



**ON SLOW WATER AND SEWER AUTHORITY  
WASTEWATER FACILITIES ANNUAL REPORT - 2020**

**TABLE OF CONTENTS**

<b>Introduction and Certification</b>	1, 2
<b>Treatment Facilities Information</b>	
Hickory Grove Wastewater Treatment Plant	3
Holly Ridge Wastewater Treatment Plant	4, 5
Northwest Regional Water Reclamation Facility	6 - 8
Summerhouse Wastewater Reclamation facility	9, 10
Swansboro Wastewater Treatment Facility	11, 12
<b>Collection Systems Information</b>	
All Collection Systems	13 - 16



## ONSWLOW WATER AND SEWER AUTHORITY WASTEWATER FACILITIES ANNUAL REPORT - 2020

### INTRODUCTION

Under the requirements of the North Carolina Clean Water Act of 1999, the Onslow Water and Sewer Authority (ONWASA) has prepared this Annual Report on the performance of all domestic/municipal wastewater treatment facilities and wastewater collection systems operated and maintained by ONWASA. The Annual Report provides basic physical and permit information for each facility, along with summaries of monthly activity and overall performance.

During 2020, ONWASA managed a total of five (5) treatment facilities and six (6) collection systems. This includes:

- The Hickory Grove Wastewater Treatment Plant, which is currently inactive and being scheduled for permanent closure.
- The Holly Ridge Wastewater Treatment Plant, with a collection system serving the Town of Holly Ridge and surrounding areas.
- The Northwest Regional Water Reclamation Facility, with a collection system serving the Town of Richlands and northwestern Onslow County.
- The Summerhouse Wastewater Reclamation Facility, with a collection system serving the Summerhouse at Everett Bay residential development.
- The Swansboro Wastewater Treatment Facility, with a collection system serving the Town of Swansboro and surrounding areas.
- The Springdale Area collection system, which sends wastewater to the City of Jacksonville for treatment and disposal.
- The Piney Green Road area collection system, which sends wastewater to Marine Corps Base Camp Lejeune for treatment and disposal.

ONWASA's continuing goal through wastewater collection and treatment is to protect public health and safety by minimizing the risk of contamination to surface and ground waters, so they will continue to be available as a drinking water resource for future generations. We hope this information helps the reader understand the effort ONWASA makes every day to manage and improve the wastewater treatment process.

We are committed to providing you with this information because informed customers support our continuing efforts.

A copy of this report is available for public review on ONWASA's website at [www.onwasa.com](http://www.onwasa.com) as well as at ONWASA's Main Office, 228 Georgetown Road, Jacksonville, NC.

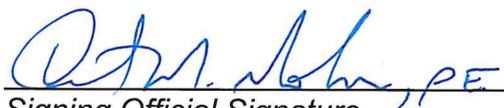
Questions about this report may be addressed to:

ONWASA  
ATTN: Chief Operations Officer  
228 Georgetown Rd.  
Jacksonville, NC 28540

Or by calling ONWASA's Main Office at (910) 455-0722.

### CERTIFICATION

I, David M. Mohr, PE, certify that the information contained within this report represents the configuration and operation of the above-referenced facilities for the reporting period. Data presented on treatment capacity and flow rates are based on readings taken at individual facilities and reported monthly to the North Carolina Department of Environmental Quality in accordance with their operating permits.

  
\_\_\_\_\_  
Signing Official Signature

02/11/2022  
\_\_\_\_\_  
Date

Chief Operations Officer  
\_\_\_\_\_  
Signing Official Title



## TREATMENT FACILITY INFORMATION HICKORY GROVE WASTEWATER TREATMENT PLANT

### Facility Description

The Hickory Grove Wastewater Treatment Plant is located adjacent to NC State Road 2335 (Easy Street), east of Jacksonville and within the Hickory Grove Subdivision. This facility is a wastewater stabilization lagoon permitted to treat 0.0225 MGD (million gallons per day) of wastewater from the surrounding development. Treatment equipment includes a 2.9 surface-acre facultative treatment lagoon; a tablet-based chlorination system, and a chlorine contact chamber with de-chlorination capability. The discharge point is into the Little Northeast Creek, which is classified as C-NSW waters in the White Oak River Basin. There are no on-site employee facilities, so this location is monitored by staff from ONWASA's Swansboro Wastewater Treatment Plant.

### General Information

Permit Number:	NC 0034991
Permit Type:	NPDES
Facility Type/Operation:	Facultative Lagoon
Operator in Responsible Charge (ORC):	Mike Lutz
Facility Phone number:	: (910) 937-7574

### Performance During 2020

Operation of this facility was suspended in June 2015 when a new pump station and force main were completed to send all wastewater flow at this location to another treatment facility, the French Creek Advanced Wastewater Treatment Facility aboard Marine Corps Base Camp Lejeune. The operating permit remains open, however, pending final approval by the NC Department of Environmental Quality (DEQ) of a completed closure plan for this site.

### Permit Violations During 2020

None.

### Comments

In May 2020 the NCDEQ Division of Water Resources approved an Addendum to the *Action Plan for Closure of Hickory Grove Lagoon*, prepared in 2019, that finalized the specific items of work necessary for closure of this facility. This approval was based on the results of water quality sampling and analysis completed during 2019 and early 2020. Bidding of a construction contract to complete this work is anticipated in late 2021.

# TREATMENT FACILITY INFORMATION HOLLY RIDGE WASTEWATER TREATMENT PLANT

## Facility Description

The Holly Ridge Wastewater Treatment Plant is located at 286 North Jenkins Street within the Town of Holly Ridge. This facility is a wastewater treatment lagoon with a permitted capacity of 0.260 MGD. Treatment equipment includes a headworks with manual bar screen and grit chamber; influent flow measurement via an ultrasonic flow meter; a 1.82-million-gallon capacity lagoon divided into four (4) treatment cells and a settling cell via floating curtain baffles; eleven (11) floating aerators/mixers to enhance sludge digestion; a 22,400-gallon aerobic sludge digester with aerator and discharge pump; an effluent pump station with duplex 450 GPM pumps; and 17,900 ft. of 8-inch diameter. force main to direct effluent to a spray irrigation site for final discharge. The spray irrigation site, located at 220 Dolph Everett Road, is a 0.240 MGD facility consisting of: a 13.30-million-gallon storage lagoon; ten (10) spray fields totaling 99.59 wetted acres; and an irrigation pump station with dual 700 GPM pumps and an effluent flow meter that distributes flow to almost 800 spray heads. There are no on-site employee facilities, so this location is monitored by staff from ONWASA's Summerhouse Wastewater Treatment Plant.

## General Information

Permit Number:	WQ0019907
Permit Type:	Wastewater Irrigation System
Facility Type/Operation:	Grade 2 WWTP and Surface Irrigation
Operator in Responsible Charge (ORC):	Mike Lutz
Contact Phone (Summerhouse):	(910) 937-7574

## Performance During 2020

Permitted Capacity:	0.225 MGD <sup>(1)</sup>
Average Daily Flow Treated:	0.190 MGD
Percent of Permitted Capacity:	84.4 %
Maximum Daily Flow Treated:	0.514 MGD (May 21 <sup>st</sup> )
Total Gallons Treated:	69,654,444 gallons <sup>(2)</sup>
Percent Change from 2019:	25.5% Increase

### *Performance Notes:*

- (1) Actual treatment capacity is based on the spray irrigation permitted capacity of 0.225 MGD.*
- (2) Total Gallons Treated annually can vary significantly for year to year, depending on the flow volume diverted to the Summerhouse WWTP (see Comments).*

## Comments

In early 2020, an engineering firm under contract with ONWASA completed work on a Capacity Evaluation Study of this facility. A copy of this document is available for review at the ONWASA Central Office, 228 Georgetown Road, Jacksonville, NC. This study

included an assessment of existing conditions at the Holly Ridge plant, projections of future population growth and sewer demand in the service area, and the development of alternatives to address that future demand. Alternatives included rehabilitation of existing plants, the construction of a replacement treatment facility and the sending of all flow to a third party for treatment/disposal. In July 2020, the ONWASA Board of Directors reviewed the alternatives presented and requested further investigations into a proposal to send all wastewater flow from the Holly Ridge collection system to the French Creek Wastewater Treatment Facility aboard Marine Corps Base Camp LeJeune for treatment and disposal. After completion of that additional analysis by the engineer, it was decided at a November 2020 Board meeting that this was the preferred alternative. Design work for the pump stations and wastewater force mains necessary to make this connection should begin in early 2021 and the system would be operational in approximately 3 years.

### **Permit Violations During 2020**

The following is a list of all violations reported to NCDEQ under the operating permit for this facility:

Month/Day:	February 7 <sup>th</sup> – 10 <sup>th</sup>
Violation:	Freeboard in storage lagoon less than 2 feet.
Cause:	Excessive rainfall prevented spraying.
Corrective Action Taken:	Resumed spraying once conditions permitted.
Known Environmental Impacts:	None.

Month/Day:	May 9 <sup>th</sup> – 11 <sup>th</sup>
Violation:	Application rate exceeded for Field 3A.
Cause:	Broken distribution line.
Corrective Action Taken:	Repaired pipe and resumed spraying.
Known Environmental Impacts:	None.

Month/Day:	May 21 <sup>st</sup> – 30 <sup>th</sup>
Violation:	Freeboard in storage lagoon less than 2 feet.
Cause:	Excessive rainfall prevented spraying.
Corrective Action Taken:	Resumed spraying once conditions permitted.
Known Environmental Impacts:	None.

Month:	June
Violation:	Monthly flow average exceeded.
Cause:	Excessive rainfall and resulting collection system inflow / infiltration.
Corrective Action Taken:	Utilized Jenkins Street Pump Station and a connection to the Summerhouse plant to reduce influent flow to the lagoon.
Known Environmental Impacts:	None.

## **TREATMENT FACILITY INFORMATION NORTHWEST REGIONAL WATER RECLAMATION FACILITY**

### **Facility Description**

The Northwest Regional Water Reclamation Facility is located at 189 Mills Field Road, one mile southeast of the Town of Richlands. This facility utilizes a sequencing batch reactor (SBR) treatment process and high-rate infiltration basins for effluent disposal, with a permitted capacity of 1.273 MGD. Treatment equipment includes an elevated headworks with fine screen/grit removal system; two 1,830,000-gallon SBR tanks with aeration equipment and axial flow jet motive pumps; an 822,000-gallon flow equalization basin with axial flow jet motive pumps; two rotating cloth disk filter assemblies with automated backwash for tertiary treatment, a membrane filtration system to generate reclaimed water for reuse; and a dual bank ultraviolet disinfection system with a sodium hypochlorite back-up and chlorine contact chamber. Treated effluent is sent via an on-site pumping station and force main to one of four (4) high-rate infiltration basins (totaling 6.99 acres) that are located immediately southeast of the plant. Waste sludge from the treatment process is sent to one of two 614,000-gallon aerobic sludge digesters for further treatment and eventual land application for disposal.

### **General Information**

Facility Permit Number:	WQ0034367
Permit Type:	High-Rate infiltration and Reclaimed Water Bulk Distribution System
Facility Type:	Sequencing Batch Reactor
Operator in Responsible Charge (ORC):	Mark C. Young
Facility Phone:	(910) 937-7572

### **Performance During 2020**

Permitted Capacity:	1.273 MGD
Average Daily Flow Treated:	0.437 MGD
Percent of Permitted Capacity:	34.3%
Maximum Daily Flow Treated:	1.042 MGD (March 6 <sup>th</sup> )
Total Gallons Treated:	163,772,600 gallons
Percent Change from 2019:	32.9% Increase

### **Comments**

This facility was severely damaged in September 2018 as a result of localized flooding during Hurricane Florence. This included the failure of 30 electrical motors for pumps, aerators, and other process equipment, along with the failure of electrical distribution and automated control systems. Both the disk filters and UV disinfection systems were also damaged and rendered unusable. During 2020, the plant continued to be run in a manual mode of operation with a total bypass of the disk filter/UV systems and use of a temporary disk

filtration system in an adjacent outdoor parking area. A Notice to Proceed with construction of the first flood recovery project, restoration of the existing disk filters, elimination of the membrane filtration system and installation of a new, flood-resistant open channel UV system, was issued in January 2020. All work on the project was completed in January 2021. A second recovery project, restoration of electrical distribution and automation systems, along with improvements to reduce risk to critical systems in future flood events, was bid in late 2020 and is scheduled for completion in December 2021.

### **Permit Violations During 2020**

The following is a list of all violations reported to NCDEQ under the operating permit for this facility; as noted above, many treatment and process control systems were damaged or inoperable during 2020 and that was a significant factor in several of these events:

Month/Day: January 13<sup>th</sup> and 14<sup>th</sup>  
Violation: Daily Limits for BOD, TSS, and fecal coliform exceeded.  
Cause: Filter equipment failure.  
Corrective Action Taken: Repaired, cleaned implemented additional testing.  
.Known Environmental Impacts: None.

Month/Day: March 11<sup>th</sup>  
Violation: Daily Limit for TSS exceeded.  
Cause: Pass-through of solids from the disk filters.  
Corrective Action Taken: Cleaned filters, increased monitoring and sampling.  
Known Environmental Impacts: None.

Month/Day: April 20<sup>th</sup>  
Violation: Daily Limit for fecal coliform exceeded.  
Cause: Not determined, possible equipment malfunction.  
Corrective Action Taken: Review treatment process and adjust.  
Known Environmental Impacts: None.

Month/Day: May 18<sup>th</sup> and 27<sup>th</sup>  
Violation: Daily Limit for fecal coliform exceeded.  
Cause: Sodium Hypochlorite feed line blockage.  
Corrective Action Taken: Cleared and repaired line.  
Known Environmental Impacts: None.

**Permit Violations During 2020** (cont.)

Month/Day:	June 2 <sup>nd</sup> and 15 <sup>th</sup>
Violation:	Daily Limit for fecal coliform exceeded.
Cause:	Sodium Hypochlorite valve and feed line failure.
Corrective Action Taken:	Repaired / replaced broken valve and line.
Known Environmental Impacts:	None.
Month/Day:	August 5 <sup>th</sup>
Violation:	Daily Limit for fecal coliform exceeded.
Cause:	Broken feed line to the chlorine contact chamber.
Corrective Action Taken:	Repaired and re-routed line.
Known Environmental Impacts:	None.
Month/Day:	October 13 <sup>th</sup>
Violation:	Daily Limit for fecal coliform exceeded.
Cause:	Pump / electrical failure.
Corrective Action Taken:	Pump repaired. Plant rehab project and restoration of the SCADA system, once operational, will alarm and call the operator in the event of future failure.
Known Environmental Impacts:	None
Month/Day:	November 16 <sup>th</sup>
Violation:	Daily Limit for fecal coliform exceeded.
Cause:	Air in Sodium Hypochlorite line due to low tank level.
Corrective Action Taken:	Sodium Hypochlorite tank refilled, replacement UV system completed and brought online.
Known Environmental Impacts:	None.

# TREATMENT FACILITY INFORMATION

## SUMMERHOUSE WASTEWATER RECLAMATION FACILITY

### Facility Description

The Summerhouse Wastewater Reclamation Facility is located at 351 Holly Ridge Road southeast of the Town of Holly Ridge. This facility utilizes a membrane bioreactor (MBR) treatment system and high-rate infiltration basins for disposal with a design maximum capacity of 0.400 MGD. Treatment equipment includes a headworks consisting of two automated bar screens and a cyclone-style grit removal system; a 184,000-gallon aerated equalization basin supplying four MBR trains rated at 100,000 gallons per day each (currently only two trains are operational); and an ultraviolet light post-treatment disinfection system with a sodium hypochlorite back-up system. Treated effluent is then sent to one of two high-rate infiltration basins (totaling 7.1 acres) that are located within the Summerhouse at Everett Bay housing development. Waste sludge from the trains is sent to one of two 129,400-gallon aerated digesters for further treatment and eventual land application for disposal.

### General Information

Permit Number:	WQ0029945
Permit Type:	High-Rate Infiltration System
Facility Type / Operation:	Grade 3 MBR with High-Rate Infiltration Basins
Operator in Responsible Charge (ORC):	Mike Lutz
Contact Phone:	(910) 937-7574

### Performance During 2020

Permitted Capacity:	0.100 MGD <sup>(1)</sup>
Average Daily Flow Treated:	0.071 MGD
Percent of Permitted Capacity:	71.0%
Maximum Daily Flow Treated:	0.101 MGD (March 31 <sup>st</sup> )
Total Gallons Treated:	26,047,500 gallons
Percent Change from 2019:	32.6% Increase <sup>(2)</sup>

#### *Performance Notes:*

- (1) While the design capacity for the Summerhouse facility is 400,000 gallons per day, only one of the two infiltration basins is suitable for use so actual treatment capacity is limited to a maximum of 100,142 gallons per day.*
- (2) Total Gallons Treated can vary significantly from year to year, depending on the flow volume diverted from the Holly Ridge WWTP (see Comments on Page 11).*

## **Comments**

Due to the low number of completed homes in the Summerhouse at Everett Bay development, which is the sole source of wastewater flow for this treatment facility, and the limited capacity of the Holly Ridge Wastewater Treatment Plant, a portion of the wastewater generated from the Holly Ridge collection system was diverted to the Summerhouse facility for treatment through a pump station on Jenkins Street and an 18,000-foot-long force main that terminates at the plant.

In November 2019 a hydrogeologist began an analysis of the high-rate infiltration basin now in use (Basin #2) to determine if it would support a higher flow rate and thereby increase the effluent disposal capacity of this facility. The results of this testing were favorable to an increase in capacity, however as of December 2020 a permit modification request had not been granted by NCDEQ due to several concerns, including the configuration of an underground drainage system surrounding Pond #2. In 2021 a project to review alternatives for the use of Pond #1, which has never been put into service due to construction issues, will be initiated.

Also, in early 2020 an environmental engineering firm under contract with ONWASA completed work on a Capacity Evaluation Study of this facility. A copy of this document is available for review at the ONWASA Central Office, 228 Georgetown Road, Jacksonville, NC. This study included an assessment of existing conditions at the plant, projections of future population growth and sewer demand in the service area, and the development of alternatives to address that future demand. These included the construction of a replacement treatment facility and the sending of all flow to a third party for treatment/disposal. In July 2020, the ONWASA Board of Directors reviewed the alternatives presented and requested further investigations into a proposal to send all wastewater flow from the Holly Ridge collection system to the French Creek Wastewater Treatment Facility aboard Marine Corps Base Camp LeJeune for treatment and disposal. After completion of that additional analysis by the engineer, it was decided at a November 2020 Board meeting that this was the preferred alternative. Design work for the pump stations and wastewater force mains necessary to make this connection should begin in early 2021 and the system would be operational in approximately 3 years.

## **Permit Violations During 2020**

There were no violations reported to NCDEQ under the operating permit for this facility.

## **TREATMENT FACILITY INFORMATION SWANSBORO WASTEWATER TREATMENT FACILITY**

### **Facility Description**

The Swansboro Wastewater Treatment Facility is located at 199 Williams Street, just outside the incorporation limits of the Town of Swansboro. This facility utilizes a conventional activated sludge treatment process and high-rate infiltration basins for effluent disposal, with a permitted capacity of 0.600 MGD. Treatment equipment includes an aerated equalization basin and headworks with automatic bar screen and grit removal system rated at 1.5 MGD; two 300,000-gallon capacity oxidation ditches with aeration rotor assemblies; three secondary clarifiers; two rotating cloth disk filters with automatic backwash; and an ultraviolet light post-treatment disinfection system with a sodium hypochlorite back-up. Treated effluent is then sent via an on-site pumping station and force main to one of four high-rate infiltration basins (totaling 15.24 acres) that are located six miles west of the plant on Parkertown Road. Waste sludge from the treatment process is sent to a 46,900-gallon aerated sludge digester and 315,000-gallon aerated sludge holding tank for further treatment and eventual land application for disposal.

### **General Information**

Permit Number:	WQ0023261
Permit Type:	High-Rate Infiltration System
Facility Type:	Activated Sludge with Extended Air
Operator in Responsible Charge (ORC):	Mike Lutz
Contact Phone:	(910) 937-7539

### **Performance During 2020**

Permitted Capacity:	0.600 MGD
Average Daily Flow Treated:	0.380 MGD
Percent of Permitted Capacity:	63.4%
Maximum Daily Flow Treated:	1.022 MGD (June 16 <sup>th</sup> )
Total Gallons Treated:	129,542,020 gallons
Percent Change from 2019:	5.0% Decrease

### **Comments**

In early 2020, an environmental engineering firm under contract with ONWASA completed work on a Capacity Evaluation Study of this facility. A copy of this document is available for review at the ONWASA Central Office, 228 Georgetown Road, Jacksonville, NC. This study included an assessment of existing conditions at the plant, projections of future population growth and sewer demand in the service area, and the development of alternatives to address that future demand. Options included the construction of a replacement treatment facility, expansion of the existing plant, and the sending of all flow to a third party for treatment/disposal. The ONWASA Board of Directors reviewed the alternatives presented at a special meeting in July 2020 and selected Alternative #1, construction of utility infrastructure (pumping stations and force mains) to send all flow

from the Swansboro service area to the French Creek WWTP aboard Marine Corps Base Camp Lejeune for treatment and disposal. The existing Swansboro WWTP would then be decommissioned. A contract for design of the proposed project was executed in August 2020 with an estimated construction completion date in early 2023.

**Permit Violations During 2020**

The following are all violations reported to NCDEQ under the operating permit for this facility:

Month/Day:	March 30 <sup>th</sup>
Violation:	Daily limit for Total Suspended Solids exceeded.
Cause:	Equipment out of service for maintenance.
Corrective Action Taken:	Adjusted treatment process.
Known Environmental Impacts:	None.
Month/Day:	April 1 <sup>st</sup>
Violation:	Daily Limit for fecal coliform was exceeded.
Cause:	UV system failure.
Corrective Action Taken:	Repaired UV system wipers.
Known Environmental Impacts:	None.
Month/Day:	November 18 <sup>th</sup>
Violation:	Daily Limit for fecal coliform was exceeded.
Cause:	Power Interruptions to plant and UV system failure.
Corrective Action Taken:	Repaired power faults.
Known Environmental Impacts:	None

# COLLECTION SYSTEM SUMMARY

## Facility Description

The ONWASA sanitary sewer collection system consists of four independent regional systems associated with treatment facilities operated by ONWASA, and two systems where wastewater is pumped to a third party for treatment and disposal. Existing facilities (mains, manholes, and pumping stations) are of a wide range of materials, ages, and physical conditions since they were originally constructed by various local governments or private developers and later consolidated into ONWASA. The attached spreadsheet provides basic information on each regional system and the number of customers served.

## General Information

Permit Number: WQCS00249  
Permit Type: System-Wide Collection System  
Operator in Responsible Charge (ORC): Justin Sanderson  
Contact Phone: (910) 937-7560

## System Operation and Maintenance

In addition to regular maintenance and cleaning of sewage pumping stations and force main air release valves, a total of 49,631 linear feet of gravity sewer main was cleaned at various locations throughout the system.

## System Expansion

A total of 10,768 LF of new sewer mains were added to various regional collection systems in 2020:

<u>Collection System</u>	<u>Length</u>
Piney Green	1,250 feet
Swansboro	2,995 feet
Holly Ridge	6,523 feet

## Sewer Overflow Events in 2020

The following is a list of sewer overflow events that occurred within all regional collection systems during calendar year 2020. Discharges over 1,000 gallons in volume or those entering surface waters are reported to the North Carolina Department of Environmental Quality.

**Sewer Overflow Events - 2020**

Month/Day: February 26<sup>th</sup>  
Regional Collection System Affected: Piney Green  
Location: 280 Freedom Way (Piney Green PS).  
Cause: Tangled floats in wetwell.  
Corrective Action: Changed float position and lowered high-level float.  
Estimated Volume: 5,000 gallons  
Receiving Stream: N/A  
Long-Term Environmental Impact: None

Month/Day: May 29<sup>th</sup>  
Regional Collection System Affected: Richlands  
Location: 295 Kinston Hwy (Ervintown PS).Major rain event / infiltration.  
Cause: Major rain event / infiltration.  
Corrective Action: Portable bypass pump installed.  
Estimated Volume: 300 gallons  
Receiving Stream: New River  
Long-Term Environmental Impact: None

Month/Day: May 29<sup>th</sup>  
Regional Collection System Affected: Richlands  
Location: 312 Dillard Ln (Manhole # 002196 @ Heritage PS).  
Cause: Major rain event / infiltration.  
Corrective Action: Portable bypass pump installed.  
Estimated Volume: 600 gallons  
Receiving Stream: N/A  
Long-Term Environmental Impact: None

Month/Day: July 17<sup>th</sup>  
Regional Collection System Affected: Swansboro  
Location: 103 W Moore St (Icehouse grease trap)  
Cause: Fuse in telemetry unit blown and pump failure.  
Corrective Action: Replaced telemetry unit and pump.  
Estimated Volume: 105 gallons  
Receiving Stream: White Oak River  
Long-Term Environmental Impact: None

Month/Day: August 4<sup>th</sup>  
Regional Collection System Affected: Richlands  
Location: 312 Dillard Ln (Mh 002196, Heritage PS).  
Cause: Generator failure during storm event.  
Corrective Action: Estimated Portable bypass pump installed.  
Volume: 1,750 gallons  
Receiving Stream: N/A  
Long-Term Environmental Impact: None

Month/Day: August 6<sup>th</sup>  
Regional Collection System Affected: Southwest  
Location: Manhole 001605 (Stallion Dr.)  
Cause: Major rain event / infiltration.  
Corrective Action: Placed plastic over exposed grease traps and contacted the customer.  
Estimated Volume: 200 gallons  
Receiving Stream: Blue Creek  
Long-Term Environmental Impact: None

## ONWASA COLLECTION SYSTEM INFORMATION

*(Statistics as of 12/31/2020)*

Area	Grade / Type	Total Piping Length (Feet)	Number of Pumping Stations	Number of Service Connections		Receiving Treatment Facility
				Residential	Commercial	
Holly Ridge	Grade 1 / Domestic	117,709	8	1,326	51	Holly Ridge WWTP (1)
Piney Green	Grade 1 / Domestic	182,423	10	1,693	26	French Creek WWTP (2)
Richlands	Grade 2 / Domestic	314,005	17	1,072	153	Northwest RWRF
Springdale	Grade 1 / Domestic	30,896	2	300	6	City of Jacksonville WWTP
Swansboro	Grade 2 / Domestic	262,218	33	1,889	201	Swansboro WWTF
Summerhouse	Grade 1 / Domestic	74,350	5	354	5	Summerhouse WWRF
<b>TOTALS</b>		<b>981,601</b>	<b>75</b>	<b>6,634</b>	<b>442</b>	

Notes: (1) A portion of the flow from the Holly Ridge Collection System is sent to the Summerhouse WRF via force main interconnection.

(2) This facility is aboard Marine Corps Base Camp LeJeune.