

**Environmental
Protection Agency**

John R. Kasich, Governor
Paul F. O'Rourke, Lt. Governor
Scott M. Lippert, Director

August 1, 2011

RE: CUYAHOGA COUNTY
CITY OF SOLON WWTP
COMPLIANCE EVALUATION INSPECTION
NPDES PERMIT OH0027430
OHIO EPA PERMIT NO. 3PD00019

Mayor Susan Drucker
City of Solon
34200 Bainbridge Road
Solon, OH 44139

Dear Mayor Drucker:

On June 30, 2011, this office met with Messrs. Paul Solanics, Stan Smith, and Rich Landman to conduct an inspection of the above referenced wastewater treatment plant (WWTP). During the course of the inspection, evaluations were conducted of the treatment processes, effluent discharge quality, laboratory, and biosolids management.

NPDES Permit Status

The NPDES permit for this facility was issued effective on January 1, 2010 and will expire on July 31, 2013. The current NPDES permit authorizes an average daily discharge of 5.8 MGD from the facility to Beaver Meadow Run. Beaver Meadow Run is tributary to Tinkers Creek, Cuyahoga River, and Lake Erie, respectively. Per the Tinkers Creek TMDL report, the NPDES permit contains a water quality trading requirement in Part 1, C for Phosphorus. Additionally, the permit contains a schedule requirement regarding the headworks bypass.

Facility Description

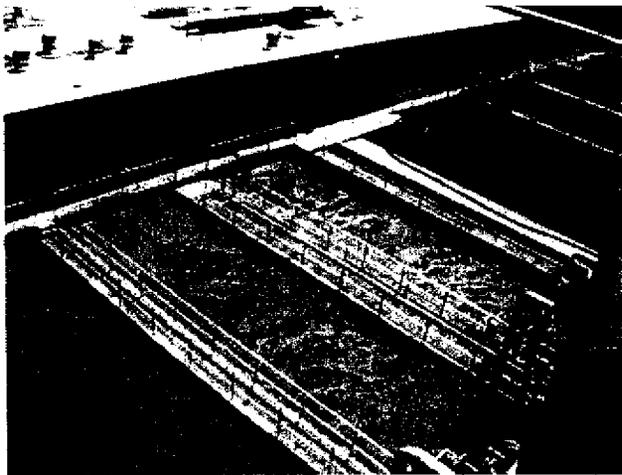
The collection system consists of approximately 138 miles of sanitary sewers and 23 pump stations.

The wet stream treatment process consists of flow equalization, bar screens, grit removal, primary settling, trickling filters, activated sludge aeration, secondary settling, rapid sand filters and ultraviolet disinfection. Phosphorus removal is achieved through the addition of ferric chloride. Primary sludge is anaerobically digested before combining with waste activated sludge from the gravity thickener. The combined sludge is dewatered by a belt filter press and hauled to a landfill for proper disposal.

At the time of the inspection, the following observations and comments were noted:

Mayor Susan Drucker
City of Solon
August 1, 2011
Page 2

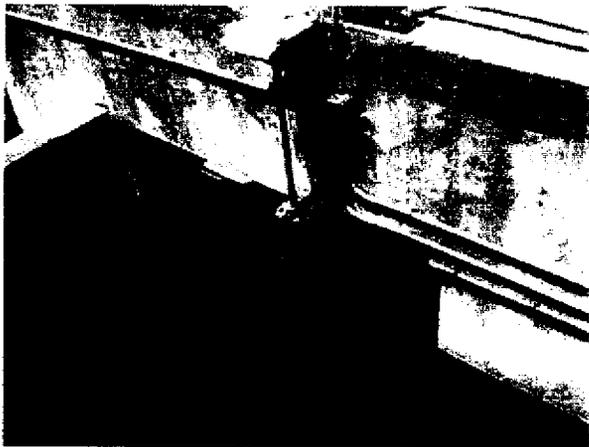
- At the time of the inspection the facility appeared to be well maintained. All components necessary for the treatment of current flows were in service. Overall, the facility appeared to be recovering from the operational and performance problems, e.g. settleability, nitrification, etc., encountered during the months of February – May. While the cause, e.g. process inhibition, has not been fully identified, the facility believes that many of the effluent violations (see below) experienced during this period are directly related to this issue.
- Scheduled maintenance of the south aeration basins had been initiated.



- Renovation of the anaerobic digesters was ongoing.



- A visual observation of the plant effluent revealed no signs of floating debris, oil & grease, or foam in the discharge.



Two treatment system bypass locations were noted and discussed during the inspection. The bypasses involve the diversion from treatment located (1) at the headworks; and (2) after secondary settling prior to the rapid sand filters (tertiary bypass).

Please be advised, the diverting or bypassing of wastewater from any portion of the treatment facility is prohibited and may be subject to an enforcement action. All bypass events must be reported as an unauthorized discharge in accordance with Part III, items 11 and 12, of your NPDES permit. Notification forms are available on our web site at <http://www.epa.state.oh.us/dsw/permits/permits.html>.

Laboratory

The laboratory area appeared to be clean and well kept. Samples required by the NPDES permit are analyzed by the in-house laboratory except for metals (including mercury) and cyanide which are sent to a commercial laboratory. Quality control measures are documented by the development and implementation of a Quality Assurance/Quality Control (QA/QC) program. The analyses of standards, duplicates and spikes are regularly performed. Analytical procedures are documented in writing and maintained in a bound document. All samples sent to a commercial laboratory are submitted under a Chain of Custody. The 2010 DMRQA results indicated that all analytes reported were within the "acceptable" range of analytical precision.

Discharge Monitoring Reports

Discharge monitoring reports (DMR), received by Ohio EPA for the period January 2010 through June 2011, were reviewed. A summary of the reported data is listed in Attachment A. Additionally, the data was reviewed for compliance with the final effluent

Mayor Susan Drucker
City of Solon
August 1, 2011
Page 4

limitations and monitoring requirements of the NPDES permit. Violations of the NPDES permit at Outfall 001 are listed in Attachment B. Bypasses at Stations 002 and 602 are listed in Attachment C.

Please be advised that any violations referenced herein are subject to appropriate enforcement actions pursuant to Chapter 6111 of the Ohio Revised Code. Such actions can result in the imposition of fines of up to \$10,000 per day of violation.

If you should have any questions, please contact this office at (330) 963-1196.

Respectfully,



Ermelindo Gomes
Environmental Engineer
Division of Surface Water

EG/mt

Attachment

pc: Paul Solanics, Director, City of Solon Water Reclamation Department

Attachment A: Solon WWTP Data Summary (1/2010- 6/2011)							
Station Code	Parameter Name	Units	# of Obs.	# < MDL	Min	Avg	Max
1	Water Temperature	C	546	0	11.2	20.112454	42.7
1	Specific Conductance at 25 Degrees C	Umho/cm	73	0	871	1546.3425	2595
1	Dissolved Oxygen	mg/l	546	0	5	7.332967	9.9
1	Total Suspended Solids	mg/l	259	0	1	13.96139	814
1	Oil and Grease, Hexane Extr Method	mg/l	37	7	0	1.1162162	3.3
1	Nitrogen, Ammonia (NH3)	mg/l	239	65	0	1.8929707	16.39
1	Nitrite Plus Nitrate, Total	mg/l	18	0	0.14	4.6944444	18.62
1	Phosphorus, Total (P)	mg/l	83	0	0.019	0.3475783	2.67
1	Cyanide, Free	mg/l	25	24	0	0.000236	0.0059
1	Selenium, Total Recoverable	ug/l	6	6	0	0	0
1	Nickel, Total Recoverable	ug/l	17	0	3.3	5.7411765	9.6
1	Silver, Total Recoverable	ug/l	17	17	0	0	0
1	Zinc, Total Recoverable	ug/l	58	0	26.7	64.065862	112.6
1	Cadmium, Total Recoverable	ug/l	17	17	0	0	0
1	Lead, Total Recoverable	ug/l	17	14	0	0.5823529	3.6
1	Chromium, Total Recoverable	ug/l	17	15	0	0.1411765	1.3
1	Copper, Total Recoverable	ug/l	72	1	0	16.107361	49.08
1	Chromium, Dissolved Hexavalent	ug/l	6	6	0	0	0
1	Fecal Coliform	#/100 ml	96	27	0	2091.2708	181000
1	Bis(2-ethylhexyl) Phthalate	ug/l	6	3	0	6.4333333	32
1	Flow Rate	MGD	546	0	1.668	3.6744982	11.519
1	Mercury, Total (Low Level)	ng/l	37	0	0.685	10.158784	269
1	Acute Toxicity, Ceriodaphnia dubia	TUa	2	2	0	0	0
1	Chronic Toxicity, Ceriodaphnia dubia	TUc	2	2	0	0	0
1	Acute Toxicity, Pimephales promelas	TUa	2	2	0	0	0
1	Chronic Toxicity, Pimephales promelas	TUc	2	2	0	0	0
1	pH, Maximum	S.U.	546	0	6.8	7.4	8.8
1	pH, Minimum	S.U.	546	0	6.4	7.0747253	7.7
1	CBOD 5 day	mg/l	242	62	0	5.6487603	258
2	Total Suspended Solids	mg/l	1	0	196	196	196
2	Bypass Volume	MGAL	1	0	0.625	0.625	0.625
2	CBOD 5 day	mg/l	1	0	202	202	202
2	Bypass Occurrence, Number per month	No./Month	1	0	1	1	1
2	Bypass Duration, Hours per month	Hr/Month	1	0	2.5	2.5	2.5
300	Overflow Occurrence	No./Month	5	0	1	1.2	2
586	Sludge Fee Weight	dry tons	1	0	1861.5	1861.5	1861.5
601	Total Suspended Solids	mg/l	214	0	122	419.81308	1017
601	Cyanide, Total	mg/l	6	6	0	0	0
601	Nickel, Total Recoverable	ug/l	8	0	5.2	14.4625	62.6

Attachment A. Solon WWTP Data Summary (1/2010-6/2011)							
Station Code	Parameter Name	Units	# of Obs.	# < MDL	Min	Avg	Max
601	Zinc, Total Recoverable	ug/l	29	0	94	226.29655	419
601	Cadmium, Total Recoverable	ug/l	8	8	0	0	0
601	Lead, Total Recoverable	ug/l	8	1	0	8.1625	19.3
601	Chromium, Total Recoverable	ug/l	8	0	4.3	22.5375	134
601	Copper, Total Recoverable	ug/l	29	0	36.8	79.27069	264
601	Chromium, Dissolved Hexavalent	ug/l	6	6	0	0	0
601	Mercury, Total (Low Level)	ng/l	27	0	18.2	58.331481	152
601	pH, Maximum	S.U.	546	0	7	10.904212	12.6
601	pH, Minimum	S.U.	546	0	2.5	6.2967033	7.5
601	CBOD 5 day	mg/l	216	0	100	470.72685	966
602	Total Suspended Solids	mg/l	20	0	12	219.85	1236
602	Bypass Volume	MGAL	17	0	0.228	5.6822353	14.99
602	CBOD 5 day	mg/l	19	0	5	79.684211	349
602	Bypass Occurrence, Number per month	No./Month	6	0	1	2	4
602	Bypass Duration, Hours per month	Hr/Month	14	0	2.5	23.321429	120
801	Water Temperature	C	18	0	0.11	11.233889	22.1
801	Dissolved Oxygen	mg/l	18	0	7.9	12.15	22.1
801	pH	S.U.	18	0	6.9	7.4777778	8.3
801	Nitrogen, Ammonia (NH3)	mg/l	18	14	0	0.0255556	0.14
801	Nitrite Plus Nitrate, Total	mg/l	18	2	0	0.3511111	0.77
801	Phosphorus, Total (P)	mg/l	18	2	0	0.0611111	0.19
801	Fecal Coliform	#/100 ml	8	0	133	1241	4333
801	48-Hr. Acute Toxicity Ceriodaphnia dubia	% Affected	2	2	0	0	0
801	96-Hr. Acute Toxicity Pimephales promela	% Affected	2	1	0	7.5	15
801	7-Day Chronic Toxicity Ceriodaphnia dubia	% Affected	2	2	0	0	0
801	7-Day Chronic Toxicity Pimephales promelas	% Affected	2	1	0	11	22
901	Water Temperature	C	18	1	0	13.327222	25.5
901	Dissolved Oxygen	mg/l	18	1	0	10.005556	17
901	pH	S.U.	18	0	0.9	7.0888889	8.1
901	Nitrogen, Ammonia (NH3)	mg/l	18	6	0	1.09	8.7
901	Nitrite Plus Nitrate, Total	mg/l	18	1	0	2.7072222	8.14
901	Phosphorus, Total (P)	mg/l	18	0	0.1	0.1994444	0.34
901	Cyanide, Total	mg/l	19	19	0	0	0
901	Hardness, Total (CaCO3)	mg/l	18	0	133	228.5	373
901	Nickel, Total Recoverable	ug/l	18	0	2.7	4.6844444	7.5
901	Zinc, Total Recoverable	ug/l	18	0	15.8	42.344444	70
901	Cadmium, Total Recoverable	ug/l	18	18	0	0	0
901	Lead, Total Recoverable	ug/l	18	14	0	0.7055556	3.8

Mayor Susan Drucker
City of Solon
August 1, 2011
Page 7

Attachment A: Solon WWTP Data Summary (1/2010-6/2011)

Station Code	Parameter Name	Units	# of Obs.	# < MDL	Min	Avg	Max
901	Chromium, Total Recoverable	ug/l	18	8	0	0.9388889	5.3
901	Copper, Total Recoverable	ug/l	18	0	5.5	11.495556	27.9
901	Chromium, Dissolved Hexavalent	ug/l	18	18	0	0	0
901	Fecal Coliform	#/100 ml	8	0	200	916.75	4000

Attachment B: Solon WWTP Data Effluent Violations Summary (1/2010-6/2011)						
Reporting Period	Station	Parameter	Limit Type	Limit	Reported Value	Violation Date
February 2010	001	Nitrogen, Ammonia (NH3	30D Conc	4.1	5.334	2/1/2010
March 2010	001	Total Suspended Solids	7D Conc	18	18.5	3/8/2010
March 2010	001	Total Suspended Solids	7D Qty	395.2	475.298	3/8/2010
July 2010	001	Nitrogen, Ammonia (NH3	30D Conc	1.2	2.29682	7/1/2010
July 2010	001	Nitrogen, Ammonia (NH3	7D Conc	2.3	10.8	7/8/2010
July 2010	001	Nitrogen, Ammonia (NH3	7D Qty	50.5	109.141	7/8/2010
September 2010	001	Mercury, Total (Low Le	30D Conc	16.1	25.2669	9/1/2010
September 2010	001	pH, Minimum	1D Conc	6.5	6.4	9/7/2010
February 2011	001	Total Suspended Solids	30D Conc	12	58.5	2/1/2011
February 2011	001	Total Suspended Solids	30D Qty	263.5	2078.56	2/1/2011
February 2011	001	CBOD 5 day	30D Conc	10	16.5	2/1/2011
February 2011	001	CBOD 5 day	30D Qty	219.5	565.940	2/1/2011
February 2011	001	Copper, Total Recovers	1D Conc	31	39.57	2/9/2011
February 2011	001	Total Suspended Solids	7D Conc	18	160.666	2/15/2011
February 2011	001	Total Suspended Solids	7D Qty	395.2	5456.45	2/15/2011
February 2011	001	CBOD 5 day	7D Conc	15	37.	2/15/2011
February 2011	001	CBOD 5 day	7D Qty	329.3	1226.26	2/15/2011
February 2011	001	Total Suspended Solids	7D Conc	18	60.5714	2/22/2011
February 2011	001	Total Suspended Solids	7D Qty	395.2	2353.15	2/22/2011
February 2011	001	CBOD 5 day	7D Conc	15	19.5714	2/22/2011
February 2011	001	CBOD 5 day	7D Qty	329.3	736.277	2/22/2011
March 2011	001	Total Suspended Solids	30D Conc	12	13.7916	3/1/2011
March 2011	001	Total Suspended Solids	30D Qty	263.5	423.274	3/1/2011
March 2011	001	CBOD 5 day	30D Qty	219.5	228.146	3/1/2011
March 2011	001	Copper, Total Recovers	1D Conc	31	32.62	3/3/2011
March 2011	001	Total Suspended Solids	7D Conc	18	43.8	3/8/2011
March 2011	001	Total Suspended Solids	7D Qty	395.2	1652.77	3/8/2011
March 2011	001	CBOD 5 day	7D Conc	15	22.2	3/8/2011
March 2011	001	CBOD 5 day	7D Qty	329.3	831.483	3/8/2011
April 2011	001	Total Suspended Solids	30D Conc	12	18.1333	4/1/2011
April 2011	001	Total Suspended Solids	30D Qty	263.5	489.200	4/1/2011
April 2011	001	Total Suspended Solids	7D Conc	18	38.75	4/15/2011
April 2011	001	Total Suspended Solids	7D Qty	395.2	1281.85	4/15/2011
April 2011	001	CBOD 5 day	7D Conc	15	15.25	4/15/2011
April 2011	001	CBOD 5 day	7D Qty	329.3	474.172	4/15/2011
May 2011	001	Total Suspended Solids	30D Conc	12	41.6551	5/1/2011
May 2011	001	Total Suspended Solids	7D Conc	18	32.2	5/1/2011
May 2011	001	Total Suspended Solids	30D Qty	263.5	1401.33	5/1/2011
May 2011	001	Total Suspended Solids	7D Qty	395.2	712.519	5/1/2011
May 2011	001	Nitrogen, Ammonia (NH3	30D Conc	1.2	5.13563	5/1/2011

Attachment B: Solon WWTP Data Effluent Violations Summary (1/2010- 6/2011)						
Reporting Period	Station	Parameter	Limit Type	Limit	Reported Value	Violation Date
May 2011	001	Nitrogen, Ammonia (NH3	7D Conc	2.3	6.21333	5/1/2011
May 2011	001	Nitrogen, Ammonia (NH3	30D Qty	26.3	98.7474	5/1/2011
May 2011	001	Nitrogen, Ammonia (NH3	7D Qty	50.5	132.372	5/1/2011
May 2011	001	CBOD 5 day	30D Conc	10	23.75	5/1/2011
May 2011	001	CBOD 5 day	30D Qty	219.5	801.900	5/1/2011
May 2011	001	Phosphorus, Total (P)	7D Conc	0.7	.915	5/1/2011
May 2011	001	Phosphorus, Total (P)	7D Qty	15.4	20.233	5/1/2011
May 2011	001	Copper, Total Recovera	30D Conc	20	23.925	5/1/2011
May 2011	001	Copper, Total Recovera	30D Qty	0.44	.50511	5/1/2011
May 2011	001	Copper, Total Recovera	1D Conc	31	49.08	5/3/2011
May 2011	001	Copper, Total Recovera	1D Qty	0.681	1.18371	5/3/2011
May 2011	001	Nitrogen, Ammonia (NH3	7D Conc	2.3	10.84	5/8/2011
May 2011	001	Nitrogen, Ammonia (NH3	7D Qty	50.5	163.203	5/8/2011
May 2011	001	Nitrogen, Ammonia (NH3	7D Conc	2.3	2.72	5/15/2011
May 2011	001	Copper, Total Recovera	1D Conc	31	35.	5/19/2011
May 2011	001	Total Suspended Solids	7D Conc	18	135.428	5/22/2011
May 2011	001	Total Suspended Solids	7D Qty	395.2	5091.56	5/22/2011
May 2011	001	Nitrogen, Ammonia (NH3	7D Conc	2.3	3.482	5/22/2011
May 2011	001	Nitrogen, Ammonia (NH3	7D Qty	50.5	98.6273	5/22/2011
May 2011	001	Fecal Coliform	7D Conc	2000	3077.54	5/22/2011
May 2011	001	CBOD 5 day	7D Conc	15	93.	5/22/2011
May 2011	001	CBOD 5 day	7D Qty	329.3	3613.91	5/22/2011

Attachment C: Solon WWTP Bypass Summary (1/2010- 6/2011)					
Station	Reporting Code	Parameter	Units	Date	Reported Value
002	51428	Bypass Volume	MGAL	2/28/2011	0.625
602	51428	Bypass Volume	MGAL	3/1/2010	10.47
602	51428	Bypass Volume	MGAL	12/1/2010	0.228
602	51428	Bypass Volume	MGAL	2/14/2011	3.13
602	51428	Bypass Volume	MGAL	2/16/2011	14.99
602	51428	Bypass Volume	MGAL	2/21/2011	4.39
602	51428	Bypass Volume	MGAL	2/28/2011	11
602	51428	Bypass Volume	MGAL	3/5/2011	6.85
602	51428	Bypass Volume	MGAL	3/9/2011	14.63
602	51428	Bypass Volume	MGAL	4/4/2011	2.47
602	51428	Bypass Volume	MGAL	4/5/2011	4.38
602	51428	Bypass Volume	MGAL	4/19/2011	1.2
602	51428	Bypass Volume	MGAL	4/20/2011	7.79
602	51428	Bypass Volume	MGAL	5/3/2011	1.912

Mayor Susan Drucker
City of Solon
August 1, 2011
Page 10

Attachment C: Solon WWTP Bypass Summary (1/2010- 6/2011)					
Station	Reporting Code	Parameter	Units	Date	Reported Value
602	51428	Bypass Volume	MGAL	5/4/2011	1.318
602	51428	Bypass Volume	MGAL	5/25/2011	1.2
602	51428	Bypass Volume	MGAL	5/26/2011	9.2
602	51428	Bypass Volume	MGAL	5/27/2011	1.44