State of Ohio Environmental Protection Agency

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1PD0000820090622

MIAMI PIQUA WWTP MILLER, JOSEPH 2009/06/22

OhioEPA
State of Ohio Environmental Protection Agency

Southwest District Office

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

June 19, 2009

Mayor and Council
City of Piqua
201 West Water Street
Piqua, OH 45356

RE: Compliance Evaluation Investigation (CEI)
City of Piqua Wastewater Treatment Plant
NPDES Permit 1PD00008*PD/OH0027049
Piqua, Miami County

Mayor and Council:

On June 9, 2009, I conducted a Compliance Evaluation Investigation at the City of Piqua wastewater treatment works. This inspection was conducted to determine compliance with the NPDES discharge permit. Dave Burtner, WWTP Superintendent, and Dave Davis, Assistant WWTP Superintendent, represented the City during this inspection. I also reviewed laboratory procedures with Tim Parker, Lab Technician, and the collection system with Scott Cromes, Collections Supervisor.

Overall, the facility was rated as "Satisfactory", with one item rated as "Marginal". Additional information is provided in the attached detailed inspection report.

Provide a response to the "Items Requiring a Response" section of the inspection report by the dates indicated. Your response should include items completed or planned to be completed to address identified issues. If you have any questions, I can be reached at (937) 285-6109 or by email at joe.miller@epa.state.oh.us .

Sincerely,

Joe Miller
Division of Surface Water

CC: Dave Burtner, Piqua WWTP
City of Piqua Health Department

City of Piqua WWTP Compliance Evaluation Inspection
June 9, 2009

OVERVIEW

The City of Piqua wastewater treatment works is designed to treat and average daily design flow (ADDF) of 4.5 MGD. Average daily flow in 2008 was 4.34 MGD, or about 96% of the ADDF. When wastewater treatment facilities approach or surpass 80% of the ADDF, Ohio EPA highly encourages the development of plans for expansion of the facility to better handle these flows. Piqua is planning to evaluate hydraulic/solids handling improvements in the near future.

Discharge from the Piqua WWTP is to the Great Miami River (GMR) on the south side of the City of Piqua. Operators currently have the ability to either discharge from outfall 001 (below the former power plant low head dam) or outfall 005 (above the dam pool). Flow is typically discharged from outfall 005 with the intent to freshen and cool the dam pool. Due to deterioration of the effluent pipe to outfall 005, this line is likely to be eliminated in the near future. Final effluent will then be directed through outfall 001.

Influent flows to the Piqua WWTP enter via a 42" on the east side of the GMR and a 36" on the west side of the GMR. When influent flows approach 8.0 MGD during storm events, the flow is throttled by lowering a gate on the 42" influent line. When inline storage of this influent pipe is exceeded, a gate on the 36" influent line is lowered which backs up wastewater inline until it overflows from a flap gate on a vault where the former wastewater plant was located south of the Piqua Power Plant. This discharge volume is not metered. The 36" line is currently being evaluated for possible replacement or relining.

In order to reduce the occurrence of sanitary sewer overflows, the City proposed and is currently constructing an equalization basin. The current and first phase of the EQ basin will provide one million gallons of capacity without pumping. A second phase with influent pumping would allow for three million gallons of storage capacity in the EQ tank.

The Piqua WWTP treatment train is: raw influent screw pumps, bar screening, grit removal, scum removal, preaeration, primary clarification (3), partitioned activated sludge aeration (4) w/ anoxic zones, final clarification (4), chlorine gas disinfection, sulfur dioxide dechlorination, post aeration, and outfall pumping. Solids handling is: anaerobic digestion, mechanical dewatering with a sludge press, and land application at agronomic rates (Burch Hydro). Mixed liquor suspended solids are maintained between 1200 to 1500 mg/l. Sludge retention time is estimated to be 8 days. The waste hydraulic tank sends about 2-3% of solids to the sludge digesters. During normal operation, 2 of the three primary clarifiers are online. The third primary clarifier is put online when flows exceed 5 MGD. The aeration units have six cells each. The first and sixth cells are anoxic while cells two through five are aerated. During summer low flow conditions, one of the four aeration tanks is taken out of service when possible. Aeration is provided by fine bubble diffusers.

Process control testing on the wastewater treatment components includes monitoring dissolved oxygen levels in aeration cells, monitoring nitrogen-ammonia levels, settleability, mixed liquor suspended solids, pH levels, sludge age, and occasional microscopic analysis.

Plant SCADA systems are being upgraded to Ethernet and the computer system in being overhauled.

Piqua WWTP staff currently consists of:
Dave Burtner, Superintendent/WW4
Dave Davis, Assist. Superintendent/WW3
Chris Melvin, Industrial Pre-tmt/WW3
Michael Castro, WW3
John Withrow, WW2
Tim Parker, Lab. Technician, WW3
Greg Peltier, WW3
Mike Belisle, WW1
Larry Wiles, WW3
Robert Bateman, WW1
Tony Mallory, WW3

Piqua WW Collections staff currently consists of:
Scott Cromes, Collection Foreman, WW3
Kevin Grogean, WC2
Howard Philipps, WC1
Alan Miller, Collection Maintenance

Upstream samples are taken at the Main Street Bridge and downstream samples are taken at the Farrington Road Bridge.

Elevated levels of Cadmium in sludge have been reported and in some instances have necessitated the need to return field stockpiles of sludge to the WWTP. Reported influent levels of Cadmium, however, have not been high. Continued research to determine the source of the Cadmium is needed.

Two (2) Total Residual Chlorine effluent limitation violations were reported during the period of review (January 2006 to May 2009). Violation occurred on July 8, 2006 and May 13, 2009. Non-compliance notification was provided as required by the NPDES permit.

Code violations noted from January 2006 to May 2009 include two (2) pH-minimum samples reported as AB – "Analytical Data Lost" on February 8, 2007 and March 2, 2007. This data was reported to have been lost due to SCADA data recording problems. The coding "AE –Analytical Date Not Valid" is planned to be use for these instances in the future. The code "AF – High Stream Water Inundates Sample Site" was used for the upstream sampling location when the GMR was inaccessible due to freezing. This occurred in February 2009.

Frequency effluent violations reported were largely due to either reporting of sludge in dry tons (70316) rather than sludge fee weight, or because holidays were not coded "AN".

The number of sanitary sewer overflows reported using the 300 station since the effective date of NPDES version number 1PD00008*PD (January 1, 2008) were 59.

The worksheet "Collection System Performance Indicator Data Collection Form" is currently being completed by Scott Cromes, the collections supervisor. This worksheet requires a great deal of research into the details of the collection system and is a big step towards starting a comprehensive CMOM (Capacity, Management, Operations, and Maintenance) program. Additional resources are available on the both the Ohio EPA and USEPA websites.

ITEMS REQUIRING A RESPONSE

1. Collection System – Notify me when you have completed the collection system evaluation. As we discussed, September 1, 2009 is a reasonable target date.

2. Wastewater Improvements – Continue to provide updates on the EQ construction progress. Also provide a tentative schedule for the hydraulic/solids handling analysis of the WWTP by July 27, 2009.

3. Cadmium – Provide an update on determining the source of Cadmium in sludge by July 27, 2009. Please coordinate with Matt Walbridge, OEPA – Pretreatment.

4. Operator of Record Form – Complete and submit the operator of record form as soon as possible.

Permit # : 1PD00008*PD
NPDES #: OH0027049

State of Ohio Environmental Protection Agency
Southwest District Office

NPDES Compliance Inspection Report

Section A: National Data System Coding					
Permit #	**NPDES#**	**Month/Day/Year**	**Inspection Type**	**Inspector**	**Facility Type**
1PD00008*PD	OH0027049	6/09/09	C	S	1

Section B: Facility Data		
Name and Location of Facility Inspected	**Entry Time**	**Permit Effective Date**
City of Piqua WWTP 121 Bridge Street Piqua, OH 45356	8:55 AM	1/1/08
	Exit Time	**Permit Expiration Date**
	3:45 PM	1/31/2011
Name(s) and Title(s) of On-Site Representatives	**Phone Number(s)**	
Dave Burtner, Wastewater Superintendent	937-778-2088	
Dave Davis, Assistant Wastewater Superintendent	937-778-2088	
Tim Parker, Laboratory Technician	937-778-2088	
Scott Cromes, Collections Working Supervisor	937-778-2088	
Name, Address and Title of Responsible Official	**Phone Number**	
Mayor and Council City of Piqua 201 West Water Street Piqua, OH 45356	937-778-2072	

Section C: Areas Evaluated During Inspection
(S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated)

S	Permit	S	Flow Measurement	N	Pretreatment
S	Records/Reports	S	Laboratory	S	Compliance Schedule
S	Operations & Maintenance	S	Effluent/Receiving Waters	S	Self-Monitoring Program
S	Facility Site Review	S	Sludge Storage/Disposal	N	Other
M	Collection System				

Section D: Summary of Findings (Attach additional sheets if necessary)

Collection system was rated as marginal due to sanitary sewer overflows.

Inspector	Reviewer
6/19/09	6/19/09
Joseph Miller Division of Surface Water Southwest District Office Date	Martyn Burt Compliance & Enforcement Supervisor Division of Surface Water Southwest District Office Date

Permit # : 1PD00008*PD
NPDES #: OH0027049

Sections E thru K: Complete on all inspections as appropriate
Y – Yes, N – No, N/A – Not Applicable, N/E – Not Evaluated

Section E: Permit Verification

Inspection observations verify the permit

(a) Correct name and mailing address of permittee	Y
(b) Correct name and location of receiving waters.....	Y
(c) Product(s) and production rates conform with permit application (Industries).....	N/A
(d) Flows and loadings conform with NPDES permit.....	Y
(e) Treatment processes are as described in permit application...	N
(f) New treatment process(es) added since last inspection.....	N
(g) Notification given to State of new, different or increased discharges.....	N/A
(h) All discharges are permitted.....	Y
(i) Number and location of discharge points are as described in permit.....	Y

Comments/Status:

Final effluent discharge typically from outfall 005, upstream of dam, rather than outfall 001, located at the WWTP. There are plans to eliminate outfall 005 in the near future.

Average Daily Flow: 4.11 MGD (2006); 4.11 MGD (2007); 4.34 MGD (2008); 4.13 MGD (January 2009 to May 2009)

Section F: Permit Verification

(a) Any significant violations since the last inspection.....	Y
(b) Permittee is taking actions to resolve violations.....	Y
(c) Permittee has a compliance schedule.....	Y
(d) Compliance schedule contained in **NPDES permit**	
(e) Permittee is meeting compliance schedule.....	Y

Comments/Status:

Sanitary sewer overflows occur when the operators throttle flow into the plant during storm events. Construction of an equalization basin is underway. The EQ basin is expected to largely reduce the need for influent overflows. Estimated completion of construction is November 2009.

Two (2) Total Residual Chlorine effluent limitation violations were reported during the period of review (January 2006 to May 2009). Violation occurred on July 8, 2006 and May 13, 2009. Non-compliance notification was provided as required by the NPDES permit.

Section G: Operation & Maintenance

Treatment Works:

Treatment facility properly operated and maintained

(a)	Standby power available.....generator ☒ or dual feed ☐.....	Y
(b)	Adequate alarm system available for power or equipment failures..	Y
(c)	All treatment units in service other than backup units.....	N
(d)	Wastewater Treatment Works classification (OAC 3745-7).....	IV
(e)	Operator of Record holds unexpired license of class required by permit.....	Y
	Class: IV (plan to submit modification application for reduction to Class III)	
(f)	Copy of certificate of Operator of Record displayed on-site.....	Y
(g)	Minimum operator staffing requirements fulfilled (OAC 3745-7)...	Y
(h)	Routine and preventative maintenance scheduled/performed...	Y
(i)	Any major equipment breakdown since last inspection.....	N
(j)	Operation and maintenance manual provided and maintained.....	Y
(k)	Any plant bypasses since last inspection.....	Y
(l)	Regulatory agency notified of bypasses.....	Y
	On eDMRs ☒ and/or Spill Hotline (1-800-282-9378) ☐ (and phone call)	
(m)	Any hydraulic and/or organic overloads since last inspection.....	Y

Record Keeping:

(a)	Log book provided.....	Y
(b)	Format of log book (i.e. computer log, hard bound book)	
	Use of computer log and operator log book. The log is not currently bound (plan to revise)	
(c)	Log book(s) kept onsite (in an area protected from weather).....	Y
(d)	Log book contains the following:	
	I. Identification of treatment works.....	Y
	II. Date/times of arrival/departure for Operator of Record and any other operator required by OAC 3745-7.....	Y
	III. Daily record of operation and maintenance activities (including preventative maintenance, repairs and request for repairs).....(computer)	Y
	IV. Laboratory results (unless documented on bench sheets)...	N/A
	V. Identification of person making log entries.....	Y
(d)	Has the operator of record submitted written notification to the permittee, Ohio EPA and (if applicable) any local environmental agencies when a collection system overflow, treatment plant bypass or effluent limit violation has occurred.....	N

Section G: Operation & Maintenance (con't)

Collection System:

(a)	Percent combined system: 0%	
(b)	Any collection system overflows since last inspection (CSO ☐ and/or SSO ☒)	Y
(c)	Regulatory agency notified of overflows (SSOs)	Y
(d)	CSO O&M plan provided and implemented	N/A
(e)	CSOs monitored and reported in accordance with permit	N/A
(f)	Portable pumps used to relieve system	Y
(g)	Lift station alarms provided and maintained	Y/N*
(h)	Are lift stations equipped with permanent standby power or equivalent	N*
(i)	Is there an inflow/infiltration problem (separate sewer system), or were there any major repairs to collection system since last inspection	Y
(j)	Any complaints received since last inspection of basement flooding	N
(k)	Are any portions of the sewer system at or near capacity	N

Comments/Status:

Collection system operators are required to have collection certification within 3-4 years of employment

Six (6) lift stations – Stratford LS: alarmed, located in non-descript shed
Mall LS: alarmed, duplicate Smith & Loveless pumps
Eagle's Nest: alarmed, submersible Barnes pumps
Orchard: Yeoman pneumatic ejector, daily checks
Candlewood: Yeoman pneumatic ejector, daily checks
Maplewood: Yeoman pneumatic ejector, daily checks

*2 – 3" pumps available for emergency relief, portable generator available

Miami County areas tributary to Piqua collection system include Piqua Country Club, Greens of Spring Creek, Villages of Spring Creek, and Monnin Estates. The Village of Fletcher sewer project slated to begin this year will also be connected to the Piqua wastewater collection system.

Private lift station located at Lakeridge and maintained by HOA

Restaurant grease trap pumping reports are sent to City of Piqua Health Department

Section H: Sludge Management

(a) Sludge management plan (SMP)
Submitted date: 2/14/03 Approval 05-410PW Not submitted ☐ N/A ☐

(b) Sludge management plan current..... Y
(c) Sludge adequately disposed..... Y
(Method: land application)
(d) If sludge is incinerated, where is ash disposed of
(e) Is sludge disposal contracted..... Y
(Name: Burch Hydro)
(f) Has amount of sludge generated changed significantly since last inspection..... N
(g) Adequate sludge storage provided at plant.....Y
(h) Land application sites monitored and inspected per SMP..... Y
(i) Records kept in accordance with State and Federal law..... Y
(j) Any complaints received in last year regarding sludge..... N
(k) Is sludge adequately processed (anaerobic digestion, pathogen control)Y

Comments/Status:

2-3 months storage available, 650,000 gallon storage unit at south end of facility. Sludge drawn off for pressing into cake and subsequent land application by Burch Hydro.
"Bubble gun" mixing technology used in anaerobic digesters

Section I: Self-Monitoring Program

Flow Measurement:

(a) Primary flow measuring device operated and maintained..... Y
Type of device: Ultrasonic & Parshall flume ☐ Ultrasonic & Weir ☐ Weir ☐
Calculated from influent ☐ Other ☒(Specify: Sparling on-pipe mag meter)

(b) Calibration frequency adequate .....(annual).. Y
(Date of last calibration: November 2008)
(c) Secondary instruments operated and maintained.....Y
(d) Flow measurement equipment adequate to handle full range of flows..... Y
(e) Actual flow discharged is measured..... N
(f) Flow measuring equipment inspection frequency
☒Daily ☐Weekly ☐monthly ☐other

Comments/Status: Flow metering is located after screw pumps and before returned activated sludge.

Section I: Self-Monitoring Program (con't)

Sampling:

(a) Sampling location(s) are as specified by permit..... Y
(b) Parameters and sampling frequency agree with permit..... Y
(c) Permittee uses required sampling method..... Y
(d) Sample collection procedures are adequate..... Y
  (i) Samples refrigerated during compositing..... Y
  (ii) Proper preservation techniques used..... Y
  (iii) Containers and sample holding times prior to analysis conform with 40 CFR 136.3..... Y
(e) Monitoring records (i.e., flow, pH, DO) maintained for a minimum of three years including all original strip chart recordings (i.e, continuous monitoring instrumentation, calibration and maintenance records)..... Y
(f) Adequate records maintained of sampling date, time, location, etc.. Y

Laboratory:

General
(a) EPA approved analytical testing procedures used (40 CFR 136.3).. Y
(b) If alternate analytical procedures are used, proper approval has been obtained..... N/A
(c) Analyses being performed more frequently than required by permit. N
(d) If (c) is yes, are results in permittee's self-monitoring report..... N/A
(e) Commercial laboratory used..... Y
Parameters analyzed by commercial lab: O&G, TP, hardness, metals, TKN, NO2-NO3 (Piqua WTP analyzes fecal coliform samples)
Lab name: Ginosko Laboratories

Quality Control/Quality Assurance
(f) Quality assurance manual provided and maintained..... Y
(g) Satisfactory calibration and maintenance of instruments/equipment. Y
(h) Adequate records maintained..... Y
(i) Results of latest USEPA quality assurance performance sampling program: ☒ Satisfactory ☐ Marginal ☐ Unsatisfactory
Date: 2008

Comments/Status:

Section J: Effluent/Receiving Water Observations

Outfall Number	Oil sheen	Grease	Turbidity	Visible Foam	Visible Floating Solids	Color	Other
001	No	No	No	No	No	Clear	algae

Comments/Status:

Section K: Multimedia Observations

(a) Are there indications of sloppy housekeeping or poor maintenance in work and storage areas or laboratories..... N
(b) Do you notice staining or discoloration of soils, pavement or floors.. N
(c) Do you notice distressed (unhealthy, discolored, dead) vegetation.. N
(d) Do you see unidentified dark smoke or dust clouds coming from sources other than smokestacks..... N
(e) Do you notice any unusual odors or strong chemical smells..... N
(f) Do you see any open or unmarked drums, unsecured liquids, or damaged containment facilities..... N

If any of the above are observed, ask the following questions:
(1) What is the cause of the condition?
(2) Is the observed condition or source a waste product?
(3) Where is the suspected contaminant normally disposed?
(4) Is this disposal permitted?
(5) How long has the condition existed and when did it begin?

Comments/Status: