CHS Inc. 395 164th Street,
PO Box 894
South Sioux City, NE 68776
402-404-8500

February 2, 2017

Desiree McCaslen
Pretreatment Manager
City of Sioux City, IA
3100 South Lewis Blvd
Sioux City, IA 51106

Dear Ms. McCaslen:

I am writing in response to your requests for information presented on February 1, 2017 at a meeting held at the CHS plant located in South Sioux City, NE. Attendees at this meeting in addition to you and I were Bob Livermore, representing the City of South Sioux City, NE, and Scott Duncan, David Weinmann, Jeremy MacClure and Nick Lindberg (via phone), representing CHS. The purpose of the meeting was to review a voluntary, self-reported deviation from the previously-applicable CHS permit that occurred on January 29, 2017 as well as to review concerns that you had about the correlation of CHS production starting on Sunday and issues that Big Ox Energy of South Sioux City, NE were experiencing at their operation. I have responded to each request for information. At the end of the letter I have submitted a request for additional information from your organization.

CHS' Continued Voluntary Participation Under the Previously-applicable Permit

As a threshold matter, it is important to point out that the deviations at issue are from a standard found in a Permit from Sioux City to CHS that is no longer applicable. The Permit, issued April 14, 2014, is for "[t]he discharge of process waters into the sanitary sewer system *for the purpose of treating the same at the City's WWTP*" (emphasis added). As you are aware, on or about October 17, 2016, CHS has been sending its waste water to Big Ox Energy ("BOE") as a raw material in BOE's energy process (official communication as to when the valve that diverts to BOE or the City of Sioux City is not always shared with CHS). Per Article 8 of the contract that BOE has with CHS, BOE is responsible for alternative disposal of CHS wastewater during any BOE outage. Therefore, CHS is not discharging process waters for the purpose of treatment at the City's WWTP. Accordingly, the April 14, 2014 Permit is no longer applicable, and as such, the water standards within the April 14, 2014 Permit are no longer controlling.

Despite there being no applicable authority imposing standards upon the wastewater that CHS sends to BOE for their energy process, CHS desires to be a good corporate citizen and neighbor and therefore continues to voluntarily comply with the now-defunct April 14, 2014 Permit. This is why CHS self-reported the January 29, 2017 event. It is important for CHS to see BOE succeed in its efforts.

Daily Effluent Report Methodology

As reviewed during the meeting, CHS runs an automated report once a day at 12 midnight which presents by hour for the past 24 hours the hourly flow and the average hourly pH of that flow. The "Average Hourly pH" as shown on our daily "Effluent Hourly Data" report is calculated as a flow-weighted average. This calculation is done by multiplying the pH

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by the flow for each sampled time in the hour, summing the multiples, then dividing by the sum of the flow for that hour. An example of the calculation made is in the table below.

Time	pH	Flow (gpm)	pH * Flow
11:00	6.20	350	2170.00
11:05	6.25	285	1781.25
11:10	10.5	125	1312.50
11:15	7.8	450	3510.00
	Sum	1210	8773.75
	Flow-Weighted Average pH	7.25	
	(Sum of pH*Flow)/(Sum of Flow) = 8773.75/1210 = 7.25		

Summary of self-reported event and explanation of response time delay

I have included with this letter a spreadsheet titled "Jan 2017 Effluent pH data". There are two tabs on that document per your request. The first is the data from the deviation event, the second is the data collected for the entire month of January. As discussed at the meeting, the voluntarily reported deviation of pH above 11.5 started at 11 am on 1/29/17 and was resolved at 12 am on 1/30/17. The delay in addressing the issue is due to difficulty in troubleshooting the system due to the same HCL acid pump being tied to production and to pre-treatment of wastewater. Other contributions to the delayed response is that the system as it was configured only issued a report one time per day at 12 am and the alarm function to the plant operators was not noticed as it was intermixed with other alarms and notices that occur during sanitation and startup of the facility. The failure of the pump wasn't known to management and maintenance staff immediately on failure of the ability to control the system. I will explain how CHS will resolve the notification of system disruption issue later in this letter.

Corrective Actions-Immediate

CHS has put the following Corrective Actions in place as a result of the HCL pump failure event.

1. Created new alarm within plant wide operating system to notify all plant personnel of an issue with the effluent pH control. Provided training as to the expectations should that system alarm.
2. Created an automated prompt that will be sent by email and text to a phone list that includes maintenance and managers. A dial up system has been ordered. When it arrives and is installed in 4-6 weeks that same phone list will receive a phone call should a problem occur.
3. The maintenance department is now taking grab samples 2x per 12 hour shift as an additional precaution as the alarm system is tested.
4. Adjustments have been made to how many tanks are released at a given time during production and sanitation to make sure that flows do not exceed the ability of the system to pH adjust.
5. Updating daily checklist and adding sign off requirements for review.

Corrective Actions- Long Term

Prior to this discharge event, CHS had met with you on December 2nd to discuss concerns that you had related to surge discharges and pH control. At that meeting we discussed that potentially the Big Ox Energy facility would struggle with wide variations in pH and loading due to the size of the EQ tank that was being used by Big Ox Energy in comparison to the EQ system and the mixing that occurs at the City of Sioux City, IA facility. CHS had started down the road to

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research options should additional work be necessary to accommodate the change in infrastructure with the introduction of Big Ox Energy. The following list contains some of these items.

1. Interviewing Consulting Firms with the intention of hiring one by March 1st to review our current system and make suggestions for improvement. The goal is to evaluate these opportunities and determine when those projects that are identified as being feasible can be implemented.
2. Evaluating the opportunity to pull high strength side stream flows out of the system and process by alternate means.
3. Evaluating opportunity to change the size of the Effluent tank at CHS to improve retention time and containment of deviations for further processing.

Concerns/Requests of City of Sioux City/South Sioux City: CHS requests a copy of all sample data for our facility processed by the City of Sioux City from January 1 2016- January 31, 2017. Data should have time and date of sample recorded. CHS will use this data to test the accuracy of our sampling process and monitoring systems.

I thank you for facilitating the discussion to improve the CHS process and look forward to your response. Please let me know if I have omitted any point of which you had concern. Please feel free to call with questions at 402-404-8522 of 402-241-7377 (cell).

Sincerely,

Chris Oehler
Plant Manager- CHS

Enclosure:
January 2017 data- effluent pH

CC:
Tom Malecha
William Minor
Jason Trask
Eric Colvin
Eric Larson
Mark Jundt