



State of Ohio Environmental Protection Agency

Northeast District Office

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Ted Strickland, Governor
Lee Fisher, Lieutenant Governor
Chris Korleski, Director

February 12, 2009

RE: INDUSTRIAL WASTEWATER
HOLMES CHEESE COMPANY
9444 STATE ROUTE 39
NPDES PERMIT NO. 3IH00102

Mr. Robert Ramseyer
Holmes Cheese Company
9444 State Route 39
Millersburg, OH 44654

Dear Mr. Ramseyer:

On January 6, 2009, this writer along with Bill Zawiski, conducted an unannounced inspection of the Holmes Cheese wastewater treatment plant. The inspection was in response to a complaint regarding sludge and foam in Corns Run downstream of the Holmes Cheese plant. The inspection included a walk-through of the treatment system and an inspection of the receiving stream. Samples were collected at the Holmes Cheese final outfall, in Corns Run upstream of the Holmes Cheese discharge, and in Corns Run downstream of the unnamed tributary transporting wastewater from Holmes Cheese.

Treatment System

At the time of the inspection, a heavy foam or scum was apparent on the surface of the treatment lagoon. The clarifier was unsatisfactory at the time of the inspection. Large clumps of sludge were flowing over the weir and into the effluent trough of the clarifier. Heavy solids were also apparent in the parshall flume at the end of treatment. These observations at the clarifier are supported by the analytical results for the effluent.

The sludge lagoon was out of service at the time of the inspection. The sludge wagon was filled. The only sludge storage capacity in the system was a small tank under the sludge press. The tank volume may have insufficient capacity to properly process the sludge generated in the treatment system. Sludge storage capacity of the tank relative to sludge production should have been evaluated before the sludge lagoon was taken out of service.

During a subsequent inspection of the treatment system, you indicated that the sludge lagoon will not be returned to service. All sludge was to be wasted to the small tank under the filter press. You also indicated that the filter press could not be used in the cold temperatures. The inability to press sludge further limits the ability of Holmes Cheese to move sludge out of the treatment system.

The depth of sludge in the clarifier was monitored during the January 6th inspection and determined to be four feet. Brian Ramseyer indicated that the system operates best when the sludge depth is approximately one foot. It appears that taking the lagoon out of service along with the inability to press sludge is the cause of sludge in the streams as described below.

Be advised that eliminating the sludge lagoon and replacing the lagoon with the concrete storage tank constitutes a modification of the treatment system without prior approval of the director.

On December 31, 2008, this writer received an e-mail from you indicating that over night there was a failure in the waste treatment plant flocculation equipment, and that the system was operating properly at the time the e-mail was sent. However, during the telephone complaint received December 28, 2008, the complainant stated that the foam and sludge in the stream was there at least one month before he filed the complaint. In addition, observations made during the January 6, 2009 inspection showed that the problem was continuing. It appears that the cause of the treatment plant upset is something other than problems with the flocculation system since stream impacts were observed before the reported malfunction, and they continued to be present at least one week after the flocculation system was repaired.

Receiving Streams

A visual inspection of the unnamed receiving stream and Corns Run was conducted during the inspection. The unnamed tributary was heavily impacted at the point of discharge. Substrate in the unnamed stream was buried under treatment plant sludge. White foam was apparent on the surface of the tributary.

Corns Run downstream of the unnamed tributary had heavy sludge deposits on the substrate. On the surface, the sludge was identical to the color and texture of the sludge leaving the clarifier. Below the surface, the sludge appeared black and anaerobic. Filamentous growth was also apparent on the substrate downstream of the unnamed tributary. White foam in Corns Run was apparent approximately 0.5 mile downstream of the unnamed tributary. Sludge was also observed in Sapp Run approximately 2.5 miles downstream of Homes Cheese.

Corns Run upstream of the unnamed tributary had no sludge deposits, filamentous growth or foam. The substrate in Corns Run upstream of the unnamed tributary was clean cobble. The impact on Corns Run downstream of the unnamed tributary originated at Holmes Cheese.

Pictures taken on the day of the inspection are attached. The pictures support the observation stated above.

Sample Results

Following are analytical results for samples collected during the complaint inspection. Effluent samples were collected at Outfall 001.

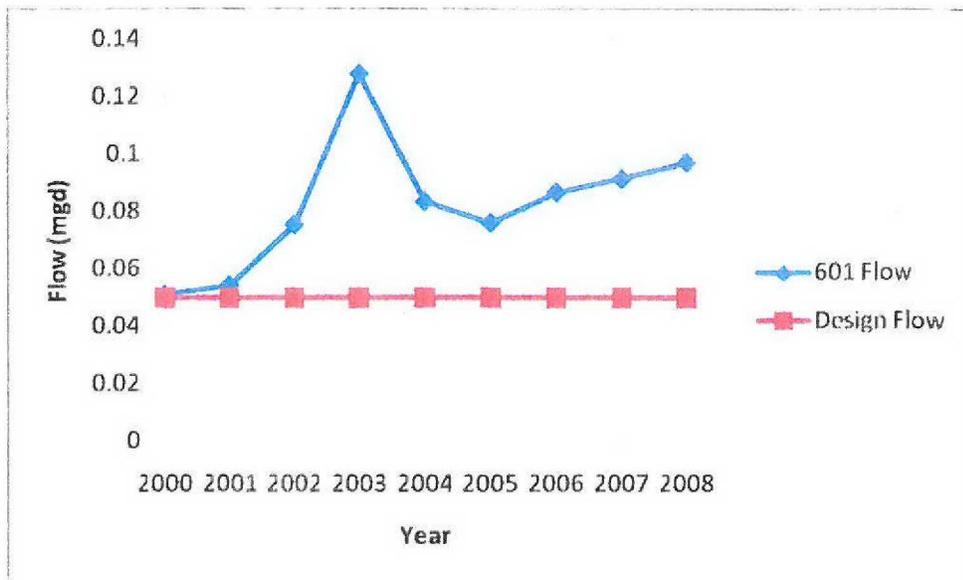
Parameter	Upstream	Downstream	Effluent	Permit Limit
CBOD ₅ (mg/l)	<2	26	31	23
TSS (mg/l)	<5	29	47	None
Ammonia (mg/l)	<0.05	1.41	1.84	None
Nitrate + Nitrite (mg/l)	2.68	1.63	0.64	None
Phosphorus (mg/l)	0.023	38.1	67.8	None

Flow Rate Trend Analysis

In an attempt to evaluate possible causes for the condition of the treatment system during the inspection, this writer conducted a flow trend analysis for Holmes Cheese. Attached is a graph that demonstrates the trend in flow rate over time. The red line identifies the design average

daily flow for the treatment system when the system was first installed. The actual flow that the system is capable of properly treating may be less than originally proposed if the aeration lagoon has not been cleaned. The accumulation of solids in the aeration lagoon could reduce the volume available for treatment.

You may note that the annual average flow has been exceeding the original design of the system since 2001. This increase in flow to the system and the accumulation of solids in the lagoon could result in a decreased retention time in the lagoon and subsequent reduction in the treatment efficiency.



Violations

The following potential violations of the NPDES Permit, Ohio Administrative Code (OAC) 3745-1 and Ohio Revised Code (ORC) 6111.46 were identified as a result of this complaint inspection and the flow trend analysis.

1. The treatment plant sludge in the streams constitutes a violation of OAC 3745 – 04(A). Holmes Cheese is in violation of the regulation by permitting the discharge of sludge that settled to form putrescent or otherwise objectionable sludge deposits. Though no biological survey of Corns Run was conducted at the time of the complaint inspection, it is conceivable that the sludge deposits in the stream will also adversely affect aquatic life.
2. The foam in the streams constitutes a violation of OAC 3745-04(B). Holmes Cheese is in violation of the regulation by discharging foam that is unsightly as evidenced by the complaint filed with this office.
3. The analytical results of the effluent indicate a violation of the NPDES Permit limit for CBOD₅ at outfall 001. The reported CBOD₅ concentration in the final effluent was 31 mg/l and the limit is 23 mg/l.

Though no limit for TSS exists in the interim table for outfall 001, it should also be pointed out that the TSS concentration in the sample exceeded the interim TSS limit established for outfall 601 at the end of treatment. The only wastewater that enters the waste stream after outfall 601 is evaporator water. Because the evaporator water is to be free of suspended solids, it is conceivable that the wastewater being discharged during the complaint inspection exceeded the interim TSS limit at outfall 601. Future samples will be collected at both outfalls 601 and 001.

4. OAC 3745-42-02(a) states that, "... no person shall cause, permit or allow the installation of a new disposal system or cause, permit or allow the modification of a disposal system without first obtaining an individual permit to install, a general permit to install or plan approval in accordance with this chapter and all other applicable rules and laws." Modifying the treatment system by replacing the sludge lagoon with the small concrete tank may have required prior approval of the director. The calculations made by Holmes Cheese to demonstrate the practicality of replacing the sludge lagoon while retaining the sludge wasting capacity of the treatment system must be provided to this office for review in order to determine if a permit to install was necessary for the change.

5. Ohio Revised Code 6111.46 states that, "No municipal corporation, county, public institution, corporation, or officer or employee thereof or other person shall establish as proprietor, agent, employee, lessee, or tenant, any garbage disposal plant, shop, factory, mill, industrial establishment, process, trade, or business in the operation of which an industrial waste is produced, or make a change in or enlargement of a garbage disposal plant, shop, factory, mill, industrial establishment, process, trade, or business whereby an industrial waste is produced or materially increased or changed in character, or install works for the treatment or disposal of any such waste until the plans for the disposal of the waste have been submitted to and approved by the director of environmental protection." In the event production was increased resulting in a subsequent increase in wastewater flow without prior review from the director may constitute a violation of ORC 6111.46. Please provide a response explaining the cause for the increase flow volume since 2001.

Compliance

The Monthly Operating Reports submitted for the period covering October 2007 through December 2008 were reviewed for compliance with the Holmes Cheese NPDES Permit. Following is a list of exceedences identified for Outfalls 001 and 601 during the review period.

Date	Outfall	Parameter	Frequency	Limit	Reported Value	Date
October 2007	001	Nitrogen, Ammonia (NH3	1D Conc	3.0	6.05	10/9/2007
October 2007	001	Nitrogen, Ammonia (NH3	1D Qty	1.46	4.53405	10/9/2007
October 2007	001	Nitrogen, Ammonia (NH3	30D Qty	0.98	.98679	10/1/2007
October 2007	001	Dissolved Oxygen	1D Conc	5.0	4.89	10/30/2007
October 2007	001	Residue, Total Dissolv	1D Qty	1282	1498.86	10/9/2007
October 2007	601	Total Suspended Solids	1D Conc	80.0	86.	10/4/2007
October 2007	601	Total Suspended Solids	30D Conc	33.0	37.	10/1/2007
October 2007	601	Total Suspended Solids	1D Qty	15.17	39.7122	10/4/2007

Date	Outfall	Parameter	Frequency	Limit	Reported Value	Date
October 2007	601	Total Suspended Solids	1D Qty	15.17	19.4170	10/11/2007
October 2007	601	Total Suspended Solids	30D Qty	6.30	17.4655	10/1/2007
October 2007	601	Biochemical Oxygen Dem	1D Qty	10.27	12.4677	10/4/2007
October 2007	601	Biochemical Oxygen Dem	30D Qty	4.39	4.71308	10/1/2007
November 2007	001	Dissolved Oxygen	1D Conc	5.0	3.26	11/13/2007
November 2007	001	Dissolved Oxygen	1D Conc	5.0	4.	11/20/2007
November 2007	001	Dissolved Oxygen	1D Conc	5.0	4.5	11/27/2007
December 2007	001	CBOD 5 day	30D Conc	15	15.75	12/1/2007
December 2007	001	CBOD 5 day	1D Qty	11.2	13.5919	12/4/2007
December 2007	001	CBOD 5 day	1D Qty	11.2	12.6721	12/11/2007
December 2007	001	CBOD 5 day	1D Qty	11.2	11.9227	12/27/2007
December 2007	001	CBOD 5 day	30D Qty	7.32	10.9925	12/1/2007
December 2007	001	Dissolved Oxygen	1D Conc	5.0	4.87	12/4/2007
December 2007	001	Dissolved Oxygen	1D Conc	5.0	4.14	12/11/2007
December 2007	001	Dissolved Oxygen	1D Conc	5.0	3.75	12/18/2007
January 2008	001	CBOD 5 day	1D Qty	11.2	12.9901	1/22/2008
January 2008	001	CBOD 5 day	30D Qty	7.32	7.44282	1/1/2008
January 2008	001	Dissolved Oxygen	1D Conc	5.0	4.5	1/10/2008
January 2008	001	Dissolved Oxygen	1D Conc	5.0	3.2	1/29/2008
January 2008	601	Total Suspended Solids	1D Qty	15.17	28.3496	1/10/2008
January 2008	601	Total Suspended Solids	30D Qty	6.30	7.14684	1/1/2008
February 2008	001	Fecal Coliform	1D Conc	2000	34700.	2/26/2008
February 2008	001	Fecal Coliform	30D Conc	1000	2907.06	2/1/2008
February 2008	001	Dissolved Oxygen	1D Conc	5.0	1.4	2/28/2008
February 2008	601	Total Suspended Solids	1D Qty	15.17	24.0829	2/7/2008
February 2008	601	Total Suspended Solids	30D Qty	6.30	10.3713	2/1/2008
March 2008	001	Fecal Coliform	1D Conc	2000	10000.	3/18/2008
March 2008	001	Fecal Coliform	1D Conc	2000	8000.	3/25/2008
March 2008	001	Dissolved Oxygen	1D Conc	5.0	4.37	3/18/2008
March 2008	001	Dissolved Oxygen	1D Conc	5.0	1.46	3/25/2008
March 2008	001	Residue, Total Dissolv	1D Conc	2625	3110.	3/18/2008
March 2008	001	Residue, Total Dissolv	1D Qty	1282	2024.67	3/18/2008
March 2008	001	Residue, Total Dissolv	30D Qty	854	1106.14	3/1/2008
March 2008	601	Biochemical Oxygen Dem	1D Qty	10.27	17.9522	3/25/2008
March 2008	601	Biochemical Oxygen Dem	30D Qty	4.39	5.95854	3/1/2008
April 2008	001	CBOD 5 day	1D Qty	11.2	12.8023	4/22/2008
April 2008	001	CBOD 5 day	30D Qty	7.32	8.57197	4/1/2008
April 2008	001	Dissolved Oxygen	1D Conc	5.0	3.98	4/15/2008
April 2008	601	Biochemical Oxygen Dem	30D Qty	4.39	4.54862	4/1/2008
May 2008	001	CBOD 5 day	1D Qty	11.2	14.7123	5/6/2008
June 2008	001	Nitrogen, Ammonia (NH3)	1D Conc	3.0	10.	6/6/2008
June 2008	001	Nitrogen, Ammonia (NH3)	1D Conc	3.0	3.54	6/10/2008
June 2008	001	Nitrogen, Ammonia (NH3)	30D Conc	2.0	2.90313	6/1/2008

Date	Outfall	Parameter	Frequency	Limit	Reported Value	Date
June 2008	001	Nitrogen, Ammonia (NH3)	1D Qty	1.46	6.75433	6/6/2008
June 2008	001	Nitrogen, Ammonia (NH3)	1D Qty	1.46	2.94427	6/10/2008
June 2008	001	Nitrogen, Ammonia (NH3)	1D Qty	1.46	2.40647	6/13/2008
June 2008	001	Nitrogen, Ammonia (NH3)	1D Qty	1.46	1.84706	6/17/2008
June 2008	001	Nitrogen, Ammonia (NH3)	30D Qty	0.98	2.08595	6/1/2008
June 2008	001	CBOD 5 day	1D Conc	23	109.	6/10/2008
June 2008	001	CBOD 5 day	30D Conc	15	33.	6/1/2008
June 2008	001	CBOD 5 day	1D Qty	11.2	90.6570	6/10/2008
June 2008	001	CBOD 5 day	30D Qty	7.32	26.6280	6/1/2008
June 2008	601	Total Suspended Solids	1D Qty	15.17	19.7075	6/10/2008
June 2008	601	Total Suspended Solids	30D Qty	6.30	7.74524	6/1/2008
June 2008	601	Biochemical Oxygen Dem	1D Conc	54.0	79.	6/10/2008
June 2008	601	Biochemical Oxygen Dem	30D Conc	23.0	29.25	6/1/2008
June 2008	601	Biochemical Oxygen Dem	1D Qty	10.27	45.7911	6/10/2008
June 2008	601	Biochemical Oxygen Dem	30D Qty	4.39	15.8221	6/1/2008
July 2008	001	Dissolved Oxygen	1D Conc	5.0	4.4	7/22/2008
July 2008	601	Total Suspended Solids	30D Qty	6.30	9.46629	7/1/2008
August 2008	001	CBOD 5 day	30D Conc	15	16.5	8/1/2008
August 2008	001	CBOD 5 day	1D Qty	11.2	11.5253	8/28/2008
August 2008	001	CBOD 5 day	30D Qty	7.32	10.5213	8/1/2008
August 2008	001	Dissolved Oxygen	1D Conc	5.0	4.79	8/5/2008
August 2008	001	Residue, Total Dissolv	1D Qty	1282	1302.04	8/8/2008
August 2008	001	Residue, Total Dissolv	1D Qty	1282	1288.41	8/15/2008
August 2008	001	Residue, Total Dissolv	30D Qty	854	965.006	8/1/2008
August 2008	601	Biochemical Oxygen Dem	1D Conc	54.0	55.	8/19/2008
August 2008	601	Biochemical Oxygen Dem	1D Qty	10.27	11.2414	8/19/2008
August 2008	601	Biochemical Oxygen Dem	30D Qty	4.39	6.18658	8/1/2008
Sept 2008	001	Nitrogen, Ammonia (NH3)	1D Qty	1.46	1.91748	9/30/2008
Sept 2008	001	Fecal Coliform	1D Conc	2000	2501.	9/2/2008
Sept 2008	001	CBOD 5 day	1D Conc	23	30.	9/30/2008
Sept 2008	001	CBOD 5 day	1D Qty	11.2	19.3035	9/30/2008
Sept 2008	001	CBOD 5 day	30D Qty	7.32	7.66311	9/1/2008
Sept 2008	001	Dissolved Oxygen	1D Conc	5.0	3.66	9/23/2008
Sept 2008	001	Dissolved Oxygen	1D Conc	5.0	2.12	9/30/2008
Sept 2008	001	Residue, Total Dissolv	1D Qty	1282	1302.41	9/5/2008
Sept 2008	601	Total Suspended Solids	1D Qty	15.17	22.6910	9/2/2008
Sept 2008	601	Total Suspended Solids	1D Qty	15.17	26.5707	9/30/2008
Sept 2008	601	Total Suspended Solids	30D Qty	6.30	11.3981	9/1/2008
Sept 2008	601	Biochemical Oxygen Dem	1D Conc	54.0	70.	9/30/2008
Sept 2008	601	Biochemical Oxygen Dem	30D Conc	23.0	32.2	9/1/2008
Sept 2008	601	Biochemical Oxygen Dem	1D Qty	10.27	17.3277	9/2/2008
Sept 2008	601	Biochemical Oxygen Dem	1D Qty	10.27	103.330	9/30/2008
Sept 2008	601	Biochemical Oxygen Dem	30D Qty	4.39	28.0392	9/1/2008

Date	Outfall	Parameter	Frequency	Limit	Reported Value	Date
October 2008	001	Dissolved Oxygen	1D Conc	5.0	3.68	10/14/2008
October 2008	601	Total Suspended Solids	1D Qty	15.17	20.1362	10/14/2008
October 2008	601	Total Suspended Solids	30D Qty	6.30	7.35899	10/1/2008
November 2008	001	Fecal Coliform	30D Conc	1000	1310.39	11/1/2008
November 2008	001	CBOD 5 day	1D Qty	11.2	13.1604	11/25/2008
November 2008	001	CBOD 5 day	30D Qty	7.32	7.43279	11/1/2008
November 2008	601	Biochemical Oxygen Dem	30D Qty	4.39	4.43697	11/1/2008
December 2008	001	CBOD 5 day	1D Qty	11.2	15.9878	12/2/2008
December 2008	001	Dissolved Oxygen	1D Conc	5.0	4.74	12/15/2008
December 2008	001	Dissolved Oxygen	1D Conc	5.0	4.61	12/17/2008
December 2008	001	Dissolved Oxygen	1D Conc	5.0	3.79	12/18/2008
December 2008	001	Dissolved Oxygen	1D Conc	5.0	4.61	12/19/2008
December 2008	001	Dissolved Oxygen	1D Conc	5.0	3.91	12/31/2008

Be advised that violations of the NPDES Permit constitute violations of Ohio Revised Code 6111.07. A response to this complaint inspection must be submitted no later than March 13, 2009. The response must include a general plan to bring the treatment system into consistent compliance with the NPDES Permit

Possible Causes to Consider

Following are possible causes for the condition of the treatment system and receiving streams at the time of the complaint inspection. These possible explanations are based on observations made during the inspection.

- a. Failure to have a full time operator – The treatment system is a biological system that requires almost constant oversight from a trained and licensed individual. An e-mail from Brian Ramseyer dated February 6, 2009 indicated that an individual has been assigned to the treatment plant and that the individual will begin operator classes soon. This is a positive step for consistent operations and compliance.
- b. Possible hydraulic and organic overload - Based on the flow analysis presented above, it is possible that the plant is hydraulically overloaded. With the hydraulic overload, organic overload may also be an issue that needs to be monitored so that adjustments in production and treatment can be made. It is recommended that Holmes Cheese review Part III, Item 30 of the NPDES Permit which addresses this issue.
- c. The upset of the treatment plant and the violations identified above may have possibly resulted from failing to periodically remove sludge from the aeration lagoon. A build-up of sludge will reduce the capacity of the lagoon causing the wastewater to be inadequately treated. If this situation does exist, it would compound problems associated with excess flow and organic loading of the treatment system.
- d. As discussed above, having inadequate sludge wasting capacity could be one of the causes for the discharge of sludge to the stream. If sludge is not properly processed in

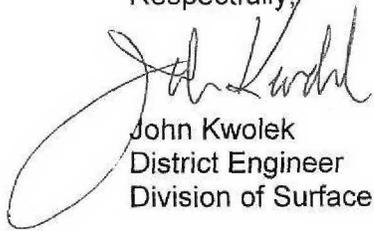
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a timely manner, the sludge could build up in the system and discharge over the clarifier weir to the stream. Sludge must be properly managed for parameters such as food to mass ratio (f/m ratio) and the Mean Cell Residence Time (MCRT). Having adequate sludge wasting capacity is necessary to enable Holmes Cheese to control these parameters.

As discussed above, a response to this complaint inspection report must be provided to this office which includes calculations made to show that the concrete tank under the filter press has sufficient capacity to permit adequate wasting of sludge. The response should be submitted no later than March 13, 2009

You may contact this office at (330) 963-1251 to discuss any questions you may have.

Respectfully,



John Kwolek
District Engineer
Division of Surface Water

JK/mt

File: Industrial/Holmes Cheese/Permit and Cheese

Holmes Cheese
January 6, 2009 Complaint



January 6, 2009 - Driveway bridge @ RM 0.75 approximately 0.4 miles downstream of Holmes Cheese.



Looking upstream in Corns Run 0.4 miles downstream of Holmes Cheese @ RM 0.75 of Corns Run.



January 6, 2009 - claims of pipe install to adjacent tributary

