PLEASE consider others and . . .

- Silence all phones & devices
- Limit phone use to breaks
- If you must use the phone - step out of class

Thank you!
Operator Certification

The state's certification programs serve to:
- Protect the public health:
  - Conserve and protect the water resources of the state;
  - Protect public investment in water treatment facilities;
  - Provide for the classification of treatment facilities;
- Administer examinations for treatment facility operators; and
- Certify the competency of treatment facility operators.
Miscues plagued cleanup of spill, review shows
Sewage floods creeks
Sewage spill endangers rare mussel
Heavy rains wreck havoc on sewer lines

The City of Thomasville reported six wastewater spills as a result of Monday's heavy rains.

An estimated 20,000-50,000 gallons of treated wastewater spilled into the Yadkin River East from separate locations in the city on the most occasion at Sanford Pump Station on Lake Road, some 2,000 gallons of wastewater from Smith Hardby Creek from that location, City Manager Kelly Craver said Thursday.

The heavy rain caused several of those municipalities that served the source of some of the heavy rains.

"There was a lot of localized flooding in the region," Craver said. "That's happened over a short period of time, I've been accustomed to those.

Other spills included 10,000 gallons from a Southern Water Regional District facility, 7,500 gallons from a United Water Regional District substation from Lake Charles, and 6,000 gallons from the United Water Regional District substation from Lake Charles.

Weather

Heavy rain causes Carrboro sewer spill

CARRBORO — Orange Water and Sewer Authority crew responded to an unattended wastewater spill from a wastewater main at wood Allen Lane and Belvedere Drive around 9:30 a.m. Wednesday.

The overflows, which were stopped about 11 a.m., occurred when rainwater entered an OWASA's sanitary sewer during heavy rain. OWASA estimated the overflows at about 5,000 gallons, based on the known location of the spill.

OWASA reported the spill to the N.C. Division of Water Quality, as is customary, and issued a news release as required for a wastewater spill of 1,000 gallons or more.

N&O tweetup: Meet us and win hockey tickets and other prizes at Isaac

Waste water contaminates Briar Creek

People in east Charlotte have been told to stay away from Briar Creek after a waste water leak caused a contamination.

Charlotte-Mecklenburg Utilities said a waste water pipe broke on Sunday, likely caused by a rain that ended the creek.

Hansel said he has two dogs and his dog was in any danger Tuesday. "It’s a surprise," he said. "When the pipe broke on Sunday, there was 150,000 gallons of sewage put into the creek.

I’m going to have to take notice. I’ll have a hard time stepping in her, too."

Hansel said about his dog.

Charlotte-Mecklenburg Utilities said a waste water pipe broke on Sunday, likely caused by a rain that ended the creek.

"I don’t want kids playing in it," said CMU spokesman Tony Dobbins, who called this a "massive."
Municipal sewage overflows dwarfed hog waste discharges

By: Dan Way - Carolina Journal

October 15, 2018

Greensboro says 1 million gallons of wastewater spilled during Michael

Updated: Oct 15, 2018 - 6:34 AM
Minimum Design Criteria

• For pumping stations:
  • screened vents
  • high water audible and visual alarms
  • all-weather roadway to site
  • restricted access to buildings/equipment
  • permanent weatherproof sign
    — pump station identifier
    — 24-hour emergency number
    — instructions to call in emergency

Department of Environmental Quality
• For pumping stations:
  • no bypass or overflow lines
  • designed with multiple pumps
    — peak flow can still be pumped with the largest pump out of service
  • dual source or standby power supply
  • pump stations designed for two + pumps shall have telemetry system
• For sewer systems and sewer system extensions:
  • a minimum velocity of:
    — 2 feet per second
  • infiltration rate limited to:
    — 100 gallons per day per inch of pipe diameter per mile of pipe
• Minimum diameter pipe
  — 8-inch for public gravity sewers
  — 6-inch for private gravity sewers
<table>
<thead>
<tr>
<th>Protection Zone</th>
<th>Depth/Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storm sewers and other utilities not listed below (vertical)</td>
<td>24 inches</td>
</tr>
<tr>
<td>Water mains (vertical-water over sewer including in benched trenches) (horizontal)</td>
<td>18 inches, 10 feet</td>
</tr>
<tr>
<td>Reclaimed water lines (vertical – reclaimed over sewer) (horizontal)</td>
<td>18 inches, 2 feet</td>
</tr>
<tr>
<td>Any private / public water supply source, including any wells, WS-I waters or Class I or Class II impounded reservoirs used as drinking water</td>
<td>100 feet</td>
</tr>
<tr>
<td>Waters classified WS (except WS-I or WS-V), B, SA, ORW, HQW, or SB from normal high water (or tide elevation) and wetlands</td>
<td>50 feet</td>
</tr>
<tr>
<td>Any other stream, lake, impoundment, or ground water lowering and surface drainage ditches</td>
<td>10 feet</td>
</tr>
<tr>
<td>Any building foundation</td>
<td>5 feet</td>
</tr>
<tr>
<td>Any basement</td>
<td>10 feet</td>
</tr>
<tr>
<td>Top slope of embankment or cuts of 2 feet or more vertical height</td>
<td>10 feet</td>
</tr>
<tr>
<td>Drainage systems and interceptor drains</td>
<td>5 feet</td>
</tr>
<tr>
<td>Any swimming pool</td>
<td>10 feet</td>
</tr>
<tr>
<td>Final earth grade (vertical)</td>
<td>36 inches</td>
</tr>
</tbody>
</table>
• For sewer systems and sewer system extensions:

If minimum design separations cannot be maintained:

— ductile iron pipe with joints equivalent to water main standards are required
• For sewer systems and sewer system extensions:
  • Minimum cover shall be provided
    — 3 feet
  • Maximum separation between manholes
    — 425 feet
• For sewer systems and sewer system extensions:
  • If invert elevations exceed 2.5 feet:
    ━ Drop manholes are required
  • At high points of all force mains
    ━ Air relief valves
Classification of Systems

• Based on:
  • Grade of WWTP – OR – Population Served
    – 1,500 or less = Grade 1
    – 1,501 to 15,000 = Grade 2
    – 15,001 to 50,000 = Grade 3
    – 50,001 or more = Grade 4
  • Whichever is less!
Exam Pass Rates (since March 1999)

- 42473 exams taken overall
- 27977 passed
- 14496 failed

- 66% pass rate OVERALL
  - 90% AW-B = Highest
  - 41% WW3 = Lowest

2/2020

Department of Environmental Quality
<table>
<thead>
<tr>
<th>Year</th>
<th>Pass Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>62%</td>
</tr>
<tr>
<td>2000</td>
<td>63%</td>
</tr>
<tr>
<td>2001</td>
<td>63%</td>
</tr>
<tr>
<td>2002</td>
<td>66%</td>
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<td>2003</td>
<td>61%</td>
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<td>2004</td>
<td>63%</td>
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<td>2007</td>
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</tr>
<tr>
<td>2018</td>
<td>67%</td>
</tr>
<tr>
<td>2019</td>
<td>70%</td>
</tr>
</tbody>
</table>
Pass Rates Since 1999

- AW-A 73
- **AW-B** 90
- CS-1 81
- CS-2 75
- CS-3 69
- CS-4 76
- LAND APP 69
- SURFACE IRRIG 76
- SUBSURFACE 82
- WW-1 61
- WW-2 48
- **WW-3** 41
- WW-4 59
- PC-1 63
- PC-2 67

Department of Environmental Quality
Disciplinary Actions

• The WPCSOCC may take disciplinary action against a certified operator for:
  • practicing fraud or deception
  • failure to properly use care or judgment
  • failure to apply knowledge or ability
  • incompetence or inability to perform duties
Disciplinary Actions may include:

- No action…
- Letter of reprimand
- Suspension
  - Length of time may vary
  - May have conditions attached
    - Additional education, etc.
- Revocation of certificate(s)
A Classic Case:

Town of Dallas in Gaston County, NC

- 0.6 MGD extended aeration plant
  - Dual 0.3 MGD circular units
  - Secondary clarifiers
  - Gas chlorination
  - Dual aerated sludge holding tanks
  - 4 sludge drying beds

- Discharges to Dallas Br (Class C) in Catawba River Basin
Town of Dallas (continued)

- Summer of 2007
- DWR ISU staff sampling Dallas Branch discovered sewage solids in the creek
- 4”- 8” deep, ≈ ½ mile from WWTP
Department of Environmental Quality
Town of Dallas (continued)

- Mooresville RO staff contacted
- Inspection at plant discovered
  - Evidence of recent bypasses & overflows
  - Treatment units out of service
  - No chlorination online
  - Operator logbook missing entries
Station
1200
on Jim fisher
is showed to
increased return
called baber
on the reservoir
and out of
FF clear at
before diving
Town of Dallas (continued)

- One half of plant not operational
- Other half FULL of solids/foam
- No chlorination: 8-12 weeks
- No operator logbook entries: 30 days
- At least 2 unreported spills
- Effluent results:
  - BOD 16x limit
  - TSS 35x limit
  - NH3 7x limit
  - Fecal 10x limit
- ½ mile of stream impacted with solids
In the end . . .

• Town fined $141,000 for permit violations
• Both ORC & operator terminated
• ORC & operator certificates revoked
• Operator admitted falsification of data & reports
  • Federal grand jury found operator guilty
  • Potential 3 years in prison & additional fines
• OPERATOR sentenced to:
  • 2 months home confinement
  • two years supervised probation
  • 400 hours community service
  • ordered to pay $5,000 criminal fine

• ORC sentenced to:
  • one year supervised probation
  • 200 hours community service
  • ordered to pay $1,000 fine
Questions ???
Steve Reid
919.707.9108
steve.reid@ncdenr.gov

Department of Environmental Quality