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

2017 Quarter 2 Report

City of Binghamton
Village of Johnson City
Joint Sewage Board

June 2017

2017 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. 87-20110628-59) between the City of Binghamton, Village of Johnson City, the Joint Sewage Board, and the State of New York, the City submits this 2017 Quarter 2 Report. The report summarizes the status and progress of the projects and programs required by the Consent Order from April 2017 to June 2017.

SECTION 1— FACILITY OPERATIONS

We continue to operate in CEPT mode. Settling Tanks 7, 8, 9 and 10 have been taken off line in preparation for work to be completed. Flow has been reduced to receive a maximum of 35 MGD. The Binghamton grit system is off-line. CEPT continues to be operational.

See Attachment A for the plant performance during this Quarter.

Background

The Binghamton - Johnson City Joint Sewage Treatment Plant (BJCJSTP) processes 18 million gallons per day with the capability of processing up to 60 million gallons per day (MGD) of wet weather flow. This plant 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 by a 500 year flood 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 500 year flood that critically damaged equipment and rendered the secondary treatment fundamentally inoperable. The secondary process system is still largely inoperable today. A 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 Consent Order requires the BJCJSTP to restore secondary treatment functionality and be able to fully treat 35 MGD of wet weather flow 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. To comply with the Consent Order, 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 included in the Consent Order.

The project is being constructed in accordance with Wicks Law, which requires 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	Complete
Contract No. 2	FEMA Mechanical	Substantial completion date July 2016. Anticipated completion date June 2017.
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. 9	Secant Pile Contract	Completion anticipated in November 2016.
Contract No. 10 thru 13	Solids Handling Renovation	Bids received March 16, 2017. Anticipate Notice of Award July 2017.
Floodwall	Floodwall and New Diversion Structure	Currently in construction. Anticipated completion date November 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.

Contract Status: 100% Complete

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 due to the flood of 2011.

Status: During this quarter, Blue Heron performed very little work. We have negotiated with Blue Heron to delete some of the valve replacements and also equipment installations that GHD has determined should no longer be performed under this contract. We are waiting on new elutriate pumps to replace the existing worn out elutriate pumps.

Three Month Look Ahead: Contractor will be finishing items under this contract within this time frame.

Contract Status: 80% Complete through June 2017

Contract No. 3 - BAF Facility Demolition

The BAF Demolition Contract removed existing structures and utilities that conflict with the new construction work included in the BAF Restoration 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: The scope of work for the contract was increased with five Change Orders. Change Order 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. Change Order Two 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). Change Order Three 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 Change Order compensated the contractor for demolition of approximately 3600 CY of additional concrete within the secant pile area not known to exist. The removal of the additional concrete eliminated a delay in excess of four months on the overall project, and reduced the cost to avoid having a future contractor remove the concrete. The Fifth Change Order compensated LeChase for repairing defective rebar from the original construction while LeChase was repairing the rebar that they overcut at their own expense. The final change was to repair the existing rebar that was cut during the original construction of the C cells.

Contract Status: 100% Complete

Contract No. 4 - MCC - HH Emergency Replacement

Contract 4 replaces the original existing Motor Control Center (MCC) in the Head House. The MCC is 50 years old, and is identified as MCC-HH. The contract was bid as an emergency contract 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. MCC HH Emergency Replacement also replaces the existing raw sewage pump drives of the existing 50 year old equipment including 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 and MCC HH have been installed in the Head House. All work on the MCC HH project has been completed including the removal of the existing MCC, and project closeout items. We are awaiting final reports on testing, and the final trip settings on MCC HH

from the manufacturer based on actual loadings measured in the field.

Contract Status: 100% Complete

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 system that can be modified to fit current plant configurations. It is also intended to provide functioning automated headworks and primary clarification processes upstream of the BIOSTYR system and solid handling processes downstream of the BIOSTYR 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, new secondary influent pumps and rehabilitation of existing pump stations for the new BAF system, a new BAF backwash tank, new CN-BAF and DN-BAF facilities, 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: The NTP for Contract No. 5 was issued on May 27, 2016, which complied with milestone requirements in the revised Consent Order. During this quarter, the east tower crane was made operational. Work continued on demolition and rebuilding of the primary clarifiers 7-10, demolition is nearing completion in the CN Cells 1-8. Concrete work and block work continued this quarter on the Administration Building and the Chemical Storage Building. Installation of the roof system on the Administration Building began this quarter and should complete in July. Brick work for the new Administration Building should be completed this next quarter. Work inside the Maintenance Building is progressing. The temporary bypass pumping piping to bypass the coarse screens and raw sewage lift pumps for Binghamton will be installed in July, and the reroute of the Johnson City flow through the permanent piping will be redirected to primary clarifiers 1-6. The concrete slab for the BAF Backwash Tank is complete, and the interior concrete wall in the tanks is nearing completion. The shotcrete wall work has begun, and should be completed in August.

Concrete work in C-N Cells has begun, and is scheduled to be completed in early to middle of 2018. The work on the new Administration Building is scheduled to complete in November 2017. The Master Schedule was updated to show the status of the work through the month the end of 2018. The latest draft shows that the Phase I Milestone is scheduled to be completed in July, 2018 and the Phase 2 Milestone is scheduled to complete in early 2019. The Kruger submittal is nearing completion, and the precast concrete elements and some equipment has already started arriving to the project.

Demolition of the Grit Chambers was completed and excavation for the new Headworks and BAF Backwash Treatment Facility continued. Demolition of the existing Administration Building was

completed, after the WTP staff was relocated to a leased facility down the street and to the other onsite offices in the new Generator Building. The contractor had difficulties with the foundation material in the excavation for the new Headworks and BAF Backwash Treatment Facility due to their lack of appropriate dewatering effort. This issue has been resolved and the appropriate foundation soil is being achieved. This impacted their schedule by several months this quarter.

The demolition of the West Scrubber Building uncovered asbestos containing material. The asbestos containing material had to be abated. The abatement was completed in July. Sheeting for the flood protection system around the UV Tank, DN Tanks and CN Cells is complete. Sheeting for the flood wall section on the south side of the plant is complete. Installation of the 72" outfall pipe is nearing completion. PC began installing the yard piping throughout the site.

3 Month Look Ahead: PC Construction will continue work on primary clarifiers 1-7. Work will progress on the Chemical Storage Building, the new Administration Building, the BAF Backwash Tank, the C-N Cells 1-8, and the UV Facility. The concrete base slab in the backwash tank will be complete. The concrete work for the CN cells 9-14 will begin. Demolition and concrete work in CN cells 1-8 and DN cells 1-4 will complete. Construction of the brick walls and roof system for the Administration Building will be completed. Concrete work for the Storm Water Pump Station on the south side of the plant will be complete and concrete work for the south floodwall will begin. Work will continue on the East Scrubber Building. The contractor is projecting that they will be able to divert the flow from the existing outfall to the new outfall by the end of the next quarter.

The contractor began installing the temporary chlorine feed system so the existing chlorine feed system can be taken out of service. The contractor is developing a plan to remove chlorine tank #3 from service so it can be retrofitted to serve as the new methanol containment tank structure. The new methanol tanks get installed within the footprint of the existing chlorine tank #3 since we are eliminating chlorine disinfection for the more environmentally friendly UV disinfection system. We anticipate putting the temporary disinfection system on line before the middle of August 2017. Concrete work in the new UV tank will begin this month. PC will continue installing yard piping throughout the site. We anticipate the contractor making a major push to complete the bulk of the concrete work in the next quarter to avoid cold weather concrete conditions.

The contractor has stated that they are one month behind schedule for meeting Phase I and Phase II milestones. We continue to work with them to improve their schedule. NYSDEC has revised the 3 intermediate milestones as requested by the owner, and we have discussed the projected late finish of the Phase I and Phase II Milestones with them. They have indicated that they are willing to work with us on adjusting these dates as soon as we have a better projection on the Phase I Milestone date.

Contract Status: 18 % Complete thru June 2017

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 components include installation of the new UV disinfection system, installation of the new generators, installation of the electrical feed throughout the plant, as well as installation of the instrumentation and SCADA System throughout the plant.

Status: Contract No. 6 was bid and awarded in compliance with the May 27, 2016 milestone for issuing the NTP in the Consent Order.

This quarter, the contractor continued installing their concrete ductbanks around the site, and began pulling the conductors for the new electrical feeds from NYSEG to the Sewage Treatment Plant. The work to install the two new 2MW generators at the WTP began this quarter. MATCO is providing input for the Project CPM baseline schedule. Equipment and material shop drawings are being submitted for review and approval. We had a WTP wide electrical outage this quarter when NYSEG lost all power to their substation that provides electrical power to the WTP. We had MATCO install a temporary diesel generator at the site that was capable of running the critical loads in the event of another electrical outage from NYSEG.

3 Month Look Ahead: MATCO will continue to install manholes and duct work for the various buildings and structures as they are constructed, for example, The Chemical Feed Building, Generator Building, Headworks and Administration Buildings, and the East Scrubber Building. They have received a considerable amount of materials and equipment which is being stored and is available to be installed when the project is ready for this work. They anticipate delivery of the majority of the Generator Equipment and new electrical equipment during the month of August. Installation of this equipment will begin in August.

Contract Status: 17% Complete Through June 2017

Contract No. 7 - BAF HVAC

The BAF HVAC contract supports the BAF General Civil Contract and includes installation of all HVAC Systems in all STP Facilities as well as revisions to the odor control systems throughout the plant. The odor control improvements are intended to alleviate the odors that have been prevalent in the past in and around the plant.

Status: Contract No. 7 was awarded on May 27, 2016 in compliance with the DEC milestones in the Consent Order. The contractor continued submitting material submittals for the HVAC Equipment for the project this quarter. They continue to provide supporting information for the development of the CPM schedule, and have acknowledged they can meet the required milestones of the Consent Order. They continued installing the HVAC Unit for the electrical room in the Head House, and continued to remove the existing duct work in the East Scrubber Building this quarter.

3 Month Look Ahead: J & K Plumbing will continue with the installation of the HVAC systems as the structure and new facilities are built. They have received a considerable amount of material and equipment and these are in storage and ready to be installed.

Contract Status: 32% Complete Through June 2017

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 Notice to Proceed was issued in compliance with the May 27, 2016 milestone for issuing the NTP in the Consent Order. The contractor has continued providing the supporting information for the overall CPM schedule this quarter, and they have confirmed that they can meet the required milestones of the Consent Order.

This quarter, they continued installing the plumbing in the new Maintenance Building and the East Scrubber Building. They also began install the plumbing in the new Headworks and BAF Backwash Treatment Facility. They continued installing the new potable water backflow preventer that will allow the potable water to be used as a back-up of the existing non-potable plant water system.

3 Month Look Ahead: JW Danforth will continue with the installation of the plumbing system as the structures and facilities are built. They also continue to work on the plant water supply system.

Contract Status: 30% Complete Through June 2017

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. This project was bid separately from Contracts 5-8. In doing so, a minimum of four months on the critical path schedule was saved.

Status: The project was substantially complete as of December 31, 2016. A punch list for items to repair was prepared for the Contractor and they are working to complete the punch list work. They completed repairing the surfaces on the columns constructed before excavation and continued epoxy injecting the visible leaks in the secant pile walls. A latent defect was discovered in the installation of the rebar couplings that the contractor installed in the wales and struts that support the C-N Cells above the BAF Backwash Tank. The contractor has hired an Engineering firm to determine what measures should be used to fix the latent defects created by the misplacement of the rebar couplers. We anticipate the column corrections and all punch list work being completed in August 2017.

Contract Status: 99% Complete Through June 2017

Contract No. 10 - 13 - Solids Handling Renovation

Contracts No. 10-13 are intended to renovate and improve the solids handlings systems including the existing digester control building, existing digesters, solids dewatering systems, and all ancillary equipment.

Bids for Contracts 10 -13 were received on March 16, 2017. Additional funding has been secured for these contracts.

3 Month Look Ahead: The Notice of Award was issued on May 3, 2017 and it is anticipated that the Notice to Proceed will be issued for the General Contract in July 2017. We are waiting on approval from the NY State EFC for the M/WBE utilization plan before we can issue the notices to proceed to the contractors.

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. The flood wall systems are being funded by a FEMA recovery grant.

Status: This quarter, the construction completed on the concrete walls for the floodwall with the exception of the concrete walls west of the existing 84" outfall. The concrete work is complete on Pump Stations 1 and 2. The piping is being installed. The relocation of the 10" sanitary sewer line from Vestal is underway.

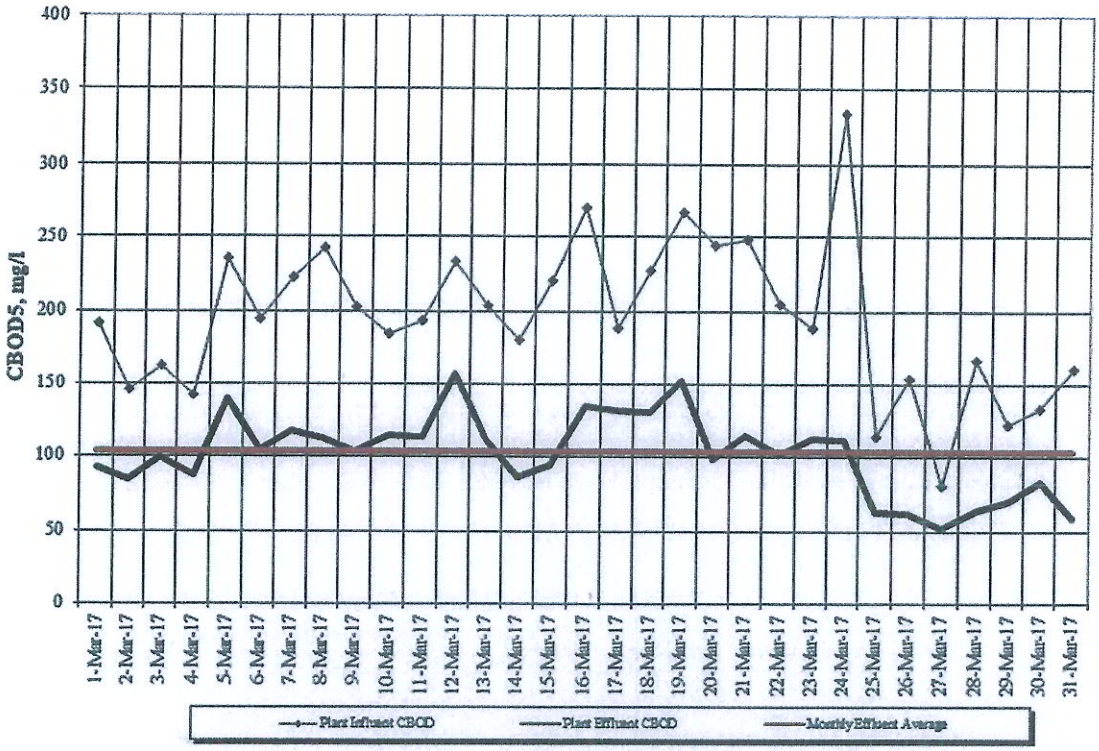
3 Month Look Ahead: Streeter will continue construction of the floodwall after the existing 84" outfall is removed. This requires the diversion of the effluent out of the plant to the new 72" outfall that is being installed. The storm pump stations should be nearing completion. Relocation of the 10" sanitary sewer line from Vestal should be complete. Construction will begin on the diversion manhole for the 54" plant bypass as well as the 54" bypass line to the river. Work on the rehabilitation of digesters 1, 2, and 3 in advance of the Solids Handling Project is ongoing. This work is scheduled to be completed in September 2017.

Contract Status: 71% Complete Through June 2017

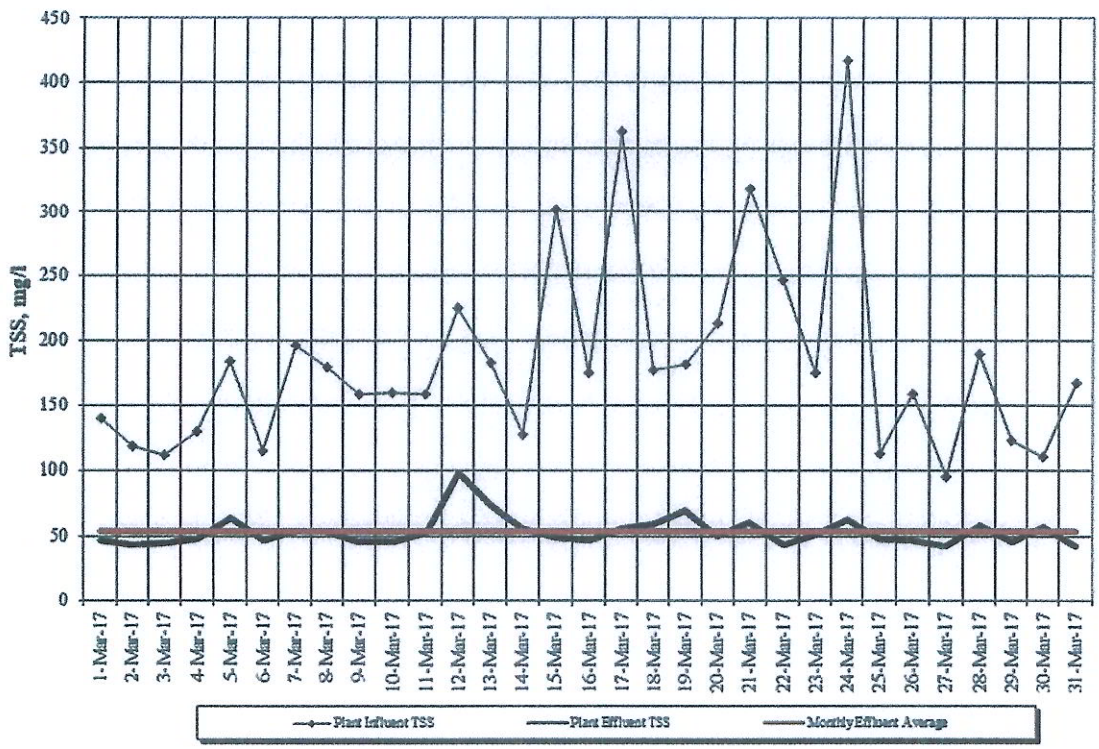
ATTACHMENT A

Facility Operations

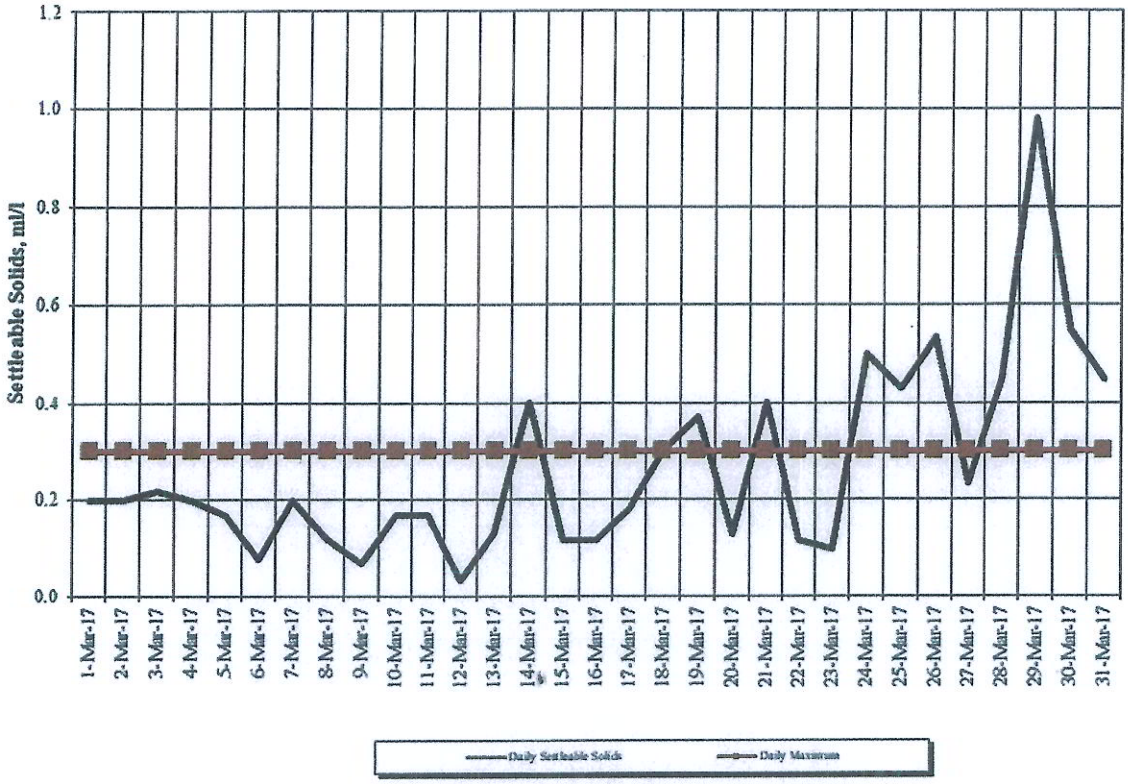
CBOD5 Concentrations
Binghamton - Johnson City JSTP



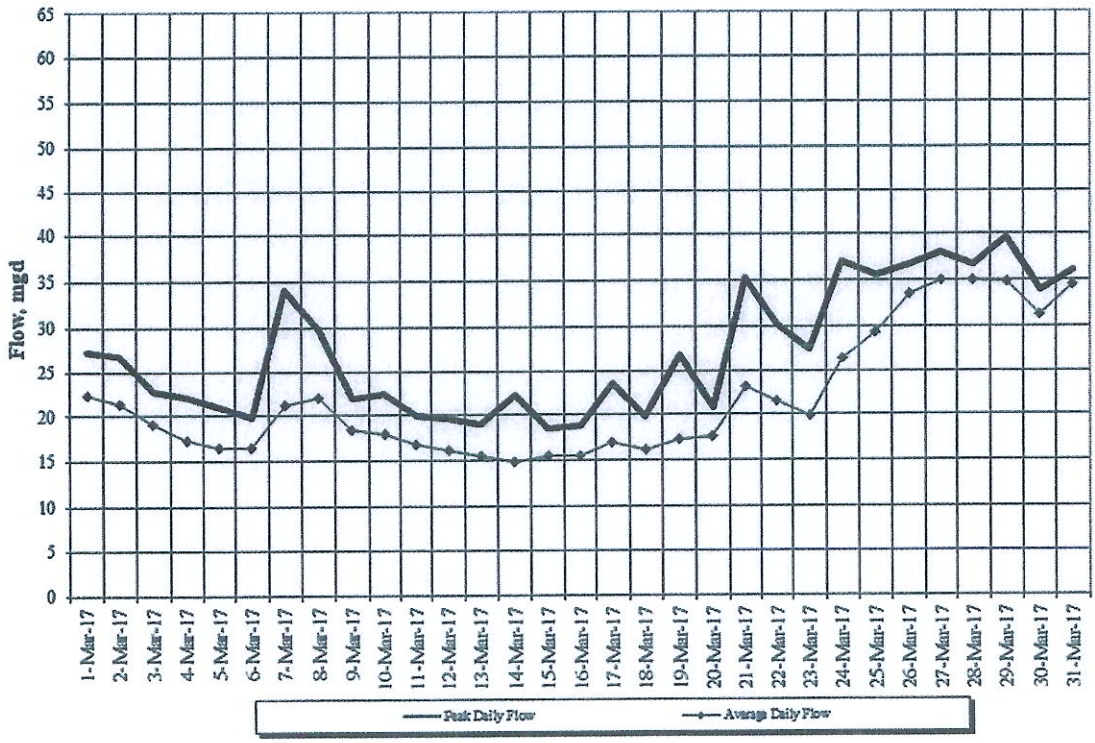
TSS Concentrations
Binghamton - Johnson City JSTP



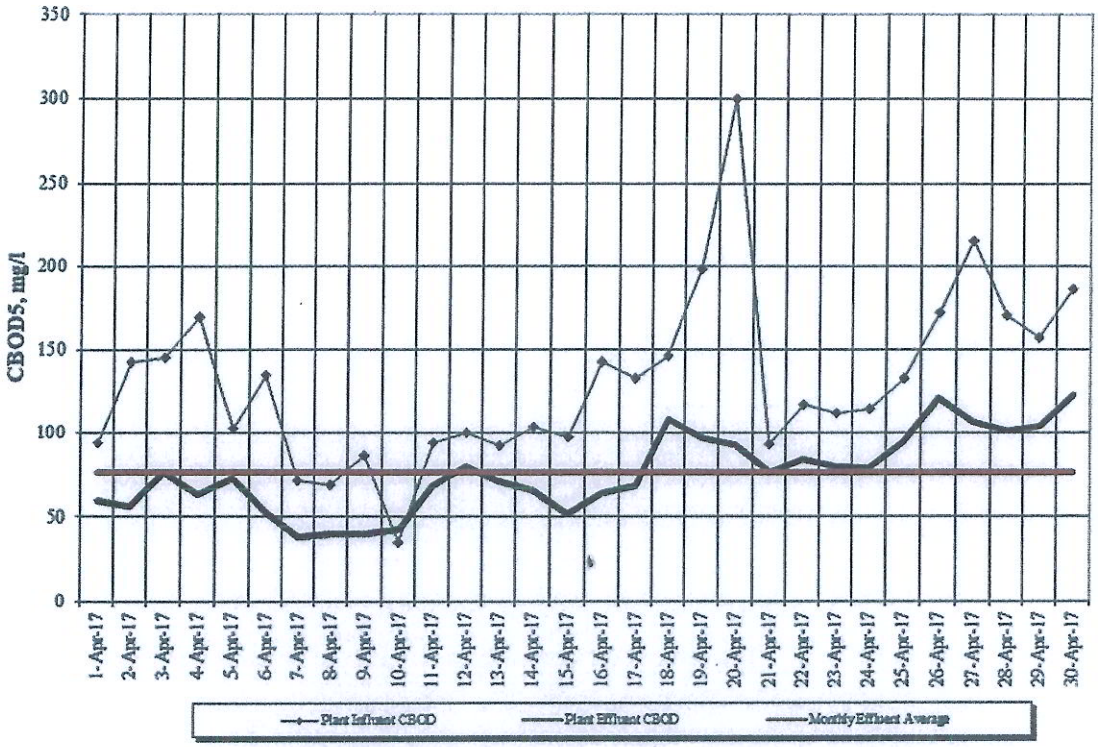
Settleable Solids
Binghamton - Johnson City JSTP



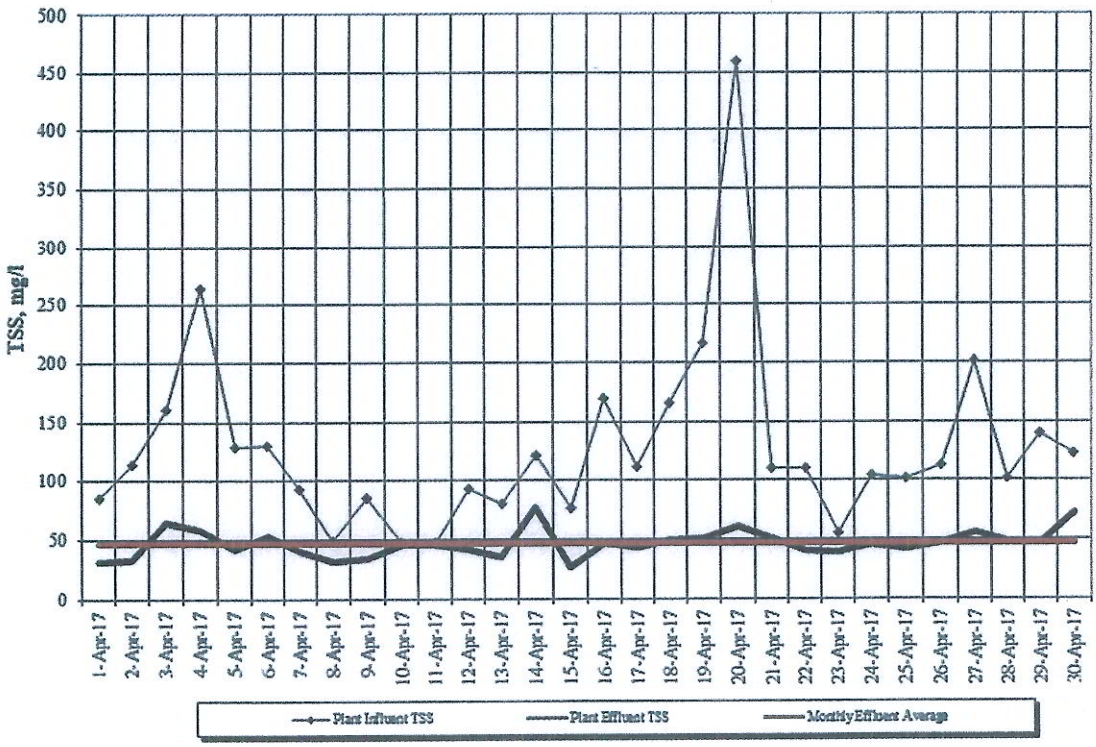
Daily Flows
Binghamton - Johnson City JSTP



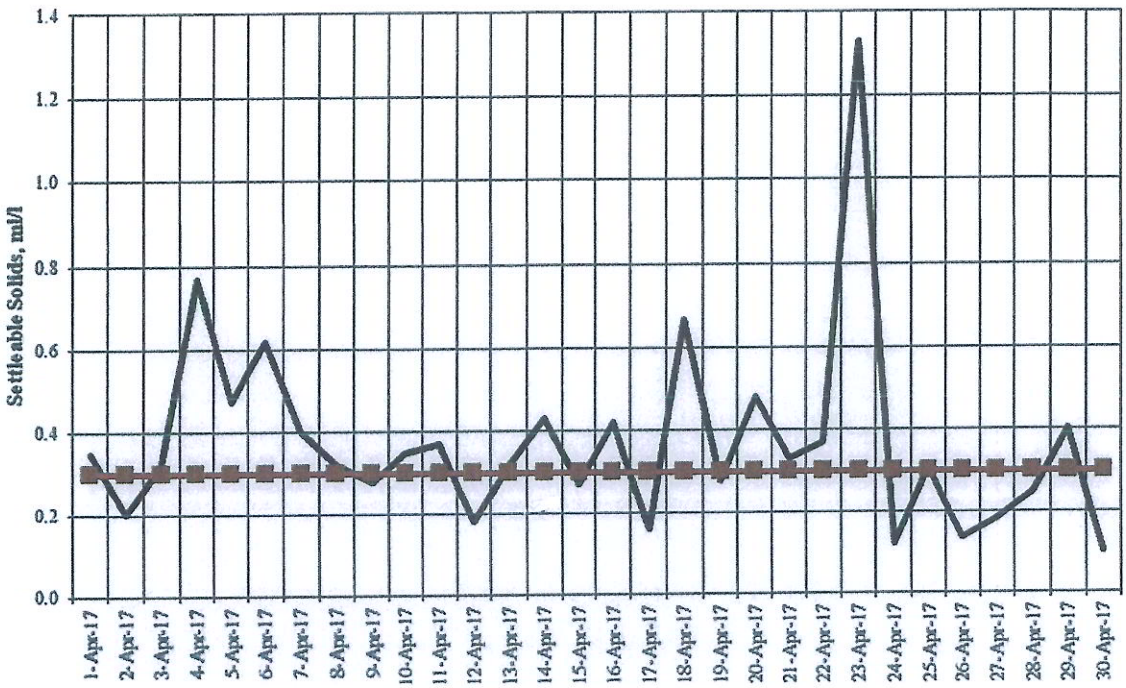
CBOD5 Concentrations
Binghamton - Johnson City JSTP



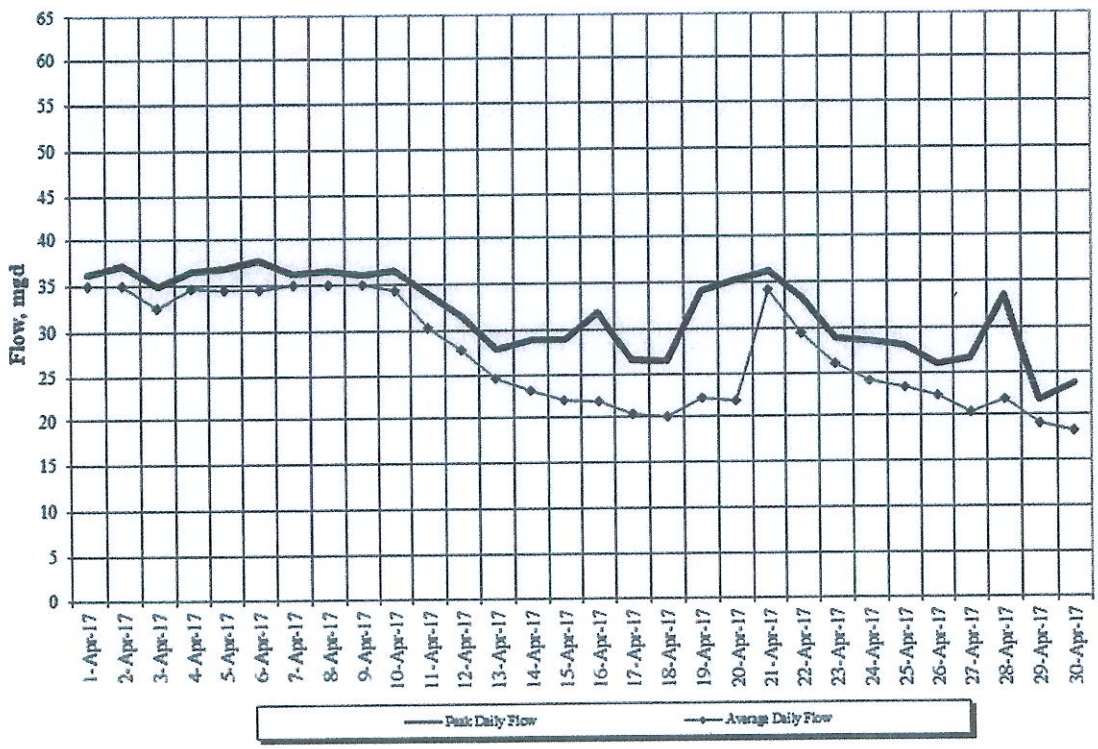
TSS Concentrations
Binghamton - Johnson City JSTP



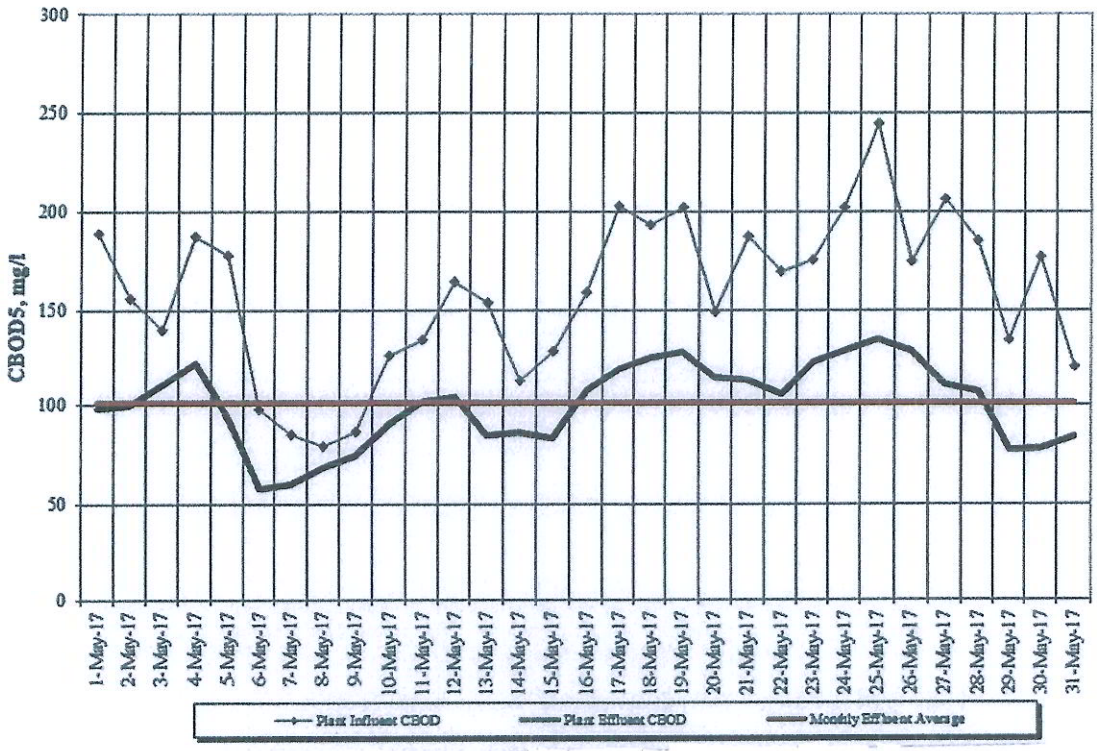
Settleable Solids
Binghamton - Johnson City JSTP



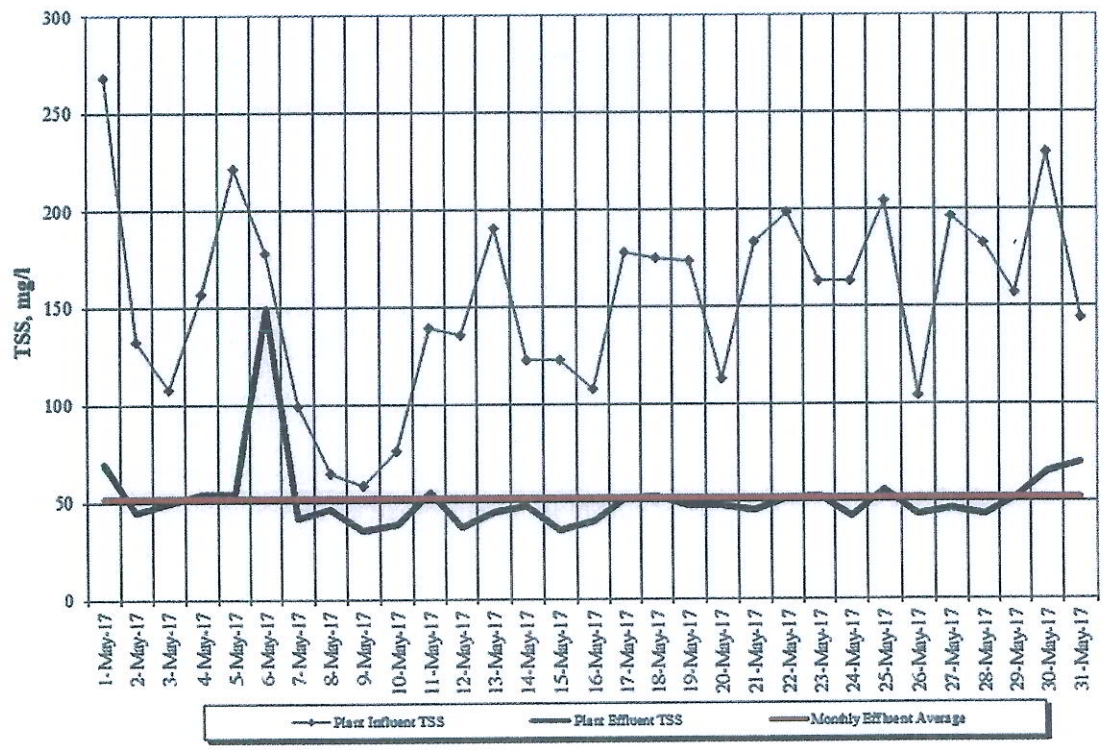
Daily Flows
Binghamton - Johnson City JSTP



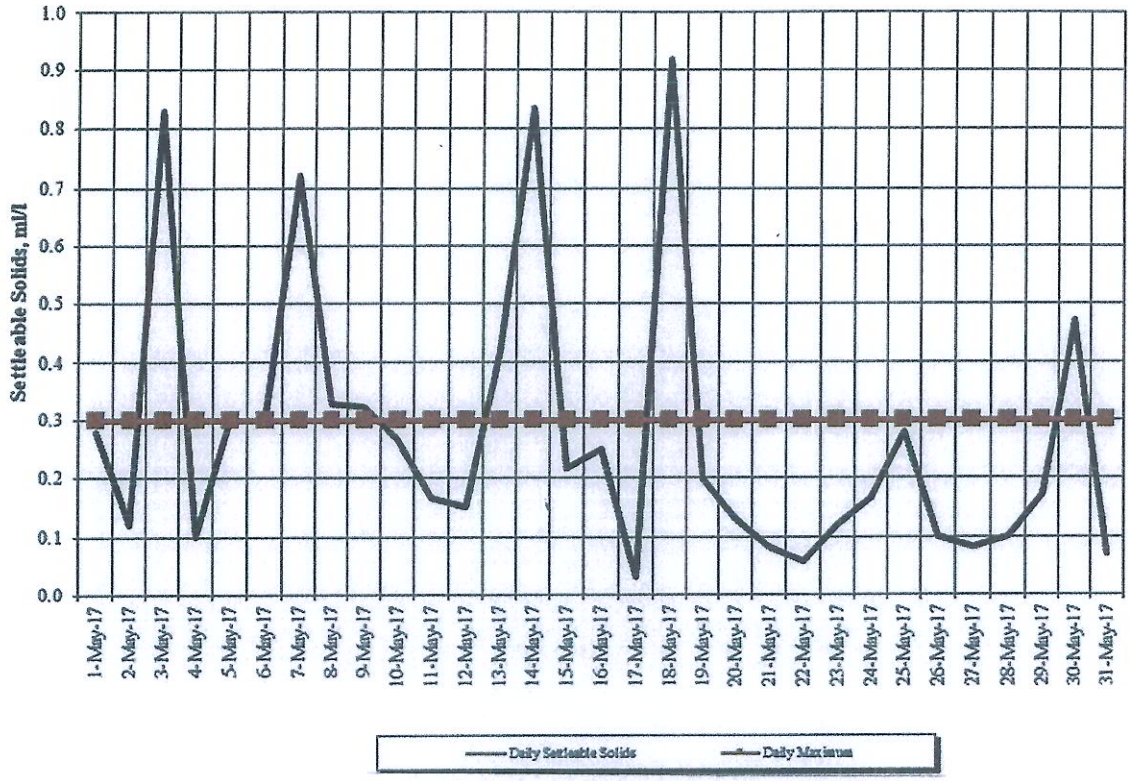
CBOD5 Concentrations
Binghamton - Johnson City JSTP



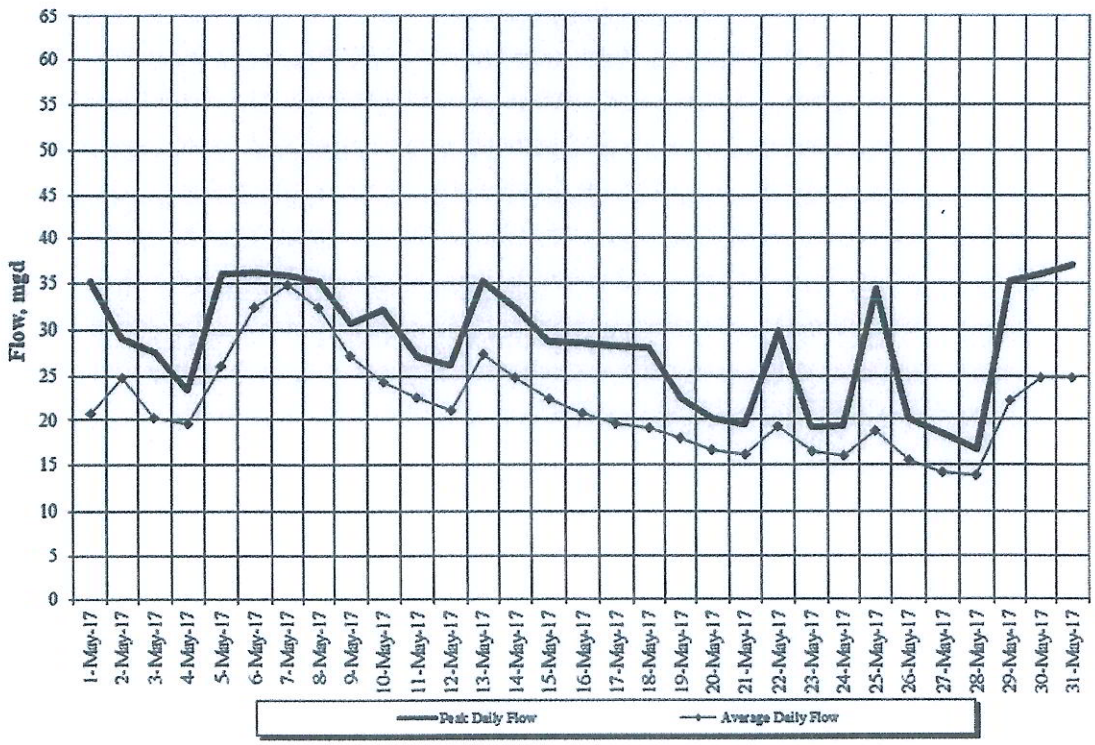
TSS Concentrations
Binghamton - Johnson City JSTP



Settleable Solids
Binghamton - Johnson City JSTP



Daily Flows
Binghamton - Johnson City JSTP



DATE	TOTAL	FW	Final Eff	FW	CL 2	Fecal	Eff.	FW	Eff. Total	Daily	Iron (Fe)
	FLOW	Amm. Avg	TKN	TKN	AVG	Coli mg/l	Phos.	Phos. Avg	Iron	Total Q	lbs/day
1-Mar-17	22.35		13.3	12.9	1.25	59					0
2-Mar-17	21.34		14.4	15.0	1.4	96			3.91	21.34	696
3-Mar-17	19.06		13.4	14.7	1.32	11					0
4-Mar-17	17.29		11.9	13.4	1.27	196					0
5-Mar-17	16.50		15.3	14.3	1.34	9					0
6-Mar-17	16.43		13.4	14.7	1.23	44					0
7-Mar-17	21.29	9.0	12.5	12.6	1.11	227	1.8	3.3	4.32	21.29	767
8-Mar-17	21.99		15	18.3	1.22	117					0
9-Mar-17	18.40		15.2	17.9	1.16	32			4.73	18.40	726
10-Mar-17	17.91		17.3	19.0	1.26	110					0
11-Mar-17	16.80		15.3	19.0	1.36	2					0
12-Mar-17	16.17		19.6	18.8	1.01	161					0
13-Mar-17	15.59		19.2	24.0	1.43	183					0
14-Mar-17	14.89	13.4	17.6	23.9	1.52	36	1.8	4.5	4.69	14.89	582
15-Mar-17	15.48		18.3	25.4	1.3	31					0
16-Mar-17	15.50		19.5	26.7	1.24	45			6.04	15.50	781
17-Mar-17	17.04		19.7	21.9	1.23	4					0
18-Mar-17	16.26		19.8	25.3	1.39	100					0
19-Mar-17	17.30		17.9	24.0	1.37	104					0
20-Mar-17	17.57		16.5	23.2	1.29	43					0
21-Mar-17	23.11	10.3	14.7	20.2	1.26	35	2.1	3.9	4.73	23.11	912
22-Mar-17	21.51		14.8	24.1	1.27	11					0
23-Mar-17	19.85		16.3	19.1	1.34	12			5.66	19.85	937
24-Mar-17	26.46		11.4	19.6	1.23	140					0
25-Mar-17	29.40		11.8	11.8	1.37	34					0
26-Mar-17	33.52		8.6	13.5	1.33	504					0
27-Mar-17	34.99		9.5	11.6	1.17	34					0
28-Mar-17	35.00	6.9	9.7	18.2	1.34	93	1.2	1.8	3.74	35.00	1092
29-Mar-17	34.83		10.6	13.9	1.23	107					0
30-Mar-17	31.25		10	12.8	1.39	60			3.26	31.25	850
31-Mar-17	34.52		9.5	14.1	1.15	860					0
		9.9	14.58	18.2	1.52	53.85	1.73	3.36	4.56	22.29	849
		FW	Final Eff	FW	CL 2	30 Day	EFF.	FW	Eff. Total	Daily	Mthly Avg
		Avg as N mg/l	TKN	TKN	Max	MEAN	PHOS.	PHOS.	Iron	Total Q	Iron lbs/day

DATE	TOTAL	FW	Final Eff	FW	CL 2	Fecal	Eff.	FW	Eff. Total	Daily	Iron (Fe)
	FLOW	Amm. Avg	TKN	TKN	AVG	Coli mg/l	Phos.	Phos. Avg	Iron	Total Q	lbs/day
1-Apr-17	34.99		6.3	10.8	1.32	104					0
2-Apr-17	34.98		8	12.6	1.06	50					0
3-Apr-17	32.63		10.1	12.0	1.36	33					0
4-Apr-17	34.67	7.6	8.9	14.3	1.32	118	1.1	2.5	4.09	34.67	1183
5-Apr-17	34.51		9.3	14.1	1.27	60					0
6-Apr-17	34.57		5.8	10.9	1.68	232			4.13	34.57	1191
7-Apr-17	35.01		5	6.5	1.36	15					0
8-Apr-17	35.01		5.5	6.7	1.45	115					0
9-Apr-17	34.98		5.5	6.9	1.42	17					0
10-Apr-17	34.40		8.3	6.9	1.45	160					0
11-Apr-17	30.39	5.9	9.6	10.6	1.24	133	1.6	1.9	3.25	30.39	824
12-Apr-17	27.91		9.6	11.0	1.18	28					0
13-Apr-17	24.70		11.1	11.6	1.34	42			3.7	24.70	762
14-Apr-17	23.21		11.6	11.8	1.33	3					0
15-Apr-17	22.01		9.4	9.6	1.36	78					0
16-Apr-17	21.90		8.2	12.6	1.28	31					0
17-Apr-17	20.40		9.7	14.8	1.12	69					0
18-Apr-17	20.05	11.8	13.8	15.0	1.19	55	2.2	2.6	4.18	20.05	699
19-Apr-17	22.18		15.4	19.5	1.21	176					0
20-Apr-17	21.87		11.4	19.9	1.13	19			3.18	21.87	580
21-Apr-17	34.18		9.7	10.1	1.42	50					0
22-Apr-17	29.57		9.6	10.6	1.34	61					0
23-Apr-17	26.15		10.3	11.1	1.37	26					0
24-Apr-17	24.18		12.8	13.6	1.42	88					0
25-Apr-17	23.37	9.9	13.8	15.2	1.27	134	1.8	2.4	2.2	23.37	429
26-Apr-17	22.40		13.6	16.4	1.27	109					0
27-Apr-17	20.47		13.2	19.0	1.18	185			2.25	20.47	384
28-Apr-17	21.87		14.6	18.4	1.3	14					0
29-Apr-17	19.08		15	16.6	1.26	84					0
30-Apr-17	18.27		14.1	18.1	1.28	70					0
	27.33	8.8	10.31	12.9	1.68	#REF!	1.68	2.32	3.37	26.26	739
	TOTAL	FW	Final Eff	FW	CL 2	30 Day	EFF.	FW	Eff. Total	Daily	Mthly Avg
	FLOW	Avg as N mg/l	TKN	TKN	Max	MEAN	PHOS.	PHOS.	Iron	Total Q	Iron lbs/day

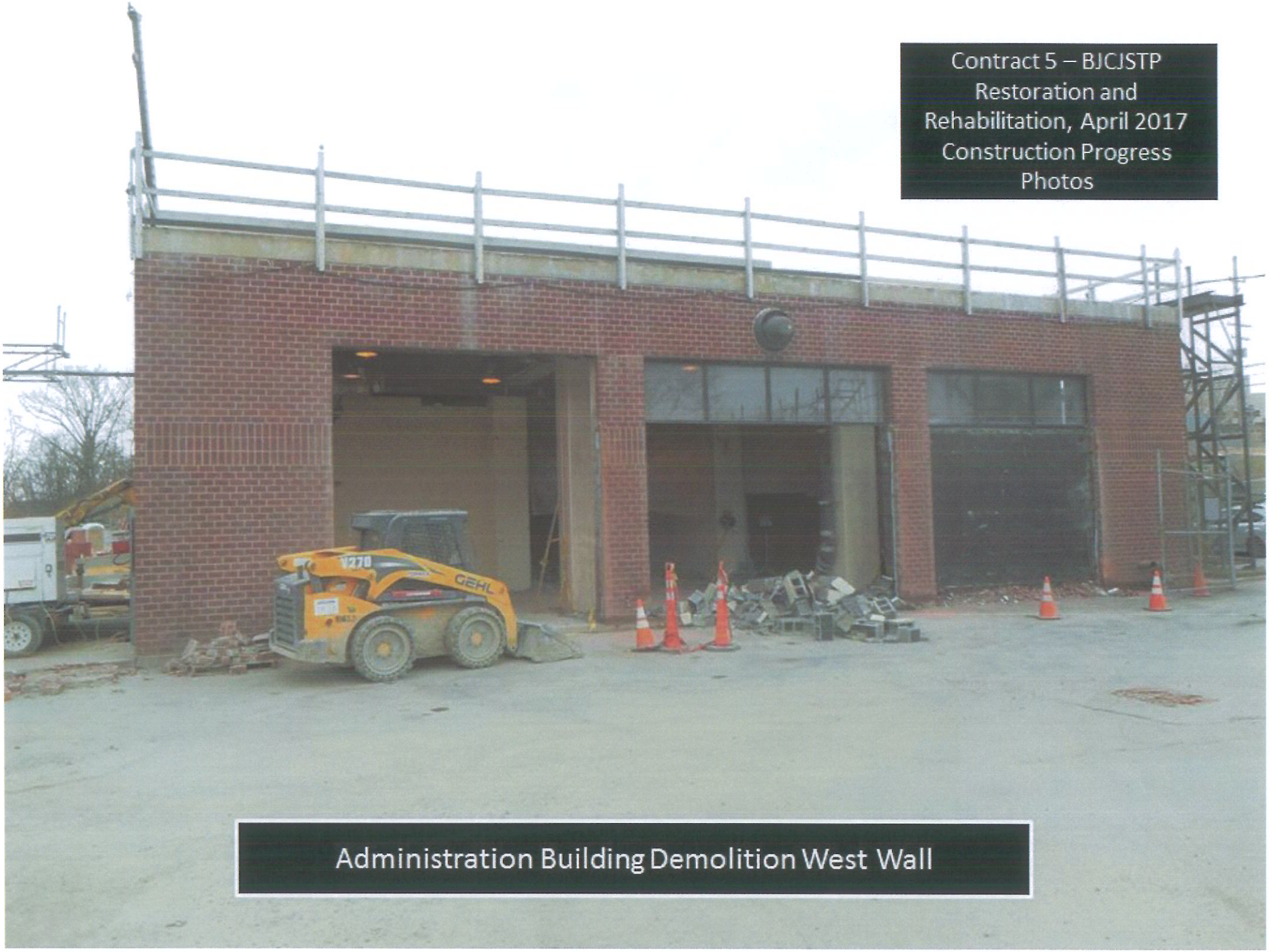
DATE	TOTAL FLOW	FW Amm. Avg	Final Eff TKN	FW TKN	CL 2 AVG	Fecal Coli mg/l	Eff. Phos.	FW Phos. Avg	Eff. Total Iron	Daily Total Q	Iron (Fe) lbs/day
1-May-17	20.68		13.1	17.9	1.35	103					0
2-May-17	24.71	11.5	15.4	16.0	1.49	26	2.1	2.7	2.59	24.71	534
3-May-17	20.30		16	18.2	1.32	20					0
4-May-17	19.56		16	18.6	1.23	270			2.83	19.56	462
5-May-17	26.06		13.2	16.8	1.31	16					0
6-May-17	32.38		7	11.4	1.35	227					0
7-May-17	34.80		8.1	10.8	1.36	93					0
8-May-17	32.38		10.4	11.1	1.39	107					0
9-May-17	27.16	8.3	11.3	13.8	1.39	129	1.6	2.0	2.24	27.16	507
10-May-17	24.33		13.4	16.8	1.34	210					0
11-May-17	22.53		12.5	16.8	1.37	36			1.92	22.53	361
12-May-17	21.01		16.7	18.5	1.48	77					0
13-May-17	27.33		10.8	13.8	1.32	90					0
14-May-17	24.79		10.8	13.1	1.23	20					0
15-May-17	22.35		14.4	15.3	1.44	19					0
16-May-17	20.81	10.9	8.4	17.2	1.33	183	1.9	2.5	1.94	20.81	337
17-May-17	19.61		15	18.0	1.35	74					0
18-May-17	19.04		14.7	19.5	1.23	833			1.57	19.04	249
19-May-17	17.96		16.1	19.5	1.24	124					0
20-May-17	16.60		16.2	16.9	1.32	2					0
21-May-17	16.26		17.7	20.5	1.16	44					0
22-May-17	19.19		13.7	19.8	1.33	183					0
23-May-17	16.45	13.6	17.1	19.4	1.09	106	3	3.2	1.55	16.45	213
24-May-17	15.96		19	19.5	1.22	612					0
25-May-17	18.81		15.1	16.7	1.29	12			1.61	18.81	253
26-May-17	15.52		17.6	18.1	1.28	113					0
27-May-17	14.31		14.2	16.9	1.25	10					0
28-May-17	13.98		14.8	17.4	1.35	78					0
29-May-17	22.23		11.3	11.0	1.22	308					0
30-May-17	24.83	7.9	10.9	11.1	1.42	140	1.8	2.3	1.77	24.83	367
31-May-17	24.78		8.5	13.2	1.21	67					0
	21.83	10.4	13.53	16.2	1.49	73.08	2.08	2.53	2.00	21.54	360
	TOTAL FLOW	FW Avg as N mg/l	Final Eff TKN	FW TKN	CL 2 Max	30 Day MEAN	EFF. PHOS.	FW PHOS.	Eff. Total Iron	Daily Total Q	Mthly Avg Iron lbs/day

ATTACHMENT B

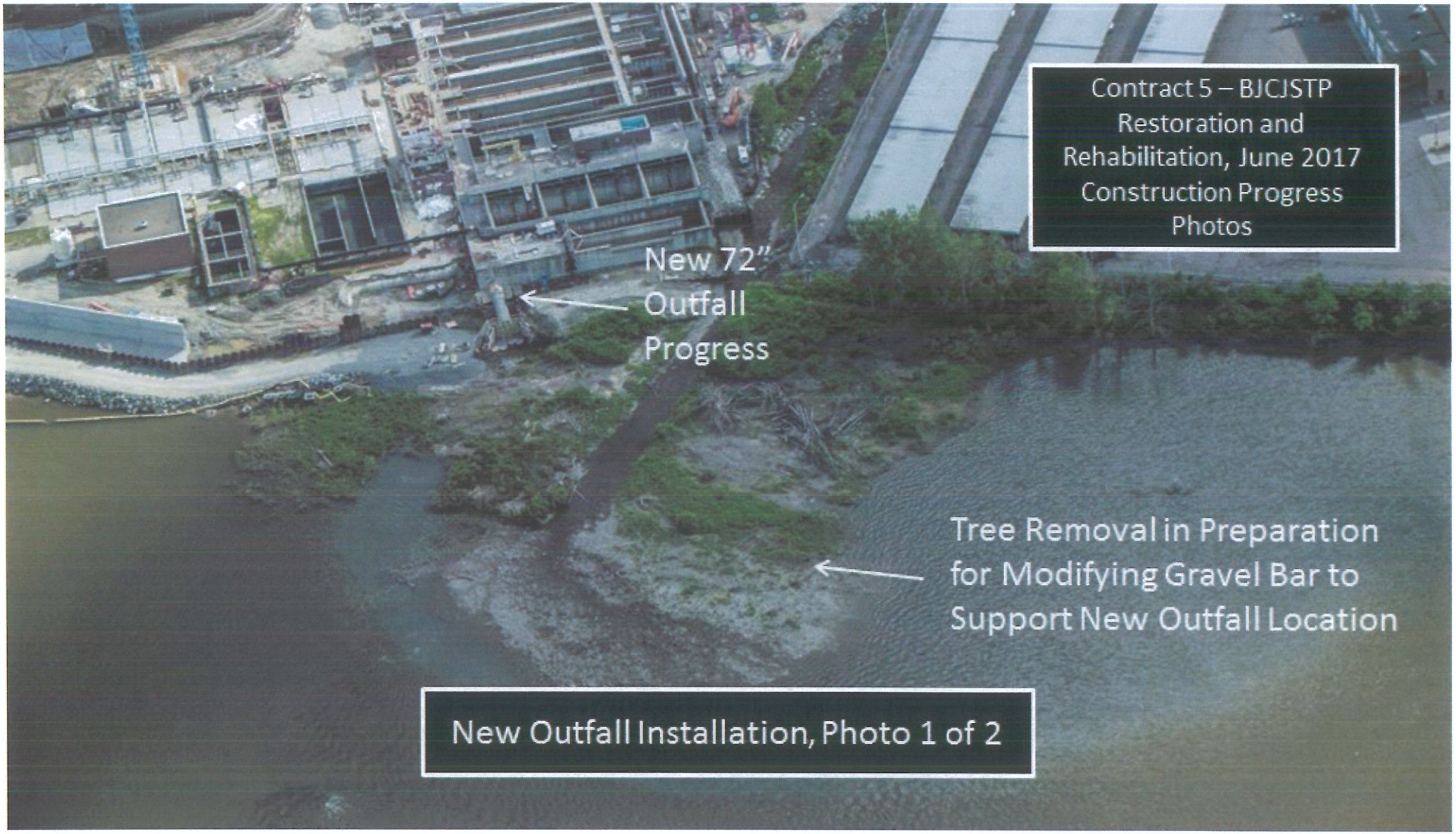
Photos


Hot Leg

Contract 5 – BJCJSTP Restoration and Rehabilitation, April 2017 Construction Progress Photos

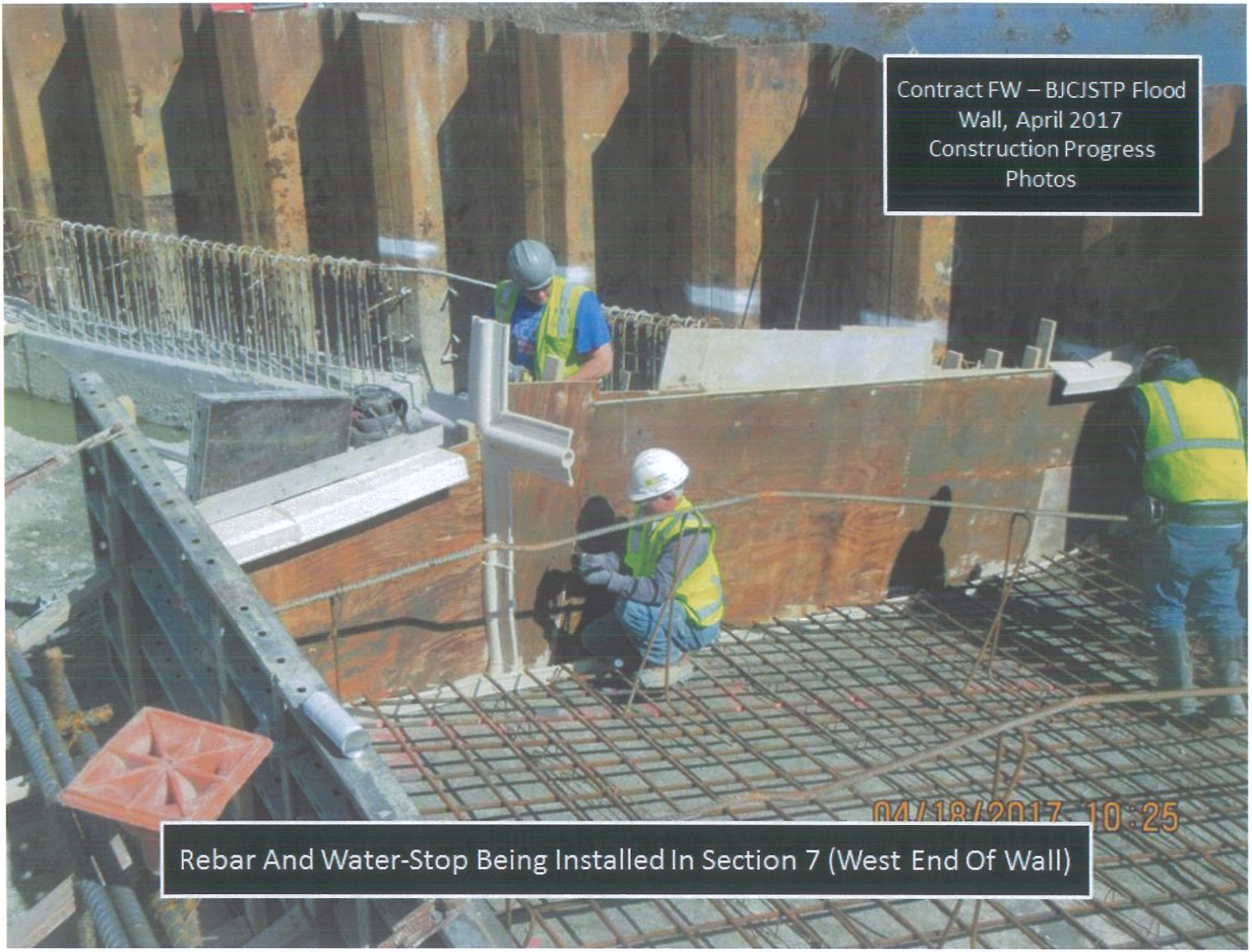


Administration Building Demolition West Wall


Contract 5 – BJCJSTP Restoration and Rehabilitation, June 2017 Construction Progress Photos
New 72" Outfall Progress
Tree Removal in Preparation for Modifying Gravel Bar to Support New Outfall Location
New Outfall Installation, Photo 1 of 2

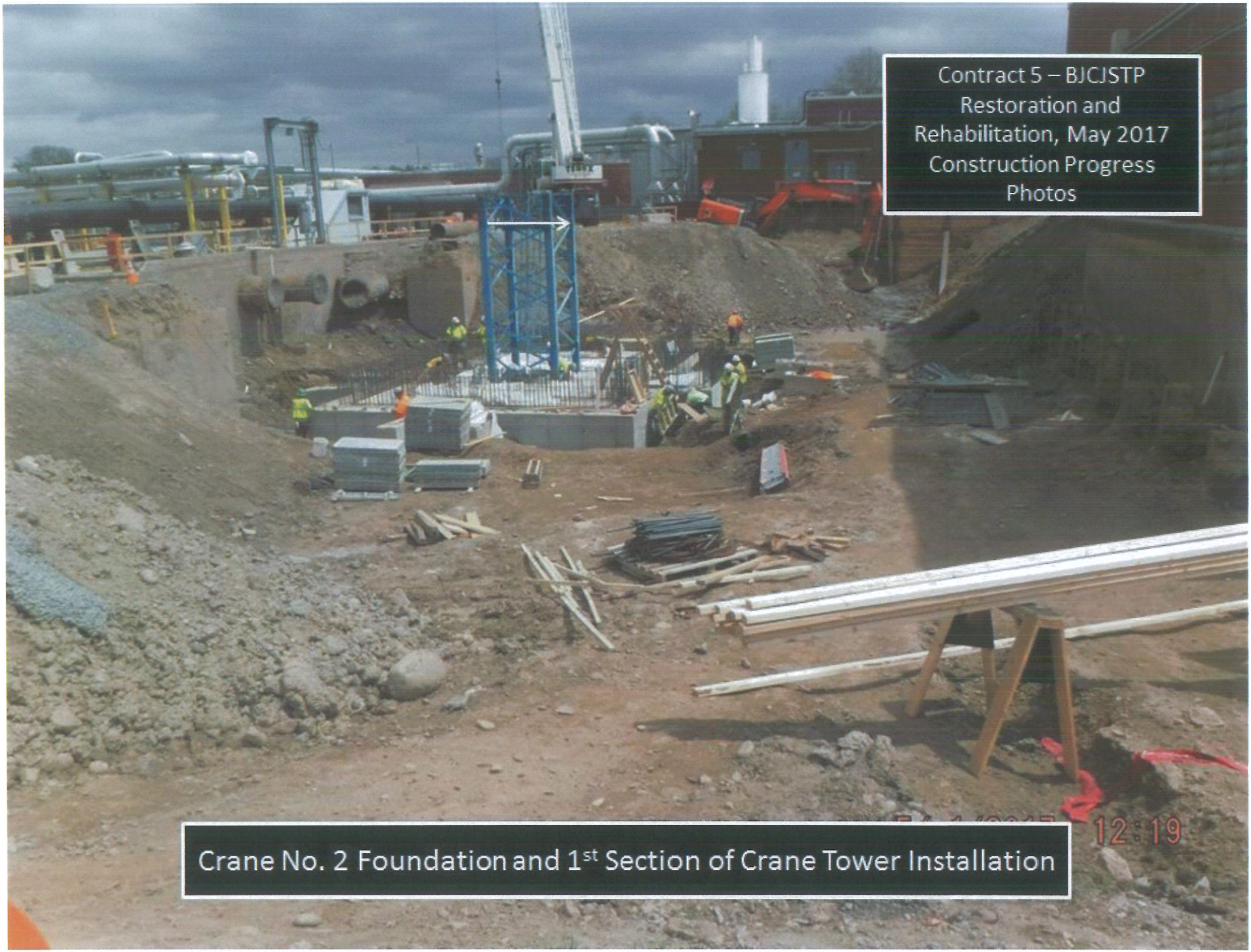

Contract 5 – BJ
Restoration a
Rehabilitation, Ju
Construction Pr
Photos
Overall Aerial View of Project Site

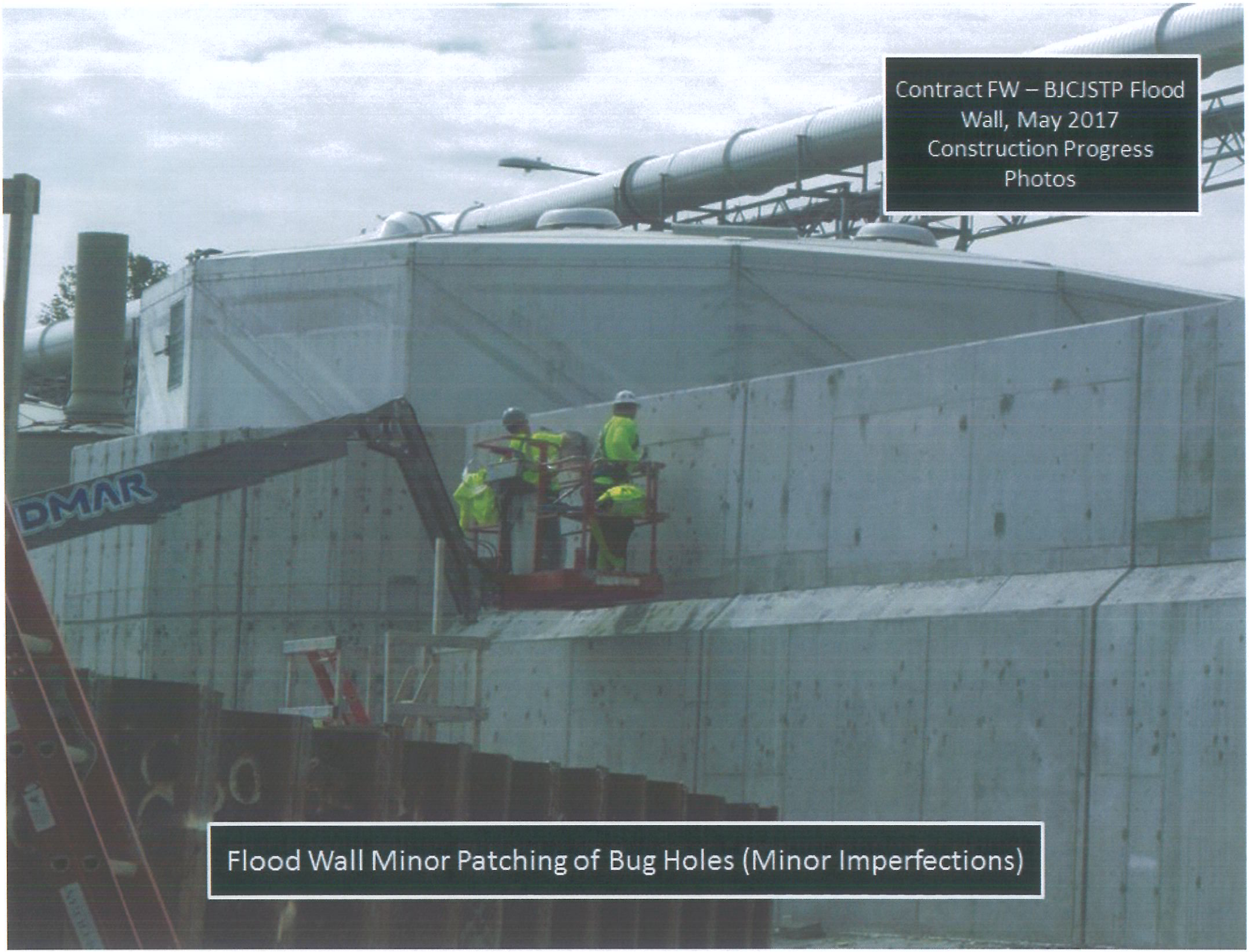

Contract 5 – BJCJSTP Restoration and Rehabilitation, April 2017 Construction Progress Photos
Chemical Storage Bldg. Masonry installation

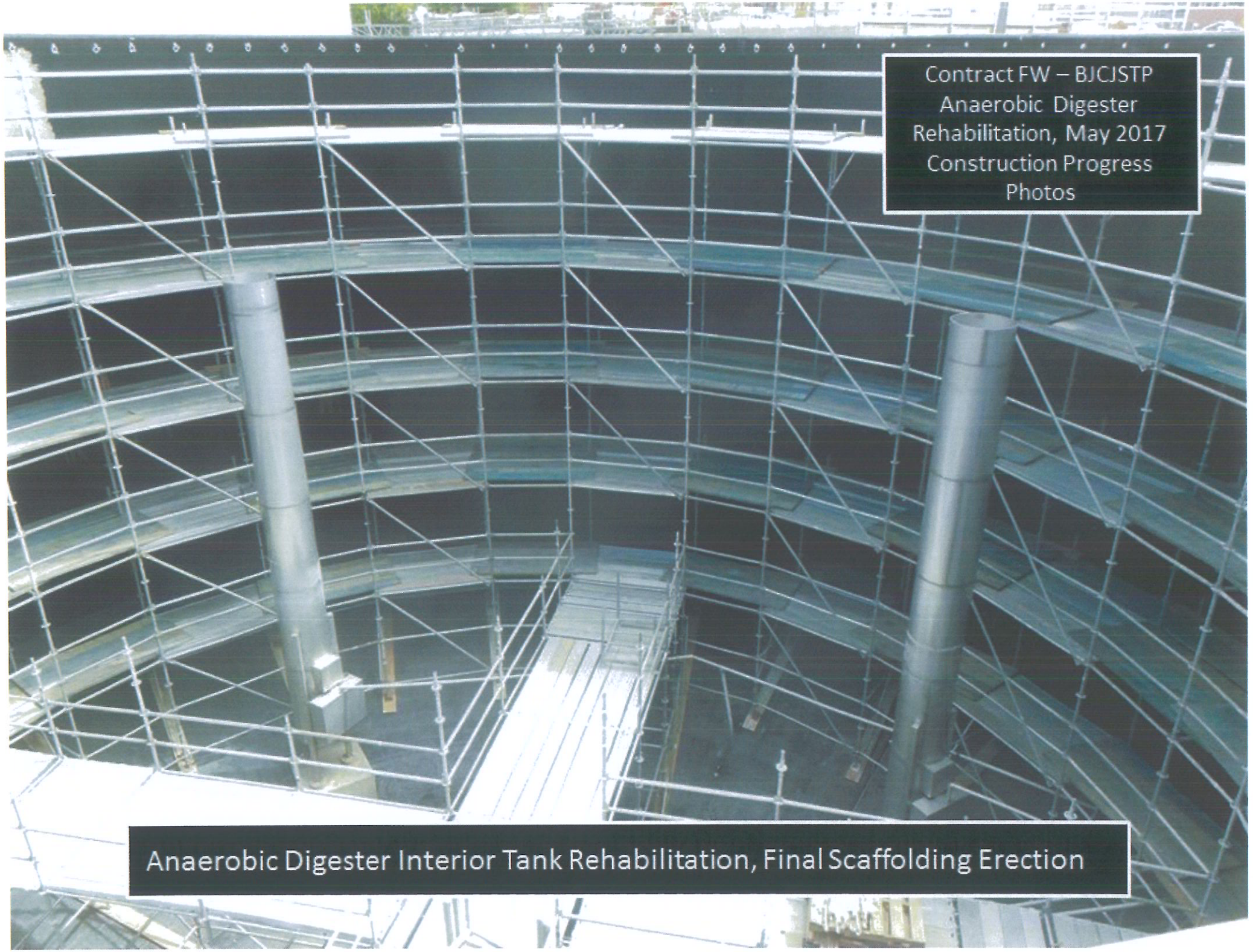

Contract FW – BJCJSTP Flood Wall, April 2017 Construction Progress Photos
04/18/2017 10:25
Rebar And Water-Stop Being Installed In Section 7 (West End Of Wall)

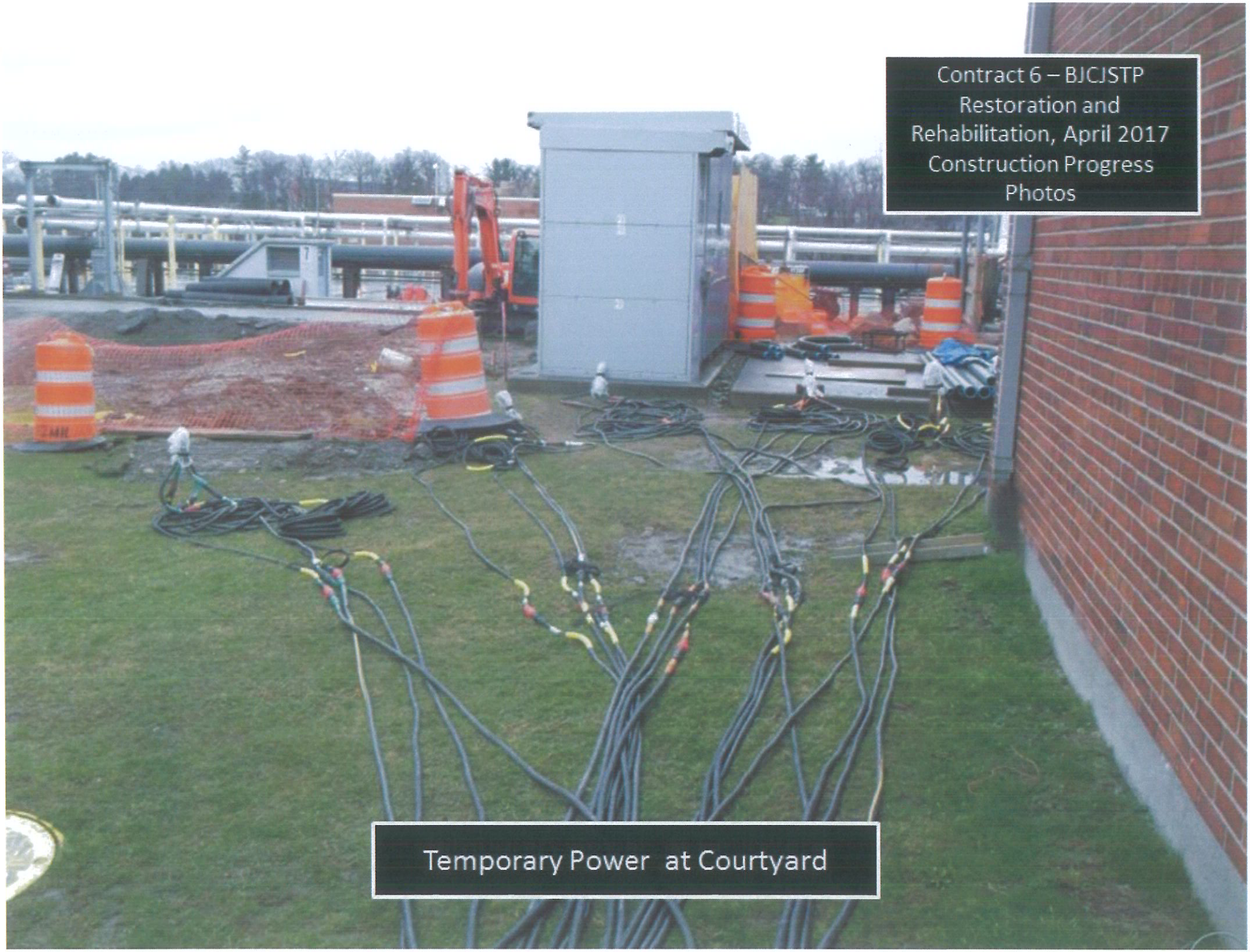

Contract 5 – BJCJSTP Restoration and Rehabilitation, April 2017 Construction Progress Photos
Reinforcing installation for the Primary Distribution Box


Contract 5 – BJCJSTP Restoration and Rehabilitation, May 2017 Construction Progress Photos
Carbonaceous Nitrogenous Cells 9-14 Progress, Photo No. 2


Contract 5 – BJCJSTP Restoration and Rehabilitation, May 2017 Construction Progress Photos
12:19
Crane No. 2 Foundation and 1st Section of Crane Tower Installation


Contract FW – BJCJSTP Flood Wall, May 2017 Construction Progress Photos
DMAR
Flood Wall Minor Patching of Bug Holes (Minor Imperfections)


Contract FW – BJCJSTP
Anaerobic Digester
Rehabilitation, May 2017
Construction Progress
Photos
Anaerobic Digester Interior Tank Rehabilitation, Final Scaffolding Erection


Contract 6 – BJCJSTP Restoration and Rehabilitation, April 2017 Construction Progress Photos
Temporary Power at Courtyard