

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WATER QUALITY

PERMIT

TO DISCHARGE WASTEWATER UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provision of North Carolina General Statute 143-215.1, other lawful standards and regulations promulgated and adopted by the North Carolina Environmental Management Commission, and the Federal Water Pollution Control Act, as amended,

Smithfield Packing Company, Inc.

is hereby authorized to discharge wastewater and stormwater from a facility located at

Smithfield Packing Company - Tar Heel Division
NC Highway 87
north of Tar Heel
Bladen County

to receiving waters designated as the Cape Fear River in the Cape Fear River Basin

in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, III, and IV hereof.

This permit shall become effective **December 1, 2002**.

This permit and the authorization to discharge shall expire at midnight on **October 31, 2006**.

Signed this day **November 15, 2002**.

Alan W. Klimek, P.E., Director
Division of Water Quality
By Authority of the Environmental Management Commission

SUPPLEMENT TO PERMIT COVER SHEET

Smithfield Packing Company, Inc. – Tar Heel Division

is hereby authorized to:

1. Continue to operate an existing 3.0 MGD wastewater facility for the treatment of process, sanitary, and vehicle washdown wastewater (and other wastewater sources defined in the permit application or subsequent supplement documents, ref. Condition A.(7)). The wastewater treatment facility consists of a pretreatment system and a main treatment system. The pretreatment system utilizes bar screens, a dissolved air flotation (DAF) unit and pump station while the main treatment system consists of two (2) anaerobic lagoons, three (3) anoxic basins, three (3) aeration basins, four (4) final clarifiers, tertiary filters, reaeration, two (2) horizontal bulb ultraviolet disinfection systems, an emergency storage lagoon and effluent pumps. The facility is located off of North Carolina Highway 87, north of Tar Heel in Bladen County (see Part III of this permit); and
2. Operate the plant in accordance with the Authorization to Operate issued March 23, 1999 for a maximum slaughter rate of 176,000 hogs per week, and
3. Discharge treated wastewater from said treatment works at the location specified on the attached map into the Cape Fear River which is classified C waters in the Cape Fear River Basin.

**A. (1). EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS
(FINAL)**

During the period beginning on the effective date of the permit and lasting until expiration, the Permittee is authorized to discharge from outfall(s) serial number 001. Such discharges shall be limited and monitored by the Permittee as specified below:

EFFLUENT CHARACTERISTICS	LIMITS			MONITORING REQUIREMENTS		
	Monthly Average	Weekly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location ¹
Flow (MGD)	3.0			Continuous (7 Days/Week)	Recorder	Influent or Effluent
BOD, 5-day, 20°C (April 1 – October 31)	250.0 lbs/day		500.0 lbs/day (30.0 mg/l)	7 Days/Week	Composite	Effluent
BOD, 5-day, 20°C (November 1 – March 31)	500.0 lbs/day		1000 lbs/day (45.0 mg/l)	7 Days/Week	Composite	Effluent
Total Suspended Solids	998.7 lbs/day		1997.5 lbs/day	7 Days/Week	Composite	Effluent
NH ₃ as N (April 1 – October 31)	30.0 lbs/day		60.0 lbs/day (7.5 mg/l)	7 Days/Week	Composite	Effluent
NH ₃ as N (November 1 – March 31)	60.0 lbs/day		120.0 lbs/day (15.0 mg/l)	7 Days/Week	Composite	Effluent
Dissolved Oxygen ²				Daily	Grab	Effluent, Upstream & Downstream
Fecal Coliform (geometric mean)	200 / 100 ml	400 / 100 ml		Daily	Grab	Effluent, Upstream & Downstream
Temperature				Daily	Grab	Effluent, Upstream & Downstream
Conductivity				Footnote 1	Grab	Upstream & Downstream
Total Nitrogen (NO ₂ +NO ₃ +TKN)				Monthly Footnote 1	Composite	Effluent, Upstream & Downstream
Total Phosphorus				Monthly Footnote 1	Composite	Effluent, Upstream & Downstream
Organic Nitrogen				Monthly Footnote 1	Composite	Effluent, Upstream & Downstream
Chlorophyll-a				Footnote 1	Grab	Upstream & Downstream
Settleable Solids	5.0 ml / L		10 ml / L	Weekly	Grab	Effluent
Oil and Grease	319.6 lbs/day		639.2 lbs/day	Weekly	Grab	Effluent
Total Residual Chlorine ³				Daily	Grab	Effluent
pH ⁴				Daily	Grab	Effluent
Total Aluminum				Quarterly	Composite	Effluent
Chlorides				Quarterly	Composite	Effluent
Total Copper				Quarterly	Composite	Effluent
Fluoride				Quarterly	Composite	Effluent
Total Nickel				Quarterly	Composite	Effluent
Total Zinc				Quarterly	Composite	Effluent
Chronic Toxicity ⁵				Quarterly	Composite	Effluent

FOOTNOTES, NEXT PAGE

A. (1). EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (FINAL) Continued

FOOTNOTES:

1. Upstream = at least 100 feet above discharge. Downstream = on the upstream side of Lock and Dam #2. See A. (2.) for specific instream sampling requirements
2. The daily average dissolved oxygen concentration in the effluent shall not be less than 5.0 mg/L.
3. Monitoring for total residual chlorine shall be conducted only if chlorine or chlorine derived disinfection is employed.
4. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units.
5. Chronic Toxicity (*Ceriodaphnia*) Pass/Fail @ 0.58%; see A. (3.) for specific testing requirements.

WHEN FLOW IS DIVERTED TO THE ON-SITE STORAGE LAGOON, ONLY THAT PORTION DISCHARGED THROUGH OUTFALL 001 MUST BE REPORTED. IF NO FLOW IS DISCHARGED, "NO FLOW" SHOULD BE REPORTED.

SEVEN DAYS PER WEEK MONITORING IS REQUIRED FOR BOD5, TSS, AND NH3-N.

THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

A. (2.) INSTREAM SAMPLING REQUIREMENTS

All stream samples shall be grab samples. Stream samples for dissolved oxygen, fecal coliform, temperature, and conductivity shall be collected three times per week during June, July, August, and September and once per week the remaining months of the year. Stream sampling for total nitrogen, total phosphorus, organic nitrogen, and chlorophyll-a shall be conducted weekly during the months of June, July, August, and September.

Instream sampling requirements are *provisionally* waived as a result of Smithfield's participation in the Middle Cape Fear River Basin Association per the Memorandum of Agreement between the Division and the Association. *Instream sampling requirements will be reinstated should Smithfield cease its participation in the Association.*

Per NCAC 2B .0505(c)(4), stream sampling is not required when flow conditions or weather conditions pose a substantial risk of injury or death to persons collecting samples.

A. (3.) CHRONIC TOXICITY PERMIT LIMIT (QRTRLY)

The effluent discharge shall at no time exhibit observable inhibition of reproduction or significant mortality to *Ceriodaphnia dubia* at an effluent concentration of **0.58 %**.

The permit holder shall perform at a minimum, *quarterly* monitoring using test procedures outlined in the "North Carolina *Ceriodaphnia* Chronic Effluent Bioassay Procedure," Revised February 1998, or subsequent versions or "North Carolina Phase II Chronic Whole Effluent Toxicity Test Procedure" (Revised-February 1998) or subsequent versions. The tests will be performed *during the months of January, April, July, and October*. Effluent sampling for this testing shall be performed at the NPDES permitted final effluent discharge below all treatment processes.

If the test procedure performed as the first test of any single quarter results in a failure or ChV below the permit limit, then multiple-concentration testing shall be performed at a minimum, in each of the two following months as described in "North Carolina Phase II Chronic Whole Effluent Toxicity Test Procedure" (Revised-February 1998) or subsequent versions.

The chronic value for multiple concentration tests will be determined using the geometric mean of the highest concentration having no detectable impairment of reproduction or survival and the lowest concentration that does have a detectable impairment of reproduction or survival. The definition of "detectable impairment," collection methods, exposure regimes, and further statistical methods are specified in the "North Carolina Phase II Chronic Whole Effluent Toxicity Test Procedure" (Revised-February 1998) or subsequent versions.

All toxicity testing results required as part of this permit condition will be entered on the Effluent Discharge Monitoring Form (MR-1) for the months in which tests were performed, using the parameter code TGP3B for the pass/fail results and THP3B for the Chronic Value. Additionally, DWQ Form AT-3 (original) is to be sent to the following address:

Attention: North Carolina Division of Water Quality
Environmental Sciences Branch
1621 Mail Service Center
Raleigh, North Carolina 27699-1621

Completed Aquatic Toxicity Test Forms shall be filed with the Environmental Sciences Branch no later than 30 days after the end of the reporting period for which the report is made.

Test data shall be complete, accurate, include all supporting chemical/physical measurements and all concentration/response data, and be certified by laboratory supervisor and ORC or approved designate signature. Total residual chlorine of the effluent toxicity sample must be measured and reported if chlorine is employed for disinfection of the waste stream.

Should there be no discharge of flow from the facility during a month in which toxicity monitoring is required, the permittee will complete the information located at the top of the aquatic toxicity (AT) test form indicating the facility name, permit number, pipe number, county, and the month/year of the report with the notation of "No Flow" in the comment area of the form. The report shall be submitted to the Environmental Sciences Branch at the address cited above.

Should the permittee fail to monitor during a month in which toxicity monitoring is required, monitoring will be required during the following month.

Should any test data from this monitoring requirement or tests performed by the North Carolina Division of Water Quality indicate potential impacts to the receiving stream, this permit may be re-opened and modified to include alternate monitoring requirements or limits.

NOTE: Failure to achieve test conditions as specified in the cited document, such as minimum control organism survival, minimum control organism reproduction, and appropriate environmental controls, shall constitute an invalid test and will require immediate follow-up testing to be completed no later than the last day of the month following the month of the initial monitoring.

A (4). WEEKLY AND ANNUAL MAXIMUM PRODUCTION LEVELS AND RELATED CONDITIONS

A(4)(a). Production at the Smithfield Packing Company, Incorporated's Tar Heel facility shall not exceed a weekly maximum production level of 176,000 hogs slaughtered per week, beginning on the effective date of this permit. This production level is based on the March 23, 1999 Authorization to Operate issued by the Division of Water Quality (and based on the facility's engineering certification dated March 2, 1999).

A(4)(b). In addition to not exceeding the weekly maximum production level in A(4)(a), production at Smithfield Packing Company, Incorporated's Tar Heel facility shall not exceed an annual maximum production level of 7,988,000 hogs per year for year 1 of the permit (i.e., from the effective date of this permit until 12 months after the effective date of the permit), and of 8,488,000 hogs per year for each subsequent 12-month period of the permit term, each of which annual maximum production levels is subject, however, to the following conditions:

A(4)(b)(i). If the Director finds that the Permittee, in a substantial way, has violated any classification, standard, limitation, or management practice established pursuant to G.S. 143-214.1, 143-214.2, or 143-215, or, in a substantial way, has violated or failed to act in accordance with the terms, conditions, or requirements of this permit, the annual production level, upon the finding being made, shall revert to 7,488,000 hogs per year (i.e., the annual maximum production level in the previous permit, issued May 10, 1999) beginning with the next year of the permit term if the finding is made between June 1 through November 30 or immediately if the finding is made between December 1 through May 31. In either case, the reversion shall last for the entirety of the permit cycle in which the substantial violation occurred.

A(4)(b)(ii). There shall be no increase in groundwater usage as a result of increased pork production. Groundwater usage shall not exceed an annual average of 1.974 MGD.

A(4)(c). Permittee will pay a stipulated penalty (i.e., without contest) of \$200 per hog slaughtered if the facility exceeds the weekly maximum production level of 176,000 hogs or exceeds the annual maximum production levels established in section A(4)(b). Any exceedance will trigger the stipulated penalty, and, if the slaughtering of a hog results in the exceedance of more than one level or cap, then each cap or level exceedance triggers a separate stipulated penalty.

A(4)(d). Within two years of the effective date of this permit, Permittee shall develop a plan for and implement an Environmental Management System for the Tar Heel facility that meets the goals outlined in this section. The Environmental Management System shall be an ISO 14000 or functionally equivalent model. The Environmental Management System shall be appropriate to the nature, scale and environmental impact of the Tar Heel facility and its operations. The system shall include aggressive environmental performance goals that address pollution prevention, a commitment to exceed compliance, annual improvements to performance, and the Permittee's commitment to reduce current groundwater usage by 10%. It shall also include a process for communication with the local community on program activities and progress towards environmental performance goals. Within the two year period, the Environmental Management System shall be certified by an independent and accredited registrar acceptable to the Director.

A(4)(e). Within one year of the date of the effective date of this permit, the Permittee shall:

- (i) develop, with the advice and consultation of the Director of the Division of Pollution Prevention and Environmental Assistance, a model Environmental Management System Program which will enable a swine farm not owned by Permittee to adapt the model system with reasonable ease for use on the swine farm in a manner appropriate to the nature, scale and environmental impacts of the swine farm,

- (ii) encourage and assist swine farms doing business with the Permittee, through contract or independent purchase options, to participate in the model EMS program, and
- (iii) make the program available to swine farms not owned by the Permittee or doing business with the Permittee through the Department.

A(4)(f). The Permittee shall not purchase any hog from any farm in North Carolina that is constructed after the date of the issuance of this permit unless such farm employs technologies that are innovative [identified pursuant to S.L. 1998, c. 188, s.2, paragraph (b)8(a)-(e) and paragraph (c)] or that are implementing technologies under the Smithfield Agreement [entered on July 25, 2000, between the company and the Attorney General of North Carolina] which will:

- Eliminate the discharge of animal waste to surface waters and groundwater through direct discharge, seepage, or runoff;
- Substantially eliminate atmospheric emissions of ammonia;
- Substantially eliminate the emission of odor that is detectable beyond the boundaries of the parcel or tract of land on which the swine farm is located;
- Substantially eliminate the release of disease-transmitting vectors and airborne pathogens; and
- Substantially eliminate nutrient and heavy metal contamination of soil and groundwater.

A (5). NONCOMPLIANT HOG FARM OPERATION RESTRICTION

The Permittee shall not process at the permitted facility, for a period of 12 months, any hog finished on a farm owned or operated by the Permittee or its parent, subsidiary or affiliate [as defined by 143-215.1 (b)] that has been the subject of the following types of enforcement actions for discharging animal waste to surface waters or wetlands or applying animal waste to land in excess of the approved application rate: a) a final assessment of a civil penalty pursuant to G. S. 143-215.6A; b) the imposition by a federal district court of a civil penalty under the federal Clean Water Act or the administrative assessment by the U.S. EPA of a penalty, but only when the order assessing the penalty becomes final; or c) a criminal conviction of one of the involved corporate entities or of a responsible corporate official, by a court of competent jurisdiction. For purposes of this Special Condition, a civil penalty has been finally assessed where either: a) the assessment is not contested, or b) the assessment is contested and upon the conclusion of any available administrative and judicial review, the assessment is upheld in whole or in part. Within 30 days of the effective date of this Permit, the Permittee shall provide DWQ with a description of its record-keeping system for implementing this Special Condition.

A (6). REQUIREMENT TO MONITOR 7 DAYS PER WEEK, AND RELATED MONITORING PROVISIONS

The Permittee shall monitor and report BOD5, NH3-N, TSS, and flow 7 days a week, 365 days a year, and shall report the results monthly.

The Director may also require, at the Director's discretion and without amending the permit, the Permittee to monitor and report additional constituents, including but not limited to total nitrogen, total phosphorus, antibiotics, hormones, and oil and grease. Such monitoring and reporting, if required, shall be conducted in accordance with methodologies and protective standards specified by the Director.

A (7). REQUIREMENT TO DOCUMENT FLOW SOURCES

The Permittee shall notify the Division of Water Quality (both the Central Office in Raleigh and the Fayetteville Regional Office) of any addition or major changes with regard to contributing flows to the plant. Major changes in flow are defined as contributing flows different in scope and composition from those already documented as part of the application for NPDES permit renewal. Additions in flow are defined as any additional sources other than those listed as part of the application for NPDES permit renewal.

In addition, the Permittee shall monitor, 7 days a week, 365 days a year, and on a monthly basis report the volume of the Tar Heel facility's groundwater withdrawals.