40 years and moving forward

John R. Kasich, Governor
[illegible]lor, Lt. Governor
[illegible]ally, Director

June 24, 2013

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

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

Dear Ms. Jenkins:

On June 11, 2013, a Compliance Evaluation Inspection was conducted at the Olentangy Environmental Control Center. Present for the inspection were Mark Chandler, Ken Rosenbaum, John Feightner, Marshall Yarnell, John Garrett and Will Southan representing the Delaware County Regional Sewer District myself and Kelly Thiel 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.

Please refer to the Summary of Findings and Comments section of this report for additional information regarding the inspection 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.state.oh.us.

Sincerely

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

ec: Michael Sapp

MS/nsm OECC 13

NPDES Compliance Inspection Report

SECTION A: NATIONAL DATA SYSTEM CODING				
Permit #	NPDES #	Inspection Type	Inspector	Facility Type
4PK00001	OH0054399	CEI	S	Public

Inspection Date	Entry Time	Exit Time	Notice of Violation	Significant Non-Compliance
6/11/2013	9:30	12:30 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
Mark Chandler – Operations Manager Ken Rosenbaum – Plant Superintendent Marshall Yarnell – Plant Operator John Feightner – Lab Analyst Will Southan – Plant Operator John Garrett – Plant Operator	(740) 549-1906 (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	Marginal due to recent effluent violations.
S	Laboratory	

Comments:

Signatures	
Michael Sapp 6/20/13	Erin Sherer 6/20/13
Michael Sapp, Inspector Date Compliance & Enforcement Division of Surface Water District Office	Erin Sherer, Reviewer Date Compliance & Enforcement Supervisor Division of Surface Water 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 ..... NA
(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 ..
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 ..... N

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?.... Y

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?..... N

Comments:

SECTION I: SLUDGE MANAGEMENT

a) Sludge management plan (SMP) last audited by Ohio EPA:
Audit Date: no recent audits

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: 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: Device location:

b) Calibration frequency adequate ..... Y*
Date of last calibration: April 17, 2013

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 ..... N

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? ..... NA*
c) Analysis performed more frequently ..... N
If yes, are results recorded in permittee's report? ..... NA
d) Commercial laboratory used:
Name: Aoolway
Parameters analyzed: metals, cyanide, bis (2-ethylhexyl) phthalate and .. sludge parameters
e) Quality assurance manual provided and maintained ..... Y*
f) Calibration and maintenance of instruments is satisfactory? .....
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	No	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 6/1/2012 to 5/1/2013

Summary
Permit Effluent Limit Violations: 5
Permit Effluent Code Violations: 0
Permit Effluent Frequency Violations: 0
Compliance Schedule Violations: 1

Limit Violations						
Reporting Period	Station	Parameter	Limit Type	Limit	Reported Violation Value	Violation Date
September 2012	001	Nitrogen, Ammonia (NH3	7D Conc	1.18	1.36	9/8/2012
March 2013	001	Nitrite Plus Nitrate,	30D Conc	4.58	5.97333	3/1/2013
April 2013	001	Nitrogen, Ammonia (NH3	30D Conc	1.28	1.62	4/1/2013
April 2013	001	Nitrite Plus Nitrate,	30D Conc	4.58	4.65	4/1/2013
April 2013	001	Nitrogen, Ammonia (NH3	7D Conc	1.93	2.02	4/22/2013

Flow Data for Olentangy Environmental Control Center between 6/1/2012 and 5/1/2013

	Date	Flows (MGD)
Ten Highest Flows	4/29/2013	7.245
	3/18/2013	6.890
	4/12/2013	6.569
	1/30/2013	6.479
	1/11/2013	6.373
	1/14/2013	6.241
	12/21/2012	6.126
	3/11/2013	6.081
	1/31/2013	6.067
	12/8/2012	5.960
Average Flow Rate		3.605

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 June 2012 – May 2013 was 3.61 mgd. The maximum daily flow experienced during this time period was 7.25 mgd. The average daily flow over the preceding twelve month period was 3.65 mgd. .

(i.) A portion of the effluent, approximately 350,000 gpd is pumped to the pond along State Route 315 for landscaping purposes. The pond overflows to a small drainage way 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. The recent upgrade of the non-potable water system included the installation of magmeters on the lines to the pond and wetland.

Section E. - Compliance

(a.) The plant has reported several NPDES permit violations since the last inspection was performed in June 2012. The majority of the violations, which occurred in March and April 2013, were associated with the centrifuge being out of service. The plant cut back on wasting over the winter to save space in the digesters. The SRT increased to 23 (target SRT is 15) which caused excessive foaming in the aeration tanks. The SRT was dropped to 10 when the centrifuge was placed back into service and the plant struggled to nitrify and denitrify. The plant has since modified the operation of the aeration tanks to improve nitrification and denitrification capabilities.

(b.) The plant recently modified the operation of the aeration tanks from on/off operation of the blowers in all three tanks (the south plant is comprised of four treatment trains with three tanks in each train) to constant air in tanks 2 and 3 and an anoxic zone in tank one with mixing. .

(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:

- Two of the final clarifiers on the south plant. These two units will undergo minor repairs to the skimmers and sludge collectors while they are off line.
- One of the four aeration trains on the south plant. This train will have the diffusers replaced while the tank is out of service.

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.
- Two 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 hired two staff people to start a new system wide preventative maintenance program. All equipment has been entered into the system wide maintenance program. Allmax software is used for routine and preventative maintenance although it hasn't worked well due to connectivity issues. The County is moving to a high-speed connection to solve this problem.

(i.) The controller for the UV unit is not functioning properly and will be replaced next yet. In the meanwhile it is being operated in hand mode.

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 has televised 19 miles of sewer since January 1, 2013 and has processed 108 work orders on the televised sections. Collections system staff are currently up to date on televising all sewer lines that have five years bonds due to expire.

The County is also continuing to build-up the CMOM program. The sewer service area has been divided into five sub-areas (A-E). Intensive maintenance is performed in each area once every five years.

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 at a rate of 100 gpm. The plant produces a cake with 20-21% solids. The centrifuge was out of service due to a sheared shaft in November and December 2012. A spare shaft will now be kept on site in the event that this problem recurs.

The gravity belt thickener is exercised once a month in the event that the centrifuge goes down for any significant period of time. The plant had sufficient storage capacity in November and December and did not need to utilize the thickener.

(d.) PD Paycoff is contracted to haul the sludge to the Crawford County Landfill for $19.70/ton. .

(e.) The plant produces approximately 300 tons/month (2-3 trucks/week). Approximately 10-12% of the total sludge volume is generated from the Delaware County package plants.

Section J. - Self Monitoring Program

(a.) Effluent flows are measured using a parshall flume and an ultrasonic 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. Beginning in this summer, the operator will begin reporting the effluent flow as the sum of the effluent flow from the ultrasonic unit and the magmeter..

(b.) The influent and effluent flow meters were last calibrated on April 17, 2013.

(g.) 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.) Since the previous inspection, SOP's have been 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 plant now has a maintenance contract for all of the aeration mixers.

    - The plant attempts to treat for phosphorus biologically by creating an anoxic zone in the first tank of each aeration train. Since the operation of the aeration tanks was recently modified the chemical addition of ferric chloride was dropped from 150 to 90 mg/L. Ferric chloride is fed into the aeration tank effluent channel before the clarifier splitter box.

    - The plant maintains an SRT of 13.5 days which corresponds to a MLSS of 2200 mg/L.

    - The recycle flow rate is approximately 50%. All recycle flows are returned to the first tank in series.

    - Sludge blankets in the clarifiers are monitored four times a day and are generally maintained below a depth of 2 feet.

    - The post aeration blowers are operated for short periods twice a day to clean the UV system.

    - The new vac truck receiving/dump pad was installed in the field north of the plant last summer. The plant is still experimenting with various types of media to enhance the dewatering process.

    - 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 was rehabilitated over the past year.

    - The rehabilitation of the south plant aeration trains is substantially complete. The rehabilitation involved diffuser replacement, grit removal, mixer maintenance and the removal of the curtain baffles.

2. The County has hired an engineering firm to being rehabilitation work on the old north plant which is not currently in use. The first steps in the process will include the installation of a 1000 KW generator with transfer switch and the replacement of the motor control units.