

**Town of Forest City**  
**2015 System Performance Annual Report (SPAR)**  
**January 1, 2015 to December 31, 2015**

**I. General Information**

- **Name of regulated entity:** Town of Forest City
- County:** Rutherford County
- **Responsible persons:** Dennis Tarlton, Mayor  
John Condrey, City Manager

**Mailing address:** PO Box 728; Forest City, NC 28043-0728  
**Physical address Public Works:** 128 North Powell Street, Forest City 28043  
**Physical address Forest City WWTP:** 397 Riverside Drive, Forest City 28043  
**Physical address Riverstone WWTP:** 219 Broad River Blvd, Forest City 28043

**Phone numbers:**

|              |                 |                                       |
|--------------|-----------------|---------------------------------------|
| 828-245-4747 | John Condrey    | City Manager                          |
| 828-245-0149 | Stewart Briscoe | Public Works Director                 |
| 828-248-5217 | Sonny Penson    | WWTP Chief Plant Operator/ORC         |
| 828-248-5217 | Jeff Dotson     | WWTP Plant Superintendent/Back-up ORC |
| 828-248-0149 | Avery Hamrick   | Water and Sewer Superintendent        |
| 828-245-0149 | Allen Greene    | Collections ORC                       |

• **Listing of applicable permits:**

**Collection System:** WQCS00050  
**Wastewater Treatment Plants:** NC0025984 Forest City WWTP – Riverside Drive  
NC0087084 Riverstone Industrial Park WWTP  
NC0083272 DRG Harris WWTP

• **Description of sewer collection system and wastewater treatment systems or processes:**

**Collection System: WQCS00050**

The Town of Forest City maintains and operates 27 lift stations (19 in Forest City, 6 in Ellenboro, and 2 at Riverstone Industrial Park) and ~ 95 miles of gravity sewer and ~13.6 miles of force main. Chase Middle School makes up 2.4 miles of this force main and Chase High School makes up another 1.5 miles of this force main. The Riverstone Industrial Park makes up 0.7 miles of the gravity sewer total and 390.8 feet of force main. The Hicks Grove station serving Horsehead Corporation has 1.1 miles of force main contributing to the above total. Riverstone's lift station and the Hicks Grove station are pumped to the Riverstone WWTP headworks located at 219 Broad River Blvd.

The Town of Forest City also maintains the Town of Ellenboro's sewer collection system. This system has ~ 6.2 miles of gravity sewer, 7.4 miles of force main and four pump stations (with telemetry and dual high water alarms). Ellenboro Elementary School and East High School

each have a lift station that pump into Ellenboro's collection system and are maintained by the Town of Forest City.

### **Pretreatment Program:**

There are 4 significant industrial users which contribute flow to the collection system and Forest City wastewater treatment plant. They are, namely: Eaton Corporation, Valley Fine Foods, RockTenn and Parker Hannifin. Riverstone WWTP has one current IUP issued to Bonita Pioneer. Horsehead Corporation has submitted an application and will be issued an IUP if the plant remains open.

### **Wastewater Treatment Plants (WWTP) / Water Reclamation Facility (WRF):**

**NC0025984** Wastewater Treatment Plant located at 397 Riverside Drive in Forest City is a 4.95 MGD plant consisting of the following units:

- Influent mechanical step/bar screen and manual bypass screen.
- Aerated traveling bridge grit chamber and grease removal.
- 5 smaller first stage aeration tanks with floating aerators (none in service due to loss of flow.)
- Second stage aeration basin with floating aerators (3.99 MG capacity.)
- Dual secondary clarifiers (75 ft. diameter.)
- Chlorine contact chamber and step aeration.
- Chlorine gas feed equipment
- Sulfur Dioxide gas feed equipment for dechlorination.
- Aerobic Digester with diffused air system (approximately 0.450 MG capacity.)
- Aerobic Digester with floating aerator (approximately 0.230 MG capacity.)
- (2) WAS pumps approximately 500 gpm direct to digester, and 375 gpm to thickener.
- 1 meter Envirex gravity belt thickener.
- Enviroquip 2.0 meter belt filter press (14% - 17% solids.)
- ~~Siemens indirect fired Dragon Dryer. A gas fired heat dryer rated at 50 wet tons per day (produces dry solids 85% - 95%.) Dryer will be phased out and scrapped year 2016.~~
- 211 cubic yard dry sludge storage silo. Emptied January 2016 will be scrapped.
- Average flow is approximately 1.25 MGD.

### **NC0087084 Riverstone WWTP**

Located at 219 Broad River Blvd in the Riverstone Industrial Park. The Plant is a 0.05 MGD SBR plant consisting of:

- Influent mechanical step/bar screen and manual bypass screen.
- Pre EQ basin with maximum capacity of 0.017 MG and max design flow rate of 138.9 gpm.
- SBR basin with minimum capacity of 0.043 MG and maximum capacity of 0.063 MG. Decant flow rate (average high to low) 313 gpm. Sludge waste rate 100 gpm.
- Post SBR EQ basin maximum volume 0.0156 MG. Flow control valve feeds chlorine contact chamber at a rate of 0 - 313 gpm.
- Chlorination chamber with tablet feeders for chlorination and dechlorination

- Aerobic digester with maximum volume of 0.033 MG.

The SBR has a default program for permitted flow rate of 5 cycles/24 hour day:

1. Mixed-fill 35 minutes (anoxic condition)
2. React-fill 109 minutes (blowers running with floating mixer)
3. React phase 35 minutes (influent pumps are locked out)
4. Settle 45 minutes
5. Decant 64 minutes
6. Idle 0-64 minutes (integral with decant)
7. Sludge waste 2.26 minutes (integral with decant)

The cycles have programmability built in by PLC. These have been adjusted as needed to accommodate the small flow rate currently received by the plant. Sludge waste is conducted manually as needed. The plant began operation in November 2013 with the start up of the Hicks Grove Lift station for the Horsehead Corporation site. Influent flow currently between 0.003 MGD and 0.008 MGD of flow from industries within the industrial park and adjacent Horsehead Corporation.

#### **NC0083272 DRG Harris Plant**

**A 0.91 MGD WWTP which is inoperative & currently inactive.**

#### **WWTP Sludge Management:**

##### **WQ0010926 for Class A Residuals / Distribution & Marketing**

Permitted for distribution up to 500 dry tons per year of Class A EQ residuals product. The sludge dryer suffered a parts failure of a rotary union on the rotating dehydration auger. The Town has decided to seek permitting for Class B sludge and scrap the dryer. The sludge storage silo was emptied of all residuals in January 2016 and hauled with the sludge cake to the Anson County Landfill operated by Waste Connections.

## **II. Performance**

- Description of overall 12 month performance, noting highlights and deficiencies.
- By month, list of the number and type of any violations of permit conditions, environmental regulations or environmental laws, including (but not limited to):

Permit Limit Violations, Monitoring and Reporting Violations:

#### **NC0025984 Forest City WWTP:**

11/19/2015 -Spill- Incident #201501692 spill at splitter box located at dryer scrubber.

Spill caused by heavy inflow and infiltration backing up from clarifiers to splitter.

Note: reported below under "SSO or bypass" section.

#### **NC0087084 Riverstone WWTP:**

- 01/15/2015 Weekly TSS violation 59 mg/L
- 01/21/2015 Acute Toxicity Fail

- 01/2015 Monthly TSS violation 30.6 mg/L
- 06/09/2015 Acute Toxicity Fail
- 09/15/2015 Acute Toxicity Fail
- 10/20/2015 Acute Toxicity Fail
- 11/03/2015 Acute Toxicity Fail
- 12/08/2015 Weekly TSS violation 53 mg/L
- 12/08/2015 Acute Toxicity Fail
- 12/22/2015 Weekly TSS violation 73 mg/L
- 12/30/2015 Weekly TSS violation 114 mg/L
- 12/2015 Monthly TSS violation 64.4 mg/L

Toxicity issues were believed to be caused by heavy metals, particularly zinc, in the influent of the Riverstone WWTP. The Town has been involved with meetings and in contact with Horsehead Corporation representatives and the North Carolina Division of Environmental Quality concerning this. It is believed that employee showers/wash stations are the main culprits for the excess metals found in the sanitary sewer. Also Inflow/Infiltration of stormwater into the sanitary sewer has caused issues. As paving around the new construction was done the I/I was decreased, but not completely eliminated. In March 2015 Horsehead Corporation began an Industrial Hygiene Plan to reduce heavy metals in the discharge from the facility into the sanitary sewer. The plan had some gains initially, but after issues in June 2015 the town prepared an Industrial User Permit Application sent in July 2015. In August 2015 David Odom (Odom and Associates) had been contracted by Horsehead Corporation to complete the permit application. Sampling was conducted at the Horsehead facility prior to the Town's sewer lift station in September 2015. Sampling was scheduled 3 days/week for 2 weeks. The Town met with Odom and associates representatives on November 14, 2015 when results were compiled, but more information was required before the application could be processed. On January 15, 2016 a more detailed permit application was received and is under review by Town officials and The North Carolina Pretreatment Emergency Response and Collections Systems unit. The Town will continue the process of implementing the Industrial User Permit, for the Mooresboro facility, regardless of Horsehead's economic woes and recent filing of bankruptcy. Any limits assessed and/or pretreatment units required to reduce the pollutant load will be addressed in the near future.

Also of note a Toxicity Identification Evaluation (TIE) was conducted by Environment Testing Solutions in October 2015 and a follow up to provide confirmation in November 2015 for the associated monthly whole effluent toxicity testing at the Riverstone WWTP. The following quote is taken from page 12 of the submitted report for October and is the same for the November test:

*"SUMMARY / CONCLUSIONS EDTA chelation and altering sample pH to 11 SU followed by filtration were successful in removing compound(s) responsible for causing acute toxicity in effluent from the Riverstone Industrial Park WWTP. In addition, altering the sample pH strongly influenced the toxicity of the effluent. Increasing sample pH decreased the toxicity of the effluent. EDTA chelation and altering sample pH to 11 SU*

*followed by filtration act to bind or remove dissolved metals from solution and give strong evidence that metals are responsible for causing acute toxicity of effluent from the Riverstone Industrial Park WWTP. Metals are also highly susceptible to changes in toxicity with pH. Of the metals detected in the effluent, only zinc was above levels expected to cause acute toxicity to Pimephales. In addition laboratory tests of zinc in synthetic water provided similar pH dependent results (decreased toxicity at higher pH). These results provide strong evidence that zinc was responsible for the whole effluent toxicity test failure in October 2015."*

The Town has submitted, via Environmental Testing Solutions, these findings to the Division of Environmental Quality Asheville Regional Office and the Division's Aquatic Toxicology Branch.

December TSS violations are being investigated.

**SSOs or Bypasses of treatment facilities\***

11/19/2015 -Spill Forest City WWTP NC 0025984- Incident #201501692 spill at splitter box located at dryer scrubber. Spill caused by heavy inflow and infiltration backing up from clarifiers to splitter.

**Sanitary Sewer Overflows (SSOs) that reached surface waters.**

**Collection System SSOs: There were three (3) SSOs reported during 2015.**

|            |                     |  |
|------------|---------------------|--|
| 11/02/2015 | Incident #201501532 | Manhole #469 – first manhole upstream from Dogwood Pump Station. |
| 11/09/2015 | Incident #201501613 | Manhole #469 – first manhole upstream from Dogwood Pump Station. |
| 11/11/2015 | Incident #201501654 | Force main from 197 Social Circle Pump Station.                  |
| 11/19/2015 | Incident #201501708 | Manhole #469 – first manhole upstream from Dogwood Pump Station. |

**Corrective Measures**

Collection System: During 2015 the Town of Forest City had 51,521 feet of sewer line cleaned and 10,111 feet of sewer treated for root control.

The Town of Ellenboro collection system is maintained by Forest City. A total of 7,575 feet of cleaning to the Ellenboro collection system took place in 2015.

- **Description of any known environmental impact of violations:**
- **Description of corrective measures taken to address violations or deficiencies at WWTP:**

The Town of Forest City WWTP is currently pressing sludge cake, via belt press, to the dryer building floor. The cake is being landfilled while Southern Soil Builders is looking to add the

Town as an additional source for Class B land application. The Town is nearing a time frame to begin an upgrade of the large aerobic digester. The worn out Jet Tech aeration equipment will be replaced with a newer system. The smaller digester and belt filter press will be addressed next budget. The Town is also considering replacement of the Gravity Belt Thickener associated with the large digester.

**Sewer Collection System Infiltration and Inflow (I&I) Rehabilitation Projects:**

The Town will actively pursue grants and repair/rehabilitate lines where possible.

**III. Notification**

Notification of the Town's System Performance Annual Report shall be conveyed to Town customers by a statement printed on monthly billing. The report will be available on the Town's website and shall be made available as "hard copy" upon request from the following locations:

- Forest City Town Hall, located at 128 N Powell Street,
- Public Works Department located at 132 Wilkie Street,
- Forest City Wastewater Treatment Plant located at 397 Riverside Drive.

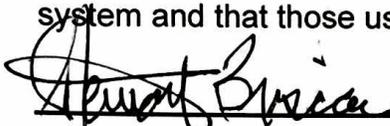
#### IV. Certification

North Carolina Certified Operators in Responsible Charge (ORC) and backups:

|                           |                                |                      |
|---------------------------|--------------------------------|----------------------|
| WWTP ORC:                 | (Sonny) Barnard N. Penson, Jr. | WW IV Cert. # 22338  |
| WWTP Back-up ORC(s):      | Jeffrey W. Dotson              | WW IV Cert. # 11688  |
| Collections ORC(s):       | Allen W. Greene                | CS 4 Cert. # 989259  |
| Collections Backup ORC(s) | Brian Reid Guffey              | CS 3 Cert. # 1000714 |

• **Statement by responsible officials certifying the report is accurate and complete.**

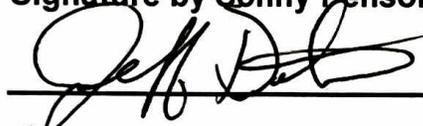
I certify under penalty of law that this report is complete and accurate to the best of my knowledge. I further certify that this report has been made available to the users or customers of the named system and that those users have been notified of its availability.

 \_\_\_\_\_ Feb. 2, 2016

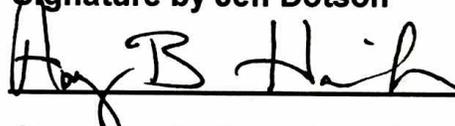
Signature by Stewart Briscoe                      Public Works Director                      Date

 \_\_\_\_\_ 02/11/2016

Signature by Sonny Penson                      Chief Plant Operator/ORC                      Date

 \_\_\_\_\_ 2/11/2016

Signature by Jeff Dotson                      WWTP Plant Superintendent/backup ORC                      Date

 \_\_\_\_\_ Feb - 11 - 2016

Signature by Avery Hamrick                      Water and Sewer Superintendent                      Date

 \_\_\_\_\_ FEB. 9, 2016

Signature by Allen W. Greene                      Collections System ORC                      Date

Note: Annual reports (SPAR) must be submitted **within 60 days of the end of the applicable 12-month review period.**

To satisfy the Departmental reporting requirement, **three copies** of the annual report (SPAR) should be submitted to the following address:

**System Performance Annual Report  
North Carolina Division of Water Quality  
1617 Mail Service Center  
Raleigh, NC 27699-1617**