

ROY COOPER

Governor

MICHAEL S. REGAN

Secretary

S. DANIEL SMITH

Director



NORTH CAROLINA
Environmental Quality

June 12, 2020

GEORGE E. BATTLE, III – VICE CHANCELLOR OF INSTITUTIONAL INTEGRITY AND RISK MANAGEMENT
THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
200 EAST CAMERON AVENUE – CAMPUS BOX 1000
CHAPEL HILL, NORTH CAROLINA 27599-1000

Subject: Permit No. WQ0023896
Bingham Facility WWTF
Wastewater Irrigation System
Orange County

Dear Vice Chancellor Battle:

In accordance with your permit renewal request received March 18, 2020, we are forwarding herewith Permit No. WQ0023896 dated June 12, 2020, to The University of North Carolina at Chapel Hill for the continued operation of the subject wastewater treatment and irrigation facilities. Please note that this renewed permit shall become effective on October 1, 2020 (i.e., the day after the expiration date of the existing permit).

This permit shall be effective from October 1, 2020 through November 30, 2026, shall void Permit No. WQ0023896 issued April 9, 2015, and shall be subject to the conditions and limitations therein. **The Permittee shall submit a renewal application no later than June 3, 2026.**

Please pay attention to the monitoring requirements listed Attachments A, B, and C for they may differ from the previous permit issuance. Failure to establish an adequate system for collecting and maintaining the required operational information shall result in future compliance problems.

The Division has removed the following permit condition since the last permit issuance dated April 9, 2015:

- Old Condition VI.2. – This condition has been removed because the permit is not voidable.

The following permit conditions are new since the last permit issuance dated April 9, 2015:

- Condition II.12. – Setbacks reflect the time in which the specific facility was permitted.
- Condition III.16. – Metering equipment shall be tested and calibrated annually.
- Condition IV.10. – The maintenance log shall include the date of irrigation equipment calibration.

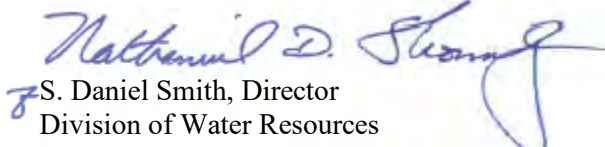
If any parts, requirements, or limitations contained in this permit are unacceptable, the Permittee has the right to request an adjudicatory hearing upon written request within 30 days following receipt of this permit. This request shall be in the form of a written petition, conforming to Chapter 150B of the North Carolina General Statutes, and filed with the Office of Administrative Hearings at 6714 Mail Service Center, Raleigh, NC 27699-6714. Otherwise, this permit shall be final and binding.



North Carolina Department of Environmental Quality | Division of Water Resources
512 North Salisbury Street | 1617 Mail Service Center | Raleigh, North Carolina 27699-1617
919.707.9000

If you need additional information concerning this permit, please contact Tessa Monday at (919) 707-3660 or tessa.monday@ncdenr.gov.

Sincerely,


S. Daniel Smith, Director
Division of Water Resources

cc: Orange County Health Department (Electronic Copy)
Raleigh Regional Office, Water Quality Regional Operations Section (Electronic Copy)
Laserfiche File (Electronic Copy)
Digital Permit Archive (Electronic Copy)

NORTH CAROLINA
ENVIRONMENTAL MANAGEMENT COMMISSION
DEPARTMENT OF ENVIRONMENTAL QUALITY
RALEIGH
WASTEWATER IRRIGATION SYSTEM PERMIT

In accordance with the provisions of Article 21 of Chapter 143, General Statutes of North Carolina as amended, and other applicable Laws, Rules, and Regulations

PERMISSION IS HEREBY GRANTED TO

The University of North Carolina at Chapel Hill
Orange County

FOR THE

operation of a 3,556 gallon per day (GPD) wastewater treatment and irrigation facility consisting of the:

continued operation of a well filter treatment system consisting of: a 3,240 gallon hydro-pneumatic storage tank; a 2,250 gallon manganese oxidation tank; a potassium permanganate tank; an 86 gallon diaphragm tank; three manganese filters; a 4,000 gallon filter backwash tank with two 20 gallon per minute (GPM), 0.5 horsepower (hp) pumps each rated at 23 feet of total dynamic head (TDH); and all associated piping, valves and appurtenances; the

continued operation of: approximately 540 linear feet (LF) of 8-inch gravity sewer; an 8,000 gallon baffled septic tank with an effluent filter; a 2,100 gallon septic tank effluent lift station with two 20 GPM, 0.5 hp pumps rated at 23 feet of TDH and audible/visual high-water alarms; a 4,000 gallon recirculation tank with two 55 GPM 0.5, hp pumps rated at 33 feet of TDH; two AdvanTex AX100 textile media packed bed filters; a 60° v-trapezoidal flume with ultrasonic level sensing; a liquid sodium hypochlorite disinfection system with a 55 gallon chemical storage tank and two 7.1 gallon per hour (GPH) positive displacement peristaltic chemical feed pumps; a 525 gallon chlorine contact tank; a 125,724 gallon clay lined secondary effluent storage basin to be used as supplemental wet weather storage; a secondary effluent pump station with two 80 GPM submersible pumps; a 1,122,440 gallon clay lined wet weather storage basin; a 1,495 gallon wastewater pump station with two 158 GPM submersible pumps and audible/visual high-water alarms; a 5.72 acre irrigation area composed of four drip irrigation zones with a total of 19,068 emitters each rated at 0.9 GPH; and all associated piping, valves, controls and appurtenances

to serve the Bingham Facility WWTF, with no discharge of wastes to surface waters, pursuant to the application received March 18, 2020, and in conformity with the Division-approved plans and specifications considered a part of this permit.

This permit shall be effective from October 1, 2020 through November 30, 2026, shall void Permit No. WQ0023896 issued April 9, 2015, and shall be subject to the following conditions and limitations:

I. SCHEDULES

1. The Permittee shall request renewal of this permit on Division-approved forms no later than June 3, 2026. [15A NCAC 02T .0105(b), 02T .0109]

II. PERFORMANCE STANDARDS

1. The Permittee shall maintain and operate the subject non-discharge facilities so there is no discharge to surface waters, nor any contravention of groundwater or surface water standards. In the event the facilities fail to perform satisfactorily, including the creation of nuisance conditions due to improper operation and maintenance, or failure of the irrigation areas to assimilate the effluent, the Permittee shall take immediate corrective actions, including Division required actions, such as the construction of additional or replacement wastewater treatment or disposal facilities. [15A NCAC 02T .0108(b)(1)(A)]
2. This permit shall not relieve the Permittee of their responsibility for damages to groundwater or surface water resulting from the operation of this facility. [15A NCAC 02T .0108(b)(1)(A)]
3. Groundwater monitoring wells shall be constructed in accordance with 15A NCAC 02C .0108 (Standards of Construction for Wells Other than Water Supply), and any other jurisdictional laws and regulations pertaining to well construction. [15A NCAC 02C .0108]
4. Effluent quality shall not exceed the limitations specified in Attachment A. [15A NCAC 02T .0108(b)(1)(A), 02T .0505(b)]
5. Application rates, whether hydraulic, nutrient, or other pollutant, shall not exceed those specified in Attachment B. [15A NCAC 02T .0505(c), 02T .0505(n)]
6. The Permittee shall connect the irrigation system to a rain or moisture sensor designed to prevent irrigation during precipitation events or wet conditions. [15A NCAC 02T .0505(x)]
7. Wastewater irrigation fields permitted on or after December 30, 1983 have a compliance boundary that is either 250 feet from the wastewater irrigation area, or 50 feet within the property boundary, whichever is closest to the wastewater irrigation area. Any exceedance of groundwater standards at or beyond the compliance boundary shall require corrective action. Division-approved relocation of the compliance boundary shall be noted in Attachment B. Multiple contiguous properties under common ownership and permitted for use as a disposal system shall be treated as a single property with regard to determination of a compliance boundary. [15A NCAC 02L .0106(d)(2), 02L .0107(b), 02T .0105(h), G.S. 143-215.1(i), G.S. 143-215.1(k)]
8. The review boundary is midway between the compliance boundary and the wastewater irrigation area. Any exceedance of groundwater standards at or beyond the review boundary shall require preventative action. [15A NCAC 02L .0106(d)(1), 02L .0108]
9. The Permittee shall apply for a permit modification to establish a new compliance boundary prior to any sale or transfer of property affecting a compliance boundary (i.e., parcel subdivision). [15A NCAC 02L .0107(c)]
10. No wells, excluding Division-approved monitoring wells, shall be constructed within the compliance boundary except as provided for in 15A NCAC 02L .0107(g). [15A NCAC 02L .0107]
11. Except as provided for in 15A NCAC 02L .0107(g), the Permittee shall ensure any landowner who is not the Permittee and owns land within the compliance boundary shall execute and file with the Orange County Register of Deeds an easement running with the land containing the following items:
 - a. A notice of the permit and number or other description as allowed in 15A NCAC 02L .0107(f)(1);
 - b. Prohibits construction and operation of water supply wells within the compliance boundary; and
 - c. Reserves the right of the Permittee or the State to enter the property within the compliance boundary for purposes related to the permit.

The Director may terminate the easement when its purpose has been fulfilled or is no longer needed.

[15A NCAC 02L .0107(f)]

12. The facilities herein were permitted per the following setbacks:

- a. The irrigation sites were originally permitted April 12, 2013. The setbacks for drip irrigation sites originally permitted or modified from September 1, 2006 to August 31, 2018 are as follows (all distances in feet):

i. Each habitable residence or place of assembly under separate ownership:	100 ¹
ii. Each habitable residence or place of assembly owned by the Permittee:	15
iii. Each private or public water supply source:	100
iv. Surface waters:	100
v. Groundwater lowering ditches:	100
vi. Surface water diversions:	25
vii. Each well with exception of monitoring wells:	100
viii. Each property line:	50 ²
ix. Top of slope of embankments or cuts of two feet or more in vertical height:	15
x. Each water line:	10
xi. Subsurface groundwater lowering drainage systems:	100
xii. Each swimming pool:	100
xiii. Public right of way:	50
xiv. Nitrification field:	20
xv. Each building foundation or basement:	15

¹ Habitable residences or places of assembly under separate ownership constructed after the facilities herein were originally permitted or subsequently modified are exempt from this setback.

² Setbacks to property lines are not applicable when the Permittee, or the entity from which the Permittee is leasing, owns both parcels separated by the property line.

[15A NCAC 02T .0506(a), 02T .0506(e), 02T .0506(f)]

- b. The storage and treatment units were originally permitted and/or modified February 12, 2007 and April 12, 2013. The setbacks for storage and treatment units originally permitted or modified from September 1, 2006 to August 31, 2018 are as follows (all distances in feet):

i. Each habitable residence or place of assembly under separate ownership:	100 ¹
ii. Each private or public water supply source:	100
iii. Surface waters:	50
iv. Each well with exception of monitoring wells:	100
v. Each property line:	50 ²

¹ Habitable residences or places of assembly under separate ownership constructed after the facilities herein were originally permitted or subsequently modified are exempt from this setback.

² Setbacks to property lines are not applicable when the Permittee, or the entity from which the Permittee is leasing, owns both parcels separated by the property line.

[15A NCAC 02T .0506(b), 02T .0506(e), 02T .0506(f)]

III. OPERATION AND MAINTENANCE REQUIREMENTS

1. The Permittee shall operate and maintain the subject facilities as a non-discharge system. [15A NCAC 02T .0500]
2. The Permittee shall maintain an Operation and Maintenance Plan, which shall include operational functions, maintenance schedules, safety measures, and a spill response plan. [15A NCAC 02T .0507(a)]
3. Upon the Water Pollution Control System Operators Certification Commission's (WPCSOCC) classification of the subject non-discharge facilities, the Permittee shall designate and employ a certified operator in responsible charge (ORC), and one or more certified operators as back-up ORCs. The ORC or their back-up shall operate and visit the facilities as required by the WPCSOCC. [15A NCAC 02T .0117]
4. The Permittee shall maintain vegetative cover on the irrigation sites, such that crop health is optimal, allows even effluent distribution, and allows inspection of the irrigation system. [15A NCAC 02T .0507(b)]
5. The Permittee shall take measures to prevent effluent ponding in or runoff from the irrigation sites listed in Attachment B. [15A NCAC 02T .0507(c)]
6. The Permittee shall not irrigate treated effluent during inclement weather, or when the soil is in a condition that will cause ponding or runoff. [15A NCAC 02T .0505(x)]
7. Irrigation equipment shall be tested and calibrated once per permit cycle. [15A NCAC 02T .0507(d)]
8. Only treated effluent from the Bingham Facility WWTF shall be irrigated on the sites listed in Attachment B. [15A NCAC 02T .0501]
9. The Permittee shall not allow vehicles or heavy machinery on the irrigation area, except during equipment installation or maintenance activities. [15A NCAC 02T .0507(e)]
10. The Permittee shall prohibit public access to the wastewater treatment, storage, and irrigation facilities. [15A NCAC 02T .0505(q)]
11. The Permittee shall dispose or utilize generated residuals in a Division-approved manner. [15A NCAC 02T .0508, 02T .1100].
12. The Permittee shall not divert or bypass untreated or partially treated wastewater from the subject facilities. [15A NCAC 02T .0505(j)]
13. Freeboard in the 125,724 gallon clay lined secondary effluent storage basin and the 1,122,440 gallon clay lined wet weather storage basin shall not be less than two feet at any time. [15A NCAC 02T .0505(d)]
14. Gauges to monitor waste levels in the 125,724 gallon clay lined secondary effluent storage basin and the 1,122,440 gallon clay lined wet weather storage basin shall be provided. These gauges shall have readily visible permanent markings, at inch or tenth of a foot increments, indicating the following elevations: maximum liquid level at the top of the temporary liquid storage volume; minimum liquid level at the bottom of the temporary liquid storage volume; and the lowest point on top of the dam. [15A NCAC 02T .0507(f)]

15. A protective vegetative cover shall be established and maintained on all berms, pipe runs, erosion control areas, surface water diversions, and earthen embankments (i.e., outside toe of embankment to maximum allowable temporary storage elevation on the inside of the embankment). Trees, shrubs, and other woody vegetation shall not be allowed to grow on the earthen dikes or embankments. Earthen embankments shall be kept mowed or otherwise controlled and accessible. [15A NCAC 02T .0507(g)]
16. Metering equipment shall be tested and calibrated annually. [15A NCAC 02T .0507(d)]

IV. MONITORING AND REPORTING REQUIREMENTS

1. The Permittee shall conduct and report any Division required monitoring necessary to evaluate this facility's impact on groundwater and surface water. [15A NCAC 02T .0108(c)]
2. A Division-certified laboratory shall conduct all analyses for the required effluent, groundwater, and surface water parameters. [15A NCAC 02H .0800]
3. Flow through the treatment facility shall be continuously monitored, and daily flow values shall be reported on Form NDMR. Facilities with a permitted flow less than 10,000 GPD may estimate their flow from water usage records provided the water source is metered. [15A NCAC 02T .0105(k), 02T .0108(c)]
4. The Permittee shall monitor the treated effluent at the frequencies and locations for the parameters specified in Attachment A. [15A NCAC 02T .0108(c)]
5. The Permittee shall monitor surface water quality at monitoring stations SW-1, SW-2, SW-3, and SW-4 at the frequencies and for the parameters specified in Attachment A. The location of the four surface water monitoring stations is provided in Figure 1. [15A NCAC 02T .0108(c)]
6. The Permittee shall maintain records tracking the amount of effluent irrigated. These records shall include the following information for each irrigation site listed in Attachment B:
 - a. Date of irrigation;
 - b. Volume of effluent irrigated;
 - c. Site irrigated;
 - d. Length of time site is irrigated;
 - e. Continuous weekly, monthly, and year-to-date hydraulic (inches/acre) loadings;
 - f. Continuous monthly and year-to-date loadings for any non-hydraulic parameter specifically limited in Attachment B;
 - g. Weather conditions; and
 - h. Maintenance of cover crops.[15A NCAC 02T .0108(c)]
7. Freeboard (i.e., waste level to the lowest embankment elevation) in the 125,724 gallon clay lined secondary effluent storage basin and the 1,122,440 gallon clay lined wet weather storage basin shall be measured to the nearest inch or tenth of a foot, and recorded weekly. Weekly freeboard records shall be maintained for five years, and shall be made available to the Division upon request. [15A NCAC 02T .0108(c)]

8. Three copies of all monitoring data (as specified in Conditions IV.3. and IV.4.) on Form NDMR for each PPI and three copies of all operation and disposal records (as specified in Conditions IV.5. and IV.6.) on Form NDAR-1 for every site in Attachment B shall be submitted on or before the last day of the following month. If no activities occurred during the monitoring month, monitoring reports are still required documenting the absence of the activity. All information shall be submitted to the following address:

Division of Water Resources
Information Processing Unit
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

[15A NCAC 02T .0105(l)]

9. The Permittee shall maintain a record of all residuals removed from this facility. This record shall be maintained for five years, and shall be made available to the Division upon request. This record shall include:
- Name of the residuals hauler;
 - Non-Discharge permit number authorizing the residuals disposal, or a letter from a municipality agreeing to accept the residuals;
 - Date the residuals were hauled; and
 - Volume of residuals removed.

[15A NCAC 02T .0508(b)]

10. A maintenance log shall be kept at this facility. This log shall be maintained for five years, and shall be made available to the Division upon request. This log shall include:
- Date of irrigation equipment calibration;
 - Visual observations of the plant and plant site; and
 - Record of preventative maintenance (e.g., changing of equipment, adjustments, testing, inspections and cleanings, etc.).

[15A NCAC 02T .0507(h)]

11. Monitoring wells MW-1, MW-3, MW-4, MW-5, and MW-6 shall be sampled at the frequencies and for the parameters specified in Attachment C. All mapping, well construction forms, well abandonment forms and monitoring data shall refer to the permit number and the well nomenclature as provided in Attachment C and Figure 1. [15A NCAC 02T .0105(m)]

12. Two copies of the monitoring well sampling and analysis results shall be submitted on a Compliance Monitoring Form (GW-59), along with attached copies of laboratory analyses, on or before the last working day of the month following the sampling month. The Compliance Monitoring Form (GW-59) shall include this permit number, the appropriate well identification number, and one GW-59a certification form shall be submitted with each set of sampling results. All information shall be submitted to the following address:

Division of Water Resources
Information Processing Unit
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

[15A NCAC 02T .0105(m)]

13. An annual representative soils analysis (i.e., Standard Soil Fertility Analysis) shall be conducted on each irrigation site listed in Attachment B. These results shall be maintained at the facility for five years, and shall be made available to the Division upon request. Each Standard Soil Fertility Analysis shall include the following parameters:

Acidity	Exchangeable Sodium Percentage	Phosphorus
Base Saturation (by calculation)	Magnesium	Potassium
Calcium	Manganese	Sodium
Cation Exchange Capacity	Percent Humic Matter	Zinc
Copper	pH	

[15A NCAC 02T .0108(c)]

14. The Permittee shall provide to the Division an annual report summarizing the performance of the wastewater treatment and irrigation facility, and the extent to which the facility has violated its permit, or federal or State laws, regulations, or rules related to the protection of water quality. This report shall be prepared on a calendar year basis and shall be provided no later than March 1st of the following calendar year. Two electronic copies of the annual report shall be submitted to the Division and at a minimum shall include:
- A record of all limit exceedances for the parameters listed in Attachments A, B and C, as well as a description of corrective actions taken to remedy the limit violations.
 - Date(s) of testing and calibration as required in Condition III.6.
 - Records of all residuals removed from the facility in accordance with Condition IV.9.
 - Copies of the annual representative soil analysis conducted on each irrigation field as required in Condition IV.14.
 - Priority Pollutant Analysis on a representative sample of the facility's generated wastewater.

[15A NCAC 02T .0108(c)]

15. Pursuant to §143-215.1C (b), the Permittee shall provide public notification upon discharge of untreated or partially treated wastewater to surface waters of the State. For discharges of 1,000 gallons or more, the Permittee shall issue a press release describing the details of the discharge. This press release shall be made through the print/electronic news media provider that has the largest circulation coverage in Orange County. The Permittee shall issue the press release within 48 hours after determining that the discharge has reached surface waters. The Permittee shall retain a copy of the press release and a list of the news media to which it was distributed for at least one year after the discharge and include this information in the Annual Report noted in Condition IV.15. above.

[G.S.143-215.1C (b)]

16. **Noncompliance Notification:**

The Permittee shall report to the Raleigh Regional Office, telephone number (919) 791-4200, within 24 hours of first knowledge of the following:

- a. Treatment of wastes abnormal in quantity or characteristic, including the known passage of a hazardous substance.
- b. Any process unit failure (e.g., mechanical, electrical, etc.) rendering the facility incapable of adequate wastewater treatment.
- c. Any facility failure resulting in a discharge to surface waters.
- d. Any time self-monitoring indicates the facility has gone out of compliance with its permit limitations.
- e. Ponding in or runoff from the irrigation sites.

Emergencies requiring reporting outside normal business hours shall call the Division's Emergency Response personnel at telephone number (800) 662-7956, (800) 858-0368, or (919) 733-3300. All noncompliance notifications shall file a written report to the Raleigh Regional Office within five days of first knowledge of the occurrence, and this report shall outline the actions proposed or taken to ensure the problem does not recur. [15A NCAC 02T .0108(b)(1)(A)]

V. **INSPECTIONS**

1. The Permittee shall perform inspections and maintenance to ensure proper operation of the wastewater treatment and irrigation facilities. [15A NCAC 02T .0507(i)]
2. The Permittee shall inspect the wastewater treatment and irrigation facilities to prevent malfunctions, facility deterioration, and operator errors that may result in discharges of wastes to the environment, threats to human health, or public nuisances. The Permittee shall maintain an inspection log that includes the date and time of inspection, observations made, and maintenance, repairs, or corrective actions taken. The Permittee shall maintain this inspection log for a period of five years from the date of the inspection, and this log shall be made available to the Division upon request. [15A NCAC 02T .0507(h), 02T .0507(i)]
3. Division authorized representatives may, upon presentation of credentials, enter and inspect any property, premises, or place related to the wastewater treatment and irrigation facilities permitted herein at any reasonable time for determining compliance with this permit. Division authorized representatives may inspect or copy records maintained under the terms and conditions of this permit, and may collect groundwater, surface water, or leachate samples. [G.S. 143-215.3(a)(2)]

VI. **GENERAL CONDITIONS**

1. Failure to comply with the conditions and limitations contained herein may subject the Permittee to a Division enforcement action. [G.S. 143-215.6A, 143-215.6B, 143-215.6C]
2. This permit is effective only with respect to the nature and volume of wastes described in the permit application, and Division-approved plans and specifications. [G.S. 143-215.1(d)]
3. Unless specifically requested and approved in this permit, there are no variances to administrative codes or general statutes governing the construction or operation of the facilities permitted herein. [15A NCAC 02T .0105(n)]
4. The issuance of this permit does not exempt the Permittee from complying with all statutes, rules, regulations, or ordinances that other jurisdictional government agencies (e.g., local, state, and federal) may require. [15A NCAC 02T .0105(c)(6)]

5. If the permitted facilities change ownership, or the Permittee changes their name, the Permittee shall submit a permit modification request on Division-approved forms. The Permittee shall comply with all terms and conditions of this permit until the permit is transferred to the successor-owner. [G.S. 143-215.1(d3)]
6. The Permittee shall retain a set of Division-approved plans and specifications for the life of the facilities permitted herein. [15A NCAC 02T .0105(o)]
7. The Permittee shall maintain this permit until the proper closure of all facilities permitted herein, or until the facilities permitted herein are permitted by another authority. [15A NCAC 02T .0105(j)]
8. This permit is subject to revocation or modification upon 60-day notice from the Division Director, in whole or part for:
 - a. violation of any terms or conditions of this permit or Administrative Code Title 15A Subchapter 02T;
 - b. obtaining a permit by misrepresentation or failure to disclose all relevant facts;
 - c. the Permittee's refusal to allow authorized Department employees upon presentation of credentials:
 - i. to enter the Permittee's premises where a system is located or where any records are required to be kept;
 - ii. to have access to any permit required documents and records;
 - iii. to inspect any monitoring equipment or method as required in this permit; or
 - iv. to sample any pollutants;
 - d. the Permittee's failure to pay the annual fee for administering and compliance monitoring; or
 - e. a Division determination that the conditions of this permit are in conflict with North Carolina Administrative Code or General Statutes.

[15A NCAC 02T .0110]

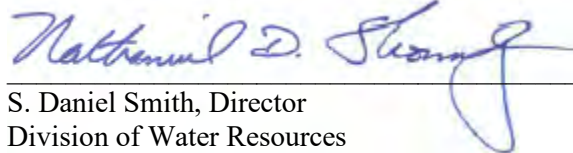
9. Unless the Division Director grants a variance, expansion of the facilities permitted herein shall not occur if any of the following apply:
 - a. The Permittee or any parent, subsidiary, or other affiliate of the Permittee has been convicted of environmental crimes under G.S. 143-215.6B, or under Federal law that would otherwise be prosecuted under G.S. 143-215.6B, and all appeals of this conviction have been abandoned or exhausted.
 - b. The Permittee or any parent, subsidiary, or other affiliate of the Permittee has previously abandoned a wastewater treatment facility without properly closing the facility.
 - c. The Permittee or any parent, subsidiary, or other affiliate of the Permittee has not paid a civil penalty, and all appeals of this penalty have been abandoned or exhausted.
 - d. The Permittee or any parent, subsidiary, or other affiliate of the Permittee is currently not compliant with any compliance schedule in a permit, settlement agreement, or order.
 - e. The Permittee or any parent, subsidiary, or other affiliate of the Permittee has not paid an annual fee.


[15A NCAC 02T .0120(b), 02T .0120(d)]

10. This permit shall not be renewed if the Permittee or any affiliation has not paid the required annual fee.
[15A NCAC 02T .0120(c)]

Permit issued this the 12th day of June 2020

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION



 S. Daniel Smith, Director
Division of Water Resources
By Authority of the Environmental Management Commission

Permit Number WQ0023896

PPI 001 – WWTF Effluent

EFFLUENT CHARACTERISTICS		EFFLUENT LIMITS					MONITORING REQUIREMENTS	
PCS Code	Parameter Description	Units of Measure	Monthly Average	Monthly Geometric Mean	Daily Minimum	Daily Maximum	Measurement Frequency	Sample Type
00310	BOD, 5-Day (20 °C)	mg/L	30				4 x Year ¹	Grab
00940	Chloride (as Cl)	mg/L					4 x Year ¹	Grab
50060	Chlorine, Total Residual	mg/L					Weekly	Grab
31616	Coliform, Fecal MF, M-FC Broth, 44.5 °C	#/100 mL		200			4 x Year ¹	Grab
50050	Flow, in Conduit or thru Treatment Plant	GPD	3,556				Monthly	Estimate
00610	Nitrogen, Ammonia Total (as N)	mg/L	15				4 x Year ¹	Grab
00625	Nitrogen, Kjeldahl, Total (as N)	mg/L					4 x Year ¹	Grab
00620	Nitrogen, Nitrate Total (as N)	mg/L					4 x Year ¹	Grab
00600	Nitrogen, Total (as N)	mg/L					4 x Year ¹	Grab
00400	pH	su					Weekly	Grab
00665	Phosphorus, Total (as P)	mg/L					4 x Year ¹	Grab
70300	Solids, Total Dissolved – 180 °C	mg/L					4 x Year ¹	Grab
00530	Solids, Total Suspended	mg/L	30				4 x Year ¹	Grab

1. 4 x Year sampling shall be conducted in March, June, September, and December.

PPI 002 – Surface Water Monitoring Station SW-1

EFFLUENT CHARACTERISTICS		EFFLUENT LIMITS					MONITORING REQUIREMENTS	
PCS Code	Parameter Description	Units of Measure	Monthly Average	Monthly Geometric Mean	Daily Minimum	Daily Maximum	Measurement Frequency	Sample Type
00310	BOD, 5-Day (20 °C)	mg/L					2 x Year ¹	Grab
00300	DO, Dissolved Oxygen	mg/L					2 x Year ¹	Grab
00600	Nitrogen, Total (as N)	mg/L					2 x Year ¹	Grab
00400	pH	su					2 x Year ¹	Grab
00665	Phosphorus, Total (as P)	mg/L					2 x Year ¹	Grab

1. 2 x Year sampling shall be conducted in June and December.

PPI 003 – Surface Water Monitoring Station SW-2

EFFLUENT CHARACTERISTICS		EFFLUENT LIMITS					MONITORING REQUIREMENTS	
PCS Code	Parameter Description	Units of Measure	Monthly Average	Monthly Geometric Mean	Daily Minimum	Daily Maximum	Measurement Frequency	Sample Type
00310	BOD, 5-Day (20 °C)	mg/L					2 x Year ¹	Grab
00300	DO, Dissolved Oxygen	mg/L					2 x Year ¹	Grab
00600	Nitrogen, Total (as N)	mg/L					2 x Year ¹	Grab
00400	pH	su					2 x Year ¹	Grab
00665	Phosphorus, Total (as P)	mg/L					2 x Year ¹	Grab

1. 2 x Year sampling shall be conducted in June and December.

PPI 004 – Surface Water Monitoring Station SW-3

EFFLUENT CHARACTERISTICS		EFFLUENT LIMITS					MONITORING REQUIREMENTS	
PCS Code	Parameter Description	Units of Measure	Monthly Average	Monthly Geometric Mean	Daily Minimum	Daily Maximum	Measurement Frequency	Sample Type
00310	BOD, 5-Day (20 °C)	mg/L					2 x Year ¹	Grab
00300	DO, Dissolved Oxygen	mg/L					2 x Year ¹	Grab
00600	Nitrogen, Total (as N)	mg/L					2 x Year ¹	Grab
00400	pH	su					2 x Year ¹	Grab
00665	Phosphorus, Total (as P)	mg/L					2 x Year ¹	Grab

1. 2 x Year sampling shall be conducted in June and December.

PPI 005 – Surface Water Monitoring Station SW-4

EFFLUENT CHARACTERISTICS		EFFLUENT LIMITS					MONITORING REQUIREMENTS	
PCS Code	Parameter Description	Units of Measure	Monthly Average	Monthly Geometric Mean	Daily Minimum	Daily Maximum	Measurement Frequency	Sample Type
00310	BOD, 5-Day (20 °C)	mg/L					2 x Year ¹	Grab
00300	DO, Dissolved Oxygen	mg/L					2 x Year ¹	Grab
00600	Nitrogen, Total (as N)	mg/L					2 x Year ¹	Grab
00400	pH	su					2 x Year ¹	Grab
00665	Phosphorus, Total (as P)	mg/L					2 x Year ¹	Grab

1. 2 x Year sampling shall be conducted in June and December.

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The University of North Carolina at Chapel Hill – Bingham Facility WWTF

IRRIGATION AREA INFORMATION							APPLICATION LIMITATIONS			
Field	Owner	County	Latitude	Longitude	Net Acreage	Dominant Soil Series	Parameter	Hourly Rate	Yearly Max	Units
1	The University of North Carolina at Chapel Hill	Orange	35.904525°	-79.241811°	1.53	Georgeville / Herndon	01284 – Non-Discharge Application Rate	0.22	10.92	inches
2	The University of North Carolina at Chapel Hill	Orange	35.904294°	-79.240597°	1.55	Georgeville / Herndon	01284 – Non-Discharge Application Rate	0.22	10.92	inches
3	The University of North Carolina at Chapel Hill	Orange	35.903842°	-79.240775°	1.55	Georgeville / Herndon	01284 – Non-Discharge Application Rate	0.22	10.92	inches
4	The University of North Carolina at Chapel Hill	Orange	35.903342°	-79.241308°	1.09	Georgeville / Herndon	01284 – Non-Discharge Application Rate	0.22	10.92	inches
Totals					5.72					

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Monitoring Wells: MW-1, MW-3, MW-4, MW-5, and MW-6

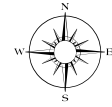
GROUNDWATER CHARACTERISTICS		GROUNDWATER STANDARDS		MONITORING REQUIREMENTS		
PCS Code	Parameter Description	Daily Maximum		Frequency Measurement	Sample Type	Footnotes
00680	Carbon, Tot Organic (TOC)		mg/L	4 x Year	Grab	1, 6
00940	Chloride (as Cl)	250	mg/L	4 x Year	Grab	1
31616	Coliform, Fecal MF, M-FC Broth, 44.5 °C		#/100 mL	4 x Year	Grab	1
00610	Nitrogen, Ammonia Total (as N)	1.5	mg/L	4 x Year	Grab	1
00620	Nitrogen, Nitrate Total (as N)	10	mg/L	4 x Year	Grab	1
00400	pH	6.5-8.5	su	4 x Year	Grab	1, 2
00665	Phosphorus, Total (as P)		mg/L	4 x Year	Grab	1
70300	Solids, Total Dissolved - 180 °C	500	mg/L	4 x Year	Grab	1
GWVOC	Volatile Compounds (GW)		Present: Yes/No	Annually	Grab	1, 4, 5
82546	Water Level, Distance from measuring point		feet	4 x Year	Calculated	1, 2, 3

1. 4 x Year monitoring shall be conducted in March, June, September & December; Annual monitoring shall be conducted every December.
2. The measurement of water levels shall be made prior to purging the wells. The depth to water in each well shall be measured from the surveyed point on the top of the casing. The measurement of pH shall be made after purging and prior to sampling for the remaining parameters.
3. The measuring points (top of well casing) of all monitoring wells shall be surveyed to provide the relative elevation of the measuring point for each monitoring well. The measuring points (top of casing) of all monitoring wells shall be surveyed relative to a common datum.
4. Volatile Organic Compounds (VOC) - In December only, analyze by one of the following methods:
 - a. Standard Method 6230D, PQL at 0.5 µg/L or less
 - b. Standard Method 6210D, PQL at 0.5 µg/L or less
 - c. EPA Method 8021, Low Concentration, PQL at 0.5 µg/L or less
 - d. EPA Method 8260, Low Concentration, PQL at 0.5 µg/L or less
 - e. Another method with prior approval by the Water Quality Permitting Section Chief

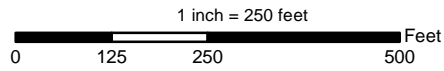
Any method used shall meet the following qualifications:

 - a. A laboratory shall be DWR certified to run any method used.
 - b. The method used shall include all the constituents listed in Table VIII of Standard Method 6230D.
 - c. The method used shall provide a PQL of 0.5 µg/L or less that shall be supported by laboratory proficiency studies as required by the DWR Laboratory Certification Unit. Any constituents detected above the MDL but below the PQL of 0.5 µg/L shall be qualified (estimated) and reported.
5. If any volatile organic compounds (VOC) are detected as a result of monitoring as provided in Attachment C, then the Raleigh Regional Office supervisor, telephone number (919) 791-4200, shall be contacted immediately for further instructions regarding any additional follow-up analyses required.
6. If TOC concentrations greater than 10 mg/L are detected in any downgradient monitoring well, additional sampling and analysis shall be conducted to identify the individual constituents comprising this TOC concentration. If the TOC concentration as measured in the background monitor well exceeds 10 mg/L, this concentration will be taken to represent the naturally occurring TOC concentration. Any exceedances of this naturally occurring TOC concentration in the downgradient wells shall be subject to the additional sampling and analysis as described above.
7. Monitoring wells shall be reported consistent with the nomenclature and location information provided in Figure 1 and this attachment.

The University of North Carolina at Chapel Hill Bingham Facility Wastewater System Improvements Orange County, NC



03/2014



- Bus Stops
- New Monitoring Wells
- Existing Monitoring Wells
- Potable Wells
- Surface Water Monitoring
- Sanitary Sewer
- Potable Water Piping
- Effluent Forcemain
- Fenceline
- Irrigation Layout
- Drip Irrigation Layout
- Stream (County GIS)
- Stream (survey)
- Streets
- 2-ft Contour
- 10-ft Contour
- Compliance Boundary
- Review Boundary
- Bingham Property Boundary
- Orange County Parcels
- Well Setback
- 50' Setback
- 100' Setback
- 150' Setback
- 200' Setback
- 500' Area of Interest
- Wastewater Treatment Plant
- Effluent Storage Basin
- Irrigation Pump Station
- Wet Weather Storage Basin
- Wetlands (survey)
- Existing Building Footprints
- Existing Paved Area
- UNC Owned Property
- Habitable Residences Not Within 500 feet
- Habitable Residences Within 500 feet
- 100' Buffer from Bus Stops
- Georgeville Soils
- Herndon Soils

- Revision 1 10/2011
- Revision 2 01/2013
- Revision 3 11/2013
- Revision 4 03/2014



SETBACKS (Per 15A NCAC 02T.00.506 (a) and (b) - Rev September 1, 2006)				
Description	Treatment Units/Storage	Irrigation System	Minimum Distance From Treatment Units/Storage**	Minimum Distance From Irrigation System**
Any habitable residence or place of public assembly under separate ownership or not to be maintained as part of the project site	100 feet	100 feet	320 feet	406 feet
Any habitable residence or place of public assembly under separate ownership to be maintained as part of the project site	--	15 feet	--	201 feet
Any private or public water supply source	100 feet	100 feet	325 feet	250 feet
Surface Waters (streams- intermittent and perennial, perennial water bodies, and wetlands)	50 feet	100 feet	50 feet	100+ feet
Groundwater lowering ditches (where the bottom of the ditch intersects the SHWT)	--	100 feet	--	N/A
Subsurface groundwater lowering drainage systems	--	100 feet	--	N/A
Surface water diversions (ephemeral streams, waterways, ditches)	--	25 feet	--	100+ feet
Any well with the exception of monitoring wells	100 feet	100 feet	325 feet	250 feet
Any property line	50 feet	50 feet	50+ feet	150+ feet
Top of slope of embankments or cuts of 2-ft or more in vertical height	--	15 feet	--	N/A
Any water line from a disposal system	--	10 feet	--	160 feet
Any swimming pool	--	100 feet	--	N/A
Public right of way	--	50 feet	--	150+ feet
Nitrification field	--	20 feet	--	N/A
Any building foundation or basement	--	15 feet	--	120 feet

