



Environmental
Protection Agency

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

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January 31, 2011

Union County Commissioners
County Office Building
233 W. Sixth Street
Marysville, OH 43040

**Re: NPDES / Public
Union County WWTPs
Compliance Inspections
Union County**

Dear Commissioners:

On November 9, 2010, Reconnaissance Inspections were conducted at the Tawa Estates and Parrott Village wastewater treatment plants (WWTP). Mill Creek Estates and Crottinger Estates WWTP were also inspected as all four plants are in the process of having their permits renewed. Present for the inspections were Mary Sampsel, Jeff Stauch, Bill Narducci, and Mike Galloway representing the Union County Commissioners, and Mike Sapp, Kelly Thiel, 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 the National Pollutant Discharge Elimination System (NPDES) permit.

At the time of the inspections, the overall operation and maintenance of the four facilities has improved since the last inspection; most notably, the tertiary sand filters, alarm systems and a decrease in the number of permit violations. There is room for improvement as the standard wet weather operating procedure for the Mill Creek Estates and Parrott Village WWTP is still unsatisfactory as the plant operator continues to temporarily shut off the air to the aerations tanks in order to help maintain solids inventories within the plant. This practice has been successful in minimizing the period of non-compliance following a rain event; however, it should not be considered a permanent solution to the inflow and infiltration problem in the collection system. As discussed during the inspections with Ms. Sampsel, I am recommending a compliance schedule for inflow and infiltration work at the Mill Creek Estates facility.

One general concern is that the County intends to install remote controls for the aeration blowers that will be used during rain events to turn off the blowers. As mentioned in previous inspection reports, this action should not be considered a permanent operational practice. The County must continue to focus on indentifying and eliminating sources of inflow from the collection systems serving these plants.

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Central District Office

NPDES Compliance Inspection Report

SECTION A: NATIONAL DATA SYSTEM CODING					
Permit #	NPDES#	Month/Day/Year	Inspection Type	Inspector	Facility Type
4PG00006*FD	OH0039152	11/9/10	R	M	1

SECTION B: FACILITY DATA		
Name and Location of Facility Inspected	Entry Time	Permit Effective Date
Parrott Village WWTP 19960 Parrott Blvd. Taylor Twp., Union Co.	10:30 am	September 1, 2005
	Exit Time	Permit Expiration Date
	11:00 am	August 31, 2010
Name(s) and Title(s) of On-Site Representatives		
Mary Sampsel Assistant County Engineer (937) 645-3132	Mike Galloway Plant Operator (937) 645-3018	
Name and Title of Responsible Official		
Union County Commissioners 233 W. Sixth St. Marysville, OH 43040 (937) 645-3018		

SECTION C: AREAS EVALUATED DURING INSPECTION		
Key: S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated		
S	Permit	
S	Records/Reports	
M	Operations & Maintenance	Filamentous bacteria problem, pin floc on one clarifier, poor aeration.
M	Facility Site Review	Walls of plant appear to lean.
M	Collection System	I&I problems.
S	Flow Measurement	
N	Laboratory	
U	Effluent/Receiving Waters	Violations in Winter 2010 and September. The facility habitually is in significant non-compliance in the winter.
N	Sludge Storage/Disposal	
N	Pretreatment	
N	Compliance Schedule	
S	Self-Monitoring Program	

Signatures			
	11/31/11		1-31-11
Cole Miller, Inspector Compliance & Enforcement Division of Surface Water Central District Office	Date	Erin Sherer, Reviewer Compliance & Enforcement Supervisor Division of Surface Water Central District Office	Date

Summary of Findings and Comments Parrott Village WWTP

General

The Parrott Village Wastewater Treatment Plant has a design treatment capacity of 20,000 gpd with a direct discharge to Phelps Run. The plant currently serves approximately 42 homes in the Parrott Village subdivision. Wet stream process provided at the plant include a trash trap, extended aeration, clarification, fixed media clarification, tertiary sand filtration, ultraviolet disinfection and post aeration. Solids handling facilities consist of a 4000 gallons sludge holding tank with decant capabilities.

1. At the time of the inspection, the following general observations were made with the operational and maintenance practices at the plant:
 - a. A filament problem was identified in the plant. Please explain what caused this proliferation of filamentous bacteria and what modifications will be made to preclude a reoccurrence.
 - b. The concrete walls were in poor shape. They were sagging in and as it was indicated that most of the I&I enters through the concrete walls, I have concerns about the long-term integrity of this plant. The operator also suspects that infiltration is occurring around the bedding of the influent and effluent sewer lines. In order to address this problem the County installed a trench dam of the effluent. The County should consider installing a trench dam on the influent line as well.
 - c. Pin floc was observed on the surface of the east clarifiers. The operator indicated that he does not scrape the clarifier walls. I recommend scraping the walls more frequently to ensure that solids are adequately returned to aeration. The county should also check the RAS lines to determine if they are both working efficiently. This might explain why one clarifier looked differently than the other.
 - d. Due to insufficient mixing in the aeration tanks the County will change the fine bubble diffusers to replace them with coarse bubble diffusers. It was indicated that the diffuser heads had previously been coarse heads.
 - e. Air is shut-off during high flow events in order to try and maintain solids inventories in the plant.
 - f. The sand in the tertiary sand filters was replaced this spring.
 - g. The trash trap is pumped out every six months.
 - h. Geyser pumps were installed for all sludge returns 2-3 years ago.
 - i. The aeration blowers are run constantly; however, the County will switch to and on/off (45 minutes on followed by 45 minutes off) once the diffusers are changed.

- j. The mixed liquor in the aeration tanks was dark in color. The operator attributed this condition to poor air transfer with the current diffusers.
 - k. The effluent weirs on the clarifiers did not appear to be level causing uneven flow through the clarifiers.
 - l. The fixed media clarifiers are drained down every 2-3 weeks.
 - m. The County samples for pH, dissolved oxygen and temperature; MASI Labs performs that laboratory analyses for the remaining parameters.
 - n. Effluent flows are estimated based on run times for the tertiary dosing pumps.
2. The attached table contains a list of NPDES permit violations for the time period between November 2004 and September 2010. The other table summarizes flow since November 2004. It appears as though I&I has decreased during the past two years, but the peak flow is five times the design capacity and the average flow is above the design capacity. Since 2007, there have been ammonia exceedances in the winter and early spring.
3. The County suspects that an additional source of I & I exists where 600-1000 linear feet of storm and sanitary sewer run parallel to one another. Please provide a plan to further investigate and eliminate I & I this area of the collection system.

**NPDES Permit Violations for Parrott Village WWTP
November 2004 – September 2010**

Reporting Period	Parameter	Units	Limit Type	Limit	Reported Value
November 2004	Nitrogen, Ammonia (NH3	mg/L	30D Conc	3.0	12.5
November 2004	Nitrogen, Ammonia (NH3	mg/L	7D Conc	4.5	12.5
November 2004	Nitrogen, Ammonia (NH3	mg/L	30D Qty	0.23	1.37206
November 2004	Nitrogen, Ammonia (NH3	mg/L	7D Qty	0.34	1.37206
April 2005	Total Suspended Solids	mg/L	30D Qty	0.9	1.04466
July 2005	Fecal Coliform	#/100mL	7D Conc	2000	7400.
May 2006	Fecal Coliform	#/100mL	30D Conc	1000	4400.
May 2006	Fecal Coliform	#/100mL	7D Conc	2000	4400.
March 2007	Nitrogen, Ammonia (NH3	mg/L	30D Conc	3.0	4.5
March 2007	Nitrogen, Ammonia (NH3	mg/L	30D Qty	0.23	.32362
April 2007	Nitrogen, Ammonia (NH3	mg/L	30D Conc	3.0	5.5
April 2007	Nitrogen, Ammonia (NH3	mg/L	7D Conc	4.5	5.5
April 2007	Nitrogen, Ammonia (NH3	mg/L	30D Qty	0.23	.41635
April 2007	Nitrogen, Ammonia (NH3	mg/L	7D Qty	0.34	.41635
May 2007	Total Suspended Solids	mg/L	30D Conc	12	17.
May 2007	Total Suspended Solids	mg/L	30D Qty	0.9	.96518
August 2007	Fecal Coliform	#/100mL	30D Conc	1000	7600.
August 2007	Fecal Coliform	#/100mL	7D Conc	2000	7600.
September 2007	Fecal Coliform	#/100mL	30D Conc	1000	1300.
February 2008	Nitrogen, Ammonia (NH3	mg/L	30D Conc	3.0	6.6
February 2008	Nitrogen, Ammonia (NH3	mg/L	30D Qty	0.23	.32475
February 2008	Nitrogen, Ammonia (NH3	mg/L	7D Conc	4.5	6.6
December 2008	Nitrogen, Ammonia (NH3	mg/L	30D Conc	3.0	4.25
December 2008	Nitrogen, Ammonia (NH3	mg/L	7D Conc	4.5	7.9
December 2008	Nitrogen, Ammonia (NH3	mg/L	7D Qty	0.34	.41862
January 2009	Nitrogen, Ammonia (NH3	mg/L	30D Conc	3.0	8.7
January 2009	Nitrogen, Ammonia (NH3	mg/L	7D Conc	4.5	8.7
January 2009	Nitrogen, Ammonia (NH3	mg/L	30D Qty	0.23	.39515
January 2009	Nitrogen, Ammonia (NH3	mg/L	7D Qty	0.34	.39515
February 2009	Nitrogen, Ammonia (NH3	mg/L	30D Conc	3.0	3.9
February 2009	Nitrogen, Ammonia (NH3	mg/L	30D Qty	0.23	.26571
April 2009	Total Suspended Solids	mg/L	7D Qty	1.4	1.47994
July 2009	Fecal Coliform	#/100mL	7D Conc	2000	3000.
January 2010	Nitrogen, Ammonia (NH3	mg/L	30D Conc	3.0	3.3
January 2010	Nitrogen, Ammonia (NH3	mg/L	30D Qty	0.23	.5246
January 2010	CBOD 5 day	mg/L	30D Qty	0.8	.95382
January 2010	Nitrogen, Ammonia (NH3	mg/L	7D Qty	0.34	.5246
February 2010	Nitrogen, Ammonia (NH3	mg/L	30D Conc	3.0	3.2

February 2010	Nitrogen, Ammonia (NH3)	mg/L	30D Qty	0.23	.59349
February 2010	Nitrogen, Ammonia (NH3)	mg/L	7D Qty	0.34	.59349
March 2010	Nitrogen, Ammonia (NH3)	mg/L	30D Qty	0.23	.36412
March 2010	Nitrogen, Ammonia (NH3)	mg/L	7D Qty	0.34	.36412
September 2010	Fecal Coliform	#/100mL	7D Conc	2000	10000.

**Flow Information for Parrott Village WWTP
November 2004 – September 2010**

	Flow (mgd)	Date Occurred
Highest since last inspection	0.344	1/4/2005
Highest in 2009	0.117	2/11/2009
Highest in 2010	0.095	4/7/2010
Average Nov '04-Sept '10	0.025	
Average Jan '08 - Sept '10	0.023	
Design Capacity	0.020	