Ohio Environmental Protection Agency

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

June 26, 2012

Tiffany Jenkins, P.E., Sanitary Engineer
Delaware County Regional Sewer District
50 Channing Street
Delaware, OH 43015

Re: Olentangy Environmental Control Center
NPDES Permit 4PK00001/ OH0054399
Compliance Evaluation Inspection
Delaware County

Dear Ms. Jenkins:

On June 14, 2012, a Compliance Evaluation Inspection was conducted at the Olentangy Environmental Control Center. Present for the inspection were Ken Rosenbaum, Mark Chandler, Marty Bell, John Feightner, Marshall Yarnell, John Garrett and Will Southan representing the Delaware County Regional Sewer District, Eric Saas and myself of the Ohio EPA, Central District Office, Division of Surface Water.

The purpose of the inspection was to evaluate compliance with the terms and conditions of your NPDES permit and to evaluate the operation and maintenance of the plant.

If you have any questions or comments concerning the enclosed inspection report, please contact me at (614) 728-3848 or e-mail at mike.sapp@epa.ohio.gov.

Sincerely,

Michael Sapp
Compliance and Enforcement Unit
Division of Surface Water
Central District Office

Enclosure

c: Ken Rosenbaum, OECC w/attachments

ec: Michael Sapp

MS/nsm OECC 12

Central District Office
50 West Town Street, Suite 700
P.O. Box 1049
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NPDES Compliance Inspection Report

SECTION A: NATIONAL DATA SYSTEM CODING				
Permit #	NPDES #	Inspection Type	Inspector	Facility Type
4PK00001	OH0054399	CEI	S	
Inspection Date	Entry Time	Exit Time	Notice of Violation	Significant Non-Compliance
6/14/2012	9:00 AM	1:15 PM	No	No

SECTION B: FACILITY DATA	
Name and Location of Facility Inspected	Permit Effective Date
Olentangy Environmental Control Center 10333 Olentangy River Road Powell, Ohio 43065	1/1/2011 Permit Expiration Date 7/31/2015
Name(s) and Title(s) of On-Site Representatives	Phone Numbers
Ken Rosenbaum, Mark Chandler, Marty Bell, John Feightner, Marshall Yarnell, John Garrett ,Will Southan	(614) 436-7999
Name and Title of Responsible Official	Phone Number
Tiffany Jenkins, P.E., Sanitary Engineer	(740) 833-2245

SECTION C: AREAS EVALUATED DURING INSPECTION		
Key: S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated		
S	NPDES Compliance	
S	Operations & Maintenance	
S	Facility Site Review	
S	Collection System	
S	Flow Measurement	
M	Receiving Waters	Effluent violations in seven months over past year
S	Laboratory	

Comments:

Signatures	
Michael Sapp 6/21/12	6/25/12
Michael Sapp, Inspector Date Compliance & Enforcement Division of Surface Water Central District Office	Erin Sherer, Reviewer Date Compliance & Enforcement Supervisor Division of Surface Water Central District Office

SECTION D: PERMIT VERIFICATION

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

Comments:

SECTION E: COMPLIANCE

(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) Permittee is meeting compliance schedule ..... Y

Comments:

SECTION F: OPERATION AND MAINTENANCE

(a) Standby power available Y*
If yes, what type? Diesel generator
(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 IV
(e) Operator of Record holds unexpired license of class required by Permit Y
Class held: IV
(f) Copy of certificate of Operator of Record displayed on-site Y
(g) Minimum operator staffing requirements fulfilled Y
(h) Routine and preventative maintenance scheduled and 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 N
(l) Regulatory agency notified of bypasses NA
By MOR ☐ and/or Spill Hotline (1-800-282-9378) ☐
(m) Any hydraulic or organic overloads since last inspection Y

Comments:

SECTION G: RECORD KEEPING

a) Log book provided ..... Y*
b) Format of log book (i.e. computer log, hard bound book)
Computer log
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) ..... Y
   iv) Laboratory results (unless documented on bench sheets) ..... Y
   v) Identification of person making log entries ..... Y
e) Has the Operator of Record submitted written notification to the permittee, Ohio EPA and any applicable local environmental agencies when a collection system overflow, treatment plant bypass or effluent limit violation has occurred?.... NA

Comments:

SECTION H: COLLECTION SYSTEM

a) Percent combined system: 0%
b) Any collection system overflows since last inspection ..... N
   CSO ☐ SSO ☐
c) Regulatory agency notified of overflows ..... NA
d) CSO O&M plan provided and implemented ..... NA
e) CSOs monitored and reported in accordance with permit ..... NA
f) Portable pumps are used to relieve system ..... N
g) Lift station alarms provided and maintained ..... Y*
h) Lift stations equipped with permanent standby power or equivalent ..... Y*
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
l) Are operations changed during high-flow events? ..... Y

Comments:

SECTION I: SLUDGE MANAGEMENT

a) Sludge management plan (SMP) last audited by Ohio EPA:
Audit Date: unknown

b) Sludge adequately disposed ..... Y*
Method: landfilling

c) If sludge is incinerated, where is ash disposed of ..... N

d) Is sludge disposal contracted ..... N*
Name: hauling is contracted to PD Paycoff

e) Has amount of sludge generated changed significantly ..... N*

f) Adequate sludge storage provided at plant ..... Y

g) Records kept in accordance with State and Federal law ..... Y

h) Any complaints received last year regarding sludge ..... N

i) Is sludge adequately processed (digestion, pathogen control) ..... Y

Comments:

SECTION J: SELF-MONITORING PROGRAM

a) Primary flow measuring device operated and maintained ..... Y*
Type of device: ultrasonic Device location: clearwell

b) Calibration frequency adequate ..... Y*
Date of last calibration: 5/8/12

c) Secondary instruments operated and maintained ..... Y*

d) Flow measurements equipment adequate to handle full range of flows .... Y

e) Actual flow discharged is measured ..... Y

f) Flow measuring equipment inspection frequency : daily

g) Sampling location(s) are as specified by permit ..... Y

h) Parameters and sampling frequency agree with permit ..... Y

i) 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

Comments:

SECTION K: Laboratory

a) EPA applicable analytical testing procedures used (40 CFR 136.3) ..... Y
b) If alternate procedures are used, are they properly approved? ..... N*
c) Analysis performed more frequency ..... N/A
If yes, are results recorded in permittee's report? ..... N/A
d) Commercial laboratory used: yes
Name: Alloway
Parameters analyzed: metals, cyanide Bis (ethylhexyl) phthalate and all sludge parameters
e) Quality assurance manual provided and maintained ..... Y*
f) Calibration and maintenance of instruments is satisfactory? ..... Y
g) Results of last U.S. EPA quality assurance ..... Y
Date:

Comments:

SECTION L: EFFLUENT/RECEIVING WATER OBSERVATIONS

Outfall Number	Outfall sign in place	Oil Sheen	Grease	Turbidity	Foam	Solids	Color	Other
001	Yes	No	No	No	Slight	No	Clear	

Comments:

SECTION M: 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:

Compliance Data for Olentangy Environmental Control Center between 5/1/2011 to 5/1/2012

Summary
Permit Effluent Limit Violations: 8
Permit Effluent Code Violations: 2
Permit Effluent Frequency Violations: 0
Compliance Schedule Violations: 3

Limit Violations						
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
June 2011	001	E. coli	7D Conc	284	363.697	6/8/2011
October 2011	001	Nitrite Plus Nitrate,	30D Conc	4.58	4.815	10/1/2011
December 2011	001	Nitrogen, Ammonia	7D Qty	43.8	46.5667	12/1/2011
February 2012	001	Nitrite Plus Nitrate,	30D Conc	4.58	5.455	2/1/2012
March 2012	001	Nitrite Plus Nitrate,	30D Conc	4.58	6.05	3/1/2012
April 2012	001	Nitrite Plus Nitrate,	30D Conc	4.58	5.81	4/1/2012
May 2012	001	Nitrogen, Ammonia	30D Conc.	0.78	0.83	5/1/2012
May 2012	001	Nitrogen, Ammonia	7D Conc	1.18	1.21	5/15/2012

Code Violations				
Reporting Period	Station	Parameter	Reported Value	Violation Date
May 2011	801	E. coli	AK	5/3/2011
May 2011	901	E. coli	AK	5/3/2011

Flow Data for Olentangy Environmental Control Center between 5/1/2011 and 5/1/2012

	Date	Flows (MGD)
Ten Highest Flows	5/3/2011	9.483
	12/6/2011	8.478
	1/27/2012	7.960
	12/5/2011	7.934
	5/26/2011	7.898
	11/29/2011	7.625
	5/4/2011	7.623
	6/11/2011	7.343
	12/21/2011	7.000
	10/20/2011	6.579
Average Flow Rate		3.646

ADDITIONAL INFORMATION

Olentangy Environmental Control Center
4PK00001 - OH0054399

General

The Olentangy Environmental Control Center has a design treatment capacity of 6.0 MGD with a discharge to the Olentangy River. The south plant can treat an average daily flow of 4.5 MGD; the older north plant can treat an average daily flow of 1.5 MGD. Wet stream process provided at the facility include communition, single-stage extended aeration with nutrient removal, final clarification, tertiary sand filtration, ultraviolet disinfection and post-aeration. Solids handling facilities consist of sludge storage followed by dewatering with a centrifuge and disposal at a landfill.

Section D. - Permit Verification

(d.) The average daily flow at outfall 001, for the time period from May 2011 – April 2012 was 3.65 mgd. The maximum daily flow experienced during this time period was 9.48 mgd. These flows represent decreases over the previous year where the average daily and daily maximum flows were 4.27 and 10.5 mgd, respectively.

(i.) A portion of the effluent, approximately 1 mgd, is pumped to the pond along State Route 315 for landscaping purposes. The pond overflows to a small drainageway that discharges to the Olentangy River at a location upstream from outfall 001. Effluent is also pumped to a two acre wetland on a seasonal basis. The discharge from the wetland is also at a location different from outfall 001.

Section E. - Compliance

(a.) The plant has reported several NPDES permit violations since the last inspection was performed in June 2010. The E. coli violation in June 2011 was attributed to short circuiting of a disinfection channel and a problem with a UV module. The nitrate plus nitrite violations were attributed unbalanced MLSS and disfunctional mixers in the tanks within each treatment train. The ammonia loading violation in December 2011 was due to high flows.

(b.) The rehabilitation of the aeration tanks in the north plant is still on going. Two of the four treatment trains in the south plant have been completely rehabilitated (e.g. grit removal, diffusers repaired or replaced, curtains removed, mixers rebuilt). One of the four aeration trains was off line and being drained to start the rehabilitation work. Plant staff were optimistic that the nitrogen violations would be resolved following completion of work on the aeration tanks. In addition, the anoxic zones within each tank have been extended and the MLSS was profiled and balanced between the tanks in each train.

(c) The effective NPDES permit contains a schedule with the following milestones:

- Total Phosphorus Limits – OECC is required to meet final loading limits (11.4 kg/d – summer and 22.8 kg/d – winter) for phosphorus on or before January 1, 2021. The plant must meet a 30-day average concentration limit of 1.0 mg/L on or before January 1, 2012.

- Local Limits Evaluation – Evaluation of local pretreatment limits no later than July 1, 2011.

The permittee expects to comply with all of the milestones in the schedule of compliance.

Section F. - Operation and Maintenance

(a.) The back-up generators are exercised every other Tuesday. Both generators have self-contained cooling systems and no longer rely on the use of non-potable water for cooling.

(c.) At the time of the inspection the following units were off-line due to low flows:

- One of the final clarifiers on the south plant.
- One of the four aeration trains on the south plant.

The following units were off-line due to disrepair:

- The underdrain system from the north plant aeration tanks to the clarifier is not functioning properly and would likely need to be fixed if the north plant aeration tanks were filled during a high flow event.
- Motor control unit in north plant.
- One of the final clarifiers is off line due to a bad floc drive.
- Three of the six tertiary sand filters are off-line and will have the sand media and backwash pumps replaced later this summer.

(h.) The County will hire two staff people in the near future to start a new system wide preventative maintenance program. They also hope to hire two new electrical maintenance technicians. Allmax software is now used for routine and preventative maintenance although it doesn't work well due to connectivity issues. The County is moving to a high-speed connection to solve this problem.

(i.) The #4 raw pump is currently out for repair and the motor on the collector mechanism for clarifier #6 failed and was subsequently replaced.

Section G. – Record Keeping

(a.) The County has developed an Excel program for operator of record entries at all of the county run facilities. The system appeared to be highly functional with the capability to search, monitor and trend various entries.

Section H. - Collection System

(g.) There are currently 9 pump stations in the County collection system tributary to OECC all of which are connected to the county SCADA System.

(h.) The two largest lift stations, Leatherlips and Golf Village (both over 100,000 gpd capacity) are equipped with permanent standby power. Most of the stations are equipped with bioxide feed systems for odor control.

(i.) Collections system staff suspect that a significant I/I problem exists close to the plant; most likely the Retreat Subdivision. This portion of the collections system is comprised primarily of truss pipe. The county plans to do a flow study in this area within the next year. Quail Meadows in Powell is another area where inflow and infiltration may be excessive.

Over the past year the County has televised 39.5 miles of sewer and has rehabilitated 125 manholes. Collections system staff are currently undertaking a project to camera all sewer lines that have five years bonds due to expire. The County is also continuing to build-up the CMOM program.

Section I. - Sludge Management

(b.) The plant is exclusively producing a sludge cake which is being landfilled. The facility no longer aerobically digests sludge or practices land application. The plant is currently using three tanks to thicken sludge and three tanks to store sludge before it is fed to the centrifuge. The optimal feed sludge is 1.2% solids. The plant produces a cake with 20-21% solids.

The gravity belt thickener is exercised once a month in the event that the centrifuge goes down for any significant period of time.

(d.) PD Paycoff is contracted to haul the sludge to the Crawford County Landfill for $12.50/ton. The County will begin doing their own hauling later this year. Tipping fees at the landfill are $19/ton.

(e.) The plant produces approximately 300 tons/month (2-3 trucks/week); some of which is generated from the Delaware County package plants.

Section J. - Self Monitoring Program

(a.) Effluent flows are measured using a parshall flume and a Drexelbrook flow meter. A magmeter is used to measure influent flows. Readings from the influent flow meter are currently reported as the final effluent flow on the discharge monitoring reports. Two new flow meters have been installed; an ultrasonic unit at the effluent weir of the clearwell and a magmeter on the line

feeding the landscape pond. Beginning in July 2011, the sum of these two meter readings will be reported as the effluent flow.

(b.) The influent and effluent flow meters were last calibrated on May 8, 2012.

(c.) The influent sampler collects a time-weighted composite sample (one aliquot every 20 minutes). The effluent sampler collects a flow-weighted composite sample. Centrifuge centrate is returned upstream of the influent wet well and influent sampler which cause the strength of the influent wastestream to be overestimated.

Section K. - Laboratory

(b.) SOP's are being added for E. coli, TKN and TDS

(e.) Standards from ERA are run quarterly for various analyses. Duplicates are run for every analysis. Spikes and blanks are run for selected parameters. Calibration was satisfactory for all instrumentation and equipment. Alloway Labs performs contract analysis for, metals, cyanide, bis (2-ethylhexyl) phthalate and sludge parameters.

(g.) Discharge Monitoring Report - Quality Assurance study results were acceptable for all parameters analyzed in-house.

SUMMARY OF FINDINGS AND COMMENTS
Olentangy Environmental Control Center

1. At the time of the inspection, the following general observations were made regarding the operation and maintenance practices at the plant:

    - The aeration blowers are operated in an on/off mode of operation (70 minutes on followed by 50 minutes off).

    - The plant attempts to treat for phosphorus biologically by creating an anoxic zone at the head of each aeration train where raw influent first enters the aeration tank. Raw influent is also fed at the beginning of the second tank in the three tank aeration train. Ferric chloride is added at a rate of 100 mL/minute.

    - The plant maintains an SRT of 15.5 days which corresponds to a MLSS of 2200 mg/L.

    - A new vac truck receiving pad will be installed in the field north of the plant this summer.

    - Sand filter #1, which has been in a state of disrepair for several years, was repaired and placed into service in March 2012.

    - The pumps serving the north plant will have new VFDs installed this year. All remaining VFDs in the north plant will be replaced within the next two years. The County also plans to perform an assessment on the functionality of all the units in the north plant.

    - The plant is served by 7 influent pumps. Pumps 1, 2, and 3 pump only to the south plant. Pumps 6 and 7 pump only to the north plan and pumps 4 and 5 can pump to both the north and south plant.

    - The non-potable water system is scheduled to be rehabilited later this year.

2. The plant employs the following storm mode protocol during sustained high flow events:
    - Bring additional influent pumps on-line.
    - Monitor sludge blankets in final clarifiers.
    - If blanket depth is greater than 8-10 feet fill any available clarifiers in south plant.
    - Place additional tertiary filters on-line.
    - Fill any available south plant aeration tanks.
    - Fill north plant aeration tanks.

The north plant was not utilized in the storm mode protocol at any time over the past year.