MUNICIPAL WATER AUTHORITY OF ALIQUIPPA

MUNICIPAL WASTELOAD MANAGEMENT REPORT
OPERATING YEAR 2017

NPDES PERMIT NO. PA0025968

MARCH 2018

REVISED JULY 2018

160 HOPEWELL AVENUE

ALIQUIPPA, PA 15001

MUNICPAL WATER AUTHORITY OF ALIQUIPPA
WATER POLLUTION CONTROL PLANT
MUNICIPAL WASTELOAD MANAGEMENT REPORT
OPERATING YEAR 2017

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PURPOSE AND SCOPE

This report is submitted in fulfillment of the requirements of Chapter 94 - Municipal Wasteload Management, of the Pennsylvania Department of Environmental Protection (PaDEP) Rules and Regulations. This report presents the following:

1. Hydraulic and organic loading graphs including five-year projections.
2. A discussion of the hydraulic and organic load projection methodology.
3. A description of all sewer extensions approved and all sewer extensions constructed in the year reported; and all known proposed projects which will require public sewers but are presently in the preliminary planning stages.
4. A description of the operation and maintenance program for the sewer system including monitoring.
5. A discussion of the condition of the sewer system.
6. A discussion of the condition and capacities of all sewage pumping stations.
7. Description of industrial waste dischargers.
8. Plan to reduce or eliminate existing/projected overload conditions.
9. Information on tributary communities. See Appendix.

SECTION 1: HYDRAULIC LOADING GRAPH (§ 94.12.(a)(1))

Figure 1 contained in the Appendix presents the hydraulic loading graph presenting flows as recorded at the sewage treatment facility for the period of time between 2013 through

2017. Figure 1 also presents flow projections for the coming five-year period (2018 through 2022). The actual data is presented in tabular form appended as Table 1. Hydraulic loading data is taken from Discharge Monitoring Reports (DMRs) submitted monthly by the Municipal Authority to PaDEP. Section 3 of this report provides discussion of the past and projected future hydraulic loadings on the Municipal Authority's sewage treatment facility.

SECTION 2: ORGANIC LOADING GRAPH (§ 94.12.(a)(2))

Figure 2 contained in the Appendix presents the organic loadings tributary to the Municipal Authority's sewage treatment facility for the most recent five year period (2013 through 2017) and projects anticipated organic loadings for the coming five year period (2018 through 2022). Organic loading data is taken from DMRs submitted monthly by the Municipal Authority to PaDEP. Historic loading data is provided in tabular form appended as Table 2. Section 3 of this report discusses past and projected future organic loadings.

SECTION 3: DISCUSSION OF HYDRAULIC AND ORGANIC LOADINGS (§ 94.12.(a)(3))

Hydraulic Loadings

The average daily hydraulic loading for Operating Year 2017 ranged from a low of 2.07 mgd in September to a high of 3.90 mgd in January and March. The 3-month maximum hydraulic loading during the 2017 Operating Year was 3.60 mgd, therefore, the treatment plant was hydraulically overloaded in 2017.

The projected hydraulic loading for the next five years was determined using a nominal estimated increase of 1% additional flow per year. The average annual and 3-month

maximum hydraulic loading projections for 2022 is 2.99 mgd and 3.49 mgd respectively. Therefore, the treatment plant is projected to be hydraulically overloaded in the next five (5) years. A summary table of the projected hydraulic loading during each of the next five (5) years is presented as Table 3.

Organic Loadings

The average daily organic loading for Operating Year 2017 ranged from a low of 544 lbs/day in July to a high of 3,920 lbs/day in March. Monthly average organic loadings at the WWTP did not exceed the design organic capacity of 5,673 lbs/day at any time during the 2017 Operating Year, therefore the WWTP was not organically loaded in 2017.

The projected organic loading was determined using an estimated increase of 1% loading per year. The projected organic loading for 2022 is 1,115 lbs BOD_5/day with a maximum monthly load projection of 1,866 lbs BOD_5/day, which are lower than the permitted organic capacity of 5,673 lbs BOD_5/day. Therefore, the treatment plant is not projected to be overloaded in the next five (5) years. A summary of the projected organic loading during each of the next five years is presented as Table 4.

Sewage Sludge Management Inventory

Reported sludge transfer calculations and Sludge Estimating Worksheet is provided in the Appendix.

A total of 434.32 dry tons of dewatered sludge were removed from the reed beds in February 2017 and hauled to Brunner landfill for disposal.

SECTION 4: SEWER EXTENSIONS (§ 94.12.(a)(4))

The Woodlawn Road sewer extension was completed in 2012, consisting of 1,392 linear feet of gravity sewer, 1,150 linear feet of force main and one pump station (Permit No. 0410402). All future flows will be metered through the pump station.

A sewer extension was completed in 2016 to serve a new 200,000 sf warehouse and laydown yard development along Woodlawn Road in Hopewell Township. The sewer extension consisted of 1,895 linear feet of 4-inch and 8-inch gravity sewer, 4-inch force main discharging into the existing 10-inch gravity sewer tributary to the Jail pump station, and one E-One duplex grinder pump station.

A sewer extension was completed in 2017 to serve 2 commercial buildings along Bet-Tech Drive, consisting of 505 linear feet of 8-inch gravity sewer. Construction drawings depicting as-built conditions are provided in the Appendix to this report.

SECTION 5: SEWER SYSTEM MONITORING, MAINTENANCE, REPAIR AND REHABILITATION (§ 94.12.(a)(5)

The Municipal Water Authority of Aliquippa employs three (3) licensed wastewater operators and one (1) laborer to operate, maintain and oversee daily WWTP operations. Additionally, the Authority currently employs five (5) full-time maintenance personnel that devote part of their time to sanitary system inspection and maintenance. Authority staff or outside contractors perform sanitary system rehabilitation and cleaning as needed to maintain system integrity.

Routine maintenance performed by Authority staff includes:

(1) Maintain Operator License and meet all continuing education requirements of PaDEP.

(2) Operate and maintain the sewage collection, conveyance and treatment facilities in good operating condition necessary to maintain compliance with NPDES Permit.

(3) Keep good housekeeping of Authority facilities including the WWTP and five (5) active pump stations (Wye Lift Station, West Aliquippa Lift Station, Golf Course Road Lift Station, Jail Pump Station, Steel Street Pump Station).

(4) Provide labor to perform all preventative maintenance on existing facilities in accordance with manufacturers' recommendations.

(5) Collect influent and effluent samples at the WWTP in accordance with the NPDES Permit and delivered to CWM Environmental for analysis.

(6) Prepare all documents required to report compliance with NPDES Permit.

(7) Advise the Authority as to necessary repairs, replacement and upgrades of the system.

(8) Prepare and submit a monthly written report to the Authority summarizing all work performed. Provide in report an update on system operating condition and permit compliance.

(9) Test operation of generators, pumps and equipment three times per week.

(10) Investigate/resolve customer complaints.

The Authority maintains a stock of spare parts, filters and lubricants for its equipment. The Authority owns a backhoe, mini excavator and trailer, two (2) dump trucks, air compressor and other miscellaneous tools and equipment. In 2017, sewer maintenance equipment (i.e. root cutter, flush / jet truck, etc.) was contracted through Tri-State Maintenance.

Analysis of historical flow data indicates an infiltration / inflow (I/I) flow component is present. As shown in Table 1, average monthly flows are higher during winter/spring season than during the summer. CCTV inspection and sewer line cleaning was performed by Tri-State Maintenance on an as needed basis in 2017. The Authority spent

approximately $35,000 in 2017 flushing and/or televising sewer lines in the following areas:

- Monaca Road
- Main Street
- St. Titus Church Alley
- McMinn Street
- Ohio Street
- Van Buren Street
- Wilker Avenue
- Maratta Road
- McLean Street
- Woodlawn Road
- Jackson Street
- Irwin Street
- Industrial Park Tunnel
- Brodhead Road
- Davis Street
- Tyler Street
- 22nd Street
- 4th Street / Old Train Station
- Station Street
- Highland Avenue
- Jail Pump Station
- Wauggman Street
- Grandview
- Sheffield Road
- Grove Street
- Mill Street
- Kennedy Boulevard
- Beaver Street
- Route 51 Off-Ramp
- Kiehl Street
- Carroll Street
- Wye Pump Station
- Jacks Street
- Main Avenue
- Davidson Street
- Pierce Street
- Green Street
- Franklin Avenue
- Reed Street
- Grand Avenue
- 4th Avenue
- Filmore Street
- Steel Street Pump Station
- Albert Street

Influent samples are collected with an auto sampler at the headworkers of the plant. The plant flow meter was calibrated in 2017. The flow meter calibration certificate is provided in the appendix.

The Authority inspects its sewage lift stations two to three times per week. The inspection includes a review of flow data, pump status / operation and observation of the wet well. Minor deficiencies found (i.e. grease on floats, clogged pumps, etc.) are repaired in-house. Major repairs such as pump service, wet well cleaning, electrical work, etc. is performed by outside contractors. The grounds at the lift stations are mowed and treated for weeds.

A copy of the maintenance records for the WWTP and pump stations is provided in the appendix.

The condition of the sewer collection and conveyance system is commensurate with age. Overflows and / or bypasses reported in 2017 are summarized in Table 5.

J&L Tunnel Sewer

It was discovered in October 2011 that a sewer line running from the Industrial Park through the tunnel to the Wye lift station collapsed allowing raw sewage to discharge directly into Logstown Run. In March 2012, the PaDEP issued a Notice of Violation for this defect. As a temporary fix, the Authority installed a hose connection.

Construction bids for a permanent fix were received by the Authority in July 2014. The sole bid was approximately $400,000 to replace the 16-inch sanitary sewer in place. At the time, the Authority did not have funds available to award the project and solicited grant monies from a number of organizations to no avail.

One option evaluated to reduce the capital cost of the project was to replace the 16-inch pipe with a smaller size. The Authority Board authorized its Consulting Engineer to initiate the necessary sewage facilities planning / permitting to allow for the reduction in pipe size.

Water Quality Management Part II Permit application was submitted to PaDEP in July 2016. Permit was received in December 2016. Construction bids were received by the Authority in February 2017 and Contract was awarded in May 2017. The sewer was substantially complete and placed into service on November 10, 2017.

WWTP Total Residual Chlorine (TRC) Improvements

PaDEP issued a renewed NPDES Permit for the WWTP in November 2014. The renewed Permit includes a 50 percent reduction of the previously permitted TRC discharge limit of 1.6 / 0.5 ppm (Peak Instantaneous / Monthly Average).

A feasibility study was prepared in November 2015. The study recommended installing a sulfur dioxide dechlorination system. Part II Permit Application was prepared and submitted in November 2016 and was approved on June 8, 2017. Construction Bids were received by the Authority in August 2017 and the Contract was awarded in September 2017. In addition to the dechlorination facility, the project also includes the replacement of the mechanical bar screen and chlorination system. Notice-to-Proceed was issued on November 28, 2017. Construction is expected to be completed and dechlorination system operational by mid 2018.

Primary Clarifier

Primary Clarifier No. 2 shut down in July 2017. An inspection determined rotating equipment is damaged beyond repair. The Authority will procure and install new clarifier equipment in 2018.

During the time that the clarifier is out of service, the Authority will use the tank as an equalization tank during wet weather periods and continue to draw off settled solids as conditions warrant.

SECTION 6: PUMPING STATIONS (§ 94.12.(a)(7))

There are six active sewage pump stations that contribute flow to the WWTP which are detailed below. Flows from each of the lift stations are not metered. Each of the five (5)

lift stations owned and maintained by the Authority is equipped with pump run time meters to estimate flow rates.

1. The Wye Lift Station serves Aliquippa and portions of Hopewell Township. It is equipped with four 3000 gpm pumps powered by 75 HP motors. The maximum monthly flowrate in 2017 was 3,459 gpm. The projected 2-year maximum flow is 3,494 gpm.

2. The West Aliquippa Lift Station serves West Aliquippa and portions of Hopewell Township. It is equipped with two 500 gpm pumps powered by 10 HP motors. The maximum monthly flowrate in 2017 was 63 gpm. The projected 2-year maximum flow is 64 gpm.

3. The Golf Course Road Lift Station serves the Hospital Drive area. It is equipped with two 160 gpm pumps powered by 15 HP motors. The maximum monthly flowrate in 2017 was 30 gpm. The projected 2-year maximum flow is 31 gpm.

4. The Jail Pump Station serves the new Beaver County Jail. It is equipped with two 300 gpm pumps powered by 5 HP motors. The peak daily flowrate in 2017 was 107 gpm. The projected 2-year maximum flow is 108 gpm.

5. The Steel Street Pump Station serves the Industrial Park. It is equipped with two 200 gpm pumps powered by 5 HP motors. The peak daily flowrate in 2017 was 18 gpm. The projected 2-year maximum flow is 19 gpm.

6. The Woodlawn Park Pump Station is owned and maintained by Hopewell Township. The pump station serves 11 residential units in the Woodlawn

Park area and is equipped with two 85 gpm pumps. The 2017 maximum flow was 11 gpm and the projected 2-year maximum flow is 11 gpm. (Refer to Sanitary Sewer System and Pump Station Information prepared by Hopewell Township and provided in the appendix)

There is one inactive sewage pump station; the Woodlawn Road Pump Station completed in 2012. It is equipped with two 122 gpm pumps powered by 4 HP motors. Projected average future flows are 6,000 gpd (30,000 gpd peak).

SECTION 7: INDUSTRIAL WASTE DISCHARGES (§ 94.12.(a)(8))

There are no known industrial wastes being discharged into or treated by the WWTP.

SECTION 8: SEWAGE MANAGEMENT PLAN (§ 94.12.(a)(9))

Based on the WWTP influent data collected to date and the projected loadings over the next five years, the WWTP has adequate capacity.

SUMMARY

As presented in this Municipal Wasteload Management Report, the Municipal Water Authority of Aliquippa Wastewater Treatment Plant was considered hydraulically overloaded in 2017. Projected loadings indicate that the WWTP will be hydraulically overloaded in the next five (5) years but not organically overloaded in the next five (5) years.

SECTION 9: SIGNATURES

To comply with the requirements of the Chapter 94 Municipal Wasteload Management Program, the following signatures are provided.

Preparer / Permittee:

Robert J. Bible, P.E., General Manager
Municipal Water Authority of Aliquippa

7/20/18
Date

FIGURE 1
HYDRAULIC LOADING GRAPH
MWAA WASTEWATER TREATMENT PLANT

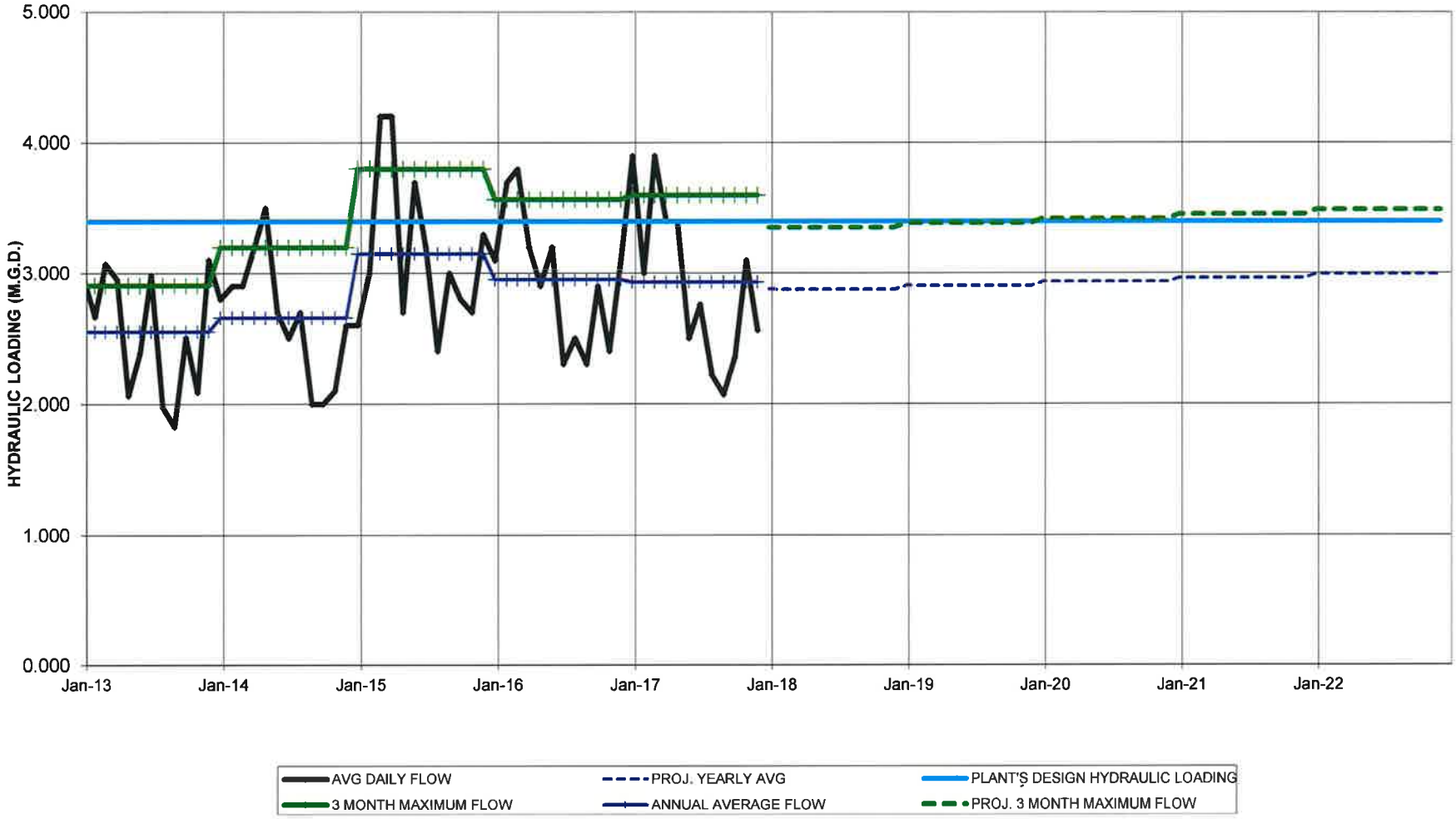

FIGURE 2
ORGANIC LOADING GRAPH
MWAA WASTEWATER TREATMENT PLANT

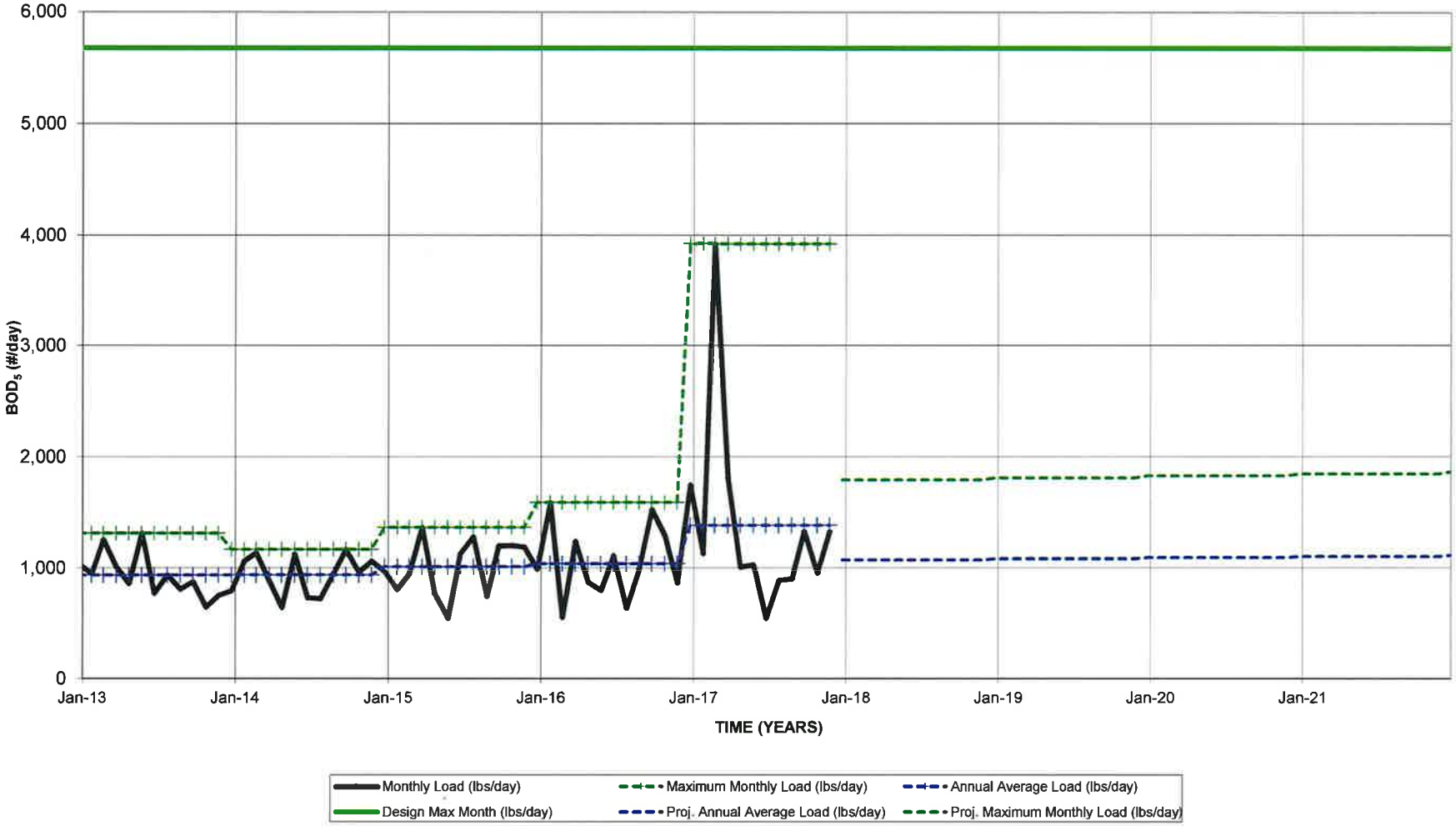

TABLE 1
MUNICIPAL WATER AUTHORITY OF ALIQUIPPA
WATER POLLUTION CONTROL PLANT
HYDRAULIC LOADING DATA SUMMARY
JANUARY 2013 THROUGH DECEMBER 2017

DATE	2013	2014	2015	2016	2017
January	2.98 *	2.80	2.60	3.10	3.90 *
February	2.67 *	2.90	3.00 *	3.70 *	3.00 *
March	3.07 *	2.90 *	4.20 *	3.80 *	3.90 *
April	2.95	3.20 *	4.20 *	3.20 *	3.40
May	2.06	3.50 *	2.70	2.90	3.40
June	2.39	2.70	3.70	3.20	2.50
July	2.99	2.50	3.20	2.30	2.76
August	1.98	2.70	2.40	2.50	2.22
September	1.83	2.00	3.00	2.30	2.07
October	2.51	2.00	2.80	2.90	2.35
November	2.09	2.10	2.70	2.40	3.10
December	3.10	2.60	3.30	3.10	2.56
Annual Average (mgd)	**2.55**	**2.66**	**3.15**	**2.95**	**2.93**
90 Day Sustained Flow Rate (mgd)	**2.90**	**2.87**	**3.70**	**3.57**	**3.60**
Ratio (90-Day Sustained to Annual Average)	**1.14**	**1.08**	**1.17**	**1.21**	**1.23**
5-Year 90-Day Sustained/Annual Average Ratio	**1.17**				
5-Year Annual Average Hydraulic Loading (mgd)	**2.85**				
5-Year 90-Day Sustained Hydraulic Loading (mgd)	**3.33**				

*Maximum 3-month flow period.

TABLE 2

MUNICIPAL WATER AUTHORITY OF ALIQUIPPA

WATER POLLUTION CONTROL PLANT

ORGANIC LOADING DATA SUMMARY

JANUARY 2013 THROUGH DECEMBER 2017

DATE	2013	2014	2015	2016	2017
January	1,042	794	968	988	1,747
February	945	1,064	806	**1,590**	1,131
March	1,255	1,137	945	552	**3,920**
April	1,009	881	**1,364**	1,238	1,809
May	860	642	765	871	1,009
June	**1,313**	1,126	547	798	1,027
July	772	730	1,129	1,111	544
August	939	721	1,280	634	**888**
September	808	951	745	995	901
October	878	**1,168**	1,197	1,527	1,328
November	644	963	1,202	1,291	954
December	751	1,063	1,187	865	1,325
Annual Average (LBS BOD_5/Day)	**935**	**937**	**1,011**	**1,038**	**1,382**
Maximum Month (LBS BOD_5/Day)	**1,313**	**1,168**	**1,364**	**1,590**	**3,920**
Ratio (Maximum Month to Annual Average)	**1.40**	**1.25**	**1.35**	**1.53**	**2.84**
5-Year Maximum Month/Annual Ratio Average	**1.67**				
5-Year Annual Average Organic Loading (LBS BOD_5/Day)	**1,061**				
5-Year Maximum Month Average (LBS BOD_5/DAY)	**1,871**				

TABLE 3

MUNICIPAL WATER AUTHORITY OF ALIQUIPPA
WATER POLLUTION CONTROL PLANT

PROJECTED HYDRAULIC LOAD

YEAR	ANNUAL AVERAGE FLOW (mgd)			90 DAY SUSTAINED AVERAGE (mgd)		
	BASE FLOW	ADDED FLOW *	TOTAL	AVERAGE	RATIO	FLOW
2018	2.85	0.028	2.88	2.88	1.17	3.35
2019	2.88	0.029	2.90	2.90	1.17	3.39
2020	2.90	0.029	2.93	2.93	1.17	3.42
2021	2.93	0.029	2.96	2.96	1.17	3.45
2022	2.96	0.030	2.99	2.99	1.17	3.49

* Estimated 1% increase per year

TABLE 4

MUNICIPAL WATER AUTHORITY OF ALIQUIPPA
WATER POLLUTION CONTROL PLANT

PROJECTED ORGANIC LOAD

ANNUAL AVERAGE LOADING LBS BOD_5/DAY				**MAXIMUM MONTH LOADING** LBS BOD_5/DAY			
YEAR	**BASE**	**ADDED LOAD ***	**TOTAL**	**YEAR**	**BASE**	**RATIO**	**TOTAL**
2018	1,061	10.6	1,071	2017	1,071	1.67	1,793
2019	1,071	10.7	1,082	2018	1,082	1.67	1,811
2020	1,082	10.8	1,093	2019	1,093	1.67	1,829
2021	1,093	10.9	1,104	2020	1,104	1.67	1,847
2022	1,104	11.0	1,115	2021	1,115	1.67	1,866

* Estimated 1% increase per year

TABLE 5

MUNICIPAL WATER AUTHORITY OF ALIQUIPPA
WASTEWATER TREATMENT PLANT

2017 OVERFLOW & BYPASS DATA

Location	Date	Duration (hours)	Reason
WWTP (Secondary Treatment)	2/21/2017	1.67	Duquesne Light Power Outage
WWTP (Secondary Treatment)	3/31/2017	9.75	Duquesne Light Power Outage
WWTP (Secondary Treatment)	4/28/2017	7	Duquesne Light Power Outage
Wye Lift Station	3/31/17	4.0	Wet Weather
Wye Lift Station	7/6/17	2.5	Wet Weather
Wye Lift Station	11/18/17	47.0	Wet Weather

SLUDGE ESTIMATING WORKSHEET

This document is designed as a diagnostic aid in the estimation of sludge quantities produced at a well operated wastewater treatment plant. The calculations are based upon the observations made at hundreds of facilities. The sourse document is the EPA Handbook "Improving POTW Performance Using the Composit Correction Program Approach"

Required Information

1. Average Daily Flow	2.93	mgd
2. BOD_{inf}	57	mg/l
3. BOD_{eff}	6	mg/l
4. Digester Capacity	84500	gallons
5. Waste Sludge (combined w/ primary)	25000	mg/l
6. % solids of sludge leaving plant	7.53	%

STEP 1: Calculate the pounds of BOD being removed by the plant.
(BOD_{inf} - BOD_{eff}) x flow, mgd x 8.34 = pounds/day $BOD_{removed}$ **1229**

STEP 2: Convert pounds/day BOD to pounds/day TSS removed
Pounds/day $BOD_{removed}$ x TSS/BOD factor = Pounds/day $TSS_{removed}$ **1229**
(from step 1) (see Table #1)

STEP 3: Determine sludge feed rate to digesters
(from step #2)
$\frac{\text{(Pounds/day TSS) x } 10^6}{(WAS_{conc} \text{ x } 8.34)}$ = sludge feed rate, gpd **5896** ok - 5,526 gpd in calcs

STEP 4: Determine Digester Hydraulic Detection Time (HDT)
$\frac{\text{Digester Capacity, gallons}}{\text{(Sludge Feed Rate, gpd)}}$ = HDT, days **14.33**
(from step #3)

STEP 5: Estimate Volatile Solid destruction using HDT **0.45**
(see Table #2)

STEP 6: Calculate digested solids amount

TSS x (1.0 - Total Solids Reduction) = Solids Produced, #/d **676** ok - 704 lbs/day in calcs
(from step # 2) (from step # 5)

STEP 7: Convert from Dried Solids to sludge

(from step #6)
$\frac{\text{pounds per day dry solids produced}}{\text{\% solids of sludge leaving plant}}$ = sludge, pounds/day **8979**

STEP 8: Convert from pounds of sludge to gallons

$\frac{\text{pounds/day sludge produced}}{\text{8.34 pounds/gallon}}$ = Sludge, gpd **1077**

Total Gallons Wasted **1119**

Low Range 0.85 x 1077 = 915 , gpd

High Range 1.15 x 1077 = 1238 , gpd

This calculation should be within ± 15% of actual production of a well operated facility

Source : EPA Handbook "Improving POTW Performance Using the Composite Correction Program Approach" EPA-625/6-84-008

TABLE 1

Process Type	$TSS_{sludge}/BOD_{removed}$
Primary Clarification	1.7
Activated Sludge with Primary Clarification	0.7
Activated Sludge w/o Primary Clarification	
Conventional	0.85
Extended Aeration	0.65
Contact Stabilization	1.00
Attached Growth	
(TF, RBC, ABF)	1.00

TABLE 2

	Digester HDT	Total Solids Reduction
Aerobic Digesters	Days	%
Following Extended	10	10
Aeration (MCRT>20 days)	15	20
	20	30
	30	35
Aerobic Digesters	10	20
Following Conventional	15	35
Activated Sludge (MCRT<12)	20	40
Anaerobic Digesters for	20	25
Activated + Primary, and	30	35
Fixed Film (Supernating	40	45
Capability Useable)		

TABLE 3

Typical Sludge Concentrations for Suspended Growth POTW's

Sludge Type	Waste Concentrations (mg/l)
Primary	50,000
Activated	
Return Sludge/Conventional	6,000
Return Sludge/Extended	7,500
Return Sludge/Cont. Stab	8,000
Return Sludge/small plants with low SOR	10,000
Separate waste hopper in clarifier	12,000
Primary + Trickling Filter	45,000
Primary + RBC	45,000
Primary + ABF	35,000
Trickling Filter	30,000
RBC	30,000
ABF	12,000

Diameter	SWD	Area	Volume		Gal/ft	Gal /inch
ft	ft	sq.ft	cu.ft	gal		
55	18	2,374.6	42,743	319,720	17,762.20	1,480.18
			85,487			

Reported Sludge Transfers

Date	From Process To #1		From #1 To #2		Supernate from #2		From #2 To Reed Beds			
	inches	gallons	inches	gallons	inches	gallons	inches	gallons	% Solids	#'s Dry Solids
1/31/2016	93	137,657	100	148,018	139	205,745	72	106,573	6.43	57,151
2/29/2016	100	148,018	70	103,613	69	102,133	62	91,771	4.03	30,845
3/31/2016	90	133,216	72	106,573	70	103,613		-		-
4/30/2016	97	143,578	73	108,053	67	99,172	98	145,058	5.23	63,272
5/31/2016	91	134,697	111	164,300	60	88,811		-		-
6/30/2016	111	164,300	102	150,979	145	214,627		-		-
7/31/2016	98	145,058	123	182,062	47	69,569	100	148,018	6.49	80,117
8/31/2016	102	150,979	74	109,534	66	97,692		-		-
9/30/2016	86	127,296	87	128,776	0	-		-		-
10/31/2016	100	148,018	116	171,701	113	167,261	112	165,780	5.67	78,394
11/30/2016	85	125,816	82	121,375	78	115,454		-		-
12/31/2016	121	179,102	108	159,860	78	115,454		-		-
Annual Totals		1,737,735		1,654,845		1,379,530		657,201	6.08	309,779
Monthly Average		144,811		137,904		114,961		54,767		
Daily Average		4,748		4,521		3,769		1,796		846
							5,565	>Daily Total Supernate plus volume to reed beds		
1/31/2017	152	224,988	132	195,384	69	102,133		-		
2/28/2017	93	137,657	116	171,701	128	189,463		-		
3/31/2017	123	182,062	137	202,785	73	108,053		-		
4/30/2017	122	180,582	100	148,018	70	103,613		-		
5/31/2017	115	170,221	132	195,384	64	94,732	90	133,216	7.00%	77,772
6/30/2017	114	168,741	144	213,146	76	112,494		-		
7/31/2017	117	173,181	104	153,939	69	102,133		-		
8/31/2017	98	145,058	89	131,736	72	106,573	96	142,098	8.00%	94,807
9/30/2017	86	127,296	81	119,895	75	111,014		-		
10/31/2017	112	165,780	130	192,424	0	-		-		
11/30/2017	114	168,741	101	149,498	124	183,543	90	133,216	7.59%	84,327
12/31/2017	98	145,058	91	134,697	113	167,261		-		-
		1,989,366		2,008,608		1,381,011		408,530	7.53%	256,906
Monthly Average		165,780		167,384		115,084		40,853		
Daily Average		5,526		5,579		3,875		1,119		704
							4,995	>Daily Total Supernate plus volume to reed beds		

Formula = (Col. K /1,000,000)* (Col. L*10,000)*8.34

HCS – Instrumentation Division

326 Cycle Drive
Portersville, PA 16051
P: (724) 368-9282
F: (724) 368-9264

Certificate of Calibration

Customer: Aliquippa Waste Water

Model #: (2) Eastech Vantage 2210

S.N.:

Type of Primary Device: (2) 36" Rectangular Weirs

Date of Calibration: 8/2/2017

Remarks: 0-10 MGD, in series with chessel chart recorder.

Andrew Forhadley

MONTHLY MAINTENANCE RECORD

Classes of Grading: Serious enough to require Shut Down = 1
Serious enough to Repair = 2
Long range Repair = 3
Preventative Maintenance = 4

P&I ✓

DATE: 1-3-17 GRADE 1 RECORD NUMBER: 117.001
MALFUNCTION or PM: #1 CLARIFIER GEAR BOX NEEDS REPAIRED PULL UPPER GEAR ASSEMBLY

DATE: 6-29-17 REMEDY: INSTALL PRIMARY GEAR BOX

SIGN OFF BK

CONTROL BOOK ✓

DATE: 1-5-17 GRADE 1 RECORD NUMBER: 117.002
MALFUNCTION or PM: # 2 SLUDGE PUMP NOT PUMPING & GRINDING

DATE: 1-7-17 REMEDY: REBUILD # 2 SLUDGE PUMP WITH NEW STATOR - ROTOR - COU-ROD GENES
48652 HRS

SIGN OFF BK

4 ✓

DATE: 1-18-17 GRADE 4 RECORD NUMBER: 117.003
MALFUNCTION or PM: PLASTIC SCREEN NEEDS CHANGED

DATE: 1-18-17 REMEDY: INSTALL NEW PLASTIC SCREEN/SNOW FENCE ON BAR SCREEN

SIGN OFF BK

MONTHLY MAINTENANCE RECORD

Classes of Grading: Serious enough to require Shut Down = 1
Serious enough to Repair = 2
Long range Repair = 3
Preventative Maintenance = 4

STEEL ST ✓

DATE: 1-23-17 GRADE 1 RECORD NUMBER: 117-004
MALFUNCTION or PM: PULL RADIATOR & CHECK
BEYOND REPAIR $40 LEONARDS
NEED TO ORDER NEW ONE

DATE: 1-25-17 REMEDY: RADIATOR SCRAP
ORDER NEW ONE

SIGN OFF BK

4 ✓

DATE: 1-25-17 GRADE 2 RECORD NUMBER: 117-005
MALFUNCTION or PM: BUBBLER AIR COMPRESSOR
P-SWITCH NOT WORKING

DATE: 1-25-17 REMEDY: INSTALL NEW P-SWITCH
30-50 PSI

SIGN OFF BK

DATE: GRADE RECORD NUMBER:
MALFUNCTION or PM:

DATE: REMEDY:

SIGN OFF

MONTHLY MAINTENANCE RECORD

Classes of Grading: Serious enough to require Shut Down = 1
Serious enough to Repair = 2
Long range Repair = 3
Preventative Maintenance = 4

PRI ✓

DATE: 2-1-2017 GRADE 2 RECORD NUMBER: 217.001
MALFUNCTION or PM: BARS ON U/S SCREEN NEED REPAIRED

DATE: 2.2.2017 REMEDY: WELD + ADJUST SCREEN BARS + CHAIN

SIGN OFF BK

PRI ✓

DATE: 2.7.2017 GRADE 2 RECORD NUMBER: 217.002
MALFUNCTION or PM: R. INF SAMPLER SUCTION HOSE PLUGGED

DATE: 2.7.2017 REMEDY: UNPLUG SAMPLER HOSE

SIGN OFF BK

PRI ✓

DATE: 2.8.2017 GRADE 4 RECORD NUMBER: 217.003
MALFUNCTION or PM: GRIT CHAMBER NEEDS PM

DATE: 2.9.2017 REMEDY: PM GRIT CHAMBER

SIGN OFF BK

MONTHLY MAINTENANCE RECORD

Classes of Grading: Serious enough to require Shut Down = 1
Serious enough to Repair = 2
Long range Repair = 3
Preventative Maintenance = 4

PUMP HOUSE ✓

DATE: 2-15-2017 GRADE 4 RECORD NUMBER: 217-004
MALFUNCTION or PM: PUMPS IN SEC PUMP HOUSE NEED PM

DATE: 2-16-2017 REMEDY: PM SEC PUMPS & FLUSH

SIGN OFF BK

PRI ✓

DATE: 2-17-2017 GRADE 2 RECORD NUMBER: 217-005
MALFUNCTION or PM: DRIVE NEEDS PULLED CALL FOR CRANE

DATE: 2-17-2017 REMEDY: PULLED PRIMARY DRIVE #1 CLARIFIER

SIGN OFF BK

✓ BEDS

DATE: 2-21-2017 GRADE 4 RECORD NUMBER: 217-006
MALFUNCTION or PM: BEDS NEED POWER

DATE: 2-21-2017 REMEDY: POWER BEDS

SIGN OFF BK

MONTHLY MAINTENANCE RECORD

Classes of Grading: Serious enough to require Shut Down = 1
Serious enough to Repair = 2
Long range Repair = 3
Preventative Maintenance = 4

PR1

DATE: 2-22-2017 GRADE 2 RECORD NUMBER: 217-007

MALFUNCTION or PM: LIGHTS IN AQUA SCREEN BUILDING NEED CHECKED

DATE: 2-22-2017 REMEDY: INSTALL NEW X-PROOF LIGHT

SIGN OFF BK

✓

LAB GATE HOUSE

DATE: 2-24-2017 GRADE 4 RECORD NUMBER: 217-008

MALFUNCTION or PM: GAS METER NEEDS CALIBRATED

DATE: 2-24-2017 REMEDY: CALIBRATE GAS METER

SIGN OFF BK

DATE: GRADE RECORD NUMBER:

MALFUNCTION or PM:

DATE: REMEDY:

SIGN OFF

MONTHLY MAINTENANCE RECORD

Classes of Grading: Serious enough to require Shut Down = 1
Serious enough to Repair = 2
Long range Repair = 3
Preventative Maintenance = 4

DISENFECTION ✓

DATE: 3-1-17 GRADE 2 RECORD NUMBER: 317-001
MALFUNCTION or PM: CHLORINE NOT FEEDING CORRECT AMOUNT

DATE: 3-1-17 REMEDY: REBUILD CHLORINATOR & REINSTALL

SIGN OFF BK

STEEL STREET ✓

DATE: 3-1-17 GRADE 2 RECORD NUMBER: 317-002
MALFUNCTION or PM: RADIATOR LEAKING

DATE: 3-8-17 REMEDY: INSTALL NEW RADIATOR, CAP, BLOCK HEATER & FLUID

SIGN OFF BK

✓ WEST

DATE: 3-6-17 GRADE 3 RECORD NUMBER: 317-003
MALFUNCTION or PM: PUMP HAS UNEVEN

DATE: 3-8-17 REMEDY: BACK FLUSH PUMPS & CHECK VALVES

SIGN OFF BK

MONTHLY MAINTENANCE RECORD

Classes of Grading: Serious enough to require Shut Down = 1
Serious enough to Repair = 2
Long range Repair = 3
Preventative Maintenance = 4

Y LIFT ST. ✓

DATE: 3-21-17 GRADE 4 RECORD NUMBER: 317-004
MALFUNCTION or PM: SHREDDER ROOM OUTSIDE DOOR NEED REPLACED REMOVED + TRIM

DATE: 3-22-17 REMEDY: INSTALL NEW DOOR + TRIM ANCHOR TO EXISTING CONCRETE + BRICK

SIGN OFF BK

PRIMARY ✓

DATE: 3-23-17 GRADE 2 RECORD NUMBER: 317-005
MALFUNCTION or PM: DUMPSTERS AT PLANT NEED REPAIRED

DATE: 3-23-17 REMEDY: REAME DUMPSTERS AS NEEDED WHEELS + DRIVE HOLES DRAIN ECT

SIGN OFF BK

PRIMARY

DATE: 3-30-17 GRADE 2 RECORD NUMBER: 317-006
MALFUNCTION or PM: AQUA SCREEN EXHAUST FAN NO WORKING

DATE: 3-30-17 REMEDY: INSTALL NEW SWITCH COVER CONDUIT REWIRE

SIGN OFF BK

MONTHLY MAINTENANCE RECORD

Classes of Grading: Serious enough to require Shut Down = 1
Serious enough to Repair = 2
Long range Repair = 3
Preventative Maintenance = 4

PM

DATE: 4-4-17 GRADE 4 RECORD NUMBER: 417-001
MALFUNCTION or PM: U.S SCREEN NEEDS PM'D

DATE: 4-4-17 REMEDY: PM SCREEN OIL LEVELS
ADJUST CHAIN OK

SIGN OFF BK

PUMP HOUSE

DATE: 4-7-17 GRADE 2 RECORD NUMBER: 417-002
MALFUNCTION or PM: FLOATS ON SECONDARY NEED CLEANED

DATE: 4-7-17 REMEDY: CLEAN FLOATS

SIGN OFF BK

JAIL

DATE: 4-13-17 GRADE 4 RECORD NUMBER: 417-003
MALFUNCTION or PM: WET WELL AT JAIL NEEDS VACUUMED

DATE: 4-13-17 REMEDY: VACUUM WET WELL

SIGN OFF BK

MONTHLY MAINTENANCE RECORD

Classes of Grading: Serious enough to require Shut Down = 1
Serious enough to Repair = 2
Long range Repair = 3
Preventative Maintenance = 4

PRI ✓

DATE: 4-13-17 GRADE 4 RECORD NUMBER: 417-004

MALFUNCTION or PM: GRIT CHAMBER PLUGGED UP CALLED TRI STATE

DATE: 4-13-17 REMEDY: VACUUM + CLEAN GRIT CHAMBER

SIGN OFF BK

2 ✓

DATE: 4-20-17 GRADE 2 RECORD NUMBER: 417-005

MALFUNCTION or PM: VENT FOR Y SCREEN ROOM NEED REMOVED + SEALED

DATE: 4-20-17 REMEDY: REMOVE + SEAL VENT IN SCREEN ROOM

SIGN OFF BK

DIS ✓

DATE: 4-26-17 GRADE 2 RECORD NUMBER: 417-006

MALFUNCTION or PM: CHLORINE DRAIN LINE PLUGGED

DATE: 4-26-17 REMEDY: CLEAN CHLORINE DRAIN LINE + HOSE CHLORINE TANKS

SIGN OFF BY

MONTHLY MAINTENANCE RECORD

Classes of Grading: Serious enough to require Shut Down = 1
Serious enough to Repair = 2
Long range Repair = 3
Preventative Maintenance = 4

WEST

DATE: 5-9-17 GRADE 2 RECORD NUMBER: 517-001

MALFUNCTION or PM: #2 PUMP KICKING OVERLOAD ON LONG RUNS AMPS OK

DATE: 5-11-17 REMEDY: INSTALL NEW B22 SO D HEATERS IN #2 STARTER

SIGN OFF BK

CONTACTOR BKR

DATE: 5-12-17 GRADE 2 RECORD NUMBER: 517-002

MALFUNCTION or PM: SLUDGE FURNACE DOWN EXHAUST BLOWER NOISE

DATE: 5-12-17 REMEDY: REPAIR COUPLING TEST RUN OK EXHAUST NORMAL NO NOISE

SIGN OFF BK

DATE: GRADE RECORD NUMBER:

MALFUNCTION or PM:

DATE: REMEDY:

SIGN OFF

MONTHLY MAINTENANCE RECORD

Classes of Grading: Serious enough to require Shut Down = 1
Serious enough to Repair = 2
Long range Repair = 3
Preventative Maintenance = 4

RCL ✓

DATE: 7-12-17 GRADE 1 RECORD NUMBER: 717-001
MALFUNCTION or PM: #1 CLARIFIER GEAR BOX + TURN TABLE CRACKED SHUT DOWN NOTIFIED JOHN MURPHY 1030AM

DATE: REMEDY:

SIGN OFF BK

Y ✓

DATE: 8-1-17 GRADE 2 RECORD NUMBER: 817-001
MALFUNCTION or PM: BROKEN OPERATOR ON Y OVER FLOW VALVE VALVE IS SHUT FLOOD CONTROL.

DATE: 8-1-17 REMEDY: REPAIR OPERATOR & CHECK FOR PROPER OPERATION FLOOD CONTROL.

SIGN OFF BK

LAB ✓

DATE: 8-2-17 GRADE 4 RECORD NUMBER: 817-002
MALFUNCTION or PM: CALIBRATE FLOW METER YEARLY

DATE: 8-2-17 REMEDY: HCS CALIBRATE PLANT FLOW METER

SIGN OFF BK

MONTHLY MAINTENANCE RECORD

Classes of Grading: Serious enough to require Shut Down = 1
Serious enough to Repair = 2
Long range Repair = 3
Preventative Maintenance = 4

LAWN MOWER

DATE: 8-3-17 GRADE 4 RECORD NUMBER: 817-003
MALFUNCTION or PM: CUB CADET NEEDS SERVICED

DATE: 8-3-17 REMEDY: FULL SERVICE 6.25.SHP
CUB CADET

SIGN OFF BK

#29

DATE: 8-4-17 GRADE 4 RECORD NUMBER: 817-004
MALFUNCTION or PM: TRUCK PM

DATE: 8-4-17 REMEDY: TRUCK PM
OIL CHANGE FILTERS TOP OFF ALL FLUIDS
160,900 MI

SIGN OFF BK

#29

DATE: 8-18-17 GRADE 4 RECORD NUMBER: 817-005
MALFUNCTION or PM: TIRES NEED CHANGED

DATE: 8-17-17 REMEDY: 4 NEW TIRES $520.00

SIGN OFF BK

MONTHLY MAINTENANCE RECORD

Classes of Grading: Serious enough to require Shut Down = 1
Serious enough to Repair = 2
Long range Repair = 3
Preventative Maintenance = 4

DATE: 8-28-17 **GRADE** 4 **RECORD NUMBER:** 817-006

MALFUNCTION or PM: Y PUMP STATION PUMPS NEED PM 1-4

DATE: 8-28-17 **REMEDY:** PM PUMPS INSTALL NEW OIL CHECK SUB MEGS + SEAL FAILURE 1-4

SIGN OFF BK

DATE: 8-29-17 **GRADE** 4 **RECORD NUMBER:** 817-007

MALFUNCTION or PM: OX TOWER NEEDS PM

DATE: 8-29-17 **REMEDY:** PM OX TOWER CHECK + TOP OFF OIL FLUSH ARMS

SIGN OFF BK

DATE: 8-31-17 **GRADE** 4 **RECORD NUMBER:** 817-008

MALFUNCTION or PM: WET WELL JAIL NEEDS VACUUMED

DATE: 8-31-17 **REMEDY:** VACUUM JAIL WET WELL + SEC CLARIFIERS ALGAE

SIGN OFF

MONTHLY MAINTENANCE RECORD

Classes of Grading: Serious enough to require Shut Down = 1
Serious enough to Repair = 2
Long range Repair = 3
Preventative Maintenance = 4

WEST PUMP HOUSE

DATE: 9-7-17 GRADE 2 RECORD NUMBER: 917-001

MALFUNCTION or PM: ROOF LEAKING.

DATE: 9-7-17 REMEDY: UMBRELLA INSTALLED NEW ROOF #11,147.

SIGN OFF BK

#29

DATE: 9-12-17 GRADE 2 RECORD NUMBER: 917-002

MALFUNCTION or PM: TRUCK AUTO BELT TENSIONER BAD

DATE: 9-12-17 REMEDY: INSTALL NEW TENSIONER TOP OFF FLUIDS

SIGN OFF BK

~~KUBOTA~~

DATE: GRADE RECORD NUMBER:

MALFUNCTION or PM:

DATE: REMEDY:

SIGN OFF

MONTHLY MAINTENANCE RECORD

Classes of Grading: Serious enough to require Shut Down = 1
Serious enough to Repair = 2
Long range Repair = 3
Preventative Maintenance = 4

KUBOTA ✓

DATE: 10-26-17 GRADE 2 RECORD NUMBER: 1017-001

MALFUNCTION or PM: KUBOTA. STEERING COLUMN ADJ

DATE: 10-26-17 REMEDY: INSTALL NEW STEERING COLUMN KUMAC BCOS $516.00

SIGN OFF BK

KUBOTA ✓

DATE: 11-8-17 GRADE 2 RECORD NUMBER: 1117-001

MALFUNCTION or PM: KUBOTA LOADER NEEDS OVERHAULED

DATE: 11-8-17 REMEDY: OVERHAUL LOADER

SIGN OFF BK

✓

DATE: 11-8-17 GRADE 2 RECORD NUMBER: 1117-002

MALFUNCTION or PM: BYPASS VALVE BROKEN

Y

DATE: 11-8-17 REMEDY: REPAIR BYPASS VALVE + WORK

SIGN OFF BK

MONTHLY MAINTENANCE RECORD

Classes of Grading: Serious enough to require Shut Down = 1
Serious enough to Repair = 2
Long range Repair = 3
Preventative Maintenance = 4

Y ✓

DATE: 11-10-17 GRADE [ ] RECORD NUMBER: 1117-003
MALFUNCTION or PM: LINE FROM STEEL ST TO Y COMPLETE

DATE: 11-10-17 REMEDY: LINE COMPLETE & TESTED

SIGN OFF BK

G.C. ✓

DATE: 11-15-17 GRADE 2 RECORD NUMBER: 1117-004
MALFUNCTION or PM: BATTERY G.C. GEN BAD

DATE: 11-15-17 REMEDY: INSTALL NEW BATTERY

SIGN OFF BK

Y ✓

DATE: 11-30-17 GRADE 4 RECORD NUMBER: 1117-005
MALFUNCTION or PM: PM 3+4 PUMP Y

DATE: 11-30-17 REMEDY: INSTALL NEW WEAR RINGS #3 & 4 CHECK O/C & ALL COMPONENTS

SIGN OFF BK

MONTHLY MAINTENANCE RECORD

Classes of Grading: Serious enough to require Shut Down = 1
Serious enough to Repair = 2
Long range Repair = 3
Preventative Maintenance = 4

JAIL ✓

DATE: 12-11-17 GRADE 2 RECORD NUMBER: 1217-001

MALFUNCTION or PM: PUMP RUN TIME VARIANCE FAULT

DATE: 12-11-17 REMEDY: INSTALL WET WELL MODULE & CONTACTS

SIGN OFF BK

JAIL ✓

DATE: 12-20-17 GRADE 2 RECORD NUMBER: 1217-002

MALFUNCTION or PM: MISSION BATTERY BAD

DATE: 12-20-17 REMEDY: INSTALL NEW BATTERY

SIGN OFF BK

DATE: _____ GRADE _____ RECORD NUMBER: _____

MALFUNCTION or PM: _____

DATE: _____ REMEDY: _____

SIGN OFF _____

Hopewell Township

Sanitary Sewer System and Pump Station Information
Municipal Water Authority of Aliquippa
Annual Wasteload Management Report
Operating Year 2017

1. Identify the industries tributary to your system.

   None. The Hopewell Township Sanitary Sewer System tributary to the MWAA is comprised entirely of residential customers.

2. Are the industries covered by an Industrial Waste Ordinance or Regulation?

   Hopewell Township adopted Sewer System Rules and Regulations via Ordinance No. 2010-04 on October 11th, 2010 which contains industrial waste discharge requirements.

3. If any industries are known to be causing a problem, has corrective action been proposed?

   Not Applicable.

4. Have any sewer extensions been constructed in 2017? Please describe areas and population served or to be served. Prepare a map if applicable.

   No sanitary sewer extensions were constructed in this area during 2017. No sanitary sewer extensions are proposed to be constructed during 2018.

5. Describe the sewer system monitoring, maintenance and rehabilitation program.

   The Hopewell Township Wastewater Collection, Conveyance, Pumping, and Treatment Facilities are operated and maintained by a staff of nine (9) full-time employees. Major repairs or replacements to the sanitary sewer system are performed by private contractors. Minor repairs or replacements are preformed by Hopewell Township personnel. Equipment available for Township personnel includes safety equipment, backhoe, front end loader, dump trucks, pickup trucks, sewer jet truck, vac truck, and internal inspection/camera equipment.

   Sewer problems are inspected as soon as Hopewell Township is made aware of the problem. Routine inspection (approximately quarterly) occurs in all areas of the wastewater collection system where known problems exist. Cleaning of known problem areas is performed on an as needed basis.

   New sanitary sewers are air tested and new manholes are vacuum tested. New lateral connections are visually inspected by the WPCS Superintendent. Roof drains, surface drains, and other stormwater connections are not permitted to be connected into the sanitary sewer system.

   No special activities were undertaken in this area of the sanitary sewer system during 2017.

6. Describe any infiltration/inflow monitoring preformed (pump station records, complaints, flow meters, smoke or dye testing, etc.).

   During 2017, Hopewell Township did not perform any comprehensive system-wide repair/rehabilitation work, smoke testing, dye testing, or wastewater flow monitoring in this area of the system.

   On October 11th, 2010, Hopewell Township implemented Ordinance No. 2010-04 requiring certification of sanitary sewer status prior to the sale of real estate served by public sewers both within and outside the service area of the wastewater treatment facilities of Hopewell Township as a condition for the issuance of municipal lien letters and property tax verification letters in order to reduce the amount of

infiltration/inflow entering the sanitary sewer system. Real estate testing may include, but may not be limited to, the following: dye testing each downspout and area drain; dye testing foundation drains by flooding or injection; smoke testing of the public sewer and lateral sewer to the house trap; smoke testing of the building drain on the house side of trap; air testing of the lateral sewer; hydrostatic testing of the lateral sewer; and internal inspection of the main sewer and/or lateral sewer during periods of saturated ground and/or precipitation.

On April 10th, 2017, Hopewell Township passed Resolution 2017-12 that repealed Ordinance 2010-06 and Resolution 2010-29, as the goals of Ordinance 2010-06 and Resolution 2010-29 have been successfully achieved thereby obviating the need for continued Smoke and Dye Testing prior to sale of real estate.

During operating year 2017, ten (10) resale dye tests were performed within the Hopewell Township sewer system tributary to Aliquippa, resulting in one (1) failure and nine (9) acceptable dye tests. The one (1) failure has been repaired and certified. One (1) new residential unit was constructed, inspected, and certified during 2017. A copy of the 2017 Dye Test Summary is attached.

7. Describe any required maintenance and control of combined sewer regulators during 2017 (if applicable).

   Not Applicable.

8. Describe the sewer system condition as follows:

   a. Define areas where the conveyance capacity is being exceeded or will be exceeded in the next five years (note: differentiate between dry weather and wet weather problems).

      None.

   b. Define areas where rehabilitation or cleaning is needed or is underway.

      None.

   c. Estimate any wet weather overflow volumes and note their location.

      Not Applicable

9. Compare available capacity of sewage pumping station (if applicable) with:

   a. Present maximum flows.

   b. Projected two (2) year maximum flow.

One (1) wastewater pumping station is located in the Woodlawn Park area of Hopewell Township and is tributary to the Aliquippa sewer system. The Woodlawn Park Wastewater Pumping Station serves eleven (11) residential units. As no wastewater flow meter exists at the Woodlawn Park Wastewater Pumping Station, the flow data presented below is theoretical and is based on 3.5 people/unit and 100 gpcd. The peak flow factor is 4.0.

Design Capacity : 85 GPM
Present Maximum Flow: 11 GPM
Projected 2-Year Maximum Flow: 11 GPM

No overflows occurred from the Woodlawn Park Wastewater Pumping Station during 2017.

10. Describe any plans to be taken to reduce or eliminate:

    a. Surface water connections.

    None (all tested and removed 1999). Implementation and enforcement of Ordinance No. 2010-04 requiring certification of sanitary sewer status prior to the sale of real estate served by public sewers through April 10th, 2017.

    b. Downspout connections.

    None (all tested and removed 1999). Implementation and enforcement of Ordinance No. 2010-04 requiring certification of sanitary sewer status prior to the sale of real estate served by public sewers through April 10th, 2017.

    c. Combined sewer flows.

    Not Applicable.

    d. Infiltration.

    Implementation and enforcement of Ordinance No. 2010-04 requiring certification of sanitary sewer status prior to the sale of real estate served by public sewers through April 10th, 2017.

11. Describe any plans to reduce or equalize existing sanitary flows.

    None.

12. Provide population projections for the next 5, 10, and 20 years. If they differ significantly with previous years, please note.

    No major development is proposed to be connected to this portion of the Hopewell Township Wastewater Collection System. Hopewell Township estimates that two (2) or fewer connections will be made to this system each calendar year. The following population projections are based on the connection of two (2) units per year and each unit containing three (3) people.

2017 Population (Estimated @ 3 persons/EDU):	***3,048***
5 Year Population:	***3,078***
10 Year Population:	***3,108***
20 Year Population:	***3,168***

Respectfully Submitted,
HOPEWELL TOWNSHIP

Marie S. Hartman

Marie Stratakis Hartman, P.E.
Hopewell Township Engineer/Assistant Manager

HOPEWELL TOWNSHIP
ALIQUIPPA SANITARY SEWER SYSTEM TRIBUTARY AREA
PROPERTY RESALE DYE TESTING SUMMARY
OPERATING YEAR 2017
(01/01/2017 THROUGH 04/10/2017)

Dye Test Date	Property Address	Pass/Fail	Certificate Date	Certificate Number
1/12/2017	199 Edgewood Avenue	Pass	1/12/2017	1892
1/12/2017	1110 Fairlane Drive	Pass	1/12/2017	1893
1/19/2017	102 Oak Drive	Pass	1/19/2017	1895
1/26/2017	1924 Maratta Road	Pass	1/26/2017	1902
2/21/2017	1118 Maine Avenue	Pass	2/21/2017	1911
2/28/2017	1216 New Hampshire Avenue	Pass	2/28/2017	1914
3/9/2017	98 Shaker Heights Drive	Pass - New Dwelling	3/9/2017	1924
3/9/2017	1210 Royal Drive	Pass	3/9/2017	1926
3/22/2017	1601 Montpelier Street	Pass	3/22/2017	1933
4/4/2017	1101 Fairlane Drive	Pass	4/4/2017	1937
2/21/2017	2101 Maratta Road	Fail-Stairwell Drain & No Cap on Clean-Out	4/7/2017	1942