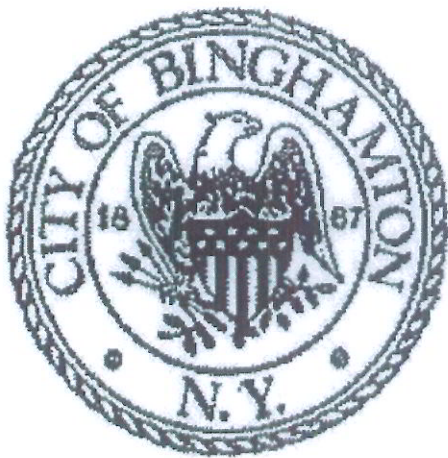


**Binghamton-Johnson City Joint Sewage  
Treatment Plant Restoration and  
Rehabilitation Project**

**2018 Quarter 4 Report**

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



January 2019

## **2019 QUARTER 4 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. 8720110628-59) between the City of Binghamton, Village of Johnson City, the Joint Sewage Board, and the State of New York, the City submits this 2018 Quarter 3 Report. The report summarizes the status and progress of the projects and programs required by the Consent Order from October through December 2018.

#### **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. The temporary disinfection is in service in chlorine contact tank #3, and flow is being discharged through parallel temporary discharge lines to the permanent 72" outfall pipe.

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 December 31, 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 September 30, 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 (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 complete.

<b>Contract No.</b>	<b>Description</b>	<b>Status</b>
Contract No. 1	Compost Facility Demolition	Complete
Contract No. 2	FEMA Mechanical	Complete.
Contract No. 3	BAF Facility Demolition	Complete.
Contract No. 4	MCC HH Emergency Replacement	Complete
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	Complete
Contract No. 10	Solids Handling Renovation Civil	NTP Issued July 20, 2017
Contract No. 11	Solids Handling Renovation Electrical	NTP Issued July 20, 2017
Contract No. 12	Solids Handling Renovation HVAC	NTP Issued July 20, 2017
Contract No. 13	Solids Handling Renovation Plumbing	NTP Issued July 20, 2017
Floodwall	Floodwall and New Diversion Structure	Anticipated completion date 1st Quarter of 2019.

### **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.

**Contract Status: 100% Complete**



### **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 have received the final reports on testing, and the final trip settings on MCC HH from the manufacturer based on actual loadings measured in the field. Paper work is being processed for Final Completion.

**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 roof for the new Headworks and BAF Backwash Treatment Facility was completed. Piping, equipment, and electrical work are ongoing in both of these structures. Stairs have been installed in both structures. Block work and roof panels were completed on BAF Backwash Treatment Facility. Mechanical and electrical components are being installed in the building. Block work for the Headworks building is now complete. Brick work for the BAF Backwash Treatment Facility is complete, but has not begun on the Headworks facility. HVAC units have been installed in both buildings, but cannot be completed until the electrical work on the building is completed. Mechanical and electrical work are scheduled to be completed in the BAF Treatment Facility next quarter, and we are hopeful that the headworks will also be completed during the first quarter of 2019.

Concrete work for the new Primary Distribution Box #1 is nearing completion. Leak testing of the Primary Distribution Box 1 was completed, in the third quarter, but the leak testing of the interior structure and gates has not been completed. PC has remedial work left to do on the interior wall of the distribution box. The installation of the gates on the interior walls is nearing completion.

Installation of the fine screen and grit removal equipment is ongoing. PC is scheduled to complete the concrete benching in the grit channels next quarter. We anticipate the Headworks and Primary Distribution Box #1 being on the critical path because the downstream systems cannot be started up until the fine screens and grit removal are operational. The startup of the Digesters and new centrifuges at the new Solids Handling Building are also waiting on the Headworks grit removal.

Miscellaneous brick work was completed on the coarse screen building. Both coarse screens have been installed and are operating. The compactor continues to have an issue plugging. The manufacturer installed to the modifications to the screen to eliminate the plugging issue at no additional cost to the City. The exhaust fans are scheduled to be installed in early 2019.

The concrete work and the interior concrete wall coatings are complete for the primary clarifiers 7-10. The contractor completed installing the equipment in primary clarifiers 7-10 last quarter. They need to complete the expansion joint replacement in the individual PST's, fix the coatings on the walls for the PST's and Matco needs to install the power and controls for the chain and flygths in the tanks. Ductbank EX-01 was held up by PC, and was not able to begin until late December 2018. This ductbank provides power to the West Primary Sludge Pump Station as well as the PST 7-10.



Concrete work for the CN Cells 1-8 is nearing completion. The only concrete work left to complete are the drop boxes. PC is required to inject cracks into the cracks in the existing walls in CN Cells 1-8 as well as the DN Cells. PC has completed rotating the valve actuators for the 30" valves for CN cells 1-8. The structural steel and grating is now complete, and the stainless steel backwash pipe and air pipe are still being installed. Installation of the nozzle decks in CN Cells 1-8 was completed this quarter, with the exception of the new panels that they had to have cast in December. PC's subcontractor, Welliver, now intends to have all structural concrete in the CN Cells 1-8 completed by the end of January 2019.

The entire Administration Building is now occupied by STP staff. Several relatively minor issues still need to be completed by PC and the other multi primes. The most difficult one is fixing the leaks in the existing south wall of the Maintenance Building. We have had PC perform injection on the leaks several times, and we continue to chase leaks in the south east corner. We continue to work with STP staff and the contractors to identify the source of the water leaks into the building, and anticipate having the remaining leaks corrected next quarter. PC began removing and installing the vapor barrier under the roof membrane as required by contract. The new green roof for the Administration Building should also be completed next quarter. The new Chemical Building's mechanical and electrical systems are ready for startup this quarter.

The shotcrete subcontractor completed installing the shotcrete for the walls in the BAF Backwash Tank and for CN Cells 9-14 long ago, and now need to complete the fillets at the base of the walls in the BAF Backwash Tank. There appears to be some minor cracking in the shotcrete that needs to be repaired. This was to be expected. The Engineer is evaluating the extent of cracking to give direction on what sections need to be repaired by the Contractor. The wash down piping is nearing completion in the tanks, and work to install the backwash tank pumps is also nearly complete.

PC's CPM Schedule was updated to show the status of the work through November 2018. PC is now planning to load the media in CN Cells 1-8 and the DN Cells in late March 2019. PC is still projecting completion of Phase 1 in the second quarter of 2019. The latest draft also shows the Phase 2 Milestone is scheduled to complete in late 2019. Much of the Kruger that was stored locally has been installed in the structures that it goes in. The SIPS and DN pumps have not yet been installed. The nozzle deck installation continued this quarter with the installation of nozzle decks in CN Cells have been completed with the exception of the recast panels. PC is still installing the nozzle decks in the DN Cells.

Concrete work in both the CN Cells and DN Cells should be complete to meet this schedule, but PC is still having to complete the crack injection in the walls for the CN Cells 1-8 so that they can begin leak testing the cells. After they pass the leak test, PC needs to install the interior coating in the cells, install the stainless steel bubble pipe, and then test the bubble pipe pattern. The bubble pipe test will require the blowers to be installed and the utilities in the north south corridor to be complete. PC has set the blowers and are nearing completion of the blower pipe in the Blower Building.

Electrical and mechanical work continued in the pipe gallery this quarter. The electricians are working where possible, but they are also waiting on PC so they can complete the electrical work in the gallery. We have directed PC to get the north south utility corridor completed between CN Cell 8 and CN Cell 9 so that the electrician can get their electrical work installed in the utility corridor between the Blower Building and CN Gallery.



PC also continued work in the UV and Plant Water Pump Stations this quarter. Installation of the UV reactors and pumps are nearly complete. They will be waiting on the electrical power for testing.

Concrete work for the new methanol containment area is complete, and the structural steel canopy for the methanol storage area is nearing completion. Both tanks and the structural steel were installed the previous quarter and PC is beginning to install the roof deck for the structure this quarter. Work in the new Methanol Control Building is progressing with all trades able to work in the building.

PC continued installing the stainless steel methanol pipe. We have discovered numerous stainless steel fittings on the methanol pipe that do not meet the state and federal requirements to purchase components that meet the American Iron and Steel (AIS) requirements. PC has not submitted a waiver request for the fittings and we have told them that they either need to remove them and replace them with AIS compliant fittings or get approval for a waiver from the EPA and EFC. These noncompliant fittings may delay startup of the methanol system.

The concrete work continued on the SIPS during the quarter, and this has allowed the other multi primes to begin their work in the SIPS area. SIPS must be complete before the flow can be sent to the CN Cells 1-8.

PC continued installing the south flood wall this quarter. They were able to get the storm drain installed to the Solids Handling Building, and are nearing completion on the south flood wall concrete work. PC was attempting to complete the parking lot before the end of November, but was unable to get the preparatory work done before the asphalt plants closed for the winter season. They will now complete the parking lot in the spring of 2019.

PC failed to achieve the Flood Protection Milestone specified and is being held accountable for all costs incurred by the City due to their failure to meet the November 18, 2017 milestone requirement. PC continued installing the yard piping throughout the site. Their focus was installing the Primary Influent Lines to the PST's 1-6 as well as installing the 54" Primary Influent between Distribution Box #1 and #2. They completed installing the pipe, but have not pressure tested the line to meet the specifications. We will continue to push them to get the line tested.

**3 Month Look Ahead:** PC Construction will complete work on equipment installation and dry testing of equipment in primary clarifiers 7-10. PC will perform the official leak test after they complete leak repairs in the basins. The Chemical Storage Building and East Scrubber Building will be completed next quarter. The lower level of the Administration Building will be completed next quarter. Concrete work will continue on the CN Cells 9-14, CN Cells 1-8, and the DN Cells. PC will complete mechanical and architectural work for the CN Blower Building, the SIPS, the Headworks, and the BAF Backwash Treatment Facility next quarter. PC should be able to complete installing the filter media this next quarter. PC is scheduled to complete the Headworks in March or April. Concrete work for the south floodwall and the concrete apron outside the structures on the west and north side of the facility should be completed this quarter.

Electrical and mechanical work for the new methanol system, UV, and Plant Water Pump Station should be completed next quarter. 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.

The contractor is now nearly twelve months behind schedule for meeting Phase I and II milestones.



We continue to work with them to improve their schedule. NYSDEC had revised several intermediate milestones in a previous modification to the Consent Order, as requested by the City, and they share our concern that PC has been unable to meet the production requirements necessary to meet the milestones, as requested by the City.

**Contract Status: 81% Complete through December 2018**

**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 working in the BAF Backwash Treatment Facility, both upper and lower level of the Headworks, and the Blower Building. Matco completed installing the courtyard switchgear this quarter. The two new 2MW generators are nearing completion. PC finally completed their work on the west end restoration of the generator building. PC also finally completed backfill west of the Headworks, which has allowed Matco to begin installing ductbank EX-01.

Matco continues to work in the UV disinfection area, the Plant Water Building, the DN cells, the CN Cells 1-8, East Odor Control, the Methanol Building, and the West Sludge Pump Station. MATCO is providing input for the Project CPM baseline schedule. The East Scrubber Building was been partially operational since the end of April, but some additional work items are being resolved to allow us to turn the facility over to the STP staff for operation. The east odor control building has been shut down for the winter. In the interim, PC remains responsible for the temporary operation of the facility.

We have sent the temporary diesel generator back to the rental company, now that the courtyard switchgear is complete.

**3 Month Look Ahead:** MATCO will continue to install overhead duct work for the various structures, and interior conduit and cable trays in buildings and structures as they are constructed. For example, the Chemical Feed Building, Generator Building, Headhouse and Administration Buildings, and the East Scrubber Building are all nearing completion and will complete next quarter. They should be complete with the electrical work in the Headworks and BAF Backwash Treatment Facility on or about the end of the next quarter. They anticipate completing the installation of the new 2MW generators and ancillary electrical equipment in the new Generator Building and the courtyard gear during the next month. MATCO will continue installing electrical systems in the CN Cells 1-8, the SIPS area, the new Blower Building, the DN Cells, the UV Building, and the Methanol Building next quarter.

**Contract Status: 79% Complete through December 2018**



### **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 Notice to Proceed was issued 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 completed start up and testing for the HVAC system in the new Maintenance and Administration Building. They are working on the HVAC systems for both the new Chemical Building, East Odor Control Building, Northwest Electrical Building, West Sludge Pump Station, UV, Plant Water Pump Station, new Generator Building, and the Headhouse.

**3 Month Look Ahead:** J & K Plumbing will complete the startup and testing of the HVAC systems for the East Odor Control Building and Chemical Storage Buildings this quarter. They should also complete the HVAC installation at the new Generator Building, West Primary Sludge Pump Station, UV Disinfection, Plant Water Pump Station and DN Cells next quarter. They will begin installing the HVAC Equipment in the Mechanical Room for SIPS, and continue installing the systems in the Methanol Building, the West Sludge Pump Station, the CN Cells 1-8, and the DN Cells this quarter. They have received a considerable amount of material and equipment and these are in storage and ready to be installed.

**Contract Status: 84% Complete through December 2018**

### **Contract No. 8 - BAF Plumbing**

The BAF Plumbing contract supports the BAF General Civil Contract and includes installing 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 the installation of the plumbing in the Headworks Building, and the new Generator Building.

**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: 87% Complete through December 2018**

### **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 punch list for items to repair was prepared for the Contractor and they have completed the punch list work. They completed repairs of the latent defects 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.

**Contract Status: 100% Complete**

**Contract No. 10 - Solids Handling Renovation - Civil**

Contract No. 10 is intended to renovate and improve the solids handling systems including the existing Digester Control Building, existing digesters, solids dewatering systems, and all ancillary equipment.

**Status:** Bids for all of the Solids Handling Contracts were received on March 16, 2017. Additional funding has been secured for these contracts. The Notice to Proceed was issued on July 20, 2017. The Contractor completed the concrete coating work for the Sludge Blend Tanks and the concrete work for the new Solids Handling Building. Brick work is complete on the Solids Handling Building, and mechanical equipment has been installed in the Solids Handling Building and pipe and other trades are actively working the structure to complete the Phase 2 work. Quandel continued work in the Thickener Pump Stations this quarter.

Quandel is protesting that the rehabilitation of the gas conditioning and gas safety equipment are included in their contract. Because of their delays in executing this work, the City has contracted direct with the equipment suppliers for the gas conditioning and safety equipment as well as the digester mixing equipment. The digester mixing equipment and the digester gas safety equipment has the potential to delay startup of the rehabilitated digesters into the second quarter of 2019. The City entered into a separate contract to provide and install the Koester the gas safety equipment, and also purchased the digester mixing equipment from the equipment manufacturer.

We completed cleaning the existing sludge from the sludge lines in the Digester Control Building and also completed cleaning the digester gas piping within the building. Quandel completed installing the cementitious coating inside the new concrete tanks. They installed the coating under protest.

We had the initial Disputes Review Board meeting with Quandel last quarter. Quandel continued installing the new equipment in the Digester Control Building this quarter. Quandel has indicated that they intend to take several issues to the DRB for a ruling on items that we have already rejected.

We identified that Quandel installed the plug valves in the sludge lines wrong, and notified them that they had to reinstall them correctly. Quandel will finish reinstalling them in January.

**3 Month Look Ahead:** Quandel has scheduled the digester dome installation in late February and early March. They will complete installing doors and windows in the building, completes concrete masonry work for the new Solids Handling Building walls, the area around the building can be backfilled. When the east side is backfilled, PC can complete the storm drain and parking lot work for the new Administration Building. Quandel will continue installing the piping and equipment in the new Solids Handling Building. Quandel has stated that they do not believe they will complete the Milestone 1 or 2 until the second quarter of 2019 due to issues they have encountered with the gas processing



equipment. Quandel and the City have agreed to treat milestones 1 and 2 as intermediate milestones as long as the equipment gets installed by the original milestone 3 date is met.

**Contract Status: 84% Complete through December 2018**

**Contract No. 11 - Solids Handling Renovation - Electrical**

Contract No. 11 is intended to renovate and improve the components of the Solids Handling Systems including the existing Digester Control Building, existing digesters, solids dewatering systems, and all ancillary equipment. The contract is intended to support Contract No. 10 in the construction and renovation of the new Solids Handling System. The contract will follow the schedule of Contract No. 10.

Status: MATCO continued installing conduit and cable tray in the Digester Complex and Solids Handling Building this quarter.

**3 Month Look Ahead:** They are shooting for completion of most of the electrical equipment for the first quarter of 2019. MATCO will continue electrical work in the Solids Handling Building, Digester Control Building and will continue installing the new electrical conduit, wire, and equipment in the building in an effort to support completion of Milestone 1 and 2.

**Contract Status: 46% Complete Through December 2018**

**Contract No. 12 - Solids Handling Renovation – HVAC**

Contract No. 12 is intended to renovate and improve the HVAC components of the Solids Handling Systems including the existing Digester Control Building, existing digesters, solids dewatering systems, and all ancillary equipment. The contract is intended to support Contract No. 10 in the construction and renovation of the new Solids Handling System. The contract will follow the schedule of Contract No. 10.

Status: J&K completed setting the boilers and installing the piping for the boiler system in the Digester Control Building. They continued installing the HVAC equipment in the Solids Handling Building.

**3 Month Look Ahead:** J&K should complete installing the HVAC equipment in the Digester Complex as well as the Solids Handling Building next quarter.

**Contract Status: 76% Complete through December 2018**

**Contract No. 13 - Solids Handling Renovation – Plumbing**

Contract No. 13 is intended to renovate and improve the plumbing components solids handling systems including the existing Digester Control Building, existing digesters, solids dewatering systems, and all ancillary equipment. The contract is intended to support Contract No. 10 in the construction and renovation of the new Solids Handling System. The contract will follow the schedule of Contract No. 10.

Danforth continued work on the interior piping in the Solids Handling Building, Digester Complex, and Sludge Thickener Buildings this quarter.

**3 Month Look Ahead:** Danforth will continue the work in the Digester Control Building, Solids Handling Building and Sludge Thickener Buildings to support the effort for compliance with Milestone 1 and 2.



**Contract Status: 28% Complete through December 2018**

**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:** Streeter has now completed installing both 54-inch valves on the Binghamton line. Streeter completed installing the bridge from the floodwall to MH 3. We anticipate deleting the removal of the heavy stone that will be used as the haul road for the WQIP Project from Streeter's contract, and we also anticipate having the WQIP contractor remove the stone and complete the storm drain installations adjacent to storm drain pump stations 1 and 2.

**3 Month Look Ahead:** We should be able to get substantial completion for the Floodwall contract by the end of the first quarter 2019, with the exception of the work that will be removed from the contract and the coating repairs to Digesters No. 1 and No .2.

**Contract Status: 97% Complete through December 2018**

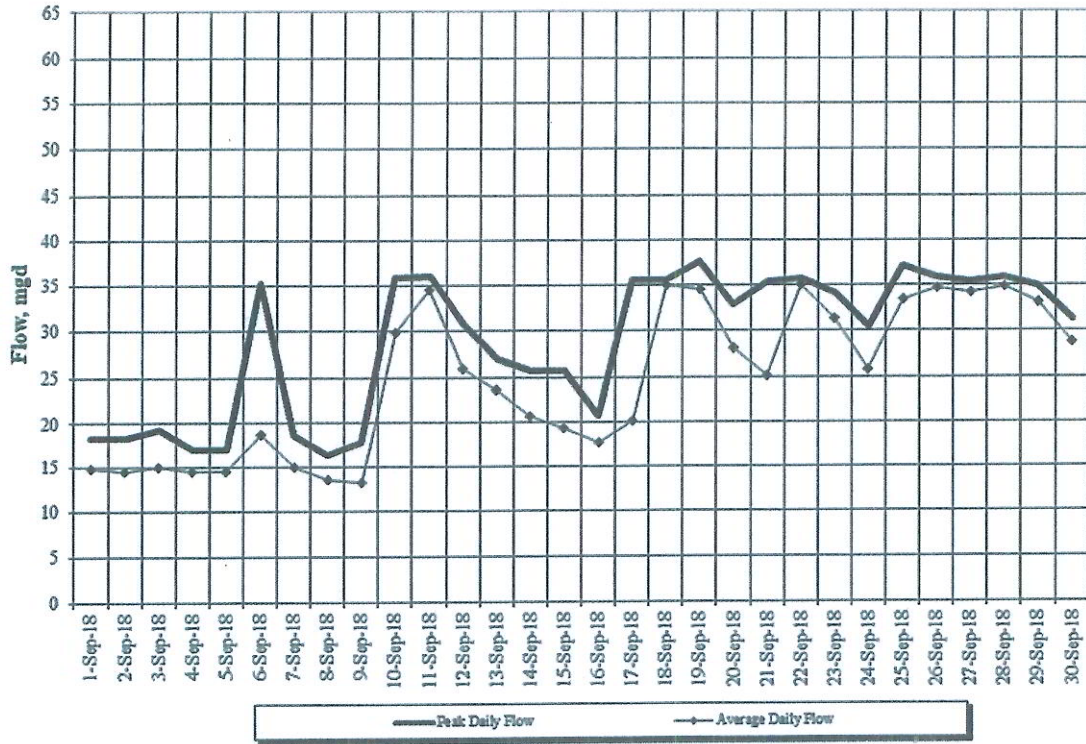


# ATTACHMENT A

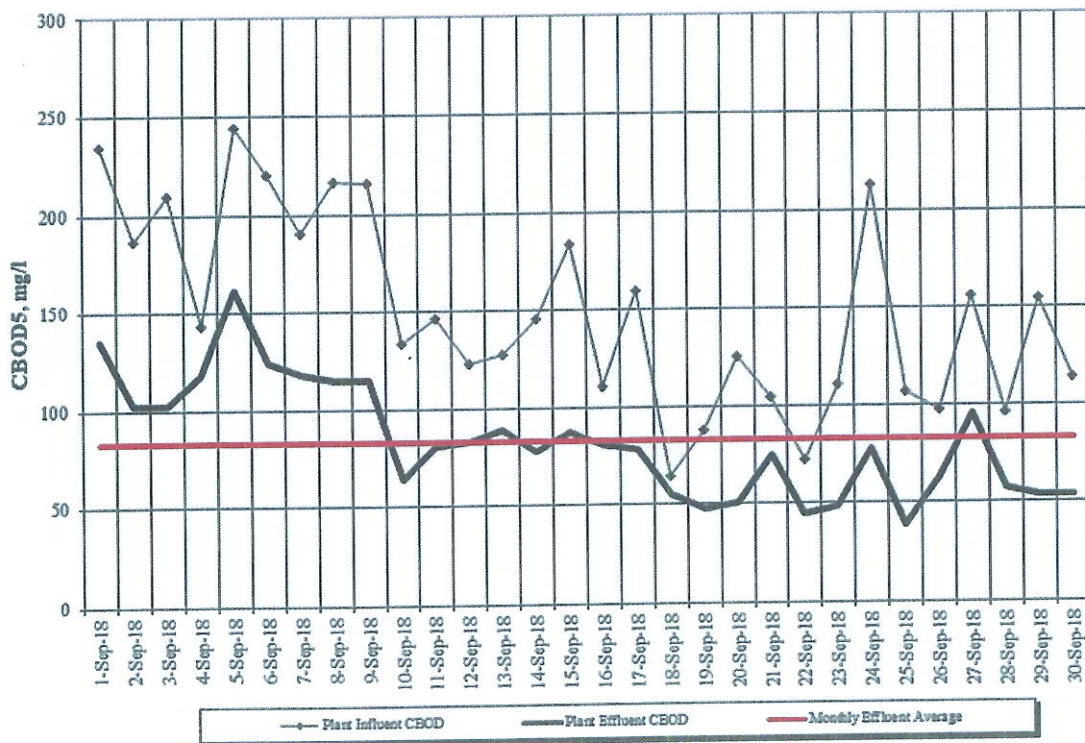
## Facility Operations



**Daily Flows**  
Binghamton - Johnson City JSTP

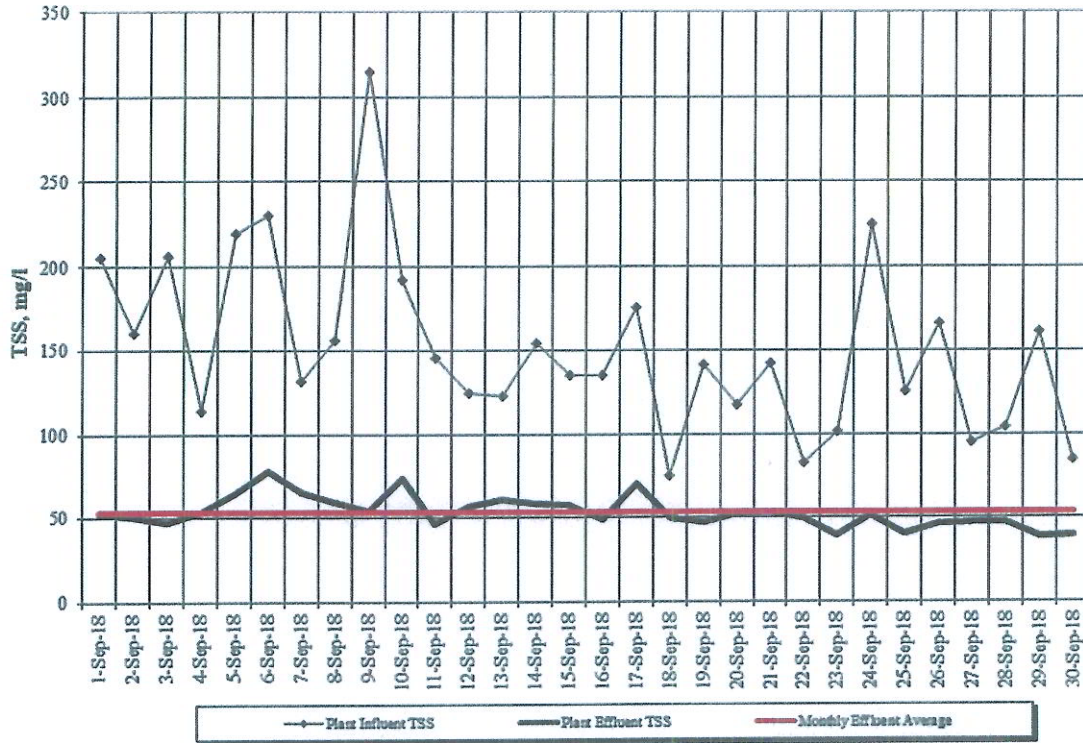


**CBOD5 Concentrations**  
Binghamton - Johnson City JSTP

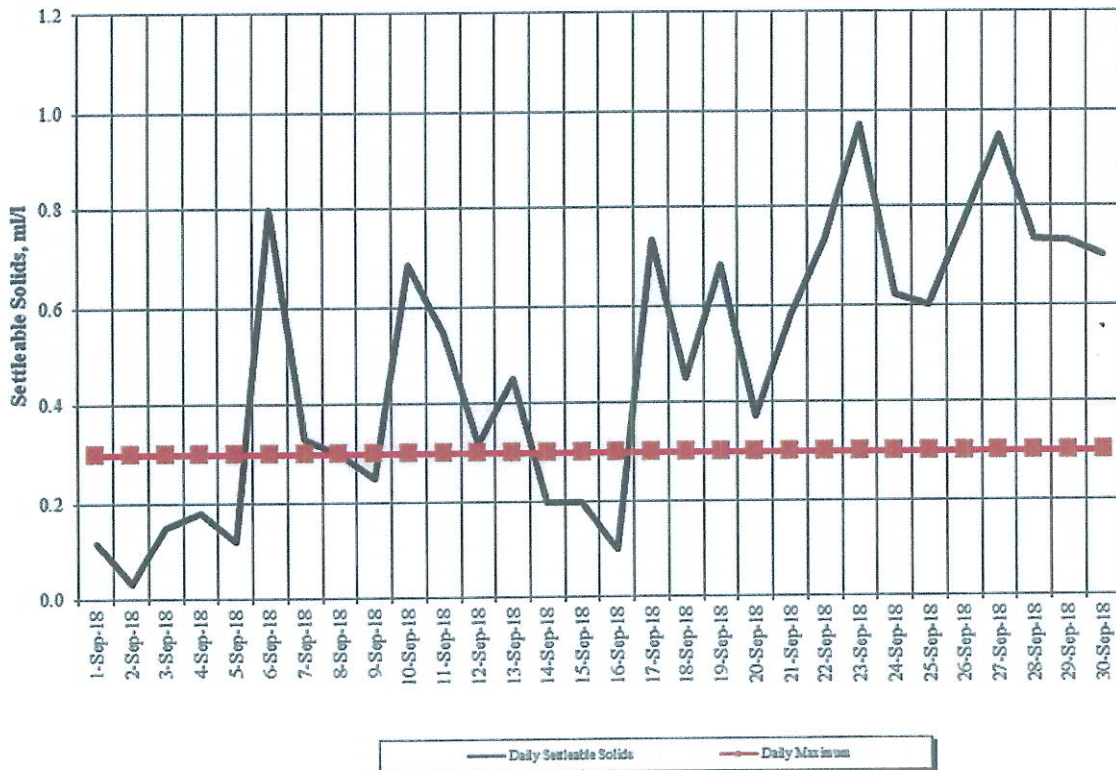




**TSS Concentrations**  
Binghamton - Johnson City JSTP

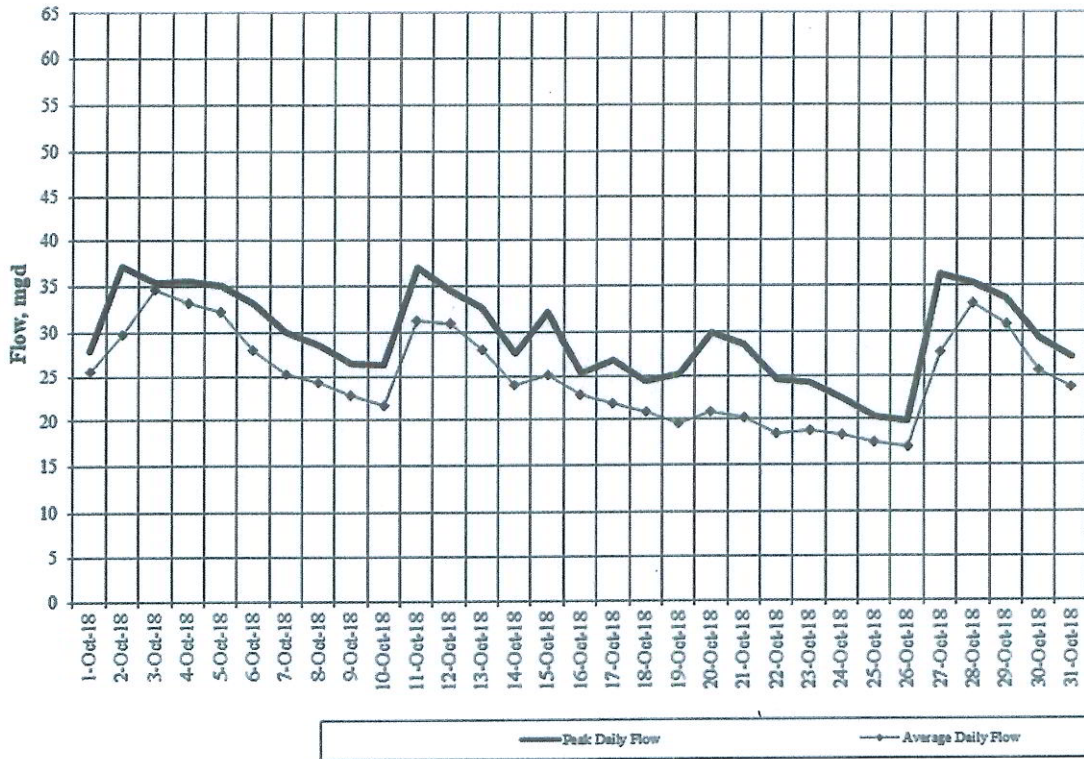


**Settleable Solids**  
Binghamton - Johnson City JSTP

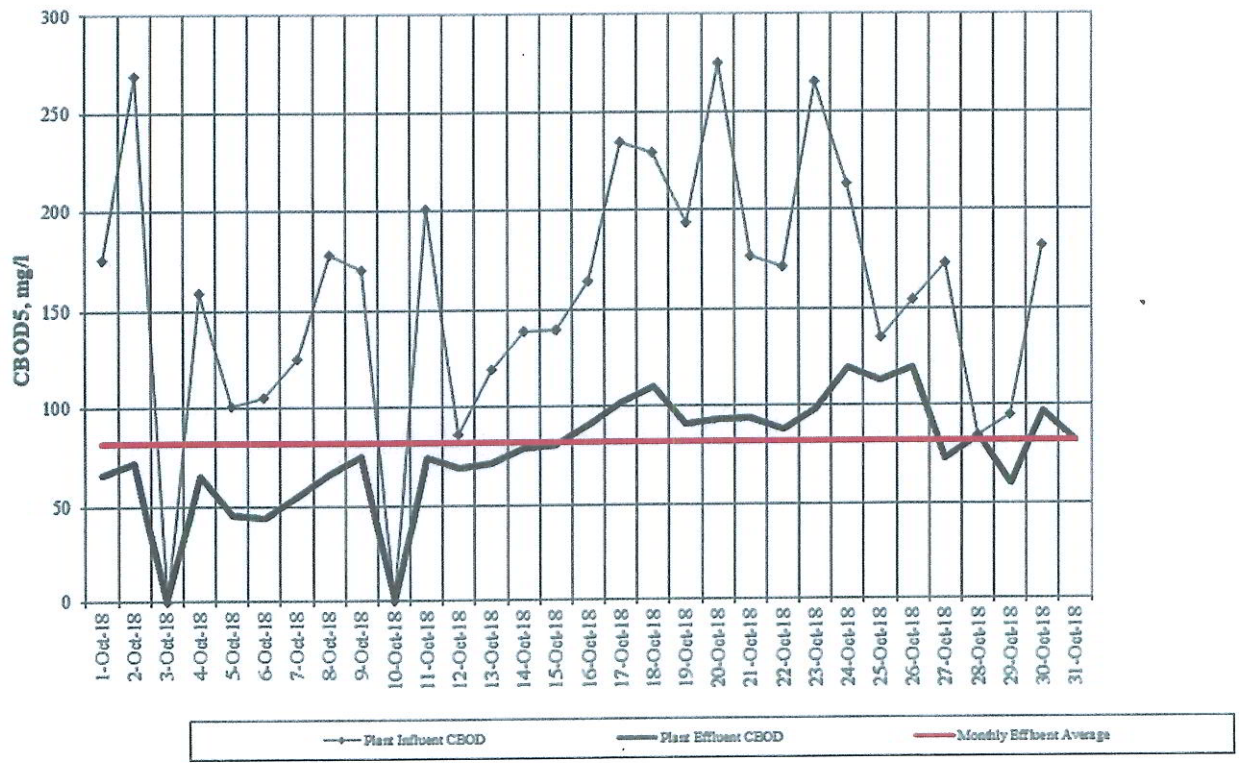




### Daily Flows Binghamton - Johnson City JSTP

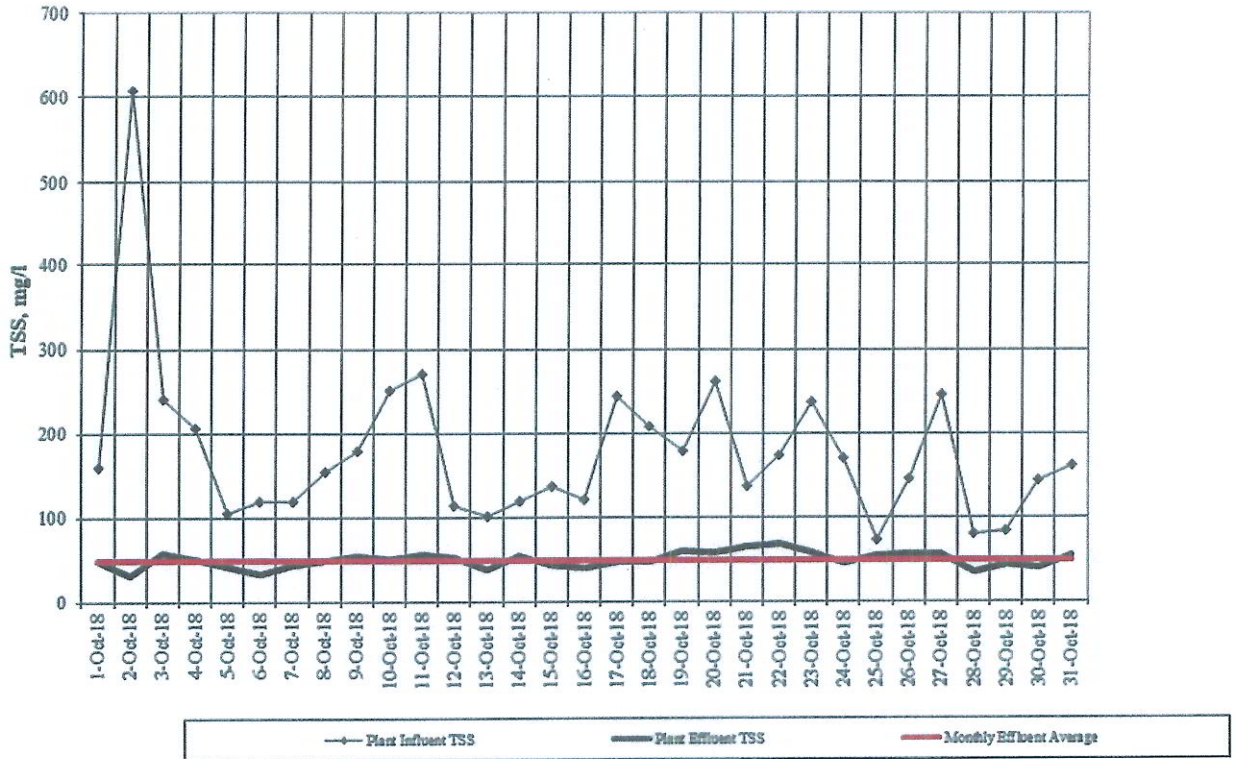


### CBOD5 Concentrations Binghamton - Johnson City JSTP

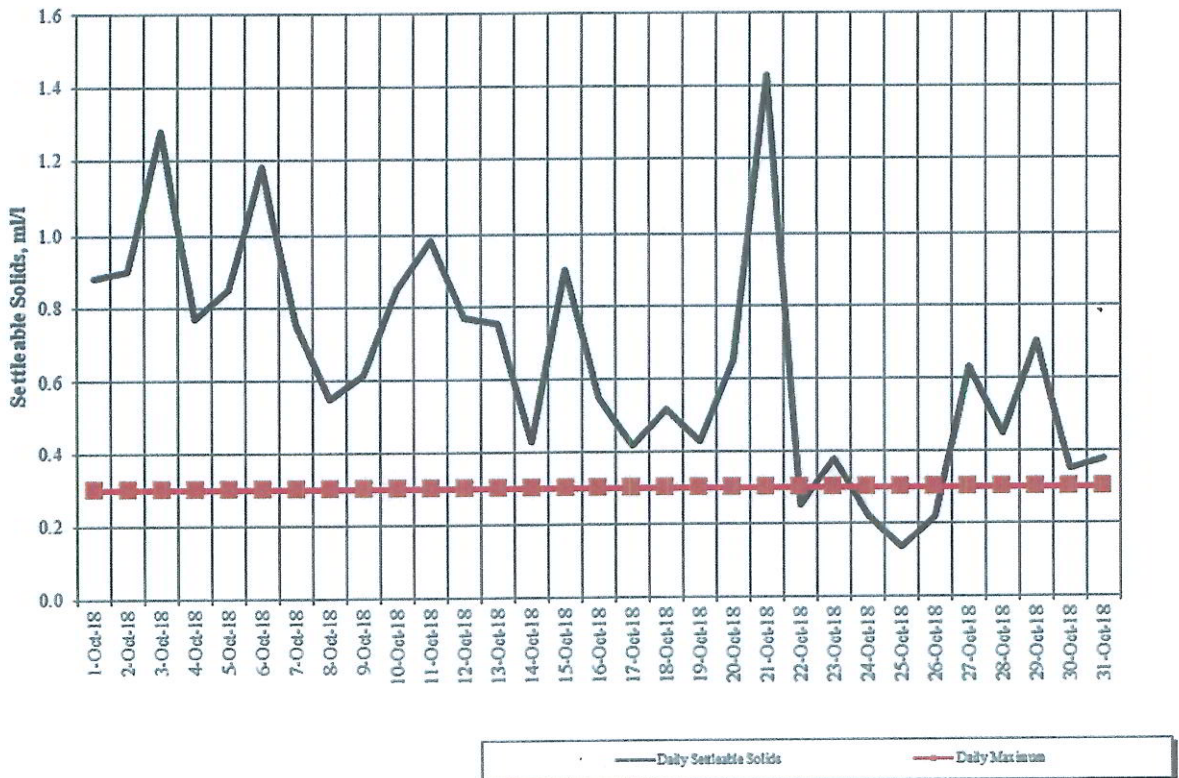




**TSS Concentrations**  
Binghamton - Johnson City JSTP

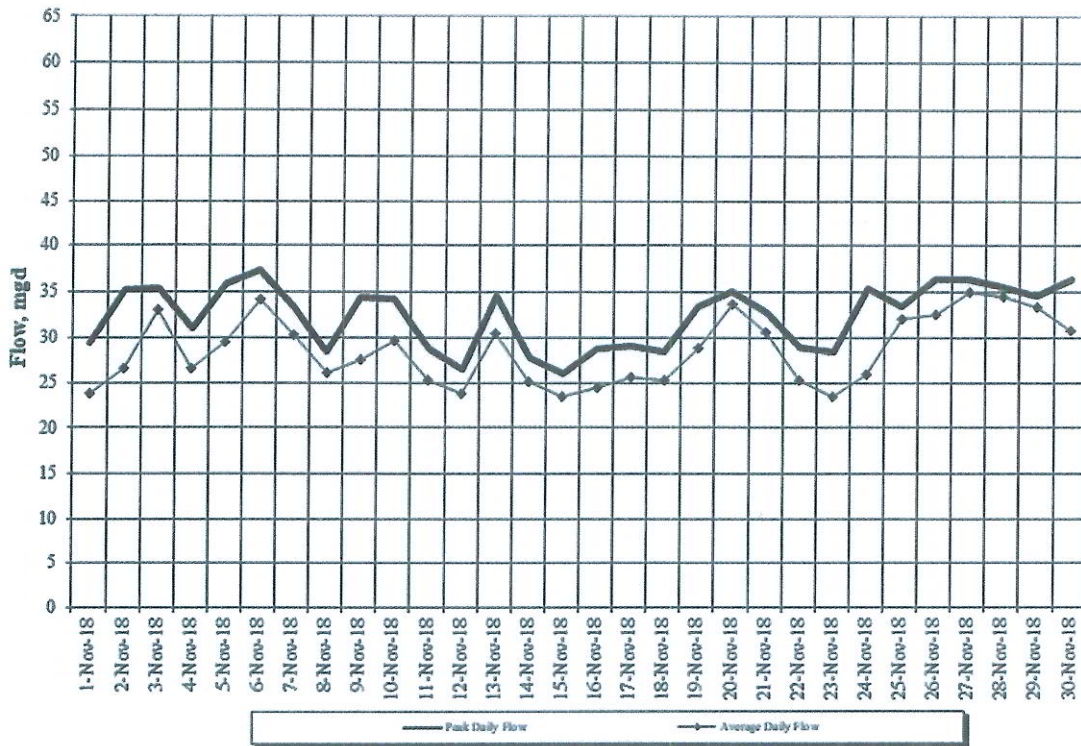


**Settleable Solids**  
Binghamton - Johnson City JSTP

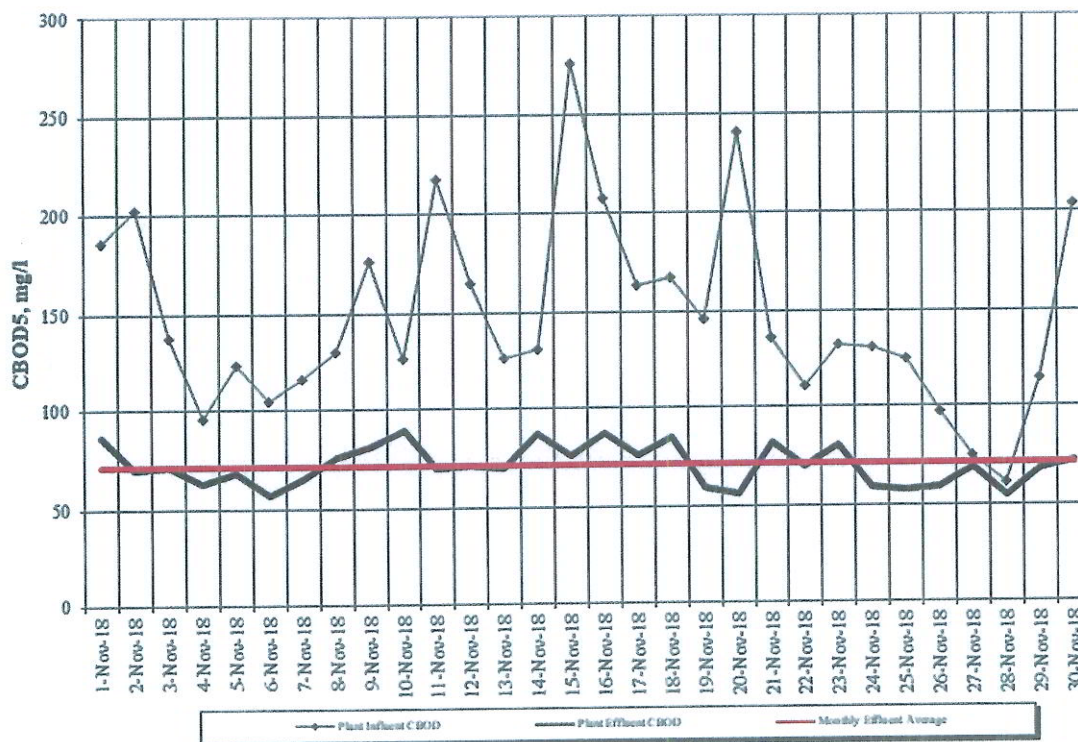




### Daily Flows Binghamton - Johnson City JSTP

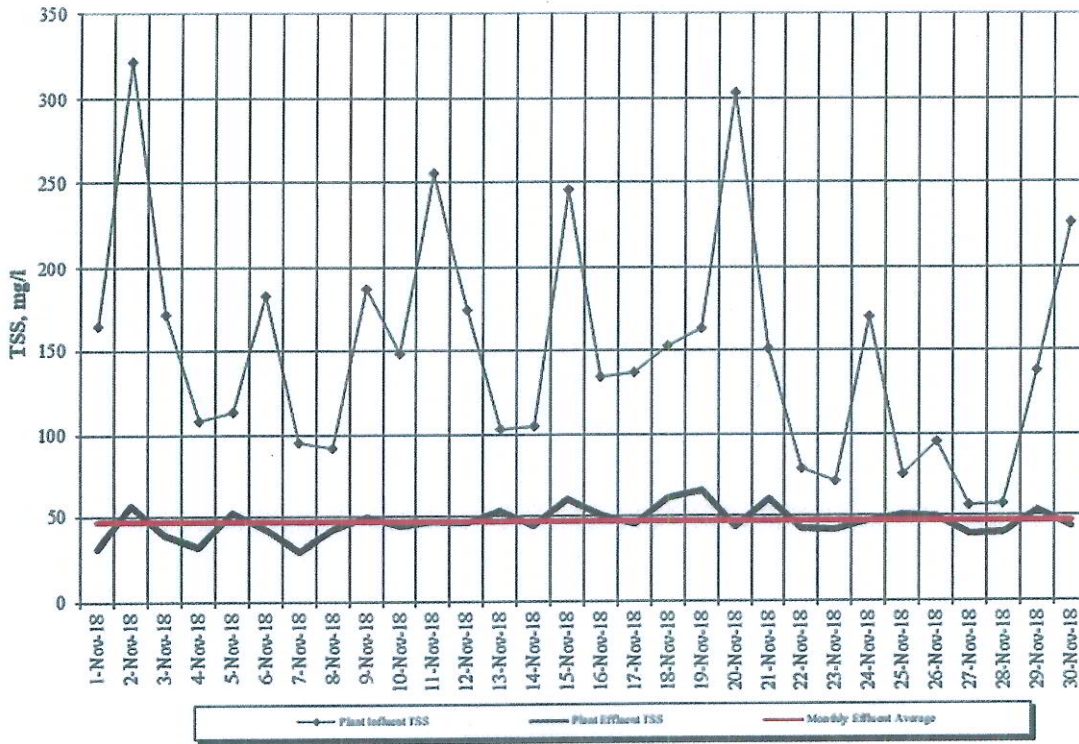


### CBOD5 Concentrations Binghamton - Johnson City JSTP

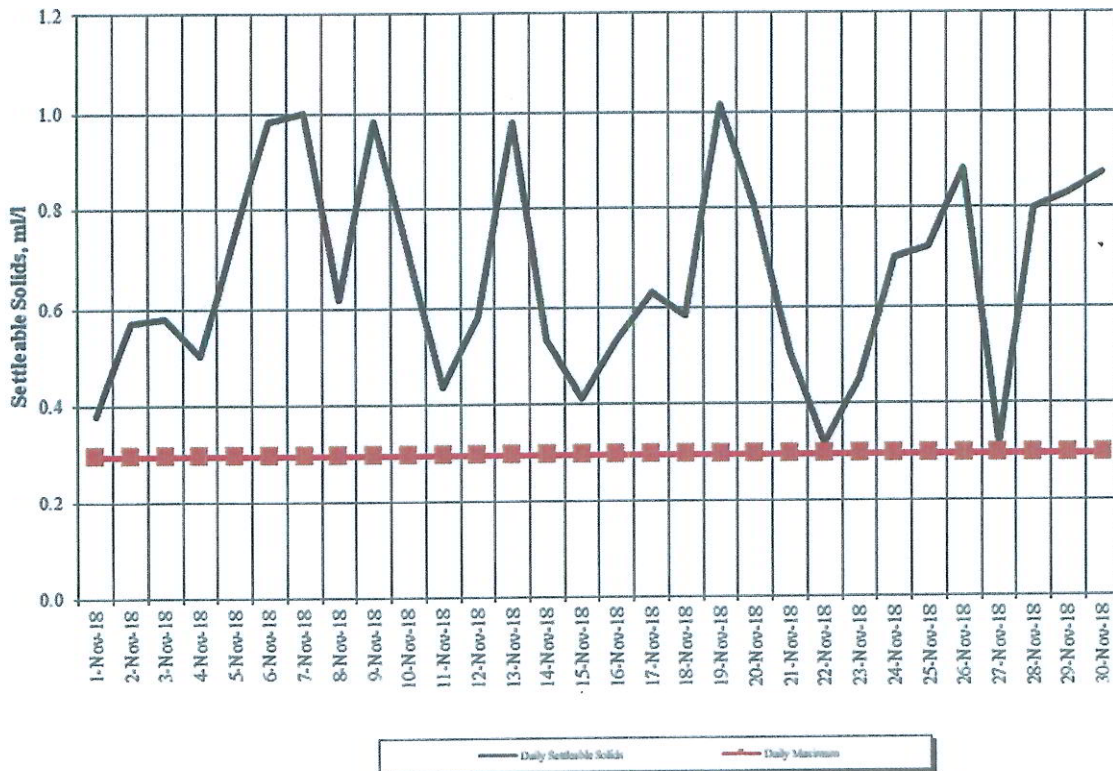




**TSS Concentrations**  
Binghamton - Johnson City JSTP



**Settleable Solids**  
Binghamton - Johnson City JSTP





DATE	TOTAL FLOW	Final Eff Amm. Avg	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-Sep-18	14.94			14.2	15.7	1.54	25					0
2-Sep-18	14.51			13.4	17.6	1.45	3					0
3-Sep-18	15.00			14.9	18.3	1.15	13					0
4-Sep-18	14.48	15.5	16.4	16.7	22.4	1.26	38	2.6	3.0	2.43	14.48	293
5-Sep-18	14.55			9.1	13.3	1.15	148					0
6-Sep-18	18.72			7.5	14.7	1.51	196			5.32	18.72	831
7-Sep-18	15.01			6.1	9.5	1.11	64					0
8-Sep-18	13.64			9.2	6.7	1.04	2					0
9-Sep-18	13.27			11.4	11.6	1.31	2					0
10-Sep-18	29.76			2.1	7.0	1.76	54					0
11-Sep-18	34.48	5.3	7.8	7.8	7.8	1.51	4	1.2	2.3	3.99	34.48	1147
12-Sep-18	25.87			12.4	15.7	1.28	2					0
13-Sep-18	23.66			14.2	16.7	1.35	58			4.58	23.66	904
14-Sep-18	20.77			12.7	16.9	1.45	4					0
15-Sep-18	19.47			12.2	15.9	1.21	135					0
16-Sep-18	17.84			15	17.7	1.21	31					0
17-Sep-18	20.26			13.7	16.9	1.91	189					0
18-Sep-18	35.03	3.3	4.0	6	7.9	1.65	52	1.1	1.0	3.84	35.03	1122
19-Sep-18	34.51			7.3	7.8	1.39	20					0
20-Sep-18	28.05			9	7.3	1.58	10			4.24	28.05	992
21-Sep-18	25.19			8.3	10.3	1.29	109					0
22-Sep-18	34.95			5.2	5.5	1.23	86					0
23-Sep-18	31.33			6.5	7.6	1.26	40					0
24-Sep-18	25.83			8	9.6	1.41	10					0
25-Sep-18	33.32	3.5	3.6	6.2	4.6	1.6	52	0.81	0.9	3.1	33.32	861
26-Sep-18	34.66			6.1	6.0	1.34	20					0
27-Sep-18	34.26			7.5	7.0	1.24	10			3.57	34.26	1020
28-Sep-18	34.83			5.5	6.8	1.55	10					0
29-Sep-18	33.11			10.4	7.5	1.48	20					0
30-Sep-18	28.66			7.7	7.1	1.54	50					0
	24.67	6.90	8.0	9.54	11.3	1.91	48.57	1.43	1.81	3.88	27.75	899
	<b>TOTAL FLOW</b>	<b>Final Eff. Avg as N mg/l</b>	<b>FW Avg as N mg/l</b>	<b>Final Eff TKN</b>	<b>FW TKN</b>	<b>CL 2 Max</b>	<b>30 Day MEAN</b>	<b>EFF. PHOS.</b>	<b>FW PHOS.</b>	<b>Eff. Total Iron</b>	<b>Daily Total Q</b>	<b>Mthly Avg Iron lbs/day</b>

1,419

LBS/day

15 Day Mean

17.30



DATE	TOTAL FLOW	Final Eff Amm. Avg	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-Oct-18	25.65			9.5	10.7	1.01	30					0
2-Oct-18	29.90	4.7	5.4	7.7	7.0	0.97	2613	1.3	2.2			0
3-Oct-18	34.73			6.9	6.4	1.43	41					0
4-Oct-18	33.31			8.2	4.8	1.2	20			3.82	33.31	1061
5-Oct-18	32.21			7.3	6.8	1.14	63					0
6-Oct-18	28.07			4.8	7.8	1.25	10					0
7-Oct-18	25.26			7.3	8.8	1.09	10.0					0
8-Oct-18	24.23			6.5	10.5	1.28	160					0
9-Oct-18	22.78	8.60	8.2	10.8	12.2	1.22	285	3.50	1.8	4.86	22.78	923
10-Oct-18	21.78			11.1	11.7	1.05	41					0
11-Oct-18	31.21			5.1	8.2	0.71	73			4.39	31.21	1143
12-Oct-18	30.90			7.7	6.7	1.34	20					0
13-Oct-18	27.97			6.3	7.5	1.51	10					0
14-Oct-18	23.93			7.4	7.2	1.45	148					0
15-Oct-18	25.10			8.5	8.3	1.23	160					0
16-Oct-18	22.91	10.30	10.6	10.3	10.8	1.04	317	1.60	2.4	4.22	22.91	806
17-Oct-18	21.91			13.8	12.9	1.11	2851					0
18-Oct-18	20.88			14.7	14.9	1.26	10			5.14	20.88	895
19-Oct-18	19.55			15.1	16.2	1.23	657					0
20-Oct-18	20.86			15.9	12.7	1.38	10					0
21-Oct-18	20.21			13.7	15.4	1.04	41					0
22-Oct-18	18.43			15.4	16.2	1.19	10					0
23-Oct-18	18.76	11.50	11.4	15.3	17.0	1.67	10	1.80	2.5	4.87	18.76	762
24-Oct-18	18.25			17.0	22.7	1.35	20					0
25-Oct-18	17.47			17.7	13.4	0.95	52			4.85	17.47	707
26-Oct-18	16.98			17.5	21.8	0.66	10					0
27-Oct-18	27.71			9.0	13.6	1.56	295					0
28-Oct-18	33.13			10.3	9.0	1.4	426					0
29-Oct-18	30.86			9.7	10.4	1.23	10					0
30-Oct-18	25.60	7.00	7.8	11.2	14.8	1.17	52	1.30	1.7	5.00	25.60	1068
31-Oct-18	23.69			14.0	17.4	1.23	63					0
	24.98	8.42	8.7	10.8	11.7	1.67	60	1.90	2.12	4.64	24.12	934
	<b>TOTAL FLOW</b>	<b>Final Eff. Avg as N mg/l</b>	<b>FW Avg as N mg/l</b>	<b>Final Eff TKN</b>	<b>FW TKN</b>	<b>CL 2 Max</b>	<b>30 Day MEAN</b>	<b>EFF. PHOS.</b>	<b>FW PHOS.</b>	<b>Eff. Total Iron</b>	<b>Daily Total Q</b>	<b>Mthly Avg Iron lbs/day</b>

176

LBS/day

15 Day Mean

48

DATE	TOTAL FLOW	Final Eff Amm. Avg	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-Nov-18	23.82			7.3	9.5	1.31	100			4.13	23.82	820
2-Nov-18	26.61			10	12.8	1.41	305					0
3-Nov-18	33.05			4.9	11.1	1.47	10					0
4-Nov-18	26.52			8.2	8.3	1.04	689					0
5-Nov-18	29.44			10.6	11.4	1.44	41					0
6-Nov-18	34.17			7.6	9.1	1.73	63			1.96	34.17	559
7-Nov-18	30.29	5.2	6.1	6.5	9.1	1.53	41	0.12	0.11			0
8-Nov-18	26.1			10.4	11.4	1.09	110			4.50	26.10	980
9-Nov-18	27.53			7.9	10.2	1.51	10					0
10-Nov-18	29.65			8.6	9.7	1.45	10					0
11-Nov-18	25.24			10.5	10.8	1.35	10					0
12-Nov-18	23.84			11.6	9.7	1.47	40					0
13-Nov-18	30.41			11.4	9.1	1.33	733			4.68	30.41	1187
14-Nov-18	25.12	6.5	7.2	12.0	14.8	0.94	20	1.40	1.49			0
15-Nov-18	23.52			13.2	13.9	1.55	110			5.00	23.52	981
16-Nov-18	24.46			11.9	14.1	1.03	10					0
17-Nov-18	25.53			10.1	10.1	1.05	52					0
18-Nov-18	25.27			11.5	9.2	1.37	336					0
19-Nov-18	28.82			11.0	15.4	1.49	97					0
20-Nov-18	33.76			10.5	13.8	1.45	31			4.30	33.76	1211
21-Nov-18	30.6	4.9	5.3	10.7	11.8	1.42	10	1.0	1.64			0
22-Nov-18	25.23			9.2	10.7	1.3	20			4.18	25.23	880
23-Nov-18	23.45			11.2	12.5	1.32	185					0
24-Nov-18	25.9			9.9	13.0	1.43	10					0
25-Nov-18	32.11			8.6	9.5	1.53	10					0
26-Nov-18	32.64			8.8	9.7	1.15	41					0
27-Nov-18	35			8.4	8.0	1.25	10			3.72	35.00	1086
28-Nov-18	34.6	3.8	4.3			1.44	41	0.9	0.86			0
29-Nov-18	33.39			9.8	9.8	0.78	189			4.03	33.39	1122
30-Nov-18	30.81			10.2	11.6	1.46	216					0
	28.56267	5.10	5.72	9.74	11.04	1.73	48.00	0.86	1.03	4.06	29.49	997
	<b>TOTAL FLOW</b>	<b>Final Eff. Avg as N mg/l</b>	<b>FW Avg as N mg/l</b>	<b>Final Eff TKN</b>	<b>FW TKN</b>	<b>CL 2 Max</b>	<b>30 Day MEAN</b>	<b>EFF. PHOS.</b>	<b>FW PHOS.</b>	<b>Eff. Total Iron</b>	<b>Daily Total Q</b>	<b>Mthly Avg Iron lbs/day</b>

LBS/day

15 Day Mean | 55.79



# ATTACHMENT B

## Photos

Contract 5 – BICJSTP  
Restoration and  
Rehabilitation, September  
2018 Construction Progress  
Photos

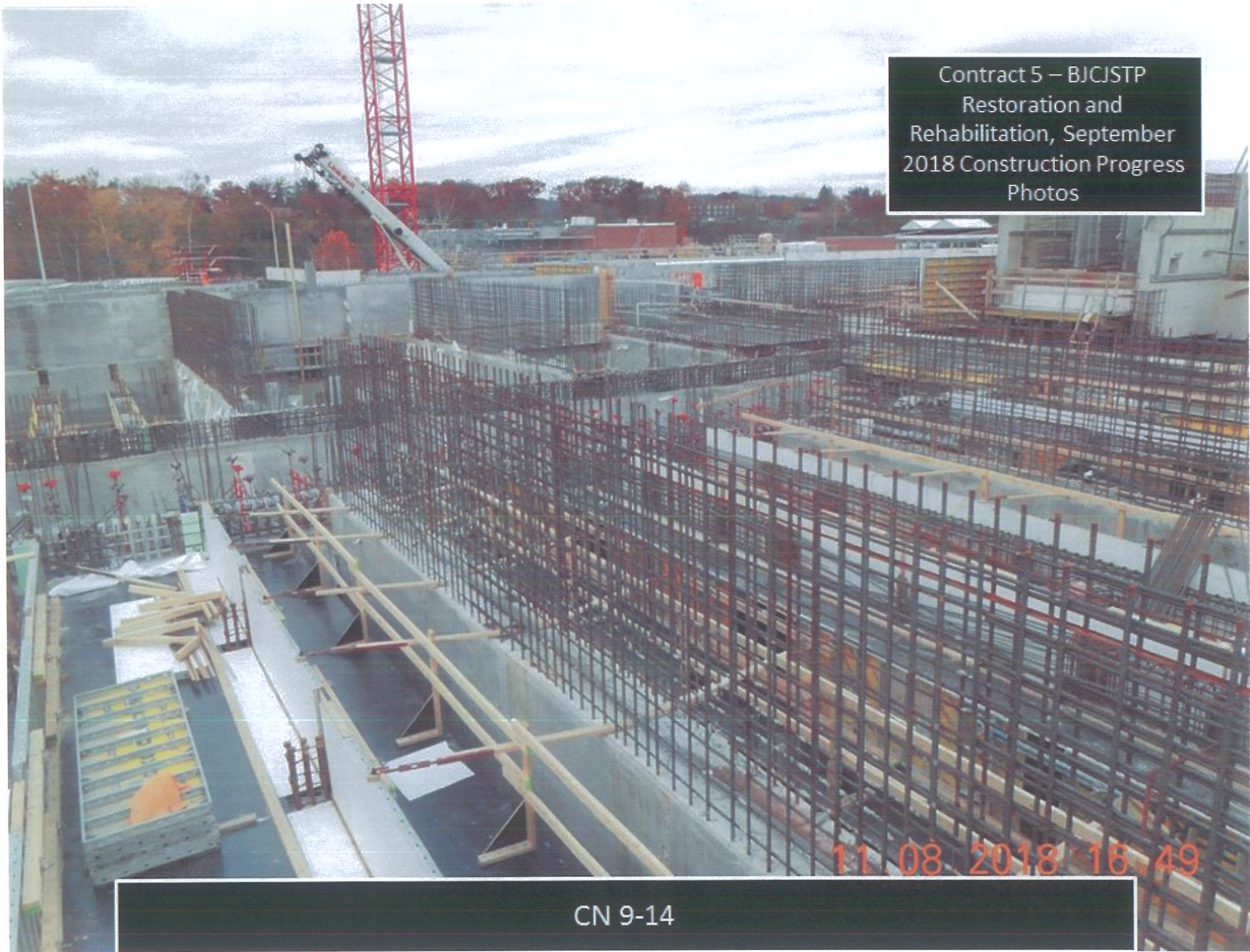


11.02.2018 13:34

Blower Building – South Wall Brick Work




Contract 5 – BJCJSTP  
Restoration and  
Rehabilitation, September  
2018 Construction Progress  
Photos



11.08.2018 16:49

CN 9-14



A construction site showing the installation of a large pipe. Three workers in safety gear are visible. One worker in the foreground is using a hand-held soil compactor on the ground around the pipe. Another worker is further down the pipe, and a third is on the left. A large excavator bucket is visible on the left side of the frame. The ground is dark and appears to be recently excavated or compacted. The background shows concrete structures and other construction elements.

Contract 5 – BJCJSTP  
Restoration and  
Rehabilitation, September  
2018 Construction Progress  
Photos

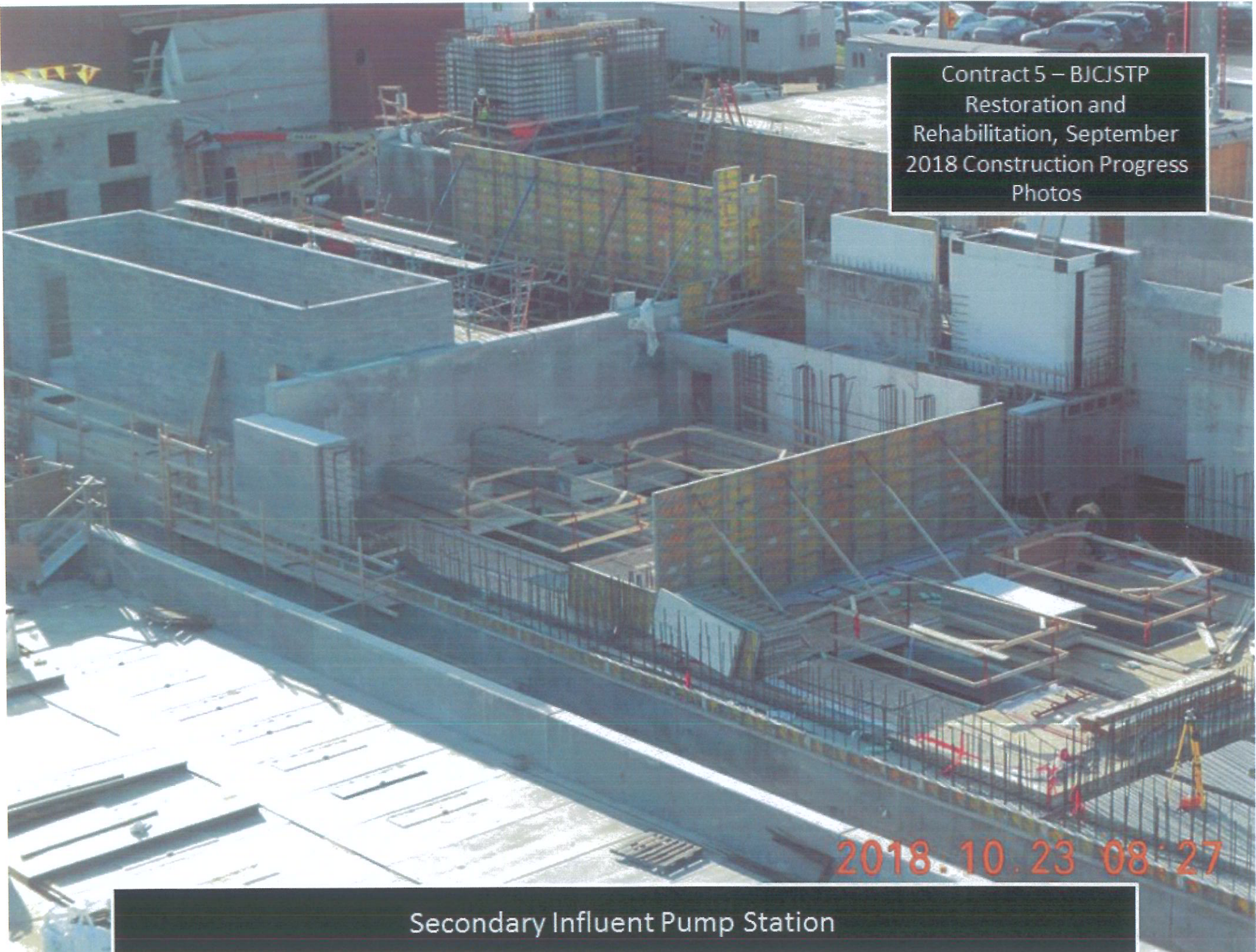
Installed 54 inch DIP Between Distribution Box 1 and West Primary Pump  
Station and Soil Compaction



Contract 5 – BJCJSTP  
Restoration and  
Rehabilitation, September  
2018 Construction Progress  
Photos

2018.10.23 08:27

Secondary Influent Pump Station





Contract 7 – BJCJSTP  
Restoration and  
Rehabilitation, September  
2018 Construction Progress  
Photos

2018/12/27 11:24

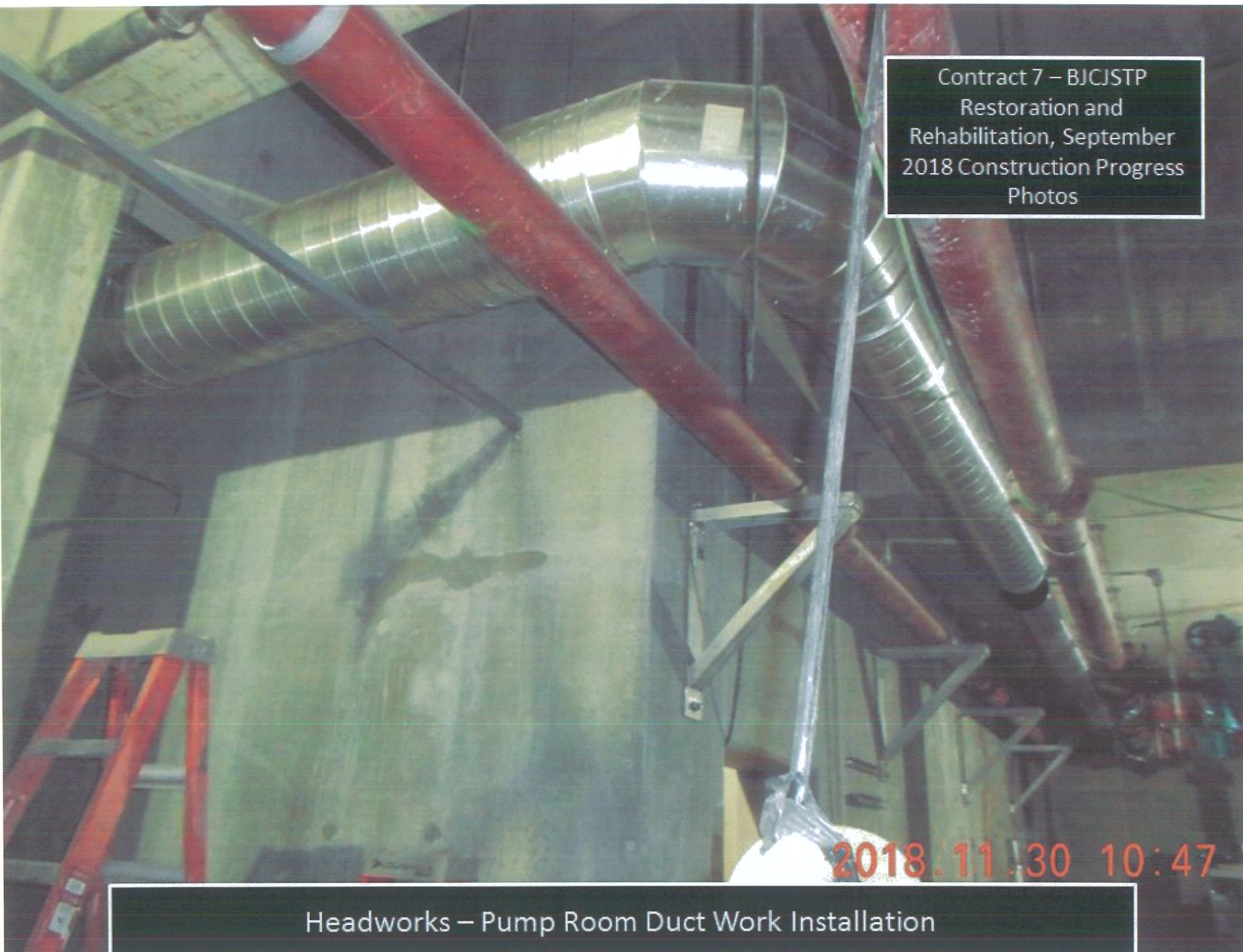
Headworks Facility – Lower Level Duct Work Installation



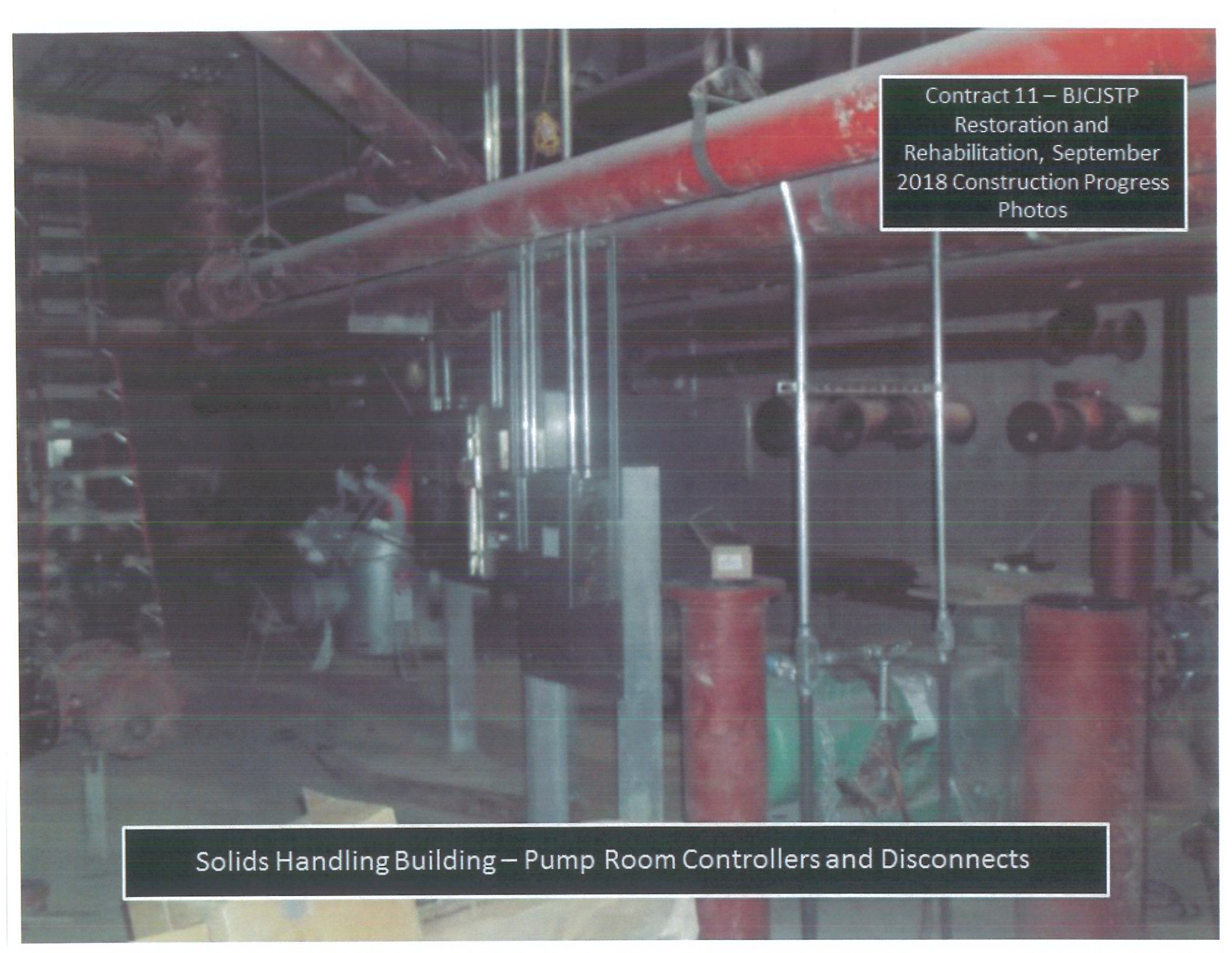
Contract 7 – BJCJSTP  
Restoration and  
Rehabilitation, September  
2018 Construction Progress  
Photos

2018.11.30 10:47

Headworks – Pump Room Duct Work Installation






A photograph of an industrial interior, likely a pump room, showing a complex network of pipes and machinery. A prominent red-painted pipe runs horizontally across the upper portion of the frame. Below it, several vertical metal rods or pipes are visible, some connected to machinery. The background is filled with more pipes and structural elements, creating a dense industrial environment. The lighting is somewhat dim, highlighting the metallic surfaces and the red paint.

Contract 11 – BJCJSTP  
Restoration and  
Rehabilitation, September  
2018 Construction Progress  
Photos

Solids Handling Building – Pump Room Controllers and Disconnects






Contract 11 – BJCJSTP  
Restoration and  
Rehabilitation, September  
2018 Construction Progress  
Photos

Digester Building – Pump Room Disconnect and Control Station for the  
Grinder Pumps for Digester 1





Contract 12 – BJCJSTP  
Restoration and  
Rehabilitation, September  
2018 Construction Progress  
Photos

2018.11.30 10:41

Digester Building – West Boiler Room Pipe Insulation