



ORANGE WATER AND SEWER AUTHORITY

Quality Service Since 1977

September 2, 2008

Chair Barry Jacobs, Jr.
Orange County
Post Office Box 8181
Hillsborough, NC 27278

Mayor Mark Chilton
Town of Carrboro
301 West Main Street
Carrboro, NC 27510

Mayor Kevin Foy
Town of Chapel Hill
405 Martin Luther King Jr. Blvd.
Chapel Hill, NC 27514

Dear Chair Jacobs, Mayor Chilton, and Mayor Foy:

Enclosed is our annual report for 2007-2008.

Please feel free to contact me or our staff if you would like an in-person presentation or further details about any of the items in the enclosed report.

Best regards,

Randy Kabrick, Chair
OWASA Board of Directors

Enclosure

- c: Ms. Laura Blackmon, Orange County Manager (w/encs.)
- Mr. Roger L. Stancil, Chapel Hill Town Manager (w/encs.)
- Mr. Steven Stewart, Carrboro Town Manager (w/encs.)
- OWASA Board of Directors (w/encs.)
- Ed Kerwin, OWASA Executive Director (w/encs.)



Annual Report to Local Governments **August 29, 2008**

This report summarizes major OWASA activities and accomplishments from July 2007 through June 2008. We have selected items that we believe are most likely to be of interest to the elected officials of Carrboro, Chapel Hill, and Orange County. Additional information is available on request, and OWASA Board members or staff will be glad to provide presentations if desired.

Water Supply and Demand – As of August 29, 2008, OWASA’s University Lake/Cane Creek/Stone Quarry reservoir system was 79 percent full, with 2.5 billion gallons, or about 10 months of supply remaining in storage. Lake storage on this date a year ago (2007) was 70 percent. On August 29, 2002, storage was 35 percent. Customer demand since May 1 has been 8 percent lower than during the same period last year. The statistical risk of critical reservoir depletion based on historical data remains minimal for the next 18 months. In addition to increased available water storage, OWASA’s supply outlook is more positive than a year ago for the following reasons:

- The OWASA/UNC reclaimed water system now under construction is expected to reduce potable water consumption by about 0.66 mgd, or approximately 7 percent of total demand beginning in the spring of 2009.
- OWASA’s aggressive conservation pricing signals will be further strengthened when recently adopted rates go into effect on October 1, 2008.
- The regional water supply picture has also improved from 2007, and additional backup supplies are expected to be available when the Cary-Durham interconnection upgrade is completed by the end of this calendar year.
- OWASA now has feasible contingency plans in place to pump Haw River water through a temporary above-ground pipeline to the Cane Creek Reservoir if necessary. No such plans existed at this time last year.

Long Range Water Supply Plan Update – We will thoroughly review our long-term water supply strategy during the coming year. This will involve revisiting underlying assumptions, such as community growth plans and water demand forecasts, as well as the supply and demand management alternatives that have been considered since 2000. With the aid of a consultant team, we will examine the levels of acceptable risk; and water supply and demand management alternatives that can offer additional flexibility and reliability, such as expanded reclaimed water distribution, additional conservation opportunities, and supplemental water from Jordan Lake. This project will involve interaction with local officials and other community stakeholders at key points. We expect this work to be substantially completed by next summer (2009).

Jordan Lake Water Supply – As described at the March 31, 2008 Orange County Assembly of Governments meeting, OWASA is participating in staff discussions with Durham (City), Cary, Chatham and Orange County representatives about opportunities for the joint development of additional water supply capacity from Jordan Lake, which could supplement OWASA's supply if current plans for additional conservation and reclaimed water fall short of our goal of reducing future demands before the expanded Stone Quarry Reservoir is in service by the mid-2030s. Jordan Lake could also provide a critically important back-up supply during droughts or other water supply emergencies. Two severe droughts in the past six years have further increased our awareness of the need for greater flexibility and additional water supply options. As an important part of our Long-Range Water Supply Plan Update described above, we will fully evaluate the estimated costs, benefits, and other considerations of obtaining water from Jordan Lake either independently or in partnership with nearby communities.

Proposed Revisions to Conservation Standards – At its August 28, 2008 meeting, the OWASA Board of Directors authorized distribution of draft revisions to OWASA's Water Conservation Standards for public comment and stakeholder feedback. The Board will receive and consider that feedback and adopt revised Standards that will be submitted to the Carrboro, Chapel Hill, and Orange County elected boards for approval and incorporation into their respective ordinances. The current Conservation Standards were developed by OWASA and adopted locally in 2003. The overall approach of the draft revisions is to simplify the existing standards and place greater emphasis on pricing as a key conservation strategy rather than a detailed list of prescriptive water use allowances and prohibitions. Following the public feedback and stakeholder participation process, the OWASA Board is expected to adopt new Conservation Standards later this fall.

Increased Water and Sewer Rates Effective on October 1st – In June the OWASA Board approved a combined increase of about 17 percent for monthly water and sewer rates that will become effective on October 1, 2008. The average bill for a typical individually-metered residential customer using 5,000 gallons per month will increase from \$58.18 to \$68.24, but bills for individual customers will vary according to the actual amount of water used, size of meter, etc. The rate increase was needed primarily due to a downturn in revenues associated with an expected decrease in total customer demand during the coming year and to an expected drop of 40 percent in connection fees associated with a slowdown in new development. The new rates also include revisions to OWASA's Water Shortage Surcharges ("Drought Rates") that would be implemented if Water Supply Shortages are declared.

Mason Farm Wastewater Treatment Plant – The three-year, \$50+ million upgrade and expansion of the wastewater treatment plant (WWTP) was completed in October 2007. The plant's peak month capacity has been increased from 12 million gallons per day (mgd) to 14.5 mgd. The project included the addition of filters to improve treated water quality, a second large generator for back-up electrical power, odor elimination improvements, better solids and nutrients removal, ultraviolet light disinfection, and an improved system for capturing and using methane gas. These WWTP improvements will support the new reclaimed water (RCW) system and will help OWASA initially meet the new nitrogen and phosphorus removal requirements of the State's Jordan Lake Nutrient Management Rules. We completed the construction of a new biosolids dewatering facility in October 2007, which reduces the amount of liquid in our

biosolids, thereby improving the economy and long-term sustainability of our biosolids recycling program and enabling us to use a wider range of biosolids management options.

OWASA's new Wastewater Treatment and Biosolids Recycling Manager, Mr. Damon Forney, has been instrumental in improving quality assurance, quality control, and operations protocols at the Mason Farm WWTP.

Odor Elimination at the Mason Farm Wastewater Treatment Plant – Although work still remains in OWASA's efforts to eliminate objectionable off-site odors at the WWTP, significant investments were made to plant facilities and operational procedures during the past year, including:

- A new covered "headworks," where untreated sewage enters the WWTP, was installed in July 2007. This is a particularly odorous portion of the treatment process, so the new covered facility is a critical improvement. Additional work was accomplished since that time to prevent the release of foul air.
- Work completed in December 2007 involved covering and treating foul air from three locations inside the WWTP site: 1) two open tanks that hold wastewater before it is pumped into the channel leading to the biological treatment or "aeration" tanks; 2) a channel that carries wastewater to the aeration tanks; and 3) two structures that carry wastewater to and from the primary settling tanks.

Design is underway for \$4.2 million of additional improvements to cover and treat the foul air from the plant's three primary settling tanks and eight of sixteen aeration tanks.

Jordan Lake Nutrient Reduction Strategy and Rules – In May 2008, the NC Environmental Management Commission (EMC) approved new Jordan Lake nutrient management rules, which had been under development for several years. These are being reviewed by the NC General Assembly's Rules Review Commission and will also be subject to approval by the 2009 General Assembly. The greatest impact on OWASA will be stricter wastewater treatment limits for Total Phosphorus (TP) and Total Nitrogen (TN). As currently adopted, the compliance dates are 2010 for the new TP discharge limits and 2014 for TN. OWASA staff is carefully reviewing our previous assessment of the operational and financial implications of the nutrient limits.

Biosolids Management – OWASA uses two methods for managing biosolids, the highly treated wastewater sludge from the WWTP: (1) most of the liquid biosolids are applied to farmland in Orange and Chatham Counties, and (2) a portion of the biosolids are dewatered (i.e., some of the water is removed) and composted by a company in Chatham County that produces soil additives for landscaping, etc. Although composting promises to be more cost-effective in terms of direct operating costs, the dewatering process produces a high strength liquid waste that has to be further treated in the WWTP. This, in turn, results in higher WWTP costs and could ultimately limit the plant's ability to meet recently adopted nutrient reduction standards for Jordan Lake. Consequently, we will not proceed with further development of a long-term Biosolids Master Plan before compiling additional technical data about the plant's performance under a wider range of operating conditions during the next one to two years.

Reclaimed Water System – OWASA and the University are developing a reclaimed water (RCW) system to supply highly treated wastewater to certain campus facilities. By decreasing the amount of drinking water used for non-potable purposes, the RCW system will reduce the community's risk to droughts. Total drinking water demand is expected to decrease by about 15 percent when the system is fully implemented. The project will also reduce the amount of nutrients and other pollutants released to Morgan Creek and Jordan Lake.

The RCW project will be financially self-supporting. UNC is paying to build the system, and OWASA will recover all operating, maintenance, management, and overhead costs through user rates and fees. Financial responsibilities, including the basis for determining the new rates and fees and other technical matters, are specified in a contract signed by OWASA and UNC in April 2006. OWASA obtained about \$2.25 million in Federal and State grant funding for the project.

Construction of RCW pumping, storage and major pipeline facilities began in January 2008 and will be in operation by the spring of 2009. The University has already installed about 7,000 feet of RCW pipe on the main campus along with other construction. OWASA's contractor has installed about 4,000 feet of RCW pipe along Old Mason Farm Road and Skipper Bowles Drive to date.

The portion of the RCW line that remains to be completed is in the **Coker Pinetum-Fern Lane** area. That section will be within an existing sewer utility easement and road right-of-way. The RCW pipe is being co-constructed with the **Meeting of the Waters** sewer replacement project.

Rogers Road Small Area Planning – In June 2007, OWASA staff provided preliminary layout and estimates of the cost of sewerage for the **Rogers Road** planning area designated by the **Chapel Hill Town Council**. This information was shared with the **Historic Rogers Road Community Task Force** established by the **Orange County Commissioners**. Additional information provided to all parties earlier this month (August 2008) included detailed maps and a list of properties adjacent to, or served by, OWASA water and sewer lines in the Rogers Road area.

Sewer Service for Durham's Blenheim Woods Subdivision – After obtaining the approval of the OWASA Board of Directors and the elected boards of Carrboro, Chapel Hill, and Orange County, OWASA entered into a wastewater transfer agreement with the City of Durham to accept wastewater flows from Durham's Blenheim Woods subdivision, a 56-lot residential development in Durham County that will connect Kinsale Drive in the Oaks subdivision to George King Road.

The agreement is similar to that for the Piney Mountain Subdivision, where Durham accepts and treats wastewater from OWASA (Orange County) customers in that area. Under the Blenheim Woods agreement, Durham (and its customers) will pay all applicable OWASA charges for sewer service, including service availability fees, plus charges for collecting and treating the wastewater received by OWASA.

This arrangement provides Durham with the improved reliability of a gravity sewer collection system, lower operation and maintenance costs, and will decrease the potential for wastewater

spills and other environmental damage (including increased noise and light pollution) associated with wastewater pumping stations.

Carolina North – During the past year, OWASA staff met with University staff and UNC's utility consultant to examine options for incorporating reclaimed water (RCW) and increased water use efficiency measures into the infrastructure and development plans for Carolina North. We will provide updated estimates of the projected effects of Carolina North on OWASA's water and sewer system as more detailed plans are developed.

Capital Improvement Projects – OWASA's Capital Improvements Program includes a number of projects that involve local permits and/or may affect local neighborhoods. Highlights of these and other FY 2008 projects are described below.

- Construction was completed in the fall of 2007 for a **new drinking water pump station near Interstate 40**. In combination with the **new 16-inch water line on Old Durham Road**, the new pump station increases OWASA's ability to obtain treated drinking water from the City of Durham.
- We continue to replace aging water mains in order to maintain a high level of water service reliability. Replacement projects were completed during the past year in part of the **Colony Woods** neighborhood, at **Pearl Lane** and **Elmdale Drive**, and at **Brookside Condominiums** in Chapel Hill. Additional water line replacement projects are being designed for **North Columbia Street** and **Lexington Drive**.
- About 2,700 feet of the new **Meeting of the Waters Creek** sewer have been installed and placed into service along **Old Mason Farm Road**. The remaining section is currently being installed along **Fern Lane** and through a utility easement in the **Coker Pinetum**. The sewer line is being co-constructed with the Reclaimed Water Transmission Main and is expected to be complete by June 2009.
- A project to increase the capacity of the Morgan Creek sewer in **Chapel Hill's Morgan Creek Preserve** property began in February 2008 and was completed this past summer. Project design was closely coordinated with Chapel Hill's greenway plans.
- Sewer manhole rehabilitation along **Finley Golf Course Road** was completed this past spring.
- OWASA crews will replace the pumps and controls at a sewer pump station along **Pope Road** in early September (2008). The project is expected to last less than two weeks.
- Design work is underway to replace part of the **Heritage Hills sewer** along **Smith Level Road**, with construction scheduled for the coming year.

- The project to replace portions of the large sewer main along **Bolin Creek** between **Estes Drive Extension** and **Martin Luther King, Jr. Boulevard** has been postponed until FY 2010 due to budgetary constraints.
- The installation of a new gravity sewer allowed us to close two sewage pump stations at **Lloyd Street** and **Starlite Drive** in December 2007. The new sewer also provides service to several properties for which service was previously unavailable.
- A project to replace the **Cleland Drive** sewage pump station with a new gravity sewer is underway and will be completed this fall (2008). We also are replacing an old water main in the same area as part of this project.

KEY OWASA FACTS, FY 2008
(JULY 1, 2007 – JUNE 30, 2008)

<i>Water Supply and Treatment</i>		FY 07	FY 08
Average Daily Raw Water Pumped from Reservoirs (Million Gallons Per Day = MGD)		8.6	8.3
Peak Day Water Pumped from Reservoirs (MGD)		11.9	13.8
Total Rainfall (Inches): <i>At Jones Ferry Road Water Treatment Plant</i> <i>30 Year Average (through Dec 2007) = 48.0 inches</i>		53.3	36.8
Exceedances of Primary Drinking Water Standards		0	0
<i>Wastewater Collection and Treatment</i>		FY 07	FY 08
Average Daily Wastewater Treated (MGD)		7.8	7.4
Reportable Sewer Overflows		4	1
Exceedances of Treated Wastewater Quality Standards		0	2
<i>Financial</i>		FY 07	FY 08
Total Revenues (\$Million):	<i>Budget</i>	\$30.6	\$32.4
	<i>Actual</i>	\$28.9	\$30.7
Operations & Maintenance Expenditures (\$ Million):	<i>Budget</i>	\$17.3	\$18.2
	<i>Actual</i>	\$16.5	\$16.5
Capital Improvements Expenditures (\$Million):	<i>Budget</i>	\$27.8	\$18.8
	<i>Actual</i>	\$19.7	\$16.3
Debt Service Coverage Ratio (Minimum of 1.2 required)		1.5	1.5
Total Water Meter Connections at End of Fiscal Year		20,163	20,279
Average combined monthly water and sewer bill for a residential customer using 5,000 gallons per month:		(FY 2008) \$58.18	(FY 2009) \$68.24

**MONTHLY SUMMARY OF CALLS AND E-MAILS TO OWASA
FROM NEIGHBORS REPORTING ODOR
IN THE MASON FARM WASTEWATER TREATMENT PLANT AREA**

January, 2002–July, 2008

	2002	2003	2004	2005	2006	2007 Reports	2007 Events	2008 Reports	2008 Events
January	11	3	9	0	8	3	3	11	8
February	7	5	2	0	8	0	0	6	4
March	9	0	7	1	10	6	4	1	1
April	9	2	4	0	9	3	3	1	1
May	6	0	2	5	8	4	3	2	2
June	4	1	1	1	5	1	1	13	8
July	1	0	2	0	0	4	2	6	6
August	1	0	4	3	11	2	2		
September	2	5	2	2	9	3	3		
October	2	6	1	1	8	9	8		
November	0	0	1	7	2	11	6		
December	3	3	2	5	8	16	10		
TOTALS	55	25	37	25	86	62	45	40	30

An “odor event” is defined as: One or more odor reports received during a 24 hour period from WWTP neighbor(s). Each odor event shall be considered to be “verified” unless OWASA determines conclusively that an alternative source other than the WWTP created the odor.

**LOG OF CALLS AND E-MAILS TO OWASA
FROM NEIGHBORS REPORTING ODOR IN THE MASON FARM WASTEWATER
TREATMENT PLANT (WWTP) AREA**

May, 2008- July 2008

Date received	Time received	Location
5/1/2008	7:19 PM	Highland Woods Road
5/22/2008	10:50 PM	Highland Woods Road
6/3/2008	5:00 AM	Kings Mill Road
6/5/2008 ¹	10:26 PM	Highland Woods Road
6/6/2008	6:55 PM	Highland Woods Road
6/7/2008	5:50 AM	Highland Woods Road
6/7/2008	7:30 AM	Highland Woods Road
6/7/2008 ²	7:51 AM	Highland Woods Road
6/8/2008	6:45 AM	Highland Woods Road
6/8/2008	7:50 AM	Highland Woods Road
6/9/2008	5:06 PM	Highland Woods Road
6/10/2008	6:06 AM	Highland Woods Road
6/13/2008	5:37 PM	Highland Woods Road
6/16/2008	11:45 PM	Highland Woods Road
6/26/2008	3:26 AM	Highland Woods Road
7/4/2008	9:12 AM	Highland Woods Road
7/7/2008 ³	8:06 AM	Highland Woods Road
7/13/2008	1:00 AM	Highland Woods Road
7/20/2008 ⁴	10:23 PM	Highland Woods Road
7/27/2008 ⁵	1:00 AM	Highland Woods Road
7/29/2008	9:00 PM	Highland Woods Road

Notes:

Call received was about odor experienced on:

¹ 6/5/2008 7:40 PM

² 6/7/2008 5:50 AM

³ 7/6/2008 5:30 PM

⁴ 7/20/2008 6:30 PM

⁵ 7/26/2008 Between 5:00 PM – 6:00 PM

E-mails from OWASA to neighbors
of the Mason Farm Wastewater Treatment Plant (WWTP)
regarding odor elimination matters

May – July, 2008

Date	Topic/Comments:
May 1, 2008	Quarterly report to the Town of Chapel Hill on odor elimination program
May 6, 2008	Invitation to participate in and copy of agenda for May 8, 2008 OWASA Board meeting including discussion of proposed deferral of additional odor improvements
May 7, 2008	Notice of possible odor releases due to maintenance work at WWTP on May 8 th
June 10, 2008	Notice of possible odor releases due to maintenance work at WWTP on June 11 th
June 27, 2008	Notice of possible odor releases due to work at WWTP headworks on June 30 th

DISTRIBUTION LIST FOR OWASA E-MAILS ABOUT ODOR RELEASES FROM THE
MASON FARM WWTP AND RELATED ITEMS (April 25, 2008)

Highland Woods	Alice W. Neebe
	Paul Neebe
	Malcolm Forbes
	Gary Richman
	Robert and Melissa Porter
	Peg Parker
	Jeffrey Tate and Anna Schwab
	Seth Kingsbury
	Amanda Kingsbury
	Abraham Nussbaum
	Elin Nussbaum
	Reed Johnson
	Rex Bartles
	Dan Pollitt
	Mary Ellen Bierck
	Barnes Bierck
	Nortin Hadler
	Carol Hadler
	Frank P. Rexford, President, Highland Woods Association
	Christina and Rex Page
	Ed Ludwig
	Joy Javits
	Gunilla Luboff
	Fred Hall
	John and Anna K Schwab
	Mary Helen and Donald Hayman
Finley Forest	Adam Kimplead
	Cindy Underwood
	Dan Puckett
	Donna Kaye
	David J. Polewka
	Kathryn Conard
	Michael Sharpe
	Dan Choi
	Julie Maness
	Maria Fernandez
Laurel Hill area	Mike Ramsey
	Phyllis Barrett
	Bob Wendell, Pres. Laurel Hill Association
	Carol David
	Pat Evans
	Ewan Rodewald and Sharon Hodge

	Joe Ferrell
	Dr. Sian Kwa
	Marcella Grendler
	Paul Grendler
	Carolyn Goldfinch
	Carol Hazard and Winston Liao
	Dick and Marie Clark
	Kay Goldstein
	Ann Wilson
	Anne Fogleman
	Louis Fogleman
	St. Thomas More staff
	Carlos Lima
	Aldersgate Methodist Church c/o Deil Wright
Morgan Creek area	Ellen Johnson
	Betsy Malpass
	Hanson Malpass
	Jeannie Cox
	Laura King Moore
	Jeanne Langley
	John Pendergrass
	AW Carr
	Gary Glish
	Marilyn and Don Hartman
Ronald McDonald House	Shelly Day
Family House	Greg Kirkpatrick, Executive Director
	Janice Ross, Operations Manager
	Matt Hapgood
Reserve	Steve McPhail, President, Hunt's Reserve Homeowners
	Steven and Susan Frye
	Doug Longman
	Barbara and Edward Paradise
	Jeanne & David Jarrett
	Nadine O'Malley
	Mark Witcher
	Ralph Abrahams
	Kathy Abrahams
Bayberry area	William Ware
UNC	Jim Ward--office
	Jim Ward--home
	Peter White, Director
	Johnny Randall, Assistant Director
	Carolyn Elfland, Assoc. Vice Chancellor
	Ray DuBose, Energy Services Director
	Margaret Holton, Water, Sewer & Stormwater Coord.
	Mary Beth Koza, Director, Environment, Health and Safety
	Ross Fowler

	Willie Scroggs
	Michael Wilkinson, golf pro
	John Inman, Men's Golf Coach
	Sally Austin, Women's Golf Coach
	Aaron Bednar
	UNC Tennis Center
	UNC parking
	Mike McFarland, Corporate Relations
	Scott Ragland, Corporate Relations
	Lisa Katz, Corporate Relations
	Linda Convissor, Corporate Relations
	Jon Howes, Corporate Relations
	Married Student Housing Manager
	UNC Farm (Faculty Staff Recreation Association)
	Steve Reznick, UNC Farm Assoc President
	Jim McAdams, Energy Services
	Frank Maynard, Athletics/ Finley Golf Course
	Robert Costa, Athletics/ Finley Golf Course
	Jeremy Whitehurst, Athletics/ Finley Golf Course
	Mark Steffer, Athletics/ Finley Golf Course
	Jeff McCracken, Public Safety
UNC Hospitals	Lynn Wooten, Corporate Relations
	Mel Hurston
	Karen McCall
Town of Chapel Hill	Roger Stancil, Town Manager
	Florentine A. Miller, Deputy Town Manager
	Bruce Heflin, Asst Town Manager
	Ralph Karpinos, Town Attorney
	Richard Terrell, Public Works Operations Supt.
	Greg Ling, Street Supv.
	Robert Sykes, Public Works
	Dan Jones, Fire Chief
	Caprice Mellon, Deputy Fire Chief
	Robert Bosworth, Deputy Fire Chief
	Kevin Gunter, Captain/ Police Information Officer
	Bob Overton, Police Captain
	Brian Curran, Police Chief
	Richard Terrell, PW Operations Supt.
	George Small, Town Engineer
	Larry Tucker, Engineering
	Bobby Pettiford, Inspections
	Steve Spade, Transportation Director
	Butch Kisiah, Parks and Recreation Director
	Bill Webster, Assistant Parks and Recreation Director
	Catherine Lazorko, Public Information Officer
	Lance Norris, Public Works Director
	Jennie Bob Culpepper, Planning Director

	Phil Mason, Planner
	Kumar Neppalli, Traffic Engineer
	Sabrina Oliver, Town Clerk
	Sandy Kline, Deputy Town Clerk
City Schools	Neil Pedersen, Superintendent
	Bill Mullin
	Beverly Knight
Orange County	Clint Osburn, Emergency Management
	Orange 911 Center Supervisor on duty
	Mike Tapp, Fire Marshall
	Tom Konsler, Environmental Health
Utilities	Ken Kernodle, Duke Energy
	Steve Small, Duke Energy
	Billy Miller, PSNC
	Time Warner Cable
	Rob Masterson, BellSouth/ATT
Other	Meadowmont Apts.
	Meadowmont Community Association
	Chamber of Commerce

**SUMMARY OF ON-SITE AND OFF-SITE ODOR INSPECTIONS
AND NUMBER OF TIMES ODOR WAS DETECTED AT THE VARIOUS MONITORING SITES**

ON-SITE:

Month and year	Total Inspections	Entrance Gate (1)	Generator Bldg. (2)	Old Outfall (3)	UV Complex (4)	Solids Tanks (5)	Odor Scrubber (6)	Head-works (7)	Digesters (8)	UNC Bldg. (9)
May 2008	75	1	2	0	0	25	33	41	43	30
June 2008	70	13	14	1	0	23	26	39	45	36
July 2008	41	10	7	0	0	8	12	20	22	17
Totals	186	24	23	1	0	56	71	100	110	83
%	----	5%	5%	0%	0%	12%	15%	21%	24%	18%

OFF-SITE:

Month and year	Total Inspections	Mc Donald House (1)	Highland Woods-A (2)	Highland Woods-B (3)	Athletic Assoc. (4)	Finley GC (5)	Silers Fen Ct. (6)	Morgan Cliff Ct. (7)	Kings Mill Rd. (8)	Laurel Hill Rd. (9)	Botanical Garden (10)
May 2008	2	1	1	1	2	1	0	0	0	0	0
June 2008	9	4	3	2	1	0	0	0	0	0	0
July 2008	5	1	0	0	1	3	0	0	0	0	0
Totals	16	6	4	3	4	4	0	0	0	0	0
%		29%	19%	14%	19%	19%	0%	0%	0%	0%	0%

Notes:

- 1) All on-site odor events were characterized by the WWTP Operators as “Mild” with odors that would not be expected to create an off-site problem except on May 2, 2008 at 7:30 AM when strong odors were reported at the Headworks (7) and Digesters (8).
- 2) Strong odors were detected at 11:00 PM on July 20, 2008 at the Athletic Association (4) and Finley Golf Course (5).

**SUMMARY OF ON-SITE HYDROGEN SULFIDE (H₂S)
ODOR MONITORING**

Month and year	Headworks Monitor			UNC Monitor			Digester Monitor			Switchgear Monitor		
	Average H ₂ S Reading (ppm)	Minimum H ₂ S Reading (ppm)	Maximum H ₂ S Reading (ppm)	Average H ₂ S Reading (ppm)	Minimum H ₂ S Reading (ppm)	Maximum H ₂ S Reading (ppm)	Average H ₂ S Reading (ppm)	Minimum H ₂ S Reading (ppm)	Maximum H ₂ S Reading (ppm)	Average H ₂ S Reading (ppm)	Minimum H ₂ S Reading (ppm)	Maximum H ₂ S Reading (ppm)
May 2008	OS	OS	OS	OS	OS	OS	0.0001	0.0000	0.0156	OS	OS	OS
June 2008	0.0011	0.0000	0.8219 ¹	0.0081	0.0000	0.2829 ²	0.0249	0.0000	0.0249 ³	0.0010	0.0000	0.0331 ⁴
July 2008	0.0104	0.0000	0.5762 ⁵	0.0113	0.0000	0.4013 ⁶	0.0002	0.0000	0.0132 ⁷	0.0003	0.0000	0.0241 ⁸

Notes:

OS – Unit Out of Service (OS). Sent to manufacturer for calibration

¹ Maximum reading occurred on June 14, 2008 at 2:00 AM.

² Maximum reading occurred on June 12, 2008 at 12:39 AM.

³ Maximum reading occurred on June 12, 2008 at 8:20 AM.

⁴ Maximum reading occurred on June 11, 2008 at 2:30 AM.

⁵ Maximum reading occurred on July 7, 2008 at 9:30 PM.

⁶ Maximum reading occurred on July 15, 2008 at 8:09 AM.

⁷ Maximum reading occurred on July 4, 2008 at 7:13 AM.

⁸ Maximum reading occurred on July 29, 2008 at 3:00 AM.

Monitor Locations (see attached location map):

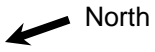
Headworks Monitor (#1) – Monitor located between Headworks Facility and Septage Receiving Station on south side of plant property.

Digester Monitor (#2) – Monitor located between Digester #1 and Digester #4 on west side of plant property.

UNC Monitor (#3) – Monitor located between UNC Research Building and Trickling Filter on north side of plant property.

Switchgear Monitor (#4) – Monitor located across from Switchgear building on north side of plant property.

Mason Farm Wastewater Treatment Plant Hydrogen Sulfide Monitor Locations



Property Line →

