National Pollutant Discharge Elimination System Stormwater Program

MS4 Annual Report Format

Check box if you are submitting an individual Annual Report with one or more cooperative program elements. ☐

Check box if you are submitting an individual Annual Report with individual program elements only. ☒

Check box if this is a new name, address, etc. ☐

1. MS4(s) Information

Department of the Air Force, Kirtland Air Force Base, 377th MSG/CEIE
Name of MS4

Gregory | Vierra | Water Quality Program Manager
Name of Contact Person (First) (Last) (Title)

505-846-6362 | gregory.vierra.1@us.af.mil
Telephone (including area code) E-mail

2050 Wyoming Blvd SE, Building 20685
Mailing Address

Kirtland AFB | NM | 87117-5663
City State ZIP code

What size population does your MS4(s) serve? 22,943 NPDES number NMR04A009

What is the reporting period for this report? (mm/dd/yyyy) From 07/01/2019 to 06/30/2020

2. Water Quality Priorities

A. Does your MS4(s) discharge to waters listed as impaired on a state 303(d) list? ☒ Yes ☐ No

B. If yes, identify each impaired water, the impairment, whether a TMDL has been approved by EPA for each, and whether the TMDL assigns a wasteload allocation to your MS4(s). Use a new line for each impairment, and attach additional pages as necessary.

Impaired Water	Impairment	Approved TMDL		TMDL assigns WLA to MS4	
Tijeras Arroyo NM -9000.A_70	N/A	☐ Yes	☒ No	☐ Yes	☒ No
Rio Grande NM-2105_50N	E.coli, dissolved oxygen, PCB	☒ Yes	☐ No	☒ Yes	☐ No
		☐ Yes	☐ No	☐ Yes	☐ No
		☐ Yes	☐ No	☐ Yes	☐ No

2. B. Continued

Impaired Water	Impairment	Approved TMDL		TMDL assigns WLA to MS4	
		☐ Yes	☐ No	☐ Yes	☐ No
		☐ Yes	☐ No	☐ Yes	☐ No
		☐ Yes	☐ No	☐ Yes	☐ No
		☐ Yes	☐ No	☐ Yes	☐ No

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

KAFB is continuing to collect data on dissolved oxygen, sediment control, and bacteria reduction.
See supplemental information.

D. Do you discharge to any high-quality waters (e.g., Tier 2, Tier 3, outstanding natural resource waters, or other state or federal designation)? ☐ Yes ☒ No

E. Are you implementing additional specific provisions to ensure their continued integrity? ☐ Yes ☒ No

3. Public Education and Public Participation

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

B. If yes, what are the specific sources and/or pollutants addressed by your public education program?

Pesticides, herbicides, oil products, sanitary waste, pet waste, sediment, and floatables.

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

N/A

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

4. Construction

A. Do you have an ordinance or other regulatory mechanism stipulating:

- Erosion and sediment control requirements? ☒ Yes ☐ No
- Other construction waste control requirements? ☒ Yes ☐ No
- Requirement to submit construction plans for review? ☒ Yes ☐ No
- MS4 enforcement authority? ☒ Yes ☐ No

B. Do you have written procedures for:

- Reviewing construction plans? ☒ Yes ☐ No
- Performing inspections? ☒ Yes ☐ No
- Responding to violations? ☒ Yes ☐ No

C. Identify the number of active construction sites ≥ 1 acre in operation in your jurisdiction at any time during the reporting period. 9

D. How many of the sites identified in 4.C did you inspect during this reporting period? 9

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

Inspections of active construction sites occur monthly by KAFB and at least bi-monthly by contractor's qualified stormwater inspectors. A total of 132 CGP inspections were conducted by KAFB personnel.

F. Do you prioritize certain construction sites for more frequent inspections? ☒ Yes ☐ No

If Yes, based on what criteria? An inspection deficiency may warrant increased inspections, reporting, or corrective actions to return site to compliance.

G. Identify which of the following types of enforcement actions you used during the reporting period for construction activities, indicate the number of actions, or note those for which you do not have authority:

☐ Yes	Notice of violation		No Authority	☒
☐ Yes	Administrative fines		No Authority	☒
☒ Yes	Stop Work Orders	0	No Authority	☐
☐ Yes	Civil penalties		No Authority	☒
☐ Yes	Criminal actions		No Authority	☒
☐ Yes	Administrative orders		No Authority	☒
☒ Yes	Other	Federal Acquisition Regulations - withholding project funds, punitive fees, negative contractor performance ratings.		

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

I. What are the 3 most common types of violations documented during this reporting period?

Sediment track-out onto streets, damaged silt fencing, and vehicle track out pads requiring refresh/rebuild.

J. How often do municipal employees receive training on the construction program? Annually, for specific staff

5. Illicit Discharge Elimination

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

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

C. Identify the number of outfalls in your storm sewer system. 10 outfalls (5 MSGP & 5 MS4)

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

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

5 (MS4 Outfalls)

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

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

The five MS4 outfalls are screened at least monthly during the wet season.

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

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

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

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

L. How often do municipal employees receive training on the illicit discharge program? Annually, for specific staff

6. Stormwater Management for Municipal Operations

A. Have stormwater pollution prevention plans (or an equivalent plan) been developed for:

All public parks, ball fields, other recreational facilities and other open spaces	☐ Yes	☒ No
All municipal construction activities, including those disturbing less than 1 acre	☒ Yes	☐ No
All municipal turf grass/landscape management activities	☒ Yes	☐ No
All municipal vehicle fueling, operation and maintenance activities	☒ Yes	☐ No
All municipal maintenance yards	☒ Yes	☐ No
All municipal waste handling and disposal areas	☒ Yes	☐ No

Other: KAFB maintains an installation SWPPP for MSGP NMR050000 sectors K, L, P and S. KAFB maintains coverage for active construction sites under CGP NMR100000.

B. Are stormwater inspections conducted at these facilities? ☒ Yes ☐ No

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

D. List activities for which operating procedures or management practices specific to stormwater management have been developed (e.g., road repairs, catch basin cleaning).

See Kirtland MSGP SWPPP and MS4 SWMP at http://www.kirtland.af.mil/Home/environment

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

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

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

H. If yes, do you also provide regular updates and refreshers? ☒ Yes ☐ No

I. If so, how frequently and/or under what circumstances?

All personnel complete one-time environmental awareness training; annual in-person training to Unit Environmental Coordinators; quarterly in-person training with MSGP shop personnel.

7. Long-term (Post-Construction) Stormwater Measures

A. Do you have an ordinance or other regulatory mechanism to require:

Site plan reviews for stormwater/water quality of all new and re-development projects?	☒ Yes	☐ No
Long-term operation and maintenance of stormwater management controls?	☒ Yes	☐ No
Retrofitting to incorporate long-term stormwater management controls?	☐ Yes	☒ No

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

Design reviews are conducted for all construction plans including new facilities or modifications to existing facilities. An environmental checklist is completed that includes requirements for stormwater management controls.

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

All activities regardless of size are reviewed and must implement BMPs to ensure stormwater pollutants are contained to the maximum practicable extent and do not enter the storm drain system.

D. Do you require water quality or quantity design standards or performance standards, either directly or by reference to a state or other standard, be met for new development and re-development? ☒ Yes ☐ No

E. Do these performance or design standards require that pre-development hydrology be met for:

Flow volumes	☒ Yes	☐ No
Peak discharge rates	☒ Yes	☐ No
Discharge frequency	☒ Yes	☐ No
Flow duration	☒ Yes	☐ No

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

https://www.epa.gov/sites/production/files/2016-08/documents/swstdsummary_7-13-16_508.pdf

G. How many development and redevelopment project plans were reviewed during the reporting period to assess impacts to water quality and receiving stream protection? 4

H. How many of the plans identified in 7.G were approved? 4

I. How many privately owned permanent stormwater management practices/facilities were inspected during the reporting period? N/A

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

K. How long do you give operators to remedy any operation and maintenance deficiencies identified during inspections? Within 24hrs or a corrective action plan is provided to remedy within 7 days.

L. Do you have authority to take enforcement action for failure to properly operate and maintain stormwater practices/facilities? ☒ Yes ☐ No

M. How many formal enforcement actions (i.e., more than a verbal or written warning) were taken for failure to adequately operate and/or maintain stormwater management practices? None

N. Do you use an electronic tool (e.g., GIS, database, spreadsheet) to track post-construction BMPs, inspections and maintenance? ☒ Yes ☐ No

O. Do all municipal departments and/or staff (as relevant) have access to this tracking system? ☒ Yes ☐ No

P. How often do municipal employees receive training on the post-construction program? None

8. Program Resources

A. What was the annual expenditure to implement MS4 permit requirements this reporting period? $90,276

B. What is next year's budget for implementing the requirements of your MS4 NPDES permit? $93,584

C. This year what is/are your source(s) of funding for the stormwater program, and annual revenue (amount or percentage) derived from each?

Source:	Department of Defense Appropriations	Amount $		OR % 100
Source:		Amount $		OR %
Source:		Amount $		OR %

D. How many FTEs does your municipality devote to the stormwater program (specifically for implementing the stormwater program; not municipal employees with other primary responsibilities)? 1.0

E. Do you share program implementation responsibilities with any other entities? ☐ Yes ☒ No

Entity	Activity/Task/Responsibility	Your Oversight/Accountability Mechanism

9. Evaluating/Measuring Progress

A. What indicators do you use to evaluate the overall effectiveness of your stormwater management program, how long have you been tracking them, and at what frequency? These are not measurable goals for individual management practices or tasks, but large-scale or long-term metrics for the overall program, such as macroinvertebrate community indices, measures of effective impervious cover in the watershed, indicators of in-stream hydrologic stability, etc.

Indicator	Began Tracking (year)	Frequency	Number of Locations
Example: E. coli	2003	Weekly April–September	20
E. coli	2015	Annually July - October	5
Dissolved Oxygen	2015	Annually July - October	5
Sediment	2015	Annually July - October	5

B. What environmental quality trends have you documented over the duration of your stormwater program? Reports or summaries can be attached electronically, or provide the URL to where they may be found on the Web.

KAFB continues to collect data. Trend analysis will be performed when more data is available.

10. Additional Information

Please attach any additional information on the performance of your MS4 program, including information required in Parts I.C, I.D, and III.B. If providing clarification to any of the questions above, please provide the question number (e.g., 2C) in your response.

Certification Statement and Signature

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

☒ Yes ☐ No

Federal regulations require this application to be signed as follows: **For a municipal, State, Federal, or other public facility**: by either a principal executive or ranking elected official.

Signature		Melissa Clark, Environmental Chief	
		Name of Certifying Official, Title	Date (mm/dd/yyyy)

Kirtland Air Force Base
1 Jul 2019 to 30 Jun 2020 MS4 Annual Report

Supplemental Information

Kirtland Air Force Base (KAFB) is a military installation located in central New Mexico, southeast of and adjacent to the City of Albuquerque and is a Phase II MS4 that is classified as a Class B Permittee. The installation encompasses 51,585 acres with elevations ranging from 5,200 to almost 8,000 feet above mean sea level. The Manzanita Mountains on its eastern boundary rise to over 10,000 feet. The land within the installation is owned by the United States Air Force (USAF), United States Forest Service (USFS) (withdrawn to the Department of Defense (DoD)), Bureau of Land Management (BLM) (withdrawn to the DoD), and the Department of Energy (DoE). The base urbanized area is 2,795 acres or 4.37 square miles, and is entirely located within Bernalillo County at the approximate latitude of 35.06ºN and longitude of 106.5ºW. Surrounding land uses adjacent to KAFB include the USFS Cibola National Forest to the northeast and east; the Isleta Pueblo Reservation to the south; Bernalillo County developments to the southwest; residential and business areas of the City of Albuquerque to the west and north; and the Albuquerque International Sunport, directly to the northwest. KAFB is the sixth largest installation in the USAF and is operated by the 377th Air Base Wing, a unit of Air Force Global Strike Command's (AFGSC) 20th Air Force and host unit at the base. KAFB has over 20,000 employees on base, including over 4,000 military, 3,500 civil service, and 12,500 contractors. There are more than 100 mission partners, to include training units, research laboratories, and three Major Air Force Commands, Reserve, and National Guard components. Missions at KAFB fall into four major categories: research, development, and testing; readiness and training; munitions maintenance; and support to installation operations.

The following information provides an implementation status of the KAFB stormwater program, the Storm Water Management Plan (SWMP), and best management practices (BMPs) for the reporting period of July 1, 2019 to June 30, 2020. There have been no changes made to the SWMP or BMPs for the reporting year. The sections underlined below are tied to the MS4 Annual Report Form.

2.C. <u>What specific sources contributing to the impairment(s) is [KAFB] targeting in the stormwater program?</u>

KAFB is continuing to collect data on dissolved oxygen, sediment discharge, and bacteria reduction as discussed below.

Dissolved Oxygen

During the reporting year, stormwater pollutants that affect dissolved oxygen levels are reviewed including fertilizers, pesticides, herbicides and animal waste. Programs to manage the use of pesticides and fertilizers have been in place at KAFB since 2007. KAFB has an extensive Base Maintenance Contract (BMC) with a formal, written Performance Work Statement (PWS). The

base maintenance contractor is responsible for implementing the Pest Management Plan (PMP) at KAFB. This plan establishes the strategy and methods for conducting a safe, effective, and environmentally-sound Integrated Pest Management (IPM) program that reduces pollution and other risk factors associated with the use of pesticides. The maintenance and implementation of this PMP is an important aspect of KAFB's Pest Management Program, which is comprised of the following eight elements:

1. PMP
2. IPM
3. Pest Management Program Reviews and Audits
4. Training and Certification of Pest Management Personnel
5. Pesticides and Pest Management Equipment
6. Contracting for Commercial Pest Management Equipment
7. Specialized Pest Management Operations
8. Pest Management and Disease Vector Control in Military Contingency Operations

KAFB implements processes and procedures to minimize contaminant exposure to stormwater and reduce impacts to dissolved oxygen by using oil water separators (OWSs) at vehicle and equipment maintenance facilities to limit pollutants from entering stormwater, installing dikes and berms to prevent contaminants from flowing to exposed areas, and appointing Facility Managers and Unit Environmental Coordinators (UEC) whose responsibilities include inspecting dumpsters and material storage areas for leaks and cracks.

Sediment

Maintenance performed by the base maintenance contractor includes sweeping impervious surfaces on a schedule which reduces the quantity of sediment discharged during storm events. The contractor is also responsible for maintaining, repairing, and constructing ditches, culvert storm drains, catch basins, impoundments, subsurface drains, and outlets to allow free flow of waters to natural basins or collecting points at all times. This includes inspecting and ensuring continuous free flow of water in open drainage systems, outfalls, spill gates, and flood gates; maintaining surface drainage ditches to be free of shrubs, trees, silt, and trash to prevent erosion and ensure continuous flow of water; and removing all trash and debris collected in ditches and ditch banks and disposing of this material properly. As needed, the base maintenance contractor will conduct maintenance activities at the request of the Water Quality Program Manager (WQPM) in addition to routine maintenance. The WQPM submitted one AF 332 Work Order Request that was completed during the reporting year:

- 6/4/2020 – Outfall F, request to have the sampling unit tubing replaced and verify all associated sampling equipment is properly functioning.

To further address sediment, KAFB developed a *Programmatic Environmental Assessment (PEA) Addressing Upgrade of the Stormwater Drainage System, Kirtland Air Force Base, New*

Mexico. The purpose of the PEA is to enable future projects that will upgrade stormwater drainage systems on KAFB to meet current standards, reduce flooding and standing water issues, and address erosion and sedimentation issues that occur on the installation. The PEA was finalized August 19, 2019.

Bacteria

The Civil Engineering (CE) Operations Branch, Distribution Shop operates, repairs, and maintains domestic sanitary sewage and industrial collection systems, force mains, valves, manholes, vaults, clean-outs, facility sewage services, and leak detection equipment, from the collection drain to the sewer main. This includes operating, repairing, and maintaining all sanitary sewage, septic tank systems, industrial-holding tanks, and all electronic, mechanical, and electrical control systems associated with the sanitary sewage collection systems; operating, repairing, and maintaining all lift stations from the collection point to the sewage main; maintaining the pumps, piping, pump mounting hardware, valves, main connections, and all electronic, mechanical, and electrical control and leach fields prior to the sewer mains; establishing and submitting an inspection schedule to verify operational integrity and operational reliability; correcting any discrepancies to ensure continuous operation of the system; providing for the removal of solids and the cleaning of systems and equipment upon any noticeable accumulation of solids or debris; and maintaining records of inspection dates.

On 16 Jan 2020 at approximately 1300, a sewer line leak was discovered on KAFB in an uninhabited, remote area of the base south of the intersection of Power Line Road and Pennsylvania Street. The leak was discovered at the location where the gravity-fed sewer line crossed Coyote Arroyo on the west bank. The leak was stopped and the sewer line was repaired on 22 Jan 2020. Based on the thick vegetation growing in the arroyo, site visits, and aerial photographs, it was assumed that the sewer leak may have reached as far as 425 feet down the arroyo from the release point. The sewage did not discharge off KAFB, as it is approximately 4.5 miles until the arroyo meets the western base boundary. This release was reported to the NMED and was assigned as incident ENTS 14048. As a result of this release, the CE Distribution Shop will monitor the approximately 95+ miles of sewer lines on KAFB by visual observations at sewer manholes and running cameras through areas identified to be of concern. The Environmental office will view aerial photography along the sewer lines for indications of leaks and identify to the CE Distribution Shop for further review. This effort will continue on a recurring basis to ensure any future sewer line breaks are identified and resolved in a timely manner.

As a BMP for reducing bacteria, throughout the reporting period the BMC and Kirtland Family Housing (KFH) supplied pet waste bags and disposal bins along walking paths in parks and in housing areas, respectively.

3.B. Pollutant Sources Addressed in Public Education and Outreach Program

Educational materials posted on the KAFB Environment webpage (https://www.kirtland.af.mil/Home/environment/) during the reporting year included:

- A KAFB stormwater awareness poster providing information on how to keep stormwater clean that addresses pesticides, general trash, household chemicals, automotive fluids, and pet waste. It provides information on how to recognize stormwater pollution and provides a telephone number for reporting issues.

  https://www.kirtland.af.mil/Portals/52/Stormwater_Awareness_1.pdf

- "When It Rains, It Drains" brochure that explains how stormwater gets polluted and what everyone can do to help keep stormwater clean.

  http://www.kirtland.af.mil/Portals/52/documents/AFD-100301-030.pdf?ver=2016-06-27-120127-517

- An EPA document "Protecting Water Quality from Urban Runoff" that explains how development in an area can impact runoff volume and stormwater quality.

  http://www.kirtland.af.mil/Portals/52/documents/AFD-100301-031.pdf?ver=2016-06-27-120155-593

The KAFB Environmental Management office attends newcomers events where information on protecting stormwater runoff is displayed, including the EPA document "Protecting Water Quality from Urban Runoff". In addition, the KAFB Environmental Management office Facility Manager training includes best management practices for reducing stormwater pollution through regular building perimeter checks, parking lot cleanup, and ensuring trash bins are closed.

Reporting Potential Stormwater Issues

Section G.4.4 of the BMC PWS (23 Jul 2018) requires implementation of a 24-hour, 7-days per week Customer Service Desk telephone line to field reports and requests by KAFB personnel to address emergency conditions and non-emergency work orders. The base maintenance contractor alerts the WQPM to potential issues related to dry weather or non-stormwater flows and other stormwater pollution concerns. Reports received are investigated to determine whether the flow is an allowable discharge or potential illicit discharge. Potential illicit discharges identified are investigated so that the source can be determined and eliminated.

- No potential stormwater related issues were logged by service desk during the reporting period.

KAFB personnel are required to report spills to Environmental Management. Spills are promptly cleaned up by an on-site spill response contractor. During the reporting period a total of 90 spills were reported to Environmental Management. The on-site spill response contractor cleaned up

spilled materials/absorbent and disposed of through the KAFB Hazardous Waste Program. The KAFB spill response and reporting form is available at https://www.kirtland.af.mil/Home/Environment/.

5.B. Sanitary and Storm Sewer System Maps

KAFB has government and contract support to maintain and update a Geographic Information System (GIS) database in which sanitary and storm drainage system maps are available. The base maintenance contractor maintains and updates the GIS and drawings for all utilities systems. This required an initial effort to migrate legacy data to the GIS system and perform field verification where discrepancies were identified.

GIS is updated when final design packages are submitted to the BMC. The GIS system was updated during the reporting period and on an ongoing basis. Updates are confirmed via a collaborative effort between CE GIS personnel and the base maintenance contractor.

5.J. Illicit Discharge Detection and Elimination Program

The base maintenance contractor is responsible for maintaining OWSs, storm drains and septic systems at KAFB. They perform routine inspections of this infrastructure and respond to emergency conditions. The CE Distribution Shop is responsible for maintenance, inspection, and emergency response for the sanitary sewer system. KAFB also contracts with an Environmental Consultant to provide support to the Stormwater Program. In addition to collecting wet weather and dry weather samples, the consultant assists with responding to and investigating potential illicit discharges. There were no illicit discharges detected during the reporting period.

Although there were no illicit discharges during the reporting period, there was one near miss incident. On 21 November 2019 at approximately 10:00am, a KAFB environmental contract support employee observed bright green liquid dripping, pooling, and flowing from the north side of hangar 1001 facility at the 58th Special Operations Wing (58 SOW) located on KAFB. The green liquid mixed with recent rainfall resulted in an unknown quantity of diluted liquid to be released into a storm drain located north of the Facility. Two KAFB Environmental Management Program Managers responded to the event and investigated the release. Based on information from the 58 SOW Unit Environmental Coordinator (UEC), it was determined that the green liquid was a "Sea Pack" - a nonhazardous and environmentally safe dye used during military sea operations. It was believed that the sea pack was thrown onto the awning over the front door of the Facility as a practical joke and recent rainfall events caused the dye to be released. KAFB Environmental Management immediately initiated cleanup through spill response contractors. Observations of the stormwater outfalls for this industrial area were conducted upon discovery of the incident. The dye was not observed in any stormwater outfalls or retention basins. It was determined that this event was not an unauthorized release or discharge, however, corrective action has been taken to eliminate recurrence and a corrective action report has been prepared and is filed at KAFB.

6.D. List activities for which operating procedures or management practices specific to stormwater management have been developed

KAFB is required to comply with a comprehensive list of Air Force Manuals (AFMAN), Air Force Instructions (AFI), and Air Force Policy Directives (AFPD) that outline requirements for environmental compliance. The following are examples of the AFIs that support the implementation of the Stormwater Program at KAFB:

AFI 32-7001	Environmental Management
AFMAN 32-7002	Environmental Compliance and Pollution Prevention
AFI 32-1001	Civil Engineer Operations (includes snow and ice control)
AFMAN 32-1067	Water and Fuel Systems
AFPD 32-70	Environmental Considerations in AF Programs and Activities
AFI 23-201	Fuels Management
AFMAN 32-1053	Integrated Pest Management Program

6.G. Do all municipal employees and contractors overseeing planning and implementation of stormwater-related activities receive comprehensive training on stormwater management?

A one-time Environmental Management System (EMS) Awareness Training is required for all employees and contractors. Unit Environmental Coordinators coordinate job specific training needs for their organizations, Environmental Management provides the training. The WQPM provides in-person training for construction contractors on KAFB.

Public Review and Comment: The 2020 draft annual report was posted to the KAFB website at: https://www.kirtland.af.mil/Home/environment/ on 15 October 2020. A statement announcing the public review period was posted in the Albuquerque Journal with a link to the draft report and an email to submit comments. The 45-day public notice period ends 28 November 2020

SWMP Measurable Goal Updates for the 2019-2020 MS4 Annual Report

Table 7-1: Dissolved Oxygen Strategy Goals

BMP Number	General BMP	BMP Description	Measurable Goal	2019-2020 Update
DO-1.a	**Investigate Contributors to Reduced Dissolved Oxygen in Receiving Waters**	Inventory and investigate structural controls to determine their potential effect on dissolved oxygen in receiving waters. Dissolved oxygen (DO) is the amount of oxygen present in water. Water bodies receive oxygen from the atmosphere and from aquatic plants. Running water, such as that of a swift moving stream, dissolves more oxygen than the still water of a pond or lake. Reducing pooling and ponding produces faster moving water thus dissolving more oxygen and preventing algae blooms. This improved water quality condition supports aquatic life.	Document inventory and investigation results then revise BMPs, as needed.	This program is not yet fully implemented but additional progress toward implementation was achieved during the reporting year. During the reporting year, the WQPM developed the scope of the inventory to include locations where pooling and ponding are occurring. During the reporting year, the WQPM identified pooling water at Pennsylvania and Griffin. In the next reporting year, the WQPM will work with the BMC to identify root cause and determine solution(s).
DO-1.b		Inventory and investigate natural or man-made topographical and geological formations for potential effects on dissolved oxygen in receiving waters.	Document inventory and investigation results then revise BMPs, as needed.	This program is not yet fully implemented but additional progress toward implementation was made during the reporting year. KAFB WQPM to continue working with AFCEC and CE GIS personnel to determine the presence and impact of these formations.

Table 7-1: Dissolved Oxygen Strategy Goals

BMP Number	General BMP	BMP Description	Measurable Goal	2019-2020 Update
DO-1.c		Review MS4 operations for potential effect on dissolved oxygen in receiving waters.	Annually evaluate standard operating procedures and BMPs, report revisions in Annual Report.	Implemented 22 March 2015 and ongoing. Reporting year update: Outfall I/Eubank Outfall (a final discharge point of the MS4) impacts DO as stagnant water is consistently present. This water eventually discharges to Coyote Arroyo. WQPM is collaborating with City of ABQ personnel to improve water quality conditions within the Outfall. City personnel will remove trash, floatables, and sediment as required.
DO-1.d		Review chemicals and materials used through standard procedures to determine if any items impact dissolved oxygen.	Annually review purchases and determine feasibility of alternative products. Clean up hazardous material spills immediately to reduce risk to stormwater runoff.	Implemented 01 July 2012 and ongoing. KAFB reviews/approves all hazardous material purchases and implements processes and procedures to minimize chemical exposure to stormwater and therefore reduce impacts to dissolved oxygen (see 2.C). KAFB cleaned up 90 spills during the reporting period to ensure no impact to stormwater runoff.

Table 7-2: Sediment Pollutant Load Reduction Strategy Goals

BMP Number	General BMP	BMP Description	Measurable Goal	2019-2020 Update
SED-1.a	**Sediment Assessment**	Develop sediment assessment plan that includes standard operating and QA procedures.	Develop sediment assessment plan and validate data.	Implemented 22 March 2015 and ongoing. KAFB prepared a sediment reduction plan progress report during the reporting period. See attachment.
SED-1.b		Conduct sediment assessment per developed plan.	Conduct sediment assessment.	Implemented 22 March 2015 and ongoing. Sediment reduction assessments are ongoing via routine inspections of bridges and other stormwater infrastructure. See attachment.
SED-2.a	**Estimate Baseline Sediment Loading**	Estimate baseline sediment loading and relative potential for contamination of sediments utilizing results from assessment.	Document baseline sediment loading estimate.	As part of the preparation of the Sediment Reduction Plan, a baseline sediment loading estimate was performed and implemented in 22 March 2015. Sampling within Kirtland AFB has continued in an effort to compare against the baseline, however, sampling data is inconsistent as it is dependent on a qualifying rainfall event. In this arid climate, regular stormwater events are not routine and consistent data for this evaluation is not available. See attachment.

Table 7-2: Sediment Pollutant Load Reduction Strategy Goals

BMP Number	General BMP	BMP Description	Measurable Goal	2019-2020 Update
SED-3.a	**Targeted Controls and BMPs for Sediment Pollutant Load Reduction**	Develop targeted controls and BMPs for sediment pollutant load reduction based on results of the sediment assessment and estimate of baseline sediment loading; putting a priority on areas that are expected to generate the highest annual average pollutant loads.	Develop and document targeted controls and BMPs, and update this SWMP as appropriate.	Baseline controls and BMPs including routine sweeping, vehicle track-out controls, and monthly inspections at construction sites are performed. New controls and BMPs are implemented as areas of sediment discharge are identified during routine inspections. Implement controls 5-10 years from permit effective date.
SED-3.b		Conduct interim monitoring and evaluate BMPs.	Conduct annual monitoring and evaluations.	Implemented 22 March 2015 and conducted during the reporting year. Monitoring and evaluation is performed during onsite monthly inspections performed by KAFB WQPM. Measuring the effectiveness of BMPs is done via visual inspections that are documented.
SED-4.a	**Progress Evaluation**	Assess the overall success of the sediment pollutant load reduction strategy by analyzing and interpreting data collected over the course of the implementation. This assessment should include assessment of both direct and indirect measures of success.	Document and report on the strategy's assessment in this SWMP and in the fifth annual report as appropriate.	See attachment "Sediment Reduction Plan Progress Report".

Table 7-3: Impaired Waters Requirements Goals

BMP Number	General BMP	BMP Description	Measurable Goal	2019-2020 Update
IW-1.a	**TMDL Required Control Measures**	Evaluate the Bacteria Reduction Plan to determine gaps in TMDL requirements and monitor compliance. Preventative methods to reduce bacteria in stormwater include pet waste collection stations around KAFB housing and Hardin Field.	Annually evaluate the Bacteria Reduction Plan and BMPs, report revisions in Annual Report.	Implemented 22 March 2015 and ongoing. E. coli samples collected during the 2019-2020 permit term were obtained from the sampling points where Tijeras Arroyo enters and exits KAFB. Samples are collected at these locations using in ground samplers. As a result, flow and estimated discharge volumes were not available for these samples and therefore a direct comparison to the Waste Load Allocation was not conducted for this reporting year. KAFB will continue to conduct sampling activities and implementation of BMPs to reduce bacteria in stormwater.
IW-2.a	**Sanitary Sewer System Evaluation**	Review maintenance reports, sanitary sewer infrastructure, and other sources for improvement areas.	Annually document inadequacies, if any, and prioritize for repair.	Implemented 01 January 2013 and ongoing through the CE Distribution Shop.
IW-2.b		Evaluate sanitary sewer lift stations for inadequacies and overflow controls.	Annually document inadequacies, if any, and prioritize for repair.	Implemented 01 January 2013 and ongoing through the CE Distribution Shop.

BMP Number	General BMP	BMP Description	Measurable Goal	2019-2020 Update
IW-3.a	**Illicit Discharges**	Reduce waste sources of bacteria through proper disposal and illicit discharge prevention.	Annual satisfactory rating of BMC performance, construction contractor performance, and compliant disposal procedures.	Implemented 01 January 2013 and ongoing. Stormwater program inspections are conducted quarterly and after rain and snow events to determine compliance.
IW-4.a	**Residential and Animal Source Evaluation**	Expand existing management programs to identify and target animal sources and residential discharges.	KFH and BMC personnel to monitor grounds and maintain pet scoop stations.	Implemented 01 January 2003 and ongoing.

Table 7-4: Construction Site Runoff Control Goals

BMP Number	General BMP	BMP Description	Measurable Goal	2019-2020 Update
MCM 1-1.a	**Construction Project Review**	Conduct reviews of new construction projects to evaluate CGP requirements, site BMPs, and provide comments.	Document 95% of construction project reviews and comments.	Implemented 15 September 2003. 43 project reviews took place during the reporting period. This goal is consistently achieved.
MCM 1-1.b		Review AF Form 103 Digging Permit Request, AF Form 332 Work Order Requests, AF Form 813 Request For Environmental Impact Analysis, Environmental Baseline Surveys, and Environmental Assessments affecting stormwater and provide comments.	Document 95% reviews and comments on Digging Permits, Work Orders, Request For Environmental Impact Analysis, Environmental Baseline Surveys, and Environmental Assessments.	Implemented 1 October 2009. 225 Digging Permits, 792 Work Orders, and 128 Request For Environmental Impact Analysis requests were processed during the reporting period. These goals are consistently achieved.
MCM 1-2.a	**Track Construction Projects**	Maintain inventory of active construction sites and previously closed construction sites.	Annually report on-going projects under CGP.	Implemented 15 September 2003. This reporting year consisted of 32 construction projects, 9 of which had CGP permitting requirements. Inventory is tracked by KAFB WQPM via internal database.
MCM 1-2.b		Ensure all projects with land disturbance have been evaluated.	Annually review CE project listing and provide comments on AF 813.	Implemented 3 February 2010. This goal is consistently achieved.

Table 7-4: Construction Site Runoff Control Goals

BMP Number	General BMP	BMP Description	Measurable Goal	2019-2020 Update
MCM 1-3.a	**National Pollutant Discharge Elimination System – Storm Water Construction General Permit, Compliance and Enforcement**	For projects requiring CGP coverage, personnel shall assess and document that contractors develop the required SWPPP, NOI, and NOT.	Document 100% of installation projects subject to CGP.	Implemented 15 September 2003. This goal is consistently achieved via KAFB WQPM coordination with individual construction contractors and SWPPP developers.
MCM 1-3.b		Conduct monthly inspections of all active CGP sites to ensure compliance with site-specific SWPPP.	Conduct and document monthly construction site inspections.	Implemented 15 September 2003 through environmental contract. The KAFB WQPM performs monthly inspections along with contract support. This goal is consistently achieved.
MCM 1-3.c		Identify deficiencies noted during site inspections. Communicate deficiencies to Contracting Officer Representative (COR) for appropriate corrective action, and document inspection reports.	Document deficiencies identified in inspections. Retain a copy of communication to COR and corrective actions.	Implemented 15 September 2003. Deficiencies entered into eDASH Finding Tracker (internal AF database) are communicated to construction contractor and COR via email and followed-up to closure.

Table 7-4: Construction Site Runoff Control Goals

BMP Number	General BMP	BMP Description	Measurable Goal	2019-2020 Update
MCM 1-4.a	**Construction Project Contractor Education**	Place CGP awareness boards at all active and permitted construction sites.	Document 100% of boards in monthly inspection records.	Implemented 29 June 2010 and ongoing. Compliance item is documented on the monthly site inspection report for each construction site.
MCM 1-4.b		Require CGP compliance training prior to start of project activities.	Document 90% of contractor personnel completing training.	Implemented 1 December 2010 and ongoing.

Table 7-5: Post-Construction Runoff Control Goals

BMP Number	General BMP	BMP Description	Measurable Goal	2019-2020 Update
MCM 2-1.a	**Post-Construction Storm Water Management Planning**	Review AF 813 forms and project designs to ensure Section 438 of EISA and sustainable practices are integrated into construction designs.	Review and record 100% of AF 813 forms and design reviews.	Implemented February 2010 and ongoing. Review of AF 813s is documented and tracked by the CE NEPA office. Project design meetings are attended by CE Environmental staff including the KAFB WQPM. This goal is consistently achieved.
MCM 2-1.b		Annually review UFCs, AFIs, Installation Development Plan and regulations for changes in requirements concerning sustainable design. Incorporate watershed protection elements during scheduled document review/revision.	Document policy revisions and BMPs changes in annual report, if necessary.	Implemented February 2010 and ongoing. This goal is consistently reached via review by the KAFB WQPM.
MCM 2-1.c		Ensure timely establishment of the 70% pre-existing vegetative cover for final stabilization.	Annually inspect final stabilization and NOTs. An NOT cannot be filed until the 70% vegetation requirement is met.	Implemented June 2007. Ongoing follow-up inspections are performed by the KAFB WQPM.
MCM 2-2.a	**Existing Site Post-Construction Storm Water Controls**	Estimate the acreage of impervious area.	Document impervious area on 90% of projects.	Implemented July 2015 and ongoing. KAFB WQPM reviews Contractor supplied maps and applicable project documentation.

Table 7-5: Post-Construction Runoff Control Goals

BMP Number	General BMP	BMP Description	Measurable Goal	2019-2020 Update
MCM 2-2.b		Inventory and prioritize KAFB assets that can be retrofitted with control measures to minimize the frequency, volume, and peak intensity of stormwater discharges.	Develop inventory and prioritization of assets for modernization.	Program implementation is pending. Basewide stormwater control upgrades have gone through NEPA approval: "Programmatic Environmental Assessment – Addressing Upgrade of the Stormwater Drainage System (KAFB)"Upgrades are being designed by the CE Engineering Branch and proponents are required to submit an AF 813 for each project.
MCM 2-2.c		Coordinate with BMC to ensure structural BMPs are inspected, maintained, and repaired. Coordinate with KFH Grounds Maintenance for operation and maintenance of the KFH area structural stormwater BMPs.	Annually coordinate with BMC and KFH and document BMP inspection, maintenance, and repair.	Implemented 17 March 2009 and ongoing.
MCM 2-2.d		Require contractors to submit as-built plans to CE within 90 days of project acceptance.	Annually review contract close-out and deliverables.	Implemented January 2009 and ongoing. KAFB WQPM coordinates with CE and BMC Project Managers
MCM 2-3.a	**Post-Construction Management Review**	Revise post-construction management process to incorporate improvements in control techniques. Consider water quality monitoring results in review.	Annually review 75% of projects and incorporate lessons learned.	Implemented 3 January 2011 and ongoing. KAFB WQPM coordinates with CE and BMC Project Managers.

Table 7-6: Pollution Prevention/Good Housekeeping Goals

BMP Name	General BMP	BMP Description	Measurable Goal	2019-2020 Update
MCM 3-1.a	**Vehicle Maintenance/ Washing Controls**	Provide educational information regarding vehicle maintenance and washing to installation tenants and residents.	Annually review educational materials provided to residents and installation tenants.	Implemented 17 March 2008 and ongoing. Installation tenants receive educational information from their UEC through the EMS Cross Functional Team (CFT). KFH did not provide educational information regarding vehicle maintenance and washing to residents in this reporting period.
MCM 3-1.b		Provide guidance document addressing car washes to installation tenants and residents.	Annually review guidance document for car washes.	Implemented 28 March 2014 and ongoing. Installation tenants receive educational information from their UEC through the EMS Cross Functional Team (CFT). KFH did not provide educational information regarding vehicle washing to residents in this reporting period.
MCM 3-2.a	**Response Procedures and Plans**	Maintain HazMat inventory and response procedures to address release of HazMat.	Annually review Hazardous Waste Management Plan.	Implemented 1 June 2007 and ongoing. This goal is consistently met.
MCM 3-2.b		Conduct weekly inspections of IAPs per Hazardous Waste Management Plan.	Document weekly IAP inspections and record in binder.	Implemented 1 June 2007 and ongoing. This goal is consistently met.

Table 7-6: Pollution Prevention/Good Housekeeping Goals

BMP Name	General BMP	BMP Description	Measurable Goal	2019-2020 Update
MCM 3-2.c		Maintain SPCC Plan to address oil spill response procedures.	Annually review SPCC Plan and re-certified every 5 years.	Implemented 1 June 2007 and ongoing. SPCC dated February 16, 2018.
MCM 3-2.d		Conduct annual inspections for impacts from industrial activities and operations.	Document annual inspections IAW the MSGP, SPCC Plan, and other program requirements.	Implemented 1 June 2007 and ongoing. This goal is consistently met.
MCM 3-3.a	**Base Contracted Services**	Ensure contractor follows and implements requirements found in BMC.	Conduct comprehensive annual evaluation of BMC and enforce or modify as needed.	Implemented 1 June 2012 and ongoing. This goal is consistently achieved.
MCM 3-3.b		Maintain dog feces collection stations situated throughout the installation.	Check stations weekly, empty stations and insert new bags.	Implemented 14 Sept 2006 and ongoing. This goal is consistently met by the BMC.
MCM 3-3.c		Monitor waste diversion and recycling through the Solid Waste Program.	Annually document percentage of waste diversion and quantity recycled.	Implemented 1 June 2007 and ongoing. This goal is consistently met through required semi-annual environmental data calls and is documented in KAFB's EESOH-MIS database.

Table 7-6: Pollution Prevention/Good Housekeeping Goals

BMP Name	General BMP	BMP Description	Measurable Goal	2019-2020 Update
MCM 3-4.a	**Stormwater Infrastructure**	Inventory, inspect and upgrade stormwater facilities by drainage basin.	Annually inventory and inspect selected stormwater facilities.	Implemented 1 January 2010 and ongoing. The AFCEC Environmental Services Contractor reviewed stormwater facilities throughout the reporting year. The BMC is also tasked with maintaining stormwater facilities. Repairs to sampling equipment were made as necessary (see 2.C **Sediment**)

Table 7-7: Illicit Discharges and Improper Disposal Goals

BMP Number	General BMP	BMP Description	Measurable Goal	2019-2020 Update
MCM 4-1.a	**Maintain Maps and Inventories**	Maintain sanitary and storm sewer maps (i.e. lines, points, attributes, etc.).	Annually update sanitary and storm sewer system maps.	Implemented 1 June 2007. Maps are maintained by CE GIS personnel.
MCM 4-1.b		Maintain OWS and septic tank inventories. Routinely inspect systems.	Annually update and maintain sanitary sewer asset inventory.	Implemented 1 June 2007 and ongoing. This requirement is met through the BMC.
MCM 4-2.a	**Illicit Discharge and Improper Disposal Detection**	Review telephone complaints, inspection reports, staff knowledge, and other available records to develop source reduction strategies, if needed.	Annually review complaint records to prioritize inspection efforts and reduce complaints by 3%.	Implemented 5 December 2007 and ongoing. No complaints received.
MCM 4-2.b		Screen high priority areas and the entire installation for illicit discharges.	Annually screen high priority areas and screen the entire installation within five years.	Implemented 1 June 2007 and ongoing. Areas are screened during quarterly inspections and when issues are reported.
MCM 4-2.c		Investigate suspected or reported illicit discharges and develop corrective action.	Investigate suspected or reported discharges within 48 hours and develop corrective action plan within one week.	Implemented 1 June 2007 and ongoing.

Table 7-7: Illicit Discharges and Improper Disposal Goals

BMP Number	General BMP	BMP Description	Measurable Goal	2019-2020 Update
MCM 4-3.a	**Illicit Discharge Education and Outreach**	Maintain and replace storm drains and storm grate inlet illegal dumping labels.	Maintain and replace storm drain/grate labels every 5 years.	Implemented 19 December 2007 and ongoing. KAFB is working a partnership with the KAFB Boy Scout Troop to assist with painting "Do not dump, drains to river" on stormwater inlets. Maintenance and replacement of storm drain/grate labels for the 2019-2020 reporting period is pending due to the ongoing COVID-19 pandemic.
MCM 4-3.b		Maintain phone and web-based information services for reporting of pollution prevention issues.	Ensure systems are maintained and respond to inquiries within 48 hours.	Implemented 5 December 2007 and ongoing through the BMC.
MCM 4-4.a	**Waste Discharge Design in Construction Projects**	Ensure construction or renovation projects connect to the proper collection system to avoid cross-connections.	Review 95% of project designs and identify appropriate collection system.	Implemented 1 June 2007 and ongoing. This goal is consistently achieved.

Table 7-8: Control of Floatable Discharges Goals

BMP Number	General BMP	BMP Description	Measurable Goal	2019-2020 Update
MCM 5-1.a	**Identify Floatables**	Characterize floatables and trash removed from sample locations.	Annually estimate volume and characterize floatables.	Implemented 20 March 2015. Locations are consistently monitored by the KAFB WQPM. During the reporting period the majority of floatables and trash found within Outfall I/Eubank Outfall. The area within the Outfall is owned by the City of ABQ and the KAFB WQPM is working with a City employee to schedule a cleanup with as needed cleanups to follow.
MCM 5-2.a	**Partner with KAFB CE Grounds Keeping Department**	Ensure proper floatable and trash reduction training.	Annually validate maintenance staff training records.	Implemented 20 March 2015 and ongoing through KAFB's Pollution Prevention Efforts. KAFB failed to validate staff training records during the reporting period.
MCM 5-2.b		Provide documents on grounds keeping practices that minimize floatables and trash accumulation.	Annually review maintenance staff training material.	Implemented 20 March 2015 and ongoing. KAFB failed to review maintenance staff training materials during the reporting period.
MCM 5-3.a	**Partner with KFH Grounds Keeping Department**	KFH grounds keeping department to ensure floatable and trash reduction training.	Annually validate maintenance staff training records.	Implemented 20 March 2015 and ongoing. KAFB failed to validate staff training records during the reporting period.
MCM 5-3.b		Provide documents on grounds keeping practices that minimize floatable and trash accumulation.	Annually review maintenance staff training material.	Implemented 20 March 2015 and ongoing. KAFB failed to review maintenance staff training materials during the reporting period.

Table 7-9: Public Education and Outreach Goals

BMP Number	General BMP	BMP Description	Measurable Goal	2019-2020 Update
MCM 6-1.a	**Partner with KAFB CE Grounds Keeping Department (BMC)**	Ensure proper pesticide and herbicide application and storage training.	Annually validate maintenance staff training records.	Implemented 1 June 2007 and ongoing through the BMC.
MCM 6-1.b		Ensure proper OWS and septic system maintenance training.	Annually validate maintenance staff training records.	Implemented 1 June 2007 and ongoing through the BMC.
MCM 6-1.c		Provide documents on grounds keeping practices that minimize pollutant discharges.	Annually review maintenance staff training material.	Implemented 17 March 2009 and ongoing through the BMC. KAFB failed to review maintenance staff training material during the reporting period.
MCM 6-2.a	**Partner with KFH Grounds Keeping Department**	KFH to ensure proper pesticide and herbicide application and storage training.	Annually validate maintenance staff training records.	Implemented 1 June 2007 and ongoing through the BMC. KAFB failed to validate maintenance staff training records during the reporting period.
MCM 6-2.b		CE operations team is responsible for septic system maintenance training.	Annually validate maintenance staff training records.	Implemented 1 June 2007 and ongoing.
MCM 6-2.c		Provide documents on grounds keeping practices that minimize pollutant discharges.	Annually review maintenance staff training material.	Implemented 17 March 2009 and ongoing through the BMC. KAFB failed to validate maintenance staff training records during the reporting period.
MCM 6-3.a		Monitor training through EMS. Consider employee turnover in training schedule.	Annually audit EMS training records during inspection.	Implemented 3 January 2011 and ongoing.

MCM 6-3.b	**Employee Training and Education**	Provide educational materials, upon request, to contractors related to storm water management for construction projects.	Annually review educational materials.	Implemented 3 January 2011 and ongoing.
MCM 6-3.c		Publish announcements that increase awareness of stormwater protection.	Annually publish two stormwater announcements by email per year.	Implemented 5 March 2010 and ongoing. Email from KAFB Housing and Newcomer's Info Fair. Briefed stormwater compliance BMPs during the EMS CFT meeting in July 2019 and emailed summary of BMPs to UECs.
MCM 6-3.d		Track shop compliance through review of self-assessments and identify training gaps.	Annually validate shop level compliance in eDASH Finding Tracker Tool.	Implemented 5 January 2015 and ongoing.
MCM 6-4.a	**Develop and Distribute Educational Materials to Base Residents**	KFH to provide pamphlets and/or materials in new resident induction packages.	Annually review stormwater education pamphlets.	Implemented 17 March 2007 and ongoing. KFH is not providing stormwater information in new resident packages. WQPM will create outreach materials and provide to KFH.
MCM 6-4.b		Display stormwater related materials on KFH web.	Annually review stormwater materials on KFH webpage.	KFH is not posting stormwater information on their website. WQPM will provide materials to KFH for posting.

Table 7-10: Public Involvement and Participation Goals

BMP Number	General BMP	BMP Description	Measurable Goal	2019-2020 Update
MCM 7-1.a	**Solicit Public Input on Storm Water Related Issues and Activities**	Post reports for public comment and solicit comments at public meetings, if necessary, concerning storm water topics.	Annually post reports for public comment. Incorporate comments in documents, as appropriate.	Implemented 31 March 2010 and ongoing. This goal is consistently met.
MCM 7-1.b		Seek public input to assess public behavioral change.	Receive 25% response on feedback questionnaires.	Annual MS4 survey has been approved by the AF Survey Office. Once disseminated the response rate will be tracked to verify the 25% goal has been achieved.
MCM 7-2.a	**Involvement Opportunities**	Participate in MS4 Technical Advisory Group and outreach opportunities.	Attend regional stormwater group meetings every other month.	Implemented 1 July 2013 and ongoing. This goal is consistently met via attendance by the KAFB WQPM. Note: Effective April 2020 and for the time being, meetings are being held virtually during the COVID-19 pandemic.

Table 7-10: Public Involvement and Participation Goals

BMP Number	General BMP	BMP Description	Measurable Goal	2019-2020 Update
MCM 7-2.b		Partner with organizations to provide routine collection days for special items for recycling and not disposal.	Provide collection for bulk items, prescription drugs, and hazardous waste items.	Implemented 13 March 2008 and ongoing. Established virtual hazardous materials free-issue program to minimize disposal of usable materials in August 2018. The 377 Medical Group provides a prescription drug takeback program. Collection of bulk items is managed by the Contracting Officer Representative for the Installation Solid Waste Management contract.
MCM 7-2.c		Participate in EMS CFT meetings (led by Environmental Management Office) and Environmental Safety and Occupational Health Council (ESOHC) meetings.	Attend quarterly EMS CFT meetings and semi-annual ESOHC meetings. Discuss stormwater compliance at least annually. Meetings required by the KAFB EMS Framework.	Implemented 3 January 2010 and ongoing. This goal is met via KAFB WQPM participation.
MCM 7-3.a	**SWMP Accessibility**	Public accessibility of SWMP document and annual reports on the KAFB website and at the MS4 operator's main office in the KAFB CEIEC building.	Maintain SWMP and annual reports located on the KAFB website and at the KAFB CEIEC office.	Implemented 22 March 2015 and ongoing. This goal is consistently met. An update and upload of these documents occurs annually.

Attachment: Sediment Reduction Plan Progress Report – Kirtland AFB

A Progress Report assessing the overall success of the Sediment Pollutant Load Reduction Strategy is required by the Permit to be submitted with the fifth Annual Report. The required elements of the Progress Report are shown below.

1. A list of species likely to be within the action area

- There are no critical habitats on or near Kirtland AFB. No federally threatened or endangered species have been identified on the installation.

- Biological surveys are conducted annually in order to monitor federal-listed, state-listed, and other special status species present on Kirtland AFB.

- The following table contains species that are known to occur on the installation and have Special Status (Source: Kirtland AFB Integrated Natural Resources Management Plan §2.4.1.4).

Species	Federal Status	State Status
Gray Vireo	-	Threatened
Peregrine Falcon	Species of Concern	Threatened
Loggerhead Shrike	-	New Mexico Species of Greatest Conservation Need
Mountain Plover	-	Sensitive taxa
Western Burrowing Owl	Species of Concern	-
Long-legged Myotis	-	Sensitive taxa
Western Small-footed Myotis	-	Sensitive taxa
Gunnison's Prairie Dog	-	Sensitive taxa
Golden Eagle	Bald/Golden Eagle Protection Act	-
Slate Millipede	Species of Concern	-
Gramma Grass Cactus	Species of Concern	-

2. Type and number of structural Best Management Practices (BMPs) installed

- Repairs completed at the bridge on Ammo Road near Stormwater Monitoring Site C has minimized bank cutting and sediment load in stormwater.

- Project located at Tijeras Arroyo under Pennsylvania bridge will eliminate erosion and sediment load in stormwater.

3. Evaluation of pollutant source reduction efforts

- Monthly and Quarterly Inspections are conducted as a BMP to minimize sediment load as a result of construction activities at Kirtland AFB.

- Work with environmental support contractors to strengthen training programs and improve adherence to stormwater permitting requirements to minimize sediment load in stormwater.

4. Any recommendation based on program evaluation

- Sampling in an arid climate is a difficult method for evaluating sediment load and reductions in sediment load as a result of specific activities. Sampling occurs infrequently and without consistent sampling data to determine sediment load and any sediment load reductions, it can be difficult to ascertain the effectiveness of program activities and achievement of goals.

- A potential alternate to sediment load sampling would be to develop a program of taking routine photographs of waterways within certain regular time frames to see visible changes to waterways that have the potential to increase sedimentation over time. These photographs have the potential to show where erosion can contribute to sediment load in stormwater.

5. Description of how the interim sediment load reduction goals were achieved

- Develop sediment assessment plan and validate data.
  - The Sediment Reduction Plan was prepared and implemented 22 March 2015.

- Conduct sediment assessment.
  - As part of the preparation of the Sediment Reduction Plan, a sediment assessment was performed and implemented in 22 March 2015. Sediment reduction assessments are ongoing via routine inspections of bridges and other stormwater infrastructure.

- Document baseline sediment loading estimate.
  - As part of the preparation of the Sediment Reduction Plan, a baseline sediment loading estimate was performed and implemented in 22 March 2015. Sampling within Kirtland AFB has continued in an effort to compare against the baseline, however, sampling data is inconsistent as it is dependent on a qualifying rainfall event. In this arid climate, regular stormwater events are not routine and consistent data for this evaluation is not available.

- Develop and document targeted controls and BMPs and update this SWMP as appropriate.
  - Develop and document targeted controls and BMPs [1 year from permit effective date].
  - Implement controls 5-10 years from permit effective date.

- Conduct annual monitoring and evaluations.
  - Annual monitoring is conducted through routine monthly and quarterly inspections of construction sites and industrial areas. Implemented 22 March 2015 and ongoing.

- Document and report on the strategy's assessment in this SWMP and in the fifth annual report as appropriate.
    - This report summarizes the Kirtland AFB Sediment Reduction Plan Progress.

6. Future planning activities needed to achieve increase of required sediment load reductions.

On August 19, 2019, Kirtland AFB finalized an Environmental Assessment to develop, upgrade, and maintain stormwater drainage systems and conduct arroyo repair and erosion control measures. Stormwater drainage system activities will include developing stormwater systems where none exist, upgrading and repairing existing systems, and future maintenance. These activities could include excavating existing retention basins and culverts/gullies; constructing berms; constructing and repairing gutters, curbs, and other drainage infrastructure; and any required repair, maintenance, or cleaning of the stormwater pipe network. Arroyo repair activities could include restabilizing, excavating, filling, lining arroyo banks, and constructing and repairing bridge supports, box culverts, bank protection, and grade control structures to assist in stabilizing the arroyo bed.

This EA was developed to meet current stormwater drainage system standards, reduce flooding and standing water issues, and address erosion and sedimentation that occur on the installation. The proposed activities are needed because existing stormwater drainage facilities on Kirtland AFB have deteriorated to the point where extensive work is needed to continuously reestablish an effective stormwater drainage system. Ditches, culverts, pipes and retention basins annually experience sediment build-up and substantial erosion due to monsoon storm events. Standing stormwater created by clogged ditches and flat ground surfaces poses hazards to traffic and undermines roads, parking lots, and foundations. Outdoor storage areas require berms and retention structures to control runoff. Revegetation and other measures are needed to control discharges of suspended solids. The stormwater drainage improvements would reduce the overall rate and volume of stormwater flows and detrimental effects of erosion and sedimentation into surface waters. Improvements to outlet structures would reduce erosion of arroyos during storms. Arroyo work is required to repair bed and bank erosion resulting in sediment transport and reduce the potential for additional damage in the future. Semi-arid regions, like those found in the southwest, typically produce more runoff and erosion than humid regions for a given intensity of rainfall because of sparse vegetation cover and poorly developed soils with little organic matter. It is anticipated that these activities will have a significant reduction on sediment in stormwater from Kirtland AFB.