UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

FEB 20 2014

CERTIFIED MAIL 7012 1010 0002 0759 6656
RETURN RECEIPT REQUESTED

Utilities Inc.
Attn: Mr. Mac Mitchell
Regional Manager
151 Old Wire Road
West Columbia, South Carolina 29172

Re: Notice of Violation
U.S. Environmental Protection Agency and South Carolina Department of Health and Environmental Control Compliance Evaluation Inspection
National Pollutant Discharge Elimination System Permit Nos.: SC0026743 & SC0026751
Tega Cay Wastewater Treatment Plant #2 & #3, Wastewater Collection and Transmission System

Dear Mr. Mitchell:

The purpose of this letter is to advise Tega Cay Water Service, Inc. (Tega Cay) that the United States Environmental Protection Agency Region 4 has reviewed information gathered by the EPA during the December 3, 2013, Compliance Evaluation Inspection (CEI) of Tega Cay's Wastewater Collection and Transmission System (WCTS). The objective of this CEI was to assess Tega Cay's compliance with the Clean Water Act (CWA) and its National Pollutant Discharge Elimination System (NPDES) permit. Additionally, the EPA evaluated Tega Cay's Management, Operations and Maintenance (MOM) programs related to its WCTS. The inspection results are summarized in the enclosed CEI report.

Based upon review of the information, the EPA has determined that Tega Cay has violated the CWA as follows:

> During the period of January 01, 2013, through January 02, 2014, Tega Cay had at least 18 Sanitary Sewer Overflows (SSO) that discharged from Tega Cay's sewer system to navigable waters of the United States as defined by Section 502 of the CWA, 33 U.S.C. § 1362. Tega Cay also had at least nine additional SSOs that did not reach waters of the United States. All 27 SSOs, totaling 446,350 gallons of untreated sewage released or discharged from Tega Cay's WCTS, violated Parts II.E.1 (Proper Operation and Maintenance) and Part II.E.6.c (Proper Management, Operation and Maintenance of the WCTS) of the above listed NPDES permits. Such SSOs were not authorized by the NPDES permit. Therefore, these SSOs are violations of Section 301(a) of the CWA, 33 U.S.C. § 1311(a).

The EPA has decided not to initiate an enforcement action at this time. However, Tega Cay's future progress in developing and implementing written MOM programs, the continued rehabilitation of the WCTS, Tega Cay's compliance with the recent DHEC Consent Order 14-002W executed on February 3, 2014, and progress towards eliminating SSOs will determine if future EPA enforcement actions are warranted. The EPA will monitor Tega Cay's progress in developing and implementing MOM programs, WCTS rehabilitation and compliance with DHEC's Consent Order over the next two years.

Until compliance with the CWA is achieved, Tega Cay is considered to be in violation of the CWA and subject to enforcement action pursuant to Section 309 of the CWA, 33 U.S.C. § 1319. This Section provides for the issuance of administrative penalty and/or compliance orders and the initiation of civil and/or criminal actions.

If you have any questions regarding this Notice of Violation, please contact Mr. Brad Ammons, of my staff, at (404) 562-9769 or by email at ammons.brad@epa.gov, or you may address written correspondence to Mr. Ammons at the above address on the letterhead.

Sincerely,

James D. Giattina
Director
Water Protection Division

Enclosure

cc: Mr. Glenn Trofatter
South Carolina Department of Health and Environmental Control

Mr. Bill Sims
South Carolina Department of Health and Environmental Control

Mr. Richard Durham
Utilities Inc.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4
Water Protection Division
Clean Water Enforcement Branch

COMPLIANCE EVALUATION INSPECTION REPORT

Tega Cay Water Service, Inc (Utilities Inc)
York County
South Carolina
NPDES Permit No. SC0026743/SC0026751

Facility Address:
4135 Koala Circle
Tega Cay, South Carolina 29708

Inspection Dates:
December 03, 2013

Inspectors:
Richard Elliott, Enforcement Officer, EPA Region 4
Mark White, Wastewater Manager, SCDHEC

Inspection Report Prepared by:
Richard Elliott, P.E.

December 09, 2013

TABLE OF CONTENTS

Contents

I. OVERVIEW 1
II. OBJECTIVES 1
III. INVESTIGATION METHODS 1
IV. REGULATORY SUMMARY 2
V. INSPECTION SUMMARY AND FINDINGS 2
A. Management Interview 2
B. Site Inspection 3
C. Recommendations 5
a. Mapping Program 6
b. Root Control Program 6
c. Preventive Maintenance and Inspection Programs 6
d. Sewer Overflow Response Plan 8
D. Conclusion 11

ABBREVIATIONS AND ACRONYMS

CMOM	Capacity, Management, Operation, and Maintenance
CWA	Clean Water Act
DHEC	South Carolina Department of Health and Environmental Control
DMR	Discharge Monitoring Report
EPA	United States Environmental Protection Agency
GIS	Geographic Information System
GPM	Gallons per Minute
I/I	Infiltration and Inflow
ICIS	Integrated Compliance Information System
MGD	Million Gallons per Day
MOM	Management, Operation, and Maintenance
NPDES	National Pollutant Discharge Elimination System
PS	Pump Station
RDII	Rain Derived Infiltration and Inflow
SORP	Sewer Overflow Response Plan
SSES	Sanitary Sewer Evaluation Study
SSO	Sanitary Sewer Overflow
STP	Sewer Treatment Plant
WCTS	Collection and Transmission System
WWTP	Wastewater Treatment Plant

I. OVERVIEW

Tega Cay Water Service Inc. provides drinking water and sanitary sewer services to approximately 2000 residential customers in Tega Cay, South Carolina. The service area is approximately 1.6 square miles with a population of 5,300. Tega Cay Water Service Inc. is owned and operated by Utilities Inc., a private company headquartered in Altamonte Springs, Florida. The City of Tega Cay (the City) also owns and operates water and wastewater facilities within the City limits but is totally separate from, and independent, of the Utilities Inc. facilities. In terms of wastewater appurtenances, Tega Cay Water Service Inc. is responsible for 30 miles of gravity sewer, 1.7 miles of force main, 19 Pump Stations (PS) and two Wastewater Treatment Plants (WWTP).

During the recent past, the EPA received several complaints from citizens served by Utilities Inc in Tega Cay. These complaints revolved around sanitary sewer back-ups and Sanitary Sewer Overflows (SSOs) into Lake Wylie during rain events. Citizens in the area have been very vocal in requesting a solution to the SSO issues and have contacted regulatory agencies as well as local media outlets.

The EPA conducted a Compliance Evaluation Inspection (CEI) of Tega Cay Water Service's sewer system on December 3, 2013. The purpose of this CEI was to evaluate compliance with the CWA as it relates to SSOs from the sewer system and to assess the utility's Management, Operations and Maintenance (MOM) programs. Additionally, the purpose of this compliance inspection was to examine the causes and potential corrective actions for SSOs from the Wastewater Collection and Transmission System (WCTS).

During the inspection, the EPA requested written documentation of any MOM programs that the Utility may use to operate and maintain the WCTS. The EPA also discussed inspection and maintenance records, interviewed management personnel and visited various sites in the WCTS including Pump Stations #2 and #3, 1007 Palmyra Rd and WWTP #2. This report describes EPA's findings, identifies areas that need to be addressed and presents preliminary recommendations.

II. OBJECTIVES

The specific objectives of the inspection were to assess the Tega Cay Water Service's compliance with the CWA, evaluate reported SSOs, assess the MOM programs, where implemented, and to examine the causes of SSOs in the Utility's sewer system.

III. INVESTIGATION METHODS

The investigation included:

- Review of the Integrated Compliance Information System - National Pollutant Discharge Elimination System (ICIS-NPDES) federal database and state documents
- Review of the facility's NPDES permit and related documents;
- Interviews with the facility's Wastewater Division personnel; and,
- Visual inspection.

IV. REGULATORY SUMMARY

The South Carolina Department of Health & Environmental Control (DHEC) is authorized under the CWA to implement the NPDES program in South Carolina. Tega Cay WWTP #2 and #3 are authorized by DHEC under permit Nos. SC0026743 and SC0026751, to discharge into Lake Wylie. Both treatment facilities are classified as non-major with WWTP #2 having a design treatment capacity of 0.320 MGD and WWTP #3 0.290 MGD. Plans for an additional plant, WWTP #4 were submitted to DHEC but was not constructed as the Tega Cay Water Service no longer needed the additional treatment capacity.

Lake Wylie and some of its tributaries are listed as impaired (particularly for total phosphorus). A Total Maximum Daily Load (TMDL) is scheduled for development by DHEC in the future. No nutrient limits are included in the current NPDES permits for either of the WWTPs.

SSOs are prohibited discharges based on Sections 301 and 402 of the CWA which generally prohibits the discharge of pollutants by any person unless authorized by an NPDES permit. The NPDES permits issued to Tega Cay Water Service Inc. expressly outlines the duty of the permit holder to properly operate and maintain the wastewater sewer systems. Part II section E states that the permittee must "provide adequate capacity to convey base flows and peak flows for all parts of the sewer system". Further, Tega Cay Water Service Inc. consented and signed an agreement with DHEC to take the necessary steps to eliminate overflows from the WCTS.

V. INSPECTION SUMMARY AND FINDINGS

The EPA performed a pre-inspection evaluation and an on-site inspection of the WCTS. The pre-inspection evaluation of the Utility's WCTS consisted of examining historic records submitted by the facility to DHEC. This section will provide a summary of both means of inspection as well as any recommendations to improve the WCTS performance.

A. Management Interview

The EPA met with the regional manager for Utilities Inc (Tega Cay Water Service's parent company and operators of the facility) at 9:30 a.m., December 3, 2013. Topics of discussion during the meeting included the use and documentation of any MOM programs including Fats, Oil, and Grease (FOG) Control, Root Control, Capacity Assurance, Preventive Maintenance and Inspections, Emergency Response, Pump Station Back-up Power, reporting procedures and compliance with the previous Consent Order (11-00-W) issued by DHEC to the facility.

The EPA discussed concerns relating to SSOs in detail with the facility managers and inquired about each program listed above to determine whether a formal or non-formal (not in writing) program existed to manage various operations and maintenance needs of the

WCTS.

Tega Cay Water Services has a very basic, one page sewer overflow response plan that outlines procedures the operator should follow in the event of a SSO. This response plan relies heavily on contractor support and raises questions about how quickly a SSO can be addressed and whether, given the topography of the area, SSOs exist that do not reach waters of the US. As a result of the DHEC Consent Order in 2011, W.K. Dickson & Co. Inc., engineering consultants was hired by the facility to assess the entire system and provide improvements recommendations. Reports from the consultant are being used to guide repairs on a prioritized approach that addresses the most critical (high priority in terms of most defects) areas first. At the time of this inspection, no formal written procedure was available for any of the MOM programs discussed.

Tega Cay Water Service is testing the use of a chemical root control process to assist in the control of root intrusion into the clay pipes that exist in the WCTS.

B. Site Inspection

The EPA performed an on-site inspection of various points in the WCTS. Several sites were chosen based on their SSO history. The EPA inspected several manholes and pump stations as well as the site of the largest SSO in the last 3 years. It is noteworthy that Lake Wylie is classified as a water of the U.S. and that a significant portion of the collection system infrastructure is in close proximity to the lake or a creek that is tributary to the lake. The facility posits that they have located several stormwater catch basins that were illegally connected to the sanitary sewer pipes and have removed these connections. This along with inserting stormwater prevention inserts into sanitary sewer manholes (see Figure 1) should significantly reduce I/I. Cured in Place Pipe (CIPP) liners were installed in existing clay pipes; refer to Figure 2.

The EPA also met with two members of a citizens group (Tega Cay Water Citizens Advisory Council) to hear their concerns and to inform them that the EPA was conducting an inspection in their area.

Figure 1: Manhole behind 4142 Marquesas Ave. showing perforated manhole cover (on left) and stormwater intrusion prevention insert (on right).

Figure 2: Inside manhole behind 4142 Marquesas Ave. Note CIPP liner (arrow above).

Pump Station #2 is a 520 Gallon Per Minute (GPM) pump station (see below). The grounds around the pump station are well kept and trees planted to disguise the station and improve aesthetics. The pump station interior is generally clean and appears to be well maintained. There is no emergency back-up power at this pump station or at any other PS except at the two WWTP. However, all Pump Stations have connections for easy hook-up of portable generators. The closest manhole upstream from this pump station showed no signs of surcharging and appeared to be in good condition.

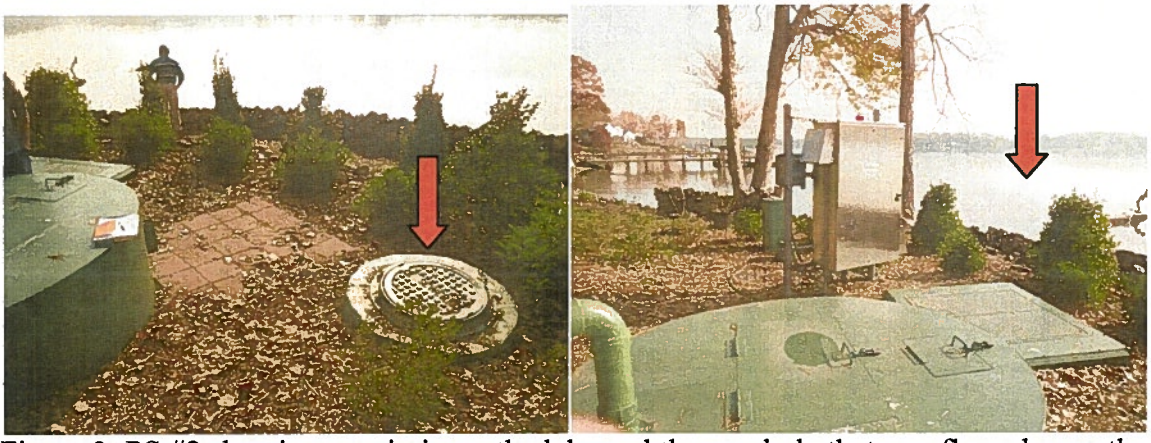

Figure 3: PS #2 showing proximity to the lake and the manhole that overflowed recently.

Pump Station #3 has a design pumping capacity of 200 GPM and is one of the recently upgraded pump stations. The grounds around this pump station are also well kept and fenced for security. The pump station interior was in need of maintenance and cleaning. The closest manhole upstream from this pump station showed signs of surcharging and appeared to be almost clogged. The capacity of this pump station is likely reduced due to its current condition.

Figure 4: Pump Station #3 (top). Note the roots and debris in manhole upstream of Pump Station (bottom).

C. Recommendations

Due to the relatively small size of the Tega Cay Water Service's WCTS, the EPA does not expect that the depth and scope of any the MOM programs used by Tega Cay Water Services to be the same as that of a major city. However, the EPA does expect the permittee to properly operate and maintain their system so that SSOs are not prevalent in the system. A basic MOM program implementation would greatly benefit the facility in preventing SSOs. The EPA noted several preventive maintenance procedures that Tega Cay Water Services is utilizing that are in keeping with best management practices to operate and maintain the system; however, the EPA recommends that the Tega Cay Water Services Inc. develop formal written programs for these preventive maintenance procedures and programs. Developing formal written programs will aid in refining these programs, which should increase efficiency of the programs and provide guidance for the implementation of these programs that can be passed down to the next maintenance generation.

MOM program development guidance documents can be found on EPA, Region 4's website at http://www.epa.gov/region4/water/wpeb/momproject/.

Recommended MOM programs include:

a. Mapping Program

Formal Mapping Program documentation should be developed to ensure consistency of map protocol and to provide official guidance for map review and maintenance. A GIS based map is being developed by the consultant as a result of the Consent Order from DHEC. However the project is not yet complete and is not directly available to the facility operators during day to day operations.

b. Root Control Program

The EPA recommends that Tega Cay Water Service develop documents that outline procedures and provide guidance on how to manage and reduce root growth and intrusion into the WCTS.

c. Preventive Maintenance and Inspection Programs

The EPA recommends that the Tega Cay Water Service develop formal written MOM Programs with an aggressive Preventive Maintenance and Inspection Program that defines goals for cleaning and inspection activities and pump station preventive maintenance activity, including:

A **Gravity Line Preventive Maintenance Program**. The Gravity Line Preventive Maintenance Program should include the following components: 1) blockage abatement mechanisms (including both hydraulic and mechanical cleaning); 2) root control mechanisms; 3) debris control mechanisms, and 4) manhole preventive maintenance procedures. This program should include the following activities; 1) identification of, and provision for, all personnel and equipment needed; 2) determination of the frequency; 3) establishment of procedures; 4) establishment of priorities for scheduling; 5) the use of standard forms; 6) establishment of record keeping requirements; 7) establishment of performance measures; and 8) integration of all data collected under the program with other information management systems.

A **Continuing Sewer System Assessment Program (CSSAP)**. The CSSAP should establish procedures for setting priorities and schedules for undertaking the WCTS assessment including; 1) corrosion defect identification, 2) routine manhole inspections, 3) flow monitoring, 4) CCTV activities, 5) gravity system defect analysis, 6) smoke testing, and 7) pump station performance and adequacy analysis. The CSSAP should provide for the assessment of at least ten percent (10%) of the WCTS on average per year and establish priorities and schedules taking into consideration the nature and extent of customer complaints; flow monitoring; location and cause of SSOs and WCTS deficiencies; any remediation work already ongoing; pump station run times; field crew work orders; any

preliminary sewer assessments, such as flow monitoring results; community input; and any other relevant information.

An **Infrastructure Rehabilitation Program (IRP)**. The IRP should establish procedures for setting priorities and schedules for undertaking rehabilitation of the WCTS. The IRP should address Infiltration/Inflow (I/I), structural issues in the WCTS, and the other conditions causing SSOs, with the goal of eliminating future SSOs. The IRP should take into account all previous information the Utility has gathered including any information gathered pursuant to the CSSAP. The IRP should also establish standard procedures to analyze the effectiveness of completed rehabilitation projects.

A **Pump Station Operations and Preventive Maintenance Program**. The Pump Station Operation and Preventive Maintenance Program should include or address the following items/components described below:

i. Pump station operations at pump stations that are to be conducted on a routine, scheduled basis. The program should define the standard pump station operating procedures to be followed at each pump station such as reading and recording information from the elapsed time meters, recording information from the pump start counters, observing wet well conditions and grease accumulation, checking and re-setting, as necessary to improve system performance, wet well set points, checking and recording system pressure, checking SCADA (or equivalent system) components, checking alarms and stand-by power and identifying maintenance needs.

ii. Emergency pump station operations procedures. The program should address pump station operations at pump stations that are to be conducted as a result of equipment failure or loss of electrical power. The program should define the emergency pump station operating procedures to be followed at each pump station such as calling for emergency maintenance, initiating stand-by power by bringing in portable generators or initiating portable pump operations for pump around.

iii. The program should establish schedules, routes, priorities, standard forms and reporting procedures and establish minimum acceptable performance measures and condition grading criteria.

Preventive Maintenance and Inspection Programs can have a significant positive impact on the future condition of the WCTS. A properly implemented Preventive Maintenance and Inspection Program can prevent a massive outlay of expenses needed to repair or replace parts of the system that Tega Cay Water Service personnel 'did not see' failing due to the lack of prevention. Relatively small preventive maintenance expenses now can save Tega Cay Water Service larger repair expenses in the future.

d. Sewer Overflow Response Plan

The EPA recommends that the Tega Cay Water Service develop a SORP using the guidelines provided below that will establish timely and effective methods and means of responding to, cleaning up, and/or minimizing the impact of SSOs and building back-ups; establish procedures to timely report the time, date, location, volume, cause, impact, and other pertinent information of all SSOs and building back-ups to the appropriate regulatory agencies; and notification methods to the potentially impacted public. The SORP should have the following components:

i. The SORP should provide procedures for orally reporting to DHEC the location of any SSO by street address or any other appropriate method (i.e., latitude-longitude) within twenty-four (24) hours of the time the Utility first becomes aware of the SSO.

ii. The SORP should provide procedures for written reporting to DHEC within five (5) days of the time the Utility first becomes aware of the SSO. At a minimum, a written report should contain the following:

a. Location of the SSO by street address, or any other appropriate method (i.e., latitude-longitude).

b. Estimated date and time when the SSO began and stopped, or if still active, the anticipated time to stop the SSO.

c. Steps taken to respond to the SSO.

d. Ultimate destination of the SSO, such surface waterbody (by name), if applicable, storm drain leading to surface waterbody (by name), dry land, building, etc.

e. An estimate of the volume (in gallons) of sewage discharged.

f. Description of the sewer system component from which the SSO was released (ie., manhole, crack in pipe, pump station wet well, etc…).

g. Estimate of the SSO's impact on public health and water quality in the receiving water body.

h. Cause or suspected cause of the SSO.

i. The date of the last SSO at the same location within the past five years.

j. Steps taken or to be taken to reduce, eliminate, and prevent recurrence of the SSO with a schedule of major milestones for those steps.

k. Report of all notifications to the public and other agencies or departments.

iii. The SORP should provide procedures for maintenance of records for at least five (5) years from the date of an SSO, including all written and/or electronic documents including but not limited to: written reports to DHEC; field crew notes, work orders, pictures, response times and corrective actions taken; records documenting steps that have been and will be taken to prevent the SSO from recurring, including work order records associated with investigation and repair activities; and a list and description of complaints from customers or others regarding an SSO.

iv. The SORP should establish procedures for identifying the cause of an SSO, for identifying the extent of potential threats to human health or the environment from the SSO, and for quantifying the volume and duration of the SSO.

v. The SORP should provide procedures for responding to SSOs in a timely manner to minimize the environmental impact and potential human health risk, and should include, but not be limited to, the following:

a. A detailed description of the procedures to immediately provide notice to the public that may be impacted by the SSO (through the local news media or other means including without limitation signs or barricades to restrict access).

b. A detailed description of the procedures for ensuring that the Tega Cay Water Service is made aware of all SSOs as expeditiously as possible, and the responsibilities of employees (by position) charged with responding to SSOs.

c. A detailed description of the procedures to provide notice to appropriate local agencies/authorities.

d. A detailed description of the procedures (including response standard operating procedures) to minimize the volume of untreated wastewater discharged at an SSO location.

e. A detailed description of pump station-specific emergency procedures, bypass/ pump-around strategies, and estimated storage capacity (i.e., maximum volume of sewage that can be stored in the event of a pump station failure or repair without causing an SSO and estimated time during which sewage can be stored before an SSO will occur).

f. In the event that a repair may cause or lengthen the time of an SSO, a detailed procedure for determining when additional storage or pump around will be needed.

g. A detailed plan for cleaning up all SSOs completely and expeditiously.

h. A detailed plan describing the standard operating procedures to be followed by Tega Cay Water Service personnel in responding to building backups, including:

i. Methods for communicating with customers about how to report building backups and how to obtain clean-up.

ii. Response to building backups, including timeframe for responses, measures to be taken to clean up building backups caused by conditions in WCTS, procedures to disinfect and/or remove potentially contaminated items (ie., wet vacuuming, wiping floors and walls with disinfectant, flushing out and disinfecting plumbing fixtures, carpet cleaning or replacement), procedures to correct or repair conditions in the sewer system causing or contributing to the building backup, and the follow-up process to insure adequacy of cleanup.

iii. Resources to correct or repair the condition causing or contributing to the building backup.

iv. The process a customer may follow to dispute a determination by Utilities Inc personnel that a wastewater backup into a building is caused by a blockage or other malfunction of a private lateral, and therefore is not a building backup.

v. The SORP should provide procedures for providing adequate training necessary for Utilites Inc. employees, contractors, and personnel of other affected agencies to effectively implement the SORP. The SORP should provide training guidelines to ensure adequate response training is provided to management and field personnel responsible for responding to SSOs. The SORP should provide procedures for adequate training to response personnel for estimating volumes from SSOs.

vi. Tega Cay Water Service should establish procedures for remedying the cause of an SSO. Standard repairs for typical SSO causes should be identified, as should the resources needed and available for such repairs. Procedures for diverting flow around blockages or line failures should be included, as should procedures for minimizing human contact with sewage. Standard containment procedures for typical SSOs should be identified.

vii. Tega Cay Water Service should identify and include in the SORP a list of those SSO locations within the WCTS that have been recorded as overflowing more than once in a 12 month period and those locations at which an SSO is likely to occur first in the event of pump station failure

for each pump station. The SORP should provide procedures for establishing routine inspection routes to be performed after each rain event. The inspection routes should include all SSO locations identified as having occurred more than once in a 12 month period, and all pump stations that are not monitored at a central location via remote monitoring devices.

viii. Tega Cay Water Service should ensure all SSOs are thoroughly documented and tracked by location, date, and volume.

D. Conclusion

The facility's personnel appear to be maintaining the system fairly well; however, some of the deficiencies noted above are of concern. Deficiencies in the area of recording and reporting and preventive maintenance have the potential to cause the facility to violate conditions of the NPDES Permit. Also, the inadequacies noted in managing I/I has caused SSOs at the treatment plant. This deficiency in controlling I/I highlights the need for improved MOM programs as well as the completion of significant conveyance infrastructure improvements. The available SSO record at the time of this inspection indicated large overflows at both WWTPs. This suggests that improvements may also be needed at the treatment plant themselves. Several additional SSOs were reported between December 2013 and January 2014 during rain events. That these types of SSOs persist is an indication that Tega Cay does not have as detailed an understanding of the existing I/I issues in the WCTS as they previously thought.

The facility has a reactive maintenance approach rather than a firm preventive maintenance program. As a result, the system is experiencing SSOs due to excessive I/I that the EPA attributes to improper operation and maintenance practices. Tega Cay Water Service should take immediate steps to correct those deficiencies in the WCTS that are contributing to SSOs in the system. DHEC has issued an order that requires certain improvements aimed at eliminating SSOs. Total compliance with this order is essential to achieving SSO reduction in Tega Cay. However, the order does not explicitly state a return to compliance date. The EPA will be monitoring the progress of the project development and implementation in Tega Cay to ensure compliance with the Consent Order is timely and appropriate.