May 30, 2020

Alabama Department of Environmental Management
MS4/Storm Water Management Branch
Water Division
1400 Coliseum Boulevard
Montgomery, Alabama 36110-2059
Attention: Cammie Ashmore

Subject: Auburn University at Montgomery Municipal Separate Storm Water Sewer System (MS4) Annual Report 2019/2020
Auburn University at Montgomery, Montgomery County (101) Alabama ALR040062

Dear Mrs. Cammie Ashmore:

Auburn University at Montgomery submits the current Storm Water Management Program Plan and the Annual Report that covers April 1, 2019 through March 31, 2020. Based on my enquiry 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.

The implementation of the University’s Storm Water Management Program Plan is dependent upon multiple groups on campus. I serve to facilitate the progress towards the Plan’s objectives and ADEM’s primary point of contact for the referenced permit. If you have any questions or clarification, please feel free to contact me.

Respectfully,

Kenneth O. Jones
Senior Public Safety Technician
## Storm Water Management Program Plan

### Responsible Personnel Contact Information

<table>
<thead>
<tr>
<th>Primary Point of Contact:</th>
<th>Kenneth O. Jones, Senior Public Safety Technician</th>
<th>334-244-3271</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cell:</td>
<td>334-651-3431</td>
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<tr>
<td></td>
<td>Campus Police</td>
<td>344-244-3271</td>
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<table>
<thead>
<tr>
<th>Executive Committee:</th>
<th>Kenneth O Jones, Senior Public Safety Technician</th>
<th>334-244-3271</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Brenda Mitchell, Director of Police Operations</td>
<td>334-244-3464</td>
</tr>
<tr>
<td></td>
<td>Daryl Morris, Director of Campus Services</td>
<td>334-244-3295</td>
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<tr>
<td></td>
<td>Michael Swicard, Director of Facilities</td>
<td>334-244-3556</td>
</tr>
<tr>
<td></td>
<td>Dora Leigh Easterwood, Grounds Manager</td>
<td>334-244-5441</td>
</tr>
<tr>
<td></td>
<td>Leon Higdon, Senior Director of Auxiliary Services</td>
<td>334-244-3576</td>
</tr>
</tbody>
</table>

### BMP#1
- **Public Education**
  - Kenneth O. Jones, 334-244-3271
- **Public Involvement**
  - Kenneth O. Jones, 334-244-3271

### BMP#2
- **Illicit Discharge**
  - Dora Leigh Easterwood, 334-244-5441
- **Detection & Elimination**
  - Kenneth O. Jones, 334-244-3271

### BMP#3
- **Construction**
  - Daryl Morris, 334-244-3295
  - Michael Swicard, 334-244-3556

### BMP#4
- **Post Construction**
  - Daryl Morris, 334-244-3295
  - Michael Swicard, 334-244-3556

### BMP#5
- **Pollution Prevention**
  - Kenneth O. Jones, 334-244-3271
- **Good Housekeeping**
  - Leon Higdon, 334-244-3576
  - Dora Leigh Easterwood, 334-244-5441
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Introduction

This Annual Report was developed in accordance with the guidelines provided in Title 40 Code of Federal Regulations (CFR), Part 122.26(d) incorporated by reference in the Alabama Administrative Code 335-6 as administered by the Alabama Department of Environmental Management (ADEM) and NPDES ALR040062 Phase II General Permit effective October 1, 2016.

This Annual Report describes the compliance efforts reflected in the University’s Storm Water Management Program Plan (SWMPP) from April 1, 2019 through March 31, 2020.

The following is a list of representation from academic and campus operations who have contributed their expertise, experience and knowledge to this Annual Report.

Dora Leigh Easterwood  Grounds Manager
Darryl Morris  Director of Campus Services
Michael Swicard  Director of Facilities
John Aho  Associate Professor of Biology, Environmental Sciences, and GIS
Chelsea Ward  Professor of Biology, Environmental Sciences, and GIS
Leon Higdon, Jr.  Senior Director of Auxiliary Services

MS4 Description
Auburn University At Montgomery is located in Montgomery, Montgomery County, Alabama comprised of approximately 500 acres of property with an average population of 6,000.

Control Measures

The Permit requires BMPs to be implemented to address five minimum control measures to be part of the SWMPP. As required by Part III.B. of the Permit, the Annual Report will describe the University’s efforts performed during this reporting period to implement the established BMPs (Public Education & Public Involvement on Storm Water Impacts, Illicit Discharge Detection & Elimination, Construction Site Storm Water Runoff Control, Post Construction Storm Water Management in New and Redevelopments and Pollution Prevention / Good Housekeeping for Municipal Operations) and will include:
1. The status of AUM’s compliance with Permit conditions, an assessment of the appropriateness of the identified BMPs, and progress towards achieving the statutory goal for each of the minimum control measures.
2. Results of information collected and analyzed during this reporting period, including any monitoring data used to assess the success of the SWMPP at reducing discharge of pollutants.
3. A summary of storm water activities the University plans to undertake during the next reporting cycle.

BMP: Public Education & Public Involvement on Storm Water Impacts

A campus community will more likely support and comply with BMP provisions and storm water pollution prevention when educated and informed. The targeted “Public” audiences of the University’s SWMPP are AUM’s faculty, staff, students and visitors, which populate the campus on any given day.

AUM initiated the following activities during this reporting period:

Presentations and Events

Earth Day @ AUM (April 22, 2019) College of Liberal Arts and Social Sciences Earth Day

Miss Alabama Callie Walker visited AUM on Monday to “talk trash” as part of Earth Day @ AUM. Walker’s platform -- “Let’s Talk Trash” -- focused on building awareness of the three Rs -- reduction, reuse and recycling -- as a means of reducing environmental impact. The program was sponsored by AUM’s College of Liberal Arts & Social Sciences, SAGE Club, AUM E.C.O., AUM Honors Program and AUM Tri-Beta.

The AUMNIBUS(Theaumnibus.com) How to Liver Greener in College(October 14,2019)
Simple Changes to Reduce Your Carbon Footprint

Looking for easy ways to reduce your waste?

Living a green lifestyle may seem difficult at first thought, but it is more manageable than you think. As college students, we are faced with the difficulties of doing well in our classes, paying tuition, balancing our priorities and more. Thinking about our carbon footprint can easily fall to the back of our mind. Luckily, there are simple choices that can make a huge difference. They take little to no time—only a simple commitment is needed to keep our planet beautiful.

One of the main challenges I believe college students face is a busy schedule. After all, we all have lives outside the classroom. We often reach for whatever is quick and easy. This usually means we are consuming pre-packaged foods and single-use plastics. In other words, we are creating a lot of waste. Following the simple steps below can immediately cut out unnecessary waste.

1. Skip the straw, or invest in reusable ones

Most straw packages come with a convenient scrubber, making the cleaning process quick and easy.
Is a straw really a necessity? Once you train your mind to realize it is not a big deal, you will be surprised how many times you used one for no reason. Of course, you need a straw for thicker liquids, such as smoothies and milkshakes. There are a variety of straws you can easily carry with you anywhere. They range from foldable key chains to easy-to-wash metal straws. All you have to do when you are finished is wash out the straw.

Another perk is that you never have to worry about not having a straw when you leave a drive thru. Convenience will always be with you wherever you go.

The price is even better. For under $10, you can own your own personal straws. Places like amazon.com can have them delivered to you faster than ever. The turtles will thank you for sure!

2. **Switch to reusable silverware**

This cutlery set ensures you are ready to eat any meal.

Another easy way to cut out plastic is switching to reusable silverware. Do not worry—this does not mean carrying around your fancy forks and knives. Many places offer bamboo utensils that come in convenient packages. This makes it easy to place in your purse, car and backpack. Just like straws, all you have to do is wash them off when you are done.
Amazon.com and Etsy are just a few of the many places that carry reusable utensil packs. Prices range from $8-$30. Some of them even have straws included, so you have the best of both worlds!

3. **Forever say farewell to plastic water bottles**

With endless options available, you can have fun choosing the style of your water bottle.

Making sure you get your daily ounces of water is a must, but the plastic sure is not. Investing in a reusable water bottle will not only reduce your waste, but also save you money. Why pay for water when you can get it for free? On our campus, we have refill stations in almost every building. By simply purchasing a reusable bottle upfront, you never have to pay for a water bottle again.

You can purchase one of these bottles at almost any grocery store or retail store. You can find a variety of fun prints and colors. Many people like to decorate their bottles with vinyl stickers. This can easily become a creative project. Bottles even range in size, so if you want to get all of your daily ounces in one container, you can.
Starting your journey to reduce your carbon footprint really is as easy as one, two and three. Once you get into the habit of choosing a greener lifestyle, you will be pleased at how much progress you can make.

Water Festival 2020 was canceled due to Covid-19
The Clear Water Alabama Seminar and Field Day are offered by the Alabama Erosion and Sediment Control Partnership to help planners, designers, contractors, inspectors, and others learn more about erosion and sediment control practices and products.

**Partnership Members**
- AL Soil and Water Conservation Committee
- AL Associated General Contractors
- AL Association of Conservation Districts
- AL Chapter Soil and Water Conservation Society
- AL Department of Environmental Management
- AL Department of Transportation
- Auburn University
- Alabama Cooperative Extension System
- Home Builders Association of AL
- Natural Resources Conservation Service
- Weeks Bay National Estuarine Research Reserve

**Industry Sponsors (Tentative)**
- Alabama Power Company
- American Excelisor Company
- Erosion Pros, LLC
- Hanes Geo Components
- Hydro-Engineering Solutions
- J.W. Faircloth & Son, Inc.
- Midwest Construction Products
- Motz Enterprises, Inc.
- Pennington Seed, Inc.
- Southeast Environmental Consultants
- Sunshine Supplies, Inc.
- Thompson Engineering, Inc.
- Volkert, Inc.

**Who Should Attend:**
- Representatives from construction firms that utilize/install BMPs on their sites
- Professional Engineers
- Road Builders
- Representatives from firms that prepare erosion control/stormwater plans
- County and city engineers, planners, and/or their staff
- Representatives of local Home Builders Association and Associated General Contractors
- Representatives from the Alabama Department of Transportation
- Inspectors from the Alabama Department of Environmental Management
- Soil and Water Conservation District Boards and their field employees
- Municipal Officials
- Certified Professionals in Erosion and Sediment Control, Landscape Architects, Registered Soil Scientist, and other Qualified Credentialed Professionals
- Staff of the Natural Resources Conservation Service

For more information contact:
Earl Norton
Erosion & Sediment Control Program Coordinator
334-728-4107

**2019**
**Clear Water Alabama Seminar and Field Day**
Prattville, AL
October 23-24, 2019
Doster Community Center

**Spring to Action for Clear Water**

**Brought to you by:**
Alabama Erosion and Sediment Control Partnership

**Sponsored locally by:**
City of Prattville
Autauga County Conservation District
Autauga County Commission
Montgomery County Conservation District
City of Montgomery
AL Department of Transportation
October 23, 2019 - Seminar (6.0 PDHs)
7:00-8:00 am Registration/Exhibits
8:00-4:30 pm Seminar
4:30-5:00 pm AL Stormwater Association Business Meeting

Seminar Topics Include:
- Keynote: Spring to Action for Clear Water (Dr. Bill Deutsch)
- ADEM Regulation Update
- Protecting Water Quality During Construction
- LID and Green Infrastructure Case Studies
- Storm Protection Case Studies
- Auburn University ESC Test Facility Update
- Professional Ethics
- Status of Erosion and Sediment Control in AL

October 24, 2019 - Field Day (3.5 PDHs)
7:30 - 9:00 am Registration/Exhibits
8:00 - 9:00 am QCI Training*
9:00 - 4:00 pm Field Day Site Visits

*See footnote in the registration form for more detail about the QCI training. This is for HBAA certified QCI participants ONLY.

Lunch and Certificates of Training will be provided each day. Contact hours will be included on the Certificates of Training to reflect the continuing education units.

ALL FIELD DAY PARTICIPANTS WILL BE REQUIRED TO SIGN A WAIVER OF LIABILITY
Measure specific activities planned for the next reporting period
During this next reporting period, AUM plans to promote the goals of the storm water program to include at a minimum:

1. Host Montgomery County Water Festival
2. Promote sustainability initiatives (Appendix A)
3. Promote Student involvement
4. Utilize various media outlets to promote MS4

BMP: Illicit Discharge Detection & Elimination
Individuals can contact Campus Police 24 hours, 7 days a week by calling 334-244-3424, Facilities at 334-244-3232 as well as the Senior Public Safety Technician, Kenneth O. Jones at 334-531-6431 during normal business hours if there is a concern, question or relay an observation. Dry weather screening is performed on an annual basis on the outfalls identified on campus. Screening includes visual observations of flow, and infrastructure condition. The listing of outfalls evaluated this reporting period is included as an APPENDIX B to this report. Illicit Discharge Detection & Elimination (IDDE) training is provided annually.

The proper management of waste and the prohibition of illicit discharges on campus continued to be promoted by AUM through a variety of guidelines, standards and regulations.

• Medical Waste Guide
• Used Battery Management
• Used Oil Management (motor oil and cooking oil)
• Universal Waste Management
• Waste Chemical Management/Used Fluorescence Bulbs management

Scheduled pick ups from Satellite Accumulation Areas by US ECOLOGY, TAMPA INC.

Measure Specific Evaluation
Throughout this reporting period, AUM met the objectives of the Illicit Discharge Detection Elimination measure as defined in the University’s SWMPP.

Measure specific activities planned for the next reporting period
AUM will implement Illicit Discharge Detection and Elimination measures as defined in the University’s SWMPP.

During the next reporting period, the following activities are planned:
1. Provide training to the University community to increase the community’s level of awareness to pollution prevention.
BMP: Construction Site Storm Water Runoff Control
AUM’s Facilities Management is responsible for all construction projects on campus and implementation of this measure. AUM will evaluate construction sites and contractors shall demonstrate to AUM the requirements set by ADEM.

AUM Contractor responsibilities include:
• Providing AUM with proof of ADEM Registration for qualifying site

Measure specific activities planned for the next reporting period
During the next reporting period, the following activities are planned:

1. Provide training to AUM Facilities Managers.
2. Evaluate BMP
3. Seek opportunities to collaborate with local governments to offer training event to the public.

BMP: Post Construction Storm Water Runoff Control
Contractors shall demonstrate to AUM the requirements set by ADEM (There were no construction activities during this reporting period)

Measure specific activities planned for the next reporting period
Auburn University did not have any construction activities during this reporting period.

BMP: Pollution Prevention / Good Housekeeping
Facility Management’s Landscape Services has designated personnel which constantly monitor the campus on a daily basis removing debris from parking lots, streets, sidewalks, drains and curbs.

Storm Water Conveyance System Cleaning Program
AUM Grounds Services inspects all storm water conveyance outfalls routinely throughout the year. This is done after each heavy rain or storm activity. If any large limbs, trees, or debris are blocking the area, the blockage is removed as quickly as possible.
AUM conveyance system is comprised of many grass channels

Grass Channel

Description and Function of Structure

A grass channel is typically a broad and shallow vegetated channel with trapezoidal or parabolic geometry and a slight longitudinal slope, and is used to convey and treat stormwater runoff. A grass channel functions as a "biofilter" and is planted with grassy vegetation to filter and capture sediment to improve water quality.
A grass channel is commonly used as part of a “treatment train” approach to improve water quality. Depending on the design, a grass channel can also reduce stormwater runoff volume. A grass channel differs from the enhanced dry swale design because it does not have engineered filter media to promote additional pollutant removal and therefore has a lower pollutant removal rate than a dry or wet (enhanced) swale. A grass channel can partially infiltrate runoff from small storm events in areas with pervious soil.

**Inspection and Maintenance**

Inspections of grass channels should be conducted at least annually. The inspector will document observed conditions.

A grass channel may not have a structural inlet and flow may enter directly from the roadway via a filter strip.

**Inspect for trash, debris, and sediment:**
Remove trash and vegetative debris or sediment that has the potential to inhibit flow into the grass channel.

**Inspect for signs of erosion:**
Repair eroded areas by resodding or reseeding. Restore compacted fill, filter fabric, and rock riprap (if present). If erosion is a recurring problem, consult a design professional.

Identify and control the source of erosion damage if soil is exposed or erosion is evident in the channel bottom or side slopes.

**Inspect inlet and outlet pipes for damage or plugging:**
Repair or replace damaged piping if needed.
If plugged, remove material and identify and mitigate the source of sediment or debris.

**Inspect for trash or debris within the grass channel:**

Remove and properly dispose of trash and debris.

Inspect for areas of unhealthy grass cover, bare areas, or dying grass:

Inspect vegetative cover, which should be maintained at a coverage of 70 percent. Reseed and add topsoil to bare areas.

If due to unusually dry conditions, water where practical.

If compaction is a concern, aerate the soil using a core aerator that collects cores, or collect cores and dispose of the cores in an area that will not impact stormwater or receiving waters. Aerate only during times of the year when grass is actively growing.

If the problem persists, determine the source (e.g., soil, drainage) and perform appropriate corrective actions. Provide lime and one-time fertilizer application if needed.
**Post Construction Structures and Controls**

Post-construction structures is defined as those “designed for filtering and/or detention.” These structures/controls are engineered to filter, detain, and/or retain stormwater flows to allow the removal of pollutants prior to discharge into waterways. Post construction structures are designed to stay in place and treat runoff after an impervious surface is built, as opposed to temporary erosion control practices used during a construction project (e.g., silt fences, sediment basins). Post-construction structures will be identified, inventoried, and maintained.

Post-construction structures generally require annual inspections while more frequent routine inspections, such as after major storm events, may be required based on the location, past maintenance issues, or risk associated with safety or compliance with the MS4 Permit due to non-performance of a structure.

**External Maintenance Practices**

AUM will continue to perform (and will increase frequency when necessary) preventive maintenance measures to reduce sources of debris and sediment from entering stormwater systems. These preventive maintenance measures may include street (parking lot) sweeping efforts (by American Sweeping, Inc. 1549 Ohio Ferro Road l Montgomery, AL 36117 O 334.244.1099 I C 334.313.1099 I F 334.244.7774) to remove dirt, grit, and sediment from the parking lot and drainage system. This is performed twice a year.
During fall and winter months, Grounds Services remove leaves and other debris daily. Mowers equipped with Grass Handling Systems vacuum leaves and grass before it is introduced into a storm drain system. Mowers with mulching equipment help retain moisture and prevent soil erosion. These practices help reduce the problem of storm drain blockage.
AUM Grounds only use herbicides that carry aquatic labels that are sprayed around retention ponds or any other body of water.

**Spill Prevention Control & Countermeasure (SPCC) Program**

AUM maintains compliance efforts consistent with 40 CFR 112 and the University’s SPCC Plan. The SPCC Plan addresses the University’s program to manage oil and other petroleum products defined by 40 CFR 112.7(2) and 40 CFR 112.7(4). This includes the management of fuel oils, gasoline, lubricating oils, and hydraulic fluid as they are utilized and stored on AUM’s main campus. The University inspects all applicable containers (fuel tanks, generators, elevators and drums) monthly. Annual training is provided to oil handling personnel employed by AUM to promote the objectives of the SPCC Plan, the regulatory responsibility associated with these regulated materials and to address in-house procedures necessary to respond to spills or releases from them. During this reporting period, 8 employees were trained.

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<tr>
<th>Applicable SPCC containers</th>
<th>Number of Inspections</th>
<th>Volume of SPCC applicable oil (gallons)</th>
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</thead>
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<tr>
<td>Generators</td>
<td>12 Annually</td>
<td>2,279</td>
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<tr>
<td>Elevators</td>
<td>12 Annually</td>
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<tr>
<td>Underground Storage Tanks</td>
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</table>

**Used Oil Recycling Program**

AUM Facilities/Grounds collects over 25 gallons of used motor oil monthly which is pickup as needed. Throughout this reporting period approximately 300 gallons of used oil was collected.

**Used Cooking Oil Recycling Program**

AUM’s Dining Services collects and recycles all used cooking oil generated from the University’s dining facilities. During this reporting period approximately 2000 gallons of used cooking oil was collected under contract with Filta Environmental Kitchen Solutions.

**Measure Specific Evaluation**

The University’s management practices waste minimization and promotes recycling. The university has sound practices to manage equipment and operations to minimize releases to the environment.

**Measure specific activities planned for the next reporting period**

AUM will continue to perform and promote pollution prevention good housekeeping management practices.
Part III.B.5.a. of the Permit requires AUM to inventory “municipal facilities” including municipal facilities that have a potential to discharge pollutants via storm water runoff.

**Inventory of Municipal Operations**

<table>
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<tr>
<th>Facilities Building</th>
<th>Chilled Water Plant 1</th>
<th>Chilled Water Plant 2</th>
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<tbody>
<tr>
<td>The Café</td>
<td>Campus Roads</td>
<td>Campus Parking Lots</td>
</tr>
<tr>
<td>Softball Complex</td>
<td>Soccer Complex</td>
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Appendix A

Sustainability Initiative
Prior to its purchase by the state of Alabama and Auburn University in the late 1960s, the approximately 500 acres that would eventually become Auburn University at Montgomery (AUM) were agricultural fields. In the 19th century, the Oliver, Brown, and McLemore families owned these lands. By the turn of the 20th century, their lands had combined through marriages, creating the approximately 7,000-acre McLemore Plantation, which operated through the 1960s. While the McLemores owned the land, as seen in much of Alabama and the Southeast after the Civil War, sharecroppers and tenant farmers actually cultivated much of that land, well into the mid-20th century.

While an unknown number of tenant farmers lived and worked on the future AUM lands, the 1958 USGS topo map (Figure 1) indicates seven structures, likely tenant houses, within the current AUM boundaries. Five of these structures would have been located in the forested area of campus that today includes a system of nature trails. One of the houses survives, although it is in a state of disrepair (Figure 2). Based on the construction materials used, namely machine-made bricks and wire nails, the house dates to the 20th century. Faux brick asphalt siding, very common in the 1930s, still covers many exterior walls, while newspapers dating from the late-1920s through the 1930s, line the interior walls. Archaeological testing conducted by AUM students and faculty, provides evidence that people lived in the cabin from the 1930s through the 1960s, likely up until the time of AUM’s founding. AUM students and faculty have also identified a second tenant house site. The only above ground evidence of this house is a brick chimney hearth. However, archaeological excavations around the chimney resulted in the recovery of hundreds of artifacts related to domestic activities (Figures 3 and 4). Similar to the extant structure, artifacts recovered from the “hearth site” indicate an occupation date of the 1930s through the 1960s.

We will likely never know the names of the individuals that lived at these sites; however, we have learned other information about them. Although both whites and blacks comprised the Alabama and Southeast tenant farmer population, there is sufficient evidence that the occupants of this particular site were of African descent. In the 1930 and 1940 US Censuses, the race of individuals who lived in the immediate vicinity of the McLemores were “negro” or “black” farmers who rented their houses. Additionally, the distribution of artifacts around the house indicates traditional yard sweeping, a practice that originated in West Africa and brought to the New World by enslaved peoples. This practice continued through at least the mid-20th century as evidenced by descriptions and photographs of black tenant farmer house sites. Additionally, yard sweeping has been identified archaeologically by a variety of methods, including low artifact concentrations immediately around a structure, such as seen here.

Furthermore, the walls and ceilings of one of the rooms in the extant cabin is painted in a color of blue often referred to as “haint blue” (Figure 5). This color is significant as it stems from West African spiritual traditions that believe the blue color protects houses against “haints,” or evil spirits and curses. The practice of painting doorways, windows, and even entire rooms in “haint blue” continued post-Emancipation and is still used today among Gullah and Geechee people of the South Carolina and Georgia lowcountry.

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1 The history of AUM’s campus was written by Dr. Kimberly Pyszka, Chair of the Sociology, Anthropology and Social Work Department.
Currently AUM maintains ~250 acres of forest containing a network of nature trails designed through a partnership between the girl scouts and faculty. Adjacent to the forest is a ??? acres wetlands and watersheds that feeds into Oliver creek, as well as black belt prairie, and native hardwood bottom land. AUM has a small-scale restoration project, of the wetland area that filters storm runoff from the parking lot to a retention pond. Oliver creek was badly channeled during the construction of campus in the 1960s and now provides a sharp boundary between the forest and watershed. The creek overflows during periods of rain but lies dry most of the time. Figure 6 shows a schematic of campus. Figure 7 is a photo of the flood plane as it exists today.

**Community Need.** The Montgomery public schools have few affordable educational venues for ecology related experiential field trips. A legacy of failed integration policies, the science lab infrastructure of the public schools are under-resourced, and antiquated. Alabama has developed some programs to address these needs. The Alabama Math Science and Technology Initiative provides resources to elementary teachers, but schools have to buy into the program. Alabama Science in Motion provides science curriculum and equipment free of charge to high-school teachers, but much of the curriculum requires access to safe outdoor spaces, unavailable to urban schools. Green spaces in and around Montgomery are either highly manicured (Shakespeare Park), distinctly lacking in native plants (Lagoon park), or come with a prohibitive entrance fee (Lanark). Surprisingly, the city of Montgomery does not have a nature center. There was once an arboretum owned and operated by MPS, but it has since closed. This leaves the portion of our community most in need, without a space or opportunity to learn about their natural environment and with no opportunity to learn about the importance and need for native natural space, the history of the land in Montgomery, and why sustaining and restoring the land is so important.
Our Vision. Our vision is to share AUM’s green space and rural history with the community through the creation of the AUM Rural History and Nature Center. The AUM Rural History and Nature Center will be managed with the help of an advisory board. The board will consist of people with an active interest in developing the center. We will include members from AUM, community partners, representatives from local schools and state regulatory groups, and local government.

Project Phases:

1. The Nature Preserve: Currently AUM has approximately 250 acres of forest containing a network of nature trails designed by a partnership between the girl scouts and faculty. The new nature ecology research center will include non-destructive pathways, trails and boardwalks with educational signage to educate visitors on the, history, land uses and proposed evolution of the area.

   Restore Native Habitat: AUM’s campus includes wetlands and watersheds that feed to Oliver creek, black belt prairie, and native hardwood bottom. Currently we have a small-scale restoration project, a wetland filtering storm runoff from the parking lot to a retention pond.

   The Nature Preserve will include a wetland restoration of our floodplain with boardwalks that allow visitors to examine the native plants of the restored ecosystem. Interactive educational signage as well as virtual signage will be installed along the forest trails and boardwalks allowing guests and instructors access to a living classroom and laboratory.

   In addition to wetland restoration, we would like to restore the portion of Oliver Creek running through campus. The biology department at AUM has three faculty who have expertise relevant to this project. The restorations project will be tied to course work on campus, and will provide opportunities for community partnerships, government partnerships, and programming for local schools.

Community Center: Community activities will include workshops, educational seminars and support for local ecology group activities such as exotic species removal, succession activities, and erosion remediation. The advisory board will also facilitate small group programing to allow community use of the forest. We also imagine creating an app that will allow guests to take virtual tours of the nature center.

2. The Rural History and Nature Teaching Center: We will build an environmentally appropriate outdoor laboratory-classroom to be used for classes, workshops, fieldtrips, and community meetings. It will used to offer programming for public schools and the community, including much needed summer programming.

   It is also important to note that the forest houses the remnants of several sharecropper houses. Faculty in the departments of history and archeology already use these sites for educational activities. Our project will tie urban ecology research with historical land use history and ecology research.

3. Create/Build a Community Laboratory (possibly in the renovated State Lab Building) that can be used by public schools, home schools, and the community. This space will be designed primarily for group research activities with the assistance of faculty on campus. The concept for this space will follow the “maker space” model seen in many urban settings. The Community Lab will be a well stocked lab with a manager who facilitates laboratory activities, and the research/teaching goals of local community members.
Appendix B

Illicit Discharge
Detection and Elimination
<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Observation</th>
<th>Contaminant /Source Activity</th>
<th>Complaint Y/N</th>
<th>Samples Y/N</th>
<th>Corrective Measures Taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/30/2019</td>
<td>Behind Goodwyn Hall</td>
<td>milky white water</td>
<td>floor stripper</td>
<td>No</td>
<td>No</td>
<td>Rinsing Floor stripping Pads. Contacted maintenance to cease action</td>
</tr>
<tr>
<td>11/18/2019</td>
<td>Under Moore Hall Driveway</td>
<td>milky white water</td>
<td>building wash</td>
<td>No</td>
<td>No</td>
<td>Contacted Contractor, and the action ceased. Contractor diluted with clear water.</td>
</tr>
</tbody>
</table>
Appendix C

Campus Map with Outfall IDs
Appendix D

Stormwater Management Program Plan
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INTRODUCTION

This Storm Water Management Program Plan (SWMPP) was developed in general accordance with the guidelines provided in Title 40 Code of Federal Regulations (CFR), Part 122.26(d) incorporated by reference in the Alabama Administrative Code 335-6 as administered by the Alabama Department of Environmental Management (ADEM) and NPDES ALR040030 Phase II General Permit effective October 1, 2016.

The purpose of this SWMPP is to describe AUM and its operation, and identify the Best Management Practices (BMPs) to be utilized to reduce the discharge of pollutants from AUM’s main campus to the maximum extent practicable (MEP) to protect water quality and to satisfy the appropriate water quality requirements of the Clean Water Act (CWA).

The Storm Water Committee formed to develop this SWMPP is comprised of individuals from both academic and operational areas of campus. The collaborative effort was strengthened by its diversity and includes the following individuals and their areas of responsibility or interest:

Kenneth O Jones, Senior Public Safety Technician  334-244-3271
Brenda Mitchell, Director of Police Operations  334-244-3464
Daryl Morris, Chief Campus Services Officer  334-244-3295
Michael Swicord, Director of Facilities  334-244-3140
Dora Leigh Easterwood, Grounds Manager  334-244-5441
Leon Higdnon, Senior Director of Auxiliary Services  334-244-3576
Objective

The primary goal of the developed SWMPP is to improve the quality of surface waters at AUM by reducing the amount pollutants contained in storm water runoff to a maximum extent practicable (MEP). AUM will seek to reduce the pollutants from entering storm water runoff through the implementation of best management practices. The SWMPP will describe the minimum best management practices to be implemented by Auburn University and as required by ADEM General Permit ALR040030 (effective date October 1, 2016).

1.1 MS4 Description

AUM is an educational institution located in Montgomery, Montgomery County, Alabama comprised of approximately 500 acres. The area surrounding AUM consists of Taylor Road, Interstate I-85, Bell Road and residential areas.

1.2 Definitions

ADEM: Alabama Department of Environmental Management is responsible for enforcing environmental regulations in the State of Alabama.
**Best Management Practices (BMP):** may include schedule of activities, prohibition of practices, maintenance procedures or other management practices to prevent or reduce the pollution of Waters of the State. BMPs also include treatment requirements, operating procedures and practices both structural and non-structural designed to control runoff, spillage or leaks, sludge or waste disposal or drainage from raw material storage.

**Clean Water Act (CWA):** The Clean Water Act is an Act passed by U.S. Congress to control water pollution. It is formally referred to as the Federal Water Pollution Control Act of 1972 or Federal Water Pollution Control Act Amendments of 1972.


**Composite Sample:** A sample collected with consideration giving towards flow and time.

**Control Measure:** any Best Management Practice or other method used to prevent or reduce the discharge of pollutants to Waters of the State.

**Discharge:** when used without a qualifier, refers to "discharge of pollutant" as defined as ADEM Admin Code 335-6-6-.02(m)

**EPA:** Environmental Protection Agency

**Grab Sample:** A sample that is taken on a one-time basis without consideration of the flow rate of the sampling media and without consideration of time.

**Green Infrastructure:** refers to systems and practices that use or mimic natural processes to infiltrate, evapotranspiration (the return of water to the atmosphere either through evaporation or by plants), or reuse storm water or runoff on the site where it is generated.

**Illicit Connection:** any man made conveyance connecting an illicit discharge directly to municipal separate storm sewer (MS4)
Illicit Discharge: defined at 40 CFR 122.26(b)(2) and refers to any discharge to a municipal separate storm sewer (MS4) that is not entirely composed of storm water, except those discharges authorized or excluded under an NPDES permit.

Low Impact Development (LID): an approach to land development (or redevelopment) that works with nature to manage storm water as close to its source as possible. LID employs principles such as preserving and recreating natural landscape features, minimizing effective imperviousness to create functional and appealing site drainage that treat storm water as a resource rather than a waste product.

Maximum Extent Practicable (MEP): the technology based discharge standard for municipal separate storm sewer systems to reduce pollutants in storm water discharges that was established by the Clean Water Act (CWA) Section 402(p). A discussion of MEP as it applies to small MS4s like AUM is found at 40 CFR 122.34

Municipal Separate Storm Sewer System (MS4): A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man made channels, or storm ditches) owned or operated by a state, city, town or other public body having jurisdiction over the collection and conveyance of storm water which is not a combined sewer and which is not part of a publicly owned treatment works.

Notice of Intent (NOI): the mechanism used to "register" for coverage under a General Permit.

National Pollutant Discharge Elimination System (NPDES): The national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits and imposing and enforcing pretreatment requirements under Section 307, 318, 402 and 405 of the CWA.

Permit: NPDES ALR040062 issued to AUM & became effective October 1, 2016.

Permittee: Auburn University at Montgomery
**Priority Construction Site:** any qualifying construction site in an area where the MS4 discharges to a waterbody which is listed on the most recently approved 303d list of impaired waters for turbidity, siltation or sedimentation, any waterbody for which a TMDL has been finalized or approved by EPA for turbidity, siltation or sedimentation, any waterbody assigned the Outstanding Alabama Water use classification in accordance with ADEM Admin Code 335-6-10-.09 and any waterbody assigned a special designation in accordance with 335-6-10-.10

**Storm water:** defined at 40 CFR 122.26(b)(13) storm water runoff, surface runoff and drainage

**Storm Water Management Program Plan (SWMPP):** A plan developed for implementation of NPDES permit requirements.

**Waters of the State:** All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce. Waters of the State include but are not limited to all interstate waters and interstate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, wetlands, sloughs, play lakes or naturals ponds.

**CONTROL MEASURES**

Storm water management controls or BMPs will be implemented to prevent pollution in storm water discharges from AUM. The Permit requires
BMPs addressing five minimum control measures to be part of the SWMPP. These BMPs are described in the remaining subsections of this section with applicable measurable goals and scheduled implementation dates for each BMP.

The five control measures addressed by this SWMPP include:

2.1 Public Education and Public Involvement on Storm Water Impacts
2.2 Illicit Discharge Detection and Elimination
2.3 Construction Site Storm Water Runoff Control
2.4 Post Construction Storm Water Management in New and Redevelopment
2.5 Pollution Prevention / Good Housekeeping for Municipal Operations

2.1 Public Education and Public Involvement on Storm Water Impacts

An informed and knowledgeable “community” at AUM will be an important factor in the success of this SWMPP to reach its goal of reducing the discharge of pollutants associated with storm water runoff. The effective implementation of this measure will help AUM to ensure:

1) Greater awareness to the University community of the importance of managing discharges to local receiving waters;
2) Greater support from the University community for the storm water management program; and
3) Greater compliance with the requirements of the General NPDES Permit.

The Public Education and Public Involvement on Storm Water Impacts control measure consists of BMPs that focus on the development of educational materials and efforts designed to inform the public about the impacts that storm water discharges have on local water bodies and to foster community partnerships that provide opportunities for stakeholders to learn more about storm water practices and policies, demonstration projects and assessments of local water quality.

Educational materials, activities and partnerships will be designed to engage the public to better understand the impacts of storm water pollution, local MS4 efforts as well as to highlight and support measures to reduce the introduction of pollutants in storm water.
The measure is expected to reach the constituents within the MS4s permitted boundary. An emphasis of these outreach efforts will be towards the removal of known pollutants from storm water to include: floatables, pathogens and sediment.

A plan for effectively engaging in Public Education and Public Involvement on Storm Water Impacts is presented below as required by the Permit.

**Target Audience**
AUM has a unique opportunity to reach several distinct target audiences throughout the year. These audiences include AUM faculty and staff, students, parents of students, visitors, contractors on campus, and surrounding community stakeholders.

**Pollutants of Concern**
Primary storm water pollutants of concern for AUM include litter from improper trash disposal, and sediment from land disturbing activities and in-stream erosion processes.

**Communication Mechanisms**
Communication of storm water pollution prevention principles will include the following mechanisms: AUM web sites, interactive campus storm water BMPs, inclusion of storm water and stream information on signage in strategical locations on campus, presentations to students, and participation in university-led activities.
Responsible Parties
The Public Education and Outreach measure development and implementation will be overseen by a partnership between the University's Public Department and the School of Science.

Measurable Outcomes and Evaluation
Effectiveness of the activities related to this measure will be measured through:

1. Number of presentations delivered – AUM SWMPP with partner with other departments.
2. Strategic Communications maintains the webpage to serve as primary reference site for the updated University SWMPP.
3. Quantify the number of individuals reached through University led activities throughout each reporting cycle. Audience includes students, staff, employees and visitors to AUM.

2.2 Illicit Discharge Detection and Elimination
Per the Permit, an Illicit discharges is defined at 40 CFR Part 122.26(b)(2) and refers to “any discharge to an MS4 (municipal separate storm sewer system) that is not composed entirely of storm water ...” Exceptions include NPDES permitted discharges and discharges resulting from fire-fighting activities. Some examples of illicit discharges include: sanitary wastewater, effluent from septic tanks, car wash wastewaters, improper oil disposal, and radiator flushing disposal, laundry wastewaters, and spills from roadway accidents, and swimming pool discharges (that have not been de-chlorinated). These illicit discharges can enter a storm drain system either through a direct connection (e.g., a pipe connected directly to the storm drain) or indirectly (e.g., spills, dumped chemicals, cracks in sanitary sewers). As a result, inadequately treated wastes containing high
levels of pollutants, such as heavy metals, oil and grease, toxics, viruses, and bacteria, are discharged to receiving waters.

Regulations require identification and elimination of all non-storm water discharges and appropriate responses to protect the campus community and the environment. The following discharges are not considered illicit and are not regulated under this minimum control measure:

A. Water line flushing (including fire hydrant testing)
B. Landscape irrigation
C. Diverted stream flows
D. Rising ground waters
E. Uncontaminated ground water infiltration (infiltration is defined as water other than wastewater that enters a sewer system, including sewer service connection and foundation drains, from the ground through such means as defective pipes, sewer service connections or manholes.)
F. Uncontaminated pumped ground water
G. Discharges from potable water sources
H. Foundation drains
I. Air conditioning condensation
J. Springs
K. Water from crawl space pumps
L. footing drains
M. Flows from riparian habitats and wetlands
N. De-chlorinated swimming pool discharges
O. Street wash water
P. Discharges or flows from fire fighting

AUM relies upon multiple methods to identify illicit discharges as quickly as possible. All potential illicit discharges should be reported to AUM Campus Police upon discovery. Discovery and reporting methods include reports conveyed from the campus community to the University’s Campus Police by dialing 334-244-3424.
Reports might originate from faculty, staff, students, or campus visitors. In particular, AUM staff with specific training on illicit discharge identification will increase the probability of proper and timely reporting.

Investigation of illicit discharges will commence as soon as practicable but always within 5 working days of the initial discovery or report. Investigation and mitigation measures are implemented upon detection to identify possible source(s) of illicit discharges and to either prevent or reduce adverse impacts to storm water runoff and the environment. A written report will be prepared to document each illicit discharge investigation. Reports will include the nature of the discharge, possible sources, mitigation or cleanup measures implemented, any steps taken to prevent similar discharges in the future, and documentation of any ADEM reporting required.

**Target Audience**
Audiences include AUM faculty and staff, students, parents of students, visitors, contractors on campus, and surrounding community stakeholders.

**Responsible Parties**
The Illicit Discharge Detection & Elimination measure development and implementation will be overseen by a partnership between the AUM Facilities Management and the Department of Public Safety.

**Measurable Outcomes and Evaluation**

1. Update map of all campus storm water outfalls. As required by Section III(b)(i) of the Permit, AUM will provide annual updates of the map to ADEM by May 31st each year.
2. Promote illicit discharge detection and elimination program in annual training efforts.
3. Perform and document routine outfall field inspections.
4. Continue to evaluate recently completed storm water system model and develop a prioritized schedule for repairs and maintenance.

AUM
Illicit Discharge Detection and Elimination
Standard Operating Procedure

1. Purpose of Standard Operating Procedure:
A. To improve the quality of surface water and ground water within the watershed areas owned and maintained by AUM by preventing illicit discharges and illicit connections.
B. To prevent the discharge of contaminated storm water runoff from AUM properties and operations into the storm drainage system and Oliver Creek.
C. To comply with the requirements of AUM storm water permit.
D. To comply with all United States Environmental Protection Agency and State laws applicable to storm water discharges.

2. Definitions
An Illicit Discharge is the discharge of pollutants or non-storm water materials to the storm drainage system via overland flow or direct dumping of materials into a catch basin or inlet. Examples of illicit discharges include overland drainage from car washing or cleaning paint brushes in or around a catch basin.
An Illicit Connection is the discharge of pollutants or non-storm water materials into the storm drainage system via a pipe or other direct connection. Sources of illicit connections may include sanitary sewer taps, wash water from laundry facilities, wash water from sinks, or other similar sources.

3. Illicit Discharges
No University employee, student, visitor, contractor, department, or unit shall cause or allow discharges into the AUM storm drainage system
which are not composed entirely of storm water, except for the allowed discharges listed in Section 5.

Prohibited discharges include but are not limited to: oil, anti-freeze, grease, chemicals, wash water, paint, animal waste, garbage, and litter.

4. Illicit Connections

The following connections are prohibited, except as provided in Section 5 below:

Any drain or conveyance, whether on the surface or subsurface, which allows any non-storm water discharge, including but not limited to sewage, process water, waste water, or wash water, to enter the storm water drainage system, and any connections to the storm drain system from indoor drains or sinks.

5. Allowed Discharges

The following discharges to the storm drainage system are allowed:

A. Discharges that are specifically permitted under a State or federal storm water program.

B. Incidental non-storm water discharges which do not significantly contribute to the pollution of AUM surface waters and are limited to the following:

- water line flushing;
- reclaimed water line flushing;
- landscape irrigation, including but not limited to reclaimed water;
- diverted stream flows;
- rising groundwater;
- uncontaminated groundwater infiltration;
- uncontaminated pumped groundwater;
- discharges from potable water sources;
- foundation drains;
- air conditioning condensate (that does not contain biocide);
- springs;
- water from crawl space pumps;
- footing drains;
- flows from riparian buffers and wetlands;
- dechlorinated swimming pool discharges;
- flows from emergency firefighting; and
- building wash water without detergents, cleaners, or corrosive additives.
C. In the event that AUM determines that any of the above discharges contribute to pollution of campus streams or other surface waters or is notified by a State or federal government agency, such as the Alabama Department of Environmental Management, that the discharge must cease, AUM will instruct the responsible person to cease the discharge.

D. When instructed to cease the discharge, the discharger of substances newly classified as pollutants shall cease the discharge immediately and be given reasonable time to make corrections so that the discharge will not continue into the future.

E. Nothing in this SOP shall affect a discharger’s responsibilities under federal or State law.

6. Enforcement and Penalties

A. Whenever AUM finds that a violation of this SOP has occurred; AUM may order compliance by written notice to the responsible person. Such notice may require without limitation:
   i. The performance of monitoring, analyses, and reporting;
   ii. The elimination of prohibited discharges or connections;
   iii. Cessation of any violating discharges, practices, or operations;
   iv. The abatement or remediation of storm water pollution or contamination hazards and the restoration of any affected property;
   v. Payment of any fee, penalty, or fine assessed against AUM to cover remediation cost;
   vi. The implementation of new storm water management practices; and
   vii. Disciplinary action up to and including dismissal, where appropriate.

B. Such notification shall set forth the nature of the violation(s) and establish a time limit for correction of these violation(s). Said notice may further advise that, if applicable, should the violator fail to take the required action within the established deadline, then AUM Safety will initiate work orders for the appropriate corrective actions and the individual or University department will be charged for the cost.

7. Dry weather outfall inspection and monitoring

AUM shall, at a minimum, visually inspect outfalls annually during dry weather conditions. Flows suspected of containing illicit discharges due to the presence of odors, colors or sheens shall be investigated.
Investigations will be outsourced to a 3rd party testing facility. Upon source discovery, measures will be implemented to cease discharge immediately as possible. Should immediate cessation not be practicable, a schedule will be developed. Should the source of discharge be determined to originate off campus, the MS4 community having jurisdiction will be notified within 24 hours as well as ADEM. The physical condition of the outfall shall also be noted during the inspections. Compromised outfall structures requiring maintenance will be documented with a work order to correct noted deficiency.

8. Promote Illicit Discharge Detection & Elimination SOP Promotion of this SOP shall be presented to AUM Grounds and Maintenance Departments to include new employees through personnel training.

**Construction Site Storm Water Runoff Control**

July 8, 2018, AUM had to be in compliance and have not had any construction after that date to present.

2.3

In accordance with Part III (B) (4) of NPDES Permit No ALR040062, AUM University developed the Construction Site Storm Water Runoff Control Best Management Practice.

**Target Audience**

The Construction Site Runoff Control Program was developed for the contractors performing construction activities on campus and to assist AUM Facilities Management personnel responsible for managing development on campus. AUM has an opportunity to reach several distinct target audiences throughout the year. These audiences include AUM faculty and staff, students, parents of students, visitors, contractors on campus, and surrounding community stakeholders.
Responsible Parties

Daryl Morris, Chief Campus Services Officer, is responsible for all construction projects on campus and implementation of this measure.

AUM will utilize Auburn University's Design and Construction Standards as the University's regulatory mechanism for the Construction Storm Water Control Program.

Section G10 – Site Preparation

http://www.auburn.edu/administration/facilities/contractors/design-const-standards.html

Section G10 of the Design and Construction Standards was modified to provide the Contractor a contractual responsibility to meet the objectives of the General NPDES Permit. This section requires that the Contractor:

- Meet the requirements outlined in the Alabama Handbook for Erosion and Sediment Control and Storm Water Management of Construction Sites and Urban Areas and the ALOA developed Erosion and Sediment Control Policy.
- Demonstrate compliance with the ADEM registration requirements prior to initiating any earthwork at the site.
- Require turbidity monitoring at specified construction sites to ensure that site runoff not result in an increase of 50 NTU turbidity standards.
2.4 Post Construction Runoff Control

The post construction runoff control measure is designed to ensure that new construction designs do not result in increased storm water pollution.

Development can alter landscapes by increasing impervious areas (i.e. roofs, driveways, parking lots) and changing drainage patterns, thereby increasing the storm water rate, volume and velocity of runoff from a site. This can lead to degradation of receiving waters and increases in the occurrence of flooding. Storm water from developed impervious areas can also contain a variety of pollutants that are detrimental to water quality, such as sediment, nutrients, heavy metals, pathogenic bacteria, and petroleum hydrocarbons.

The goal of post-construction storm water management is “to reduce runoff volume and improve water quality by replicating the natural hydrology and water balance of the site, based on historical conditions and undeveloped ecosystems in the region. New projects on campus shall address water quality and quantity impacts early in the design process to provide long-term water quality benefits. The implementation of Green infrastructure BMP designs that reduce impervious surfaces, provide water filtering services and encourage infiltration is preferred. New projects offer many opportunities to reduce storm water runoff from the site.
The Design and Construction Standards performance requirements state a project is to not increase peak storm water flows for the 2, 5, 10, and 25 year storm events as well as provide water quality treatment for the first 1.2 inches of rainfall with an 80 percent Total Suspended Solids (TSS) reduction goal. Projects are also encouraged to reduce overall storm water runoff volume by reducing impervious cover campus wide and promotion of infiltration.

1. All new and redeveloped AUM properties shall develop a storm water management plan to comply with the Design and Construction Standards. A report documenting the implementation or consideration of Low Impact Development and Green Infrastructure shall be reviewed per the Post Construction Storm water Manual by Facilities Management.

2.5 Pollution Prevention / Good Housekeeping for Municipal Operations

Part III.B.5.a. of the Permit requires AUM to inventory "municipal facilities" including municipal facilities that have a potential to discharge pollutants via storm water
runoff, develop strategies to reduce litter, floatables and debris from entering the storm sewer system from these facilities, develop SOPs detailing good housekeeping practices to be employed at the appropriate municipal facilities, develop an inspection program to evaluate these operations and to develop a good housekeeping training program for municipal facility staff as outlined in the SOP.

Inventory of Municipal Operations

Facilities Building    Chilled Water Plant 1  Chilled Water Plant 2  The Cafe
Campus Roads          Soccer Complex       Campus Parking       Softball Complex

Measureable Outcomes & Evaluation:
1. Quantify the amount of floatable materials collected as a result of the successful implementation of the BMPs at these municipal facilities.
2. Quantify the number of “municipal facility” inspections performed.
3. Provide pollution prevention annual training to municipal facility personnel.
4. Revise and update "municipal facility" inventory annually.

BMP Development & Implementation Schedule:
1. Development of SOP for municipal facilities by March 31, 2020. SOP will include inspection frequencies and documentation mechanism.

Responsible Department:
Auburn University at Montgomery Facilities
Spill Prevention Control and Countermeasure (SPCC) Program
AUM RMS has developed and maintains the campus SPCC Plan. The Plan calls for the proper storage and management of oil containing equipment. The SPCC Plan identifies the procedures to be followed to regularly (monthly) inspect applicable containers and instructs "oil handling personnel" on the appropriate measures to take in the event of a spill.

Measurable Outcomes and Evaluation:

1. Document the number of inspections performed on regulated storage units on an annual basis (SPCC).
2. Document the number of preventive maintenance procedures performed on tanks, valves, pumps, pipes, and other equipment.
3. Document the number of training presentations performed and the number of employees trained annually.
4. Document the annual volume of used oil managed by AUM.

Responsible Department:
AUM Facilities Management
REVIEW AND UPDATING SWMPP

AUM will review the SWMPP annually in conjunction with the preparation of the annual report required under Part IV, Section B of the General Permit.

The annual report will be submitted to the ADEM for each year of the permit term. Reports are due to ADEM by May 31st of each year and will cover activities for the previous reporting period (April 1- March 31).

The reports consist of:

- Compliance status including:
  - Assessment of the appropriateness of the BMPs
  - Progress towards achieving statutory goals of reducing the discharge of pollutants and protecting water quality
  - Measurable goals for each of the minimum control measures

- Results of information collected and analyzed, if any, during the reporting period.

- Any changes made to the SWMPP since the last annual report and a summary of the storm water activities AUM plans to initiate during the next reporting cycle.

- Proposed changes to the SWMPP

- Description and schedule for implementation of additional BMPs that may be necessary based on monitoring results.
Appendix E

Outfall Annual Inspections
OUTFALL RECONNAISSANCE INVENTORY FIELD SHEET

Section 1: Background Data

Subwatershed: Oliver Creek
Outfall ID: OF1

Today's date: 12/17/2019
Time (Military): 0800

Investigators: Kenneth Jones
Form completed by: Kenneth Jones

Temperature (°F): 50
Rainfall (in.): Last 24 hours: Last 48 hours:

Latitude: 32.372294
Longitude: -86.184343
GPS Unit:
GPS LMK #:

Camera:

Near AJM Drive

Section 2: Outfall Description

LOCATION

☐ Closed Pipe
☐ Open drainage

MATERIAL

☐ RCP ☐ CMP
☐ PVC ☐ HDPE
☐ Steel
☐ Other: ________

SHAPE

☐ Circular ☐ Eiliptical
☐ Box ☐ Triple
☐ Other: ________

DIMENSIONS (IN.)

Diameter/Dimensions: ______________

In Water:
☐ No
☐ Partially
☐ Fully

With Sediment:
☐ No
☐ Partially
☐ Fully

Depth: 4.6 ft
Top Width: 12 ft
Bottom Width: 6 ft

☐ In-Stream
(applicable when collecting samples)

Flow Present? ☐ Yes ☐ No
If No, Skip to Section 5

Flow Description
(If present) ☐ Trickle ☐ Moderate ☐ Substantial

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>RESULT</th>
<th>UNIT</th>
<th>EQUIPMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Flow #1</td>
<td>Volume</td>
<td>Liter</td>
<td>Bottle</td>
</tr>
<tr>
<td>Time to fill</td>
<td>Sec</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Flow #1</td>
<td>Flow depth</td>
<td>6</td>
<td>In</td>
</tr>
<tr>
<td>☐ Flow #1</td>
<td>Flow width</td>
<td>6' 0&quot;</td>
<td>Ft, In</td>
</tr>
<tr>
<td>☐ Flow #1</td>
<td>Measured length</td>
<td>____, ____</td>
<td>Ft, In</td>
</tr>
<tr>
<td>☐ Flow #1</td>
<td>Time of travel</td>
<td></td>
<td>S</td>
</tr>
<tr>
<td>☐ Flow #1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Flow #1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>°F</td>
<td>Thermometer</td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>----------</td>
<td>-----------------</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>pH Units</td>
<td>Test strip/Probe</td>
<td></td>
</tr>
<tr>
<td>Ammonia</td>
<td>mg/L</td>
<td>Test strip</td>
<td></td>
</tr>
</tbody>
</table>
Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only
Are Any Physical Indicators Present in the flow? ☑ Yes ☒ No (If No, Skip to Section 5)

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>CHECK if Present</th>
<th>DESCRIPTION</th>
<th>RELATIVE SEVERITY INDEX (1-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odor</td>
<td></td>
<td>Sewage ⬜</td>
<td>Petroleum/gas ⬜</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sulfide ☐</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rancid/sour ☐</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other: ☐</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td></td>
<td>Clear ☐</td>
<td>Brown ☐</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green ☐</td>
<td>Gray ☐</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Orange ☐</td>
<td>Red ☐</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other: ☐</td>
<td></td>
</tr>
<tr>
<td>Turbidity</td>
<td>☑</td>
<td>See severity</td>
<td>1 – Slight cloudiness</td>
</tr>
<tr>
<td>Floatables</td>
<td>☐</td>
<td>Sewage (Toilet Paper, etc.) ☐</td>
<td>Suds ☐</td>
</tr>
<tr>
<td>-Does Not Include Trash!!</td>
<td></td>
<td>Petroleum (oil sheen) ☐</td>
<td>Other: ☐</td>
</tr>
</tbody>
</table>

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls
Are physical indicators that are not related to flow present? ☑ Yes ☒ No (If No, Skip to Section 6)

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>CHECK if Present</th>
<th>DESCRIPTION</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outfall Damage</td>
<td>☑</td>
<td>Spalling, Cracking or Chipping ☐</td>
<td>Peeling Paint</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Corrosion</td>
<td></td>
</tr>
<tr>
<td>Deposits/Stains</td>
<td>☑</td>
<td>Oily ☐</td>
<td>Flow Line ☐</td>
</tr>
<tr>
<td>Abnormal Vegetation</td>
<td>☑</td>
<td>Excessive ☐</td>
<td>Inhibited</td>
</tr>
<tr>
<td>Poor pool quality</td>
<td>☑</td>
<td>Olfors ☐</td>
<td>Colors ☐</td>
</tr>
<tr>
<td>Pipe benthic growth</td>
<td>☑</td>
<td>Brown ☐</td>
<td>Orange ☐</td>
</tr>
</tbody>
</table>

Section 6: Overall Outfall Characterization
☒ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection
1. Sample for the lab? ☑ Yes ☒ No
2. If yes, collected from: ☑ Flow ☐ Pool
3. Intermittent flow trap set? ☑ Yes ☐ No If Yes, type: ☑ OBM ☐ Caulk dam

Section 8: Any Non-Illlicit Discharge Concerns (e.g., trash or needed infrastructure repairs)? none
OUTFALL RECONNAISSANCE INVENTORY FIELD SHEET

Section 1: Background Data

Subwatershed: Oliver Creek  
Outfall ID: OF2

Today’s date: 12/17/2019  
Time (Military): 0800

Investigators: Kenneth Jones  
Form completed by: Kenneth Jones

Temperature (°F): 50  
Rainfall (in.): Last 24 hours:  
Last 48 hours:

Latitude: 32.368990  
Longitude: -86.180327  
GPS Unit:  
GPS LMK #:

Camera:  
Photo #s:

Section 2: Outfall Description

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>MATERIAL</th>
<th>SHAPE</th>
<th>DIMENSIONS (IN.)</th>
<th>SUBMERGED</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Closed Pipe</td>
<td>□ RCP</td>
<td>□ Circular</td>
<td>□ Single</td>
<td>In Water:</td>
</tr>
<tr>
<td></td>
<td>□ PVC</td>
<td>□ Elliptical</td>
<td>□ Double</td>
<td>□ No</td>
</tr>
<tr>
<td></td>
<td>□ HDPE</td>
<td>□ Box</td>
<td>□ Triple</td>
<td>□ Partially</td>
</tr>
<tr>
<td></td>
<td>□ Steel</td>
<td>□ Other: ______</td>
<td>□ Other: ______</td>
<td>□ Fully</td>
</tr>
<tr>
<td></td>
<td>□ Other: ______</td>
<td>□ Other: ______</td>
<td>□ Other: ______</td>
<td></td>
</tr>
<tr>
<td>□ Open drainage</td>
<td>□ Concrete</td>
<td>□ Trapezoid</td>
<td>Depth: 2-3 ft.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ Earthen</td>
<td>□ Parabolic</td>
<td>Top Width: 4 ft.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ Rock</td>
<td>□ Other: ______</td>
<td>Bottom Width: 4 ft.</td>
<td></td>
</tr>
<tr>
<td>□ In-Stream</td>
<td>(applicable when collecting samples)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Flow Present?  □ Yes  □ No  
If No, Skip to Section 3

Flow Description (If present)  □ Trickle  □ Moderate  □ Substantial

Section 3: Quantitative Characterization

<table>
<thead>
<tr>
<th>FIELD DATA FOR FLOWING OUTFALLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARAMETER</td>
</tr>
<tr>
<td>--------------------</td>
</tr>
<tr>
<td>□ Flow #1</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>□ Flow #2</td>
</tr>
</tbody>
</table>
Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only
Are Any Physical Indicators Present in the flow?  ☑ Yes ☐ No  (If No, Skip to Section 5)

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>CHECK if Present</th>
<th>DESCRIPTION</th>
<th>RELATIVE SEVERITY INDEX (1-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odor</td>
<td>☐</td>
<td>Sewage</td>
<td>1 – Faint</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rancid/sour</td>
<td>2 – Easily detected</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Petroleum/gas</td>
<td>3 – Noticeable from a distance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sulfide</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other:</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>☐</td>
<td>Clear</td>
<td>1 – Faint colors in sample bottle</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Brown</td>
<td>2 – Clearly visible in sample bottle</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gray</td>
<td>3 – Clearly visible in outfall flow</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yellow</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other:</td>
<td></td>
</tr>
<tr>
<td>Turbidity</td>
<td>☐</td>
<td>See severity</td>
<td>1 – Slight cloudiness</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2 – Cloudy</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3 – Opaque</td>
</tr>
<tr>
<td>Floatables</td>
<td>☐</td>
<td>Sewage</td>
<td>1 – Few/slight; origin not obvious</td>
</tr>
<tr>
<td>-Does Not Include Trash!!</td>
<td></td>
<td>Petroleum (oil sheen)</td>
<td>2 – Some; indications of origin (e.g., possible suds or oil sheen)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other:</td>
<td>3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)</td>
</tr>
</tbody>
</table>

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls
Are physical indicators that are not related to flow present?  ☐ Yes ☑ No  (If No, Skip to Section 6)

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>CHECK if Present</th>
<th>DESCRIPTION</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outfall Damage</td>
<td>☐</td>
<td>Spalling, Cracking or Chipping</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Corrosion</td>
<td></td>
</tr>
<tr>
<td>Deposits/Stains</td>
<td>☐</td>
<td>Oily</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flow Line</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Paint</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other:</td>
<td></td>
</tr>
<tr>
<td>Abnormal Vegetation</td>
<td>☐</td>
<td>Excessive</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inhibited</td>
<td></td>
</tr>
<tr>
<td>Poor pool quality</td>
<td>☐</td>
<td>Odors</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Colors</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Floatables</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oil Sheen</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Excessive Algae</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other:</td>
<td></td>
</tr>
<tr>
<td>Pipe benthic growth</td>
<td>☐</td>
<td>Brown</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Orange</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other:</td>
<td></td>
</tr>
</tbody>
</table>

Section 6: Overall Outfall Characterization
☒ Unlikely   ☐ Potential (presence of two or more indicators)  ☐ Suspect (one or more indicators with a severity of 3)  ☐ Obvious

Section 7: Data Collection
1. Sample for the lab?  ☐ Yes ☑ No
2. If yes, collected from:  ☐ Flow ☐ Pool
3. Intermittent flow trap set?  ☐ Yes ☐ No  If Yes, type: ☐ OBM  ☐ Caulk dam

Section 8: Any Non-Illlicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?  none
OUTFALL RECONNAISSANCE INVENTORY FIELD SHEET

Section 1: Background Data

Subwatershed: Oliver Creek
Outfall ID: OF3

Today’s date: 12/17/2019
Time (Military): 0843

Investigators: Kenneth Jones
Form completed by: Kenneth Jones

Temperature (°F): 50
Rainfall (in.): Last 24 hours: Last 48 hours:

Latitude: 32.367655
Longitude: -86.179769
GPS Unit:
GPS LMK #:

Camera:
Photo #s:

Section 2: Outfall Description

LOCATION MATERIAL SHAPE DIMENSIONS (IN.) SUBMERGED

☐ Closed Pipe
☐ PVC ☐ HDPE ☐ Circular ☐ Single Diameter/Dimensions:
☐ Steel ☐ Box ☐ Double
☐ Other: ______ ☐ Triple

☐ Open drainage
☐ Concrete ☐ Trapezoid Depth: 2-3 ft
☒ Earthen ☐ Parabolic Top Width: 2-3 ft
☐ rip-rap ☐ Other: ______ Bottom Width: 2-3 ft
☐ Other: ______

☐ In-Stream (applicable when collecting samples)

Flow Present? ☐ Yes ☒ No If No, Skip to Section 5

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>RESULT</th>
<th>UNIT</th>
<th>EQUIPMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow #1 Volume</td>
<td>Liter</td>
<td>Bottle</td>
<td></td>
</tr>
<tr>
<td>Time to fill</td>
<td>Sec</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flow depth</td>
<td>In</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flow width</td>
<td>Ft, In</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measured length</td>
<td>Ft, In</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time of travel</td>
<td>S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flow #2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The section includes options for various parameters related to outfall characteristics and flow measurements.
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Units</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>°F</td>
<td>Thermometer</td>
</tr>
<tr>
<td>pH</td>
<td>pH Units</td>
<td>Test strip/Probe</td>
</tr>
<tr>
<td>Ammonia</td>
<td>mg/L</td>
<td>Test strip</td>
</tr>
</tbody>
</table>
Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only
Are Any Physical Indicators Present in the flow? ☐ Yes ☑ No (If No, Skip to Section 5)

<table>
<thead>
<tr>
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<td>Odor</td>
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<td>Sewage</td>
<td>Rancid/sour Petroleum/gas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sulfide</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other:</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>☐</td>
<td>Clear</td>
<td>Brown</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green</td>
<td>Orange</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other:</td>
<td></td>
</tr>
<tr>
<td>Turbidity</td>
<td>☐</td>
<td>See severity</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floatables</td>
<td>☐</td>
<td>Sewage</td>
<td>Toilet Paper, etc.)</td>
</tr>
<tr>
<td>-Does Not Include Trash!!</td>
<td></td>
<td>Petroleum (oil sheen)</td>
<td>Other:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls
Are physical indicators that are not related to flow present? ☐ Yes ☑ No (If No, Skip to Section 6)

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>CHECK if Present</th>
<th>DESCRIPTION</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outfall Damage</td>
<td>☐</td>
<td>Spalling, Cracking or Chipping Corrosion</td>
<td>Peeling Paint</td>
</tr>
<tr>
<td>Deposits/Stains</td>
<td>☐</td>
<td>Oily Flow Line Paint Other:</td>
<td></td>
</tr>
<tr>
<td>Abnormal Vegetation</td>
<td>☐</td>
<td>Excessive Inhibited</td>
<td></td>
</tr>
<tr>
<td>Poor pool quality</td>
<td>☐</td>
<td>Odors Colors Floatables Oil Sheen</td>
<td></td>
</tr>
<tr>
<td>Pipe benthic growth</td>
<td>☐</td>
<td>Brown Orange Green Other:</td>
<td></td>
</tr>
</tbody>
</table>

Section 6: Overall Outfall Characterization
☒ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection
1. Sample for the lab? ☐ Yes ☑ No
2. If yes, collected from: ☐ Flow ☐ Pool
3. Intermittent flow trap set? ☐ Yes ☑ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Ilicit Discharge Concerns (e.g., trash or needed infrastructure repairs)? none
OUTFALL RECONNAISSANCE INVENTORY FIELD SHEET

Section 1: Background Data

Subwatershed: Oliver Creek  Outfall ID: OF4
Today's date: 12/12/2019  Time (Military): 1000
Investigators: Kenneth Jones  Form completed by: Kenneth Jones
Temperature (°F): 55  Rainfall (in.): Last 24 hours: 0  Last 48 hours:
Latitud: 32.367137  Longitud: -86.179686  GPS Unit:
Camera:  Photo #s:

Section 2: Outfall Description

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>MATERIAL</th>
<th>SHAPE</th>
<th>DIMENSIONS (IN.)</th>
<th>SUBMERGED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Closed</td>
<td>RCP</td>
<td>Circular</td>
<td>Diameter/Dimensions:</td>
<td>In Water:</td>
</tr>
<tr>
<td>Closed</td>
<td>PVC</td>
<td>Elliptical</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Closed</td>
<td>HDPE</td>
<td>Box</td>
<td></td>
<td>Partially</td>
</tr>
<tr>
<td>Closed</td>
<td>Steel</td>
<td>Other: ____</td>
<td></td>
<td>Fully</td>
</tr>
<tr>
<td>Open</td>
<td>Concrete</td>
<td>Trapezoid</td>
<td>Depth: 4-6 ft.</td>
<td>With Sediment:</td>
</tr>
<tr>
<td>Open</td>
<td>Earthen</td>
<td>Parabolic</td>
<td>Top Width: 12 ft.</td>
<td>No</td>
</tr>
<tr>
<td>Open</td>
<td>rip-rap</td>
<td>Other: ____</td>
<td>Bottom Width: 6 ft.</td>
<td>Partially</td>
</tr>
<tr>
<td>Open</td>
<td>Other: ____</td>
<td></td>
<td></td>
<td>Fully</td>
</tr>
</tbody>
</table>

☐ In-Stream (applicable when collecting samples)
Flow Present? ☐ Yes  ☑ No  If No, Skip to Section 5
Flow Description (If present) ☐ Trickle  ☐ Moderate  ☐ Substantial

Section 3: Quantitative Characterization

<table>
<thead>
<tr>
<th>FIELD DATA FOR FLOWING OUTFALLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARAMETER</td>
</tr>
<tr>
<td>-----------</td>
</tr>
<tr>
<td>Flow #1</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Flow depth</td>
</tr>
<tr>
<td>Flow width</td>
</tr>
<tr>
<td>Measured length</td>
</tr>
<tr>
<td>Time of travel</td>
</tr>
<tr>
<td>Flow #2</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Temperature</td>
</tr>
<tr>
<td>pH</td>
</tr>
<tr>
<td>Ammonia</td>
</tr>
</tbody>
</table>

D-2
### Section 4: Physical Indicators for Flowing Outfalls Only

**Are Any Physical Indicators Present in the flow?** Yes [ ] No [ ] *(If No, Skip to Section 5)*

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>CHECK if Present</th>
<th>DESCRIPTION</th>
<th>RELATIVE SEVERITY INDEX (1-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odor</td>
<td></td>
<td>□ Sewage            □ Rancid/sour □ Petroleum/gas</td>
<td>□ 1 – Faint</td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Sulfide           □ Other:</td>
<td>□ 2 – Easily detected</td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Other:</td>
<td>□ 3 – Noticeable from a distance</td>
</tr>
<tr>
<td>Color</td>
<td></td>
<td>□ Clear             □ Brown □ Gray □ Yellow</td>
<td>□ 1 – Faint colors in sample bottle</td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Green             □ Orange □ Red □ Other:</td>
<td>□ 2 – Clearly visible in sample bottle</td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Other:</td>
<td>□ 3 – Clearly visible in outfall flow</td>
</tr>
<tr>
<td>Turbidity</td>
<td></td>
<td>See severity</td>
<td>□ 1 – Slight cloudiness</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>□ 2 – Cloudy</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>□ 3 – Opaque</td>
</tr>
<tr>
<td>Floatables -Does Not Include Trash!!</td>
<td></td>
<td>□ Sewage (Toilet Paper, etc.) □ Suds</td>
<td>□ 1 – Few/slight; origin not obvious</td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Petroleum (oil sheen) □ Other:</td>
<td>□ 2 – Some; indications of origin (e.g., possible suds or oil sheen)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>□ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)</td>
</tr>
</tbody>
</table>

### Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

**Are physical indicators that are not related to flow present?** Yes [ ] No [ ] *(If No, Skip to Section 6)*

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>CHECK if Present</th>
<th>DESCRIPTION</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outfall Damage</td>
<td>□</td>
<td>□ Spalling, Cracking or Chipping □ Peeling Paint</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Corrosion</td>
<td></td>
</tr>
<tr>
<td>Deposits/Stains</td>
<td>□</td>
<td>□ Oily □ Flow Line □ Paint □ Other:</td>
<td></td>
</tr>
<tr>
<td>Abnormal Vegetation</td>
<td>□</td>
<td>□ Excessive □ Inhibited</td>
<td></td>
</tr>
<tr>
<td>Poor pool quality</td>
<td>□</td>
<td>□ Odors □ Colors □ Floatables □ Oil Sheen</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Suds □ Excessive Algae □ Other:</td>
<td></td>
</tr>
<tr>
<td>Pipe benthic growth</td>
<td>□</td>
<td>□ Brown □ Orange □ Green □ Other:</td>
<td></td>
</tr>
</tbody>
</table>

### Section 6: Overall Outfall Characterization

- [x] Unlikely  [ ] Potential (presence of two or more indicators)  [ ] Suspect (one or more indicators with a severity of 3)  [ ] Obvious

### Section 7: Data Collection

1. Sample for the lab? [ ] Yes [ ] No
2. If yes, collected from: [ ] Flow [ ] Pool
3. Intermittent flow trap set? [ ] Yes [ ] No  If Yes, type: [ ] OBM [ ] Caulk dam

### Section 8: Any Non-Illlicit Discharge Concerns (e.g., trash or needed infrastructure repairs)? none
OUTFALL RECONNAISSANCE INVENTORY FIELD SHEET

Section 1: Background Data

Subwatershed: Oliver Creek
Outfall ID: OF5

Today's date: 12/12/2019
Time (Military): 0900

Investigators: Kenneth Jones
Form completed by: Kenneth Jones

Temperature (°F): 50
Rainfall (in.): Last 24 hours:

Latitude: 32.365968
Longitude: -86.179375
GPS Unit:
GPS LMK #:

Section 2: Outfall Description

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>MATERIAL</th>
<th>SHAPE</th>
<th>DIMENSIONS (IN.)</th>
<th>SUBMERGED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Closed Pipe</td>
<td>□ RCP</td>
<td>□ Circular</td>
<td>Diameter/Dimensions:</td>
<td>In Water:</td>
</tr>
<tr>
<td></td>
<td>□ PVC</td>
<td>□ Elliptical</td>
<td></td>
<td>□ No</td>
</tr>
<tr>
<td></td>
<td>□ Steel</td>
<td>□ Box</td>
<td></td>
<td>□ Partially</td>
</tr>
<tr>
<td></td>
<td>□ Other:</td>
<td>□ Other:</td>
<td></td>
<td>□ Fully</td>
</tr>
<tr>
<td>Open drainage</td>
<td>□ Concrete</td>
<td>□ Trapezoid</td>
<td>Depth: 1-2 ft.</td>
<td>With Sediment:</td>
</tr>
<tr>
<td></td>
<td>□ Earthen</td>
<td>□ Parabolic</td>
<td>Top Width: 5 ft.</td>
<td>□ No</td>
</tr>
<tr>
<td></td>
<td>□ rip-rap</td>
<td>□ Other:</td>
<td>Bottom Width: 4 ft.</td>
<td>□ Partially</td>
</tr>
<tr>
<td></td>
<td>□ Other:</td>
<td></td>
<td></td>
<td>□ Fully</td>
</tr>
</tbody>
</table>

□ In-Stream (applicable when collecting samples)

Flow Present? □ Yes □ No □ If No, Skip to Section 5
Flow Description (If present) □ Trickle □ Moderate □ Substantial

Section 3: Quantitative Characterization

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>RESULT</th>
<th>UNIT</th>
<th>EQUIPMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Flow #1</td>
<td>Volume</td>
<td>Liter</td>
<td>Bottle</td>
</tr>
<tr>
<td></td>
<td>Time to fill</td>
<td>Sec</td>
<td></td>
</tr>
<tr>
<td>□ Flow depth</td>
<td></td>
<td>In</td>
<td>Tape measure</td>
</tr>
<tr>
<td>□ Flow width</td>
<td><em><strong><strong>'</strong></strong></em>&quot;</td>
<td>Ft, In</td>
<td>Tape measure</td>
</tr>
<tr>
<td>□ Measured length</td>
<td><em><strong><strong>'</strong></strong></em>&quot;</td>
<td>Ft, In</td>
<td>Tape measure</td>
</tr>
<tr>
<td>□ Time of travel</td>
<td></td>
<td>S</td>
<td>Stop watch</td>
</tr>
<tr>
<td>□ Temperature</td>
<td></td>
<td>°F</td>
<td>Thermometer</td>
</tr>
<tr>
<td>pH</td>
<td>pH Units</td>
<td>Test strip/Probe</td>
<td></td>
</tr>
<tr>
<td>----</td>
<td>----------</td>
<td>------------------</td>
<td></td>
</tr>
<tr>
<td>Ammonia</td>
<td>mg/L</td>
<td>Test strip</td>
<td></td>
</tr>
</tbody>
</table>
Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only
Are Any Physical Indicators Present in the flow? □ Yes □ No (If No, Skip to Section 5)

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>CHECK if Present</th>
<th>DESCRIPTION</th>
<th>RELATIVE SEVERITY INDEX (1-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odor</td>
<td></td>
<td>□ Sewage □ Rancid/sour □ Petroleum/gas</td>
<td>□ 1 – Faint □ 2 – Easily detected □ 3 – Noticeable from a distance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Sulfide □ Other:</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td></td>
<td>□ Clear □ Brown □ Gray □ Red □ Yellow</td>
<td>□ 1 – Faint colors in sample bottle □ 2 – Clearly visible in sample bottle □ 3 – Clearly visible in outfall flow</td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Green □ Orange □ Other:</td>
<td></td>
</tr>
<tr>
<td>Turbidity</td>
<td></td>
<td>See severity</td>
<td>□ 1 – Slight cloudiness □ 2 – Cloudy □ 3 – Opaque</td>
</tr>
<tr>
<td>Floatables</td>
<td></td>
<td>□ Sewage (Toilet Paper, etc.) □ Suds □ Petroleum (oil sheen) □ Other:</td>
<td>□ 1 – Few/slight; origin not obvious □ 2 – Some; indications of origin (e.g., possible suds or oil sheen) □ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)</td>
</tr>
</tbody>
</table>

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls
Are physical indicators that are not related to flow present? □ Yes □ No (If No, Skip to Section 6)

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>CHECK if Present</th>
<th>DESCRIPTION</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outfall Damage</td>
<td></td>
<td>□ Spalling, Cracking or Chipping □ Peeling Paint</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Corrosion</td>
<td></td>
</tr>
<tr>
<td>Deposits/Stains</td>
<td></td>
<td>□ Oily □ Flow Line □ Paint □ Other:</td>
<td></td>
</tr>
<tr>
<td>Abnormal Vegetation</td>
<td></td>
<td>□ Excessive □ Inhibited</td>
<td></td>
</tr>
<tr>
<td>Poor pool quality</td>
<td></td>
<td>□ Odors □ Colors □ Floatables □ Oil Sheen</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Suds □ Excessive Algae □ Other:</td>
<td></td>
</tr>
<tr>
<td>Pipe benthic growth</td>
<td></td>
<td>□ Brown □ Orange □ Green □ Other:</td>
<td></td>
</tr>
</tbody>
</table>

Section 6: Overall Outfall Characterization
□ Unlikely □ Potential (presence of two or more indicators) □ Suspect (one or more indicators with a severity of 3) □ Obvious

Section 7: Data Collection
1. Sample for the lab? □ Yes □ No
2. If yes, collected from: □ Flow □ Pool
3. Intermittent flow trap set? □ Yes □ No If Yes, type: □ OBM □ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)? none
OUTFALL RECONNAISSANCE INVENTORY FIELD SHEET

Section 1: Background Data

Subwatershed: Oliver Creek
Outfall ID: OF6

Today's date: 12/17/2019
Time (Military): 1:00

Investigators: Kenneth Jones
Form completed by: Kenneth Jones

Temperature (°F): 50
Rainfall (in.): Last 24 hours:

Latitudie: 32.362126
Longitude: -86.178227
GPS Unit:

GPS LMK #:

Camera:

Photo #: 1

Section 2: Outfall Description

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>MATERIAL</th>
<th>SHAPE</th>
<th>DIMENSIONS (IN.)</th>
<th>SUBMERGED</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Closed Pipe</td>
<td>RCP</td>
<td>Circular</td>
<td></td>
<td>In Water:</td>
</tr>
<tr>
<td></td>
<td>PVC</td>
<td>Elliptical</td>
<td></td>
<td>☐ No</td>
</tr>
<tr>
<td></td>
<td>HDPE</td>
<td>Box</td>
<td></td>
<td>☐ Partially</td>
</tr>
<tr>
<td></td>
<td>Steel</td>
<td>Other: _____</td>
<td></td>
<td>☐ Fully</td>
</tr>
<tr>
<td></td>
<td>Other: _____</td>
<td>Other: _____</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☒ Open drainage</td>
<td>Concrete</td>
<td>Trapezoid</td>
<td></td>
<td>With Sediment:</td>
</tr>
<tr>
<td></td>
<td>Earthen</td>
<td>Parabolic</td>
<td></td>
<td>☐ No</td>
</tr>
<tr>
<td></td>
<td>rip-rap</td>
<td>Other: _____</td>
<td></td>
<td>☐ Partially</td>
</tr>
<tr>
<td></td>
<td>Other: _____</td>
<td>Other: _____</td>
<td></td>
<td>☐ Fully</td>
</tr>
</tbody>
</table>

☐ In-Stream (applicable when collecting samples)
Flow Present? ☒ Yes ☐ No
Flow Description (If present) ☐ Trickle ☒ Moderate ☐ Substantial
If No, Skip to Section 5

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>RESULT</th>
<th>UNIT</th>
<th>EQUIPMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Flow #1 Volume</td>
<td></td>
<td>Liter</td>
<td>Bottle</td>
</tr>
<tr>
<td></td>
<td>Time to fill</td>
<td>Sec</td>
<td></td>
</tr>
<tr>
<td>Flow depth</td>
<td>.5</td>
<td>In</td>
<td>Tape measure</td>
</tr>
<tr>
<td>☐ Flow #2 Flow width</td>
<td>2' 0&quot;</td>
<td>Ft, In</td>
<td>Tape measure</td>
</tr>
<tr>
<td>Measured length</td>
<td></td>
<td>Ft, In</td>
<td>Tape measure</td>
</tr>
<tr>
<td>Time of travel</td>
<td>S</td>
<td>Stop watch</td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>---</td>
<td>------------</td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td>°F</td>
<td>Thermometer</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>pH Units</td>
<td>Test strip/Probe</td>
<td></td>
</tr>
<tr>
<td>Ammonia</td>
<td>mg/L</td>
<td>Test strip</td>
<td></td>
</tr>
</tbody>
</table>
## Outfall Reconnaissance Inventory Field Sheet

### Section 4: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow?  
☐ Yes  ❌ No  (If No, Skip to Section 5)

<table>
<thead>
<tr>
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<th>CHECK if Present</th>
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<td>Odor</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Sulfide</td>
<td>Other:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sulfide</td>
<td>Other:</td>
</tr>
<tr>
<td>Color</td>
<td></td>
<td>Clear</td>
<td>Brown</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green</td>
<td>Orange</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other:</td>
<td>Other:</td>
</tr>
<tr>
<td>Turbidity</td>
<td></td>
<td></td>
<td>See severity</td>
</tr>
<tr>
<td>Floatables</td>
<td></td>
<td>Sewage (Toilet Paper, etc.)</td>
<td>Suds</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Petroleum (oil sheen)</td>
<td>Other:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Other:</td>
</tr>
</tbody>
</table>

### Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present?  
☐ Yes  ❌ No  (If No, Skip to Section 6)

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>CHECK if Present</th>
<th>DESCRIPTION</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outfall Damage</td>
<td></td>
<td>Spalling, Cracking or Chipping Corrosion</td>
<td>Peeling Paint</td>
</tr>
<tr>
<td>Deposits/Stains</td>
<td></td>
<td>Oily Flow Line Paint Other:</td>
<td></td>
</tr>
<tr>
<td>Abnormal Vegetation</td>
<td></td>
<td>Excessive Inhibited</td>
<td></td>
</tr>
<tr>
<td>Poor pool quality</td>
<td></td>
<td>Odors Colors Floatables Oil Sheen</td>
<td></td>
</tr>
<tr>
<td>Pipe benthic growth</td>
<td></td>
<td>Brown Orange Green Other:</td>
<td></td>
</tr>
</tbody>
</table>

### Section 6: Overall Outfall Characterization

☒ Unlikely  ☐ Potential (presence of two or more indicators)  ☐ Suspect (one or more indicators with a severity of 3)  ☐ Obvious

### Section 7: Data Collection

1. Sample for the lab?  
☐ Yes  ☐ No
2. If yes, collected from:  
☐ Flow  ☐ Pool
3. Intermittent flow trap set?  
☐ Yes  ☐ No  If Yes, type:  ☐ OBM  ☐ Caulk dam

### Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)? none