Ohio | Environmental Protection Agency

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

September 11, 2012

RE: Reid Elementary School WWTP
Inspection and Notice of Violation
NPDES Permit 1PT00120*AD
Clark County

Mr. Brian Kuhn
Assistant Superintendent
Clark-Shawnee Local School District
3680 Selma Road
Springfield, OH 45502

Dear Mr. Kuhn:

On August 29th, I met with Brenda and Joe Sweeney to conduct an inspection of the wastewater treatment plant serving Reid Elementary School. The inspection was a follow-up to my unsuccessful attempt to inspect the plant on August 10th.

A review of your Discharge Monitoring Reports (DMRs) from July 2010 through July 2012 revealed the following reported violations:

Date		Parameter	Limit Type	Limit (mg/l)	Reported Value (mg/l)
2010	November	Total Suspended Solids	Mo. Avg.	12	20
	November 15-21		Wk. Avg.	18	20
	December	Total Suspended Solids	Mo. Avg.	12	32
		CBOD5	Mo. Avg.	10	14
	December 8-14	Total Suspended Solids	Wk. Avg.	18	32
2011	January	Total Suspended Solids	Wk. Avg.	12	33
	January 1-7		Mo. Avg.	18	33
	February	Total Suspended Solids	Mo. Avg.	12	18
	March	Total Suspended Solids	Mo. Avg.	12	19
	March 15-21		Wk. Avg.	18	19

There is little to be gained from having you try to provide explanations for the dated violations. However, please note that you need notify this office of violations at the time they occur along with explanation(s) for their cause, remedies employed and plans to avoid violations from recurring. Please ensure that you meet this obligation for any future violations.

Southwest District Office
401 East Fifth Street
Dayton, OH 45402-2911

937 | 285 6357
937 | 285 6249 (fax)
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Findings from my inspection are as follows:

Condition of Clarifier

The observed condition of the clarifier was completely unacceptable as evidenced by floating trash, turbid grey water, mosquito larvae all over the top of the water, no skimming, clear water in the sludge return lines (instead of heavy brown sludge) and heavy black solids in the effluent weir. It is unclear how long these observed conditions have existed, but it is my impression that it was not a short time. The observed conditions must be corrected immediately and not be allowed to recur.

I encourage you to consider utilizing on-site staff to identify conditions that look out of the ordinary so they can notify the operator of record (Brenda Sweeney) to take corrective measures quickly. Ms. Sweeney should be able to provide staff with a check list of conditions (both good and bad) to look for.

I plan to revisit the wastewater plant to see if the observed conditions have been corrected and would appreciate a summary of corrective actions taken to remedy them.

Equalization Tank

1. At the time of my inspection there was no aeration in the equalization tank. It was revealed that the blower was not operating and was manually activated. Upon activation, a septic odor became noticeable to me indicating that the blower hadn't been operating for some time. Although I didn't track its operation carefully after this time, it was my recollection that the blower was turning off indicating that there may be a fault condition needing attention. Please ensure the contents of the equalization tank are kept aerated to avoid odors and solids settling.

2. Ms. Sweeney mentioned past problems with the wastewater treatment system being caused by floor cleaning/stripping/waxing. I suggested that, in anticipation of such an event, the level in the equalization tank could be increased to provide dilution of the wastewater from floor resurfacing activities. Along with this, reducing the forward flow to the aeration tanks until school is back in session would lessen the impact of the floor refinishing wastewater on the plant. Please recognize that floor strippers can be very detrimental to the operation of a wastewater treatment plant as the chemicals can kill the microbes. It may be necessary to change how floor refinishing is practiced at the school.

3. If very little wastewater is generated by school operations during summer breaks, I suggest that you consider the idea of accumulating whatever small amount of wastewater flow is generated in the equalization tank (maintaining aeration) by de-

activating the equalization pumps. This would turn the equalization tank into essentially a holding tank. Solids in the aeration tanks would be removed by 'wasting' them to the sludge holding tank instead of returning them to the aeration tanks. Once school was ready to start up, you would 'seed' the plant with activated sludge from an active wastewater treatment facility and then resume normal wastewater processing. Please let me know if you plan to look into this possible mode of operation.

Aeration Tanks

The first aeration tank was off-line with all wastewater flow being directed to the second aeration tank. The contents of both the first and second tanks were very thin and did not exhibit the appearance of a healthy microbial population (typically a color and consistency of chocolate milk).

I believe there are likely two contributing causes for this condition. The first is that without any wastewater being generated by the school since the beginning of June, the microbial population in the treatment plant likely starved to death and now a new population is trying to become established.

For facilities with seasonal flows, such as schools, this problem is often addressed by 'seeding' the plant with active microbes (in the form of mixed liquor) hauled from another facility's aeration tanks or clarifier. Please work with Ms. Sweeney to develop a plan to ensure proper operating conditions exist in the wastewater treatment plant at the beginning of future school years.

The second and more troubling likely cause is that the return activated sludge (RAS) was clear which means that any biomass generated in the aeration basin is not settling to the bottom of the clarifier for return to the aeration basin. RAS is typically thick and dark brown. This can be caused by what is called 'rat-holing' that is typically remedied by regularly scraping down the sides of the clarifier. Please ensure good sludge return to the aeration tank.

Also, since the first aeration tank is being bypassed, the RAS should be directed to the aeration tank where raw influent is being directed so that the concentrated microbes are introduced to the raw sewage (food) right away.

Finally, it will be necessary to evaluate the need to bring both aeration tanks on-line based on the flow to the plant as measured by the flow meter after the necessary corrections (identified below) are made to it.

Flow Measurement

Reported flows have consistently been around 1,500 gallons per day. With about 600 students/staff, expected flow should be about 9,000 gpd (based on the design flow of 15 gpd/student). The discrepancy is likely based on my observation that the weir plate in the discharge tank is not sealed to the tank which causes the water to leak under the weir and the ultrasonic level sensor to subsequently measure an artificially low water level. The sensor is also installed in the wrong location; it should be between the weir and the stilling baffle. Please arrange to correct this condition as soon as possible so that accurate flow data is reported. You will also need to recalibrate the flow meter. Please include a note with your Discharge Monitoring Report (DMR) indicating the date the flow meter readings reflect the leak being fixed, the relocation of the sensor and the recalibration of the meter.

Please note that flow is required to be monitored daily which necessitates someone recording the reading from the flow meter. This reading should be made at about the same time every day and could coincide with when daily turbidity observations are made and recorded. Flow is not required to be recorded on days when the school is not normally staffed (weekends and holidays).

Sampling Documentation

In reviewing the chain of custody sheets and lab analytical reports, I have identified the following issues that need to be addressed:

1. There is no indication that samples are properly preserved at the time of collection until they are analyzed. All samples must at least be refrigerated to less than six degrees Celsius and documented as such on the chain of custody sheet. Please ensure this practice for future monitoring.

2. It appears that samples are collected from several wastewater treatment plants throughout the day and then held until they are picked up at the same time (often the next day). While the date samples are set out for pick up is noted, the time is not. Please ensure both the date and time Ms. Sweeney relinquishes the samples from her possession are entered on the chain of custody sheet in the space provided.

3. Several sample records indicate CBOD analysis occurring very close to the end of the maximum 48-hour holding time. Please note that CBOD analysis should begin within six hours of collection when possible. Also, several sample collection times for different locations are the same. Please ensure records are accurate.

Operator Log Book

Ms. Sweeney has provided small bound notebooks to record her time spent at the plant and will keep them in the control panel. I ask that her arrival and departure time be recorded. Notes for any unique activity or noteworthy observations should be included with her log entries. It may be that conditions or activity will sometimes warrant taking up a page or more.

Please provide me a written response to this inspection letter by September 28th addressing the items I have presented. If you have any questions concerning this letter or the attached inspection form, please call or email me.

Sincerely,

Matt Walbridge
Environmental Specialist
Division of Surface Water
(937) 285-6095
matt.walbridge@epa.ohio.gov

MW/tf

Enclosure

ec: Brenda Sweeney

Ohio Environmental Protection Agency

Southwest District Office

NPDES Compliance Inspection Report
Semi-Public Sewage Disposal Inspection Form

Section A: National Data System Coding					
Permit Number	NPDES Number	Inspection Date	Inspection Type	Inspector	Facility Type
1PT00120*AD	***OH0137782***	***8-29-12***	***C***	***S***	***2***

Section B: Facility Info		
Name and Location of Facility Inspected	Entry Time	Permit Effective Date
Clark-Shawnee Local School District ***Rockway Primary and Middle School*** ***3500 West National Road*** ***Springfield, OH 45505***	***10:00 AM***	***11-1-07***
	Exit Time	Permit Expiration Date
	11:30 AM	***10-31-12***
Name(s) and Title(s) of On-Site Representatives	Phone Number(s)	
Brenda and Joe Sweeney	***(937) 605-2748 (cell)***	
Name and Address of Operator of Record	Phone Number(s)	
Brenda Sweeney ***Unified Laboratories*** ***12121 Old Columbus Rd.*** ***South Vienna, OH 45369*** ***Bsweeney4@woh.rr.com***	***(937) 568-4534*** ***(937) 605-2748 (cell)***	
Name, Address and Title of Responsible Official	Phone Number	
Brian Kuhn – Assistant Superintendent ***Clark-Shawnee Local School District*** ***3680 Selma Rd.*** ***Springfield, OH 45502***	***(937) 328-5378***	

Ohio EPA Inspector	Ohio EPA Reviewer
9-11-12	9/11/12
Matt Walbridge Division of Surface Water Southwest District Office Date	Martyn Burt Environmental Supervisor Division of Surface Water Southwest District Office Date

Average Daily Design Flow:	**12,000 Gallons/Day**
Plant Serves:	**600 students/staff**
Average Daily Flow: (Period of Review):	**Approximately 1,400 Gallons/Day (Mid-November 2010 – July 2012) Approximately 1,500 gpd during the 2011-2012 school year Reported to be 1,540 every day during summer 2012.**
Method of flow monitoring:	**Weir/ultrasonic**
Type of alarms for plant:	**High water level**

Pretreatment

Type of Pretreatment: **Trash Trap**
Does the Trash Trap need pumped: **Not Determined**
Maintenance of pretreatment components is: **Not Evaluated**

Comments/Status:

The equalization tank blower was not on and had to be manually turned on. When it was turned on, a septic odor was noticeable. During the inspection, it seemed that the blower kept kicking out. This blower should be operated continuously.

The flow meter is located at the outfall. It is in the wrong location (should be over the stilling well in the middle. Also, the overflow weir is not sealed which causes there to be no water level to measure.

Secondary Treatment (Aeration)

Color of sludge: **Other**
Quality of Sludge: **Thin**
Foam: **None present**
Odor: **No objectionable odor present**

	Yes	No		Yes	No
Aeration is taking place	☒	☐	Plant is septic	☐	☒
Blowers are operating	☒	☐	Blowers are on a timer	☒	☐
Skimmers are operating	☐	☒	Plant is flooded	☐	☒
Diffusers are operating	☒	☐	Grating is present	☒	☐
Sludge return is operating	☐	☒			

Maintenance of aerating equipment is...**Good**

Comments/Status:

Influent was being directed to the second aeration tank. The first aeration tank was being aerated and RAS was being directed to this tank. The mixed liquor was very thin and was more grey than brown. Aeration in the second basin was normal and the mixed liquor looked the same as in the first basin. The return activated sludge (RAS) was clear.

Secondary Treatment
(Settling)

Clarity:	**Solids Present**
Condition of Overflow Weir:	**Excessive Solids Build-up**
Weir is level:	**Yes**
Effluent in weir:	**Heavy Solids**
Clarifier walls need scraped:	**Yes**

Overall maintenance of settling components is: **Poor**

Comments/Status:

There was no overflow into the weir or from the clarifier to the upflow media filter dispite there being forward flow from the EQ tank. There was floating trash (bottle, bag) and the water was very turbid and gray with an extremely large amount of mosquito larvae squiggling around. I could not see where the skimmer was located although it shouldn't have been submerged since the water level was below the overflow weir. There was a lot of black solids in the bottomof the weir. This clarifier looked terrible.

Tertiary Treatment

	Yes	No		Yes	No
Surface sand Filters: **Slow**	☒	☐	**Subsurface**	☐	☒
Distribution box operating	☒	☐	Beds alternated	☒	☐
Are filters ponding/flooding	☐	☒	Beds raked	☒	☐
Sand filters overgrown	☐	☒	Chlorination present	☐	☒
UV present	☒	☐	Dechlorination present	☐	☒

Overall maintenance of components is: **Good**

Comments/Status:

The surface sand filters looked OK. The channel ahead of the UV lamps looked septic and there was yellow/tan foam on the surface. It seemed that the amount of slime and foam would interfere with the transmittance of UV light. The ultrasonic sensor is mounted over the wrong part of the tank. It should be over the portion between the v-notch weir and the stilling baffle. Regardless, the v-notch weir is not sealed to the tank which causes the water level to be below the v-notch which very likely results in artificially low flow values. This condition needs to be fixed.

Sludge Handling/Storage Disposal

Hauler name:	**Unknown**
Disposal Site:	**City of Springfied WWTP**
Sludge wasted from:	**Sludge Holding Tank**
How often is sludge wasted:	**Approx. once per year**

Sludge drying beds: **No** Sludge holding tank: **Yes**

Overall maintenance of components is: **Fair**

Comments/Status:

The sludge holding tank was fairly full. There was no active aeration/mixing but I didn't notice an objectionable odor.

Plant Discharge

Discharge point is a: **Ditch**
Name of discharge point: **Unnamed tributary of North Fork**
Discharge is visible: **No** Quality of Effluent: **Other**

Comments/Status:

No discharge (surprising since school in session) There was not even a trickle of waste water going through the UV channel from the slow surface sand filters.

EFFLUENT LIMIT VIOLATIONS

(Period of Review: July 2010 through July 2012)

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