



Environmental
Protection Agency

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

June 19, 2012

Tiffany Jenkins, P.E. – Sanitary Engineer
Delaware County Division of Environmental Services
50 Channing Street
Delaware, OH 43015

**Re: Alum Creek Water Reclamation Facility
NPDES Permit 4PK00003/ OH0121380
Compliance Evaluation Inspection
Delaware County**

Dear Ms. Jenkins:

On June 5, 2012, a Compliance Evaluation Inspection was conducted at the Alum Creek Water Reclamation Facility. Present for the inspection were yourself, Mark Chandler and Matt Ice from Delaware County 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

ec: Mike Sapp

MS/nsm Alum Creek WRF 12

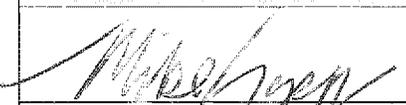
NPDES Compliance Inspection Report

SECTION A: NATIONAL DATA SYSTEM CODING				
Permit #	NPDES #	Inspection Type	Inspector	Facility Type
4PK00003	OH0121380	CEI	S	
Inspection Date	Entry Time	Exit Time	Notice of Violation	Significant Non-Compliance
6/5/2012	10:00 AM	1:15 PM	No	No

SECTION B: FACILITY DATA	
Name and Location of Facility Inspected	Permit Effective Date
Alum Creek Water Reclamation Facility 7767 Walker Woods Blvd. Lewis Center, Ohio 43035	8/1/2009
	Permit Expiration Date
	1/31/2014
Name(s) and Title(s) of On-Site Representatives	Phone Numbers
Mark Chandler – Operations Manager Matt Ice, Operations Supervisor	(740) 549-1906
Name and Title of Responsible Official	Phone Number
Tiffany Jenkins – Director of Environmental Services	(740) 833-2240

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
S	Receiving Waters
S	Laboratory

Comments:

Signatures	
 6/18/12	 6/19/12
Mike Sapp, Inspector Compliance & Enforcement Division of Surface Water Central District Office	Erin Sherer, Reviewer 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 NA
- (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 N*
- (b) Permittee is taking actions to resolve violations Y*
- (c) Permittee has a compliance schedule N
- (d) Permittee is meeting compliance schedule NA

Comments:

SECTION F: OPERATION AND MAINTENANCE

- (a) Standby power available Y*
If yes, what type? Diesel generators
- (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 Y*
- (j) Operation and maintenance manual provided and maintained Y
- (k) Any plant bypasses since last inspection Y*
- (l) Regulatory agency notified of bypasses Y
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?....

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:
- 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 Y*
- 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 w/flume Device location: effluent weir
- b) Calibration frequency adequate Y
Date of last calibration:5/9/12
- 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 - weekly
- 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: Yea
 Name: Alloway
 Parameters analyzed: metals, bis (2-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.....Acceptable*
 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:

ADDITIONAL INFORMATION

Alum Creek Water Reclamation Facility
4PK00003 - OH0121380

General

The Alum Creek Water Reclamation Facility has a design treatment capacity of 10.0 MGD with a discharge to Alum Creek. Wet stream process provided at the facility include influent fine screens, single-stage extended aeration, final clarification, tertiary sand filtration, ultraviolet disinfection and post-aeration. Solids handling facilities consist of limited digestion, sludge storage, dewatering with a belt filter press followed by 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 4.88 mgd. The maximum daily flow experienced during this time period was 8.37 mgd.

Section E. - Compliance Schedule Violations

- (a.) The plant has reported one NPDES permit violations since the last inspection was performed in June 2011. A minor exceedance for copper was experienced in March 2012.
- (b.) No explanation for the copper violations was provided (the entity submitted a response but did not speculate on the causes or corrective actions for the copper violation); however, it does not appear at such a concentration or frequency to present chronic non-compliance issues.

Section F. - Operation and Maintenance

- (a.) Both back-up generators are exercised weekly. These units are capable of providing back-up power to the entire plant.
- (c.) At the time of the inspection the following units were off-line due to low flows:
- Four of the six aeration tank trains.
 - Three of the four final clarifiers although clarifier #4 was not functional due to a bad gear drive.
 - Two of the eight tertiary filters. Two were off-line awaiting sand replacement, two were off-line awaiting retrofit installation of AquaDiamond systems in 2013 and the remaining two filters were off-line due to issues with the sand media and will be rehabilitated if warranted by flow increases.
 - Several of the nine sludge digesters were off-line.

- (g.) Mark Chandler, the Operator of Record, was granted a staffing hour reduction to 10 hours/week.
- (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 aeration mixers in the first tank of each aeration train are now fully functional although the air is now on in these tanks at all times. The mixers are kept on to keep them from failing. Clarifier #4 has been in a state of disrepair for several years but the gear drive and floc drives are scheduled to be fixed this year. Failure of two sludge blowers last month resulted in an odor complaint. The plant was able to temporarily relocate a larger blower to replace one of the failed units to minimize the duration of the odorous condition. One of the sludge hauling trucks was also down during this period which delayed hauling operations.
- (k.) The plant reports internal bypasses of the tertiary sand filters during rain events although the plant flows are less than the average daily design flow.
- (m.) The collection system tributary to the Alum Creek plant does not receive significant amounts of inflow or infiltration.

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.) All lift stations tributary to the Alum Creek WRF are connected to the county SCADA system.
- (h.) There are currently 6 pump stations in the County collection system tributary to the Alum Creek WRF. The two largest lift stations, Alum Creek and Maxtown Road are equipped with permanent standby power. Most of the stations are equipped with bioxide feed systems for odor control. The bioxide feed system at Alum Creek is flow paced.
- (i.) The collection system tributary to the Alum Creek plant does not have a significant I/I problem. 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.

- (k.) There are no portions of the system tributary to the Alum Creek WRF that are at or near capacity; however, the Old 3C Highway is likely the most significant source area for inflow and infiltration. System wide, eight problem areas have been identified for cleaning every six months.

Section I. - Sludge Management

- (b.) This facility discontinued land application of sludge in early 2007. Solids receive limited digestion before they are dewatered and landfilled.
- (e.) The Alum Creek WRF does all of their own sludge hauling to the Crawford County Landfill.
- (f.) The plant produces approximately 1000-1200 dry tons/year (8 truckloads/week).
- (h.) As noted in the previous section, one sludge odor complaint was received in May 2012.
- (i.) Typically 3 of the 9 digesters/holding tanks are in service at any one time. Sludge from these tanks is fed to the belt filter press for dewatering. The press produces sludge with a solids content of 14%. Blowers are cycled on and off (120 minutes on followed by 40 minutes off) mainly to control the pH.

Section J. - Self Monitoring Program

- (a.) Influent flows are measured using a magmeter on the influent line from the Alum Creek pump station. Effluent flows are measured using an ultrasonic unit mounted over a parshall flume. The effluent flow meter was recalibrated on May 9, 2012.
- (c.) Influent samples are manually composited since the influent sampler broke down several years ago. A time-weighted influent sample is composited (200 mL every 4 hours). The effluent sampler collects a flow-weighted composite sample.

Section K. - Laboratory

- (g.) Standards from ERA are run quarterly for various analyses. Spikes, duplicates and blanks are run for every ammonia, CBOD and suspended solids analysis.

Analyses for nitrate, phosphorus and oil & grease are sent to the lab at OECC.

Calibration was satisfactory for all instrumentation and equipment. Alloway Labs performs contract analysis for metals, cyanide, bis (2-ethylhexyl) phthalate and sludge parameters.

- (i.) Discharge Monitoring Report - Quality Assurance (DMR-QA #30) study results were acceptable for all parameters analyzed in-house.

SUMMARY OF FINDINGS AND COMMENTS Alum Creek Water Reclamation Facility

1. At the time of the inspection, the following general observations were made regarding the operation and maintenance of the plant:
 - Extended aeration consists of six trains with three tanks in each train (Tanks A, B and C). Mixers are installed only in Tank A of each train. The plant attempts to rotate flow between aeration trains every 9 months.
 - The plant began experiencing a septicity filament (filament # 0021) two weeks prior to the inspection. The source of septicity is unknown; however, the appearance of filaments appeared to coincide with two rehabilitated sand filters being placed into service. The rehabilitated filters don't generate as much backwash water (approximately 1 mgd) the absence of the return flows might have exposed an underlying septicity problem. The plant is currently testing this assumption by running 1 mgd of non-potable water through the foam suppression system on the aeration tanks. Plant operator will continue to evaluate possible sources of septicity (e.g. blower issues associated with the sludge digesters).
 - The plant runs MLSS tests and spin tests once a day and attempts maintain a target MLSS of 2000 mg/L. The target 30-minute settleability is 200; however, the 30-minute settleability results are currently at 750 due to the filaments.
 - The dissolved oxygen in the Tank C is generally maintained above 2.0 mg/L.
 - Sludge blankets in the clarifiers are maintained at less than a foot. Otherwise, a high blanket will trip-off the withdraw mechanism.
 - Filter flies in the tertiary filter building were significantly reduced since the previous inspection. Matt Ice indicated that they have experimented with maintaining a scum layer on the splitter box upstream of the filter to see if it helps to reduce the population.
 - The off-line sand filters are manually cleaned by raking the top layer of sand. The filters are chlorinated every six weeks.
 - The Alum Creek pump station conveys flow to the plant trough two force mains (20" and 36" diameter).
 - The sludge filter press is operated 4 days/week.

2. The plant has reported bypasses of the tertiary sand filters during storm events when the average flow is less than 10 mgd. They recently discovered that as much as one-

half to two-thirds of the total flow is bypassed around the tertiary filters during wet weather events. The intentional bypassing of the tertiary filters at or below design hydraulic conditions constitutes an Unauthorized Discharge in accordance with Part III. 11. on page 28 of the effective NPDES permit.

This office is currently notified of bypass events within 24 hours following the occurrence of a bypass condition through e-mail or telephone notifications. The plant reports the occurrence, duration and volume of the bypass events. In order to modify the effective permit to include a 602 outfall for the bypass, it will be necessary to submit an NPDES permit modification form with a check for \$200.

Plant staff anticipate that the two rehabilitated filters (Filters 2 and 7) can each take up to 4.5 mgd. Rehabilitation of Filters 3 and 6 should be completed in July. Plant operators do not anticipate that any bypasses will occur once four of the rehabilitated filters are in service.

3. The plant employs the following storm mode protocol during sustained high flow events:
 - Monitor sludge blankets in final clarifiers.
 - Fill all available aeration trains (note: air is added to stored flows and attempts are made to drain to head of plant as soon as possible)
 - Fill any available clarifiers. This option is exercised last since it temporarily removes the number of bugs in the system available for treatment.

Compliance Data for Alum Creek Water Reclamation Facility between 4/1/2011 to 5/1/2012

Summary

Permit Effluent Limit Violations: 1
 Permit Effluent Code Violations: 2
 Permit Effluent Frequency Violations: 0
 Compliance Schedule Violations: 0

Limit Violations						
Reporting Period	Station	Parameter	Limit Type	Limit	Reported Value	Violation Date
March 2012	001	Copper, Total Recovera	30D Conc	20	22.	3/1/2012

Code Violations				
Reporting Period	Station	Parameter	Reported Value	Violation Date
May 2011	801	Fecal Coliform	AK	5/23/2011
May 2011	901	Fecal Coliform	AK	5/23/2011

Flow Data for Alum Creek Water Reclamation Facility between 4/1/2011 and 5/1/2012

	Date	Flows (MGD)
Ten Highest Flows	1/27/2012	8.370
	7/24/2011	8.230
	4/20/2011	8.140
	5/4/2011	7.710
	10/20/2011	7.560
	12/6/2011	7.560
	2/9/2012	7.530
	5/3/2011	7.510
	5/26/2011	7.340
	11/29/2011	7.290
Average Flow Rate		4.879