THE UNIVERSITY of TENNESSEE
KNOXVILLE
Facilities Services
FINANCE & ADMINISTRATION

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September 22, 2014

Jason Mann
Tennessee Department of Environment and Conservation
Knoxville Environmental Field Office
3711 Middlebrook Pike
Knoxville, TN 37921

Dear Mr. Mann,

On behalf of the University of Tennessee, I am pleased to submit the enclosed second annual report for the NPDES Permit January 16, 2013. This report fulfills reporting requirements for the University of Tennessee (MS4) Discharge Permit, TNS076121. It identifies accomplishments for the permit program from June 30, 2013 to June 30, 2014.

The report demonstrates progress toward meeting the permit requirements and Stormwater program goals. Key activities and accomplishments are summarized below:

- A new Stormwater Management Coordinator within UTK Facilities Services has been hired. This hire officially occurred after the reporting period for this annual report.
- The university has hired a Sustainability Coordinator within UTK Facilities Services. This person will work with the Stormwater Management Coordinator on meeting the requirements of the permit.
- A consultant hired by the university is in the process of mapping all of the underground utilities for the UTK campus. This includes all storm water infrastructure and outfalls. This work began in the summer of 2012 and is approximately 80% complete. We anticipate that they will be complete by late spring/early summer of 2015. This mapping will be updated as our infrastructure changes.
- A Stormwater management master plan was created for UTK Facilities Services by the Department of Civil and Environmental Engineering. This document will be continually updated as the Stormwater Management program evolves.
- An Illicit Discharge Policy has been developed and is currently in the approval phase
- The Universities Spill Prevention, Control & Countermeasures Plan adopted in August of 2009 is currently undergoing an update.

- The UTK Stormwater website is currently undergoing updates and can be found at the following address: stormwater.utk.edu. This website will be one of our dynamic resources for the university to get information out to our population.
- The Stormwater Advisory Committee bylaws and their intended charge has been approved. We are in the process of finalizing our committee members
- We made application for and was awarded the 2013 TNSA Green Infrastructure Grant. The title of our grant application was "Making Orange Green: Towards a Water-Smart Campus at UT". As part of this grant we are currently in the process of installing an elevated boardwalk and wetland garden at the University of Tennessee Gardens. In addition, we will be installing several rain gardens across campus.
- We made application for and received the 2014 U.S. Forest Service National Urban and Community Forestry Challenge Cost-Share Grant Program. The title of our grant application was "Stormwater Goes Green? Investigating the Benefit and Health of Urban Trees in Green Infrastructure Installations". We are currently looking at two locations on campus to install Silva Cells as part of this program.
- We installed a rainwater cistern at our new Music Building. The harvested water is being used for the irrigation system for the site. The cistern holds approx. 23,000 gallons.

Table 1. Education Program Target Groups and Target Pollutants					
Description	Goal	Type	Target Group	Target Pollutant	2010 Permit Citation(s)
Website	To provide information construction phase and long term stormwater management. To educate the public on how to prevent stormwater pollution. To allow the public to report illicit discharges and stormwater related concerns.	Public Information	Staff, Public, Students, Construction Workers	All	4.2.1a-h
Pre-construction Meetings	To make the construction community aware of regulations, guidance materials and long term water quality impacts from construction activities	Event	Engineers, Architects, Construction Workers	All	4.2.1c&g
Public Notices	to comply with state laws governing this activity	Publication	Public	All	4.2.2
University Facilities Services Employee Training	To make University employees aware of water quality impacts from daily operations, and to educate staff on how to identify and report illicit discharges	Training	University Facilities Services Staff	All	4.2h

Table 2. Outcomes from Education and Construction Programs		
Description	Activity	Goal/ Result
Rain Garden Installation	One Rain garden is currently in use. Several more have funding and are slated to be installed.	To manage Stormwater runoff from selected areas throughout campus
Storm drain Inserts	Strom drain inserts have been installed in active construction areas to intercept sediment prior to entering the storm sewer system.	To prevent sediment from entering the storm sewer system
Water Catchment systems	Total 23,050 gallons. 1 - 23,000 gallon cistern installed at Natalie Haslam Music Center. 1-55 gallon rain barrel installed at the Environmental and Landscape Lab.	To reduce stormwater runoff. To reuse Stormwater for irrigation purposes
Stream Monitoring in 2nd Creek	Installed ISCO brand flow meter and refrigerated sampler to collect base flow samples at least once quarterly (through grab samples), and additionally targeting 9-12 storm events.	To characterize pollutant changes during the course of storm events in the watershed and also to get info on how and why concentrations change from storm to storm.
River Rescue	Participated in the annual River Rescue clean up on April 5, 2014. Our involvement was focused on the portion of 2nd Creek that flows through campus.	We removed 3.5 cubic yards of debris from 2nd Creek

Table 3. University of Tennessee Staff Education and Outreach Activities			
Description	participants	Findings	Date
Green Roof Design Strategies for Stormwater Mangement	2	How to implement a green roof	9/18/2013
Watershed Symposium	4	Prioritizing stormwater management, BMP's for urban environments, & stream bank erosion	2/18/2014
Integrating Science in Land and Planning Design – Clean Harbors	4	Lecture by Keith Bowers, founder of Bio habitats	3/11/2014
MS4 Phase II education presentation	10	Meeting with UT Facilities Planning to discuss goals and implementation of the permit	5/25/2014
Trip to Emory University, Atlanta, GA	3	To learn about the universities stormwater infrastructure, rain water harvesting, etc.	6/24/2014

Please call me at (865) 805-9729 if you have any questions concerning this report.

Sincerely,

Garrett Ferry, CPESC
Stormwater Management Coordinator

Tennessee Department of Environment and Conservation
Division of Water Resources
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243
1-888-891-8332 (TDEC)

Municipal Separate Storm Sewer System (MS4) Annual Report

1. MS4 Information

The University of Tennessee, Knoxville	TNS076121
Name of MS4	MS4 Permit Number
Mr. Garrett Ferry	gferry@utk.edu
Name of Contact Person	Email Address
865-805-9729	
Telephone (including area code)	
2233 Volunteer Blvd.	
Mailing Address	

Knoxville	TN	37996
City	State	ZIP code

What is the current population of your MS4? 36,809 (2012 data)

What is the reporting period for this annual report? From June 30, 2013 to June 30, 2014

2. Water Quality Priorities (Section 3.1)

A. Does your MS4 discharge into waters listed as impaired on TN's most current 303(d) list and/or according to the on-line GIS mapping tool? ☒ Yes ☐ No

B. If yes, please attach a list all impaired waters within your jurisdictional area.

- TN06010201 067-1000 Third Creek
- TN06010201 067-1000 East Fork Third Creek
- TN06010201 097-1000 Second Creek
- TN06010201 020-2000 Ft. Loudon Reservoir

C. Does your MS4's jurisdictional area contain any water bodies where a TMDL has been approved for parameters other than pathogens, siltation and habitat alterations? If yes, please attach a list.

- TN06010201 020-2000 Ft. Loudon Reservoir TMDL for PCB's March 3, 2010
- TN06010201 097-1000 Second Creek TMDL for Anthropogenic Substrate Alterations, Siltation and E. Coli; January 27, 2006
- TN06010201 067-1000 Third Creek TMDL for Anthropogenic Substrate Alterations, Siltation and E. Coli; January 27, 2006

D. Does your MS4 discharge to any Exceptional TN Waters (ETWs) or Outstanding National Resource Waters (ONRWs)? If yes, please attach a list. ☐ Yes ☒ No

E. Are you implementing additional specific provisions to ensure the continued integrity of ETWs or ONRWS located within your jurisdiction? ☐ Yes ☒ No

3. Protection of State or Federally Listed Species (Section 3.2.1 General Permit for Phase II MS4s)

A. Are there any state or federally listed species within the MS4's jurisdiction? ☐ Yes ☒ No

B. Are any of the MS4 discharges or discharge-related activities likely to jeopardize any state or federally listed species? ☐ Yes ☒ No

C. Please attach any authorizations or determinations by U.S. Fish & Wildlife Service on the effect of the MS4 discharges on state or federally listed species.

4. Public Education and Public Participation (Section 4.2.1 and 4.2.2)

A. Have you developed a Public Information and Education plan (PIE)? ☐ Yes ☒ No

B. Is your public education program targeting specific pollutants and sources of those pollutants, such as Hot Spots? ☐ Yes ☒ No

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

D. Note specific successful outcome(s) (NOT tasks, events, publications) fully or partially attributable to your public education program during this reporting period.N/A

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

F. How do you facilitate, advertise, and publicize public involvement and participation opportunities? The Daily Beacon (University Newspaper)

G. Do you have a webpage dedicated to your stormwater program? ☒ Yes ☐ No

If so, what is the link/URL: http://fs.utk.edu/stormwater/

H. Are you tracking and maintaining records of public education, outreach, involvement and participation activities? Please attach a summary of these activities. ☐ Yes ☒ No

5. Illicit Discharge Detection and Elimination (Section 4.2.3)

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

B. Have you completed a map of all storm drain pipes of storm sewer system? ☐Yes ☒ No

C. How many outfalls have you identified in your system? N/A

D. Have any of these outfalls been screened for dry weather discharges? 0

F. What is your frequency for screening outfalls for illicit discharges? N/A

G. Do you have an ordinance that effectively prohibits illicit discharges? ☒ Yes ☐ No

H. During this reporting period, how many illicit discharges/illegal connections have you discovered (or been reported to you)? N/A

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

6. Construction Site Stormwater Runoff (Section 4.2.4)

A. Do you have an ordinance or adopted policies stipulating:

Erosion and sediment control requirements? ☒ Yes ☐ No

Other construction waste control requirements? ☐ Yes ☒ No

Requirement to submit construction plans for review? ☒ Yes ☐ No

MS4 enforcement authority? ☐ Yes ☒ No

B. How many active construction sites disturbing at least one acre were there in your jurisdiction this reporting period? 11

C. How many of these active sites did you inspect this reporting period? 11

D. On average, how many times each, or with what frequency, were these sites inspected (e.g., weekly, monthly, etc.)? Twice Monthly

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

If Yes, based on what criteria? Size, Contractor Performance

7. PERMANENT STORMWATER CONTROLS (SECTION 4.2.5)

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

Site plan reviews of all new and re-development projects? ☒ Yes ☐ No

Maintenance of stormwater management controls? ☒ Yes ☐ No

Retrofitting of existing BMPs with green infrastructure BMPs? ☐ Yes ☒ No

B What is the threshold for new/redevelopment stormwater plan review? (e.g., all projects, projects disturbing greater than one acre, etc.) All projects

C. Have you implemented and enforced performance standards for permanent stormwater controls? ☐ Yes ☒ No

D. Do these performance standards go beyond the requirements found in Section 4.2.5.2 and require that pre-development hydrology be met for:

Flow volumes ☐ Yes ☒ No

Peak discharge rates ☐ Yes ☒ No

Discharge frequency ☐ Yes ☒ No

Flow duration ☐ Yes ☒ No

E. Please provide the URL/reference where all permanent stormwater management standards can be found.

N/A

F. How many development and redevelopment project plans were reviewed for this reporting period? 20

G. How many development and redevelopment project plans were approved? 20

H. How many permanent stormwater management practices/facilities were inspected? 2

I. How many were found to have inadequate maintenance? 0

J. Of those, how many were notified and remedied within 30 days? (If window is different than 30 days, please specify) N/A

K. How many enforcement actions were taken that address inadequate maintenance? N/A

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

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

N. Has the MS4 developed a program to allow for incentive standards for redeveloped sites? ☐ Yes ☒ No

O. How many maintenance agreements has the MS4 approved during the reporting period? N/A

8. Codes and Ordinances Review and Update (Section 4.2.5.3)

A. Is a completed copy of the EPA Water Quality Scorecard submitted with this report? ☐ Yes ☒ No

B. Include status of implementation of code, ordinance and/or policy revisions associated with permanent stormwater management. University of Tennessee Knoxville Illicit Discharge Policy – pending approval

9. Stormwater Management for Municipal Operations (Section 4.2.6)

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

All parks, ball fields and other recreational facilities	☐ Yes	☒ No
All municipal turf grass/landscape management activities	☐ Yes	☒ No
All municipal vehicle fueling, operation and maintenance activities	☒ Yes	☐ No
All municipal maintenance yards	☒ Yes	☐ No
All municipal waste handling and disposal areas	☐ Yes	☒ No

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

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

C. Have standard operating procedures or BMPs been developed for all MS4 field activities? (e.g., road repairs, catch basin cleaning, landscape management, etc.) ☐ Yes ☒ No

D. Do you have a prioritization system for storm sewer system and permanent BMP inspections? ☐ Yes ☒ No

E. On average, how frequently are catch basins and other inline treatment systems inspected? Bi-Monthly

F. On average, how frequently are catch basins and other inline treatment systems cleaned out/maintained? As Needed

G. Do municipal employees in all relevant positions and departments receive comprehensive training on stormwater management? ☐ Yes ☒ No

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

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

10. Stormwater Management Program Update (Section 4.4)

A. Describe any changes to the MS4 program during the reporting period including but not limited to:

Changes adding (but not subtracting or replacing) components, controls or other requirements (Section 4.4.2.a). N/A

Changes to replace an ineffective or unfeasible BMP (Section 4.4.2.b). N/A

Information (e.g. additional acreage, outfalls, BMPs) on program area expansion based on annexation or newly urbanized areas. Addition of a 9 acre property within the MS4

Changes to the program as required by the division (Section 4.4.3). N/A

11. Evaluating/Measuring Progress

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

Indicator	Began Tracking (year)	Frequency	Number of Locations
Example: E. coli	*2003*	*Weekly April–September*	*20*
Sediment	2014	Quarterly (plus 9-12 storm events)	1
Bacteria	2014	Quarterly (plus 9-12 storm events)	1
Metals	2014	Quarterly (plus 9-12 storm events)	1
Nutrients	2014	Quarterly (plus 9-12 storm events)	1

B. Provide a summary of data (e.g., water quality information, performance data, modeling) collected in order to evaluate the performance of permanent stormwater controls installed throughout the system. This evaluation may include a comparison of current and past permanent stormwater control practices.

The University has installed an ISCO brand Signature flow meter in Second Creek, which is equipped with an area velocity meter and is utilized to activate an ISCO Avalanche refrigerated automatic sampler. Our students surveyed the cross section where we are monitoring to convert depth and velocity readings from the area velocity meter into flow readings.

The University is now collecting base flow samples at least once quarterly over our year of sampling (through grab samples), and additionally are targeting 9-12 storm events. The goal is to characterize pollutant changes during the course of storm events in the watershed and also to get informational data on how and why concentrations change from storm to storm. Samples are collected after each storm event and tested for sediment, bacteria, metals, and some nutrient species. An ongoing program is under development to quantify various organic pollutants in the stream water as well. A future goal is to have this data available in real time on line via the Stormwater website

12. Enforcement (Section 4.5)

A. Identify which of the following types of enforcement actions you used during the reporting period, indicate the number of actions, the minimum measure (e.g., construction, illicit discharge, permanent stormwater control) or note those for which you do not have authority:

Action	Construction	Permanent Stormwater Controls	Illicit Discharge	Authority?	
Notice of violation	#N/A	#N/A	#N/A	☐ Yes	☒ No

Administrative fines	#N/A	#N/A	#N/A	☐ Yes	☒ No
Stop Work Orders	#N/A	#N/A	#N/A	☐ Yes	☒ No
Civil penalties	#N/A	#N/A	#N/A	☐ Yes	☒ No
Criminal actions	#N/A	#N/A	#N/A	☐ Yes	☒ No
Administrative orders	#N/A	#N/A	#N/A	☐ Yes	☒ No
Other _____	#_____	#_____	#_____		

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

C. What are the 3 most common types of violations documented during this reporting period? N/A

13. PROGRAM RESOURCES (OPTIONAL)

A. What was your annual expenditure to implement the requirements of your MS4 NPDES permit and SWMP this past reporting period? _____

B. What is next year's budget for implementing the requirements of your MS4 NPDES permit and SWMP?
$19,500

C. Do you have an independent financing mechanism for your stormwater program? ☐ Yes ☒ No

D. If so, what is it/are they (e.g., stormwater fees), and what is the annual revenue derived from this mechanism?

Source: Amount $

Source: Amount $

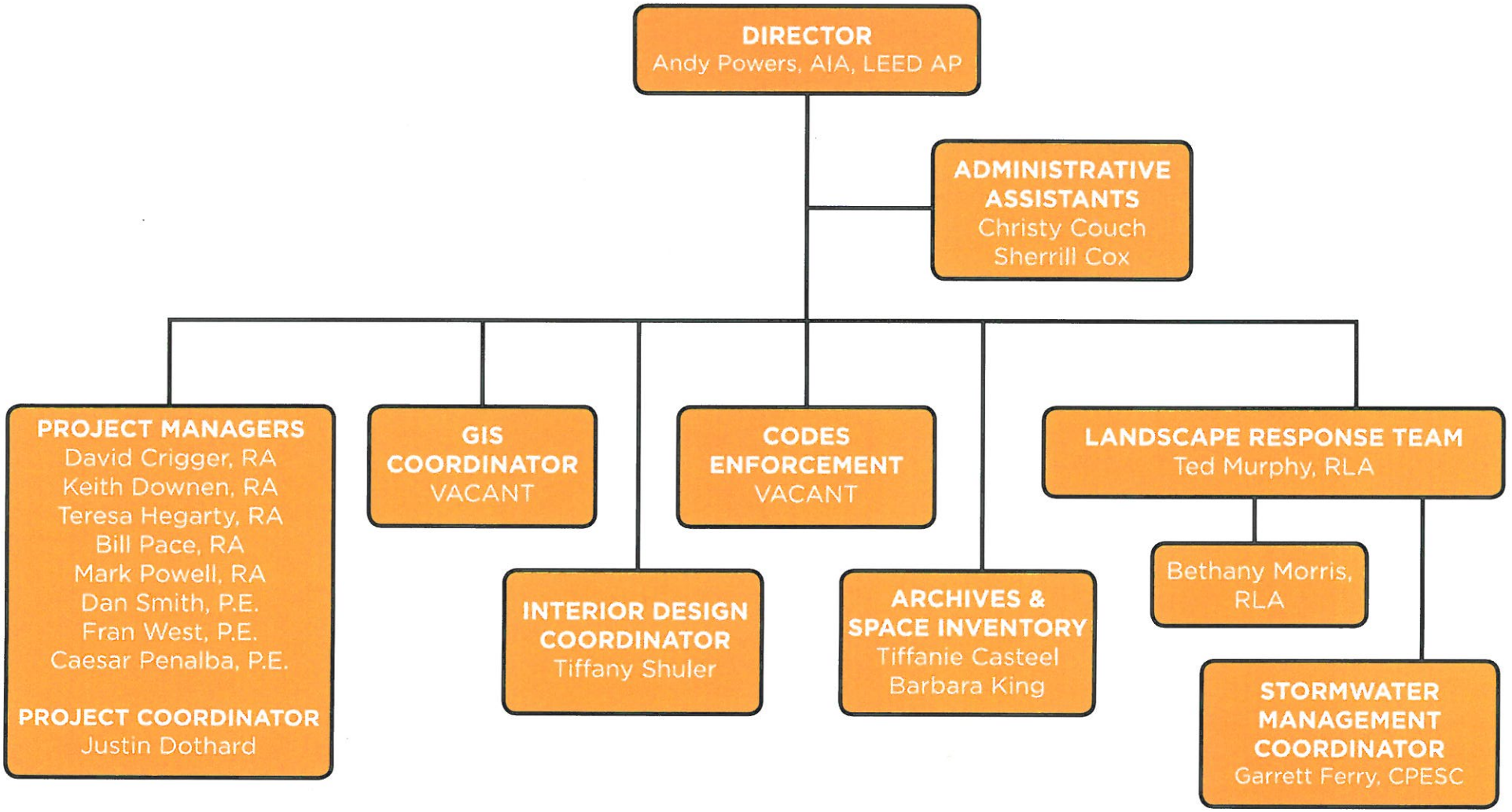
E. How many full time employees does your municipality devote to the stormwater program (specifically for implementing the stormwater program vs. municipal employees with other primary responsibilities that dovetail with stormwater issues)? 1

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

Entity	Activity/Task/Responsibility	Your Oversight/Accountability Mechanism

G. Please attach a copy of your Organizational Chart

DESIGN SERVICES



UT Facilities Services

12 SEPT 2014

14. CERTIFICATION

This report must be signed by a ranking elected official or by a duly authorized representative of that person. See signatory requirements in sub-part 6.7.2 of the permit.

"I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury."

Dave Irvin
Assoc. Vice Chancellor
Printed Name and Title

Signature

9/22/14
Date

Annual reports must be submitted in accordance with the requirements of Section 5.4. (Reporting) of the permit. Annual reports must be submitted to the appropriate Environmental Field Office (EFO) by September 30 of each calendar year, as shown in the table below:

EFO	Street Address	City	Zip Code	Telephone
Chattanooga	540 McCallie Avenue STE 550	Chattanooga	37402	(423) 634-5745
Columbia	1421 Hampshire Pike	Columbia	38401	(931) 380-3371
Cookeville	1221 South Willow Ave.	Cookeville	38506	(931) 432-4015
Jackson	1625 Hollywood Drive	Jackson	38305	(731) 512-1300
Johnson City	2305 Silverdale Road	Johnson City	37601	(423) 854-5400
Knoxville	3711 Middlebrook Pike	Knoxville	37921	(865) 594-6035
Memphis	8383 Wolf Lake Drive	Bartlett	38133	(901) 371-3000
Nashville	711 R S Gass Boulevard	Nashville	37216	(615) 687-7000