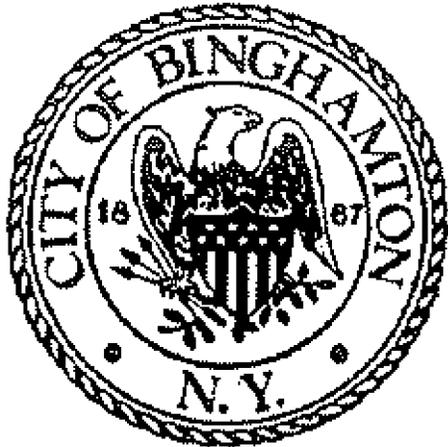


Binghamton-Johnson City Joint Sewage Treatment Plant Restoration and Rehabilitation Project

2016 Quarter 2 Report

*City of Binghamton
Village of Johnson City
Joint Sewage Board*



July 2016

**2016 QUARTER 2 REPORT
BINGHAMTON-JOHNSON CITY JOINT SEWAGE TREATMENT PLANT
RESTORATION AND REHABILITATION PROJECT
CASE No. R7-20110628-59**

In accordance with Paragraph A-1c. of the Second Modification Consent Order (Case No. R7-20110628-59) between the City of Binghamton, Village of Johnson City and the Joint Sewage Board, and the State of New York, the City submits this 2016 Quarter 2 Report. The report summarizes the status and progress of the projects and programs required by the Consent Order from April 1, 2016 to June 30, 2016.

SECTION 1 - FACILITY OPERATIONS

We continue to operate in CEPT mode.
Settling Tanks 7, 8, and 9 have been taken off line in preparation for work to be completed.
Flow has been reduced to receive a minimum of 35 MGD.

See Attachment A for the plant performance during this Quarter.

SECTION 2 - STATUS OF REHABILITATION

Background

The Binghamton - Johnson City Joint Sewage Treatment Plant (BJCJSTP) is a 60 million gallon per day (MGD) wastewater treatment facility that is jointly owned by the City of Binghamton and the Village of Johnson City and managed by the Binghamton- Johnson City Joint Sewage Board (BJCJSB).

The BJCJSTP has suffered several catastrophic events since 2006. In 2006, the BJCJSTP was flooded that affected many of the processes in operation. In May of 2011, a concrete structure suffered structural failure, and in September 2011, the BJCJSTP suffered another major flood event that critically damaged equipment and rendered the secondary treatment fundamentally inoperable. The secondary process system is still largely inoperable today. There was a Consent Order and the First Modification Consent Order was negotiated between the City of Binghamton, the Village of Johnson City, the BJCJSB and the NYSDEC to develop a plan to restore treatment operations at the BJCJSTP. The Second Modification dated May 31, 2016 requires the BJCJSTP to restore secondary treatment to treat 35 MGD by August 1, 2018. To achieve this level of treatment, the reconstruction and testing of the Secondary Treatment Process must be completed as necessary to achieve treatment of 35 MGD. The sewage treatment plant must then be fully operable by May, 1, 2019, including the remainder of the secondary treatment process. There are also several interim milestones established in the Second Modification Consent Order.

The project is being constructed in accordance with Wicks Law, which requires that the project be bid as multiple prime contracts. More specifically, Wicks Law requires that the bulk of the

construction work, consisting of the secondary treatment biological filtration filters (BAF), be divided into a General Civil Construction Contract, an Electrical Contract, an HVAC Contract and a Plumbing Contract. The following projects are either nearing completion, in construction, or in the planning stage.

Contract No.	Description	Status
Contract No. 1	Compost Facility Demolition	Nearing final completion
Contract No. 2	FEMA Mechanical	Substantial Completion Date July 2016 Anticipated Completion Date October 2016
Contract No. 3	BAF Facility Demolition	Nearing final completion
Contract No. 4	MCC HH Emergency Replacement	Substantial completion in September 2016
Contract No. 5	BAF Restoration and Rehabilitation Civil Contract	Notice to Proceed (NTP) Issued May 27, 2016
Contract No. 6	BAF Electrical	NTP Issued May 27, 2016
Contract No. 7	BAF HVAC	NTP Issued May, 27, 2016
Contract No. 8	BAF Plumbing	NTP Issued May 27, 2016

Contract No.	Description	Status
Contract No. 9	Secant Pile Contract	Completion anticipated in September 2016
Contract No. 10 13	Solids Handling Renovation	Currently in design. Anticipated completion of design is the end of 2016.
Floodwall	Floodwall and New Diversion Structure	Currently in construction. Anticipated Completion Date July of 2017

Contract Descriptions

Contract No. 1 - Compost Facility Demolition

Demolition of the upper portion of the compost facility was performed to accommodate the construction of the new Administration Building to house the plant staff as well as provide the new control room to operate the new facilities. Demolition of the lower portion of the Compost Building clears the way for the construction of a new maintenance facility.

Status: LeChase Construction is nearing completion on this contract. No new submittals or RFI's have been submitted since the first of the year. The original contract amount was \$1,473,925, and change orders have been processed to the City for execution in the aggregate amount of \$87,390. The change order amount represents approximately 6% of the original construction bid amount. The only remaining item to complete this contract is to install camera #3 which is part of the CCTV system being used to visually document work and monitor the site.

Contract No. 2 - FEMA Mechanical

The FEMA Mechanical Project replaces valves, equipment and other miscellaneous items damaged in the 2011 flood. It includes equipment in both the East and West Primary Sludge Pumping Stations, valves and equipment located in the Head House, and equipment associated with Sludge Thickener Pumping Station Nos. 1 and 2. Work associated with this contract is being reimbursed by FEMA as a result of the flood of 2011.

Status: Blue Heron has submitted most of the required submittals. Several of the submittals have been returned Revise and Resubmit by the GHD. Jacobs the contractor and GHD are working to get submittals approved to complete the contract. Blue Heron has indicated that it will take them approximately 6 weeks to perform the work once they receive the materials for construction. We are actively managing the construction contract to ensure that the work associated with this contract does not impact Contract #5.

Contract No. 3 - BAF Facility Demolition

The BAF Demolition Contract removed the existing structures and utilities that conflict with the new construction work included in the BAF Restoration and Rehabilitation Project. Demolition efforts include selective demolition in the existing process tanks (C-Filters, N-Filters, and DN-Filters) and buildings and mechanical equipment and piping to ready the site for new construction.

Status: LeChase is nearing completion on the BAF Facility Demolition contract. The only remaining items for completion are evaluation and repair of concrete reinforcing steel cut in error by their subcontractor, disposal of the existing methanol in the existing methanol tanks, and final resolution of the excess concrete removal and additional backfill included in change order #4. The scope of work for the contract was increased with four change orders. One modified the contract to demolish and remove the existing Blower Building to improve construction on contracts 5-8 at the C-N cells 1-8. The second demolished the known concrete in the C cell area inside the secant pile area below the elevation 825 (the original limit of demolition indicated on the contract documents.) The third removed the additional concrete pile caps and steel H piles not originally included in the contract documents and also backfilled from elevation 825 to 831. The fourth and final change order compensated the contractor for demolition of approximately 3600 CY of additional concrete within the secant pile area not known to exist when demolition was priced for change order number 2. The necessity to remove the additional concrete also resulted in additional backfill to fill the excavation inside the secant pile perimeter. By removing the additional concrete and backfilling the area inside the secant pile area allowed the secant pile contract to be more clearly defined. Without this advanced demolition effort it would not have been possible to meet the Consent Order milestones which would have potentially exposed the project to significant fines from DEC.

Contract No. 4 - MCC - HH Emergency Replacement

Contract 4 replaces the original existing Motor Control Center (MCC) in the Head House (HH). The MCC is 50 years old and well past its useful life. The contract was bid as an emergency

because the electrical system in the Head House is both critical to keeping the BJCJSTP in service and because the original MCC is extremely unreliable due to the age and condition of the gear. The work includes new electrical feeders from the HH to the Johnson City Grit House No. 1, a new feeder from the HH to the Thickened Sludge Pump Station No. 1, and various other panel boards. The emergency work also includes replacement of the existing raw sewage variable frequency drives that were located in the existing MCC HH. The new drives will be more reliable, more efficient, and will provide better performance of the existing raw sewage pumps.

Status: The new VFD's have been delivered, and are installed in the Head House pending replacement of the existing MCC HH. The new MCC HH was delivered on July 12, 2016. Installation and testing of the new MCC HH will take about 5 weeks before the old original gear will be completely removed. Change Orders have been minimal to date, and the work is expected to be substantially complete in September 2016. The complexity of replacing an existing MCC with a complete new system took considerable time and effort to insure the proper installation and uninterrupted transition of power and control from the old MCC to the new MCC.

Contract No. 5 - BAF Restoration and Rehabilitation Civil Contract

When combined with the other BAF contracts (Nos. 6, 7 & 8), Contract No. 5, the General Civil contract, is intended to provide a functioning automated plant using a BIOSTYR BAF. It is also intended to provide functioning automated head works and primary clarification processes upstream of the BIOSTYR BAF system and solid handling processes downstream of the BIOSTYR BAF system.

Major components of the work under Contract No. 5 include new coarse screens and ancillary equipment, new piping and valves for the influent pumps, new metering equipment, new fine screens and grit removal with ancillary equipment, a new primary distribution box, new mechanical equipment for primary clarifiers 1-10, new chemical equipment for primary treatment, modification of the primary clarifier structural components to replace the aged and deteriorated mechanical equipment, modifications to the secondary influent pump station including new pumps for the new BAF system, a new BAF backwash tank, (9) new CN BAF cells and modifications to the (4) DN-BAF cells, a new methanol system that will feed the DN-BAF cells, new Ultra Violet Light disinfection system to replace the existing chlorine disinfection system, new sludge thickening equipment and systems, a new administration building, new odor control equipment, two new 2MW electric generators, and a new plant outfall to the river.

Status: Contract No. 5 was bid and awarded in compliance with the May 27, 2016 milestone for issuing Notice to Proceed (NTP) in the Consent Order. The contractor is preparing for mobilization and is in the process of developing the Critical Path Method (CPM) Schedule to reflect their plan to meet the required milestones of the Consent Order. Because of the extremely tight site, the Contractor will use two tower cranes and several mobile cranes to execute the work. The Contractor is preparing to mobilize the first tower crane in either late August or early September. Because Wicks Law required the contracts to be bid as Multiple Prime Contracts, it is critical to manage the coordination of the work between the Multiple Prime Contracts to ensure the work progresses and schedules are met. The first coordination meeting was held July 6, 2016.

The first draft of the CPM Schedule was submitted on July 1, 2016. The CPM schedule continues to be refined to meet the Consent Order milestones.

Contract No. 6- BAF Electrical

The BAF Electrical contract supports the BAF General Civil Contract and includes all electrical and instrumentation associated with the BAF contracts. The project scope includes installation of the electrical components of Contract 5 as well as the installation of the new generators, installation of the electrical feed throughout the plant, as well as installation of the instrumentation and SCADA System.

Status: Contract No. 6 was bid and awarded in compliance with the May 27, 2016 milestone for issuing the NTP in the Consent Order. The contractor is preparing for mobilization and is in the process of developing the CPM Schedule to reflect their plan to meet the required milestones of the Consent Order.

Contract No. 7-BAF HVAC

The BAF HVAC contract supports the BAF General Civil Contract and includes installation of all HVAC Systems in all facilities as well as revisions and improvements to the odor control systems.

Status: Contract No. 7 was bid and awarded in compliance with the May 27, 2016 milestone for issuing the NTP in the Consent Order. The contractor is preparing for mobilization and is in the process of developing the CPM Schedule to reflect their plan to meet the required milestones of the Consent Order.

Contract No. 8- BAF Plumbing

The BAF Plumbing contract supports the BAF General Civil Contract and includes installation of plumbing systems for the new and existing facilities included in Contract No. 5.

Status: Contract No. 8 was bid and awarded in compliance with the May 27, 2016 milestone for issuing the NTP in the Consent Order. The contractor is preparing for mobilization and is in the process of developing the CPM Schedule to reflect their plan to meet the required milestones of the Consent Order.

Contract No. 9 - Secant Pile Contract

The Secant Pile contract includes installation of the secant piles that support the excavation for the new BAF Backwash tank as well as supporting the new CN Cells 9-14. Construction also includes excavation to the final grade for the BAF Backwash tank. Approximately 4 months were saved on the overall project schedule by bidding the Secant Pile Construction Project separately from the larger projects.

Status: Construction is progressing with the completion of the 142 secant piles on July 1, 2016. This is approximately 10 days behind the original projected completion date from the Contractor's base line schedule. The Contractor's current CPM schedule shows them completing the work approximately 40 days beyond the required contract completion date, but finishing well ahead of the DEC Consent Order milestone of November 2016. The Construction Manager is working with the Contractor to improve on the schedule.

Contract Nos. 10 - 13 -Solids Handling Renovation

Contracts Nos. 10-13 are intended to renovate and improve the solids handling systems including the existing digester control building, existing digesters, solids dewatering systems, and all ancillary equipment. The scope will be further developed as the design progresses.

Floodwall

The new floodwall being constructed at the STP is intended to protect the plant to an elevation 1.5 feet above the 2011 flood level. The floodwall includes concrete walls on the east and north side of the STP. The project also includes two new pump stations to pump rainwater out of the plant during the storm events that might overwhelm the existing storm drain system. The new flood wall system works in conjunction with new flood wall features included in Contract No.5 BAF General Civil Construction.

Status: Construction is proceeding with the clearing and grubbing of the area north of the BJCJSTP site, as well as completion of a temporary haul road between the floodwall and the Susquehanna River. Installation of the sheet pile is nearing completion and the excavation for the flood wall has begun. Form work and rebar installation is progressing for the first segment of the flood wall. We continue to proof the subgrade condition as excavation areas are exposed. All early permit requirements regarding the SEQR and the USACE Permit have been complied with for year one. We are currently projecting the Contractor to complete the flood wall within the allowed contract completion date and the Consent Order milestones.

SWPPP Compliance:

As part of the Jacobs contract we have Atlantic Testing Laboratories perform a weekly inspection of the site BMP's included in each construction contractor's SWPPP.

Status of Consent Order Milestones

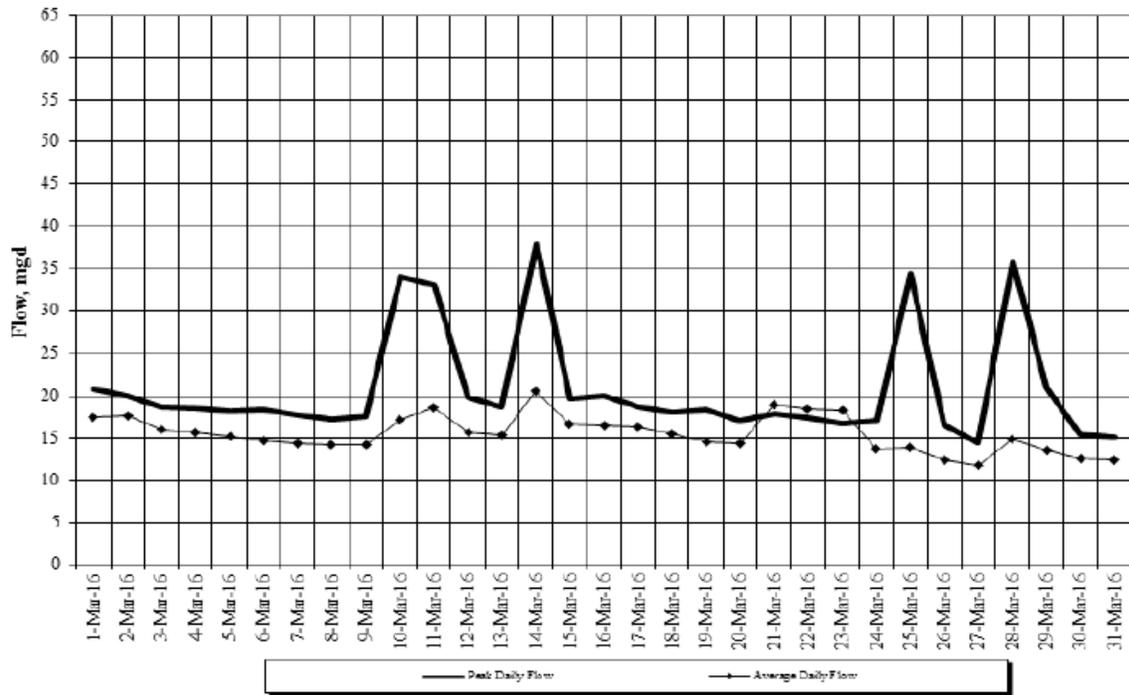
Notice to Proceed letters issued for Contracts 5-8 were submitted on May 27, 2016.

Web Page on the City of Binghamton's web site went on-line June 24, 2016.

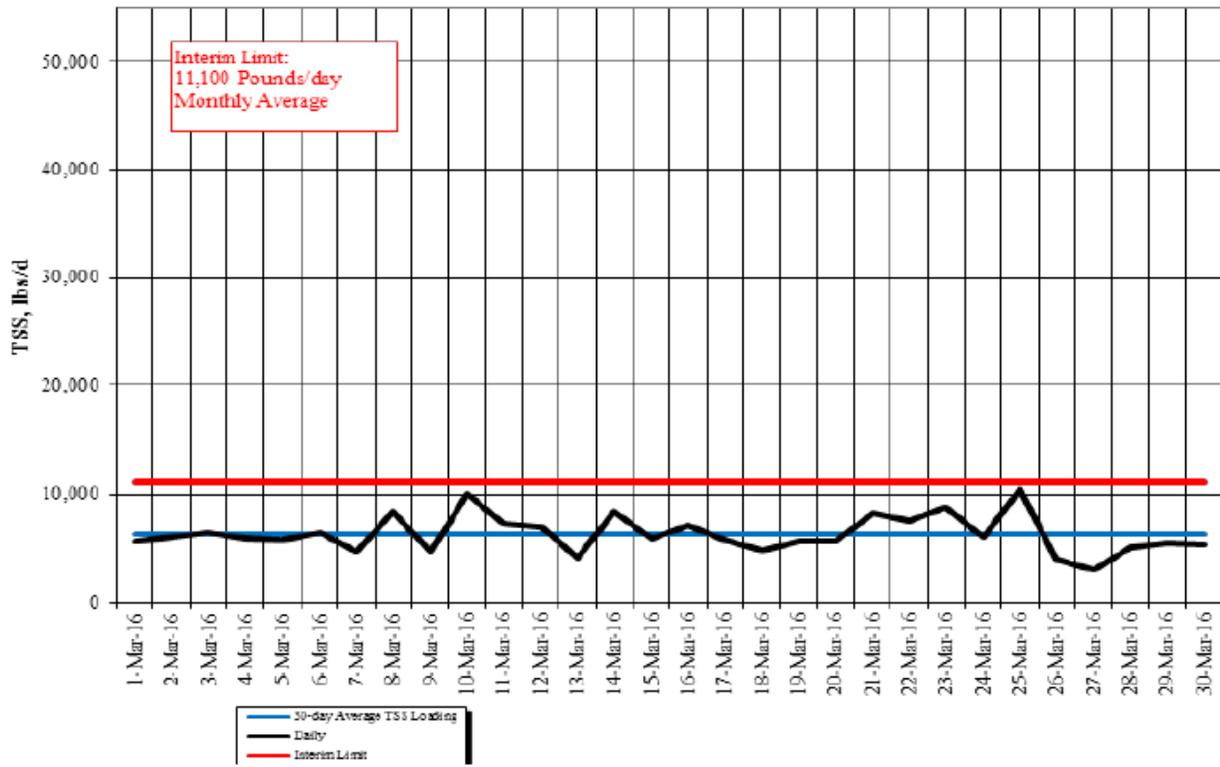
Submitted the 2016 Quarter 2 Report on July 15, 2016.

ATTACHMENT A
FACILITY OPERATIONS

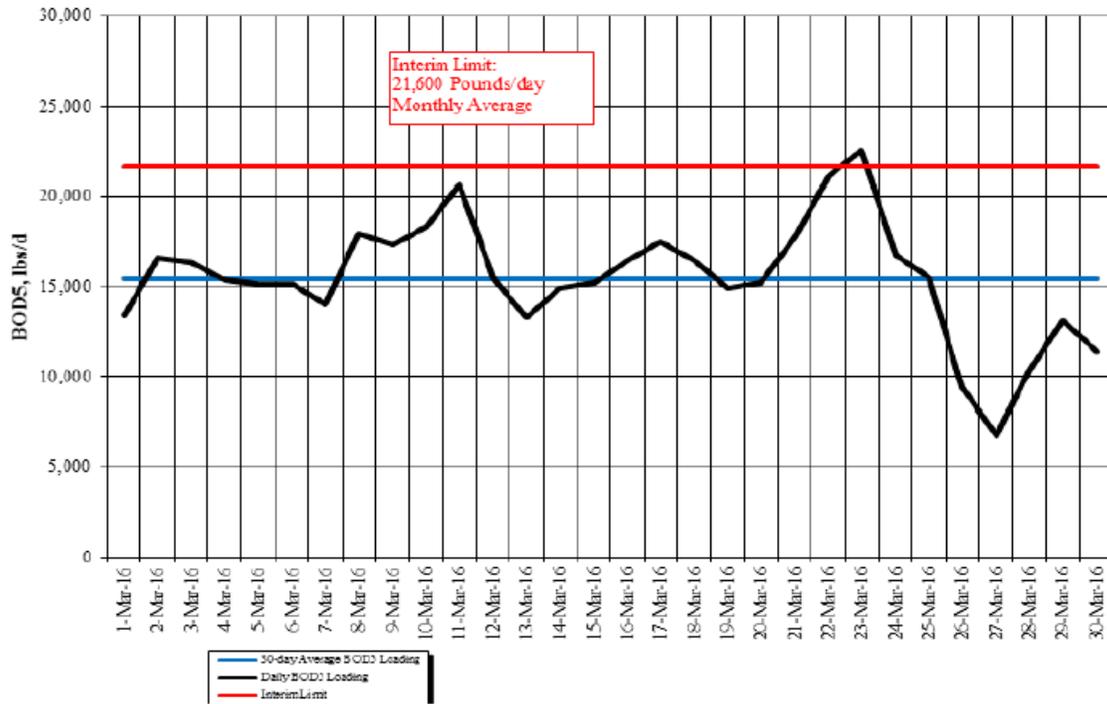
March Daily Flows
 Binghamton - Johnson City JSTP



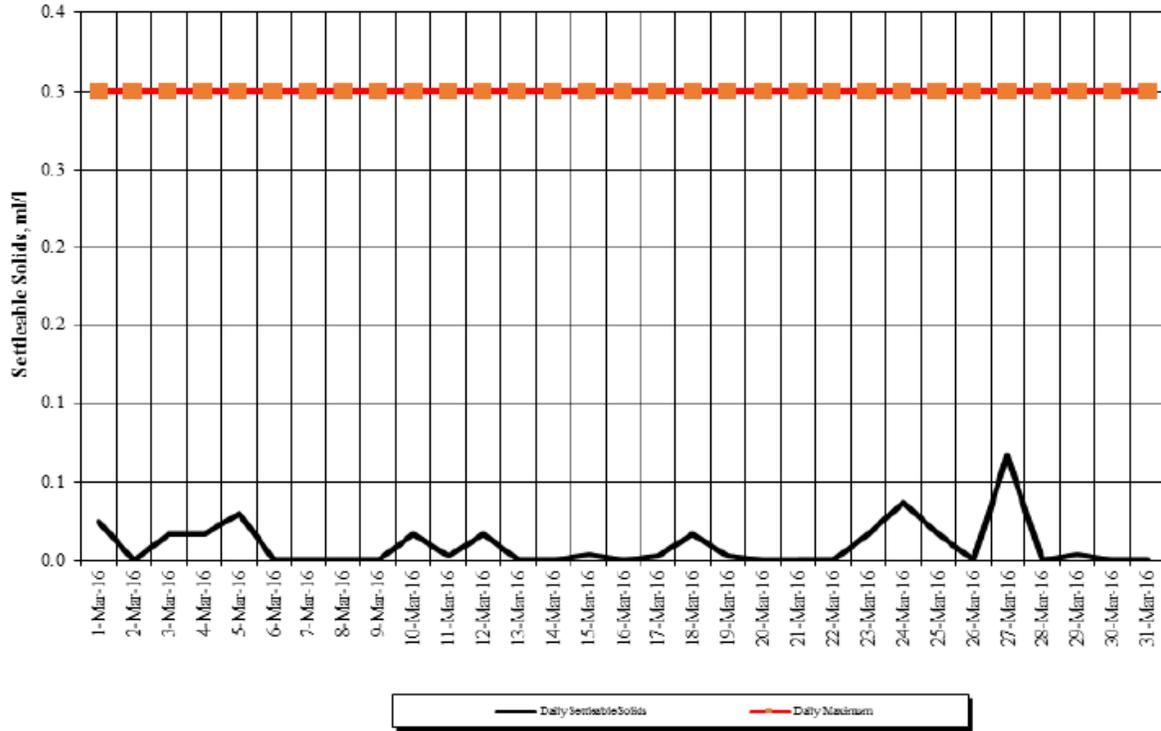
March Effluent TSS Loadings
Binghamton - Johnson City JSTP



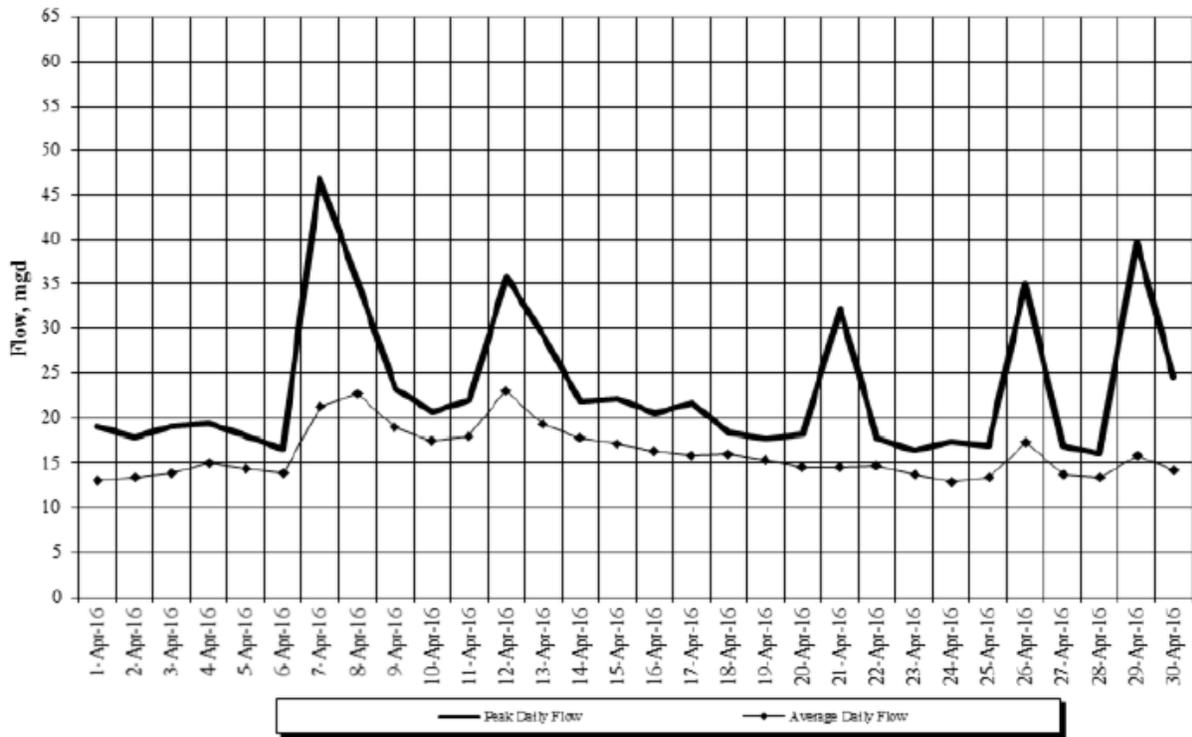
March Effluent BOD5 Loadings
 Binghamton - Johnson City JSTP



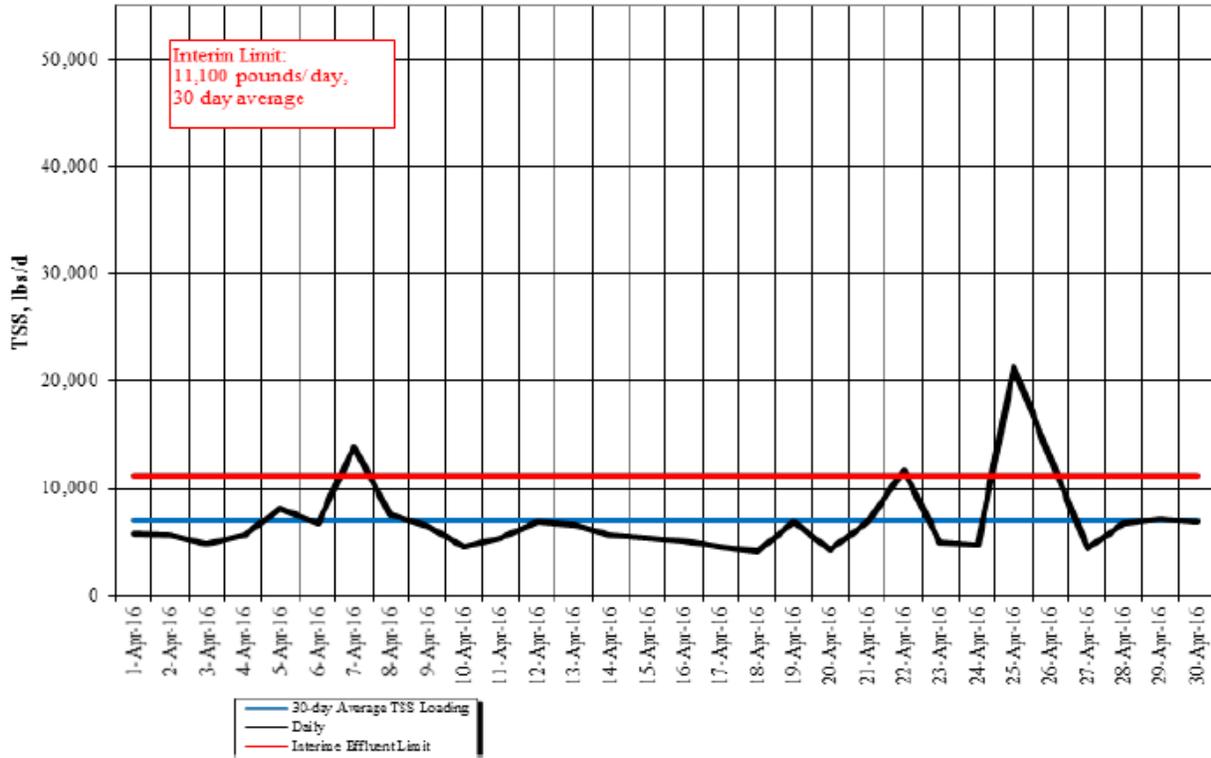
March Settleable Solids
Binghamton - Johnson City JSTP



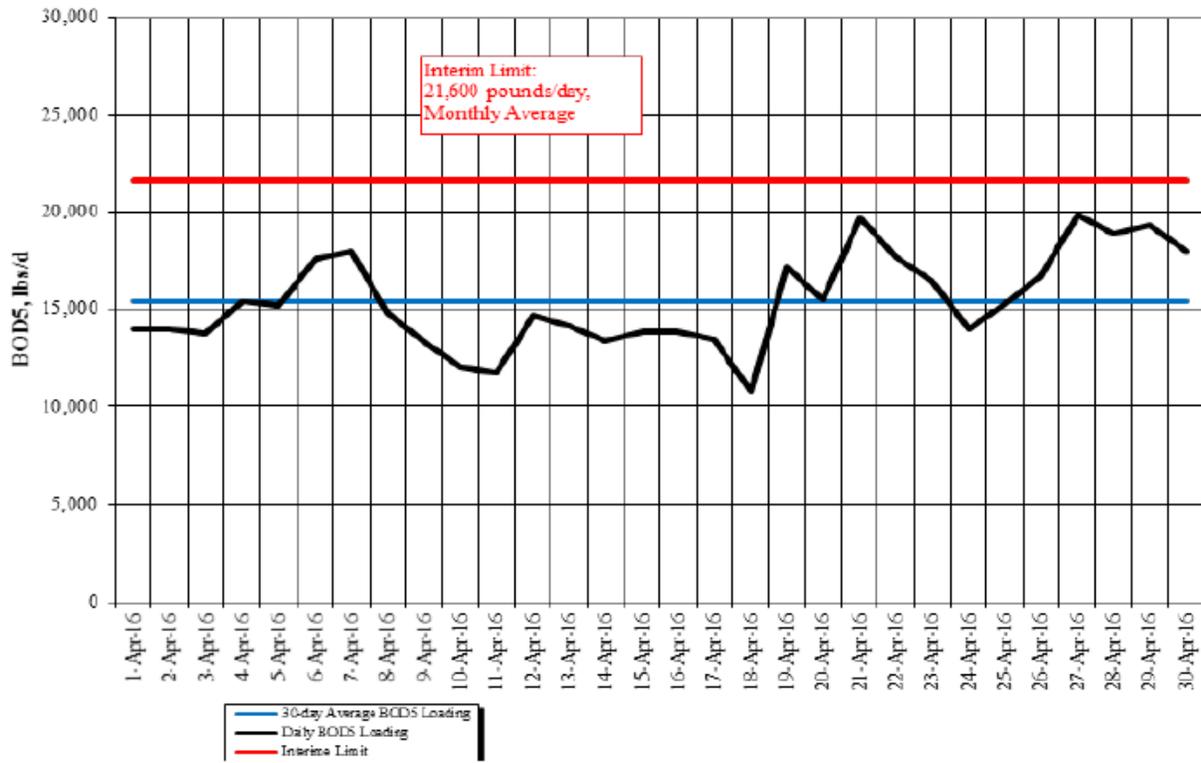
April Daily Flows
Binghamton - Johnson City JSTP



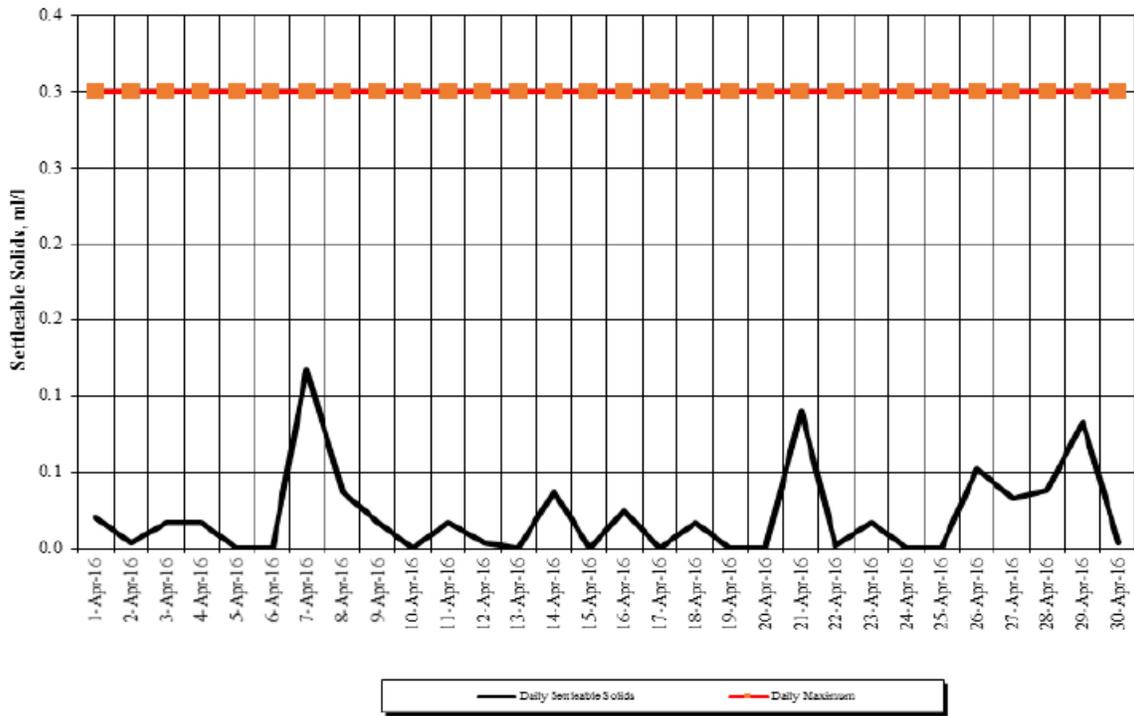
April Effluent TSS Loadings Binghamton - Johnson City JSTP



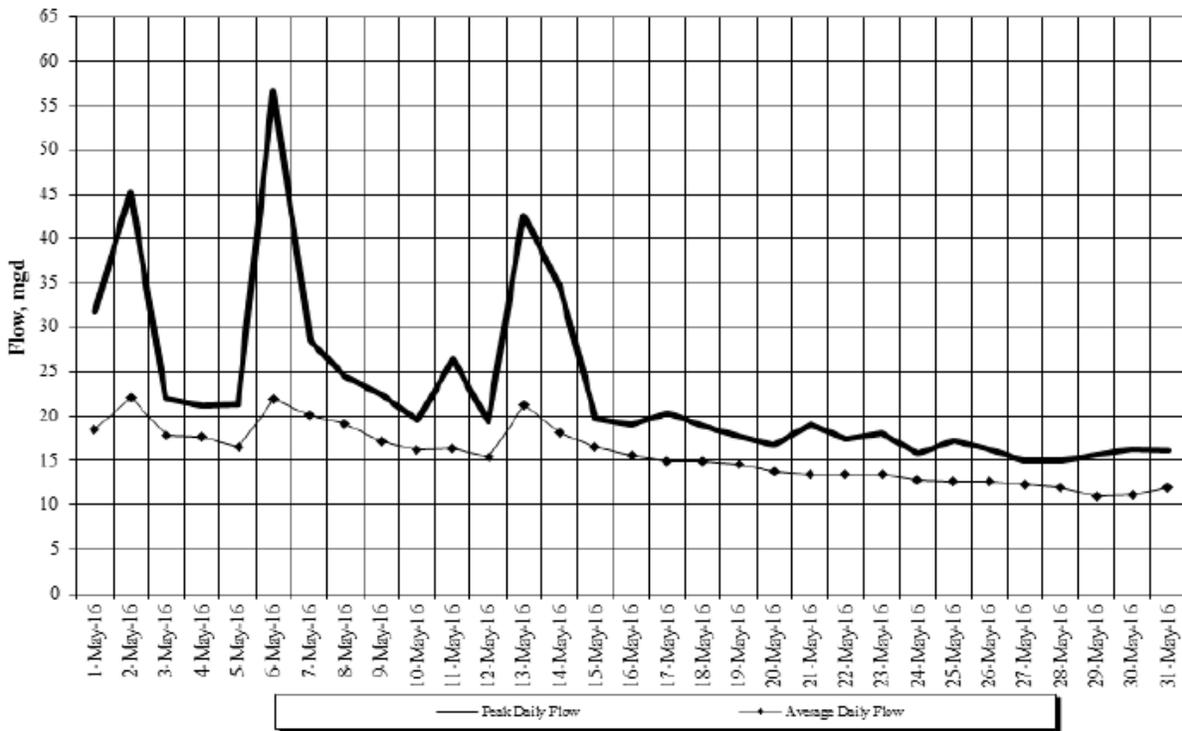
April Effluent BOD5 Loadings Binghamton - Johnson City JSTP



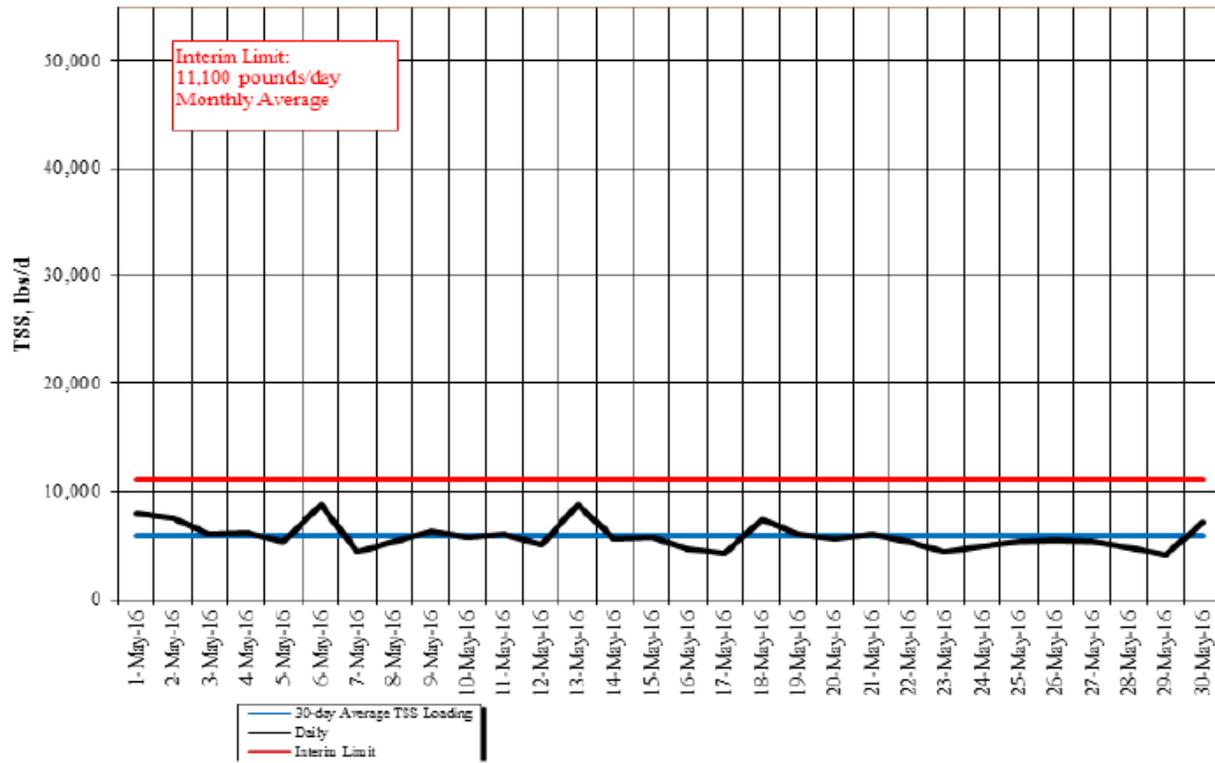
April Settleable Solids
 Binghamton - Johnson City JSTP



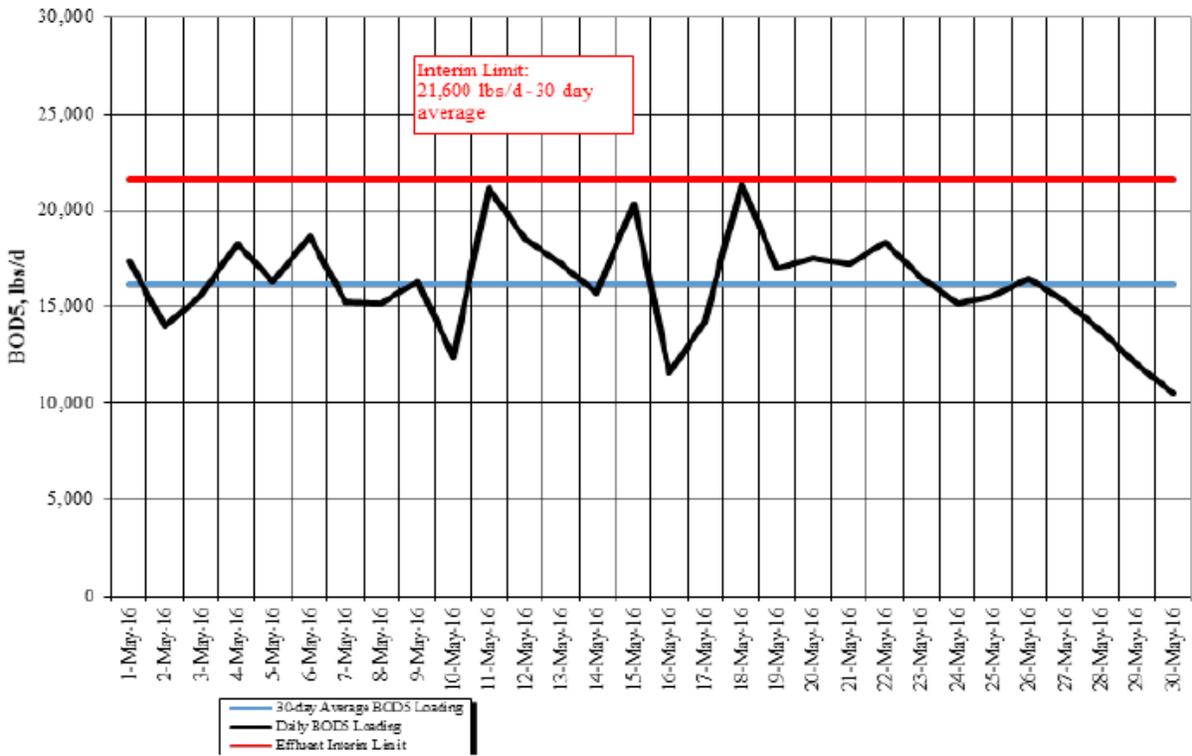
May Daily Flows
 Binghamton - Johnson City JSTP



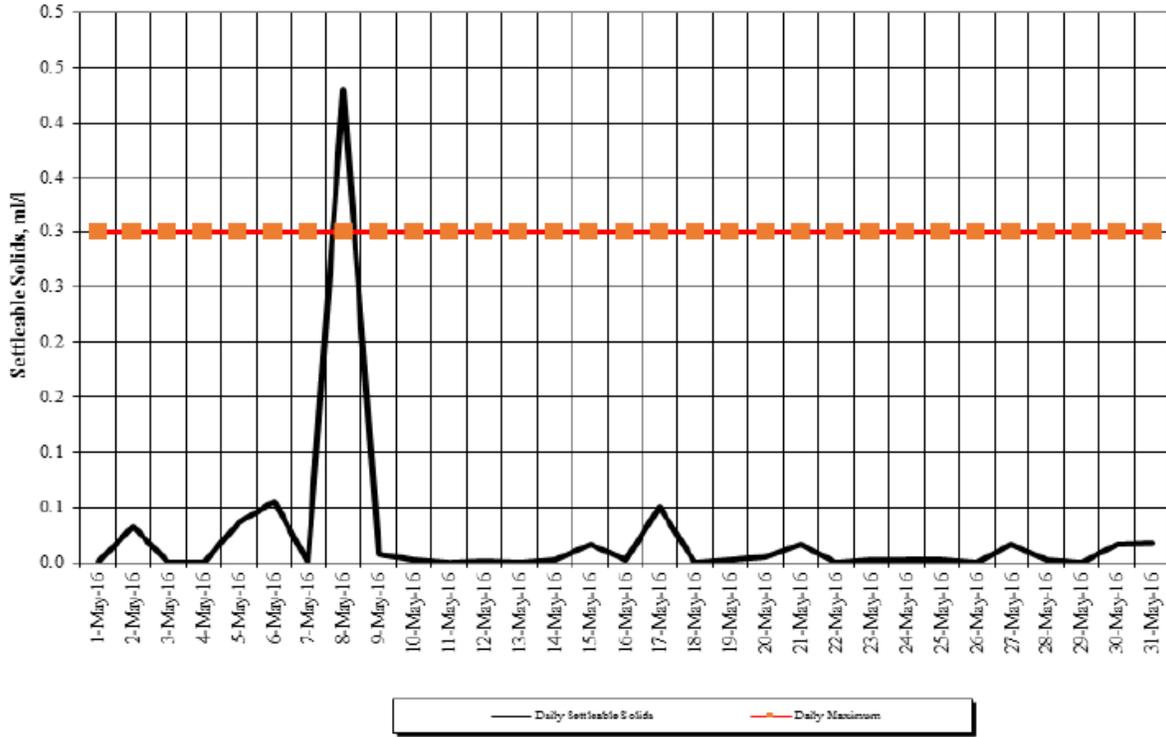
May Effluent Total Suspended Solids Loadings Binghamton - Johnson City JSTP



May Effluent BOD5 Loadings Binghamton - Johnson City JSTP



May Settleable Solids
Binghamton - Johnson City JSTP



DATE	Final Eff Amm. Avg	Final Eff TKN	EFF TOTAL N	CL 2 AVG	Fecal Coli mg/l	FW Phos. Avg	Eff. Total Iron	Daily Total Q	Iron (Fe) lbs/day
1-Mar-16	11.2	16.6	17.62	1.25	8	1.31	4.3	17.52	628
2-Mar-16		21.5	22.28	1.48	2				
3-Mar-16		19.4	20.14	1.35	3		4.5	15.98	600
4-Mar-16		17.3	18.09	1.28	193				
5-Mar-16		18.9	19.85	1.41	7				
6-Mar-16		17.4	18.31	1.4	2				
7-Mar-16		19.1	20.05	1.3	6				
8-Mar-16	14.8	21.4	22.03	1.37	9	1.83	4.91	14.33	587
9-Mar-16		21.4	21.79	1.38	52				
10-Mar-16		21.1	21.68	1.35	30		4.47	17.17	640
11-Mar-16		17.6	18.40	1.34	2				
12-Mar-16		19.3	19.96	1.36	3				
13-Mar-16		20.4	21.04	1.23	21				
14-Mar-16		16.2	17.13	1.28	333				
15-Mar-16	7.2	20.1	20.89	1.34	223	1.64	3.58	16.64	497
16-Mar-16		19.7	20.34	1.28	23				
17-Mar-16		17.6	18.24	1.19	7		3.81	16.29	518
18-Mar-16		19.3	19.87	1.24	30				
19-Mar-16		19.4	20.01	1.27	7				
20-Mar-16		10	10.65	1.2	10				
21-Mar-16		10.2	10.78	1.23	33				
22-Mar-16	16.4	11.2	11.74	1.18	11	1.79	4.29	18.47	661
23-Mar-16		20.2	20.78	1.31	38				
24-Mar-16		16.9	17.37	1.41	2		3.71	13.77	426
25-Mar-16		18.8	19.39	1.32	50				
26-Mar-16		17.1	18.27	1.28	1				
27-Mar-16		22	22.60	1.16	2				
28-Mar-16		16.7	17.55	1.41	580				
29-Mar-16	14.4	19.9	20.60	1.1	6	1.78	3.69	13.63	419
30-Mar-16		20.4	20.99	1.52	2				
31-Mar-16		21.9	22.41	1.31	41		3.75	12.47	390
	12.80	18.35	19.06	1.52	12.91	1.67	4.10	15.63	534
	Final Eff.	Final Eff	EFF	CL 2	30 Day	FW	Eff. Total	Daily	Mthly Avg
	Avg as N mg/l	TKN	TOTAL N	Max	MEAN	PHOS.	Iron	Total Q	Iron lbs/day
	LBS/day								

DATE	Final Eff	FW	EFF	CL 2	Fecal	FW	Daily	Eff. Total	Daily	Iron (Fe)
	Amm. Avg	TKN	TOTAL N	AVG	Coli mg/l	Phos. Avg	Total Q	Iron	Total Q	lbs/day
1-Apr-16		18.32	22.74	1.33	11		13.10			
2-Apr-16		17.41	20.40	1.54	250		13.50			
3-Apr-16		22.00	18.98	1.36	4		13.98			
4-Apr-16		18.20	20.77	1.3	2		15.00			
5-Apr-16	17.6	20.61	21.36	1.24	22	1.81	14.42	4.05	14.42	487
6-Apr-16		21.82	21.91	1.66	88		13.98			
7-Apr-16		14.22	15.97	1.32	38		21.30	3.71	21.30	659
8-Apr-16		17.47	16.40	1.39	2		22.70			
9-Apr-16		16.67	16.42	1.25	11		19.01			
10-Apr-16		15.59	12.16	1.2	136		17.58			
11-Apr-16		11.62	13.48	1.21	3		18.01			
12-Apr-16	11	12.50	7.96	1.28	37	1.42	23.09	4.91	23.09	946
13-Apr-16		17.81	19.19	1.37	2		19.28			
14-Apr-16		18.61	15.93	1.24	150		17.79	5.01	17.79	743
15-Apr-16		21.10	16.51	1.41	10		17.10			
16-Apr-16		18.58	15.97	1.36	74		16.39			
17-Apr-16		17.82	17.56	1.28	109		15.94			
18-Apr-16		22.08	17.57	1.29	34		16.07			
19-Apr-16	16.3	23.68	21.12	1.17	1	1.78	15.33	3.55	15.33	454
20-Apr-16		25.84	22.16	1.35	111		14.62			
21-Apr-16		24.58	25.84	1.15	5		14.65	1.29	14.65	158
22-Apr-16		25.28	24.77	1.28	1		14.71			
23-Apr-16		23.33	23.85	1.11	23		13.71			
24-Apr-16		22.43	20.66	1.32	2		12.96			
25-Apr-16		29.04	23.90	1.18	14		13.43			
26-Apr-16	14.8	25.32	20.01	1.08	2	2.29	17.41	2.61	17.41	379
27-Apr-16		23.21	18.37	1.2	155		13.75			
28-Apr-16		21.71	20.17	1.26	58		13.38	3.4	13.38	379
29-Apr-16		18.42	20.07	1.28	251		15.85			
30-Apr-16		20.08	14.17	1.2	2		14.23			
	14.93	20.2	18.9	1.66	16.36	1.82	16.08	3.57	17.17	511
	Final Eff.	FW	EFF	CL 2	30 Day	FW	Daily	Eff. Total	Daily	Mthly Avg
	Avg as N mg/l	TKN	TOTAL N	Max	MEAN	PHOS.	Total Q	Iron	Total Q	Iron lbs/day

DATE	Final Eff Amm. Avg	Final Eff TKN	CL 2 AVG	Fecal Coli mg/l	FW Phos. Avg	Daily Total Q	Eff. Total Iron	Daily Total Q	Iron (Fe) lbs/day
1-May-16		22.2	1.09	1400		18.55			
2-May-16		19.8	1.34	327		22.08			
3-May-16	12.4	18.5	1.22	38	1.7	17.80	2.93	17.80	435
4-May-16		20.1	1.34	450		17.65			
5-May-16		20.8	1.25	2		16.45	3.44	16.45	472
6-May-16		21.3	1.35	20		21.89			
7-May-16		15.2	1.33	1		20.13			
8-May-16		15.3	1.24	2		19.20			
9-May-16		15.5	1.22	19000		17.17			
10-May-16	14.7	11.3	1.43	44	1.9	16.15	3.95	16.15	532
11-May-16		12.5	1.36	42		16.31			
12-May-16		7	1.19	2		15.40	3.87	15.40	497
13-May-16		18.2	1.23	280		21.29			
14-May-16		14.9	1.36	24		18.13			
15-May-16		15.9	1.15	98		16.52			
16-May-16		15.4	1.38	8		15.61			
17-May-16	16.8	17.1	1.15	11	2.0	14.93	3.56	14.93	443
18-May-16		17	1.31	123		14.95			
19-May-16		20.4	1.28	2		14.56	4.04	14.56	491
20-May-16		21.7	1.11	43		13.80			
21-May-16		25.4	1.11	2		13.37			
22-May-16		24.2	1.28	144		13.39			
23-May-16		23.3	1.21	35		13.39			
24-May-16	17.6	20.1	1.24	13	2.4	12.83	4.09	12.83	438
25-May-16		23.3	1.24	2		12.57			
26-May-16		19.3	1.12	102		12.57	4.03	12.57	422
27-May-16		18.2	0.97	2		12.29			
28-May-16		20	1.28	2		11.94			
29-May-16		19.9	1	11		11.00			
30-May-16		14	1.42	2		11.10			
31-May-16	20.8	18.26	1.08	6	2.3	11.97	2.71	11.97	271
	16.46	Final Eff	1.43	21.94	2.06	15.64	3.62	14.74	446
	Final Eff.	TKN	CL 2	30 Day	FW	Daily	Eff. Total	Daily	Mthly Avg
	Avg as N mg/l		Max	MEAN			Iron	Total Q	Iron lbs/day
	LBS/day								