Georgia Department of Natural Resources
Environmental Protection Division
2 Martin Luther King Jr. Drive, Suite 1456, Atlanta, Georgia 30334
Judson H. Turner, Director
(404) 656-4713

DEC 09 2013

Certified Mail
Return Receipt Requested

Honorable John Gayle, Mayor
City of Valdosta
Post Office Box 1125
Valdosta, Georgia 31603-1125

RE: Consent Order No. EPD-WQ-5478
City of Valdosta Withlacoochee and Mud Creek Water Pollution Control Plants

Dear Mayor Gayle:

The public notice period for Consent Order No. EPD-WQ-5478 (Order) has ended and EPD received no comments. Therefore, enclosed is a copy of the executed Order. The City of Valdosta will be expected to comply with all conditions of the Order.

Your cooperation in this matter is appreciated.

Sincerely,

Judson H. Turner,
Director

JHT/kh
Enclosure

ENVIRONMENTAL PROTECTION DIVISION
OF THE
DEPARTMENT OF NATURAL RESOURCES
STATE OF GEORGIA

IN RE: CITY OF VALDOSTA ORDER NO. EPD-WQ-5478

CONSENT ORDER

WHEREAS, the City of Valdosta (City) was issued National Pollutant Discharge Elimination System (NPDES) Permit Nos. GA0033235 and GA0020222 (Permits) by the Director of the Georgia Environmental Protection Division (Director, EPD) for its Withlacoochee Water Pollution Control Plant (WPCP) and Mud Creek WPCP, respectively, located in the Suwannee River Basin; and

WHEREAS, the Permits authorize the City to discharge treated wastewater according to effluent limitations, monitoring requirements, and other conditions set forth in the Permits; and

WHERAS, from January 1, 2008 to June 30, 2013, the City reported an excessive number of effluent violations of Permit Nos. GA0033235 and GA0020222 (see Attachment 1); and

WHEREAS, from January 1, 2008 through July 31, 2013, the City reported an excessive number of raw sewage spills from its sanitary sewer collection system to waters of the State (see Attachment 2); and

WHEREAS, Chapter 391-3-6-.05(2)(a) of the Rules and Regulations of the State of Georgia for Water Quality Control (Rules) defines a spill as "any discharge of raw sewage by a Publicly Owned Treatment Works (POTW) to the waters of the State"; and

WHEREAS, Chapter 391-3-6-.05(2)(b)(2) of the Rules defines a major spill, in part, as "Any discharge of raw sewage that (1) is in excess of 10,000 gallons or (2) results in water quality violations in the waters of the State"; and

WHEREAS, the City reported two fish kill events downstream of the November 18, 2009

and February 21, 2013 spills; and

WHEREAS, on November 20, 2009 and February 22, 2013, the Wildlife Resources Division investigated the fish kill events (see Attachment 3); and

WHEREAS, from January 1, 2008 through July 31, 2013, the City reported an excessive number of major spills, as defined by 391-3-6-.05(2)(b)(1) of the Rules, from the Withlacoochee WPCP and the Mud Creek WPCP outfalls to waters of the State (see Attachment 4); and

WHEREAS, Chapter 391-3-6-.05(2)(b)(1) of the Rules defines a major spill, in part, as "The discharge of pollutants into the waters of the State by a POTW that exceeds the weekly average permitted effluent limit of biochemical oxygen demand (5-day) or total suspended solids by 50 percent or greater for any one day, provided that the effluent discharge concentration is equal to or greater than 25 mg/L for biochemical oxygen demand or total suspended solids" [amended August 2012]; and

WHEREAS, Chapter 391-3-6-.03(3)(l) of the Rules defines waters of the State as any and all rivers, streams, creeks, branches, lakes, reservoirs, ponds, drainage systems, springs, wells, wetlands, and all other bodies of surface or subsurface water, natural or artificial, lying within or forming a part of the boundaries of the state which are not entirely confined and retained completely upon the property of a single individual, partnership, or corporation; and

WHEREAS, the spills to State waters documented in Attachments No. 1 and 2 of this Order meet the definition of a spill or major spill; and

WHEREAS, on March 31, 2009, the Withlacoochee WPCP was inundated with floodwaters due to heavy rains and severe weather, and according to the City's April 1, 2009 and April 14, 2009 letters, an estimated 50,300,000 gallons of raw sewage was discharged to the Withlacoochee River from March 31, 2009 to April 2, 2009; and

WHEREAS, on March 27, 2009, Governor Sonny Perdue declared Lowndes County to

be in a State of Emergency due to heavy rains and severe weather; and

WHEREAS, on April 23, 2009, President Barack Obama declared South Georgia counties, including Lowndes County, federal disaster areas; and

WHEREAS, in July 2009, the City applied for federal funding with the Federal Emergency Management Agency (FEMA) to secure approval of, and funding for, damages to the Withlacoochee WPCP from the flood of March 2009; and

WHEREAS, on December 7, 2009, the Mud Creek WPCP sanitary sewer manhole receiving all influent flow into the WPCP collapsed, along with associated piping, and, according to the City's December 14, 2009 report to EPD, an estimated 5,500,000 gallons of raw sewage spilled into Mud Creek from December 8, 2009 to December 13, 2009 spill; and

WHEREAS, in a letter to EPD, dated January 4, 2010, the City stated that during the December 8-13, 2009 major spill, a major leak was discovered by close circuit television equipment just downstream from one of the plugged influent lines, allowing significant groundwater inflow into the repaired manholes and lines; and

WHEREAS, on January 5, 2010, representatives of the City and EPD held a teleconference to discuss the City's sanitary sewer system; and

WHEREAS, during the January 5, 2010 teleconference, the City advised EPD of work completed on the sanitary sewer system, various initiatives implemented by the City since October 2008, and the City's commitment to continue to address its sanitary sewer system issues; and

WHEREAS, in a correspondence, dated January 6, 2010, the City submitted to EPD a Sanitary Sewer Condition Assessment and Rehabilitation Program, Condition and Criticality Report, and Sewer System Modeling and Capacity Evaluation Report (Assessment Program); and

WHEREAS, the City completed construction of the renovated Mud Creek WPCP

WHEREAS, on April 6, 2010, representatives of the City and EPD held a teleconference to discuss clarification of the City's Assessment Program and to request the City to submit updated schedules for completion of specific sewer system projects; and

WHEREAS, on April 21, 2010, at the request of the City, representatives of the City and EPD met to further discuss corrective actions to address the City's sanitary sewer system, the amount of work the City has completed with regard to its sewer system, and the City's commitment to continue to address its sanitary sewer system; and

WHEREAS, in April 2012, the City completed the renovation and expansion of the Mud Creek WPCP. Since completion of the renovations and expansion, the Mud Creek WPCP has met permit effluent limitations for pollutant parameters; and

WHEREAS, on August 1, 2012, the City was denied federal funding from FEMA; and

WHEREAS, according to the City, the denial followed a final appeal prepared by FEMA staff and FEMA's external consultant, in which they concluded the proposed project to build a new force main system, equalization basin, headworks and relocation of the WPCP was eligible, feasible and cost effective; and

WHEREAS, in a letter dated October 23, 2012, the United States Environmental Protection Agency Region 4 (EPA) submitted a request to the City, under Section 308 of the Clean Water Act, for information regarding the Withlacoochee WPCP, the Mud Creek WPCP, and their associated sanitary sewer collection systems; and

WHEREAS, on February 28, 2013, at the City's request, the City met with EPA to discuss the City's sanitary sewer system issues and plans to address those issues, including funding alternatives and timelines of completion. In addition, the City requested that EPA allow them to work directly with EPD on a corrective action plan; and

WHEREAS, on February 28, 2013, the Withlacoochee WPCP was inundated with floodwaters due to heavy rains and severe weather; and

WHEREAS, on March 13, 2013, a meeting was held between the City and EPD to discuss recent flooding issues at the Withlacoochee WPCP and the City's plans to address its sanitary sewer system issues, including specific projects, timelines and funding sources, as well as a proposed corrective action plan; and

WHEREAS, in a letter to EPD, dated March 14, 2013, the City stated that due to the flooding on February 28, 2013 the Withlacoochee WPCP was taken offline from February 28, 2013 to March 3, 2013 and as a result an estimated 19,150,000 gallons of raw sewage was discharged to the Withlacoochee River; and

WHEREAS, on March 19, 2013, EPA and EPD held a teleconference to discuss the City's response to EPA's October 23, 2012 Section 308 information request and corrective actions to address the City's sanitary sewer system issues; and

WHEREAS, on April 10, 2013, the City submitted to EPD a document titled "Corrective Action Plans and Schedules" which includes completion dates for corrective actions within the City's sanitary sewer collection system and relocation of the Withlacoochee WPCP (see Attachment 6); and

WHEREAS, on April 11, 2013, following review of the City's response to the Section 308 information request, EPA submitted to EPD via electronic mail comments regarding the City's "Sewer Overflow Response and Reporting Procedures" (see Attachment 5a); and

WHEREAS, on April 15, 2013, the City submitted via electronic mail a list of sanitary sewer projects completed by the City from 2009 to present with a total expenditure amount of $49,453,784 (see Attachment 7), including the renovation and expansion of the Mud Creek WPCP, which was completed in April 2012; and

WHEREAS, on April 23, 2013 the City submitted via electronic mail an interim plan for meeting permit compliance at the existing Withlacoochee WPCP; and

WHEREAS, according to the City, on April 25, 2013, the Mayor and City Council adopted a five (5) year action plan to address the City's sanitary sewer system issues, including the relocation of the Withlacoochee WPCP; a new force main to the Withlacoochee WPCP; an equalization basin; a new headworks facility at the Withlacoochee WPCP; inspection of all sewer lines and manholes with associated repairs; and short term improvements to the existing Withlacoochee WPCP; and

WHEREAS, on September 11, 2013 the City transmitted to EPD via electronic mail a revised "Sewer Overflow Response and Reporting Procedures" in response to EPA's and EPD's comments (See Attachment 5b); and

WHEREAS, Part II.A.1. of the Permits requires the permittee to maintain and operate as efficiently as possible all treatment or control facilities and related equipment installed or used by the permittee to achieve compliance with the permit; and

WHEREAS, Section 12-5-29(a) of the Georgia Water Quality Control Act (Act) makes it unlawful to use any waters of the State to dispose of sewage or other wastes, except in such a manner as to conform and comply with the Code and all rules, regulations, orders, and permits established under the Code; and

WHEREAS, Section 12-5-23(c)(12) of the Act provides the Director the authority to issue orders as may be necessary to control, abate, and prevent pollution of the waters of the State; and

WHEREAS, Section 12-5-52(a) of the Act specifies that any person violating the Code or any permit condition or limitation established pursuant to the Code shall be liable to the State of Georgia for a civil penalty not to exceed $50,000 per day for each day during which such violations continue; and

WHEREAS, the spills and Permit violations addressed in this Order are violations of the Permits, Rules, and Act.

NOW THEREFORE, the Director ORDERS and the City AGREES as follows:

1. Allocate, at a minimum, $200,000 to complete a Supplemental Environmental Project (SEP). The SEP must go beyond standard compliance requirements and should result in improvement to water quality or water conservation. Any proposed SEP should not be part of a plan or requirement that the City is already in the process of implementing or that is otherwise required in order to comply with the Georgia Water Quality Control Act. Within sixty (60) days of the execution date of this Order, submit to EPD for review and approval a SEP plan and schedule with a completion date no later than December 31, 2016. Once approved by EPD, the SEP plan and schedule will become part of the Order.
2. Complete the relocation of the Withlacoochee WPCP in accordance with the construction deadline as described in Action Item 1a and 1b in Attachment 6 of this Order.
3. Upon EPD written approval, immediately implement the interim plan for meeting permit compliance at the existing Withlacoochee WPCP, submitted to EPD on April 23, 2013.
4. Complete Action Item Nos. 2-5 in accordance with the completion deadlines listed in Attachment 6 of this Order.
5. Upon EPD written approval, immediately implement the revised "Sewer Overflow Response and Reporting Procedures", submitted to EPD via electronic mail on September 11, 2013.
6. Submit to EPD semi-annual progress reports for the SEP listed in Condition 1 this Order, and action items listed in Attachment 6 of this Order, by June 30th and December 31st of each year.

7. Consistent with timely review and approval by EPD, all plans, procedures, and schedules required by or referenced in this Order, are upon approval by EPD, incorporated into this Order. The City shall implement all approved plans, procedures, and schedules.

8. Upon receipt of any report, plan, or schedule; or any portion of a report, plan, or schedule; or any revised report, plan, or schedule; or any revised portion of a report, plan, or schedule; or any written response (hereinafter collectively "document") required under this Order, EPD shall review said document to determine its completeness with regard to the Act, Permit, and this Order. If EPD determines that said document is complete, EPD shall notify the City in writing that said document is approved. If EPD determines that said document is incomplete, EPD shall provide the City with written notice of any deficiencies. The City shall have sixty (60) days from receipt of the written notice of deficiencies to submit a modified document to EPD unless otherwise specified by EPD. Should the City take exception to all or part of EPD's notice of deficiencies, the City shall, within fifteen (15) days after receipt of the written notice of deficiencies, submit to EPD a written statement of the grounds for the exception. EPD and the City shall confer by telephone or in person in an attempt to resolve any disagreement. If agreement is reached, the resolution shall be written and signed by representatives of each party. If agreement cannot be reached within thirty (30) days from the date of the City's receipt of the notice of deficiencies unless otherwise specified by EPD, the City shall revise the document as required by EPD and resubmit the revised document in accordance with a schedule to be specified by EPD

This Order does not waive EPD's authority to take further enforcement action, or imply

that EPD will not take such action, if the City (1) fails to meet applicable Permit effluent limits, (2) or the City does not fully satisfy the conditions of the Order, or (3) fully comply with other relevant requirements.

This Order is not a finding, adjudication of, or evidence of a violation of any State law by the City nor does the City by its consent agree to any violations of State laws nor admit any liability to any third party or parties.

This Order does not relieve the City of any obligation or requirements of the Permits.

This Order is final and effective immediately, and shall not be appealable, and the City waives any hearing on its term and conditions.

It is so ORDERED, CONSENTED, and AGREED TO this 4th day of December. 2013.

FOR THE DIVISION:

Judson H. Turner

Director

FOR THE CITY:

BY (print name): Henry Hicks

SIGNATURE:

TITLE: Utility Director

DATE: September 23, 2013

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
WASTEWATER REGULATORY PROGRAM
4220 INTERNATIONAL PARKWAY, SUITE 101
ATLANTA, GEORGIA 30354

City of Valdosta

ATTACHMENT 1

Permit Effluent Limitation Violations
Withalcoochee WPCP (GA0033235) and Mud Creek WPCP (GA0020222)
January 2008 to July 2013

City of Valdosta
Permit Effluent Limitation Violations
January 2008 to July 2013

Withlacoochee WPCP GA0033235

Parameter	Date	Permit Limit	Reported Value
Biochemical Oxygen Demand Weekly Maximum Loading, kg/Day	Feb-08	1706	1970
Total Suspended Solids Monthly Average Concentration, mg/L	Feb-08	30	44.2
Total Suspended Solids Weekly Maximum Concentration, mg/L	Feb-08	45	141
Total Suspended Solids Monthly Average Loading, kg/Day	Feb-08	1365	2458
Total Suspended Solids Weekly Maximum Loading, kg/Day	Feb-08	1706	7814
Total Suspended Solids Percent Removal	Feb-08	85%	80.8%
Total Suspended Solids Weekly Maximum Loading, kg/Day	Mar-08	1706	2315
Fecal Coliform Weekly Maximum Geometric Mean, CFU/100 mL	Mar-08	400	1041
Biochemical Oxygen Demand Weekly Maximum Loading, kg/Day	Aug-08	379	623
Total Suspended Solids Weekly Maximum Loading, kg/Day	Aug-08	1137	1311
Dissolved Oxygen Minimum, mg/L	Apr-09	5.0	3.0
Total Suspended Solids Weekly Maximum Concentration, mg/L	Apr-09	45	59.6
Total Suspended Solids Weekly Maximum Loading, kg/Day	Apr-09	1706	3355
Fecal Coliform Weekly Maximum Geometric Mean, CFU/100 mL	Apr-09	400	58281
Ammonia Weekly Maximum Concentration, mg/L	May-09	6.4	7
Biochemical Oxygen Demand Weekly Maximum Loading, kg/Day	Jan-10	853	970
Total Suspended Solids Weekly Maximum Concentration, mg/L	Jan-10	45	62
Total Suspended Solids Weekly Maximum Loading, kg/Day	Jan-10	1706	3396
Ammonia Weekly Maximum Concentration, mg/L	May-10	6.4	15.7
Ammonia Weekly Maximum Loading, kg/Day	May-10	204	366
Ammonia Monthly Average Concentration, mg/L	Aug-11	2.0	2.9
Ammonia Weekly Maximum Concentration, mg/L	Aug-11	3.0	4
Ammonia Weekly Maximum Loading, kg/Day	Aug-11	76.0	80.1
Ammonia Weekly Maximum Concentration, mg/L	Sep-11	3.0	3.6
Ammonia Weekly Maximum Concentration, mg/L	Jul-12	3.0	3.1
Biochemical Oxygen Demand Monthly Average Concentration, mg/L	Sep-12	4.0	4.4
Biochemical Oxygen Demand Weekly Maximum Concentration, mg/L	Sep-12	6.0	8.3
Biochemical Oxygen Demand Weekly Maximum Loading, kg/Day	Sep-12	152	180.3
Ammonia Weekly Maximum Concentration, mg/L	Sep-12	3.0	3.5
Fecal Coliform Weekly Maximum Geometric Mean, CFU/100 mL	Sep-12	400	457.1
Biochemical Oxygen Demand Monthly Average Concentration, mg/L	Oct-12	4.0	4.5
Biochemical Oxygen Demand Weekly Maximum Concentration, mg/L	Oct-12	6.0	8.7
Ammonia Weekly Maximum Concentration, mg/L	Oct-12	3.0	5.8
Ammonia Weekly Maximum Loading, kg/Day	Oct-12	76	86.6

City of Valdosta
Permit Effluent Limitation Violations
January 2008 to July 2013

Withlacoochee WPCP GA0033235, cont.

Parameter	Date	Permit Limit	Reported Value
pH Minimum, S.U.	Jan-13	6.0	4.5
Total Suspended Solids Monthly Average Concentration, mg/L	Feb-13	30	67.2
Total Suspended Solids Weekly Maximum Concentration, mg/L	Feb-13	45	98.3
Total Suspended Solids Monthly Average Loading, kg/Day	Feb-13	1365	2476.0
Biochemical Oxygen Demand Weekly Maximum Loading, kg/Day	Mar-13	1706	3542.6
Total Suspended Solids Weekly Maximum Concentration, mg/L	Mar-13	45	149.4
Total Suspended Solids Weekly Maximum Loading, kg/Day	Mar-13	1706	14624
Fecal Coliform Weekly Maximum Geometric Mean, CFU/100 mL	Mar-13	400	35283

Mud Creek WPCP GA0020222

Parameter	Date	Permit Limit	Reported Value
Total Suspended Solids Weekly Maximum Loading, kg/Day	Aug-08	458	654
Effluent Flow Monthly Average, MGD	Jan-10	3.22	3.23
Effluent Flow Monthly Average, MGD	Mar-10	3.22	3.3
Fecal Coliform Weekly Maximum Geometric Mean, CFU/100 mL	Oct-10	400	1158
Ammonia Monthly Average Concentration, mg/L	Nov-10	1.5	3.8
Ammonia Weekly Maximum Concentration, mg/L	Nov-10	2.25	12.2
Ammonia Monthly Average Loading, kg/Day	Nov-10	18	60.6
Ammonia Weekly Maximum Loading, kg/Day	Nov-10	23	108.6
Effluent Flow Monthly Average, MGD	Feb-11	3.22	3.3
Effluent Flow Monthly Average, MGD	Mar-11	3.22	3.3
Effluent Flow Monthly Average, MGD	Mar-12	3.22	3.3
Effluent Flow Weekly Maximum, MGD	Mar-12	4.03	4.8
Effluent Flow Monthly Average, MGD	Mar-13	3.22	3.3
Effluent Flow Weekly Maximum, MGD	Mar-13	4.03	6.2
Effluent Flow Monthly Average, MGD	Jul-13	3.22	3.4

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
WASTEWATER REGULATORY PROGRAM
4220 INTERNATIONAL PARKWAY, SUITE 101
ATLANTA, GEORGIA 30354

City of Valdosta

ATTACHMENT 2

City of Valdosta Raw Sewage Spills
January 1, 2008 to July 31, 2013

City of Valdosta Raw Sewage Spills
January 2008 to July 2013

BEGIN DATE	WATERWAY IMPACTED	OVERFLOW LOCATION	QUANTITY	REPORTED CAUSE
2008-02-21	TRIBUTARY TO JOREE MILL POND TO TWO MILE BRANCH	817 GORNTO ROAD	6,000	HEAVY RAIN, PRESSURE ALSO CAUSED FAILURE TO PREVIOUS SEWER REPAIR
2008-02-21	STILLHOUSE BRANCH TRIB TO WITHLACOOCHEE RIVER	3500 COUNTY CLUB ROAD	6,000	HEAVY RAINFALL
2008-02-21	DUKES BAY CANAL TRIBUTARY TO MUD CREEK	108 TUCKER ROAD	18,000	HEAVY RAINFALL
2008-02-21	KNIGHTS CREEK	1001 PONDEROSA DRIVE	22,000	HEAVY RAINFALL
2008-02-22	TWO MILE BRANCH	608 HOWELL BROOK DRIVE	35,000	OVERLOAD DURING HEAVY RAIN
2008-08-23	KNIGHTS CREEK	1001 PONDEROSA DRIVE	24,000	INFLOW
2008-11-30	WITHLACOOCHEE RIVER	HIGHWAY 133 @ I-75 EXIT 18	135,000	HEAVY RAINFALL
2009-02-19	TRIBUTARY TO CHERRY CREEK	LAKE LAURIE DRIVE	500	SANITARY OVERFLOW/ ELECTRICAL PUMP FAILURE
2009-04-03	SUGAR CREEK	2408 MEADOWBROOK DRIVE	10,001	EXCESSIVE RAIN
2009-04-03	SUGAR CREEK	2310 PARK LANE	10,001	EXCESSIVE RAIN
2009-04-03	ONE MILE BRANCH	1212 WAINWRIGHT DRIVE @ OLD SUGAR CREEK WWTP	10,001	EXCESSIVE RAIN
2009-08-13	SUGAR CREEK	1314 BAYTREE ROAD	18,900	MANHOLE FALLEN INTO STREAM
2009-08-18	UNNAMED TRIBUTARY	KINDERLOU LIFT STATION	5,500	ELECTRICAL- DUE TO SCADA FAILURE
2009-08-26	DUKES BAY CANAL	210 DAMPIER STREET	3,000	GREASE BLOCKAGE
2009-11-11	SUGAR GREEK	1825 NORMAN DRIVE	14,000	BLOCKAGE OF GREASE AND RAGS
2009-11-18	ONE MILE BRANCH	1409 NORTH ASHLEY STREET	7,500	STORM WATER PIPE BROKE SEWER LINE

City of Valdosta Raw Sewage Spills
January 2008 to July 2013

BEGIN DATE	WATERWAY IMPACTED	OVERFLOW LOCATION	QUANTITY	REPORTED CAUSE
2009-12-02	TWO MILE BRANCH	2408 NORTH PATTERSON	9,000	GREASE BLOCKAGE
2009-12-02	SUGAR CREEK	1825 NORMAN DRIVE	6,000	BLOCKAGE IN SEWER MAIN
2009-12-03	SUGAR CREEK	1815 NORMAN DRIVE	9,999	BLOCKAGE AND EXCESSIVE RAIN
2009-12-08	MUD CREEK	MUD CREEK WWTP	550,000	COLLAPSED MANHOLE
2009-12-09	MUD CREEK	MUD CREEK WWTP	1,150,000	COLLAPSED MANHOLE/EXCESSIVE RAIN/CLOGGED PUMPS
2009-12-10	MUD CREEK	MUD CREEK WWTP	1,150,000	COLLAPSED MANHOLE/HEAVY RAINS/CLOGGED PUMPS
2009-12-11	MUD CREEK	MUD CREEK WWTP	1,350,000	DAMAGED MANHOLES
2009-12-12	MUD CREEK	MUD CREEK WWTP	950,000	COLLAPSED MANHOLE/PUMP FAILURE
2009-12-13	MUD CREEK	MUD CREEK WWTP	350,000	COLLAPSED MANHOLE/PUMP FAILURE
2009-12-22	SUGAR CREEK	1825 NORMAN DRIVE	14,000	GREASE AND RAGS
2010-01-21	TRIBUTARY TO KNIGHTS CREEK	1001 PONDEROSA DRIVE	12,100	INFLOW AND INFILTRATION (I&I), HEAVY RAIN
2010-01-21	DUKES BAY	700 ROGERS STREET	600	I&I, HEAVY RAIN
2010-01-21	TWO MILE BRANCH	2422 MEADOWBROOK DRIVE	138,000	I&I, HEAVY RAIN
2010-01-21	TRIBUTARY TO AN UNNAMED STREAM	700 CYPRESS STREET	64,000	I&I, HEAVY RAIN
2010-01-21	SUGAR CREEK	2408 MEADOWBROOK DRIVE	450,000	I&I, HEAVY RAIN
2010-01-21	DUKES BAY	400 SOUTH OAK STREET	6,000	I&I, HEAVY RAIN

City of Valdosta Raw Sewage Spills
January 2008 to July 2013

BEGIN DATE	WATERWAY IMPACTED	OVERFLOW LOCATION	QUANTITY	REPORTED CAUSE
2010-01-21	TRIBUTARY TO TWO MILE BRANCH	817 GORNTO ROAD	20,350	I&I, HEAVY RAINS
2010-01-25	DUKES BAY CANAL	701 CYPRESS STREET	34,000	MANHOLE COLLAPSED
2010-04-04	TWO MILE BRANCH	2408 NORTH PATTERSON STREET	4,000	GREASE BLOCKAGE
2010-04-18	TRIBUTARY TO KNIGHTS CREEK	1201 PONDEROSA DRIVE	500	GREASE BLOCKAGE
2010-04-29	DUKES BAY CANAL	TUCKER ROAD	3,000	LINE BLOCKAGE
2010-06-14	DUKES BAY CANAL	613 SOUTH PATTERSON STREET	3,240	BROKEN PIPE
2010-09-27	ONE MILE BRANCH	212 EAST COLLEGE STREET	1,100	I&I
2010-09-29	SUGAR CREEK	1423 GORNTO ROAD	75,000	I&I DUE TO EXCESSIVE RAIN
2010-09-29	TRIBUTARY TO KNIGHTS CREEK	1003 PONDEROSA DRIVE	27,000	I&I DUE TO EXCESSIVE RAIN
2010-09-29	TWO MILE BRANCH	2422 MEADOWBROOK DRIVE	48,000	I&I DUE TO EXCESSIVE RAIN
2010-09-29	SUGAR CREEK	2408 MEADOWBROOK DRIVE	48,000	I&I DUE TO EXCESSIVE RAIN
2010-09-29	ONE MILE BRANCH	212 EAST COLLEGE STREET	6,000	I&I DUE TO EXCESSIVE RAIN
2011-01-18	TRIBUTARY TO CHERRY CREEK	4036 BEMISS ROAD	27,000	GREASE BLOCKAGE
2011-02-07	THREE MILE BRANCH	825 NORTHWOOD PARK DRIVE	187,660	COLLAPSED SEWER
2011-10-12	TWO MILE BRANCH	2501 NORTH PATTERSON STREET @ PENDLETON DRIVE	500	GREASE BLOCKAGE
2011-10-13	TRIBUTARY TO LAKE SHERI	1307 NORTH SAINT AUGUSTINE ROAD	4,600	RAG BLOCKAGE

City of Valdosta Raw Sewage Spills
January 2008 to July 2013

BEGIN DATE	WATERWAY IMPACTED	OVERFLOW LOCATION	QUANTITY	REPORTED CAUSE
2011-11-29	SPRINGHOUSE CREEK	3350 PLANTATION DRIVE	9,000	BYPASS PUMP HOSE CONNECTION FAILURE
2012-03-03	CHERRY CREEK	4119 BEMISS ROAD BEMISS ROAD PUMP STATION	24,000	PUMP STATION OVERLOADED BY HEAVY RAINS
2012-03-03	SUGAR CREEK	2412 MEADOWBROOK DRIVE	12,000	HYDRAULIC OVERLOAD
2012-03-08	TRIBUTARY TO KNIGHTS CREEK	301 SOUTH BLANCHARD STREET	189,000	COLLAPSED SEWER MAIN
2012-06-05	TWO MILE BRANCH	NORTH ASHLEY STREET	1,800	SEWER BROKEN BY CONTRACTOR
2012-06-26	SUGAR CREEK	2412 MEADOWBROOK DRIVE	2,000	EXCESSIVE RAIN FROM TROPICAL STORM DEBBY
2012-07-11	SUGAR CREEK	2412 MEADOWBROOK DRIVE	1,000	EXCESSIVE RAIN
2012-08-07	CHERRY CREEK	4119 BEMISS ROAD	1,000	LEAKING PUMP
2012-08-16	WITHLACOOCHEE RIVER	EXIT 18 @ HIGHWAY 133	2,500,000	PUMP STATION FAILURE
2012-08-16	SUGAR CREEK	2412 MEADOWBROOK DRIVE	2,500,000	BOTH PUMPS AT PUMP STATION FAILED
2013-02-21	KNIGHTS CREEK	3891 INNER PERIMETER ROAD	20,000	GREASE BLOCKAGE
2013-02-25	CHERRY CREEK	4119 BEMISS ROAD	173,000	HYDRAULIC OVERLOAD
2013-02-25	SUGAR CREEK	626 SCOTT DRIVE	720,000	EXCESSIVE RAIN
2013-02-25	SUGAR CREEK	2412 MEADOWBROOK DRIVE	1,290,000	EXCESSIVE RAIN
2013-02-25	ONE MILE BRANCH	ROUSE ROAD	590,500	EXCESSIVE RAIN
2013-02-25	TWO MILE BRANCH	2420 MEADOWBROOK DRIVE	936,000	EXCESSIVE RAIN

City of Valdosta Raw Sewage Spills
January 2008 to July 2013

BEGIN DATE	WATERWAY IMPACTED	OVERFLOW LOCATION	QUANTITY	REPORTED CAUSE
2013-02-25	TWO MILE BRANCH	817 GORNTO ROAD	53,750	EXCESSIVE RAIN
2013-02-25	ONE MILE BRANCH	1248 NORTH LEE STREET	19,200	EXCESSIVE RAIN
2013-02-25	WITHLACOOCHEE RIVER	HIGHWAY 133 WEST	124,500	EXCESSIVE RAIN
2013-02-26	ONE MILE BRANCH	JOREE STREET	29,000	EXCESSIVE RAIN
2013-02-28	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	3,750,000	I&I, FLOODING FROM RAIN
2013-03-01	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	6,000,000	I&I, EXCESSIVE RAIN
2013-03-02	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	6,000,000	EXCESSIVE RAIN
2013-03-03	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	3,400,000	EXCESSIVE RAIN
2013-03-04	DUKES BAY CANAL	1810 SOUTH PATTERSON STREET	100,000	RUPTURED SEWER MAIN
2013-03-24	WITHLACOOCHEE RIVER	HIGHWAY 133 WEST OF WITHLACOOCHEE RIVER BRIDGE	20,000	EXCESSIVE RAIN
2013-03-24	SUGAR CREEK	1423 GORNTO ROAD	20,000	EXCESSIVE RAIN
2013-03-24	SUGAR CREEK	2412 MEADOWBROOK DRIVE	360,000	EXCESSIVE RAIN
2013-03-24	SUGAR CREEK	626 SCOTT DRIVE	300,000	EXCESSIVE RAIN
2013-03-24	SUGAR CREEK	1404 GORNTO ROAD	20,000	EXCESSIVE RAIN
2013-07-22	TWO MILE BRANCH	2400 NORTH PATTERSON STREET	2,050	GREASE
2013-07-31	SUGAR CREEK	2400 MEADOWBROOK DRIVE	2,000	POSSIBLE BLOCKAGE, UNDER INVESTIGATION

City of Valdosta Raw Sewage Spills
January 2008 to July 2013

BEGIN DATE	WATERWAY IMPACTED	OVERFLOW LOCATION	QUANTITY	REPORTED CAUSE
2013-07-31	HIGHTOWER CREEK	600 SCOTT DRIVE	2,000	POSSIBLE BLOCKAGE

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
WASTEWATER REGULATORY PROGRAM
4220 INTERNATIONAL PARKWAY, SUITE 101
ATLANTA, GEORGIA 30354

City of Valdosta

ATTACHMENT 3
EPD Fish Kill Investigations
November 20, 2009 and February 22, 2013

Fish Kill Investigation: One Mile Branch In Lowndes County, Georgia On November 20, 2009

By
Jeremy Wixson

Georgia Department of Natural Resources
Fisheries Management Section
Southcentral Region
Fitzgerald, Georgia

November 24, 2009

On Thursday November 19, 2009 at 3:45 p.m., Bill Noelle (404-362-2624) of Georgia EPD telephoned the Bowen's Mill Office to notify us of a fish kill in the city of Valdosta in Lowndes County Georgia. Marty Snowden took the call and linked me in the field to let me know. I was planning to sample fish that night and was not able to get to Valdosta before dark. I telephoned Bill Noelle and left a message for him on Friday November 20, 2009. I then telephoned John Waite (229-292-0842 cell, jwaite@valdostacity.com), Environmental Manager with the City of Valdosta. John informed me that there had been a break in a wastewater line that occurred in the Coca-Cola Bottling Plant parking lot. The leak was first discovered by a work detail cleaning One Mile Branch. The City dispatched utility crews to determine the cause and make repairs to the line. It was an 8-inch vitrified clay pipe and the water in it was coming from businesses in the area including a large laundromat. They discovered the broken pipe on Wednesday November 18, 2009. To fix the pipe, they dammed up One Mile Branch just below the site the wastewater was entering the branch, and used a gasoline pump to pump the water back into the sewage system. They estimated that approximately 7,500 gallons was discharged to the Branch before they got the pump in place. On Thursday November 19, 2009, Utility Department staff was checking the Branch downstream of the break and noticed some dead fish in One Mile Branch. They called EPD, who in turn called us. Bill Noelle indicated that EPD staff would be investigating on November 20, 2009 as well.

Edward Zmarzly and Jeremy Wixson went to the location of the fish kill on November 20th and took water quality measurements at the North Lee Street crossing (Figure 1, WQ station 1) at 1230 hours, at the break site (Figure 1, WQ station 2) at 1244 hours, and at the Williams Street Crossing (Figure 1, WQ station 3) at 1348 hours. Water was flowing slowly in the branch, and in all locations live fish were observed. We then went to the site of the broken sewer line and began counting the fish observed according to species and size, working our way downstream until we no longer observed dead fish. The kill area was spread out from the location of the broken sewer line (Figure 1, purple marker by WQ station 2) to 0.69 miles downstream on the Valdosta State University Campus (Figure 1, purple marker between WQ stations 3 and 4). When we finished taking inventory of the dead fish, we went downstream to take a final set of water quality readings at the West Gordon Street Crossing (Figure 1, WQ station 4) at 1610 hours. We were unable to determine if the fish kill was a direct result of the broken pipe's effluent or from installation of a temporary dam used to catch the effluent.

We measured basic water quality with a YSI model 550 oxygen meter and a Hach portable water test kit model FF-1 (Table 1). Dissolved oxygen was lowest at the WQ station 1, which was a little shallower and slower moving than the other stations. The pH was highest at the location of the sewage line break (WQ station 2), but had become more neutral by the time it reached WQ station 3.

In total we found 510 dead fish with a total value of $186.45 (Table 2), there was one crayfish also dead in the area. The cost of investigating the fish kill (Table 3) was $1,215.99. The total value of the fish kill including the cost of investigation and the value of the fish killed was $1,402.44.

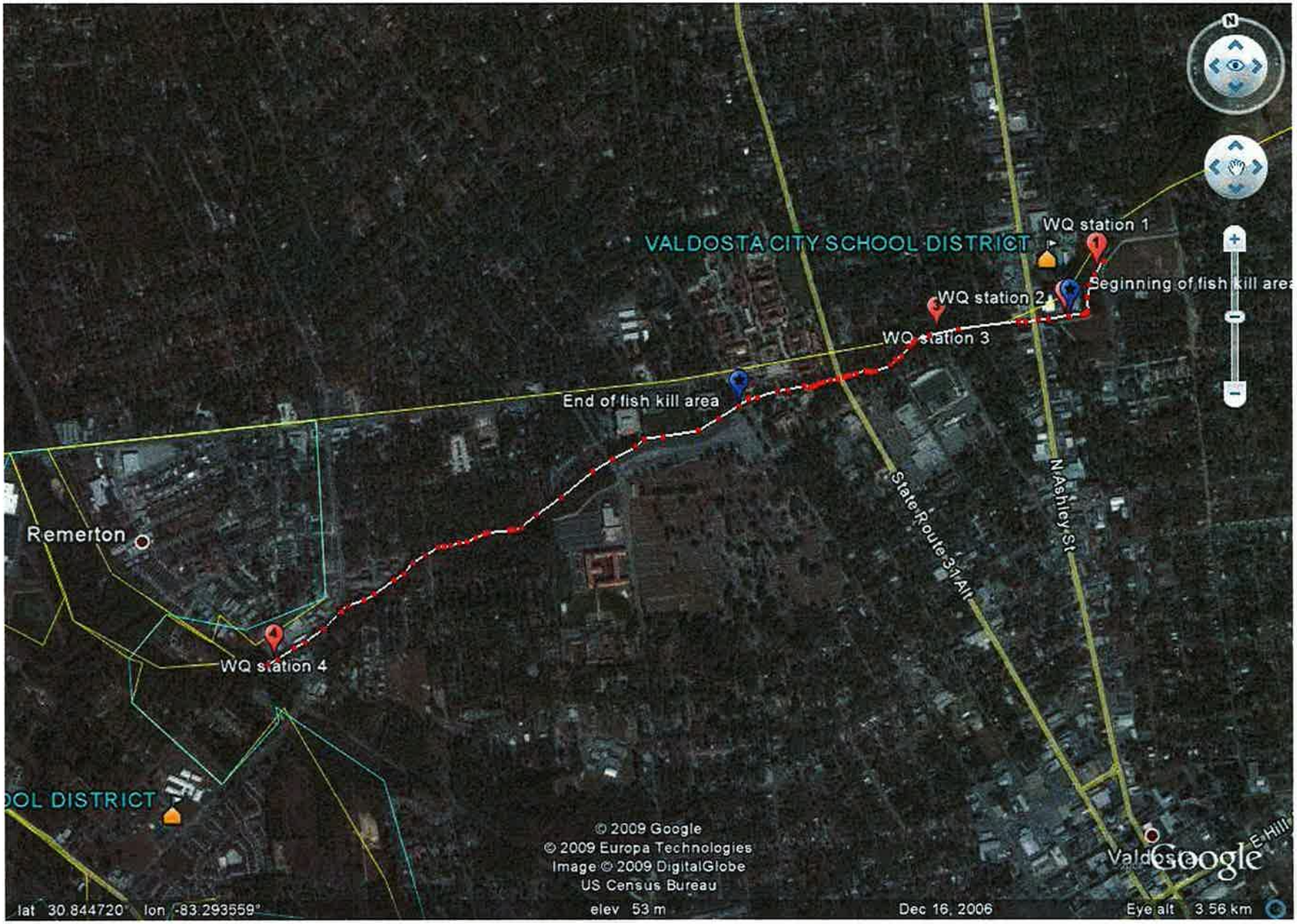


Figure 1. Map of One Mile Branch area of fish kill investigation.

Table 1. Water quality measurements made during the fish kill investigation on One Mile Branch in Lowndes County on November 20, 2009.

Station Number and Location	Time (hrs)	Depth (ft)	Temperature (°C)	DO (ppm)	pH	Hardness (ppm)	Alkalinity (ppm)	Dead Fish
1. N Lee Street 30.84862° N 83.27824° W	1230	Surface	16.1	3.3	7	48	12	NO
2. Marion Street 30.84755° N 83.27940° W	1244	Surface	21.7	5.5	9	60	24	YES
3. Williams Street 30.84748° N 83.28365° W	1348	Surface	16.3	4.2	6.5	44	24	YES
4. W Gordon Street 30.84041° N 83.30654° W	1610	Surface	17.5	8.15	6.5	36	24	NO

Table 2. Number and monetary value of dead fish from the fish kill investigation on One Mile Branch in Lowndes County on November 20, 2009.

Species	Number of Dead Fish	Value (in dollars)[a]
American Eel *Anguilla rostrata*	1	2.37
Golden Shiner *Notemigonus crysoleucas*	35	7.75
Bullhead Catfish *Ameiurus* spp.	62	68.56
Mosquitofish *Gambusia* spp.	196	25.48
Bluegill *Lepomis macrochirus*	156	54.55
Redbreast Sunfish *Lepomis auritus*	59	27.44
Spotted Sunfish *Lepomis punctatus*	1	0.30
Total	510	186.45

[a] Southwick, R. I., and A. J. Loftus, editors. 2003. Investigation and monetary values of fish and freshwater mussel kills. American Fisheries Society, Special Publication 30, Bethesda, Maryland.

Table 3. Costs for the fish kill investigation on One Mile Branch in Lowndes County on November 20, 2009.

Item	Amount	Cost ($)
Personnel [a]		
PS: Nat Res Biologists (WL)	20 hours	584.00
TS: Natural Resources Tech (AL)	21 hours	506.94
Vehicles		
129772	191 miles	105.05
Other		
Supplies	1 set	20.00
Total		**$1215.99**

[a] Cost includes fringe benefits

REPORT OF POLLUTION-CAUSED FISH KILL

LOCATION (Name of body of water: Latitude-Longitude)		MAJOR RIVER BASIN
One Mile Branch (Tributary to Withlacoochee River) 30.84755° N, 83.27940° W		Suwannee
NEAREST TOWN: Valdosta	COUNTY: Lowndes	DATE OF KILL: November 18, 2009
TYPE OF WATER BODY: ☒ RIVER OR STREAM ☐ LAKE/POND ☐ ESTUARY	DURATION OF KILL (If known) DAYS/HOURS: Several hours	

POLLUTION SOURCE - TYPE OF OPERATION

AGRICULTURAL OPERATIONS

- ☐ POISONS (pesticides)
- ☐ FERTILIZERS
- ☐ MANURE DRAINAGE, ENSILAGE LIQUORS, OR FEED LOT OPERATIONS
- ☐ HANDLING OF EQUIPMENT AND CONDITIONS
- ☐ OTHER

INDUSTRIAL OPERATIONS

- ☐ MINING
- ☐ FOOD & KINDRED
- ☐ METALS
- ☐ RUBBER & PLASTICS
- ☐ CHEMICALS
- ☐ PETROLEUM
- ☐ OTHERS:
- ☐ TEXTILES
- ☐ LEATHER & LEATHER PRODUCTS
- ☐ PAPER & ALLIED PRODUCTS
- ☐ LUMBER & WOOD PRODUCTS
- ☐ SAND & GRAVEL

MUNICIPAL OPERATIONS

- ☒ SEWERAGE SYSTEMS
- ☐ REFUSE DISPOSAL
- ☐ WATER SYSTEM
- ☐ SWIMMING POOL
- ☐ POWER SYSTEM
- ☐ PEST CONTROL
- ☐ OTHER

TRANSPORTATION OPERATIONS

☐ RAIL ☐ TRUCK ☐ BARGE OR BOAT
☐ AIR ☐ PIPELINE ☐ OTHER

OTHER

☐ IMPINGEMENT/ENTRAINMENT/DAM DESIGN
☐ CONSTRUCTION ☐ OTHER

☐ UNKNOWN

SPECIFIC POLLUTANT OR FACTOR CHANGING WATER CHARACTERISTIC

- ☐ NUTRIENTS
- ☐ RADIONUCLEIDES
- ☐ TEMPERATURE
- ☐ CYANIDES AND PHENOLS
- ☐ ORGANIC CHEMICALS
- ☐ PETROLEUM (OIL & GREASE)
- ☐ SEDIMENTATION/SILTING
- ☐ INORGANIC CHEMICALS (METALS)
- ☐ OXYGEN DEFICIENCY
- ☐ PESTICIDES, HERBICIDES, ETC.
- ☐ MIXED CHEMICALS
- ☐ OTHER (specify):
- ☐ pH
- ☐ TURBIDITY
- ☒ UNKNOWN

EXTENT OF AREA AFFECTED		ESTIMATED OR ACTUAL NUMBER KILLED	SPECIES OF FISH KILLED (If known)
MILES OF STREAM: 0.69	ACRES OF LAKE:	510 – direct count	American Eel, Golden Shiner, Bullhead spp., Mosquitofish, Bluegill, Redbreast Sunfish, Spotted Sunfish
SEVERITY: ☐ TOTAL ☐ HEAVY ☐ MOD ☒ LIGHT		VALUE OF FISH KILLED: $186.45	

ADDITIONAL REMARKS (Include effects on other than fish, e.g., shellfish, waterfowl, etc.)
Saw one dead Crayfish.

INVESTIGATOR	INVESTIGATOR MAILING ADDRESS AND PHONE NUMBER	DATE OF REPORT
Jeremy Wixson	1773A Bowens Mill Highway Fitzgerald, GA 31750 229-426-5272	November 24, 2009

EPD FOLLOW-UP INVESTIGATION REFERRED TO:	ACTIONS TAKEN (If known) (EPD)	WQMU (EPD)

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
WILDLIFE RESOURCES DIVISION

MARK WILLIAMS
COMMISSIONER

DAN FORSTER
DIRECTOR

March 11, 2013

MEMORANDUM

TO: Jane Hendricks
EPD – Wastewater Regulatory Program

Marzieh Shahbazaz
EPD – Permitting, Compliance, and Enforcement

FROM: Matt Thomas
Assistant Chief of Fisheries

SUBJECT: Fish Kill – Knights Creek
Lowndes County, Georgia
February 22, 2013

Attached is copy of subject fish kill investigation report for your files. Please call me if you have questions.

:mt

cc: John Biagi
Bert Deener

Attachment

FISHERIES MANAGEMENT SECTION
2070 U.S. HIGHWAY 278 S.E. | SOCIAL CIRCLE, GEORGIA 30025-4711
770.918.6406 | FAX 706.557.3030 | WWW.GEORGIAWILDLIFE.COM

Fish Kill Investigation in Knights Creek In Lowndes County, Georgia February 22, 2013

by
Bryant Bowen

Georgia Department of Natural Resources
Fisheries Management Section
Southcentral Region IV
Waycross, Georgia

February 26, 2013

Chad Sexton received notification of a fish kill in Knights Creek, Lowndes County on February 22, 2013 around 0945 hours from John Waite (229.292.0842) of Valdosta Water and Sewerage Department resulting from a sewage spill. The spill reportedly started around 2130 hours on February 20, 2013. The city located the spill at 1030 hours February 21, 2013 near the Chadwyck subdivision and repaired the overflowing manhole around 1430 hours. Mr. Waite reported an estimated 20,000 gallons of sewage spilled. Mr. Waite also reported that the department flushed the canal, with treated water, overnight using a nearby fire hydrant. Valdosta Water and Sewerage Department personnel picked up and iced around 30 dead fish on February 21, 2013. After receiving all pertinent information from Mr. Waite and gathering necessary equipment and additional staff, Jason Mitchell and Chad left Waycross to investigate.

Chad and Jason arrived at 1230 hours at the intersection of Inner Perimeter Road and Tyndall Dr. near the origin of the spill (Fig. 1). At this point, it started raining and continued to rain throughout the investigation. Mr. Waite met Chad and Jason around 1315 hours at Site #1 (Fig. 1) and reported that EPD had already been contacted. He relayed the spill history and actions taken by his department and handed over the previously collected dead fish. Based on Mr. Waite's information, there was nowhere to take water quality above or near the spill origin, which was a clogged manhole that overflowed municipal sewage into a ditch with little water in it. Here they encountered the remnants of the spill: the smell of raw sewage and visual debris. They measured basic water quality at all of the rest of the sites using a YSI model 85 oxygen/conductivity meter, a Hach portable water test kit model FF-1, and a YSI model 60 pH meter. They noted that the total hardness and specific conductance readings were elevated at the first site and dropped as they moved downstream. At the time of the investigation, none of the water quality readings were at levels typically capable of killing fish. Water temperatures dropped as they moved downstream, likely because of the heavy rainfall.

Jason and Chad counted and/or collected every visible dead fish between the spill origin and Site #2 (Jaycee Shack Road) but were unable to collect dead fish between Sites #2 and #3 due to lack of access, deeper water, and an impenetrable understory. Therefore, the number of dead fish was estimated using an expansion factor. The expansion factor was determined by dividing the total number of segments by the number of segments in which fish were collected. In this case, we had 5 total segments and were able to collect fish from 2 of those. This provided us with an expansion factor of 2.5.

They observed no live fish at any of the 3 sites, mainly because of the reduced visibility caused by the heavy rainfall. The water quality at the last site had improved and no dead aquatic organisms were detected within 200 ft. upstream of Park Avenue. Therefore we determined this was the terminus of the 1.58 mile long fish kill. It was at this point that the field investigation ended. Due to heavy rainfall, Chad and Jason returned to the Waycross Regional Fisheries Management Office to work up all collected dead fishes with Bert Deener.

The initial cause of the fish kill appears to be an oxygen depletion caused by overloading of nutrients from raw sewage into Knights Creek. The system was also flushed with treated city drinking water from a fire hydrant. The total estimated number of fish killed was 469, and the value of these fish was $219.59 (Table 2). Additionally, 17 crayfish and 16 bullfrog tadpoles were killed. The cost of the investigation was $845.36 (Table 3). The total cost of the dead fish and the investigation was $1064.95.

REPORT OF POLLUTION-CAUSED FISH KILL

LOCATION (Name of body of water: Latitude-Longitude)		MAJOR RIVER BASIN
Knights Creek		Alapaha / Suwanee
NEAREST TOWN	COUNTY	DATE OF KILL
Valdosta	Lowndes	2/20 – 2/21/2013
TYPE OF WATER BODY	DURATION OF KILL (If known)	
☒ RIVER OR STREAM ☐ LAKE/POND ☐ ESTUARY	DAYS/HOURS ~ 18 hrs.	

POLLUTION SOURCE - TYPE OF OPERATION

AGRICULTURAL OPERATIONS

- ☐ POISONS (pesticides)
- ☐ FERTILIZERS
- ☐ MANURE DRAINAGE, ENSILAGE LIQUORS, OR FEED LOT OPERATIONS
- ☐ HANDLING OF EQUIPMENT AND CONDITIONS
- ☐ OTHER

INDUSTRIAL OPERATIONS

- ☐ MINING
- ☐ FOOD & KINDRED PRODUCTS
- ☐ METALS
- ☐ RUBBER & PLASTICS
- ☐ CHEMICALS
- ☐ PETROLEUM
- ☐ OTHERS:
- ☐ TEXTILES
- ☐ LEATHER & LEATHER PRODUCTS
- ☐ PAPER & ALLIED PRODUCTS
- ☐ LUMBER & WOOD PRODUCTS
- ☐ SAND & GRAVEL

MUNICIPAL OPERATIONS

- ☒ SEWERAGE SYSTEMS
- ☐ REFUSE DISPOSAL
- ☐ WATER SYSTEM
- ☐ SWIMMING POOL
- ☐ POWER SYSTEM
- ☐ PEST CONTROL
- ☐ OTHER

TRANSPORTATION OPERATIONS

☐ RAIL ☐ TRUCK ☐ BARGE OR BOAT
☐ AIR ☐ PIPELINE ☐ OTHER

OTHER

☐ IMPINGEMENT/ENTRAINMENT/DAM DESIGN
☐ CONSTRUCTION ☐ OTHER

☐ UNKNOWN

SPECIFIC POLLUTANT OR FACTOR CHANGING WATER CHARACTERISTIC

- ☐ NUTRIENTS
- ☐ RADIONUCLEIDES
- ☐ TEMPERATURE
- ☐ CYANIDES AND PHENOLS
- ☐ ORGANIC CHEMICALS
- ☐ PETROLEUM (OIL & GREASE)
- ☐ SEDIMENTATION/SILTING
- ☐ INORGANIC CHEMICALS (METALS)
- ☐ OXYGEN DEFICIENCY
- ☐ PESTICIDES, HERBICIDES, ETC.
- ☐ MIXED CHEMICALS
- ☒ OTHER (specify): Possible chlorine poisoning from flushing system with city water and/or Oxygen sag from sewage.
- ☐ pH
- ☐ TURBIDITY
- ☐ UNKNOWN

EXTENT OF AREA AFFECTED		ESTIMATED OR ACTUAL NUMBER KILLED	SPECIES OF FISH KILLED (If known)
MILES OF STREAM: 1.58 mi	ACRES OF LAKE:	469	Lake chubsucker, Warmouth, Spotted sunfish, Largemouth bass, Redfin pickerel, Chain pickerel, Redbreast sunfish, Goldfish, Unidentified sunfish, Bluegill sunfish, Bluespotted sunfish, Gambusia, Lined topminnow, Swamp darter, Brook silverside, Flat bullhead
SEVERITY: ☐ TOTAL ☒ HEAVY ☐ MOD ☐ LIGHT		VALUE OF FISH KILLED: $219.59	

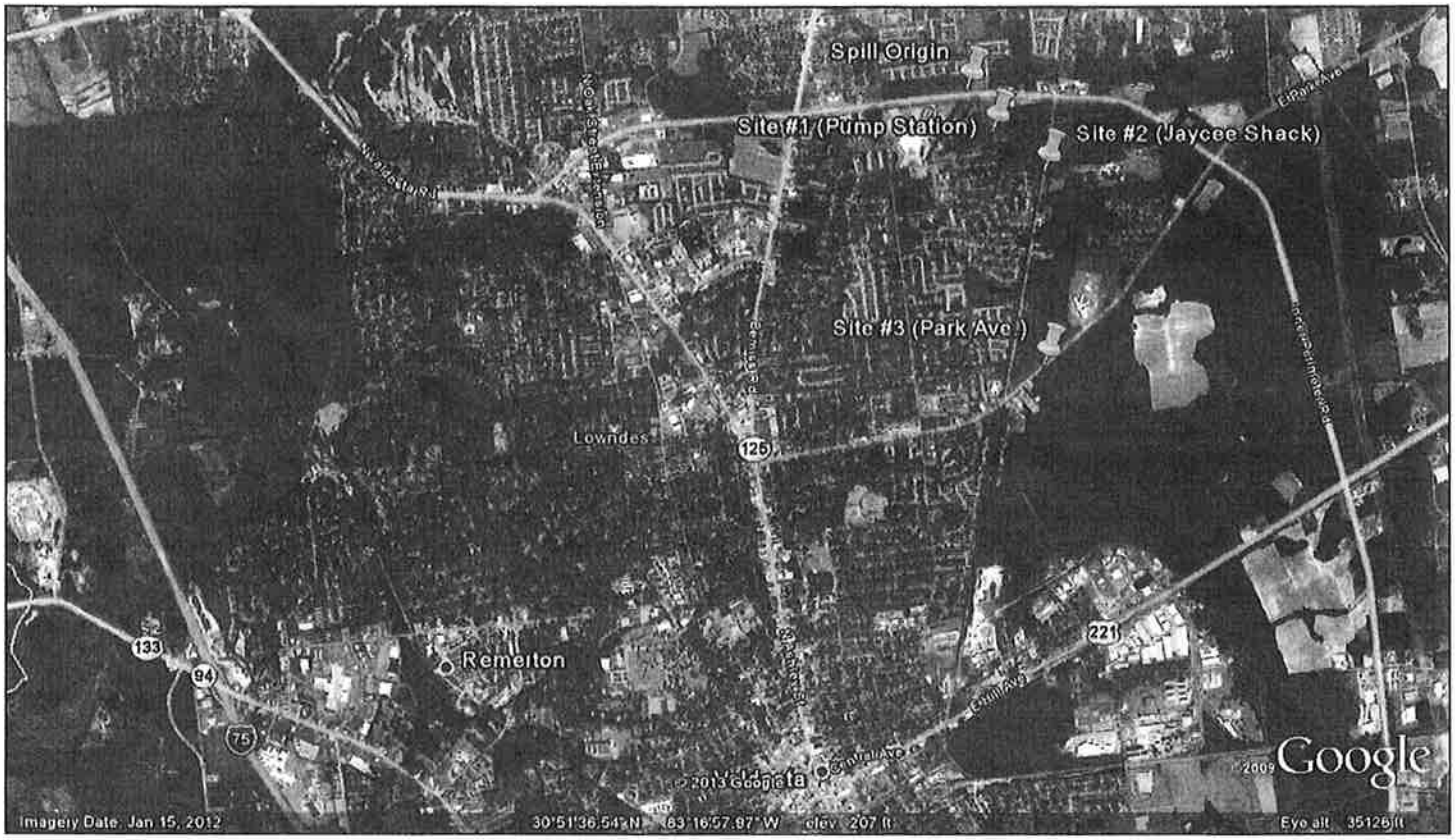
ADDITIONAL REMARKS (Include effects on other than fish, e.g., shellfish, waterfowl, etc.)

The spill killed other aquatic organisms besides fishes including: 17 Crayfish, 16 Tadpoles,

INVESTIGATOR	INVESTIGATOR MAILING ADDRESS AND PHONE NUMBER	DATE OF REPORT
Chad Sexton Jason Mitchell	P.O. Box 2089 Waycross, GA 31502 (912)285-6094	2/26/2013

EPD FOLLOW-UP INVESTIGATION REFERRED TO:	ACTIONS TAKEN (If known) (EPD)	WQMU (EPD)

Figure 1. Map of study area for the fish kill investigation on Knights Creek in Valdosta, Lowndes County, GA on February 20-22, 2013.



Legend		
Spill Origin	30°52'58.91"N	83°15'29.50"W
Site # 1 (Pump Station)	30°52'46.42"N	83°15'22.86"W
Site #2 (Jaycee Shack)	30°52'33.77"N	83°15'8.27"W
Site #3 (Park Avenue)	30°51'40.78"N	83°15'16.42"W

Figure 2. Photo of manhole that was the spill origin (photo taken on February 22, 2013).

Figure 3. First road culvert holding water near spill origin (taken on February 22, 2013).

Table 1. Water quality measurements made during the fish kill investigation on Knights Creek in Lowndes County February 22, 2013 including GPS coordinates.

Station name or location	Time (hrs)	Water depth (ft)	Water Temp (°C)	D.O. (ppm)	pH	Total hardness (ppm)	Total alkalinity (ppm)	Specific conductance (µs)	Dead fish	GPS coordinates
Site # 1 (Pump Station)	1350	Surface	18.5	5.6	6.2	154	68	306	Yes	30°52'46.42"N 83°15'22.86"W
Site #2 (Jaycee Shack) Road	1430	Surface	16.4	6.1	6.1	68	34	252	Yes	30°52'33.77"N 83°15'8.27"W
Site # 3 (Park Avenue)	1536	Surface	15.4	7.01	6.1	68	68	91	No	30°51'40.78"N 83°15'16.42"W

Table 2. Number and monetary value of dead fish from the fish kill investigation in Knights Creek, Lowndes County, on February 20 - 22, 2013.

Species	Number of dead fish [b]	Value ($) [a/b]
Lake chubsucker *Erimyzon sucetta*	26	21.85
Flat bullhead *Ameiurus platycephalus*	33	25.00
Western mosquitofish *Gambusia affinis*	8	1.04
Redbreast sunfish *Lepomis auritus*	225	75.75
Warmouth *Lepomis gulosus*	40	16.23
Bluegill *Lepomis macrochirus*	10	3.15
Spotted sunfish *Lepomis punctatus*	68	21.36
Largemouth bass *Micropterus salmoides*	15	24.58
Redfin pickerel *Esox americanus*	10	15.97
Chain pickerel *Esox niger*	3	4.29
Goldfish *Carrassius auratus auratus*	5	2.05
Bluespotted sunfish *Enneacanthus gloriosus*	3	0.81
Lined topminnow *Fundulus lineolatus*	5	0.54
Swamp darter *Etheostoma fusiforme*	10	4.22
Brook silverside *Labidesthes sicculus*	3	0.75
Unidentified sunfish	8	2.00
Total	**469**	**$219.59**

[a] Southwick, R. I., and A. J. Loftus, editors. 2003. Investigation and monetary values of fish and freshwater mussel kills. American Fisheries Society, Special Publication 30, Bethesda, Maryland.

[b] Expanded value = number counted multiplied by an expansion factor.
The expansion factor = total number of segments/number of segments sampled = 5/2 = 2.5

Table 3. Costs for the fish kill investigation on the Knights Creek in Lowndes County from February 20-22, 2013.

Item	Amount	Cost ($)
Personnel [a]		
Fisheries Biologist I	8 hours	$233.53
Fisheries Technician III	12 hours	$314.04
Fisheries Technician II	8.5 hours	$194.57
Regional Supervisor	1 hour	$38.22
Vehicles		
129823	130 miles	$65.00
Total		**$845.36**

[a] Values include fringe benefits.

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
WASTEWATER REGULATORY PROGRAM
4220 INTERNATIONAL PARKWAY, SUITE 101
ATLANTA, GEORGIA 30354

City of Valdosta

ATTACHMENT 4

City of Valdosta Major Spills as Defined by 391-3-6-.05(2)(b)(1)
January 1, 2008 to July 31, 2013

City of Valdosta Major Spills as Defined by 391-3-6-.05(2)(b)(1)
January 2008 to July 2013

BEGIN DATE	WATERWAY IMPACTED	OVERFLOW LOCATION	QUANTITY	REPORTED CAUSE
2008-01-19	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	6,473,000	HYDRAULIC OVERLOAD, CAUSED BY RAIN
2008-02-21	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	7,700,000	HEAVY RAIN, INFLOW AND INFILTARION (I/I) DURING WEEK OF 2/18-22/08, 8" RAIN, 5" on 2/21 and 2" on 2/22
2008-02-22	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	15,500,000	HEAVY RAIN, I/I DURING WEEK OF 2/18-22/08, 8" RAIN, 5" on 2/21 and 2" on 2/22
2008-02-23	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	15,200,000	HEAVY RAIN, I/I DURING WEEK OF 2/18-22/08, 8" RAIN, 5" on 2/21 and 2" on 2/22
2008-02-25	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	16,400,000	HEAVY RAIN, I/I DURING WEEK OF 2/18-22/08, 8" RAIN, 5" on 2/21 and 2" on 2/22
2008-04-05	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	10,600,000	HEAVY RAIN CAUSED HIGH PEAK FLOW LEADING TO HYDRAULIC OVERLOAD OF SECONDARY CLARIFIERS
2008-08-22	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	10,200,000	HYDRAULIC OVERLOAD
2008-08-23	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	16,900,000	HYDRAULIC OVERLOAD
2008-08-26	MUD CREEK	1638 NEW STATENVILLE ROAD	6,300,000	HYDRAULIC OVERLOAD FROM TROPICAL STORM FAY
2008-11-29	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	6,500,000	I&I, HEAVY RAINFALL
2009-01-27	MUD CREEK	1638 NEW STATENVILLE ROAD	2,700,000	CLOGGED ACTIVATED SLUDGE TUBES
2009-03-31	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	8,800,000	HIGH SOLIDS IN EFFLUENT FLOW AND EXCESSIVE RAIN
2009-04-01	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	18,300,000	EXCESSIVE RAIN
2009-04-02	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	24,800,000	FLOODING
2010-01-21	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	15,400,000	I&I, HEAVY RAIN
2010-01-22	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	14,900,000	INFLOW FROM HEAVY RAIN

City of Valdosta Major Spills as Defined by 391-3-6-.05(2)(b)(1)
January 2008 to July 2013

BEGIN DATE	WATERWAY IMPACTED	OVERFLOW LOCATION	QUANTITY	REPORTED CAUSE
2010-02-05	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	12,000,000	INFLOW FROM HEAVY RAIN
2010-03-11	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	12,200,000	INFLOW FROM HEAVY RAIN
2010-04-22	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	5,900,000	BIOLOGICAL UPSET OF SECONDARY TREATMENT SYSTEM
2011-02-05	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	9,100,000	RAIN INDUCED, HYDRAULIC PROBLEM AT PLANT
2011-02-10	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	10,300,000	HYDRAULIC OVERLOAD
2011-02-19	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	6,825,000	MECHANICAL FAILURE
2012-03-03	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	8,380,000	HYDRAULIC OVERLOAD OF WPCP SECONDARY SYSTEM
2013-02-23	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	9,047,000	HYDRAULIC OVERLOAD
2013-02-25	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	11,673,000	HYDRAULIC OVERLOAD
2013-02-26	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	15,173,000	EXCESSIVE RAIN
2013-07-23	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	7,600,000	HYDRAULIC OVERLOAD, EXCESSIVE RAIN
2013-07-24	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	7,950,000	HYDRAULIC OVERLOAD, EXCESSIVE RAIN
2013-07-25	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	8,500,000	HYDRAULIC OVERLOAD, EXCESSIVE RAIN
2013-07-26	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	7,000,000	HYDRAULIC OVERLOAD, EXCESSIVE RAIN
2013-07-30	WITHLACOOCHEE RIVER	3352 WETHERINGTON LANE	7,200,000	HYDRAULIC OVERLOAD, EXCESSIVE RAIN

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
WASTEWATER REGULATORY PROGRAM
4220 INTERNATIONAL PARKWAY, SUITE 101
ATLANTA, GEORGIA 30354

City of Valdosta

ATTACHMENT 5a

EPA Comments on the City of Valdosta's Sewer Overflow Response and Reporting Procedures
April 11, 2013

EPA Comments on Sewer Overflow Response and Reporting Procedures:
City of Valdosta – Response to 10/23/2012 Section 308 Request (Attachments E and F)

Standard Operating Procedure (Attachment E)

1. Section II.A.1. If the crew confirms an overflow is occurring, then the start time recorded should be the initial time reported, or earlier if there is credible testimony, and not the time that the overflow was discovered by the crew. This should also be reflected in the process diagram.

2. Section II.A.5. Additional instruction concerning the perspective(s) and settings for the photographs is likely needed to ensure photos are taken that are of use in making estimations.

3. Section II.A.6. Additional instruction concerning procedure for measurements is likely needed to ensure measurements are obtained accurately.

4. Section II.A.9. Identification of the name of the waters is also necessary for reporting purposes.

5. Section II.B.2. Additional instruction concerning how to document causal observations is likely needed to ensure the information collected has consistent specificity.

6. Section III.D. Washing down the area after application of the disinfectant could still result in pollutants to the storm drain. Quarantining and collecting the wash water, or instructing that no wash water is to be directed or drained to the storm drain may be a prudent addition.

7. Section IV. Direction regarding how to respond and communicate back-ups to basements or homes due to the sewer overflow conditions is needed.

8. Section IV. Direction regarding how to record and communicate sewer overflows that do not reach waters of the state is needed.

9. Process diagram. Start time of overflow should be specified as noted above. More than one picture may be taken.

Methods of Estimation

The two page document (Attachment F) offers insufficient instruction for performing the estimations of discharge. Valdosta needs to formalize its techniques and attach instruction to the standard operating procedure.

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
WASTEWATER REGULATORY PROGRAM
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City of Valdosta

ATTACHMENT 5b

The City of Valdosta's Revised Sewer Overflow Response and Reporting Procedures
September 11, 2013

Standard Operating Procedure
Sanitary Sewer Overflow Response and Reporting

The purpose of this document is to establish a standard procedure for responding to and reporting sanitary sewer overflows from the City of Valdosta collection system. All sanitary sewer overflows require immediate response to stop the overflow and secure the affected area to protect public health. All overflows must be investigated to determine the cause and any contributing factors. Finally, all overflows must be documented to fulfill regulatory requirements and to provide information for future collection system improvements and repairs. Any sanitary overflow that allows untreated wastewater to enter waters of the state must be reported to the Environmental Protection Division (EPD), to the local media, and to the health department as required under the Georgia Rules for Water Quality Control section 391-3-6-.05 Emergency Actions.

I. Definitions:

"Major Spill" means:

1. The discharge of pollutants into the waters of the State by a POTW that exceeds the weekly average permitted effluent limit for biochemical oxygen demand (5-day) or total suspended solids by 50 percent or greater for any one day, provided that the effluent discharge concentration is equal to or greater than 25 mg/L for biochemical oxygen demand or total suspended solids.

2. Any discharge of raw sewage that (1) is in excess of 10,000 gallons or (2) results in water quality violations in the waters of the State.

"Spill" means any discharge of raw sewage by a Publicly Owned Treatment Works (POTW) to waters of the state.

"Waters of the State" means any and all rivers, streams, creeks, branches, lakes, reservoirs, ponds, drainage systems, springs, wells, and all other bodies of surface or subsurface water, natural or artificial, lying within or forming a part of the boundaries of the state which are not entirely confined and retained completely upon the property of a single individual, partnership, or corporation. (O.C.G.A. 12-5-22)

II. Identification of sanitary sewer overflow:

A. When a report of an overflow is received a utilities department crew must be dispatched to confirm that an overflow does exist. If the report is received after normal working hours the standby crew must respond. Upon locating and confirming the overflow the responders must follow procedures to document the overflow and aid in determining the extent of the overflow. Supervisors responding to the overflow will be able to help collect information and will make sure that all needed information is gathered.

1. Record the date and time the overflow began. This will be the time the initial report was received, or earlier if there is credible testimony to support the earlier time.
2. Report the overflow to the Superintendent of Distribution, the Collections Supervisor, and the Environmental Manager.
3. Advise the Collections Supervisor or standby supervisor of conditions and what equipment may be needed to stop the overflow
4. Check downstream manholes to determine if there is a blockage and to identify the approximate position of any blockage.
5. Document the overflow with pictures before removing the manhole cover, these pictures will be used to help estimate the rate of flow. When taking pictures of the overflow:
    a. Use a digital camera on automatic settings
    b. The camera must be set to the correct date and time, the date stamp option must be on so that the date will appear on the picture
    c. Take at least one picture from the side of the manhole with a ruler in place to display the height of the sewage coming from the vents or around the manhole frame. If there are multiple vents discharging then more than one picture should be taken measuring the height of flow at different locations along the arc of the manhole cover.
    d. Take one picture from above the manhole lid to document the number of vents releasing sewage or the percentage of the frame involved in the overflow.
    e. Takes pictures of the sewage stream leaving the manhole, any ponds or pools of sewage for documentation. The size of these pools will be measured to estimate the volume in the pool.
6. Document information necessary to help determine the volume of the overflow. Since the conditions at each overflow will be different, there is no single method of determining total volume of sewage discharged that will be appropriate for all events. One or more of the following methods will be used. Appendix 1 contains detailed instructions for determining total volume.
    i. For overflows from a manhole with the lid still in place, measure the depth of the spout of water at the rim or at the pick holes. Make a note of the depth measurement and where it was taken. Using a clock face record the areas overflowing and the measured height of the water at each five minutes of circumference. (Example: height of 1 inch from 1:00 to 2:00, height of ½ inch from 2:00 to 3:00, etc.
    ii. For contained overflows map the containment area and measure the wetted area, including depth measurements.
    iii. For runoff in a defined channel such as against a curb measure the width of the channel, the average depth, and the velocity of flow.
7. Follow the sewage stream to determine if the sewage is reaching waters of the state or entering the storm sewer system
8. Document any place sewage is entering waters of the state or the storm sewer system with pictures

9. Make a note of the point that the sewage is entering waters of the state or the storm sewer system as closely as possible using temporary markers or by noting landmarks. The name of the waterway receiving the discharge must be recorded for proper reporting.
10. Inform the Superintendent of Distribution, the Collections Supervisor, and the Environmental Manager of any entry into state waters.

B. When the overflow has been stopped:

1. The responders must document the time that the overflow stopped. This information is required for reporting to the state. In addition, the rate of the overflow in gallons per minute and the duration of the overflow in minutes may be used to estimate the total volume released in gallons.

2. The responding crews will make on site observations to help determine the cause of the release. The crew should write on the work order form any physical indicators found such as rags, grease, broken pipe, dirt, bricks, etc. If any pictures can be taken of debris removed from the manhole or line, then these pictures will be helpful in determining the cause of the overflow. All such pictures should be taken using a digital camera in automatic mode with the date stamp turned on. A yardstick or ruler should be laid next to the debris to provide a size reference.

III. Site Cleanup

A. Collect as much of the sewage as possible using the vacuum truck
B. Gather and remove sewage related debris and organic solids from the area.
C. Using a solution of household chlorine bleach, such as Clorox or Purex, spray the affected area. Let the disinfectant remain in place for at least one-half hour. Recommended dosage of chlorine bleach is ¾ cup of liquid bleach to 50 gallons of water or 1 tablespoon of liquid bleach to five gallons of water.
D. Wash down the area. Wash water applied after disinfection could still carry pollutants to the storm sewer system or a stream, therefore wash water must be directed away from any storm system inlet. Pools of wash water should be recovered using the vacuum truck.

IV. Reporting of overflows, spills, and major spills:

A. All overflows should be reported to the Environmental Manager so that a record can be kept of the location, amount, and cause of the overflow. Overflows that do not reach waters of the state will be on record with the Utilities Department. Any customers whose property is affected by the overflow should be told of the event and of all cleanup actions that have been done or are planned.

B. If sewage does reach the waters of the state then reporting to the EPD is required, along with public notification. The required actions are listed in the Georgia Rules for Water Quality Control; section 391-3-6-.05 Emergency Actions.

1. In the event of a spill: (less than 10,000 gallons released to waters of the state and no water quality violation)

   a. The City must notify the EPD immediately by telephone or by FAX. Reporting by FAX is preferred because the person who needs to receive the report may not be available by telephone at the time of the report. FAX reporting is allowed by the EPD and will provide documentation that the report was made and when it was made. The initial report is normally made by the Environmental Manager, but may be done by any supervisor. A template to use for initial reporting is included with this document. The initial report must include:

      1. Date of the spill;
      2. Location and cause of spill;
      3. Estimated volume discharged and name of receiving waters;
      4. Corrective action taken to mitigate or reduce the adverse effects of the spill.

   b. The City must report the spill to the local media within 24 hours of becoming aware of the spill. The media report must include the same items;

      1. Date of the spill;
      2. Location and cause of spill;
      3. Estimated volume discharged and name of receiving waters;
      4. Corrective action taken to mitigate or reduce the adverse effects of the spill.

   c. All reports to the local media must be approved by the Utilities Director, who will forward the report to the Public Information Officer. Only the Public Information Office will release news reports to the media.

   d. The City must report the same items to the Lowndes County Health Department, Environmental Division by telephone. This report is normally done by the Environmental Manager, but may be done by any supervisor or by the Environmental Technician. The contact number for Lowndes County Environmental Services is 245-2314.

   e. The City must post notices at the point where sewage entered waters of the state and at public access points downstream. The Environmental Manager has signs for this purpose and will attach copies of the media notice to the signs giving specifics of the spill. The Environmental Manager's staff will be responsible for the placement of the notices.

f. Within five days of the spill the City must submit a written report to the EPD. The written report must include the items above plus a description of where the spill notices were placed. Normally the draft of this report will be completed by the Environmental Manager and submitted to the Utilities Director for editing and signature. If the Environmental Manager is absent another supervisor will need to complete the first draft of this letter and send an electronic copy to the Utilities Director by e-mail.

2. In the event of a "major spill" (over 10,000 gallons released or a water quality violation occurs) the same responses are required with some extra requirements:

   a. The City must notify the EDP immediately by telephone or by FAX. Reporting by FAX is preferred because the person who needs to receive the report may not be available by telephone at the time of the report. FAX reporting is allowed by the EPD and will provide documentation that the report was made and when it was made. The initial report is normally made by the Environmental Manager, but may be done by any supervisor. A template to use for initial reporting is included with this document. The initial report must include:

      1. Date of the spill;
      2. Location and cause of spill;
      3. Estimated volume discharged and name of receiving waters;
      4. Corrective action taken to mitigate or reduce the adverse effects of the spill.

   b. The City must report the spill to the local media within 24 hours of becoming aware of the spill. The media report must include the same items;

      1. Date of the spill;
      2. Location and cause of spill;
      3. Estimated volume discharged and name of receiving waters;
      4. Corrective action taken to mitigate or reduce the adverse effects of the spill.

   c. All reports to the local media must be approved by the Utilities Director, who will forward the report to the Public Information Officer. Only the Public Information Office will release news reports to the media.

   d. The City must report the same items to the Lowndes County Health Department, Environmental Division by telephone. This report is normally done by the Environmental Manager, but may be done by any supervisor or by the Environmental Technician. The contact number for Lowndes County Environmental Services is 245-2314.

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g. The City must publish a notice of the major spill in the Valdosta Daily Times within seven days. The notice must include the items required in the initial report to EPD. Normally the Public Information Officer will arrange the public notice using a copy of the press release.

h. The City must immediately begin a sampling program for the waterway affected by the major spill. Sample sites are selected upstream and downstream of the major spill site and are monitored for dissolved oxygen, temperature, pH, and fecal coliform. The Environmental Manager's staff will be responsible for selecting sites, collecting samples, and performing on site tests.

C. Responding to backups to homes resulting from sanitary sewer overflows

D. Recording of overflows that do not reach waters of the state

1. The Environmental Manager will maintain records of all sanitary sewer overflows whether or not there is discharge to the waters of the state. Therefore, all overflows must be reported to the Environmental Manager. In the event that the position of Environmental Manager is eliminated from the department organizational structure, the maintenance of overflow records will be reassigned by the Utilities Director, and the Standard Operating Procedure updated to reflect this change.
2. The following information will be recorded for overflows that do not reach waters of the state:
    a. Date and time the overflow began
    b. Date and time the overflow ended
    c. Location of the overflow
        i. By address if one exists for the location
        ii. By Latitude and Longitude if no address exists
        iii. By manhole identification number if a manhole is involved
        iv. By upstream and downstream manhole identification numbers is a pipe break is involved

d. Cause of the overflow
e. Volume discharged
f. Volume recovered
g. Final disposal of recovered sewage
h. Description of cleanup

E. Responding to backups that enter homes

1. The following information will be recorded for overflows that enter houses
    a. Date and time of the backup
    b. Address of the house
    c. Name of the resident and owner
    d. Cause of the overflow
    e. Volume discharged
    f. Volume recovered
    g. Final disposal of recovered sewage
    h. Description of cleanup

2. The collection system supervisor or crew leader will contact the Utilities Office Coordinator to report a backup into a residence
3. The Utilities Office Coordinator will arrange for professional cleaning services for the residence
4. The resident or home owner will be provided information on procedures for filing a claim

City of Valdosta
Department of Utilities
Report of Spill or Major Spill

Report Date: _____

Type of Occurrence: _____

Date of Spill: _____

Time Started or identified: _____

Time Stopped: _____

Location: _____

Amount: _____

Did spill reach "Waters of the State"? _____

Receiving water: _____

Cause: _____

Corrective Action:

_____
_____
_____
_____
_____

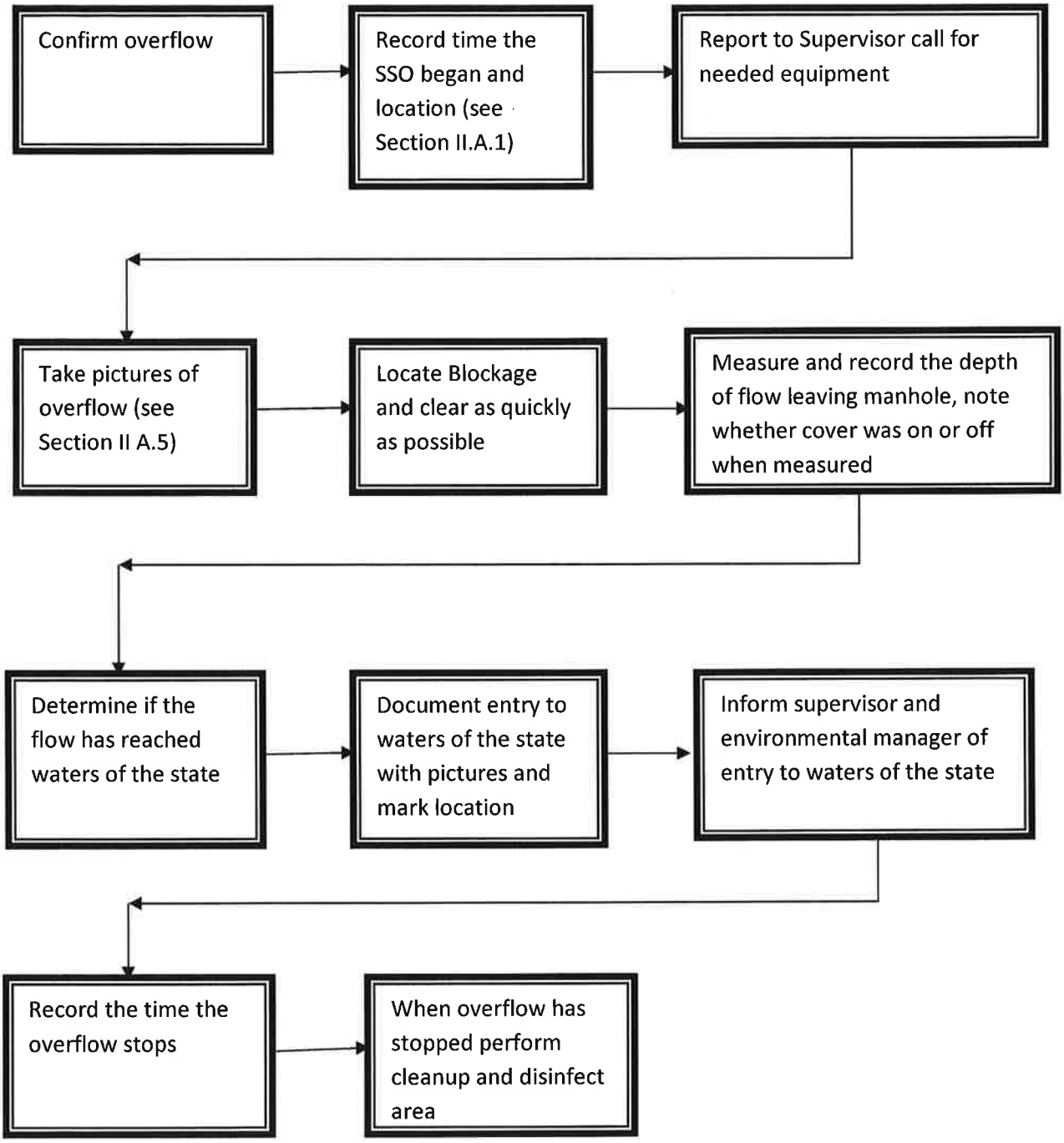
Upstream sampling site will be: _____

Downstream sampling site will be: _____

Reported by: _____

Contact number: _____

Sanitary Sewer Overflow Response Process



Spill Documentation and Spill Volume Calculation Guidance

D.1 Spill Documentation

Upon initial discovery of a spill, utility personnel should document and record the following information:

- Date;
- Time (based on best professional judgment, estimate the start time of the overflow prior to initial discovery or establish the start of the spill at the time of receipt of a customer service request reporting of a spill);
- Description of spill.
- Where it started;
- Where the spill discharged to (describe the nearest receiving water body and conduct a visual inspection for signs of algae, rags, raw sewage, and debris; also inspect and describe immediate upstream and downstream areas);
- Determine time period of long term spill events (evidence such as algae growth indicates a long term spill and it is estimated that algae growth occurs after one month of exposure to sewage); and
- Estimate volume since discovery of the spill.
- Use photographs to document all information possible.

D.2 Spill Volume Calculation

The following sections provide guidance for estimating spill flow volume for manholes, broken pipes, wet weather, and pump station outage. This is provided as guidance only however, if a different method is used to calculate spill volume, that method should be validated and described.

D.2.1 Broken Lines

Table D-1 provides Spill Volume Calculation by Flow Rate for different size pipes.

SANITARY SEWER FLOW RATES FOR SPILL DETERMINATIONS

Depth of Flow (Inches)	Pipe Size								
	6	8	10	12	15	18	21	24	30
1	15	20	25	30	35	40	45	50	100
2	50	60	70	80	85	95	105	125	145
3	90	110	125	135	150	175	185	210	230
4	125	160	180	200	235	260	285	320	350
5	155	190	240	280	315	360	380	445	470
6	180	260	310	355	415	455	500	555	630
7		290	370	425	495	570	620	695	770
8		320	430	500	600	680	760	815	1010
9			465	575	690	800	890	965	1260
10			490	625	775	905	1005	1120	1360
11				685	870	1020	1135	1275	1490
12				715	935	1130	1260	1410	1630
13					1020	1240	1415	1580	1870
14					1070	1345	1520	1690	2110
15					1105	1425	1650	1850	2220
16						1495	1760	1990	2560
17						1550	1880	2110	2730
18						1595	1980	2285	2940
19							2050	2410	3100
20							2115	2530	3330
21							2160	2630	3510
22								2700	3780
23								2765	3900
24								2820	4040
									4130
									4200
									4250
									4320
									4370
									4400

Gallons per Minute @ V=2.0 feet per second (ft/sec) and n=0.013; Adjust accordingly for flat or steep sloped sewers.

SPILL CALCULATION PROCEDURES

1. Determine and record the time of initial caller notification of sewer spill.
2. Measure and record the flow in inches immediately downstream of spill or blockage and determine flow rate in gallons per minute (gpm) using table above. Record the pipe size in inches.
3. Clear obstacles from blocked sewer, allow free and steady flow to stabilize. Note time the flow stabilizes.
4. Measure the depth of flow in inches in the previously blocked sewer and determine flow rate from table above.
5. Subtract the flow rate from the downstream sewer determined in 2 above from the flow rate from the previously blocked sewer determined in 4 above and multiply the result by the elapsed minutes from notification to clearance.
6. Report total amount spilled to Supervisor or Superintendent

SEWER OVERFLOW AND SPILL PROCEDURES

1. 99% of all visible debris should be removed from the site.
2. Areas where sludge is pooled should be pumped back into sewer.
3. Site should be raked and limed to neutralize sludge accumulations.
4. Deodorant should be applied to neutralize odor problems.
5. Areas below where spill entered stream should be checked for visible debris or sludge on banks.
6. Crew Chief should document on Work Order extent of cleanup completed and note whether repeat visits for additional lime applications are needed.
7. Crew Chief should insure that Supervisor or Superintendent has notified the GA EPD (during normal duty hours) or that Dispatch has notified GA EPD (during off-duty hours). Telephone notification is required with backup letter report.
8. If spill has occurred at a national park, National Park Service also should be notified using same procedures as noted above.
9. Supervisor or Superintendent should insure that spill location is entered into the GIS database.
10. Superintendent and Division Manager should identify repeat locations and develop plan to eliminate further spills at these locations.

D.2.2 MANHOLE OVERFLOWS (Adapted from Guidance from GA EPD)

The following guidance can used in estimating the rate of loss of flow out of manholes. As this is an estimate, judgment by the observing person and/or estimator must always be used. The following manhole SSO quantification methods are provided as guidance.

D.2.2.A Estimating Spill Flow rates for overflowing manholes

This is a visual estimating method. Please refer to Exhibit D-2 for the Reference Sheet. Source: City of San Diego Metropolitan Wastewater Department.

Exhibit D-2

Reference Sheet for Estimating Sewer Spills from Overflowing Sewer Manholes
All estimates are calculated in gallons per minute (gpm)
City of San Diego
Metropolitan Wastewater Department
Wastewater Collection Division
(619) 654-4160
5 gpm
25 gpm
50 gpm
100 gpm
150 gpm
200 gpm
225 gpm
250 gpm
275 gpm
All photos were taken during a demonstration using metered water from a hydrant in cooperation with the City of San Diego's Water Department.
rev. 4/99

D.2.2.B Volume of SSO at Manhole

Length x Width x Depth x 7.48 = gallons
Spill area = 20 feet by 30 feet = 600 sq. ft.
Depths of spill = 3 inches = 0.25 feet
Volume = 20 x 30 x 0.25 x 7.48 = 1,122 gallons

D.2.3 WET WEATHER OVERFLOW CALCULATION:

The following can be used to help in estimating the rate of loss of flow out of manholes. As this is an estimate, judgment by the observing person and/or estimator must always be used.

All calculations are based on an estimate of the size of the opening involved, the velocity of flow through the opening, and the duration of time the overflow occurred. In most all occurrences, the opening size and velocity will change over an event from low to high back to low. Judgment on an average condition must thus be attempted to reach a realistic rate of loss.

D.2.3.A. Loss through vent holes

1. Size of opening:
   Assume holes at 1- inch diameter

   Area = (number of holes) (π) ($D^2/4$) ($1ft^2/144$)
   Area = (number of holes) (3.14) (1/4) (1/144)

   Area = (number of holes) ($0.0055ft^2$/hole)

2. Velocity Plume Guide

   Velocity through holes, based on Velocity Head = ($Velocity^2/2g$)

Plume height	Velocity
1-inch	2.0 ft/sec
2-inch	3.3 ft/sec
3-inch	4.0 ft/sec
4-inch	4.6 ft/sec
5-inch	5.2 ft/sec
6-inch	5.7 ft/sec

3. Time = convert to minutes

Volume (Gal.) = (Area) (Velocity) (Time) (448 gpm/cfs)

Example: Top with six hole, flow through holes makes a one-inch high plume, last for 4 hours, 15 minutes

Volume = (6 holes x 0.0055 ft²/hole) (2ft/sec) (255 min) (448 gpm/cfs)
Volume = (0.033) (2) (255) (448) = 7540 gallons

D.2.3.B. Loss around edge of non-vented cover

1. Size of opening:

As the weight of manhole lid will generally hold it in place until internal pressures exceed 0.4 pounds/sq. in., loss occurs through imperfections, grit, etc. between the lid and manhole frame. Observations are generally a vertical ring of water from side gap between the lid and frame of approximately ¼ inch width.

Area = (π) (D) (¼ inch) (1/12 in/ft)
= (3.14) (2ft) (1/4) (1/12)

Area = 0.131 ft²

2. Velocity through gap
(see vertical plume guide above, D.3.A.2.)

3. Time - convert to minutes

Example: Manhole with 4-inch plume around edge for 2 hours, 15 minutes

Volume (Gal.) = (Area) (Velocity) (Time) (448 gpm/cfs)
= (0.131 ft²) (4.6 ft/sec) (135) (448)
= 36,445 gallons

D.2.3.C. Loss from tilted cover

1. Size of opening:

Some estimate has to be made in the field concerning how much gap exists in order to do this calculation. For the following amounts of lift of one side, the areas are as follows:

A = (π) (D) (in of lift) (1/12 ft/in) (1/2)
A = (3.14) (2ft) (in. of lift) (1/12) (1/2)
A = 0.262 (in. of lift)

Lift (inches)	Area (ft²)
1	0.262
2	0.524
3	0.786
4	1.048

2. Velocity through opening

This must be estimated from visual observation. A low rate would be 2/ft/sec, moderate rate at 4 to 5 ft/sec, high rates up to 7 ft/sec. Over 7 ft/sec, the lid will

probably blow off the manhole. The gap (lift) will generally increase with higher velocity as well.

3. Time – convert to minutes

Volume (Gal.) = (Area) (Velocity) (Time) (448 gpm/cfs)

Example: Field observation of 2-inch gap and velocity of 4 ft/sec for a period of 3 hours, 30 minutes.

Volume (Gal.) = (0.524 ft^2) (4ft/sec) (210min) (448)
= 197,192 gallons

D.2.3.D. Loss from Manhole without a lid in place

If no cover exists, an estimate of the average height the water column (plume) extends above the top of the manhole frame must be made. Use the height to velocity estimate from (A) above to estimate the velocity. Be sure to adjust the height estimate downward for the affects of debris around the edge of the rim which will cause the height to be incorrectly high.

Area = (π) ($D^2/4$) = (3.14) ($2^2/4$) = 3.14 ft^2

Velocity – from field observation of water column height

Time - convert to minutes

Volume (Gal.) = (Area) (Velocity) (Time) (448 gpm/cfs)

Example: A manhole without a lid was observed to have an overflow with a 3 – inch high column of water for a period of 6 hours, 10 minutes

Volume (Gal.) = (3.14) (4.0 ft /sec) (370) (448)
Volume = 2,081,946 gallons

D.2.3.E. Other

1. Generally approach of estimating a cross sectional area where the flow is leaving and a velocity of flow can be used to determine a rate. This can be applied to any situation.

2. Several observations over an event to estimate the area and velocity are better than a single observation. The overflow examples above assume a constant rate over the period which will estimate volumes too high. As an example, if an hour at the beginning and end of each event is assumed for the flow to build up from zero to maximum and back to zero, a calculation could be done as follows:

Example: A manhole with a cover tilted open 2 inched with an estimated velocity of 4 ft/sec at its worst rate of loss for two hours and about 1-inch tilt with a velocity of 2 ft/sec observed at two other occasion over a 7 hour total event.
Worst case: 2 hours, 2 inched tilt, 4 ft/sec
Other times: 1 inch tilt, 2 ft/sec, time unknown
Total overflow time: 7 hours

Divide total of 7 hours into several periods

1st hour: Start to 1-inch tilt, 2 ft/sec

Volume (Gal.) = (Area) (Velocity) (Time) (448) x 50%
= (0.262) (2) (60) (448) (0.50)
= 7,043 gallons

7th hour: 1-inch tilt, 2 ft/ sec down to end
Same as above situation
Volume = 7,043 gallons

5 remaining hours:

2 hours at 2-inch tilt, 4 ft/sec
3 hours at 1-inch tilt, 2 ft. sec

Volume = (0.524) (4 ft/sec) (120 min) (448)
= 112,681 gallons

Volume = (0.262) (2 ft/sec) (180 min) (448)
= 42,255 gallons

Event Total = 7,043 + 7,043 + 112,681 + 42,255 = 169,022 gallons

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City of Valdosta

ATTACHMENT 6

Corrective Action Plans and Schedules
Revised September 11, 2013

Corrective Action Plans and Schedules

Action Item No.	Action Description	Completion Date
1a. (Phase 1)	**Pump Station, Force Main, Headworks and Equalization Basin Project:** Design and construct two new master pump stations, two smaller pump stations, a new force main, and a new headworks structure with grit removal and bar screens at the location of the existing Withlacoochee WPCP. Complete construction of a 6.0 MG equalization basin, which will be included at this site for initial wet weather flows and future flow equalization through the new treatment plant. The flow from this project will be gravity fed to the existing WPCP for final treatment and discharged utilizing the existing plant outfall. This project will replace an existing 54-inch gravity sewer main to the current plant as well as the existing influent pump station, both of which are highly prone to severe inflow and flooding from the Withlachoochee River.	July 2016
1b. (Phase 2)	**Relocation of Withlacoochee WPCP to new location 60 feet above current flood level:** Complete construction of the relocated Withlacoochee WPCP. Upon completion, the relocated Withlacoochee WPCP will continue to use the existing Withlacoochee WPCP outfall on the Withlacoochee River.	August 2017
2.	**Collection System Evaluation Program:** Complete a 5-year system wide plan to evaluate the entire sanitary sewer collection system (300 total miles of lines, with 75 miles already evaluated) and develop a schedule for repairs. The evaluation will include the inspection of all manholes and collection system lines using smoke testing first to be followed by Closed Circuit Television (CCTV) Inspections of high priority areas. The evaluation will be utilized to prioritize and perform critical repairs and to plan and prioritize major rehabilitation projects for the future. A schedule to complete major rehabilitation projects identified during the evaluation will be submitted for EPD approval by December 2018.	December 2018
3.	**Manhole Replacement/Rehabilitation Program:** Continue implementing the existing program and complete the inspection of approximately 3,390 remaining manholes (2,610 inspected to date). Prioritize replacement or rehabilitation of the most deteriorated manholes. Complete the replacement or rehabilitation of a minimum of 60 manholes each year until all Priority 1 manholes are completed. A schedule will be submitted to EPD for ongoing rehabilitation to address Priority 2, and all remaining manholes, on an annual basis.	December 2018
4a.	**Lift Station Rehabilitation/Replacement Program:** Continue implementing existing rehabilitation/replacement program until all existing older lift stations are rehabilitated or replaced. This will include connection to SCADA and/or auto-dialer systems, along with emergency power capabilities for connection to portable generators.	December 2018

4b.	**Purchase Portable Generators for lift stations:** The purchase of three portable generators will be completed (one per year, with the first generator purchased by December 2014) so that any existing lift stations not wired with two independent electric feeds can be connected to a portable generator for emergency power needs. In addition to the generators, the City will work with Godwin Pumps to meet emergency bypass pumping needs at each lift station whenever needed.	December 2016
5.	**Ongoing Repairs to the Existing Withlacoochee WPCP:** Ongoing repairs to the existing Withlacoochee WPCP will be conducted to maintain permit compliance until such time as the new treatment plant is brought online. Present repairs include new bar screens and temporary blower system.	August 2017

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ATTACHMENT 7

Sanitary Sewer Projects Completed By the City From 2009 to Present
April 9, 2013

Completed Sewer Projects from 2009 to Present			
No.	**Project**		**Cost**
1	CMMS for the Utility Department	$	85,000
2	Mud Creek Emergency Manhole Repair	$	103,000
3	Withlacoochee Biosolids Converyor Repair (FEMA)	$	52,000
4	Withlacoochee Multi-Media Filters Repair (FEMA)	$	46,000
5	Replacement of SO2 and CL2 systems (FEMA)	$	82,700.00
6	Replacement of Reuse system controls (FEMA)	$	13,377.59
7	Eectronics dryout and replacement of pannels, transformers, and misc components (FEMA)	$	169,277.00
8	30% Design for Force Main, EQ Basin and Lift Stations	$	100,000
9	CCVT Evaluation of Mud Creek and Knights Creek Trunk Lines	$	122,000
10	Cleaning of Withlacoochee Influent Pump Station Wet Well	$	373,000
11	Rehabilitation of Four Problematic Lift Stations	$	1,500,000
12	Withlacoochee Nitrification Pump Replacement	$	60,000
13	Withlacoochee Influent Pump Station Impeller Replacement	$	90,000
14	Withlacoochee RAS Controller Replacement	$	36,000
15	Thickener pump replacement	$	53,068.00
16	Valve actuators for liftstation	$	8,369.00
17	3 - 14hp Wilo pumps	$	38,110.50
18	RAS pump impellers	$	33,642.00
19	4 - 5hp submersible pumps	$	20,154.00
20	Phase 1 Manhole Rehabilitation	$	205,000
21	Country Club Emergency Manhole Repair	$	72,000
22	Withlacoochee Roughing Tower Controller Replacement	$	38,000
23	Purchase of 75-acres for Relocation of Plant	$	1,012,500
24	Water and Sewer Rate Analysis	$	50,000
25	Construction of Tucker Road Lift Station	$	204,000
26	Withlacoochee Belt Press Major Repairs	$	52,000
27	Phase 2 Manhole Rehabilitation	$	237,000
28	Goodyear Lift Station Rehabilitation	$	104,000
29	CCTV work for Big County Lift Station Service Area	$	108,000
30	100% Design for Force Main, EQ Basin and Lift Station	$	1,400,000
31	Withlacoochee Emergency Repairs for broken 20-inch Valve	$	616,000
32	Withlacoochee Sludge Pump Replacement	$	54,000
33	Blanchard Street Emergency Repairs	$	234,000
34	Temporary Bar Screens at Withlachoochee	$	104,770
35	Temporary Blower System at Withlachoochee	$	376,131
36	Projected Easement costs for force main project	$	370,000
37	Recent emergency repairs at Withlachooche follow Flood	$	203,225
38	Repair to Tucker Road Outfall	$	27,460
40	Mud Creek WPCP Expamnsion and Upgrades	$	41,000,000
	Total:	**$**	**49,453,784**
	Total Expenditures Related to the Withlachoochee Plant since 2009 =	**$**	**5,583,784**