



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO ATTENTION OF
ECW-15J

VIA EMAIL

Ms. Ashton Williams
Plant Manager
Smithfield Food
410 South Kirk Road
St. Charles, IL 60174

Subject: August 29, 2023, Inspection Report for Smithfield Foods, St. Charles,
Clean Water Act (CWA) NPDES ID ILP000270

Dear Ms. Williams:

Enclosed, please find a copy of the U.S. Environmental Protection Agency Clean Water Act Inspection Report that describes and documents the activities at Smithfield Foods on August 29, 2023.

The purpose of the inspection at Smithfield Foods was to perform a Compliance Evaluation Inspection of the facility.

If you have any questions or concerns regarding this letter, or the inspection report, please contact Joan Rogers at (312) 886-2785 or at rogers.joan@epa.gov.

Sincerely,

RYAN BAHR
Digitally signed by RYAN
BAHR
Date: 2023.10.19
16:15:16 -05'00'

Ryan J. Bahr, Section 2 Supervisor
Water Enforcement and Compliance Assurance Branch

Enclosure

cc: Tim Wilson, Public Works Manager, City of St. Charles

**CWA COMPLIANCE EVALUATION INSPECTION REPORT
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 5**

Purpose: Compliance Evaluation Reconnaissance Inspection

Facility:

Smithfield Foods
410 South Kirk Road
St. Charles, IL 60174
41.91612, -88.27452

NPDES ID: ILP000270

Date of Inspection: August 29, 2023

EPA Representatives:

Joan Rogers, Environmental Scientist
Rogers.joan@epa.gov

312-886-2785

Val Dooling, Environmental Engineer/Scientist
Dooling.valerie@epa.gov

312-886-7167

State Representatives:

None

Facility Representatives:

Ashton Williams, Plant Manager
awilliams@smithfield.com

630-549-2209

Whit Divilbiss, Assistant Plant Manager

Steve Price, Wastewater Operator

Bryan Ward, Wastewater Operator

Leo Guardado, Environmental Process Safety Manager/Supervisor

Report Prepared by: Joan Rogers

Inspector Signature/Date: JOAN ROGERS  Digitally signed by JOAN ROGERS
Date: 2023.10.19 15:06:31 -05'00'

Approver Name and Title: Ryan Bahr, Supervisor, Section 2, WECAB

Approver Signature/Date: RYAN BAHR  Digitally signed by RYAN BAHR
Date: 2023.10.19 16:14:49 -05'00'

1. BACKGROUND

The purpose of this report is to describe and document the reconnaissance inspection at the Smithfield Foods facility in St. Charles on August 29, 2023. This inspection was performed pursuant to Section 308(a) of the Federal Water Pollution Control Act, as amended.

The Smithfield Foods facility in St. Charles manufactures and distributes hard sausage, including pepperoni and hard salami. The facility's wastewater flows to the City of St. Charles' Publicly Owned Treatment Works (POTW). Smithfield Foods has an Illinois Pretreatment Permit (Permit) number ILP000270 to operate pretreatment equipment before discharging the wastewater to St. Charles' POTW. Smithfield also has a pretreatment permit from the City of St. Charles that expires on May 31, 2027.

The inspection on August 29, 2023, was a compliance evaluation inspection to determine compliance with the Permit and investigate the source of odors from a complaint received by the EPA on August 25, 2023.

2. SITE INSPECTION

Site Entry and Opening Conference

Arrival Time:	9:15 A.M.
Presented credentials?	Yes.
Credentials presented to whom and at what time?	9:20 A.M. to Ashton Williams and Whit Divilbiss.
Was an opening conference held? With whom?	Yes, with Ms. Williams and Mr. Divilbiss.
If photographs or documents were taken, does the facility consider any to be Confidential Business Information (CBI)?	None that were taken were claimed as CBI.
Which information does the facility consider to be CBI?	None.
Is the EPA vehicle parked in approved location?	Yes.
Location where EPA vehicle was parked?	Main Parking Lot.

EPA inspectors, Ms. Joan Rogers, and Ms. Val Dooling, provided an opening conference at 9:20 A.M. During the opening conference, Ms. Rogers explained that the purpose of the inspection was to observe the wastewater system and treatment and discuss the recent complaints of odors from the facility. Ms. Rogers stated that if there was any CBI provided during the inspection, facility representatives would let me know which information they considered to be CBI and it would be handled as such.

Ms. Williams explained that this Smithfield Food facility processes dry sausage, specifically pepperoni and salami. Water is used in the process in two ways: for sanitation, and for cooling. Sanitation is completed using Clean in Place (CIP) process every 24 hours, during third shift. Cooling water is used to shower the meat to cool it before drying. The facility typically has 180,000 gallons per day (gpd) of wastewater but can peak at 250,000 gpd. Sludge is tanked off 2-3 times per week and is land applied.

Wastewater flows to a wet well where solids are macerated. The wastewater is then pumped to the EQ Basin where solids are allowed to settle out before flowing to the aeration basin where it receives biological treatment. The wastewater then flows via gravity to the clarifier. Effluent from the clarifier flows via gravity to the city's sanitary sewer.

In June of 2022, the facility experienced a wastewater upset. Some of the bubbler diffusers in the aeration process failed and caused low dissolved oxygen levels in the aeration basin. Since then, the facility has put in an automated surface aerator.

The facility was aware of the odors affecting the community earlier in 2023. The facility hired an environmental supervisor to assist in identifying processes that could be changed to mitigate the odors and contracted with another wastewater treatment operator to be available for operational support.

Additionally, the facility brought in personnel from their Sioux Falls, South Dakota plant to assist. Some operational changes were made after that.

The facility previously utilized aeration in the EQ Basin, and occasionally, the aeration would cause pockets of hydrogen sulfide to release and cause odors. The facility stopped using aeration in the EQ Basin in early May 2023 to prevent this situation.

The facility also installed a scented vapor blower system for both the EQ Basin and the aeration basin. When the sensor detects hydrogen sulfide levels of 2 parts per million (ppm) in either basin, the blower automatically sprays a citrus scented vapor over the top of the basin. The vapor comes out of small holes in a hose that is attached around the top of each basin. The blowers more frequently blow vapor over the EQ Basin vs. the aeration basin. It cost the facility \$300,000 to install this vapor system and \$10,000 every 1.5 weeks for the chemical.

As additional odor mitigation, the facility began draining the basins more frequently to prevent the buildup of hydrogen sulfide producing solids. The EQ Basin is drained every couple of weeks, but totally cleaned out only two times per year. The aeration basin and clarifier are cleaned out only one time per year.

The facility times their cleanouts for when production is stopped due to a holiday as the facility operates 24 hours per day. The last cleanout of the EQ Basin was over Memorial Day 2023. Facility personnel acknowledge that there are more odors during cleanout than during normal operations. As another preventative from producing odors that can be a nuisance to the community, the facility abandoned its plans to conduct the next EQ Basin cleanout on the 4th of July weekend to a time later in the year when people in the community would not have their windows open.

The facility is continuing to explore additional ways to prevent odors from impacting the nearby neighborhoods and is in contact with the City of St. Charles' Public Works Manager, Mr. Tim Wilson and spoke with the City Council.

EPA discussed the requirements under their Permit. They have one sampling point and they are required to sample for ammonia, Carbonaceous Biochemical Oxygen Demand (CBOD), Chemical Oxygen Demand (COD), Oil and Grease, pH, and Total Suspended Solids (TSS) twice per year. Flow to the City of St. Charles is measured. The facility tests daily for Biochemical Oxygen Demand (BOD), ammonia, pH, and TSS for their own process controls.

EPA observed the sample analysis from the last semi-annual sampling on March 29, 2023. All parameters were within the required limits and the Chain of Custody and preservation of the samples were completed properly.

Facility Walkthrough

See Attachment A for the photolog of the photos taken during the facility walkthrough.

The facility is divided into two plants, Plant 1, and Plant 2. Plant 1 was built in 1974 and Plant 2 was built in 1978. The processes are duplicated in both plants and the plant buildings were connected by a shipping dock in 2008. EPA began the walkthrough at the Aging Area of Plant 1. In the Aging Area, sausages are hung in bays, called Environment Chambers, and sprayed with water to cool them before they hang for a period to age. When the sausages are sprayed, the facility uses approximately 6000 gallons per hour per Environmental Chamber. There are floor drains that take the wastewater from the Environmental Chambers to the wet well. EPA observed the identical Environmental Chambers in several hallways.

EPA did not enter the sausage making room, as it needs to stay clean for the food processing, but EPA did observe the drying and aging sausages and the packaging areas.

EPA then went outside Plant 1 and walked to the Wet Well Room with facility personnel. The Wet Well is fifteen feet deep and is drained out once per quarter. The solids from the bottom of the Wet Well go to a digester. Every Wednesday, solids are skimmed out of the digester and are picked up by a biofuel company.

Following the Wet Well, wastewater is pumped through two grinder pumps and then transferred to a wet well in the Wastewater Office via two transfer pumps.

EPA then walked to the Wastewater Office. The wet well in the Wastewater Office receives the wastewater where it is treated with chlorine to disinfect, ferric chloride is added as a flocculant and coagulant, and caustic soda is used to raise the pH. The wastewater is then pumped to the EQ Basin. Stormwater from the ground around the wastewater plant is directed to a trench drain which directs the flow to the wet well in the Wastewater Office.

EPA then observed the wastewater in the EQ Basin. The EQ Basin was only one third full on the day of the inspection. The wind was from the west and EPA inspector Rogers could smell the faint citrus odor from the top of the EQ Basin.

EPA then observed the wastewater in the aeration basin. EPA inspector Rogers could not smell any odor from the top of the aeration basin. The dissolved oxygen in the aeration basin was 2.24 mg/L on the day of the inspection. An alarm is present in the aeration basin that will indicate if dissolved oxygen is too low. Facility personnel walk the perimeter of the wastewater treatment one time every shift and document their inspections.

EPA then observed the clarifier. Wastewater flows to the clarifier from the aeration basin via gravity and then via gravity from the weirs of the clarifier to the city's sanitary sewer. EPA observed foam on the surface of the wastewater in the clarifier and some solids built up on the weirs. The facility uses a hose to spray the surface of the wastewater in the clarifier to break up the foam and will manually clean the weirs one time per week with bleach.

Before flowing to the city's sanitary sewer, the flow is measured. The flow meters are calibrated two times per year.

There is a building on the north side of the property that used to be Swift Foods. Brown and Serve Sausages used to be made in that building, but Smithfield Foods purchased it, and it is now only used as storage.

Closing Conference

EPA provided a closing conference to the facility personnel at 12:15 P.M. EPA mentioned the importance of a continuing focus on preventing odors from affecting the neighboring community.

EPA exited the facility at 12:30 P.M.

3. DOCUMENTS RECEIVED FROM FACILITY

- Wastewater flow diagram.
- City of St. Charles Industrial Waste Discharge Permit No. 104001.
- Suburban Laboratories, Inc. Semi Annual Wastewater Sampling Report from April 13, 2023.

4. AREAS OF CONCERN

- A. None.

5. LIST OF ATTACHMENTS

- A. Photolog