



**CHARLOTTE**<sup>SM</sup>

CHARLOTTE-MECKLENBURG  
UTILITIES

# Wastewater Performance Report

**July 1, 2002 – June 30, 2003**

**Charlotte-Mecklenburg Utilities**

5100 Brookshire Blvd.

Charlotte, NC 28216

Phone: (704) 399-2221 Fax: (704) 393-2219

[www.cmutilities.com](http://www.cmutilities.com)

## **I. General Information**

### **Name of Regulated Entity and Responsible Person:**

City of Charlotte  
Barry Gullet, Deputy Director  
Charlotte-Mecklenburg Utilities  
Administration Division  
5100 Brookshire Blvd.  
Charlotte, NC 28216  
(704) 399-2221

### **Applicable Permits:**

There are five wastewater treatment facilities owned and operated by Charlotte-Mecklenburg Utilities. Charlotte-Mecklenburg Utilities also operates one facility that is owned by Mecklenburg County. Below is a list of these facilities and their applicable NPDES (National Pollutant Discharge Elimination System) permit number. Included with the list of facilities is the name of the Operator in Responsible Charge (ORC) at the facilities and the site telephone numbers.

| <b>WWTF</b>         | <b>Permit Number</b> | <b>ORC</b>           | <b>Phone</b> |
|---------------------|----------------------|----------------------|--------------|
| Irwin Creek WWTP    | NC0024945            | James T. Hunter      | 704-357-1344 |
| Mallard Creek WRF   | NC0030210            | Jerome Lucky         | 704-547-0680 |
| McAlpine Creek WWMF | NC0024970            | Sandy Kim Neely      | 704-542-0736 |
| McDowell Creek WWTP | NC0036277            | Elliot E. Goins, Jr. | 704-875-6443 |
| Sugar Creek WWTP    | NC0024937            | Roy E. Purgason, Jr. | 704-553-2124 |

| <b>WW COLLECTION</b> | <b>Permit Number</b> | <b>ORC</b>       | <b>Phone</b> |
|----------------------|----------------------|------------------|--------------|
| 4100 W. Tyvola Road  | pending              | Richard McMillan | 704-357-6064 |

The wastewater treatment facility that is owned by Mecklenburg County and operated by Charlotte-Mecklenburg Utilities is:

| <b>WWTF</b>        | <b>Permit Number</b> | <b>ORC</b>       | <b>Phone</b> |
|--------------------|----------------------|------------------|--------------|
| McDowell Park WWTP | NC0029220            | Robert P. Norris | 704-537-1344 |

### **Description of collection and treatment systems:**

The wastewater collection system currently operates under existing wastewater treatment plant NPDES permits. Utilities applied for its collection system permit and the NC Department of Environment and Natural Resources is reviewing that application.

Charlotte-Mecklenburg Utilities collects wastewater from an estimated 181,700 connections to households and businesses throughout the county. Wastewater is collected and directed (via gravity flow supported by 71 sewage lift stations) to any one of five wastewater treatment plants where it is treated and released. An average of 86.80 million gallons of wastewater is treated and discharged each day.

More than 100 employees work to maintain 3,210 miles of collection pipelines and 71 sewage lift stations throughout the county to ensure proper gravity flow. The gravity sewer pipes in this system range in size from 6 inches in diameter to 78 inches in diameter.

Each of the wastewater treatment plants provides primary, secondary and advanced treatment to the waste stream. Large solid particles and inorganic materials are removed by screening and settling. The wastewater is treated biologically to remove dissolved pollutants. Disinfection reduces bacterial and pathogenic materials. Finally, the waste stream passes through sand filters to remove very small particles that may not have been removed through the settling process.

## **II. Summary of System Performance**

### **Highlights**

Charlotte-Mecklenburg Utilities safely collected, treated and discharged more than 31.65 billion gallons of wastewater for the fiscal year ending June 30, 2003. Our wastewater collection system and plants safely transported and processed more than 99.93 percent of all flow. Less than 0.067 percent escaped the collection and treatment system in the form of sewage spills and overflows. Our wastewater treatment plants met 99.796 percent of all permitted discharge limits.

Charlotte-Mecklenburg Utilities celebrated some important milestones even as it took numerous actions to prevent overflows and protect water quality through effective wastewater treatment.

- Approximately 624 miles of sewer lines were cleaned (including repeated cleanings).
- 6.75 miles of sewer lines were restored or replaced
- All five wastewater treatment plants received Peak Performance Awards from the Association of Metropolitan Sewerage Agencies (AMSA) for the calendar year ending 2002. AMSA Gold Awards recognized four plants with 100 percent perfect compliance with their permit requirements. Mallard Creek Wastewater Treatment Plant earned an AMSA Silver Award, which was an excellent accomplishment for a plant that has experienced construction challenges related to its expansion.
- The Sugar Creek and Irwin wastewater treatment plants celebrated 75 years of service.
- Plant expansions and upgrades continued at all five treatment facilities to enhance performance and increase reliability.
- In its third year, our Oil & Grease Prevention Program inspected grease-handling facilities at 375 restaurants to ensure compliance with the city sewer use ordinance and protect the sewer system from improper grease disposal. Staff followed up on 332 sewer-overflow and 45 complaint investigations. Other activities included educating the public with 382 follow-up inspections, 1,296 residential handouts / mailings, and 20 grease prevention presentations.
- Charlotte-Mecklenburg Utilities added five wastewater pump stations and removed two for a total of 71 stations as of June 30, 2003.
- Phosphorus reduction project design is complete and scheduled to begin construction in Fall 2003.

### **Continuing Challenges**

The greatest continuing wastewater challenge in this community – and in others across the U.S. – is sewage spills and overflows. During the fiscal year ending June 30, 2002, Utilities reported 532 sewage spills from the collection system and six at wastewater treatment plants.

The total of 538 spills equaled 21,319,973 gallons spilled (20,681,677 gallons reached surface waters).

#### ***What Causes Wastewater to Overflow?***

Most overflows are due to blockages in the line caused by a buildup of grease, rocks, debris, or roots. Vandalism is also a problem, with tree stumps, bricks, rags, and other miscellaneous items being dumped into manholes or forced into lines to cause a blockage.

Locally, frequent heavy rains and the December ice storm represented a major challenge. Over sixteen million gallons of the wastewater that overflowed this year were during rain events. In FY2003, 20 rainfall events exceeded one inch and three exceeded two inches. Weather was a major challenge and staff continues to inspect each cause and take appropriate steps.

#### ***Wastewater Collection Challenges***

Grease and other blockages that lead to sewer overflows are cleared by Utilities crews, using metal rods and/or truck-mounted water jets. If damaged pipe or other infrastructure is discovered it is repaired. The spilled sewage can sometimes be captured and pumped back into the sewer system.

Inspection crews and our customers find overflows. Reports of overflows where 1,000 or more gallons are spilled are faxed to the media in an effort to notify the public. A legal notice is posted when overflows of 15,000 gallons or more reach surface waters. Crews also use door hangers to notify customers when appropriate.

Charlotte-Mecklenburg Utilities continues its excellent sewage spill response record. Our wastewater collection staff response time averaged 36.6-minute to all overflows as of June 30, 2003. Staff responded to over 91 % of the spills in less than 60 minutes. This compares to a state response standard of 120 minutes or less.

The total number of collection system overflows was the highest in several years. The five-year moving average now stands at 325 collection system spills per year (from FY1999 to present-FY03).

Twenty-seven of the 532 spills were at pump stations; all but four of the pump station overflows occurred during heavy rain events and ice storm.

Utilities continues to identify and correct grease, tree root, and rain related overflows. A consultant has been retained to assess the wastewater collection system and our ongoing programs to reduce overflows. Odor issues in the collection system are improving but challenges remain.

### ***Wastewater Treatment Plants Challenges***

Charlotte-Mecklenburg Utilities five wastewater treatment plants met 99.796 percent of all discharge limit tests set forth by our NPDES permits but our commitment is 100 percent compliance. Staff continues to improve maintenance capabilities and overall performance. Major rehabilitation and improvement projects help maintain compliance. Future upgrades and expansions are being designed.

There were six overflows at wastewater treatment plants. The largest was at McDowell Creek WWTP. On January 18, 2003, operations staff inadvertently closed the wrong valve while repairing a broken water pipe causing influent wastewater to back up in a pipe and spill out of manholes outside the plant. The amount was estimated at 2,500,000 gallons. Appropriate steps were taken to reduce a repeat occurrence. The N.C. Division of Water Quality fined Charlotte-Mecklenburg Utilities \$9,300 for this spill.

Wastewater treatment plant flows were starting to increase significantly at the end of 2002. Utilities temporarily suspended accepting applications for new sewer pipe extensions in the McDowell Creek WWTP service area. The wastewater treatment plant is operating near its permitted treatment capacity. Utilities is working with N.C. Department of Environment And Natural Resources to obtain permits to increase capacity. Work on this has been under way since 1999 and Charlotte-Mecklenburg Utilities' permitting process with the state began in 2000.

Our pretreatment program has identified, permitted and is regulating large industrial users to keep unsuitable discharges out of the wastewater system. While industrial compliance is extremely high in Charlotte-Mecklenburg, identifying other potentially hazardous discharge sources is an ongoing challenge. In FY03 expansion of the trunkline monitoring program continued, enabling Utilities pretreatment staff to more closely observe what industrial and commercial customers discharge into the sewer network and to identify potential problem areas to protect the collection system and plants.

*The sections following this page – Sections IIA and IIB -- detail all spills from the collection system and plants, along with plant permit limit violations and monitoring and reporting violations. Section IIA includes spills for the fiscal year ending June 30, 2003 and is separated by month. These include size of spills, their cause and descriptions of any known environmental impact.*

*The second section, Section IIB, represents NPDES reporting and monitoring violations and is separated by plant.*

### **III. Notification**

This report is available to the users or customers of this system by clicking on the 'publications' link of the Charlotte-Mecklenburg Utilities homepage at [www.cmutilities.com](http://www.cmutilities.com). There are also printed copies available at the Charlotte-Mecklenburg Utilities Administration Building at 5100 Brookshire Blvd., Charlotte, NC 28216, and at the City/County Customer Service and Information

Center at 600 East Fourth Street, Charlotte, NC 28202. The users or customers of this system will receive a summary version of this report and will be notified of the availability of this comprehensive version via a bill insert in the September 2003 water/sewer bill. A news release will be issued before September 1 about this report. In addition, the summary version will be translated into Spanish and advertised during the month of September in *La Noticia*, a regional Spanish-speaking newspaper. We will also make this Spanish version available via our website.

#### **IV. Certification**

I certify under penalty of law that this report is complete and accurate to the best of my knowledge. I further certify that this report has been made available to the users or customers of the named system and that those users have been notified of its availability.

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Barry Gullet, Deputy Director  
Charlotte – Mecklenburg Utilities

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Date