



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8**

1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917

<http://www.epa.gov/region8/stormwater>

STORMWATER ANNUAL REPORT FORM

This form is for regulated small MS4s (Municipal Separate Storm Sewer Systems) and may be used to meet the annual reporting requirements for regulated small MS4s as outlined in 40 CFR§122.34g(3). While it is not required for MS4 operators to use this form to meet federal regulations, MS4s are encouraged to use this format to allow for more efficient recordkeeping and to minimize paper consumption.

PLEASE NOTE: This form may not include all of the information required to be submitted in your annual report. Please review your MS4 permit to ensure all required information is reported. Include supplemental pages to this form, if needed.

Completed forms should be mailed to:

Amy Clark
EPA Region 8 Stormwater Coordinator
Mail code: 8WP-CWW
1595 Wynkoop Street
Denver, CO 80202-1129
Email: clark.amy@epa.gov

All sections of this form must be completed and Item I on Page 18 must be signed and certified.

Please print or type.

A. Permittee Information

Permittee (Agency Name):	USAF BUCKLEY AIR FORCE BASE
Mailing Address:	600 S. ASPEN ST, STOP 86
City, State and Zip Code:	BUCKLEY AFB, CO 80011-9564
Contact Phone Number:	720-847-7245
Permit Certification Number:	COR 042003

Have any areas been added to the MS4 due to annexation or other legal means?

B. Reporting Period: January 1, 2019 to December 31, 2019

C. Construction Program Contact:

The following information will be provided on the Environmental Protection Agency's (EPA) web site to assist construction site operators in determining municipality-specific requirements for their projects:

Have you assigned an appropriate contact person/work unit to address questions regarding your municipality's construction and post-construction requirements?

If Yes:

Contact name:	Matthew Rodgers
Position/work group title:	Chief, Environmental Element
Contact phone number:	720-847-7245
Contact E-mail address:	matthew.rodgers.7@us.af.mil

If a web site has been created with information on complying with your municipality's construction and/or post-construction requirements, list the address:

D. Implementation of EPA's Stormwater Management Program

The purpose of the annual report is to report on the status of your implementation of the permit requirements, including compliance with the standard of reducing the discharge of pollutants from your MS4 to the Maximum Extent Practicable (MEP). Address each of the following items for **each** of the six program areas:

1. Public education and outreach on stormwater impacts;
2. Public participation/involvement;
3. Illicit discharge detection and elimination;
4. Construction site stormwater runoff control;
5. Post-construction stormwater management in new development and redevelopment; and
6. Pollution prevention/good housekeeping for municipal operations

As the permittee, you must collect and maintain adequate information to demonstrate implementation of the six program areas as per your stormwater management program. Note that although the annual report only requires the submittal of certain information as outlined below, additional information may be requested by EPA to audit the implementation of your stormwater management program. For example, construction site inspection reports, outreach materials, and records of maintenance activities performed may be requested by EPA in addition to the annual report.

If another entity does not have its own permit but is instead covered under your permit, the annual report information under Section D of this form must also be provided for each such entity.

1. Public Education and Outreach (PEO) on Stormwater Impacts

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to a Best Management Practice (BMP) or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

1. The BMP/measurable goal for which a change is proposed;
2. Any proposed changes to the BMP description;
3. Any proposed changes to the measurable goals (including specific dates and measures); and
4. The rationale for the proposed changes.

Describe any measurable goal(s) for public education and outreach on stormwater impacts for the reporting period; including dates and numeric measures:

Measurable Goal(s) Including dates and numeric measures, as previously submitted	Status: Including dates and numeric measures	Changes proposed to BMP and/or Measurable Goal? (Yes/No). If yes, provide information on proposed changes and rationale.
<p><u>PEO-1 Household Hazardous Waste and Stormwater Awareness</u></p> <p>1. Provide stormwater awareness at least twice per year during Newcomers Orientation (Right Start).</p>	<p>COMPLETED</p> <p>In Permit Year 6 environmental awareness materials and information were provided by 460 CES/CEIE Environmental Element staff 12 times (on the third Wednesday of every month: 16 January, 20 February, 20 March, 17 April, 15 May, 19 June, 17 July, 21 August, 18 September and 16 October, 20 November, and 18 December of 2019). Materials were provided in person; 460 CES/CEIE staff set up a display table with copies of the environmental awareness information provided for attendees to take. Slides were presented regarding the Buckley Air Force Base (AFB) Recycling Program on several occasions. Copies of the environmental materials, slides and information provided are presented on the following pages.</p>	<p>No</p>

2. Provide environmental protection awareness materials to new housing residents, including household hazardous waste.	COMPLETED Copies of the environmental awareness materials and information provided are presented on the following pages.	No
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460th Space Wing

Environmental Management



Mr. Matt Christensen
EMS/Solid Waste/Hazmat
460 CES/CEIE

UNCLASSIFIED

Environmental Management System

- Environmental Management System (EMS) is the overall umbrella of the environmental programs (Recycling, Hazmat/Hazwaste, Water, Air Emissions, Natural Resources, etc.)
- Buckley AFB Environmental Policy
 - Maintain Partnership with Local Community
 - Meet Aggressive Goals for Improvement
 - Embrace Pollution Prevention
 - Ensure Continuous Education
 - Sustaining Compliance
 - Exceeding Expectations

UNCLASSIFIED

Recycling

- The Buckley AFB recycling program uses single-stream collection. There are marked recycling dumpsters (like this one) near your building.



UNCLASSIFIED

Alternate Single-Stream Recycling Collection Point



UNCLASSIFIED

Recycling Turn-in

Scrap Metal Recycling Recycling Yard, a.k.a. North Yard
(Open Thursday from 1001-1200hr or call Mr. Matt Christensen at ext. 2285 to make an appointment)



Recycle every metal, wood, plastic and tire at the North Yard.

UNCLASSIFIED

Hazwaste Turn-in

- Environmental holds hazardous waste/universal waste turn-in every Thursday @ 1300 or by appointment (Bldg 1026)



- Acids
- Batteries
- Antifreeze
- Ink
- Oil
- Paint
- Pesticides, Oil, Lubricants (P/O's)
- Refrigerant Gases
- Solvents
- Stains
- Wax
- Other Chemicals

UNCLASSIFIED

Water

- Colorado is a headwaters state and there are large aquifers under Buckley AFB/Denver Metro area – our actions can adversely affect millions of other users downstream of us.



- Do your part to ensure only rainwater enters our storm drains as they flow directly, essentially untreated, to our streams, lakes and other waterways.
- If you do have a spill that has a chance of encountering stormwater, please call the Buckley Fire Department at (720) 847-9117 to clean-up the spill.

UNCLASSIFIED

Natural Resources

- Buckley AFB is home to the Meadowlark, Golden Eagle, Bald Eagle, Burrowing Owl, Red Tail Hawk



UNCLASSIFIED

What Exists at Buckley AFB?


- 39 Archaeological Sites
 - Prehistoric temporary Native American camp sites
- 26 Isolated Finds (artifacts)
- 12 Historic Buildings
 - Hangars 801 and 909; Buildings 431, 433, 630, and 814
 - Radomes 402, 403, 404, 405, 432, and 434
- Do not disturb an artifact or the location where you found it
 - Report any artifact findings to the 460th Civil Engineer Squadron-Environmental Flight at 847-9032



UNCLASSIFIED

Air Emissions

- Clean Air Act Section 118 (d) requires privately owned or leased vehicles operated by Federal employees on Federal Facilities for 60 or more days per calendar year, **regardless of where your vehicle is registered**, to be in compliance with the emissions standards for the vehicle inspection and maintenance (I/M) program area where the facility is located and Federal Facilities must document compliance
- "Employee Vehicle Certification & Reporting System" (ECARS) is the Air Force's web-based self-certification process used to document compliance
- Buckley/Denver requires emissions testing
- System generated email will be sent



The commander must ensure Federal employees provide proof of compliance

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Air Emissions

- List of Exemptions Applicable to Buckley AFB
 - Gasoline Vehicle 7 years old or newer
 - Diesel Vehicle
 - Electric Vehicle
 - Hybrid Electric Vehicles
 - Motorcycle
 - Natural Gas and Propane Vehicles
 - Pre-1975 Collector-Plated Vehicles
 - Two-Stroke Engines Manufactured Prior to 1980

*** You are still required to fill out the registration form, even if you are exempt, in the ECARS Program.**

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Emissions Testing Stations



- Denver
- Northglenn
- Dakota
- County Line
- Golden
- Denver Southeast
- Broomfield
- Glen Caryl
- Shoreline
- Greeley
- Parker
- Arvada
- Stapleton
- Boulevard
- Lowland
- Longmont
- Castle Rock
- Fort Collins

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General Information

- CDPHE Website: [www.cdphe.com](#)
- Air Car Colorado Emission Testing Locations and Test Times: [www.aircarcolorado.com](#)
- Buckley AFB I/M Program Manager
Jeffrey Harrison
460 CES/CEIE
660 S. Aspen Street, MS 86
720-847-9032
jeffrey.harrison.6@us.af.mil or
jeffrey.harrison.6@us.af.mil

UNCLASSIFIED



DEPARTMENT OF THE AIR FORCE
UNITED STATES SPACE FORCE
460TH SPACE WING

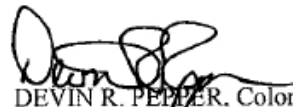
FEB 25 2020

MEMORANDUM FOR DISTRIBUTION A, B, C, AND D

FROM: 460 SW/CC

SUBJECT: Buckley AFB Environmental Policy and Commitment Statement

1. Whether directly or indirectly, every activity conducted on Buckley AFB impacts the environment as well as national security. In accordance with AFI 32-7001 *Environmental Management Systems (EMS)*, Buckley AFB is committed to leadership and stewardship in protecting the environment, the prevention of pollution, and for continual improvement. These are primary responsibilities of each person utilizing or working on the installation in any capacity.
2. To this end, Buckley AFB commits to environmental excellence by:
 - a. Valuing our natural resources and managing them wisely;
 - b. Following all applicable environmental laws;
 - c. Educating our workforce to be environmentally friendly;
 - d. Developing and maintaining programs that limit environmental impact;
 - e. Setting and reviewing environmental quality objectives and targets;
 - f. Recognizing that environmental impacts from our work processes can also affect national security.
3. Compliance with this environmental guidance is the responsibility of every member of the Buckley AFB community in accordance with his or her roles and responsibilities in all daily operations.
4. Please direct any questions to Mr. Matthew Christensen, Buckley AFB EMS Coordinator, at (720) 847-9268 or matthew.christensen.11@us.af.mil.


DEVIN R. PEPPER, Colonel, USAF
Commander

Public Education and Outreach on Stormwater Impacts (continued)

Narrative description. Provide any descriptions which may further describe the implementation of this minimum measure. Such narrative may include descriptions of efforts which overlap several minimum measures or descriptions of documents or programs which have been created in an effort to implement this minimum measure:

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to the BMP or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

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<p><u><i>PEO-2 Hazardous Waste or Stormwater Management Related Article</i></u></p> <p>1. Publish one hazardous waste or stormwater management article on the Buckley AFB website that discusses hazardous waste management and/or stormwater discharge impacts that may include options for disposing of household hazardous waste, pollution prevention, or other related information.</p>	<p>COMPLETED</p> <p>An article on Hazardous Waste was distributed via the Buckley AFB Weekly Bulletin Environmental Page on 16 December 2019.</p> <p>A copy of the informational article is presented on the following page.</p>	<p>No</p>

HAZARDOUS WASTE 101



FY2020

HW PROGRAM POC'S

- ❖ Ethan Woodard
 - 919-500-1377
 - Ethan.woodard.ctr@us.af.mil
- ❖ Harry Nuce
 - 720-847-5578
 - Harry.nuce.ctr@us.af.mil
- ❖ Martin Burris
 - 720-847-5723
 - Martin.burris@us.af.mil
- ❖ In event of spill, contact Fire Dept.
 - 720-847-9117

WASTE IDENTIFICATION – IS IT HAZARDOUS?

Hazardous Waste = Ignitable, Corrosive, or Toxic

If the potential to be hazardous exists, contact HW program for disposal. Use SDS and/or process knowledge to make determination. When in doubt, contact the HW program.

Universal Waste = Lamps, All Batteries, Electronic Waste, Mercury Devices

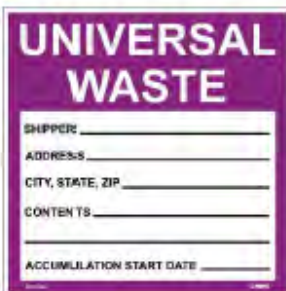
These 4 types of wastes must be managed according to the Universal Waste regulations.

Empty Containers

Empty containers (cannot leak, drip, or spill) with no residual product left inside may be recycled or thrown in the regular trash. If you are unsure, contact the HW program.

“When in doubt, contact the HW program.”

- A wise man



HAZARDOUS WASTE ACCUMULATION

- + Labelling: “Hazardous Waste _____”
- + No time limit for accumulation (up to 55-gallons per waste stream)
- + Must be transferred to B-1025 within 24 hours of being filled
- + For liquids, only fill to 90% to allow for expansion/contraction
- + Weekly inspection required and must be logged using provided sheet

UNIVERSAL WASTE ACCUMULATION

- + Labelling: “Universal Waste _____” and accumulation start date
- + Turn-in during March, September, or when full
- + Non-fluorescent lamps must be counted
- + Positive ends of batteries must be taped to prevent shorting
- + Aerosol cans are not considered Universal Waste
- + Weekly inspection required and must be logged using provided sheet.

If no accumulation point in area, waste must be turned in within 24 hours.

Waste turn-in every Thursday at 1300-1330 or by appointment at Building 1025

Public Education and Outreach on Stormwater Impacts (continued)

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<u>PEO-3 Sediment And Erosion Awareness Training for Industrial Stormwater Personnel</u> 1. Provide training at least once per year and maintain attendance record.	Annual Industrial Stormwater Permit training session was held 1 October 2019 with 5 attendees; the session included sediment and erosion awareness information. The training was presented in person by 460 CES/CEIE WQP staff using a power point slide presentation. Slide presentation and roster are shown below.	No



Stormwater Compliance Training for Industrial Operations at Buckley AFB

1 October 2019
 Charles Beebe, Certified Stormwater Inspector
 MSE Group
 720-847-6308
charles.beebe.ctr@us.af.mil



Base Water Program POCs

Water Quality Program Manager
 Ms. Kim Bowman, PE, PhD, 460 CES/CBIE

Kimberly.bowman.5@us.af.mil
 720-847-4655; DSN 847-4655

Stormwater Program Coordinator
 Charles Beebe, ctr, Certified Stormwater Inspector
charles.beebe.ctr@us.af.mil
 720-847-6308; DSN 847-6308



COURSE OBJECTIVES

- ▶ Understand what a Multi-Sector General Permit (MSGP) is and why Buckley AFB is required to have one
- ▶ Familiarize with stormwater basics
- ▶ Review MSGP requirements including our installation
 - ISWPPP
 - Industrial Stormwater BMPs
 - Inspections
 - Corrective and Maintenance Action Items
- ▶ Discuss lessons learned in 2019
- ▶ What to do in the event of a spill
- ▶ Identify BMPs being used at your facility and determine if additional ones are required



Clean Water Act (Enacted in 1972)
 ↓
 Environmental Protection Agency (Region 8 for CO) - Program Administrator and Enforcement



↓
 National Pollutant Discharge Elimination System (NPDES) requires permit for the discharge of pollutants from any point source into waters of the U.S.

↓
 2015 Multi-Sector General Permit (MSGP) governs industrial discharges
 Sector S - Air Transportation (applies at Buckley AFB)



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Stormwater is...

- Any precipitation (e.g. rain water & snow melt) that runs off the land and into streams, rivers, and lakes
- Typically not treated before being discharged, so it can carry pollutants to receiving water bodies
- Discharges may be controlled, and treated to an extent, through structural Best Management Practices (BMPs) or Minimum Control Measures (MCMs) such as detention ponds, secondary containment, etc.





Effects of Stormwater Pollution



- ▶ Hazardous materials: industrial chemicals such as DEICING FLUIDS, PETROLEUM, OIL, GREASE, insecticides, pesticides, paint, solvents, used oil, etc.
 - ▶ Can poison aquatic life, land animals and people who eat diseased fish or ingest polluted water
 - ▶ Affect drinking water sources



- ▶ Debris: plastic bags, bottles, cigarette butts, etc.
 - ▶ Can choke, suffocate, or disable aquatic wildlife and birds
 - ▶ Clog drains and pipes



- ▶ Sediment: exposed soils and unstabilized areas
 - ▶ Sediment is the #1 source of surface water pollution in the world
 - ▶ Can fill waterways and waterbodies, increasing flooding potential
 - ▶ Can make the water cloudy, preventing animals from seeing food
 - ▶ Can interfere with aquatic habitat by disrupting the smallest organisms with chain effects to large fish and wildlife
 - ▶ Soils at Buckley are very susceptible to erosion



- ▶ Excess nutrients: soaps and fertilizers
 - ▶ Can cause algae blooms and consequentially dead zones
- ▶ Bacteria and other pathogens create health hazards
 - ▶ Can affect drinking water sources
 - ▶ Can create health hazards such as gastroenteritis, dysentery etc.



Storm Sewer System

- ▶ Know the drainage of the stormwater runoff at your facility/work area including:
 - ▶ Above ground trench drains outdoors
 - ▶ Inlets and area drains
- ▶ Indoor floor drains - typically not part of the storm sewer system



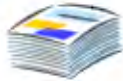
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Buckley AFB's MSGP Permit requirements:



- ▶ 460 SW to manage stormwater from industrial activities from other tenants
- ▶ Stormwater Pollution Prevention Plan (iSWPPP) for Airfield Ops
- ▶ Initiate, implement and maintain control measures to minimize pollutant discharges
- ▶ Conduct inspections to ensure control measures are adequate, appropriate and properly maintained
- ▶ Identify Corrective Actions, address within deadlines and report
- ▶ Monitoring and reporting



iSWPPP Basics

- Specifies how installation personnel prevent discharges to storm water of potential pollution from industrial operations.
- Contains procedures intended to minimize the risk of industrial storm water pollution in drainage areas located within the installation's boundaries.
- The SWPPP includes:
 - ▶ Identification and evaluation of activities and potential stormwater pollution sources
 - ▶ Identification and Implementation of storm water Best Management Practices (BMPs)
 - ▶ Pollution reduction measures and procedures
 - ▶ Monitoring and Inspection procedures

Note: The installation Stormwater Pollution Prevention Team (SWPPT) is responsible for developing, implementing, and managing the SWPPP.



Stormwater Pollution Prevention Team

- ▶ 460 CES/CEIEQ Title: Water Quality Program Manager and Support Contractor - **KIM BOWMAN & CHARLES BEEBE**
 - ↳ Responsibilities: Serve as the SWPPP Leadership Team.
 - maintenance and administration of the SWPPP
 - visual inspections and participate in routine facility inspections.
- ▶ 460 CES/CEIEQ Title: Chief, Environmental Element - **MATT RODGERS**
 - ↳ Responsibilities:
 - ✓ Approves environmental required SWPPP projects/activities.
- ▶ 460 CES/CEO Title: Heavy Repair/Horizontal Shop - **STEVE FALLS**
 - ↳ Responsibilities:
 - ✓ Advise the SWPPT of changes to industrial operations (Stormwater conveyance system maintenance projects)
 - ✓ Maintain non-airfield structural BMPs on the installation



Stormwater Pollution Prevention Team Membership

- ▶ 460 CES/CEPD Title: Program Development - **2nd LT MARK KELLOWS**
 - ↳ Responsibilities:
 - ✓ Represent planning and development organization on base in regards to SWPPP development and implementation.
 - ✓ Advise the SWPPT, as needed, of upcoming facility and infrastructure projects that may include potential stormwater pollutants and identify planned structural stormwater BMPs for future development.
- ▶ 460 LIS/OVS Title: Transportation Environmental Manager - **DAVE DINES/SRA ALLEN ROBBS**
 - ↳ Responsibilities:
 - ✓ Represent fuel management, vehicle maintenance and vehicle operation organizations for SWPPP.
 - ✓ Advise the SWPPT of changes in vehicle maintenance and operations.
- ▶ 140 WG COANG Title: 140 Wing Environmental Manager - **TONY CHIN/CHRIS VAN FLEET**
 - ↳ Responsibilities:
 - ✓ Represent COANG units operating (aircraft maintenance, vehicle maintenance, and airfield snow and ice control organizations) for SWPPP.
 - ✓ Advise the SWPPT of changes to industrial operations related to aircraft maintenance and operations, including deicing operations and aircraft/equipment washing.



Stormwater Pollution Prevention Team Membership

- ▶ COANG Title: Army Aviation Support Facility (AASF) Environmental Manager - **CPT BENJAMIN HOGAN**
 - ↳ Responsibilities:
 - ✓ Represents Army helicopter maintenance organizations for SWPPP.
 - ✓ Advise the SWPPT of changes to industrial operations related to helicopter maintenance and operations, including washing.
- ▶ 460 SW/JA Title: Judge Advocate Office - **KETH TART**
 - ↳ Responsibilities:
 - Provide as-needed legal support to the SWPPT.
- ▶ 460 SW/PA Title: Public Affairs Office - **2nd LT WILLIAM GOMEZ**
 - ↳ Responsibilities:
 - Provide as-needed public outreach support to the SWPPT.



Regulated Industrial Activities at Buckley AFB

*The key is that all of these areas are in close proximity to the flying mission either directly or indirectly

Facility Name	Brief Facility Description	Industrial Activity	Potential Pollutant Source
Consolidated Fuel Facility 401 (see fuel and on the installation)	Fuel tank operations at Buckley AFB are located at Building 1016. This is the primary storage facility for aircraft fuel.	Aircraft fueling support and aircraft deicing/fuel/bleed fuel, jet fuel, testing equipment, aircraft deicing fuel	
Main Shop, Building 601 (aircraft maintenance)	Operations at these buildings will also include aircraft maintenance, flight line maintenance, maintenance of passenger ground equipment (AGSE) equipment, minor aircraft maintenance, aircraft refueling, AGSE equipment maintenance, and aircraft deicing. Certain aircraft are stored near Building 601 rather than in the Fuel Deicing Fuel.	Aircraft maintenance, equipment storage, aircraft deicing, refueling operations and aircraft deicing	Deisel fuel, jet fuel, testing, refueling operations and aircraft deicing fuel and aircraft deicing materials
Building 140 Vehicle Maintenance Facility and Building 140 Vehicle Parking	Ground vehicle maintenance, testing, vehicle maintenance and washing are accomplished at Building 140. The government vehicle testing center is located at 140 facility and includes diesel and gas/ethanol storage tanks with associated dispensing equipment.	Ground vehicle maintenance, ground vehicle testing, and vehicle storage, vehicle washing	Gasoline, motor oil, brake fluid, hydraulic oil, anti-freeze, batteries, used oil/coolant, compressed gas cylinders, leaks from vehicles, small spills
4437 Tarmac	The 4437 Tarmac supports Army helicopter operations occurring on Buckley AFB. Helicopters are parked, refueled and stored on the tarmac. Helicopter maintenance (MRO) is periodically performed at this location with secondary maintenance structures.	Aircraft maintenance, aircraft refueling	Deisel fuel, jet fuel, testing equipment, waste water
Fuel Deicing Fuel	The Fuel Deicing Fuel is the primary aircraft deicing location for Buckley AFB.	Aircraft deicing	Aircraft deicing fuel, leaks from equipment

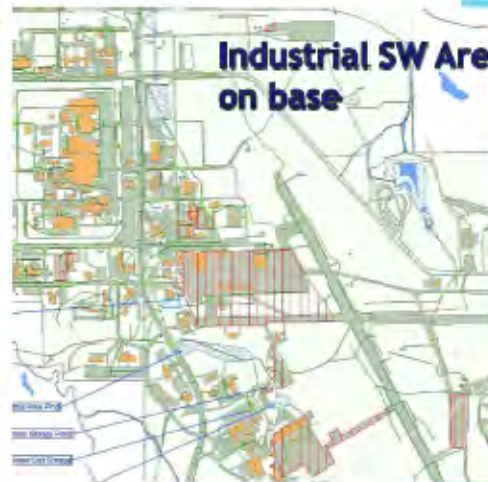


Regulated Industrial Activities at Buckley AFB

Facility Name	Brief Facility Description	Industrial Activity	Potential Pollutant Source
North Gate	The North Gate serves as auxiliary storage facilities for various metals, oils, paints, solvents and other items generated in the day shift including aircraft support activities.	Decontamination of materials.	Acid rain, used oil, solvents, and other
Building 101, 102ND CCARD Computer Ground Equipment Laboratory and Storage Facility	Operation at Building 101 include maintenance and storage of various pieces of AED support equipment.	Equipment maintenance, storage, and handling.	Leak from equipment.
Building 103, 102ND CCARD O&M Engineering Equipment and Storage Yard	Airfield support equipment including assembly, repair and line control equipment, and chemical are stored at this facility.	Decontamination of equipment.	Leak from equipment, airfield and equipment.
Building 105, 102ND CCARD Maintenance Management	Building 105 houses the three hangars used as the central maintenance area (CMA) for operations and maintenance on the day shift, including aircraft support activities.	Non-hazardous waste, including motor oil storage of materials.	Household Waste, Unknown Waste.



Industrial SW Areas on base



Industrial Operations Potentially Impacting Stormwater

- ▶ Aircraft, Ground Vehicle and Equipment - Maintenance, Cleaning and Storage Areas
- ▶ Material Storage Areas
- ▶ Fueling Systems and Areas
- ▶ Aircraft and Runway Deicing
- ▶ Equipment and Vehicle Washing



- ▶ Potential pollutant sources
 - ▶ Fluid transfers: hydraulic fluid, engine oil, radiator fluid, etc.
 - ▶ Long-term vehicle parking
 - ▶ Leaking equipment and vehicles - ensure drip pans are installed!



Definition of an allowable non-stormwater discharge

“Allowable Non-Stormwater Discharge” (MS4 Permit Part 1.3.2):

- ▶ Discharges authorized by a separate NPDES permit;
- ▶ Water line flushing;
- ▶ Landscape irrigation;
- ▶ Diverted stream flows;
- ▶ Rising ground waters;
- ▶ Uncontaminated ground water infiltration;
- ▶ Uncontaminated pumped ground water;
- ▶ Discharges from potable water sources;
- ▶ Foundation drains;
- ▶ Air conditioning condensate;
- ▶ Irrigation water;
- ▶ Springs;
- ▶ Water from crawl space pumps;
- ▶ Footing drains;
- ▶ Lawn watering;
- ▶ Individual residential car washing;
- ▶ Flows from riparian habitats and wetlands;



Definition of an allowable non-stormwater discharge

“Allowable Non-Stormwater Discharge” (MS4 Permit Part 1.3.2):

- ▶ Dechlorinated swimming pool discharges;
- ▶ Street wash water;
- ▶ Power washing where no chemicals are used;
- ▶ Roof drains;
- ▶ Fire hydrant flushing;
- ▶ Non-storm water discharges resulting from a spill which are the result of an unusual and severe weather event where reasonable and prudent measures have been taken to minimize the impact of such discharge;
- ▶ Emergency discharges required to prevent imminent threat to human health or severe property damage, provided that reasonable and prudent measures have been taken to minimize the impact of such discharges; and
- ▶ Discharges or flows from fire fighting activities occurring during emergency situations.

Definition of illicit discharge

- An illicit discharge is any discharge to a MS4 that is not stormwater or an allowable non-stormwater discharge listed in MS4 Permit Part 1.3.2.
- Buckley's MS4 permit stipulates, the permittee **must prohibit** all types of non-stormwater discharges into its MS4, except for allowable non-stormwater discharges described in Part 1.3.2.
- NPDES permit violations carry Civil Penalty fines of up to \$54,833 per day, per violation (<https://www.epa.gov/npdes/penalties>)

Material Management

- ▶ **Outdoors: Good Practices**
 - Provide cover
 - Place on pallets
 - Place materials away from storm drains
 - Must be properly labeled



Store Hazardous Materials in Areas Where They Cannot Enter Stormwater

- ▶ Close containers when not in use
- ▶ Use containers in good condition
- ▶ Store in areas protected from precipitation
- ▶ Provide secondary containment
- ▶ Move away from storm drains



Vehicle/Equipment Maintenance: Washing

- ▶ Vehicle washing runoff is laden with pollutants
- ▶ Dirt, oils, and soap are discharged to the environment
- ▶ At Buckley AFB, vehicle washing is authorized only in approved wash facilities (1014/1006, 8806, 8340/341)
- ▶ Water is discharged to sanitary sewer – ask CEIE if you have questions regarding where a drain goes to (sanitary or stormwater)
- ▶ Typically water is recycled (50% or more)



Maintenance BMPs True or False

1. **True or False:** Spills should be washed into storm drains.
2. **True or False:** Perform routine maintenance and chemical-related activities inside.
3. **True or False:** Place solid waste in authorized dumpsters and keep the lids open until dumpster is full.
4. **True or False:** Secondary containment area valves should be kept closed anytime equipment is being stored inside.
5. **True or False:** If a sheen is found in a secondary containment area, the sheen should be absorbed and/or pumped before any draining occurs.
6. **True or False:** Dispose of mop water in the stormwater sewer system.

- ▶ Facility inspections at least monthly during the deicing season (include all months during which deicing chemicals are used).
 - Keep record of the types and monthly quantities used.
- ▶ Quarterly industrial facility inspections:
 - identify operational changes and issues of non-compliance
 - assess effectiveness of existing stormwater controls
 - identify maintenance requirements for existing stormwater controls
- ▶ If a control measure is found to be in need of maintenance, repair or replacement, POC will be issued a control.
 - maintenance action item
 - or corrective action item





Maintenance Action Item or Corrective Action Item

- ▶ Timelines are the same for both.
 - ▶ Immediately: reasonable steps to prevent or minimize the discharge of pollutants.
 - ▶ As soon as feasible but no later than 14 days for final repair/replacement.
 - ▶ If infeasible to repair/replace within 45 days; notify EPA of time and rationale, document in SWPPP.
- ▶ Corrective Action Item - Further documentation and follow-up
- ▶ An email will be sent to the appropriate facility POC(s) explaining required repairs/replacement and timelines to ensure compliance with the 2015 MSGP.



Example

Control Measure Maintenance Actions

- f) Issue Location: Outdoor Equipment Storage Yard
 Date of Maintenance Action: 8 March 2018
 Reason for Action: Regular Maintenance Discovery of Problem
 If Problem:
 - Description of Action Required: Leaving equipment stored in an individual secondary containment unit was leaking over the edge of the containment unit. Per section 21.2.4 of the 2015 MSGP, excise procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases as soon as possible. At the time of the inspection, no stormwater infrastructure was observed affected. Site POC discussed moving the equipment to completely contain the leak within the secondary containment unit with personnel during his inspection. Follow-up is needed to verify full leak containment and cleanup.
 - Date Control Measure Returned to Full Function: |
 - Justification for Extended Schedule if applicable: N/A
 Notes:



COURSE OBJECTIVES

- ▶ Understand what a Multi-Sector General Permit (MSGP) is and why Buckley AFB is required to have one
- ▶ Familiarize with stormwater basics
- ▶ Review MSGP requirements including our installation
 - ▶ ISWPPP
 - ▶ Industrial Stormwater BMPs
 - ▶ Inspections
 - ▶ Corrective and Maintenance Action Items
- ▶ Discuss lessons learned in 2019
- ▶ What to do in the event of a spill
- ▶ Identify BMPs being used at your facility and determine if additional ones are required



What can we learn from 2019?

Notable Findings from 2019 include the following:



- ▶ Accumulation of significant residual hydraulic fluid in secondary containment units.
- ▶ Improper vehicle storage in secondary containments
- ▶ Hydraulic leaks
- ▶ Small oil spills from leaking equipment and vehicles that weren't initially contained or properly cleaned-up.
 - ▶ Typically occurs from lack of drip pans, or improper drip pan monitoring



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What To Do If There is a Spill?

Discharge Prevention and Response Procedures

ALL SPILLS A NEED TO BE REPORTED TO 460 CES/CEER, NO MATTER THE SIZE!

WHAT TO DO:	WHAT KIND OF SPILL IS IT?
<ul style="list-style-type: none"> ▶ Single spill response is not required. An Incident Response Plan (IRP) is required. ▶ Process spill response (containment, cleanup, disposal). ▶ Containment of spill is required. ▶ Prompt cleanup of spill is required. ▶ Cleanup of spill is required. ▶ Cleanup of spill is required. 	<ul style="list-style-type: none"> ▶ MLSGP: Spills that involve an area less than 1/2 inch in any dimension, or not more than 100 gallons of liquid, and are not oil or hazardous materials. ▶ ILSGP: Spills that are over 1/2 inch in any dimension, or are contained in a spill pan, or are a hazardous material. Major spill response will be coordinated by the POC and Emergency Management Services (EMS).
<ul style="list-style-type: none"> ▶ Report the discharge to 460 CES/CEER Environmental Office 	<p>DO NOT RESPOND TO A SPILL IF YOU ARE NOT PROPERLY TRAINED OR EQUIPPED!</p> <p>WHO TO CONTACT:</p> <ul style="list-style-type: none"> ▶ Buckley Air Force Base POC Department (see AFB 460-460-460) ▶ 460P (24) 460P Incident Control and Coordination (2015) Program Manager (Dr. Mike Bennett) (202) 460-460 ▶ 460P (24) 460P Incident Control and Coordination (2015) Program Manager (Dr. Mike Bennett) (202) 460-460



What To Do If There is a Spill? (cont)

- | | |
|--|---|
| 1) Notify your supervisor and Buckley Air Force Base Fire Department (BAFB FD). | BAFB FD will help you determine if it is a major spill and assist if you are unqualified/uncomfortable cleaning up the spill. |
| 2) Put on appropriate Personal Protective Equipment (PPE). | At minimum: safety glasses or goggles, gloves, apron, and rubber boots. |
| 3) Turn off all sources of ignition. | For example: pumps and motors. |
| 4) Attempt to stop or slow the source of the spill to prevent any further release. | Without risk of injury. |
| 5) Contain the source of the spill if possible. | Build a dike around the spill using absorbent material. Protect nearby stormwater, sanitary sewer drains, and conveyances using booms and draft mats, if available. |
| 6) Proceed with cleanup efforts. | Refer to the SDS and the Base's Hazardous Waste Management Plan for procedures on proper packaging and disposal of recovered materials. |



What To Do If There is a Spill? (cont)

WHO TO CONTACT:

- Buckley Air Force Base Fire Department: 720-847-9117 (911 on base)
- 460th CES Spill Prevention Control and Countermeasure (SPCC) Program Manager (Dr. Kim Bowman) : 720-847-4655
Or
460th Flight Chief (Mr. Matt Rodgers) : 720-847-7245



COURSE OBJECTIVES

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 - ISWPPP
 - Industrial Stormwater BMPs
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 - Corrective and Maintenance Action Items
- Discuss lessons learned in 2019
- What to do in the event of a spill
- Identify BMPs being used at your facility and determine if additional ones are required



ACTIVITY

Part A: 10 minutes

- What area do you work in?
- Identify one area you work in from provided Regulated Industrial Activities at Buckley AFB chart.
- Using the provided chart, identify the industrial activity and potential pollutant source for your work area.
- Use the Industrial Stormwater Fact Sheet Table 2 BMPs and put a checkmark on BMPs that you believe are being used in the area you work.



ACTIVITY

Part B: 5-10 minutes

Get together with other people from your area and compare your checklists.

Determine if there is a BMP you should be implementing and are not.



Summary:

- Facility personnel require training and support to implement BMPs.
- SWPPT members (supervisors) support personnel.
- Inspections, monitoring, and check implementation of BMPs.
- Team effort!
- Ways to improve?



QUESTIONS?



Thank you for your participation!

Please ensure you have signed the attendance roster.

Public Education and Outreach on Stormwater Impacts (continued)

Narrative description. Provide any descriptions which may further describe the implementation of this minimum measure. Such narrative may include descriptions of efforts which overlap several minimum measures or descriptions of documents or programs which have been created in an effort to implement this minimum measure:

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<p><u>PEO-4 Sediment and Erosion Awareness Training for Facility Managers</u></p> <ol style="list-style-type: none"> 1. Provide facility manager training at least annually and maintain attendance record. 	<p>COMPLETED</p> <p>Group Facility Manager trainings were held on 12 February, 25 April, 6 June, 14 August, 3 October, 3 December of 2019 and individual Facility Manager training were also provided as needed; sessions included sediment and erosion awareness information. The training was presented in person by multi-discipline 460 CES/CEO, /CEIE, and /CEN flight staff using a power point slide presentation. The environmental portion of the training, which is presented by 460 CES/CEIE staff, is shown below.</p>	<p>No</p>

Environmental



Matthew Christensen
Environmental Compliance
847-9268

UNCLASSIFIED

Environmental Management System

- Environmental Management System (EMS) is the overall umbrella of the environmental programs (Hazmat, Hazwaste, Recycling, Water, Storage Tanks, Toxics, Natural/Cultural Resources, etc.)
- Buckley AFB Environmental Policy
 - Maintain Partnership with Local Community
 - Meet Aggressive Goals for Improvement
 - Embrace Pollution Prevention
 - Ensure Continuous Education
 - Exceeding Expectations
 - Sustaining Compliance

UNCLASSIFIED

Recycling

- The Buckley AFB recycling program uses single-stream collection. There are marked recycling dumpsters (like this one) near your building.



UNCLASSIFIED

Recycling Turn-in

Scrap Metal Recycling Receiving Yard, a.k.a. North Yard
Open: Thursday thru 1200-1200hrs or call Mr. Matt Christensen at ext. 9268 to make an appointment



Recycle scrap metal, wood pallets AND MORE at the North Yard.

UNCLASSIFIED

Hazwaste Turn-in

- Environmental holds hazardous waste/universal waste turn-in every Thursday @1300 or by appointment (Bldg 1025)

- Lamp
- Batteries
- Aerosols
- Paint
- Spent Solvents



- Petroleum, Oils, Lubricants (POL's)
- Flammable Liquids
- Corrosives
- Sealants
- Misc Chemicals



UNCLASSIFIED

Water Quality

Sanitary Sewer -



- Do not pour chemicals or oils down the sink or discharge to the sanitary sewer
- Call the Water Quality Program Manager, 847-4655, if a chemical is discharged into sanitary sewer.

Tap Water -

- If tap water looks or smells different than usual,
 - Call Bioenvironmental Engineering at 847-6384 to test the water.
 - If appears urgent, call CE Customer Service, 847-9913.

Storm Water -

- Only rain down the drain.
- Sediment is the #1 source of surface water pollution in the world

UNCLASSIFIED

Storage Tanks

- Containers that store petroleum, oils, or lubricants (POL) that have the capacity to store 55 gallons or more of POL per US EPA
- Who is responsible for the tanks at Buckley AFB?
 - The owning organization
- The Facility Manager should:
 - Know the tank manager (Kim Bowman at 847-4655)
 - Be familiar with emergency spill procedures
 - Have contact information for the tank manager in case a spill occurs
 - Know location spill response materials
 - Call Fire Department (311 or 720-347-9117)
- Any questions about storage tanks at your facility please notify BAFB Tanks Program Manager, Kim Bowman at 847-4655

UNCLASSIFIED

Toxics

- **Asbestos (Asbestos Containing Materials ACM) -**
 - Base-wide survey (2004-2006) Building specific Asbestos Management plans were also developed when ACM present. Remodeling may require updated survey.
 - Environmental Office and Customer Service have results
 - FM's are required to maintain a copy of their building surveys and management plan if one was developed. (hardcopies located at Customer Service/ENV.)
- **Lead Based Paint -**
 - No requirement for a base survey. Project surveys may be req'd
 - Only a risk if you disturb material. (LBP use now prohibited)
- **Radon Gas -**
 - Past base-wide survey, no high risk facilities on Buckley
- Toxics Program Manager, Martin Burris at 847-5723

UNCLASSIFIED

Cultural & Natural Resources

Cultural -

- 6 historical bldgs & sites (801, 909 & 4 SATCOM Terminals)
 - CEJE must review work order requests prior to maintenance
- If an inadvertent archaeological discovery is made stop work immediately and contact the cultural resources manager at 847-9032.

Natural -

- Many species on BAFB are protected
 - Work outside your facility may impact these species
 - CEJE must review work order requests prior to maintenance
 - There's a rodent, birds, or snake in my bldg? Call CE Customer Service 847-9913

UNCLASSIFIED

Public Education and Outreach on Stormwater Impacts (continued)

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<p><u>PEO-5 Post-Construction Stormwater Control Awareness Training</u></p> <p>1. Develop post-construction stormwater control awareness training materials. (Year 2)</p>	<p>COMPLETED Completed in December of 2019. Training materials consist of a handout that addresses revegetation at Buckley AFB and some guidelines for achieving an adequate site stabilization status. See below.</p>	<p>No</p>
<p>2. Provide post-construction stormwater control awareness training materials to 460 CES/CEN and CEIE, as well as the 460 CONF. (Year 2-5)</p>	<p>COMPLETED Training materials were distributed via email to 16 primary points of contact for 460 CES/CEN, 460 CES/CEI, 460 CES/CEC, 460 CONF, 460 CES/CONF/CC, COANG, and COARNG, as well as 11 contractors on 23 December 2019.</p>	<p>No</p>

Designing for Revegetation Success at Buckley AFB



Proper amendment, seeding, and straw mulch crimping will allow this...



to become this!



If you have any questions about revegetation practices on Buckley please contact:
 Kim Bowman, Water Quality Program Manager, 720-847-4655; kimberly.bowman.3@us.af.mil
 Charles Beebe, Stormwater Program Coordinator, 720-847-6308; charles.beebe@us.af.mil

Keys to Success

Soil amendments:

- required for All revegetation projects as stated in the Buckley AFB Facility Excellence Plan (FEP)
- **Soil Amendments** – compost, lime, fertilizer, and/or approved others add biological organic matter the soil that plants use as food
- Traps moisture in the soil allowing seed and grasses to fully utilize water
- Compost shall be uniformly applied and tilled to a depth of 2” – 8”

Drill seeding is required:

- Correct seed mix and application rates must be verified prior to seeding
- The FEP should be referenced for application rates and requirements
- Allows for direct seed-to-soil contact, promoting seed growth

Irrigation

- Regularly irrigate after seeding and amendments have been applied
- Continue irrigating until a healthy stand of vegetation has established
- Where an irrigation system is unavailable, water shall be provided by the contractor and hand applied by truck with water usage being tracked for contractor billing

Soil surface stabilization

- Facilitates water intrusion into the soil
- Prevents erosion and sediment loss while vegetation establishes
- Hydromulching (pictured right) is allowed only upon approval from the environmental office.

The planting seasons must be considered:

Planting period	Time of year	Expected results	Comments
Dormant season	November - March	Preferred - Good	Most likely to succeed
Spring	April	Fair	Marginal success
Summer	May – August	Poor	Very risky, not recommended
Fall	September – October	Questionable	Hit and miss results

The FEP requires a minimum of 15% of the planting area to be planted during the dormant season from the planting start through consistent ground freeze.



Vegetation Establishment Requirements for permit closeout:

- Dead spots up to 0.5 square feet in size must not exceed ten percent (10%) of the total seeded area.
- The sites shall be free of eroded areas.
- No noxious weeds can be present on site.

Public Education and Outreach on Stormwater Impacts (continued)

Narrative description. Provide any descriptions which may further describe the implementation of this minimum measure. Such narrative may include descriptions of efforts which overlap several minimum measures or descriptions of documents or programs which have been created in an effort to implement this minimum measure:

All information used to implement the program has been provided under the Measurable Goals

2. Public Participation/Involvement (PIP)

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<u>PIP-1 Public Notice Requirements</u> 1. The 460 CES/CEIE Water Quality Program Manager (WQPM) and 460 SW/JA will review and document the public notice requirements, if any, associated with the public involvement and participation program.	COMPLETED Per MS4 permit requirements, the 460 CES/CEIE WQPM and 460 SW/JA conferred in Permit Year 1 regarding public notice requirements associated with the PIP program. No public notification requirements were identified at the time.	No
2. Public notices are provided and documented for required public involvement and participation activities.	NOT APPLICABLE No activity required.	No

Public Participation/Involvement (continued)

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- 7. Any proposed changes to the measurable goals (including specific dates and measures); and
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<p>Measurable Goal(s) Including dates and numeric measures, as previously submitted</p>	<p>Status: Including dates and numeric measures</p>	<p>Changes proposed to BMP and/or Measurable Goal? (Yes/No). If yes, provide information on proposed changes and rationale.</p>
<p><u>PIP-2 SWMP Public Review</u> 1. Make MS4 annual reports available on the Buckley AFB website (www.buckley.af.mil) within 15 days of submitting the annual report to the EPA.</p>	<p>COMPLETED The Permit Year 5 Annual Report was posted on the Buckley AFB website prior to 5 April 2019. To locate the report on the Buckley AFB website, highlight the "About Us" tab, and click on "Environmental" in the drop-down list (URL: http://www.buckley.af.mil/About-Us/Environmental); a narrative in regard to the MS4 Permit is provided along with links to applicable environmental documentation including the complete MS4 Permit, the SWMP Plan, and the Annual Report.</p>	<p>No</p>

Public participation/involvement (continued)

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- 11. Any proposed changes to the measurable goals (including specific dates and measures); and
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<p><u>PIP-3 Stormwater Action Line and Email Address</u></p> <p>1. Maintain the stormwater action line email address. Document action line emails received from the public and actions taken in public participation log.</p>	<p>COMPLETED</p> <p>The stormwater action line email address, 460 CES/CEV Water (460ces.cevwater@us.af.mil) is active and is being maintained. The email address (along with the 460 CES/CEIE WQP staff and 460 CES Customer Service direct telephone numbers) is published in a variety of sources including the Air Force Global Address List (GAL) and the stormwater awareness brochures (see BMP PEO-1).</p> <p>No emails using the 460 CES/CEV Water address were submitted during Permit Year 6. A spill log is maintained with the 460 CES Environmental Office files.</p>	<p>No</p>

Public Participation/Involvement (continued)

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<p><u>PIP-4 Annual Meeting with City of Aurora</u></p> <p>1. The 460 CES/CEIE WQPM will conduct a meeting between appropriate Buckley AFB and City of Aurora stormwater/water quality managers at least once per year to discuss water quality and discharges to East Toll Gate Creek.</p>	<p>COMPLETED</p> <p>460 CES/CEIE WQPM attended one (1) in person project Tollgate Creek Design, Fence Relocation, Cost and Land Swap Discussion meeting in conjunction with the City of Aurora (CoA), J3 Engineering/Dewberry and Parks, Recreation & Open Spaces to discuss the East Toll Gate Creek (ETGC) Restoration Project on 13 February 2019. In addition to the single in person meeting, a weekly phone meeting was held between BAFB, COA and J3 Engineering/Dewberry from 31 January 2019 to November 2019 to provide a status update on the design, planning, permitting, and construction management of the ETGC Restoration Project. Weekly meetings were terminated when the project design was completed (November 2019). The U.S. Army Corps of Engineers is currently (March 2020) constructing the Buckley AFB components of the completed ETGC Restoration Project design.</p>	<p>No</p>

Public Participation/Involvement (continued)

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<p><u>PIP-5 Volunteer and Cleanup of MS4 Receiving Water Activities</u></p> <p>1. Buckley AFB will maintain a log of public participation activities related to water quality protection and cleanup of MS4 receiving waters.</p>	<p>COMPLETED</p> <p>In Permit Year 6 public participation activities included: Earth Day and Arbor Day activities held 25 April 2019. Earth Day activities included: Display set up with handouts of information; children’s activities for pollinator planting and lady bug release (approx. 40 kids); open recycling center access; gas can exchange; and a tree planting ceremony. A volunteer clean up event was held on 19 July 2019 with 30 participants cleaning up the ADF pond and the stormwater conveyance to the west and north of the Base Exchange (BX). Photos of the various activities can be found below.</p>	<p>No</p>

Children's activities: Tree Planting – Earth Day and Arbor Day



Children's activities: Lady Bug Release – Earth Day and Arbor Day



Children's activities: Lady Bug Release – Earth Day and Arbor Day



Children's activities: Pollinator Planting – Earth Day and Arbor Day



Environmental Display Booth – Earth Day and Arbor Day 2019



19 July 2019 MS4 Earth Day Receiving Waters Cleanup



Buckley Air Force Base

Earth Day 2019

Proposed Agenda

Thursday, 25 Apr 2019

Event	Time	Location
Environmental Clean-up	0800-1000	Base wide
Children Activities	0900-0945	CDC's
Arbor Day Ceremony	1000-1045	Bldg 725
Environmental Displays	0900-1400	BX/Commissary
Recycling Center Drop-offs	0900-1400	Recycling Center

Arbor Day 2019
Tree Planting Ceremony

Bldg. 725
25 April 2019 @ 1000

SEQUENCE OF EVENTS

Introductions and Welcome 460 CES/DD

Vice Commander's Arbor Day Remarks 460 SW/CV

Guest Speaker – Nancy Klasky, Community Forestry Division Colorado State Forest Service

- Earth Day / Arbor Day / Tree City USA
- Presentation – Tree City USA
- 14th Year Annual Award Presented to BAFB

2019 Arbor Day Proclamation Col. Robert B. Riegel

Ceremonial Tree Planting Vice Commander & Child Development Center

Public Participation/Involvement (continued)

Narrative description. Provide any descriptions which may further describe the implementation of this minimum measure. Such narrative may include descriptions of efforts which overlap several minimum measures or descriptions of documents or programs which have been created in an effort to implement this minimum measure:

All information used to implement the program has been provided under the Measurable Goals

3. Illicit Discharge Detection and Elimination (IDE)

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to the BMP or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

1. The BMP/Measurable goal for which a change is proposed;
2. Any proposed changes to the BMP description;
3. Any proposed changes to the measurable goals (including specific dates and measures); and
4. The rationale for the proposed changes.

Describe any measurable goal(s) for illicit discharge detection and elimination for the reporting period; including dates and numeric measures:

Measurable Goal(s) Including dates and numeric measures, as previously submitted	Status: Including dates and numeric measures	Changes proposed to BMP and/or Measurable Goal? (Yes/No). If yes, provide information on proposed changes and rationale.
<p><u>IDE-1 Storm Sewer System Map</u></p> <ol style="list-style-type: none"> 1. Update the complete storm sewer system map in the Buckley AFB Geographic Information Systems (GIS) (Year 3). 	<p>COMPLETE</p> <p>The update process is organized by installation areas, called tiles; there are 35 tiles that cover the entire installation. Each tile covers a specific portion or area of the installation and a certain number of tiles are scheduled to be covered by the update process each calendar quarter, so progress toward the goal can be measured.</p> <p>The update process involves staff from engineering, operations, and environmental within 460 CES who systematically conduct field inspections and surveys to validate/correct existing system maps and to add missing features. The update is 96% complete with no anticipation of ever being 100% as there is always construction occurring on base and occasionally errors are found through the process described above. It is Buckley AFB base's opinion that it has met the intent of this requirement and an MFR dated 13 February 2017 has been issued by the 460 CES/CEIE WQPM documenting completion of this task shown below.</p>	<p>No</p>



DEPARTMENT OF THE AIR FORCE
460TH SPACE WING (AFSPC)

13 February 2017

MEMORANDUM FOR RECORD

FROM: 460 CES/CEIE

SUBJECT: Documentation of Completion of the Buckley AFB Storm Sewer System GIS
Update per IDE-1 (Permit Year 3)

1. Mr. Matt Rodgers, the Buckley AFB Water Quality Program Manager (WQPM) met with 460 CES/CENM representatives Mr. Delbert Brown and Mr. Juanito Canon on 6 Feb 2017 to discuss the status of the IDE-1 task identified in the Stormwater Management Program Plan and within paragraph 2.4.8 of the Buckley AFB MS4 Permit. Mr. Brown and Mr. Canon explained that the vast majority (Approx. 96%) of stormwater infrastructure has been reviewed and updated within the Buckley AFB Geobase system as applicable over the past (3) years via efforts staffed by engineering, operations, and environmental personnel through field maintenance and compliance inspections along with various surveying tasks. Due to the ongoing nature of construction projects being conducted base-wide, there is essentially never a discrete moment when Geobase is 100% up-to-date and it is believed that the intent of this MS4 permit tasking has been met.
2. Please contact Matt Rodgers at matthew.rodgers.7@us.af.mil or at (720) 847-4655 with any questions or comments in regard to this tasking.

A handwritten signature in black ink, appearing to read "Matthew C. Rodgers", is positioned above the typed name.

Matthew C. Rodgers, GS-12, DAF
Water Quality Program Manager, 460 CES/CEIE

PERSISTENT GLOBAL SURVEILLANCE

Illicit Discharge Detection and Elimination (continued)

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to the BMP or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

1. The BMP/Measurable goal for which a change is proposed;
2. Any proposed changes to the BMP description;
3. Any proposed changes to the measurable goals (including specific dates and measures); and
4. The rationale for the proposed changes.

Describe any measurable goal(s) for illicit discharge detection and elimination for the reporting period; including dates and numeric measures:

Measurable Goal(s) Including dates and numeric measures, as previously submitted	Status: Including dates and numeric measures	Changes proposed to BMP and/or Measurable Goal? (Yes/No). If yes, provide information on proposed changes and rationale.
<p><u>IDE-2 Dry Weather Screening of Major Outfalls</u></p> <ol style="list-style-type: none"> 1. Conduct dry weather screening of Buckley AFB outfalls once per year. Document findings of dry weather screening and erosion evaluation. Document results of any follow up illicit discharge investigation or assessments. 	<p>COMPLETED</p> <p>The visual dry weather screening for MS4 Permit Year 6 was conducted in September 2019. Major industrial and municipal outfalls were inspected. Results of the screening were that no dry weather discharges were observed. Therefore, no actions to investigate / assess potential illicit discharges were implemented. The erosion and sediment control concerns were documented and recommended for work orders.</p>	<p>No</p>

Illicit Discharge Detection and Elimination (continued)

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to the BMP or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

1. The BMP/Measurable goal for which a change is proposed;
2. Any proposed changes to the BMP description;
3. Any proposed changes to the measurable goals (including specific dates and measures); and
4. The rationale for the proposed changes.

Describe any measurable goal(s) for illicit discharge detection and elimination for the reporting period; including dates and numeric measures:

Measurable Goal(s) Including dates and numeric measures, as previously submitted	Status: Including dates and numeric measures	Changes proposed to BMP and/or Measurable Goal? (Yes/No). If yes, provide information on proposed changes and rationale.
<u>IDE-3 Illicit Discharge Detection and Elimination Program</u> 1. Maintain one printed copy of the EPA Illicit Discharge Detection and Elimination Manual in the Environmental Element's library.	COMPLETED A hardcopy of the US EPA's Illicit Discharge Detection and Elimination Manual is in place on the 460 CES/CEIE Stormwater library shelves.	No
2. At a minimum, the Water Quality Program Manager, Spill Program Manager, and Environmental Element Chief will conduct an annual review of the EPA Illicit Discharge Detection and Elimination Manual. This review will serve as training for illicit discharge investigation and response techniques.	COMPLETED The 460 CES/CEIE: WQPM, Stormwater Program Coordinator and Element Chief met on 31 December 2019 and reviewed the EPA's Illicit Discharge Detection and Elimination Manual.	No

Illicit Discharge Detection and Elimination (continued)

<p>3. Document the time required to investigate, plan, and correct confirmed illicit discharges identified on Buckley AFB. For confirmed illicit discharges, Buckley AFB will develop a Corrective Action Plan (CAP) within 15 business days and implement the corrective action within 45 business days of discovery. If corrective action will require more than 45 business days, permission must be obtained from Region 8 USEPA.</p>	<p>COMPLETED</p> <p>Three confirmed illicit discharges occurred in Permit Year 6, on 31 May, 10 June and 25 October 2109. Two discharges (31 May & 10 June) were closed loop chiller water (CLCW) releases into storm water in the Aerospace Data Facility (ADF) restricted area. The third discharge (25 October) was evaporative cooling tower water from the 2nd Space Warning System (2 SWS) restricted area. The illicit discharges were documented in EASI, the Air Force information management system for reporting spills. See EASI documentation below for details for each of the three illicit discharges, with responses described in Actions Taken.</p>	<p>No</p>
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31 May 2019:

Installation Details

Installation:	Buckley	MAJCOM:	AFSPC	State:	CO
Sub Location:		Branch:	Midwest Branch	EPA Region:	8
		ISS:	Peterson		

Spill Details

Fiscal Year:	2019
Classification:	Reportable
Date Reported to HAF:	
Date Read/Received:	
Estimated Clean-up Date:	06/03/2019
Updated in EASIER:	06/11/2019
Entered in EASIER:	
Spill/Release Date:	05/31/2019 8:00
Was the release cleaned up within 24 hours?:	No
Did process owner have sufficient clean-up capabilities?:	Yes
Class:	N/A
Overall Root Cause:	(I) Infrastructure
Specific Root Cause:	(I1) Inadequate or defective facility design
Equipment/Facility Involved:	closed loop chilled water (CLCW) pipe
Equipment Type:	N/A
Aircraft Type	N/A

Description:
 The Aerospace Data Facility (ADF) restricted area at Buckley Air Force Base had a closed loop chilled water (CLCW) accidental release of approximately 150 gallons from Building 460 (B460) into the stormwater conveyance system between 5/31/19 and 6/3/19. The CLCW drained out of a pipe that was closed off and was being cut open as part of the CLCW system upgrade project. The CLCW entered the storm drain inlet located 85 feet south of the southeast corner of B460. The impacted storm drain is located approximately 125 feet south of the source of the CLCW release. Based on the limited discharge volume, the water would have flowed a short distance in the stormwater conveyance system before infiltrating into the soil. The CLCW contains one treatment chemical (a corrosion inhibitor, Nalco 8338) at a concentration of approximately 650 parts per million. A valve was installed at the cut location, so no additional CLCW will be discharged. The CLCW leak was a continuous trickle leak over the weekend, between 5/31/19 and 6/3/19, while the pipe was being fixed. Much of the trickle leak infiltrated in overland flow to the inlet, but CLCW was observed last week pooled at the inlet downgradient of B460 indicating that the CLCW leak had reached stormwater conveyance. Amy Clark of Region 8 EPA was notified by email of the release on 10 June 2019 because the release is not an allowable non-stormwater discharge for Buckley's MS4-permit COR042003, therefore it was reported as an illicit discharge. The identified illicit discharge was corrected with the installation of a valve at the cutoff location. As follow-up, the illicit discharge will be reported in Buckley's 2019 MS4 Annual Report.

Points of Contact

Type	Name	Email	Phone
Author	BOWMAN, KIMBERLY S GS-12 USAF AFSPC 460 CES/CEIE	kimberly.bowman.5@us.af.mil	

Location Map

Latitude: 39.7056767340211	Longitude: -104.753297790754
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Material Released	Qty Released	Qty Recovered	Reportable Quantity
Closed Loop Chilled Water (CLCW) with ~650 ppm Nalco 8338 Corrosion Inhibitor	150 Gallon(s)	0 Gallon(s)	150 Gallon(s) or more

Release Details

Question	Answer	Details
The release extended beyond a hard surface?	Yes	150 gallons
The release contaminated a body of water or storm drain?	Yes	less than or equal to 150 gallons reached stormwater
The release entered the sanitary sewer?	No	
The release reached soil?	Yes	150 gallons
The release caused environmental contamination extending beyond installation boundaries?	No	
The release caused a film or sheen on nearby surface water?	No	
The release caused imminent and substantial threat to public health, safety, or the environment?	No	
In the opinion of the environmental element, the release should be reported to headquarters, regardless of quantity?	No	
The release resulted in injury or loss of life?	No	
The release resulted in loss of aircraft or facility?	No	
The release interrupted flying operations?	No	
The release presents continuing threat to the environment?	No	
The release is anticipated to result in an Enforcement Action?	No	
The release resulted in or could result in litigation, publicity, or media coverage?	No	
The estimated clean-up cost exceeds \$50,000?	No	
The release resulted in political/host nation involvement?	No	

External Communications

Question	Answer
The Fire Department was notified?	No
The Fire Department visited the release site?	No
The NRC was notified?	No
The NRC visited the release site?	No
An environmental regulatory agency was notified?	Yes
What environmental regulatory agency was notified?	Region 8 EPA Stormwater Coordinator
An environmental regulatory agency visited the release site?	No
An OPREP was submitted?	No

Attachments

File	Document Type	Description	Sent/Received	Upload Date
Buckley_CLCWrelease_150gal_1Jun19.pdf	Supporting Document	Map with Release Details	06/10/2019	6/10/2019 11:57:38
NALCO Corrosion Inhibitor Closed Loop (8338).pdf	Supporting Document	SDS for Corrosion Inhibitor 650 ppm	06/10/2019	6/10/2019 11:59:23

Corrective Action 1

Status: Complete

Corrective Action: The identified illicit discharge was corrected with the installation of a valve at the cutoff location. The discharge will be reported in the 2019 MS4 Annual Report.

Air Force POC:

Additional POC: Timothy Bosco

Additional Funding Required:

Est. or Act. Completion Date: 6/3/2019

Project/Work Order Title: N/A

Project/Work Order Number: N/A

10 June 2019

Installation Details

Installation:	Buckley	MAJCOM:	AFSPC	State:	CO
Sub Location:		Branch:	Midwest Branch	EPA Region:	8
		ISS:	Peterson		

Spill Details

Fiscal Year:	1919
Classification:	Reportable
Date Reported to HAF:	
Date Read/Received:	
Estimated Clean-up Date:	06/09/2019
Updated in EASIER:	06/11/2019
Entered in EASIER:	
Spill/Release Date:	06/10/2019 7:00
Was the release cleaned up within 24 hours?:	No
Did process owner have sufficient clean-up capabilities?:	Yes
Class:	N/A
Overall Root Cause:	(I) Infrastructure
Specific Root Cause:	(I1) Inadequate or defective facility design
Equipment/Facility Involved:	closed loop chilled water (CLCW) pipe
Equipment Type:	N/A
Aircraft Type	N/A

Description:
 The Aerospace Data Facility (ADF) restricted area at Buckley Air Force Base had a closed loop chilled water (CLCW) accidental release of approximately 100 gallons of B412 closed loop chilled water (CLCW) into the storm drain on 6/10/19 from approximately 0700 to 1100. The CLCW drained out of a pipe that was closed off and was being cut open as part of the CLCW system upgrade project. It took several hours for the 100 gallons of CLCW to drain out of the pipe cut. The CLCW entered the storm drain inlet located 85 feet south of the southeast corner of B460. The impacted storm drain is located approximately 120 feet north of the source of the CLCW release. Based on the limited discharge volume and several hours of release time, the water would have flowed a short distance in the stormwater conveyance system before infiltrating into the soil. The CLCW contains one treatment chemical (a corrosion inhibitor, Nalco 8338, SDS attached) at a concentration of approximately 650 parts per million. Work is being performed at the cut location and will include a leak-tight pipe/valve installation, so no additional CLCW will be discharged. This is not an allowable non-stormwater discharge for Buckley's MS4permit COR042003, it was reported to the EPA Region 8 as an illicit discharge. The identified illicit discharge was corrected with the installation of a leak-tight pipe/valve and the discharge will be reported in our 2019 MS4 Annual Report. Since this has occurred twice in the past two weeks, the ADF has been asked to make a plan for how to contain or avoid another leak should it happen again and leadership will be meeting to discuss the discharges and plans moving forward.

Points of Contact

Type	Name	Email	Phone
Author	BOWMAN, KIMBERLY S GS-12 USAF AFSPC 460 CES/CEIE	kimberly.bowman.5@us.af.mil	

Location Map

Latitude: 39.705817	Longitude: -104.753373
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Material Released	Qty Released	Qty Recovered	Reportable Quantity
closed loop chilled water (CLCW) with a 650 ppm corrosion inhibitor, Nalco 8338	100 Gallon(s)	0 Gallon(s)	100 Gallon(s) or more

Release Details

Question	Answer	Details
The release extended beyond a hard surface?	Yes	100 gallons
The release contaminated a body of water or storm drain?	Yes	100 gallons
The release entered the sanitary sewer?	No	
The release reached soil?	Yes	100 gallons
The release caused environmental contamination extending beyond installation boundaries?	No	
The release caused a film or sheen on nearby surface water?	No	
The release caused imminent and substantial threat to public health, safety, or the environment?	No	
In the opinion of the environmental element, the release should be reported to headquarters, regardless of quantity?	No	
The release resulted in injury or loss of life?	No	
The release resulted in loss of aircraft or facility?	No	
The release interrupted flying operations?	No	
The release presents continuing threat to the environment?	No	
The release is anticipated to result in an Enforcement Action?	No	
The release resulted in or could result in litigation, publicity, or media coverage?	No	
The estimated clean-up cost exceeds \$50,000?	No	
The release resulted in political/host nation involvement?	No	

External Communications

Question	Answer
The Fire Department was notified?	No
The Fire Department visited the release site?	No
The NRC was notified?	No
The NRC visited the release site?	No
An environmental regulatory agency was notified?	Yes
What environmental regulatory agency was notified?	EPA Region 8 Stormwater Program Coordinator
An environmental regulatory agency visited the release site?	No
An OPREP was submitted?	No

Attachments

File	Document Type	Description	Sent/Received	Upload Date
Buckley_CLCWrelease_100gal_10Jun19.pdf	Supporting Document	Map of spill location and event details	06/10/2019	6/11/2019 7:44:40
NALCO Corrosion Inhibitor Closed Loop (8338).pdf	Supporting Document	SDS for corrosion inhibitor	06/10/2019	6/11/2019 7:45:38

Related Events

Event ID	Event Type	Details	Classification	Installation	Sub Location	Status	Occurred	Entered	Updated
No Related Events have been added.									

Corrective Actions

Corrective Action 1

Status: In Progress

Corrective Action: The identified illicit discharge was corrected with the installation of a leak-tight pipe/valve and the discharge will be reported in our 2019 MS4 Annual Report. Since this has occurred twice in the past two weeks, the ADF has been asked

to make a plan for how to contain or avoid another leak should it happen again and leadership will be meeting to discuss the discharges and plans moving forward.

25 October 2019:

Installation Details

Installation:	Buckley	MAJCOM:	AFSPC	State:	CO
Sub Location:		Branch:	Midwest Branch	EPA Region:	8
		ISS:	Peterson		

Spill Details

Fiscal Year:	2020
Classification:	Reportable
Date Reported to HAF:	
Date Read/Received:	11/14/2019
Estimated Clean-up Date:	10/27/2019
Updated in EASIER:	11/15/2019
Entered in EASIER:	11/14/2019
Spill/Release Date:	10/25/2019 17:00
Was the release cleaned up within 24 hours?:	No
Did process owner have sufficient clean-up capabilities?:	No
Class:	N/A
Overall Root Cause:	(I) Infrastructure
Specific Root Cause:	(I2) Defective or failed equipment
Equipment/Facility Involved:	solenoid valve for cooling tower make-up water
Equipment Type:	Other (Add Description Below)
Aircraft Type	N/A

Description:
 Equipment Type: Cooling Tower Sump The solenoid valve that automatically fills the Cooling Tower 101 (CT-101) sump with make-up water failed, so the cooling tower sump was continuously filled overnight Friday, October 25, to Saturday, October 26, causing an overflow release of 64,000 gallons from the sump into the stormwater. The valve was manually closed Saturday, October 26, when the solenoid failure was discovered. The valve will be operated manually until the solenoid valve is fixed. CT-101 water contains two treatment chemicals with the following respective concentrations: NALCO 3DT265-A (119.2 ppm), NALCO 3DT265-I (134.1 ppm). The sump contained CT-101 water with the two treatment chemicals. CT-101 water overflowed out of the sump into stormwater with the addition of 64,000 gallons of make-up water.

Points of Contact

Type	Name	Email	Phone
Author	<u>BOWMAN, KIMBERLY S GS-12 USAF AFSPC 460 CES/CEIE</u>	kimberly.bowman.5@us.af.mil	
Regulator / Agency	<u>Clark, Amy</u>	Clark.Amy@epa.gov	(303)-312-7014

Location Map

Latitude: 39.705817	Longitude: -104.753373
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Material Released	Qty Released	Qty Recovered	Reportable Quantity
Cooling tower water with treatment chemicals	64000 Gallon(s)	0 Gallon(s)	N/A

Release Details

Question	Answer	Details
The release extended beyond a hard surface?	Yes	64000
The release contaminated a body of water or storm drain?	Yes	64000
The release entered the sanitary sewer?	No	
The release reached soil?	No	
The release caused environmental contamination extending beyond installation boundaries?	No	
The release caused a film or sheen on nearby surface water?	No	
The release caused imminent and substantial threat to public health, safety, or the environment?	No	
In the opinion of the environmental element, the release should be reported to headquarters, regardless of quantity?	No	
The release resulted in injury or loss of life?	No	
The release resulted in loss of aircraft or facility?	No	
The release interrupted flying operations?	No	
The release presents continuing threat to the environment?	No	
The release is anticipated to result in an Enforcement Action?	No	
The release resulted in or could result in litigation, publicity, or media coverage?	No	
The estimated clean-up cost exceeds \$50,000?	No	
The release resulted in political/host nation involvement?	No	

External Communications

Question	Answer
The Fire Department was notified?	No
The Fire Department visited the release site?	No
The NRC was notified?	No
The NRC visited the release site?	No
An environmental regulatory agency was notified?	Yes
What environmental regulatory agency was notified?	EPA - Region 8 Stormwater Program Coordinator, Amy Clark
An environmental regulatory agency visited the release site?	No
An OPREP was submitted?	No

Attachments

File	Document Type	Description	Sent/Received	Upload Date
No Attachments have been added.				

Related Events

Event ID	Event Type	Details	Classification	Installation	Sub Location	Status	Occurred	Entered	Updated
No Related Events have been added.									

Corrective Actions

Corrective Action 1

Status:	In Progress
Corrective Action:	The valve will be operated manually until the solenoid valve is fixed.
Air Force POC:	
Additional POC:	
Additional Funding Required:	
Est. or Act. Completion Date:	12/1/2019
Project/Work Order Title:	
Project/Work Order Number:	

Illicit Discharge Detection and Elimination (continued)

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to the BMP or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

1. The BMP/Measurable goal for which a change is proposed;
2. Any proposed changes to the BMP description;
3. Any proposed changes to the measurable goals (including specific dates and measures); and
4. The rationale for the proposed changes.

Describe any measurable goal(s) for illicit discharge detection and elimination for the reporting period; including dates and numeric measures:

Measurable Goal(s) Including dates and numeric measures, as previously submitted	Status: Including dates and numeric measures	Changes proposed to BMP and/or Measurable Goal? (Yes/No). If yes, provide information on proposed changes and rationale.
<p><u>IDE-4 Illegal Dumping and Non-Compliance Enforcement Procedures</u></p> <ol style="list-style-type: none"> 1. Document any illicit discharge and illegal dumping enforcement actions taken. 	<p>COMPLETED</p> <p>No enforcement actions (EAs) were required in Permit Year 6. No illicit discharge incidents occurred that resulted in enforcement actions (see BMP IDE-3) and no illegal dumping incidents occurred. As a military installation, all personnel working, assigned, visiting, or otherwise having access to the installation are subject to specific laws, regulations, and policies while on Buckley AFB. Existing illegal dumping and non-compliance enforcement procedures for non-compliance with laws, regulations, and policies include the Uniform Code of Military Justice, contracts subject to Federal Acquisition Regulations, Air Force Instruction (AFI) 51-202 Non-judicial Punishment, and AFI 36-704 Discipline and Adverse Actions. Enforcement procedures vary based on specific situations; military and civilian employees can receive verbal reprimands, written reprimands placed in employment records, demotions, loss of pay, discharge from Federal service, and the Installation Commander has the authority to bar individuals from accessing Buckley AFB.</p>	<p>No</p>

Illicit Discharge Detection and Elimination (continued)

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to the BMP or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

1. The BMP/Measurable goal for which a change is proposed;
2. Any proposed changes to the BMP description;
3. Any proposed changes to the measurable goals (including specific dates and measures); and
4. The rationale for the proposed changes.

Describe any measurable goal(s) for illicit discharge detection and elimination for the reporting period; including dates and numeric measures:

Measurable Goal(s) Including dates and numeric measures, as previously submitted	Status: Including dates and numeric measures	Changes proposed to BMP and/or Measurable Goal? (Yes/No). If yes, provide information on proposed changes and rationale.
<p><u>IDE-5 Allowable Non-Stormwater Discharges and Controls</u></p> <p>1. Conduct an annual review of allowable non-stormwater discharges listed in Paragraph 1.3.2 of the MS4 Permit. Identify if any category of allowable, non-stormwater discharge is a significant contributor of pollutants to the MS4. If a category of allowable, non-stormwater discharge is determined to be significant, the category is then considered an illicit discharge and controls must be enacted to minimize or eliminate the discharge.</p>	<p>COMPLETED</p> <p>A review of authorized, non-stormwater discharge sources listed in Part 1.3.2 of the Permit was conducted 15 July 2019 and presented as a training to the ADF-C 1 August 2019 25 ADF-C personnel attended the 1 August 2019 training, including the Operations Branch Chief, several personnel for environmental safety and health (ESH), project managers and operations personnel discharges from the ADF-C (see slides below).</p> <p>Of the 26 sources listed, only 9 were identified as occurring on Buckley AFB during Permit Year 6. Of those 9 occurring during Permit Year 6, none have been determined to be a significant contributor of pollutants to the storm drain system.</p>	<p>No</p>

Illicit Discharge Elimination Stormwater Spill Training

Buckley Air Force Base

1 August 2019



Dr. Kimberly Bowman
460 CES/CEIE Water Quality and Tanks
Program Manager
kimberly.bowman.5@us.af.mil
720-847-4655

Purpose

- Provide an overview of Buckley Air Force Base's (BAFB) National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit
- We will define:
 - Authorized discharge
 - Allowable non-stormwater discharge
 - Illicit discharge
- Identify response procedures and personnel

Overview of Buckley's Municipal Separate Storm Sewer System (MS4) Permit

- In accordance with the Clean Water Act (CWA), Buckley AFB holds a MS4 permit requiring coverage under the NPDES for stormwater discharges.
- The 460th Space Wing (460 SW) is currently the host organization and the MS4 permit holder for BAFB.
- The MS4 Permit encompasses all areas of the MS4 within the base's perimeter fence (except the privatized housing area).
- BAFB's MS4 permit (Section 1.3.1) prohibits all types of not allowable stormwater discharges into its MS4.

Definition of "authorized discharge"

"Authorized Discharge":

- Stormwater within MS4 boundaries
- Stormwater commingled with flows contributed by *allowable non-stormwater discharges*

Definition of an allowable non-stormwater discharge

"Allowable Non-Stormwater Discharge" (MS4 Permit Part 1.3.2):

- Discharges authorized by a separate NPDES permit;
- Water line flushing;
- Landscape irrigation;
- Diverted stream flows;
- Rising ground waters;
- Uncontaminated ground water infiltration;
- Uncontaminated pumped ground water;
- Discharges from potable water sources;
- Foundation drains;
- Air conditioning condensate;
- Irrigation water;
- Springs;
- Water from crawl space pumps;
- Footing drains;
- Lawn watering;
- Individual residential car washing;
- Flows from riparian habitats and wetlands;

Definition of an allowable non-stormwater discharge

"Allowable Non-Stormwater Discharge" (MS4 Permit Part 1.3.2):

- Dechlorinated swimming pool discharges;
- Street wash water;
- Power washing where no chemicals are used;
- Roof drains;
- Fire hydrant flushing;
- Non-storm water discharges resulting from a spill which are the result of an unusual and severe weather event where reasonable and prudent measures have been taken to minimize the impact of such discharge;
- Emergency discharges required to prevent imminent threat to human health or severe property damage, provided that reasonable and prudent measures have been taken to minimize the impact of such discharges; and
- Discharges or flows from fire fighting activities occurring during emergency situations.

Definition of illicit discharge

- An illicit discharge is any discharge to a MS4 that is not stormwater or an allowable non-stormwater discharge listed in MS4 Permit Part 1.3.2.
- Buckley's MS4 permit stipulates, the permittee **must prohibit** all types of non-stormwater discharges into its MS4, except for allowable non-stormwater discharges described in Part 1.3.2.
- NPDES permit violations carry Civil Penalty fines of up to \$54,833 per day, per violation (<https://www.agc.org/news/2019/02/27/new-epa-civil-penalty-amounts-take-effect-2019>)



<https://www.ci.cambridge.ma.us/your-government/departments/stormwater/illicit-discharge>

What to do in the event of an "illicit discharge"

- **Follow Spill Response Protocol**
 - Notify 460 SW Water Quality Program Manager (WQPM) as soon as possible, but no later than close of business the next business day. The WQPM will notify EPA Region 8 and report discharge in MS4 Annual Report
- **Provide WQPM with narrative:**
 - What happened, when, how stopped (include details of chemicals, concentration, volume)
 - Include SDS of chemicals
- **Provide WQPM corrective actions and plan to minimize chances of happening again.**

Spill Response Protocol Petroleum, Oil or Lubricant (POL) Protocol Applies to Illicit Discharges to Stormwater [Posters are available from 460 CES/CEIE]

1. **Immediately notify a Supervisor and Buckley AFB Fire Department** (720-847-9117 (or 911 if on base)), if unsure of qualifications to handle spill/illicit discharge or if major POL spill (greater than 10 feet in any direction or 50 feet squared, or continuous).

For a MINOR POL Spill or Illicit Discharge:

2. Check Safety Data Sheet (SDS) for spilled chemical and put on appropriate personal protective equipment (PPE), such as gloves, safety glasses and rubber boots.
3. Turn off any power source (such as a pump or motor).
4. Without placing anyone at risk of injury, attempt to stop or slow the source of spill to prevent further release
5. Contain the source of the spill if possible. Build a dike around the spill using absorbent material and protect adjacent storm water and sanitary drains and conveyances by using booms and drain mats, if possible.

For a MINOR POL Spill or Illicit Discharge:

6. As soon as possible, but no later than close of business the next business day, contact 460th Civil Engineer Squadron, Environmental (CES/CEIE) (Water Quality/SPCC Program Manager, 720-847-4655 or Environmental Element Chief, 720-847-7245) who will carry out regulatory notifications (local, state, federal). ALL illicit discharges and POL spills must be reported to 460 CES/CEIE, no matter how small.

ADF-C) has had the following five (5) illicit discharges into BAFB's stormwater conveyance:

- -- 30 Oct 18: @280 gallons of cooling tower water was released into stormwater from Building 460 (B460) due to a failure to reopen a valve before starting one of the cooling towers.
- -- 5 Nov 18: @2,000 gallons of B460 cooling tower water was discharged into stormwater. B460 Cooling Tower 8 balancing valve was 100% open (50% open is the correct setting).
- -- 27 Nov 18: @45 gallons of B460 cooling tower water was discharged into the storm drain. The cooling tower automated control system started a second pump and caused water to flow out to the sump and into the storm sewer.

- -- 31 May 19 to 3 Jun 19: @150 gallons of B460 Closed Loop Chilled Water (CLCW) was discharged into the storm drain. The CLCW drained out of a pipe that was closed off and was being cut open as part of the CLCW system upgrade project. The CLCW leak was a continuous trickle leak over the weekend while the pipe was being fixed.

- -- 10 Jun 19: Approximately 100 gallons of B412 CLCW was discharged into the storm drain. The CLCW drained out of a pipe that was closed off and was being cut open as part of the CLCW system upgrade project. It took several hours for the 100 gallons of CLCW to drain out of the pipe cut.

Cooling Tower Water

- The cooling tower water contains 3 treatment chemicals, each <150 ppm.
 - Environmental Precautions from SDS of treatment chemicals:
 - This pesticide is toxic to fish and wildlife. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters, unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge.
 - Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority.
 - Prevent material from entering sewers or waterways.

CLCW

- The CLCW contains 1 treatment chemical, @650 ppm.
 - Environmental Precautions from SDS of treatment chemicals:
 - Do not allow contact with soil, surface or ground water.

Illicit Discharge Example from 6/10/19

- "Approximately 100 gallons of B412 closed loop chilled water (CLCW) were discharged accidentally into the storm drain on 6/10/19 from approximately 7:00 am to 11:00 am. The CLCW drained out of a pipe that was closed off and was being cut open as part of the CLCW system upgrade project. It took several hours for the 100 gallons of CLCW to drain out of the pipe cut."

Illicit Discharge Example from 6/10/19 (cont.)

- The CLCW entered the storm drain inlet located 85 feet south of the southeast corner of B460. The impacted storm drain is located approximately 120 feet north of the source of the CLCW release. Based on the limited discharge volume and several hours of release time, the water would have flowed a short distance in the stormwater conveyance system before infiltrating into the soil.
- The CLCW contains one treatment chemical (a corrosion inhibitor, Nalco 8338, SDS attached) at a concentration of approximately 650 parts per million. Work is being performed at the cut location and will include a leak-tight pipe/valve installation, so no additional CLCW will be discharged."

Illicit Discharge Example from 6/10/19 (cont.)



Comments

- Report as soon as possible, but no later than close of business the next business day.
 - Kudos to team for reporting promptly after illicit discharge!
- Slow/Stop/Contain Illicit Discharge
 - Illicit discharge must have been seen as it was occurring and happened over several hours. Attempts should have been made to stop or contain discharge.
- Corrective Actions/Plans
 - An almost identical illicit discharge happened just a week prior from the same project in a different location. A plan should have been created following the first discharge to avoid a future similar discharge and/or to address it if it happened again.

Sanitary Sewer Discharges

- In general, chemicals and waste water containing chemicals are not allowed to be discharged into the ADF-C's sanitary sewer system (S3).
- There are specific chemical concentration limits for wastewater discharged into the S3.
- Permission is required for non-customary discharges, even if we typically discharge this type of wastewater into the S3.
 - Example: draining an evaporative cooling tower sump because of the greater volume, while our routine discharge amount does not.
 - Non-customary discharges include greater than typical volumes, discharges of wastewater that contain regulated chemicals, etc.
 - The permission process takes approximately 2 weeks and the required information includes the amount of wastewater being discharged, chemicals (including SDSs) in the wastewater and their concentrations, and the date and time interval for the discharge.

Sanitary Sewer Discharges- Chemical Concentration Limits (mg/L)

- | | |
|-------------------|-----------------------------|
| • 1. Arsenic 0.33 | • 7. Molybdenum 0.43* |
| • 2. Cadmium 3.4 | • 8. Nickel 5.6 |
| • 3. Chromium 3.6 | • 9. Selenium 0.66 |
| • 4. Copper 6.1 | • 10. Silver 2.9 |
| • 5. Lead 2.2 | • 11. Tetrachloroethene 1.5 |
| • 6. Mercury 0.13 | • 12. Zinc 15.6 |

*Discharge from cooling towers, boilers, closed-loop heat transfer systems and any other cooling/heating system treated with molybdenum-containing water treatment chemicals is prohibited entirely

Questions?

Illicit Discharge Detection and Elimination (continued)

Narrative description. Provide any descriptions which may further describe the implementation of this minimum measure. Such narrative may include descriptions of efforts which overlap several minimum measures or descriptions of documents or programs which have been created in an effort to implement this minimum measure:

All information used to implement the program has been provided under the Measurable Goals

4. Construction Site Stormwater Runoff Control (CON)

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to the BMP or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

1. The BMP/Measurable goal for which a change is proposed;
2. Any proposed changes to the BMP description;
3. Any proposed changes to the measurable goals (including specific dates and measures); and
4. The rationale for the proposed changes.

Describe any measurable goal(s) for construction site stormwater runoff control for the reporting period; including dates and numeric measures:

Measurable Goal(s) Including dates and numeric measures, as previously submitted	Status: Including dates and numeric measures	Changes proposed to BMP and/or Measurable Goal? (Yes/No). If yes, provide information on proposed changes and rationale.
<p><u>CON-1 Construction Project Oversight Program</u></p> <ol style="list-style-type: none"> 1. Develop a written construction oversight program and inspection plan for use by Buckley AFB stormwater managers. The construction oversight program will include a list of policies and procedures that can be used to enforce compliance with applicable stormwater discharge permits related to construction activities. The program will be continuously reviewed and updated annually as needed (Years 1–5, and into continuance). 	<p>COMPLETED</p> <p>The construction oversight program and inspection plan was developed/prepared in Permit Year 1. The Plan was finalized in Permit Year 2 (rev 0) on 30 April 2015. In Permit Year 3 it was updated on 20 September 2016 (rev 1). In Permit Year 4 the plan was updated on 3 May 2017 (rev 2). In Permit Year 5 the plan was updated on 10 May 2018 (rev 3). In Permit Year 6 the plan was updated on 23 December 2019 (rev 4).</p> <p>Description of the regulatory mechanism used to require sediment and erosion controls is provided in the following section. Description of the procedures used to address noncompliance and enforcement mechanisms is provided in the following section.</p>	<p>No</p>

REGULATORY MECHANISM TO REQUIRE SEDIMENT AND EROSION CONTROLS

The regulatory mechanism used to require sediment and erosion controls on construction projects located on Buckley AFB is the 2017 Construction General Permit (CGP), under the National Pollutant Discharge Elimination System (NPDES), a federal permitting program, under the authority of the Clean Water Act (CWA). In the State of Colorado areas subject to construction activity by a Federal Operator (i.e., a federal facility) are not under the State’s authority, but are permitted under the authority of the Region 8 US EPA NPDES stormwater permitting under general Permit No. COR10F000. Also, Department of the Air Force Engineering Technical Letter (ETL) 14-1 – Construction and Operation and Maintenance Guidance for Storm Water Systems – provides guidance specifically applicable to Air Force bases related to construction stormwater management.

The construction project contract and standard specifications specify stormwater discharges from construction activities such as clearing, grading, excavating, and stockpiling that disturb one or more acres, or smaller sites that are part of a larger common plan of development, are regulated under the 2017 CGP, for which construction operators must obtain coverage (i.e., prepare a construction Stormwater Pollution Prevention Plan (SWPPP) and obtain an active status Notification of Intent (NOI)) prior to commencing ground disturbing activity.

PROCEDURES TO ADDRESS NONCOMPLIANCE AND ENFORCEMENT MECHANISMS

Government contractors must comply with Federal Acquisition Regulations and contract requirements that include environmental protection. Acquisition regulations and contracts contain specific enforcement provisions for non-compliance by contractors. Enforcement provisions include cure notices, contract termination, stop work orders, liquidated damages, negative contractor performance ratings, and being precluded from future government contracts. Enforcement against a government contractor is a contracting officer responsibility with input and support from quality assurance evaluator and subject matter experts on Buckley AFB.

Construction Site Stormwater Runoff Control (continued)

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to the BMP or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

1. The BMP/Measurable goal for which a change is proposed;
2. Any proposed changes to the BMP description;
3. Any proposed changes to the measurable goals (including specific dates and measures); and
4. The rationale for the proposed changes.

Describe any measurable goal(s) for construction site stormwater runoff control for the reporting period; including dates and numeric measures:

Measurable Goal(s) Including dates and numeric measures, as previously submitted	Status: Including dates and numeric measures	Changes proposed to BMP and/or Measurable Goal? (Yes/No). If yes, provide information on proposed changes and rationale.
<p><u>CON-2 Construction Project Oversight Inspections</u></p> <ol style="list-style-type: none"> 1. Conduct oversight compliance assistance inspections of permitted construction sites (> 1 acre or part of a larger common plan of development that will cumulatively disturb \geq 1 acre) at least semi-annually and prior to construction permit termination to verify final stabilization has been met on all areas of the site. Buckley AFB has developed a spreadsheet-based prioritization model to guide additional construction oversight inspections based on project location, size, and nature of construction activity, site characteristics, and the compliance history of construction contractor. 	<p>COMPLETED</p> <p>Oversight construction compliance inspections are conducted on sites with > 1 acre ground disturbance or are part of a larger common plan of development. The log of construction site inspections conducted in Permit Year 6 follows.</p> <p>A total of 23 inspections were conducted on 15 different permitted project sites. The model for frequency of inspection planning on a given project is based on several factors including type of project, size of disturbed area, construction timeframe and time of year, natural slope, and previous experience with the contractor. Exceptions to the planned frequency are made by the 460 CES/CEIE WQPM as needed. A copy of the inspection tracking spreadsheet, and planning guide score log is provided in the following section.</p>	<p>No</p>

2017 CDP TRACKING NUMBER	ORGANIZATION NAME	PROJECT NAME	Project Manager Contact	Contractor	Contact Info	Construction Status	Date Active	Co-Permittee	Inspection Frequency (Months)	Last Inspected	Next Scheduled Inspection (Months)
Active											
CON10101Y	BLOCKY AIR FORCE BASE	Multiple Small Projects - 4 (Formerly MSP -3)	Kimberly Bowman	N/A	(720) 891-4655	Active	7/10/2017	Multiple Contractors			
CON10101U	Norfolk	COANNG BAFB Drainage Site Improvements	Evan Pritchard	Norfolk - Jason Kopp PM, Brandon Carter from Summit Services for Inspections	(Returning late August/early September, Ben Hagan (COANNG Stormwater Management contact (ben.hagan@coanng.com), Benjamin S. Hagan (ben.hagan@coanng.com), 703-572-5460, Jason Kopp (j.kopp@ppg.com), hudson@coanng.com, Jason Kopp (j.kopp@ppg.com), Brandon Carter (brandoncarter@summitservices.com)) (returning late August/early September, Ben Hagan (COANNG Stormwater Management contact (ben.hagan@coanng.com), Benjamin S. Hagan (ben.hagan@coanng.com), 703-572-5460, Jason Kopp (j.kopp@ppg.com), hudson@coanng.com, Jason Kopp (j.kopp@ppg.com), Brandon Carter (brandoncarter@summitservices.com))	Waiting on final Stabilization	4/27/23	Norfolk	6	21-Feb-20	21-Mar-20
CON10102A	COANNG	COANNG BAFB Drainage Site Improvements	Evan Pritchard	Norfolk - Brandon Carter from Summit Services for Environmental	(returning late August/early September, Ben Hagan (COANNG Stormwater Management contact (ben.hagan@coanng.com), Benjamin S. Hagan (ben.hagan@coanng.com), 703-572-5460, Jason Kopp (j.kopp@ppg.com), hudson@coanng.com, Jason Kopp (j.kopp@ppg.com), Brandon Carter (brandoncarter@summitservices.com))	Waiting on final Stabilization	4/27/23	Norfolk	6	27-Jan-20	27-Mar-20
CON101023	140 CES	Bepe's Main Apron Access, Batch Plant, Alert Point	Chris Van Fleet 720-987-9100	JE Hurley - Brady Bensen	Brady Bensen, Brady Bensen (bradybensen@black.com, 715-651-7542, Chris Van Fleet, Van Fleet, Christopher VMS (us) (christopher.vms@black.com), 720-947-9100)	Active	2/23/2015	JE Hurley	4	10-Oct-19	10-Feb-20
CON10102Z	Brady Bensen - JE Hurley Refiling	Bepe's Main Apron Access, Batch Plant, Alert Point	Chris Van Fleet 720-987-9100	JE Hurley - Brady Bensen (777)	Brady Bensen, Brady Bensen (bradybensen@black.com, 715-651-7542, Chris Van Fleet, Van Fleet, Christopher VMS (us) (christopher.vms@black.com), 720-947-9100)	Active	4/12/2014	JE Hurley	4	10-Oct-19	10-Apr-20
CON101031	Brifereno	Bepe's Main Apron Access, Batch Plant, Alert Point	Chris Van Fleet 720-987-9100	Brifereno	?	Active	7/2/2018	JE Hurley	4	10-Oct-19	10-Feb-20
CON101032	140 CES	Runway 37 Extended Safety Area Grading	Chris Van Fleet 720-987-9100	JE Hurley - Brady Bensen (777)	715-651-7542	Active	4/12/2014	JE Hurley	4	10-Oct-19	10-Apr-20
CON101038	Omaha District Army Corps of Engineers	Small Arms Firing Range	Michael Reddon	Bryan Construction, Brandon Gies	Brandon Gies 715-335-9777 brg@bryanconstruction.com, Nick Erwin, Nicholas S. Erwin@usace.army.mil -309-489-1385>	Waiting on final Stabilization	4/30/09	Bryan Construction	5	4-Oct-19	4-Mar-20
CON101041	Amazon Web Services	Blue Martin	Mike Mont-Eton	Gray Contracting - Daniel Phillips	Daniel Phillips (502) 320-6940, dphillips@gray.com, Mike Mont-Eton (MONT-ETON, MICHAEL E OS-12 USAF AFSPC 460 CES/CENM CES/CENM) michael.mont-eton@us.af.mil>, 847-1055	Active	2/12/2018	465SW	3	18-Dec-19	18-Mar-20
CON101048	COANNG	CST Vehicle Ready Bay Drdg	Harrison Omolo	JE Hurley - Dan Anderson	Captain Ben Hagan (SAMW/NG COANNG) ben.hagan@coanng.com, 703-572-5460, Dan Anderson (dan.anderson@black.com), 703-572-5460	Waiting on final Stabilization	4/35/2	JE Hurley	5	14-Nov-19	14-Apr-20
CON10104A	Ogcock Diversified Services	6th Ave Deceleration Lane	Mike Mont-Eton	Ogcock, Andrew Halley	Andrew Halley (720) 333-6521, Mike Mont-Eton (MONT-ETON, MICHAEL E OS-12 USAF AFSPC 460 CES/CENM CES/CENM) michael.mont-eton@us.af.mil>, 847-1055	Waiting on final Stabilization	4/38/3	465SW	5	22-Jan-20	22-Jan-20
CON10104M	Centers Construction	AS3 Maintenance Storage Facility	Frank Cuna	Centers Construction	Andrew Halley (720) 333-6521, Mike Mont-Eton (MONT-ETON, MICHAEL E OS-12 USAF AFSPC 460 CES/CENM CES/CENM) michael.mont-eton@us.af.mil>, 847-1055 Frank Cuna (frank.cuna@centersconstruction.com), 720-987-9100	Active	8/28/2019	465SW	5	23-Jan-20	23-Jan-20
CON101052	Technical Services	Troja QPR Dual Bank Construction - Shady Arb	Mike Mont-Eton	Technical Services - Chip Young	Mike Mont-Eton (MONT-ETON, MICHAEL E OS-12 USAF AFSPC 460 CES/CENM CES/CENM) michael.mont-eton@us.af.mil>, 847-1055, Frank Cuna (frank.cuna@centersconstruction.com), 720-987-9100, Chip Young (703) 928-7983, chip.young@tds.com	Active	8/23/2019	465SW	5	10-Dec-19	10-May-20
CON101056	Omaha District Army Corps of Engineers	SIBS 30F	Josh Wallfort	Morrison	Josh Wallfort (josh.wallfort@morrison.com, 815-560-2888)	Active	12/9/2019	465SW	5	6-Feb-20	6-Mar-20
CON101055	Omaha District Army Corps of Engineers	East 7th Gate Creek	Mike Mont-Eton	RME	Bruck Ramsey (bruck.ramsey@usace.army.mil, 720-659-5040), Mike Mont-Eton (MONT-ETON, MICHAEL E OS-12 USAF AFSPC 460 CES/CENM CES/CENM) michael.mont-eton@us.af.mil>, 847-1055, Daniel Vaughn (dvaughn@rme.com, 720-702-3817)	Active	1/21/2020	465SW	5	21-Jan-20	21-Jan-20

MS4 Oversight Inspection Planning Guide

Construction Project Site Score Sheet

Site Name: _____

Category	Description	Score Parameters	The Site	Score
1	Area of Disturbance	0 - 1	1	
		>1 - 3	2	
		>3 - 5	3	
		>5 - 7	4	
		>7 - 9	5	
		>9 to 11	6	
		>11 - 14	7	
		>14 - 17	8	
		>17 - 20	9	
		20+	10	
2	Anticipated Construction Period in months	0 - 1	1	
		>1 - 3	3	
		>3 - 6	5	
		>6 - 9	7	
		>9 - 12	9	
		>12	10	
3	Adjacent to E. Tollgate Creek or its Tributary	No	1	
		Yes	10	
4	Construction Season	Oct thru Mar	1	
		Apr thru Sep	5	
		All year	10	
5	Slope of Site (avg)	1% = 1 thru 10% and greater = 10	1 - 10	
6	Past Experiences with the Owner/Contractor (Note: This is a subjective evaluation)	1 (excellent), 5 (OK) or 10 (Poor)	1 - 5 - 10	
7	Type of Construction Activity (Note: 10 is maximum)	Landscaping/Re seeding	1	
		Grading	2	
		Road Construction	3	
		Building Construction	3	
		Utility Construction	3	
		Batch Plant	10	
Note: Score sheet is a guideline and may be re-evaluated and adjusted at any time				Sum _____

Results

Score of 56 to 70

Score of 36 to 55

Score of 16 to 35

Score of 7 to 15

Frequency of Oversight Inspections

Every 3 months

Every 4 months

Every 5 months

Every 6 months

In addition to the above frequency an inspection prior to close-out of the permit is required. Advise contracting of the state of revegetation.

MS4 Sec. 2.5.6 - Implement an inspection plan and keep a copy of that plan which contains inspection triggers, a priority for order of inspection, and a required timeframe upon which construction sites must be inspected by Buckley AFS. All construction sites within Buckley AFS must be inspected at a minimum semi-annually, and all sites must be inspected prior to construction stormwater permit construction to verify that 70% vegetative cover has been met on all areas of the site.

Construction Site Stormwater Runoff Control (continued)

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3. Any proposed changes to the measurable goals (including specific dates and measures); and
4. The rationale for the proposed changes.

Describe any measurable goal(s) for construction site stormwater runoff control for the reporting period; including dates and numeric measures:

Measurable Goal(s) Including dates and numeric measures, as previously submitted	Status: Including dates and numeric measures	Changes proposed to BMP and/or Measurable Goal? (Yes/No). If yes, provide information on proposed changes and rationale.
<p><i>CON-3 Construction Site Stormwater Training</i></p> <ol style="list-style-type: none"> 1. Document the number of Buckley AFB construction site quality assurance personnel who have received construction stormwater compliance annual training. 	<p>COMPLETED</p> <p>Construction stormwater training was conducted on 22 May 2019 with 12 attendees, and at the COARNG Colorado headquarters on 22 November 2019 with 12 attendees of Buckley AFB personnel and contractors. A copy of the slides is available through the 460 CES/CEIE office. They have been excluded due to the size of the slide show (approximately 100 slides per training). Rosters can be found below.</p>	<p>No</p>

**ENVIRONMENTAL COMPLIANCE TRAINING
ATTENDANCE ROSTER**

Course: Stormwater Compliance for Construction Activities, Buckley AFB
 Date/Time: Wednesday, 22 May 2019 0930-1130
 Instructor: Charles Beebe, MSE Group
 Location: Learning Development Center (LCD), Buckley AFB

Rank, Civ, Cr	Last	First	Unit/Org Symbol	Phone	EMAIL address	Supervisor, Primary, or Alternate
MR.	Bishop	Joe	COARL6	720-467-5286	josphrbj.bishop@nrc.af.mil	
MR	Funk	Lynette	COARL6	720-2501353	lammie.l.funk@nrc.af.mil	
Civ.	DeBels	Michael		353-457-0089	michael.debels@stg.com	
CIV	Delaney	Andrew	ODS	720-252-6241	adelaney@stg.com	
CIV	Deese	Matthew	COARL6	720-467-5281	matthew.g.deese@nrc.af.mil	
CIV	LAKEUCE	CURTIS	ADF-C	3633-5784	christopher.laurence@nrc.af.mil	
CPI	HIGAN	BEN	COARNG	720-2501371	benjamin.hogan@nrc.af.mil	
Eng.	Donald	HARRISON	COARNG	720-250-1438	harrison.donald@nrc.af.mil	
MR.	ANDERSON	DAW	JEHURLEY	419-849-8328	dawson@jehtley.com	
CIV	SPAUDRINK	MARK	INNTV	3207-2138	mark.spaudrink@nrc.af.mil	
CIV	MUNSONOVS	SCOTT	RTS	315-25-3437	scott@rtsc.kyle@gmail.com	
CIV	DELL	BEAN	ADF-C	31677-5757	dellbean@nrc.af.mil	

ENVIRONMENTAL COMPLIANCE TRAINING ATTENDANCE ROSTER

Course: Stormwater Compliance for Construction Activities, Colorado National Guard
 Date/Time: Wednesday, 22 November 2019 / 0900 - 1100
 Instructor: Charles Beebe, MSE Group
 Location: The Colorado National Guard Public Affairs Office (PAO)

Rank, Civ, Ctr	Last	First	Unit/Org Symbol	Phone	EMAIL address	Supervisor, Primary, or Alternate
CPT	HOGAN	BEN	CFMO/EMW	7202501391	benjamin.s.hogan.41@mil.mil	
CIV	Sioeth	josie A	EMO	x-1522	michael.sioeth@mil.mil	
CIV	BRAND	DARREN	CFMO	720-601-3958	darren.g.brand@mil.mil	
CIV	Rhodes	Joseph	ENV	720-250-1386	P. BRAND.NFG@mil.mil	
CIV	Bereza	Miklos	CFMO	720 250 1398	Joseph. b. rhodes 4.civ@mil.mil	
CIV	HAGILE	WARRE	CFMO	720-250-1380	miklos.f.bereza.nfg@mil.mil	
CIV	DICKERSON	JOSCPH	CFMO	303-994-6452	warr.e.hague-nfg@mail.mil	
CIV	DATSON	ROB	CFMO	720-250-1571	Joseph.B.Dickerson.NFG@mail.mil	
CIV	Blair	Celene	ENV	720 250 1384	robert.g.datson.nfg@mail.mil	
CIV	MEZA	JOSE	CFMO	303-849-4537	Celene.l.blair.nfg@mail.mil	
1R	Pitblond	EVAN	CFMO	720-250-1545	Jose.C.Meza.NFG@mail.mil	
					evan.v.pitblond@mail.mil	

Construction Site Stormwater Runoff Control (continued)

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to the BMP or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

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3. Any proposed changes to the measurable goals (including specific dates and measures); and
4. The rationale for the proposed changes.

Describe any measurable goal(s) for construction site stormwater runoff control for the reporting period; including dates and numeric measures:

Measurable Goal(s) Including dates and numeric measures, as previously submitted	Status: Including dates and numeric measures	Changes proposed to BMP and/or Measurable Goal? (Yes/No). If yes, provide information on proposed changes and rationale.
<p><u>CON-4 Design Review and Construction Site BMP Information</u></p> <p>1. Maintain existing review process for design and construction projects planned for Buckley AFB.</p>	<p>COMPLETED</p> <p>Existing design review processes/practices are being followed. Design projects plans/specs/reports are typically posted to a shared drive location for easy access by multiple users. An email notification regarding availability of the design documents and the suspense date for completion of review and comment is sent to members of the 460 CES Design Review Group; the 460 CES/CEIE WQP staff are members. WQP staff review documents for compliance with stormwater permit requirements/regulations applicable to projects located on Buckley AFB such as 2017 CGP and Energy Independence and Security Act (EISA) Section 438.</p> <p>Comments are provided back to the issuing source for incorporation by the project design team. In addition, the 460 CES/CEIE WQP staff attended 8 project design review meetings for 6 projects in 2019.</p>	<p>No</p>

Construction Site Stormwater Runoff Control (continued)

<p>2. Maintain existing process for identifying construction site BMPs and providing such information to project construction contractors (Year 2-5).</p>	<p>COMPLETED Maintained existing process for providing information to construction contractors regarding BMP selection options, installation guidelines, maintenance information and details for temporary and permanent BMPs.</p>	<p>No</p>
<p>3. Hold preconstruction meetings with the contractors and project management staff to ensure BMP related questions and requirements are addressed prior to BMP installation on 50% of new construction projects (Years 4-5).</p>	<p>COMPLETED 460 CES/CEIE personnel met construction contractors and project management staff prior to groundbreaking to inspect stormwater BMP installation, and to clarify expectations of working on Buckley AFB. Environmental staff met onsite at 5 of the 5 new construction projects in Permit Year 6.</p>	<p>No</p>

Construction Site Stormwater Runoff Control (continued)

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to the BMP or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

1. The BMP/Measurable goal for which a change is proposed;
2. Any proposed changes to the BMP description;
3. Any proposed changes to the measurable goals (including specific dates and measures); and
4. The rationale for the proposed changes.

Describe any measurable goal(s) for construction site stormwater runoff control for the reporting period; including dates and numeric measures:

Measurable Goal(s) Including dates and numeric measures, as previously submitted	Status: Including dates and numeric measures	Changes proposed to BMP and/or Measurable Goal? (Yes/No). If yes, provide information on proposed changes and rationale.
<p><u>CON-5 Site Plan and Construction SWPPP Review</u></p> <ol style="list-style-type: none"> 1. Maintain existing site plan and SWPPP review process. Document site plan and SWPPP reviews and record any comments provided to the construction entity pertaining to the contractor's SWPPP. Dates and copies of SWPPP review comments will be maintained by 460 CES/CEIE. 	<p>COMPLETED</p> <p>The file of SWPPP reviews and comments provided by 460 CES/CEIE WQP for applicable construction projects conducted in Permit Year 6 is maintained in 460 CES Environmental Office files. A total of 12 SWPPP reviews were conducted for 8 projects on Buckley AFB. Additionally there were 47 Design/Site Plan Reviews conducted for 26 different projects. Buckley AFB also reviews SWPPP documentation of active construction sites as part of CON-2.</p>	<p>No</p>

Construction Site Stormwater Runoff Control (continued)

Narrative description. Provide any descriptions which may further describe the implementation of this minimum measure. Such narrative may include descriptions of efforts which overlap several minimum measures or descriptions of documents or programs which have been created in an effort to implement this minimum measure:

All information used to implement the program has been provided under the Measurable Goals

5. Post-Construction Stormwater Management in New Development and Redevelopment (PC)

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to the BMP or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

1. The BMP/Measurable goal for which a change is proposed;
2. Any proposed changes to the BMP description;
3. Any proposed changes to the measurable goals (including specific dates and measures); and
4. The rationale for the proposed changes.

Describe any measurable goal(s) for post-construction stormwater management in new development and redevelopment for the reporting period; including dates and numeric measures:

Measurable Goal(s) Including dates and numeric measures, as previously submitted	Status: Including dates and numeric measures	Changes proposed to BMP and/or Measurable Goal? (Yes/No). If yes, provide information on proposed changes and rationale.
<p><u>PC-1 Post-Construction Stormwater Management Process</u></p> <ol style="list-style-type: none"> 1. Maintain existing review process for new development and re-development projects planned for Buckley AFB. Include evaluation of pre-development and post-development runoff conditions in design review process (Years 2–5). 	<p>COMPLETED</p> <p>In Permit Year 6, there were 21 pre-development projects reviewed for water resource environmental impact analysis (as part of Air Force Form 813) that includes requirements to implement post-construction stormwater management controls. Comments are provided to the initiating group so that any necessary controls may be incorporated during the design process. Project evaluations during the design process are maintained by 460 CES/CEN. BMPs are used in all projects with soil disturbances, EISA 438 stormwater criteria are used in projects greater than 5,000 square feet, and a SWPPP is initiated for projects impacting one acre or larger. All projects are considered for predevelopment hydrology.</p>	<p>No</p>

**Post-Construction Stormwater Management in New Development and Redevelopment
(continued)**

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to the BMP or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

1. The BMP/Measurable goal for which a change is proposed;
2. Any proposed changes to the BMP description;
3. Any proposed changes to the measurable goals (including specific dates and measures); and
4. The rationale for the proposed changes.

Describe any measurable goal(s) for post-construction stormwater management in new development and redevelopment for the reporting period; including dates and numeric measures:

Measurable Goal(s) Including dates and numeric measures, as previously submitted	Status: Including dates and numeric measures	Changes proposed to BMP and/or Measurable Goal? (Yes/No). If yes, provide information on proposed changes and rationale.
<p><u>PC-2 Impracticality Determination Documentation for Post-Construction Stormwater Controls</u></p> <ol style="list-style-type: none"> 1. Document all impracticability determinations and provide supporting documentation to the Water Quality Program Manager (Years 2–5). 	<p>COMPLETED</p> <p>In Permit Year 6 confirmed with 460 CES/CEN, there were no projects that documented reasons of impracticality for implementing Post-Construction Stormwater Controls.</p>	<p>No</p>

Post-Construction Stormwater Management in New Development and Redevelopment (continued)

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to the BMP or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

1. The BMP/Measurable goal for which a change is proposed;
2. Any proposed changes to the BMP description;
3. Any proposed changes to the measurable goals (including specific dates and measures); and
4. The rationale for the proposed changes.

Describe any measurable goal(s) for post-construction stormwater management in new development and redevelopment for the reporting period; including dates and numeric measures:

Measurable Goal(s) Including dates and numeric measures, as previously submitted	Status: Including dates and numeric measures	Changes proposed to BMP and/or Measurable Goal? (Yes/No). If yes, provide information on proposed changes and rationale.
<p><u>PC-3 Inventory, Visual Inspection, and Maintenance of Post-Construction Stormwater Controls</u></p> <ol style="list-style-type: none"> 1. Conduct annual review of the post-construction stormwater controls inventory/map and make required updates (Years 2–5). 	<p>COMPLETED In Permit Year 6, the permanent post-construction stormwater controls were inspected in October and November, and a report was officially submitted in December 2019. The inspection report contained recommendations for work orders. There were no new permanent post-construction stormwater controls completed in 2019.</p>	<p>No</p>
<ol style="list-style-type: none"> 2. Inspections of any permanent post-construction stormwater control measures that are under warranty, typically one year following installation, will be annotated and the appropriate official responsible for warranty enforcement will be notified (Years 2–5). 	<p>COMPLETED Buckley AFB currently has a process in place for evaluating projects under warranty for corrections. All projects are assessed during the last month of the warranty period and remaining punch list items are documented and corrected by the contractor. All corrections are documented and maintained by 460 CES/CONF.</p>	<p>No</p>

**Post-Construction Stormwater Management in New Development and Redevelopment
(continued)**

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to the BMP or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

1. The BMP/Measurable goal for which a change is proposed;
2. Any proposed changes to the BMP description;
3. Any proposed changes to the measurable goals (including specific dates and measures); and
4. The rationale for the proposed changes.

Describe any measurable goal(s) for post-construction stormwater management in new development and redevelopment for the reporting period; including dates and numeric measures:

Measurable Goal(s) Including dates and numeric measures, as previously submitted	Status: Including dates and numeric measures	Changes proposed to BMP and/or Measurable Goal? (Yes/No). If yes, provide information on proposed changes and
<p><u>PC-4 Visual Inspection of New Post-Construction Stormwater Controls</u></p> <ol style="list-style-type: none"> 1. Document inspections of all newly installed post-construction stormwater control measures prior to closing out contracts (Years 2–5). 	<p>COMPLETED</p> <p>In Permit Year 6, there were no new permanent post-construction stormwater controls completed. All projects are assessed during the last month of the warranty period and remaining punch list items are documented and corrected by the contractor; or, by specific items previously accepted by the government but now exceed warranty time limits.</p>	<p>No</p>

Post-Construction Stormwater Management in New Development and Redevelopment (continued)

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to the BMP or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

1. The BMP/Measurable goal for which a change is proposed;
2. Any proposed changes to the BMP description;
3. Any proposed changes to the measurable goals (including specific dates and measures); and
4. The rationale for the proposed changes.

Describe any measurable goal(s) for post-construction stormwater management in new development and redevelopment for the reporting period; including dates and numeric measures:

Measurable Goal(s) Including dates and numeric measures, as previously submitted	Status: Including dates and numeric measures	Changes proposed to BMP and/or Measurable Goal? (Yes/No). If yes, provide information on
<p><u>PC-5 Natural Resource Management Plan Update</u></p> <ol style="list-style-type: none"> 1. Hydrologic performance standards and information related to design and maintenance of permanent post-construction stormwater controls are included in natural resource plans when these plans are updated (Year 5). 	<p>COMPLETED</p> <p>In Permit Year 6, the Integrated Natural Resource Management Plan (INRMP) was reviewed and comments were provided to US Fish and Wildlife (USFWS) 17 July 2019. Hydrologic performance standards included in the INRMP are Section 438 of the Energy Independence and Security Act (EISA) requirements for all projects that construct facilities with a footprint greater than 5,000 gross square feet, or expand the footprint of existing facilities by more than 5,000 gross square feet; projects are required to maintain predevelopment hydrology and prevent any net increase in storm water runoff, unless determined to be infeasible. Additionally, information related to design and maintenance of permanent post-construction stormwater controls in the INRMP include design and post-construction maintenance requirements of Low Impact Development Best Management Practices (LID BMPs).</p>	<p>No</p>

**Post-Construction Stormwater Management in New Development and Redevelopment
(continued)**

Narrative description. Provide any descriptions which may further describe the implementation of this minimum measure. Such narrative may include descriptions of efforts which overlap several minimum measures or descriptions of documents or programs which have been created in an effort to implement this minimum measure:

All information used to implement the program has been provided under the Measurable Goals

6. Pollution Prevention/Good Housekeeping for Municipal Operations (P2)

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to the BMP or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

1. The BMP/Measurable goal for which a change is proposed;
2. Any proposed changes to the BMP description;
3. Any proposed changes to the measurable goals (including specific dates and measures); and
4. The rationale for the proposed changes.

Describe any measurable goal(s) for pollution prevention/good housekeeping for municipal operations for the reporting period; including dates and numeric measures:

Measurable Goal(s) Including dates and numeric measures, as previously submitted	Status: Including dates and numeric measures	Changes proposed to BMP and/or Measurable Goal? (Yes/No). If yes, provide information on proposed changes and rationale.
<p><i>P2-1 Conduct Annual Stormwater Training for All Fleet Maintenance and Civil Engineer Shops</i></p> <ol style="list-style-type: none"> 1. Conduct annual training of fleet maintenance and civil engineer shops. Maintain attendance roster and training date. 	<p>COMPLETED</p> <p>For Permit Year 6, the annual stormwater training for shop personnel was accomplished by the 460 CES/CEIE Stormwater Program Manager by providing an in person training to 5 staff members from the COARNG Construction and Facilities Management Office (CFMO), 140th CES, and 460th CES organizations. The training was held on 3 October 2019, with the slides and attendance roster found below.</p>	<p>No</p>



Stormwater Compliance Training for Industrial Operations at Buckley AFB

1 October 2019
Charles Beebe, Certified Stormwater Inspector
MSE Group
720-847-6308
charles.beebe.ctr@us.af.mil



Base Water Program POCs

Water Quality Program Manager
Ms. Kim Bowman, PE, PhD, 460 CES/CEIE
Kimberly.bowman.5@us.af.mil
720-847-4655; DSN 847-4655



Stormwater Program Coordinator
Charles Beebe, ctri, Certified Stormwater Inspector
charles.beebe.ctr@us.af.mil
720-847-6308; DSN 847-6308



COURSE OBJECTIVES

- ▶ Understand what a Multi-Sector General Permit (MSGP) is and why Buckley AFB is required to have one
- ▶ Familiarize with stormwater basics
- ▶ Review MSGP requirements including our installation
 - ISWPPP
 - Industrial Stormwater BMPs
 - Inspections
 - Corrective and Maintenance Action Items
- ▶ Discuss lessons learned in 2019
- ▶ What to do in the event of a spill
- ▶ Identify BMPs being used at your facility and determine if additional ones are required



Clean Water Act (Enacted in 1972)

Environmental Protection Agency (Region 8 for CO) - Program Administrator and Enforcement



National Pollutant Discharge Elimination System (NPDES) requires permit for the discharge of pollutants from any point source into waters of the U.S.

2015 Multi-Sector General Permit (MSGP) governs industrial discharges
Sector 5 - Air Transportation (applies at Buckley AFB)



COURSE OBJECTIVES

- ▶ Understand what a Multi-Sector General Permit (MSGP) is and why Buckley AFB is required to have one
- ▶ Familiarize with stormwater basics
- ▶ Review MSGP requirements including our installation
 - ISWPPP
 - Industrial Stormwater BMPs
 - Inspections
 - Corrective and Maintenance Action Items
- ▶ Discuss lessons learned in 2019
- ▶ What to do in the event of a spill
- ▶ Identify BMPs being used at your facility and determine if additional ones are required



Stormwater is...

- Any precipitation (e.g. rain water & snow melt) that runs off the land and into streams, rivers, and lakes
- Typically not treated before being discharged, so it can carry pollutants to receiving water bodies
- Discharges may be controlled, and treated to an extent, through structural Best Management Practices (BMPs) or Minimum Control Measures (MCMs) such as detention ponds, secondary containment, etc.



Industrial Stormwater Training
3 October 2019

NAME	ORG	PHONE	EMAIL
Demetris King	CFMD	719 602 9215	Demetris.King@hofma1.com
Anthony Chin	140 CES/CEV	720 847 9042	anthony.v.chin@vail.mil
Spuel Falls	CEHP	720-847-6780	ralph.falls@us.af.mil
Christopher Karter	140 th AES	780.847.9100	christopher.karter@af.mil
Ben Hogan	COARNG ENV	710-250-1371	benjamin.s.hogan.mil@mail.mil

Pollution Prevention/Good Housekeeping for Municipal Operations (continued)

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to the BMP or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

1. The BMP/Measurable goal for which a change is proposed;
2. Any proposed changes to the BMP description;
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4. The rationale for the proposed changes.

Describe any measurable goal(s) for pollution prevention/good housekeeping for municipal operations for the reporting period; including dates and numeric measures:

Measurable Goal(s) Including dates and numeric measures, as previously submitted	Status: Including dates and numeric measures	Changes proposed to BMP and/or Measurable Goal? (Yes/No). If yes, provide information on proposed changes and rationale.
<p><u>P2-2 Snow and Ice Control Training</u></p> <ol style="list-style-type: none"> 1. Conduct training once per year and maintain an attendance roster. 	<p>COMPLETED</p> <p>The snow and ice control training session was conducted by 460 CES/CEO on 16th – 18th September 2019 approx. 35 attendees. The training included classroom instruction on procedures for plowing snow on Buckley AFB and everything that goes into snow operations such as:</p> <ul style="list-style-type: none"> -Plow assembly/ disassembly -Blade change procedures -Dump truck operating/ maintenance procedures -Sidewalk clearing procedures -Sidewalk clearing equipment attachment overview -Street plowing procedures -Parking lot clearing procedures 	<p>No</p>

Pollution Prevention/Good Housekeeping for Municipal Operations (continued)

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to the BMP or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

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4. The rationale for the proposed changes.

Describe any measurable goal(s) for pollution prevention/good housekeeping for municipal operations for the reporting period; including dates and numeric measures:

Measurable Goal(s) Including dates and numeric measures, as previously submitted	Status: Including dates and numeric measures	Changes proposed to BMP and/or Measurable Goal? (Yes/No). If yes, provide information on proposed changes and rationale.
P2-3 <i>Street Sweeping</i> 1. Accomplish an average of 20 hours of street sweeping per month.	COMPLETED The 460 CES/CEOHP shop reported an average 69.75 hours of street sweeping per month in Permit Year 6.	No
2. Perform an annual evaluation of the schedule and document the evaluation (Years 2-5).	COMPLETED In accordance with Permit Part 2.7.8.2, evaluation of the street cleaning operation in Permit Year 6 determined that sweeping will continue to focus on more highly trafficked areas and locations where sediment and debris accumulate, rather than a set route of streets. Operations are evaluated on a daily basis through the Buckley AFB Preventive Maintenance program and visual inspections.	No

Pollution Prevention/Good Housekeeping for Municipal Operations (continued)

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to the BMP or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

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Measurable Goal(s) Including dates and numeric measures, as previously submitted	Status: Including dates and numeric measures	Changes proposed to BMP and/or Measurable Goal? (Yes/No). If yes, provide information on
<p><u>P2-4 Storm Drain Inlet Inspection and Maintenance Schedule</u></p> <ol style="list-style-type: none"> 1. Inspect an average of 5% of storm drain inlets and culverts per quarter. Document cleaning activities, waste disposal practices, and amount of debris collected during maintenance (Year 2-5). 	<p>COMPLETED</p> <p>The inspection schedule was established to meet the 5% per quarter goal and a minimum of 34 culverts/inlets would need to be inspected each month. In Permit Year 6, the average number of culverts/inlets inspected per month was 35. Identified maintenance issues were logged in a spreadsheet for input into the new TRIRIGA management system. Any maintenance activity records are maintained by 460 CES/CEOHP personnel.</p>	<p>No</p>

<p>2. Develop a maintenance schedule based on inspection results. Perform an annual evaluation of the schedule and document the evaluation (Year 2-5).</p>	<p>COMPLETED At the end of 2017, 460 CES/CEOHP personnel determined that Buckley AFB lacks the equipment and the manpower to resolve base wide culvert/inlet issues. In 2019, maintenance of storm culverts/inlets were entered into TRIRIGA; minor maintenance/repair items were directed to 460 CES/CEOHP and major maintenance/repair items (that 460 CES/CEOHP is unable to fix) were programmed for contracted work.</p>	<p>No</p>
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Pollution Prevention/Good Housekeeping for Municipal Operations (continued)

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to the BMP or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

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Measurable Goal(s) Including dates and numeric measures, as previously submitted	Status: Including dates and numeric measures	Changes proposed to BMP and/or Measurable Goal? (Yes/No). If yes, provide information on proposed changes and rationale.
<p><i>P2-5 Vehicle Washing Limitation</i></p> <ol style="list-style-type: none"> 1. Maintain copy of current policy. 	<p>COMPLETED</p> <p>A copy of the current municipal vehicle washing policy that limits washing to approve vehicle wash racks is maintained in the 460 CES/CEIE Environmental Stormwater library.</p>	<p>No</p>

Pollution Prevention/Good Housekeeping for Municipal Operations (continued)

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to the BMP or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

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6. Any proposed changes to the BMP description;
7. Any proposed changes to the measurable goals (including specific dates and measures); and
8. The rationale for the proposed changes.

Describe any measurable goal(s) for pollution prevention/good housekeeping for municipal operations for the reporting period; including dates and numeric measures:

Measurable Goal(s) Including dates and numeric measures, as previously submitted	Status: Including dates and numeric measures	Changes proposed to BMP and/or Measurable Goal? (Yes/No). If yes, provide information on proposed changes and rationale.
<p><u>P2-6 Post-Construction Stormwater Control Measure Maintenance</u></p> <ol style="list-style-type: none"> 1. Document post-construction stormwater control maintenance requirements during annual post-construction stormwater control inspection. 	<p>COMPLETED</p> <p>The existing post-construction BMPs annual inspection was conducted in October and was officially submitted in December 2019. The inspection report included documentation of maintenance recommendations on each BMP. The report is maintained in 460 CES Environmental Office files.</p>	<p>No</p>

<p>2. Initiate a Work Order using the appropriate work request system/database for any post-construction stormwater control maintenance activity that requires additional equipment, manpower, or resources to accomplish.</p>	<p>COMPLETED Multiple Work Orders resulting from Permit Year 5 inspections were initiated during Permit Year 6. During Permit Year 6, maintenance work order recommendations were provided to 460 CEIE following inspections. Some of the issues noted are either currently being processed as a work order, are currently being maintained by the grounds maintenance contract, or are under consideration for issuance as a work order during permit administrative continuance.</p>	<p>No</p>
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Pollution Prevention/Good Housekeeping for Municipal Operations (continued)

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to the BMP or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

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Measurable Goal(s) Including dates and numeric measures, as previously submitted	Status: Including dates and numeric measures	Changes proposed to BMP and/or Measurable Goal? (Yes/No). If yes, provide information on proposed changes and
<p><u>P2-7 Consolidated Wash Rack Evaluation</u></p> <ol style="list-style-type: none"> 1. Document completion of the consolidated wash area evaluation including methodology and recommendations. If a consolidated wash area is recommended, a Form 1391 will be generated (Year 3). 	<p>COMPLETED</p> <p>Investigations and general evaluations of requirements were initiated in late fall of 2015. The evaluation was finalized in May 2016. The evaluation covered existing wash racks, large equipment washing requirements, and potential locations. There is general agreement that a consolidated wash rack is needed and a project will move forward as funding becomes available.</p>	<p>No</p>

Pollution Prevention/Good Housekeeping for Municipal Operations (continued)

Narrative description. Provide any descriptions which may further describe the implementation of this minimum measure. Such narrative may include descriptions of efforts which overlap several minimum measures or descriptions of documents or programs which have been created in an effort to implement this minimum measure:

All information used to implement the program has been provided under the Measurable Goals

E. Results of Information Collected and Analyzed.*

If you have collected and/or analyzed information during the reporting period, including any monitoring data used to assess the success of the program at reducing the discharge of pollutants, submit a short summary of the information and any analysis completed.

Measurable Goal	Results of information collected and analyzed that must be reported for this item
N/A	N/A

*Data collected to audit the implementation status of a program element does not need to be reported in the annual report unless required by an established measurable goal or as a requirement or result of an inspection or enforcement action. For example, data such as street miles swept, visitors at an information booth, or visits to a web site do not need to be included in the annual report unless directly related to a measurable goal or committed to be reported and/or analyzed in a program description.

F. Summary of Inspections and Enforcement Actions.

Provide a summary of the number and nature of inspections and formal enforcement actions performed. Site-specific information may also be included, but is not required.

Program Area	Description of Enforcement Actions/ Inspections
All inspections were documented above in the specific program areas.	

G. Proposed Changes to the Stormwater Management Program.

Provide a narrative description of any changes or additions to the stormwater management program.

No changes for permit year 6.

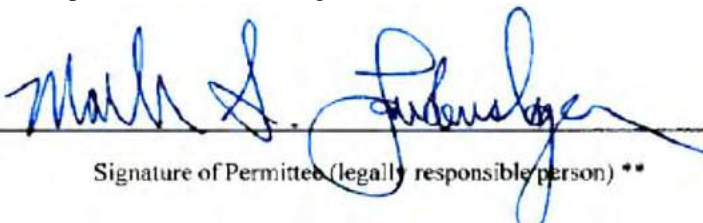
H. Notice of Program Element Operation by a Second Party.

Another government entity may be relied on to perform requirements of your MS4 permit. However, as the permittee, you remain liable for compliance with the terms of the permit if the requirements are not fulfilled. You must complete this annual report for the geographic areas covered under your permit, for all program areas, even if one or more program elements/areas is being performed by another entity. (However, if you are performing a program element for another permittee, you do not need to include that activity in this report.) If you are relying on another government entity to satisfy some of your permit obligations (and if the information has not been previously provided to the EPA in earlier reports or t h e application), the annual report must include a statement to that effect. If the BMP and/or measurable goal will be modified in addition to the change of operator to another government entity, the change must be included in Item G, above. Example statement: "As of September 15, 2003, Monroe County is performing the construction site plan reviews for the Nixon Air Force Base in accordance with the procedures in the Base's original application."

N/A

I. Certification.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly 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."

	16 March 2020
Signature of Permittee (legally responsible person) **	Date Signed
<hr/> Mark S. Laudenslager	Chief, Installation Management
Name (printed)	Title

**This report may be signed by a duly authorized representative of the permittee in conjunction with the signatory requirements for NPDES permitting provided at 40 CFR§122.22(b).