

August 2009

# UNION COUNTY, NORTH CAROLINA

## DEPARTMENT OF PUBLIC WORKS



# WASTEWATER SYSTEM PERFORMANCE SUMMARY

(FISCAL YEAR 2008-2009)

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## 1.0 INTRODUCTION

House Bill 1160, the Clean Water Act of 1999, was ratified by the North Carolina General Assembly on July 20, 1999 and signed into law by the Governor on July 21, 1999. This legislation placed significant reporting requirements on entities that own or operate wastewater systems. This Performance Summary is intended to establish compliance with said rule.

Union County Public Works (UCPW) is charged with the management, operation and maintenance of the County's sanitary sewer system. During the 2008-2009 fiscal year the wastewater system was comprised of 5 active wastewater treatment plants (WWTP), approximately 65 wastewater pumping stations, and over 580 miles of pipe with over 27,400 connections. In addition to the 5 WWTP's which have a combined rated treatment capacity of 8.1 million gallons per day (MGD), the County, through contractual agreement, has 2.65 MGD and 3.0 MGD of purchased capacity at the City of Monroe WWTP and Charlotte's McAlpine Creek WWTP respectively.

Public Works' Mission Statement is as follows:

*Develop water, sewer and solid waste infrastructure that supports residential, commercial, industrial and agricultural needs while meeting Federal/State regulations and providing our customer base with acceptable levels of service at cost effective rates*

## 2.0 DEFINITIONS

For the purposes of this Performance Report the following definitions apply:

- **Aerobic** – A condition in which atmospheric or dissolved molecular oxygen is present in the aquatic environment.
- **Automatic Telephone Dialer or ATD** – A device connected to the telephone system that will call programmed telephone numbers to alert people of equipment status.
- **Biological Nutrient removal** – The process of removing nitrogen and phosphorus from wastewater using biological processes as opposed to chemical means.
- **Biosolids** – A primarily organic solid product, produced by wastewater treatment processes that can be beneficially recycled. The word *biosolids* replaces the word *sludge*.
- **BOD – Biochemical Oxygen Demand** – The rate at which organisms use the oxygen in water or wastewater while stabilizing decomposable organic matter under aerobic conditions. The BOD Test is a procedure that measures the rate of oxygen use under controlled conditions of

time and temperature. BOD is typically used to express the “strength” of wastewater.

- **CL<sub>2</sub> – Chlorine Residual** – The amount of chlorine present in the final effluent after disinfection. Typically measured in micrograms per liter or milligrams per liter.
- **D.O. – Dissolved Oxygen** – Molecular (atmospheric) oxygen dissolved in a liquid.
- **Effluent** – Treated wastewater flowing from the treatment system.
- **Extended Aeration** – A type of wastewater treatment facility in which the wastewater is retained and treated for a minimum of 24 hours at design flow before discharge occurs.
- **Impeller**- A rotating set of vanes in a pump designed to pump or lift water.
- **Inflow and Infiltration (I&I)** - extraneous water that enters the sanitary sewer system through openings and/or defects in the collection system.
- **Fecal Coliform** – The coliform (bacteria) found in the feces of warm blooded animals. The presence of coliform-group bacteria is an indication of possible pathogenic bacterial contamination.
- **MGD – Million Gallons per Day** – Volumetric measurement of flow converted to millions. Example 150,000 gallons per day (gpd) / 1,000,000 = 0.150 MGD.
- **NH<sub>3</sub> – Nitrogen as Ammonia** – A compound found naturally in wastewater. The compound is produced by the deamination of organic nitrogen containing compounds.
- **NPDES Permit – National Pollutant Discharge Elimination System - Permits**, required by the Federal Water Pollution Control Act Amendments of 1972, which regulate discharges to surface waters.
- **pH** – The expression of the intensity of the basic or acidic condition of a liquid.
- **Pump Station** – A holding tank with pumps that forces wastewater uphill when flow by gravity is not possible.
- **Reclaimed Water** – Highly treated wastewater that has undergone advanced treatment processes to remove solids, organics, and pathogens meeting the State’s Health and Safety Standards for Beneficial Reuse.
- **SBR – Sequencing Batch Reactor** – A type of wastewater treatment facility that treats and discharges water in batches as opposed to continuous flow.
- **Telemetry** – A system by which information pertaining to remote equipment status is transmitted via radio waves to a central location.
- **TSS – Total Suspended Solids** – Particles suspended in a liquid.
- **Turbidity** – The measurement of the clearness or cloudiness of a liquid.

### **3.0 SYNOPSIS OF WASTEWATER TREATMENT FACILITIES (Fiscal Year 2008-2009)**

During the 2008-2009 fiscal year the Department of Public Works operated and maintained a total of five (5) active wastewater treatment facilities and maintained one (1) inactive facility. Although each Permit requires facility visitation daily, excluding weekends and holidays, Public Works' wastewater treatment facilities are checked 7 days per week, 365 days per year. All treatment facilities are equipped with emergency back-up power generators. Each treatment facility is equipped with an automated telephone dialer (ATD). In addition to an ATD, each facility has both audible and visual trouble alarms. Wastewater treatment plant staff rotate "call duty" for after hour situations that may arise.

A brief overview of each facility and a performance summary table for each facility is provided herein.

#### **3.1 Twelve Mile Creek Water Reclamation Facility**

Permit No. NC0085359. Twelve Mile is an extended aeration facility utilizing biological nutrient removal and tertiary filtration. Disinfection is accomplished via UV (ultraviolet light). Twelve Mile effluent is discharged into Twelve Mile Creek, which is part of the Catawba River Basin. The facility is permitted to discharge up to 6.0 MGD of treated wastewater. January 18, 2008, the Twelve Mile facility was permitted to dispense bulk "reclaimed" water to authorized users (Permit No. WQ0032519). Bulk reclaimed water has multiple "Non-potable" uses which can serve to reduce demand upon the potable water supply and distribution system. The bulk reclaimed water program was suspended in the fall of 2008 pending a system upgrade which includes secondary disinfection. Operational changes have been successfully implemented to control phosphorous quantities discharged. A "Plant Reliability Enhancements" project which commenced February 4, 2009 will serve to aid monitoring and control operations upon completion in early 2010. An "Odor Control" project also commenced on February 4, 2009 and will serve to scrub the foul air which may be emitted on occasion from specific process units. This project is slated for completion later in 2010. Twelve Mile Creek WWTP is located at 8299 Kensington Drive and serves Waxhaw as well as portions of Indian Trail, Stallings and Weddington. Please refer to Table 3-1.

#### **3.2 Crooked Creek Water Reclamation Facility**

Permit No. NC0069841. Crooked Creek is an extended aeration facility utilizing tertiary filtration. Disinfection is accomplished via UV (ultraviolet light). Crooked Creek effluent is pumped over 17,000 feet to discharge into the North Fork Crooked Creek which lies in the Yadkin Pee Dee River

Basin. This facility is permitted to discharge up to 1.9 MGD of treated wastewater. January 18, 2008, the Crooked Creek facility was permitted to dispense bulk “reclaimed” water to authorized users (Permit No. WQ0032520). Bulk reclaimed water has multiple “Non-potable” uses which can serve to reduce demand upon the potable water supply and distribution system. As with Twelve Mile Creek, the bulk reclaimed water program was suspended in the fall of 2008 pending a system upgrade which includes secondary disinfection. Crooked Creek is located at 4015 Sardis Church Road and serves the Indian Trail, Lake Park and Stallings areas. Please refer to Table 3-2.

### **3.3 Hunley Creek Wastewater Treatment Plant**

Permit No. NC0072508. Hunley Creek is a Sequencing Batch Reactor. Disinfection is accomplished via chlorination/dechlorination. Hunley Creek effluent is discharged into Goose Creek, which lies in the Yadkin Pee Dee River Basin. This facility is permitted to discharge up to .231 MGD of treated wastewater. Discharge permit limits changed February 2005. The new limits are more stringent than the design capabilities of the Hunley Creek facility. The facility was taken off-line May 10, 2006 via flow diversion project and remains inactive. Hunley Creek is located at 6913 Stevens Mill Road and serves the subdivisions of Shanamara, Hunley Creek and Stevens Mill. Due to “Inactive Status” of the Hunley Creek WWTP, there was no data to report to Table 3-3 for fiscal year 2008-2009.

### **3.4 Olde Sycamore Water Reclamation Facility**

Permit No. WQ0011928. Olde Sycamore is an extended aeration facility with tertiary filtration. Disinfection is accomplished via UV (ultraviolet light). This facility is permitted to discharge up to .150 MGD of treated wastewater. Olde Sycamore serves the Olde Sycamore Golf Community located off Highway 218 and Rock Hill Church Road. Olde Sycamore effluent is discharged to a man-made impoundment from which it is then pumped onto the Olde Sycamore Golf Course as a source of irrigation. Please refer to Table 3-4.

### **3.5 Tallwood Estates Wastewater Treatment Plant**

Permit No. NC0069523. Tallwood is an extended aeration facility with tertiary filtration. Disinfection is accomplished via UV (ultraviolet light). This facility is permitted to discharge up to .05 MGD of treated wastewater. Tallwood is located within and serves the Tallwood Subdivision off Brief Road. Tallwood effluent is discharged to Clear Creek, which lies in the Yadkin Pee Dee River Basin. Please refer to Table 3-5.

### **3.6 Grassy Branch Wastewater Treatment Plant**

Permit No. NC0085812. Grassy Branch is an extended aeration facility with tertiary filtration. Disinfection is accomplished via UV (ultraviolet light). This facility is permitted to discharge up to .05 MGD of treated

wastewater. Grassy Branch is located at 1629 Old Fish Road and currently serves the Unionville Elementary, Piedmont Middle and Piedmont High Schools as well as one individual residence, Loxdale Farms Subdivision, and Smith Field Subdivision. Grassy Branch effluent is discharged to Crooked Creek which lies in the Yadkin Pee Dee River Basin. Please refer to Table 3-6.

TABLE 3-1

**Twelve Mile Creek Water Reclamation Facility  
NPDES Permit #: NC0085359  
Fiscal Year: 2008-2009 Effluent Limits and Performance**

PARAMETER	LIMIT	JUL '08	AUG '08	SEP '08	OCT '08	NOV '08	DEC '08	JAN '09	FEB '09	MAR '09	APR '09	MAY '09	JUN '09
<b>FLOW</b>	<b>6.0 MGD</b>	3.01	3.24	3.28	3.01	3.35	3.72	3.65	3.49	4.48	3.68	3.45	3.30
<b>pH</b>	<b>6-9 SU</b>	6.7-7.2	6.8-7.2	6.9-7.3	6.9-7.6	7.2-7.5	7.1-7.7	7.1-7.4	7.1-7.4	7.0-7.4	7.2-7.5	7.4-7.6	7.4-7.8
<b>BOD<sub>5</sub></b> SUMMER (APR.1 - OCT.31)	<b>5 mg/l</b>	0.9	1.5	1.5	1.0						2.7	1.0	0.2
WINTER (NOV.1 - MAR.31)	<b>10 mg/l</b>					2.8	3.8	4.5	3.5	4.1			
<b>AMMONIA NITROGEN</b> SUMMER	<b>1 mg/l</b>	0.0	0.0	0.0	0.0						0.0	0.0	0.0
WINTER	<b>2 mg/l</b>					0.0	0.0	0.0	0.0	0.0			
<b>TOTAL SUSPENDED RESIDUE</b>	<b>30 mg/l</b>	2.6	1.8	2.7	1.7	1.0	1.3	1.8	0.7	1.5	0.5	0.3	0.1
<b>FECAL COLIFORM</b>	<b>200/100 ml</b>	2	2	2	1	1	1	3 <sup>1</sup>	1	3	4	1	2
<b>DISSOLVED OXYGEN</b>	<b>≥ 6 mg/l</b>	7.8	10.94	7.8	8.3	8.7	8.7	8.8	8.9	8.9	8.8	8.4	8.4
<b>COPPER</b>	<b>18.5 ug/l</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>ZINC</b>	<b>172.0 ug/l</b>	67.0	52.0	63.0	50.0	55.0	52.0	43.0	50.0	38.0	43.0	39.0	51.0
<b>TOTAL PHOSPHOROUS</b>	<b>41.7 #/day</b>	19.05	26.35	13.74	6.28	5.31	6.52	5.78	0.44	1.68	2.70	0.29	0.38

<sup>1</sup> Fecal Coliform daily limit exceeded on one day. Hydraulic system of disinfection system had internal leak. Repaired upon discovery. Monthly parameter was compliant.

TABLE 3-2

**Crooked Creek Water Reclamation Facility  
NPDES Permit #: NC0069841  
Fiscal Year: 2008-2009 Effluent Limits and Performance**

PARAMETER	LIMIT	JUL '08	AUG '08	SEP '08	OCT '08	NOV '08	DEC '08	JAN '09	FEB '09	MAR '09	APR '09	MAY '09	JUN '09
FLOW	1.900 MGD	1.027	1.087	1.08	1.09	1.09	1.11	1.11	0.99	1.37	1.02	0.98	1.02
pH	6-9 SU	6.95-8.06	6.68-7.78	6.5-7.8	7.3-8.2	6.5-7.9	6.9-7.9	6.6-7.6	6.9-7.8	6.8-7.7	6.8-7.7	6.7-7.9	6.5-8.2
Cl <sub>2</sub>	17 ug/l	-	-	-	-	-	-	-	-	-	-	-	-
BOD <sub>5</sub>	SUMMER (APR.1 - OCT.31)	1.23	4.40	2.8	2.0						6.1 <sup>2</sup>	2.8	1.8
	WINTER (NOV.1 - MAR.31)	10 mg/l				2.5	5.3	3.2	5.2	4.0			
AMMONIA NITROGEN	SUMMER	2 mg/l	0.0	0.0	0.0	3.2 <sup>1</sup>					0.0	0.0	0.0
	WINTER	4 mg/l				0.0	0.0	0.0	0.0	0.0			
TOTAL SUSPENDED RESIDUE	30 mg/l	0.4	0.4	1.5	0.9	1.2	4.1	2.7	4.2	5.5	8.8	2.8	0.9
FECAL COLIFORM	200/100 ml	3	4	14	3	10	14	4	4	5	27	5	7
DISSOLVED OXYGEN	≥ 6 mg/l	8.02	7.49	7.9	8.1	9.4	9.5	10.3	10.5	9.8	9.1	8.4	7.7

<sup>1</sup> Ammonia Nitrogen exceeded monthly limit due to first week of month performance. No cause was determined for first week excursion.

<sup>2</sup> BOD exceeded limit for week 2 and month. Process upset is thought to be related to chlorination of RAS to control filamentous growth in system.

TABLE 3-3

Hunley Creek Wastewater Treatment Plant  
 NPDES Permit #: NC0072508  
 Fiscal Year: 2008-2009 Effluent Limits and Performance

PARAMETER	LIMIT	JUL '08	AUG '08	SEP '08	OCT '08	NOV '08	DEC '08	JAN '09	FEB '09	MAR '09	APR '09	MAY '09	JUN '09
FLOW	0.231 MGD	<p><b>Hunley Creek WWTP                      is currently not in active service.                      This facility was listed as inactive as of May 2006;                      therefore there is no data reported for this fiscal year</b></p>											
pH	6-9 SU												
Cl <sub>2</sub>	20 ug/l												
BOD <sub>5</sub> SUMMER (APR.1 - OCT.31)	5 mg/l												
WINTER (NOV.1 - MAR.31)	10 mg/l												
AMMONIA NITROGEN SUMMER	2 mg/l												
WINTER	4 mg/l												
TOTAL SUSPENDED RESIDUE	30 mg/l												
FECAL COLIFORM	200/100 ml												
DISSOLVED OXYGEN	≥ 5 mg/l												

No violations for fiscal year

TABLE 3-4

**Olde Sycamore Water Reclamation Facility**  
**NPDES Permit #: WQ0011928**  
**Fiscal Year: 2008-2009 Effluent Limits and Performance**

PARAMETER	LIMIT	JUL '08	AUG '08	SEP '08	OCT '08	NOV '08	DEC '08	JAN '09	FEB '09	MAR '09	APR '09	MAY '09	JUN '09
<b>FLOW</b>	<b>0.150 MGD</b>	0.062	0.067	0.088	0.125	0.073	0.092	0.070	0.061	0.048	0.060	0.072	0.075
<b>pH</b>	<b>6-9 SU</b>	6.20-7.30	6.27-7.07	6.68-6.97	6.52-7.31	6.14-7.21	6.38-7.11	6.02-7.18	6.38-7.08	6.01-6.89	6.04-6.78	6.29-7.04	6.38-7.07
<b>BOD<sub>5</sub></b>	<b>10 mg/l</b>	0.55	1.10	0.54	1.22	1.16	1.94	1.73	2.17	1.24	0.71	2.77	1.00
<b>AMMONIA NITROGEN</b>	<b>4 mg/l</b>	0.0	0.3	0.3	0.8	1.6	1.2	0.0	0.0	0.0	0.0	0.0	0.0
<b>TOTAL SUSPENDED RESIDUE</b>	<b>5 mg/l</b>	0.0	1.0	0.0	0.0	0.0	0.0	0.6	0.5	0.0	0.0	1.7	0.0
<b>FECAL COLIFORM</b>	<b>14/100 ml</b>	1	2	2	1	1	10 <sup>1</sup>	1	1	1	1	1	1
<b>TURBIDITY</b>	<b>≤ 10 NTU</b>	0.3	1.1	0.8	0.5	0.5	3.5	1.2	1.6	1.1	1.7	1.1	1.1

<sup>1</sup> Fecal Coliform exceeded daily limit (33 vs 25). Cause was not determined. Monthly parameter limit was compliant.

TABLE 3-5

**Tallwood Estates Wastewater Treatment Plant  
NPDES Permit #: NC0069523  
Fiscal Year: 2008-2009 Effluent Limits and Performance**

PARAMETER	LIMIT	JUL '08	AUG '08	SEP '08	OCT '08	NOV '08	DEC '08	JAN '09	FEB '09	MAR '09	APR '09	MAY '09	JUN '09
<b>FLOW</b>	<b>0.050 MGD</b>	0.026	0.026	0.027	0.024	0.022	0.028	0.027	0.027	0.046	0.028	0.026	0.026
<b>pH</b>	<b>6-9 SU</b>	6.8-7.3	6.5-7.3	6.8-7.3	6.7-7.4	6.3-7.5	6.9-7.4	6.4-7.3	6.8-7.3	6.4-7.5	6.8-7.5	6.4-7.2	6.8-7.2
<b>BOD<sub>5</sub></b> SUMMER (APR 1-OCT 31)	<b>5 mg/l</b>	0.0	2.88	0.0	0.0						0.6	0.5	2.1
WINTER (NOV.1 - MAR.31)	<b>10 mg/l</b>					0.0	0.5	0.6	0.6	1.2			
<b>AMMONIA NITROGEN</b> SUMMER	<b>2 mg/l</b>	0.0	1.0	0.0	0.0						0.0	0.0	0.0
WINTER	<b>4 mg/l</b>					0.0	0.0	0.0	0.0	0.0			
<b>TOTAL SUSPENDED RESIDUE</b>	<b>30 mg/l</b>	0.00	0.82	0.00	0.5	0.0	0.0	0.0	1.1	2.6	0.0	0.0	0.5
<b>FECAL COLIFORM</b>	<b>200/100 ml</b>	1	1	1	1	1	2	1	2	1	2	1	1
<b>DISSOLVED OXYGEN</b>	<b>≥ 6 mg/l</b>	7.28	7.52	7.7	7.8	8.2	8.4	9.5	9.7	8.9	9.0	8.5	8.0

No violations for fiscal year

TABLE 3-6

**Grassy Branch Wastewater Treatment Plant  
NPDES Permit #: NC0085812  
Fiscal Year: 2008-2009 Effluent Limits and Performance**

PARAMETER	LIMIT	JUL '08	AUG '08	SEP '08	OCT '08	NOV '08	DEC '08	JAN '09	FEB '09	MAR '09	APR '09	MAY '09	JUN '09
<b>FLOW</b>	<b>0.050 MGD</b>	0.012	0.014	0.034	0.022	0.016	0.024	0.021	0.024	0.043	0.020	0.027	0.011
<b>pH</b>	<b>6-9 SU</b>	6.9-7.4	6.3-7.5	6.8-7.0	6.2-7.1	6.5-7.3	6.1-6.9	6.4-6.9	6.4-6.8	6.4-7.3	6.1-6.8	6.5-6.9	6.5-7.3
<b>Cl<sub>2</sub></b>	<b>17 ug/l</b>	–	–	–	–	–	–	–	–	–	–	–	–
<b>BOD<sub>5</sub></b>	<b>5 mg/l</b>	0.8	1.3	1.3	0.5						2.9	3.8	1.7
	<b>10 mg/l</b>					1.8	2.1	1.6	2.1	3.9			
<b>AMMONIA NITROGEN</b>	<b>2 mg/l</b>	0.0	0.8	0.0	0.0						0.0	0.7	1.6
	<b>4 mg/l</b>					0.0	0.4	0.0	0.0	0.0			
<b>TOTAL SUSPENDED RESIDUE</b>	<b>30 mg/l</b>	0.0	0.3	0.0	1.7	2.9	3.0	1.7	3.3	3.6	0.6	2.1	2.6
<b>FECAL COLIFORM</b>	<b>200/100 ml</b>	3	4	1	3	6	2	1	2	2	2	1	1
<b>DISSOLVED OXYGEN</b>	<b>≥ 6 mg/l</b>	7.3	7.9	8.0	8.3	7.4	9.0	9.7	10.2	9.9	9.4	8.3	8.1

No violations for fiscal year

#### 4.0 BIOSOLIDS MANAGEMENT

Biosolids are managed and disposed of in accordance with Permit No. WQ0007486 issued by the North Carolina Department of Environment and Natural Resources. Biosolids are stored at both the Crooked Creek and Twelve Mile Creek WWTPs. The solids are aerobically digested and then applied as “fertilizer” to permitted sites. The solids are considered stabilized, and thus suitable for land application, when the volatile solids content is reduced by 38%. If this 38% volatile solids reduction can not be achieved, then alkaline stabilization, injection or incorporation is employed to ensure Permit compliance.

#### 5.0 SYNOPSIS OF WASTEWATER COLLECTION SYSTEM (Fiscal Year 2008-2009)

UCPW currently operates and maintains approximately 65 wastewater pump stations and over 580 linear miles of sewer lines including force mains, which serve approximately 27,430 customers throughout the county. All pump stations are equipped with both audible and visual alarms as well as either automated telephone dialer (**ATD**) or telemetry which alert staff when alarm conditions occur. Inspections of all stations meet or exceed State requirements. Approximately 80% of all pump stations are checked a minimum of twice weekly and 20% are checked once a week to ensure proper maintenance and operation. Emergency back up power is provided to all stations via portable or permanent generators. Wastewater personnel are on a call rotation providing staff coverage 24 hours per day, 7 days per week, 365 days a year.

Public Works maintains emergency response equipment in a ready state at all times. This emergency equipment varies in nature from spare electrical parts and plumbing supplies to vacuum trucks and backhoes. Workers’ safety is of utmost importance. Safety equipment such as night lighting, gas monitors, trenching and shoring equipment, and reflective cones/signs are always readily available.

Public Works has ongoing programs to identify and correct deficiencies associated with the wastewater collection system. The programs are listed below with results of this year’s efforts to maintain the collection system.

LINE MAINTENANCE (min. 10%)	FEET	MILES
SEWER LINES CLEANED	243,331	46.1
CCTV MAIN LINE	144,248	27.3
SMOKE TESTS	88,543	16.8

<b>PRO-ACTIVE MAINTENEANCE INSPECTIONS</b>	<b>INSPECTED</b>	<b>REPAIRED</b>
<b>GRAY WATER TANKS</b>	<b>58</b>	<b>23</b>

		<b>EXTRANEIOUS FLOW ELIMINATED</b>	
<b>INFLOW/INFILTRATION (I &amp; I)</b>	<b>REPAIRS</b>	<b>GPM</b>	<b>MGD</b>
<b>POINT REPARIS (MANHOLES, LATERALS, ETC.)</b>	<b>1058</b>	<b>477</b>	<b>0.687</b>
<b>MANHOLE FULL REHAB</b>	<b>15</b>	<b>NA</b>	<b>NA</b>

<b>PUMP STATION MAINTENANCE</b>	
<b>ALARM CONDITIONS</b>	<b>827</b>
<b>REPAIRS</b>	<b>128</b>

<b>OTHER</b>	
<b>SEWER BLOCKAGES/ODOR</b>	<b>131</b>
<b>MANHOLES INSPECTED (GIS MAP)</b>	<b>882</b>

High priority lines such as aerial creek crossings, lines subject to erosion and/or problematic areas are visually inspected at a minimum of semi-annually. High priority lines are inspected more frequently after periods of heavy rain and flooding.

Another important program is the **FOG** (Fats, Oils, and Grease) program. This program is aimed at reducing back-ups and overflows by educating the public of the hazards associated with the disposal of grease and grease related by-products into the wastewater system. A grease trap inspection program has provided better data ensuring that restaurants and other food preparation facilities properly maintain grease traps and interceptors.

**Major system improvements during fiscal year 2008-2009 include:**

- ✓ The continued development of a comprehensive electronic sewer map. This map will help Public Works in tracking problematic areas as well as track scheduled maintenance, improvements, and repairs throughout the service area.
- ✓ CCTV/Cleaning efforts concentrated within UCPW's satellite systems were conducted to identify areas of inflow and infiltration.
- ✓ Reclaimed bulk water program was introduced to reduce the effects of drought conditions.

During the Fiscal Year 2008-2009, the County's wastewater system collected nearly 2.5 billion gallons. There were twenty-one (21) sanitary sewer overflows with a combined volume of approximately 18,355 gallons that occurred within the collection system during the reporting period. The overflows are summarized below.

<u>DATE</u>	<u>LOCATION</u>	<u>CAUSE</u>	<u>SURFACE WATER</u>	<u>VOLUME (GALLONS)</u>
7/3/2008	BROOK VALLEY	DEBRIS	TWELVE MILE CREEK	600
7/7/2008	MH#1020 – ST JOHN'S FORRETT	VANDALISM	NONE	100
7/8/2008	RONE BRANCH(21-25) PS	SEVERE STORMS/POWER OUTAGE	NONE	375
7/21/2008	MERIWEATHER (MH#8686)	VANDALISM	TWELVE MILE CREEK	80
8/5/2008	2607 BOBWHITE CIRCLE	GREASE	NONE	40
8/9/2008	14834 PAWNEE TRAIL	GREASE	CROOKED CREEK	450
8/26/2008	EASTSIDE PUMP STATION #2	TROPICAL STORM FAY	MEADOWS BRANCH	1950
8/31/2008	EASTSIDE PUMP STATION #2	HEAVY RAIN	MEADOWS BRANCH	1750
9/15/2008	8800 WALTHAM CT.	GREASE	SIX MILE CREEK	500
11/2/2008	ARV ES3-41	DEBRIS	NONE	80
12/11/2008	EASTSIDE PUMP STATION #2	HEAVY RAIN	NONE	450
12/12/2008	EASTSIDE PUMP STATION #2	EQUIPMENT FAILURE/CHECK VALVE	RAYS FORK BRANCH	500
12/31/2008	14834 PAWNEE TRAIL	VANDALISM	CROOKED CREEK	350
1/6/2009	MH #5231	HEAVY RAIN/I&I	CROOKED CREEK	3600
2/7/2009	ARV	FAILURE TO SEAL	NONE	300
3/1/2009	MH #2700	HEAVY RAIN – 3.5"	MEADOWS BRANCH	900
	MH #2707	BREAK HEAVY RAIN – 3.5"	RAYS FORK BRANCH	300
	MH #2698, 2699	BREAK HEAVY RAIN – 3.5"	MEADOWS BRANCH	4500
3/28/2009	EASTSIDE PUMP STATION #2	HEAVY RAIN/I&I	NONE	750
3/29/2009	44926 CRUZ BAY-ST JOHN'S FOREST MH #12020	VANDALISM – ROCKS, STICKS	NONE	30
4/26/2009	3005 ANSDALE DR - BROOKHAVEN	VANDALISM – STICKS	NONE	750

For questions concerning this Wastewater System Performance Summary or additional information please contact **UCPW**:

(704) 296-4210

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500 North Main Street, Suite 500  
Monroe, NC 28112-4730

This document can be viewed at:

<http://UCPW.co.union.nc.us>