

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

2019 Quarter 1 Report

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



April 2019

2019 QUARTER 1 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 August 31, 2019. 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 April 1, 2020, 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.

Contract No.	Description	Status
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: This quarter, PC has completed all but about 1000 CY of concrete. Their progress was impacted this quarter by some days of inclement weather as well as insufficient manpower for the concrete work. PC completed the concrete work for the CN Cells 1-8, DN Cells this quarter. PC also completed the concrete work for DN Cells, SIPS, and the Headworks.

PC completed leak testing the grit trenches and tanks in the Headworks this quarter, and have installed the concrete in the bottom of the south trench to contour the trench bottom for the grit equipment. They still have not yet completed backfill around the Headworks. The backfill between the Headworks and Generator Building held up installation of the power feeds and conduits to the Headworks. We have expressed our concerns that PC is delaying work on the electrical feeders to both the Headworks Building, and BAF Treatment Facility electrical feeds. PC began installing the brick work at the Headworks this quarter. PC continues to provide insufficient manpower to complete the pipe work and masonry work at the Headworks. The underground ductbank west of the Headworks is now installed, and Matco installed the cables in the ductbank this quarter. Electrical and process systems installation continued in the Headworks and BAF Treatment Facilities this quarter. The sludge pipe in the basement of the BAF Treatment Facility is nearing completion.

PC is nearing completion of the Primary Influent Pipes to the PST's. PC is still testing the 54-inch primary influent pipe between Distribution Box #1 and #2. They have completed testing the 36-inch pipes from the Primary Distribution Box 1 to the PST's 1-6. The 54-inch pipe is having an impact to backfill around the Headworks. Matco completed the ductbank DBEX-01 installation in January. Wiring has been pulled in the ductbank. We are very concerned that the delays by PC that prevented Matco from installing the ductbank area may push the electrical feed to the west facilities to the critical path.

Work on CN Cells 1-8 is being advanced. PC has completed concrete work for all the CN cells 1-8, with the exception of the two west drop boxes at Cell 7 and 8, as well as repair or replacement of the defective concrete for M Line in Cell No. 2. GHD has provided details for repairing the new wall on M line at CN Cells 2. The wall has an excessive amount of imperfections in the concrete. PC has completed the crack injection for all cells in the CN 1-8 and the DN Cells. All CN Cells have passed the leak test, and coatings have been completed in CN Cells 1-7 as well as the DN Cells. Air piping is currently being installed in the final cells. PC has completed placing concrete for the DN Cells. PC has finally installed the aerial support for feeders to the UV Structure.

PC continued installing stainless steel air pipe and backwash drain pipe in the CN 1-8 gallery and DN gallery this quarter. PC also continued installing stainless steel pipe in the Blower Building, Headworks, and BAF Treatment Facility.

CN Cells 9-14 walls are also being advanced. PC is nearing completion of the concrete work for the concrete decks over the gallery at CN 9-14. The remaining section of concrete deck in the north-south utility corridor was placed in the middle of February. PC has stripped the shoring in that corridor, and now turned that area over to Matco for their work between the Blower Building and the CN Galleries. PC continued working on the backwash header in the CN Cells 9-14. PC is nearing completion of the cells on the south side of the structure and has completed all of the benching in the lower level of the cells. PC has completed setting and grouting nozzle decks in CN Cells 9-14. PC's subcontractor has reported that they should now finish the concrete work for the CN Cells 9-14 by the middle of May, 2019. We remain skeptical. Mechanical and electrical trades completed work in the CN Blower Building and CN Gallery to allow startup of the blowers to CN Cells 1-8.

The mechanical and electrical trades continued installing the stainless steel pipe in the DN Building and DN Gallery. They are complete with all lower level concrete work. Electrical equipment such as the variable frequency drives have been installed, which has allowed Matco to put substantial resources in the gallery and building. They are installing the conduit in the gallery, and in the DN Blower Building.

PC finally installed the expansion joints in the PSTs 7-10 this quarter. PC also completed installing the slide gates on the PST drain lines. The Primary Setting Tanks 7-10 are nearly complete. The concrete coating applications are complete and PC still needs to repair some blemishes in the coatings. PC still has to do the leak test after they complete the installation of the expansion joints. Matco has completed installing the ductbank EX-01 that provides the electrical feed to the area. It will likely be the end of May before the Headworks is complete. We cannot take flow to the PST 7-10 until both the Headworks and SIPS are operational.

PC did very little work on yard pipe this quarter. The pipe work for the 54-inch primary influent pipe between Distribution Box No. 1 and Distribution Box No. 2 is complete with the exception of the hydrostatic and leak test. The installation of the 54-inch pipe held up the duct bank that runs between the new Generator Building and the West Primary Sludge Pump Station. PC should continue installing miscellaneous yard piping in the area of the Headworks and also in the area adjacent to the floodwall on the south side of the site this month. Backfill around the Headworks has not been completed, and is potentially impacting work in the Headworks.

Construction of the new Chemical Building is nearing completion, but no significant activity has been done in this building for months. The building is ready for testing, which will be several months ahead of the need for the building. Work in the East Odor Control Building is nearing completion. All work by PC has been completed, and they are requesting a partial substantial completion for the building.

Matco continued electrical work in the Blower Building this quarter. The blowers are operational to allow the air pipe installation in all cells with the exception of CN Cell 8. PC continued their process pipe installation for air and backwash pipe in the CN gallery. PC has completed the concrete work for the SIPS area. PC is erecting the metal SIPS Pump Building. The roof has been installed on the Electrical Room, which has allowed Matco to begin work there.

PC suspended work in the Methanol area, pending a resolution on their American Iron and Steel (AIS) Compliance issue. We have notified them that the fittings are not covered under the de minimis material. PC has submitted a waiver request for the fittings in order to comply with the AIS provisions of the contract. They were advised by the EPA that PC provided insufficient information to allow the EPA to do their market analysis. We are in the process of writing the letter to DEC seeking a variance from the EPA and EFC for the noncompliant AIS fittings. They will either need to successfully get the variance or remove and replace the fittings with AIS compliant fittings.

Matco installed the exhaust for the new generators this quarter. Matco has completed the conduit work and has pulled the wire to various locations in the building. PC was directed to square the existing openings for the new louvers to be installed on the North wall of the Generator Building. This is extra work, and it has been authorized to be done on T&M. Startup of the generators cannot complete until the exhausts are complete and the louvers have been installed in the north wall of the Generator Building.

Kruger equipment submittals are complete. Much of the Kruger supplied equipment is being installed at Kruger's direction. Most of the preliminary Operations and Maintenance manuals as well as the startup and testing plan from Kruger are complete. PC began cleaning the walls for testing and coating. PC had committed to a hard date of March 25, 2019 for delivery and installation of the filter media being provided by Kruger. However, this delivery date was moved to April 8, 2019. PC's March construction schedule shows them missing that date by several months, however, PC has stated that they are now following the flawed CPM schedule. We have notified PC that they are not in compliance with the contract for providing a comprehensive schedule, and were notified that no further payments would be made until they are in full compliance with the CPM Schedule specifications.

No significant change at the new Administration Building this quarter. The work on the upper floor of the Administration Building is complete. The final punch list and Fire Protection System testing is complete. Miscellaneous punch list items are being resolved by PC and the other trades on a regular basis. The HVAC system is now in the automatic mode. We believe that the final leak in the existing concrete for the structure in the maintenance portion of the building has been fixed.

PC continued the storm drain installation near the Solids Handling Building this quarter. Paving of the parking lot for the Administration Building should be completed this spring. The City decided to increase the width of the parking lot to meet Vestal Code. The parking lot will now be 60 feet wide from North to South. The material was removed via change order.

PC has completed the south flood wall and completed the concrete placements at CN 9-14 to meet the Consent Order requirements for flood protection to elevation 845. In addition to the concrete work, Matco has completed the electrical power to storm water pump station 4. Storm water pump stations 1 and 2 are also now operational from permanent power.

Contract Status: 84% Complete

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. Concrete work will continue on the CN Cells 9-14.. 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 will complete installing the filter media this next quarter. PC is scheduled to complete the Headworks in late May.

Functional Demonstration Test and System Demonstration Tests will begin on SIPS, Headworks, CN 1-8, DN, UV, BAF Backwash Tank, BAF Backwash Treatment, Methanol, and Chemical Storage this quarter. Commissioning of the SIPS as identified in the DEC Consent Order will begin before April 30, 2019 in order to meet the Consent Order. Construction will be complete on the BAF Backwash Tank.

Electrical and mechanical work for the new methanol system, UV, and Plant Water Pump Station should be completed next quarter. PC should complete installing yard piping throughout the site. We anticipate the contractor completing structural concrete for all structures with the exception of PST 1-6 by the end of the next quarter.

The contractor is now nearly fourteen months behind schedule for meeting Phase I and II milestones. We continue to work with them to improve their schedule. NYSDEC has a 3rd modification of the Consent Order, and several intermediate milestones in a previous modification to the Consent Order have been revised as requested by the Owner. We have shared these revised dates with the Contractors, and we are confident that PC can meet the requirements for Contract 5.

Contract Status: 84% Complete through March 2019

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, CN Cells 1-8, DN Cells, UV, and the Blower Building. Matco is planning to energize several Motor Control Centers 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 complete 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 returned to service after the winter outage on April, 1, 2019. Some additional change order work items are being resolved to allow us to turn the facility over to the STP staff for operation.

3 Month Look Ahead: MATCO will continue to install conduit and wire for all structures 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

Backwash Treatment, BAF CN Cells, DN Cells, UV, Methanol, and Chemical Storage Facility by June 30, 2019. They anticipate completing the installation of the new 2MW generators and ancillary electrical equipment in the new Generator Building during the next quarter.

Contract Status: 87% Complete through March 2019

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 are working on the HVAC systems for CN Cells 1-8, DN Cells, Headworks, BAF Treatment, and Thickener Pump Stations.

3 Month Look Ahead: J & K Plumbing should complete the startup and testing of the HVAC systems for the remaining facilities this quarter.

Contract Status: 90% Complete through March 2019

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 should complete the remaining plumbing system this quarter. They also continue to work on the plant water supply system.

Contract Status: 93% Complete through March 2019

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: Architectural work for the new Solids Handling Building is now complete. Concrete work for the Gas Conditioning Equipment Building was completed several months ago. Renovation for the Lab at the Headhouse is nearing completion. As soon as we can get the code inspections for the east portion of the lab in the headhouse, we can allow Quandel to begin work on the west half of the lab renovation. It should take Quandel about a month to complete the lab renovation after they are able to move the WTP staff from the west half of the laboratory to the renovated east half.

Quandel is nearly complete installing the mechanical systems in the Solids Handling Building. They are largely waiting on Matco to complete the electrical work so they can begin pre-functional testing of the equipment. After they complete the pre-functional testing, they will be able to move into the Functional Demonstration Tests. The Functional Demonstration test should complete about the time that PC is projecting to have the headworks equipment functional. As soon as we can complete the System Demonstration Test on the equipment in the Solids Handling Building, we can divert sludge to the new centrifuges for processing. After this diversion, the existing Centrifuges can be removed to make way for the new Mechanical Thickeners that are to be installed in the current centrifuge room.

Quandel was not making any progress on the removal and recertification of the gas conditioning equipment, so we were forced to remove the work from their scope of work and the City is procuring the equipment on a sole source contract. They are alleging that they are not responsible for reconditioning the equipment. Quandel declined to quote a cost proposal to recoat the inside of digesters 1 & 2, which are the two smaller digesters. The owner is reviewing options to recoat digesters 1 & 2 before the covers are installed on them. Digester Cover #3 is installed, and we had to put digester covers 1 & 2 on hold pending a decision for recoating. The next available window of time for Westech to mobilize to the site to install covers for digesters 1 & 2 is in middle of June. Quandel completed installing the coatings inside the new sludge tanks under protest. We are working hard to get Quandel to complete a digester functional equipment test plan as well as a System Demonstration Plan. We had a very productive meeting with several of the stakeholders for the startup of the Digesters, and believe that we will have a functional plan that is approvable within a few weeks for Digester #3. Implementation of that plan cannot begin until the Headworks is complete and functional. All indications are that Digester #3, the headworks, and ancillary facilities should all be ready to startup in late May to early June.

Quandel continued to work in the Sludge Thickener Pump Stations and will be able to complete the sludge grinders in the Digester Complex in early April. A segment of buried digester gas pipe is leaking and will need to be replaced. GHD has completed their design. We developed and executed a plan that saved the City in excess of \$400K from the price quoted by the Contractors to clean the Digester Gas

Pipe and Sludge Pipe in the Digester Control Building.

3 Month Look Ahead: Quandel has scheduled the sludge delivery around the completion of the system delivery test for Digester 3. We anticipate that test beginning at the end of May when the Headworks is complete. Digester covers for 1 & 2 will be installed in June. The digester gas safety equipment and digester mixing equipment should be completed for Digester 3 at the end of May, and should be completed for Digesters 1 & 2 at the end of June. We should be complete with the coating inside Digesters 1 and 2 by the end of May.

Quandel will be completed installing doors and windows in the building next quarter. 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 the equipment gets installed by the original Milestone 3 date.

Contract Status: 92% Complete through March 2019

Contract No. 11 - Solids Handling Renovation - Electrical

Contract No. 11 is intended to renovate and improve the components of the Solids Handlings 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 part of May 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: 66% Complete Through March 2019

Contract No. 12 - Solids Handling Renovation – HVAC

Contract No. 12 is intended to renovate and improve the HVAC components of the Solids Handlings 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: 82% Complete through March 2019

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 Milestones 1 and 2.

Contract Status: 86% Complete through March 2019

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 testing the 54-inch valve in Manhole #3 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 second quarter 2019, with the exception of the work that will be removed from the contract and the coating repairs to Digesters 1 and 2.

Contract Status: 98% Complete through March 2019

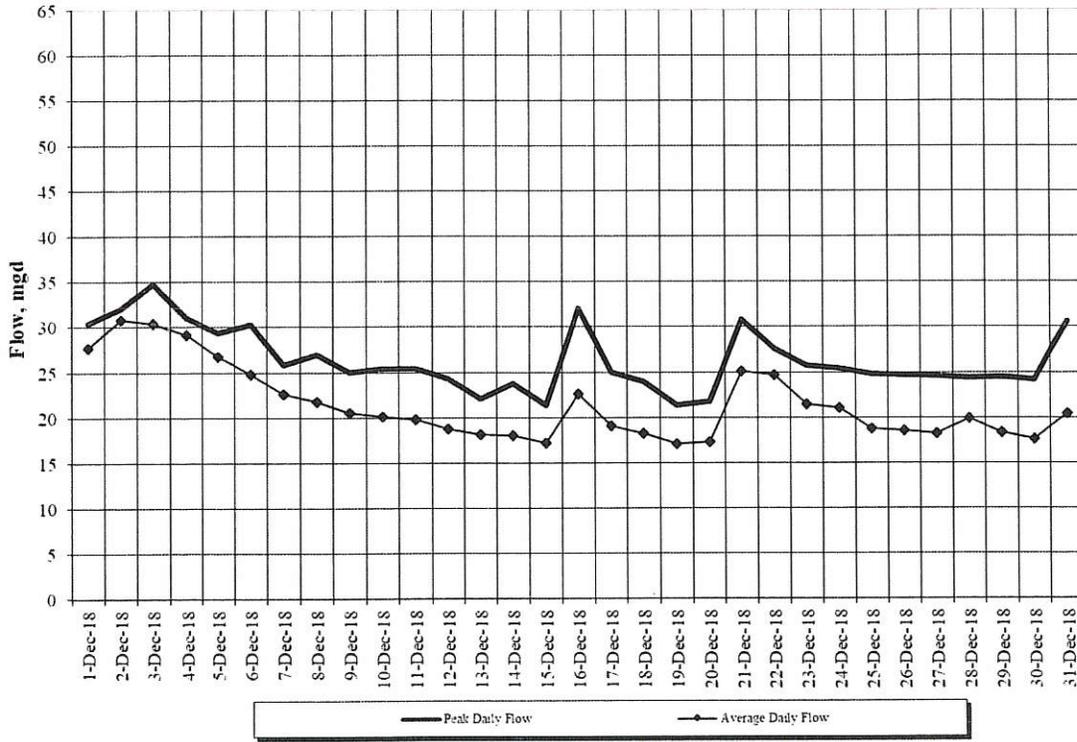
Consent Order Compliance Table

DEC #	Description	Consent Order Date	Status
7	Flood Mitigation to Elevation 845	February 28, 2019	March 1, 2019
3f	Begin SIPS Commissioning	April 30, 2019	April 30, 2019
3e	Backwash Waste Treatment Construction Complete	June 30, 2019	June 30, 2019
3h	Hydraulic Testing of new BAF Backwash Tank	June 30, 2019	June 30, 2019
3j	Retrofit of two sludge thickeners, (1 is complete, the second should be complete by August 31, 2019. Two thickeners will be available for use at all times.	June 30, 2019	August 31, 2019
4d	Complete construction of anaerobic digesters. (Digester #3 will be complete before June 15, 2019, and it can handle the entire sludge load during the interim construction period.)	June 30, 2019	June 15, 2019/ August 31, 2019
5b	Interim Operating Strategy for equipment from 8/31/19 through 1/1/20.	July 31, 2019	July 31, 2019
3i	Construction Complete on PST 7-10	August 31, 2019	May 30, 2019
3k	Commence Operation of CN 1-8, DN, BAF Backwash Tank, BAF Backwash Treatment, Headworks, and PST 7-10.	August 31, 2019	August 31, 2019
3l	Commence Operation of CEPT, UV, Sludge Thickeners, and appurtenances.	August 31, 2019	August 31, 2019
4e	Operation of Digesters 1-3. (Digester 3 is scheduled to be operational in June 2019.)	August 31, 2019	June 30, 2019/ August 31, 2019
3m	BAF CN Cells 9-14 Construction Complete	January 1, 2020	September 30, 2019
3n	Operation in Compliance with SPDES	April 1, 2020	April 1, 2020

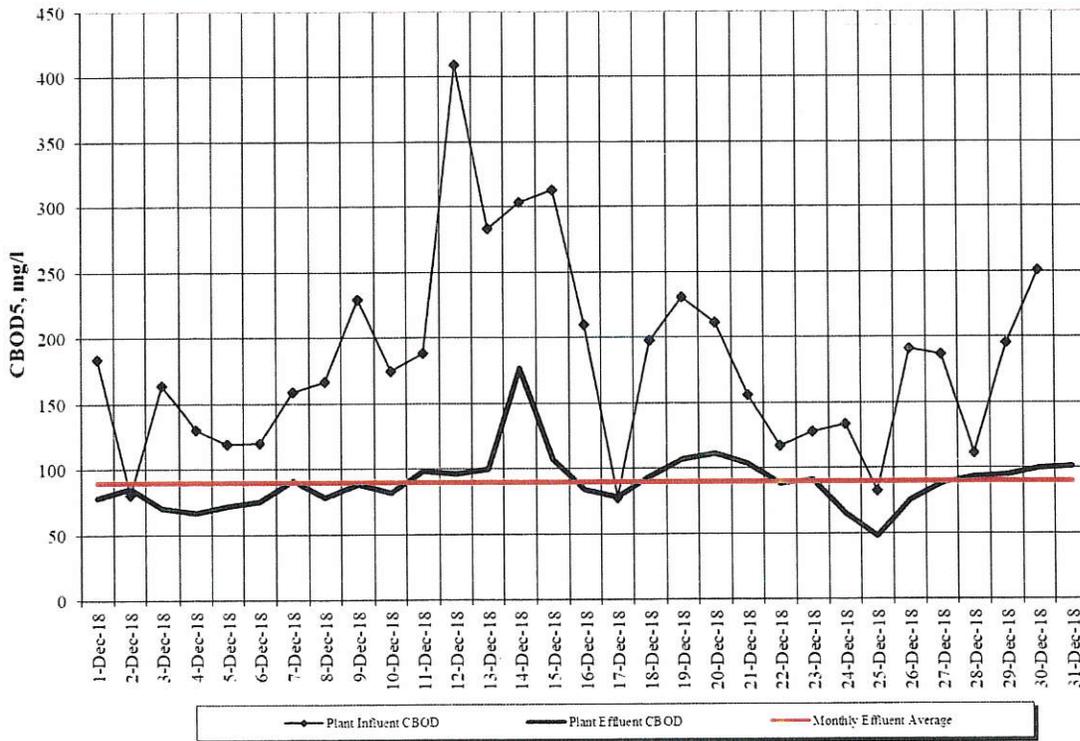
APPENDIX A

Facility Operations

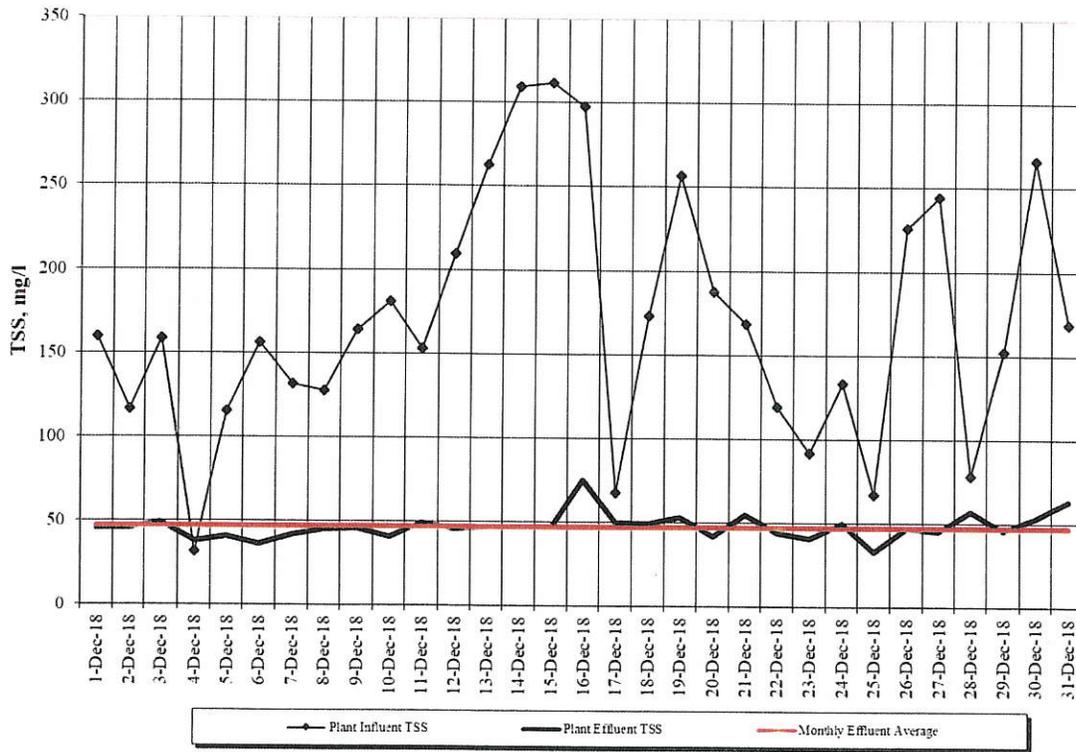
Daily Flows
Binghamton - Johnson City JSTP



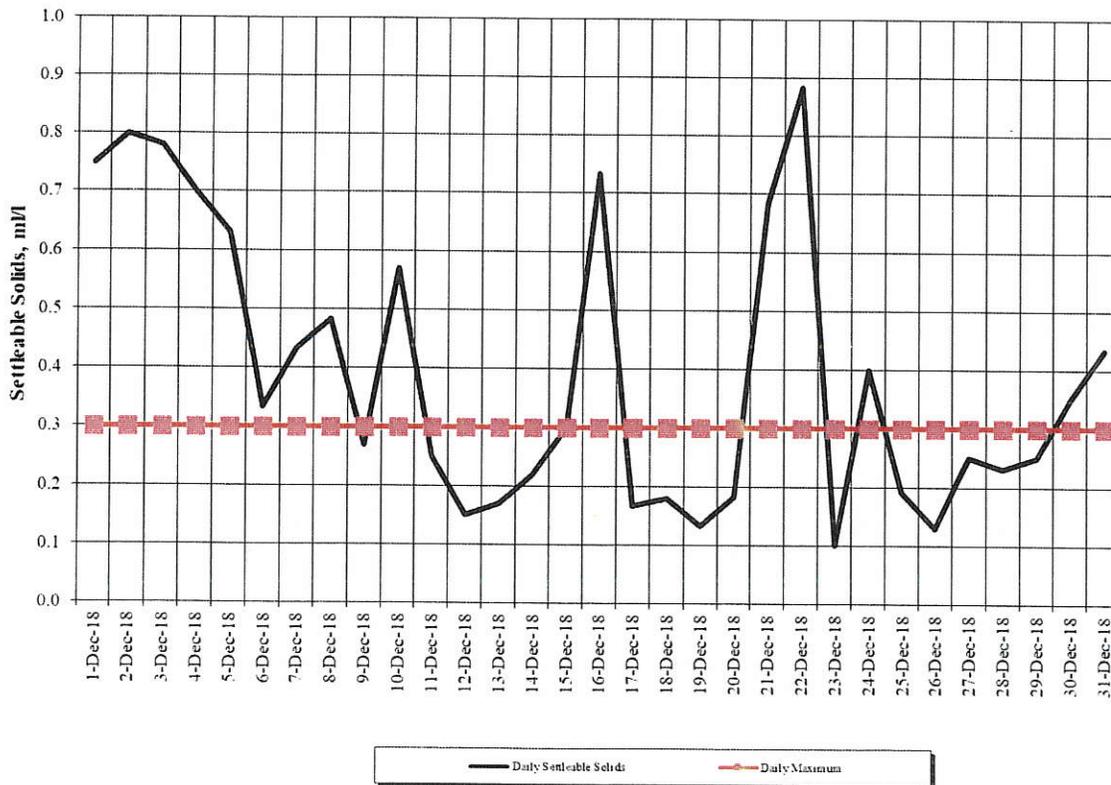
CBOD5 Concentrations
Binghamton - Johnson City JSTP



TSS Concentrations Binghamton - Johnson City JSTP

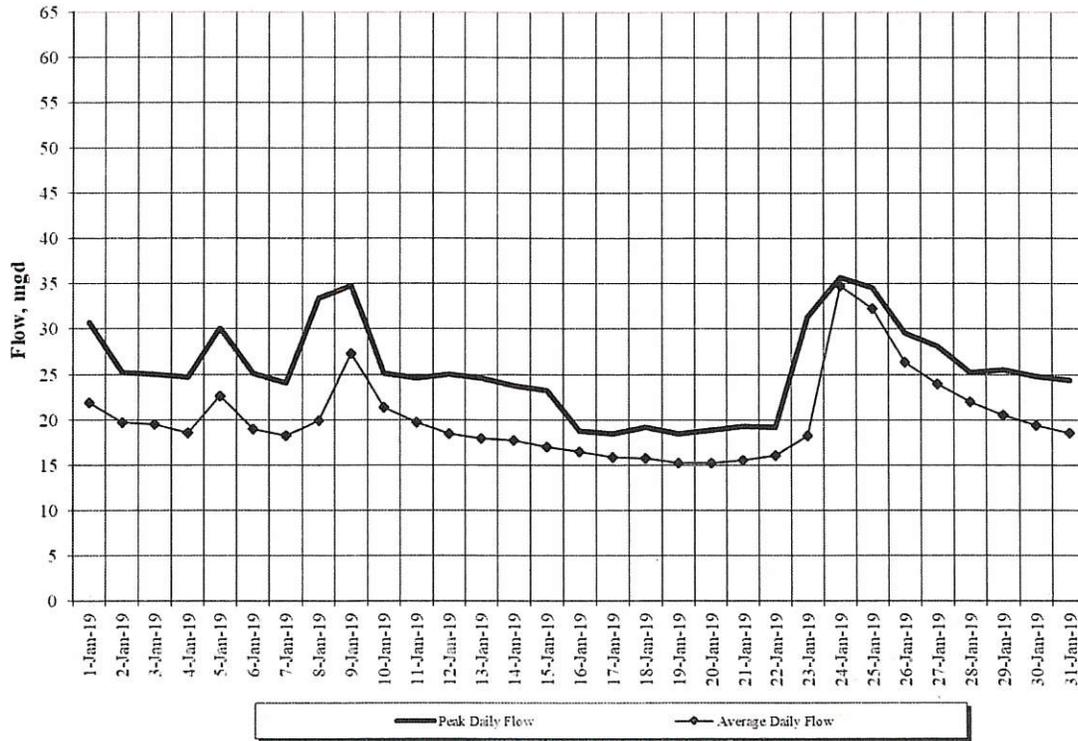


Settleable Solids Binghamton - Johnson City JSTP



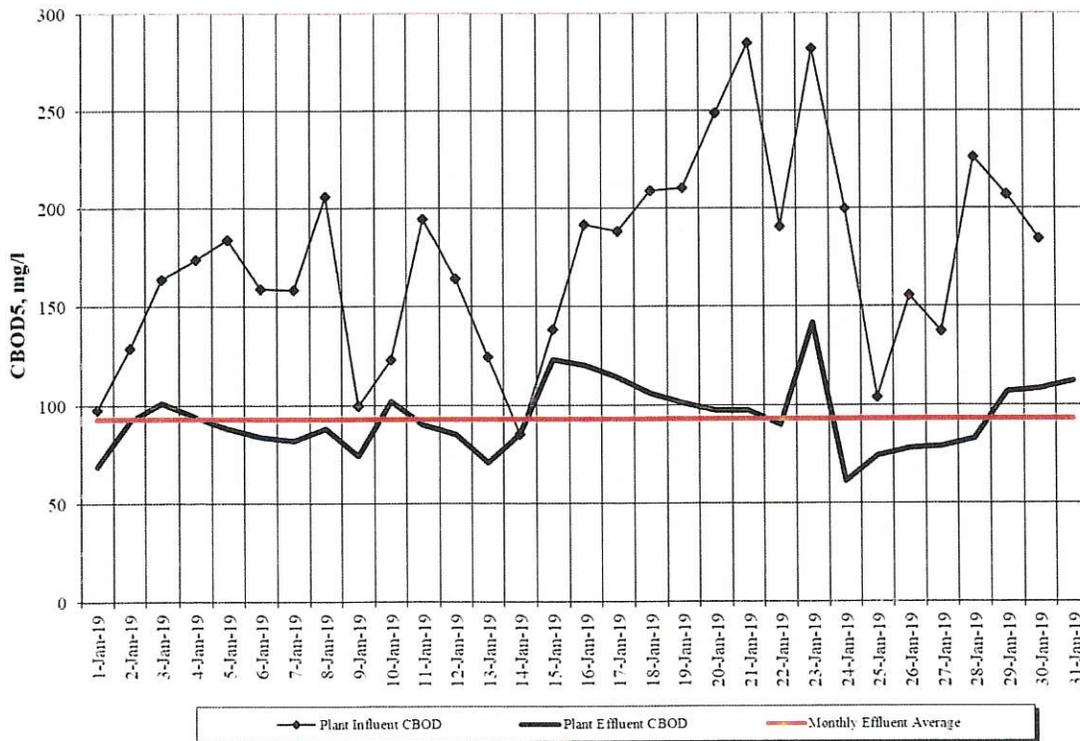
Daily Flows

Binghamton - Johnson City JSTP

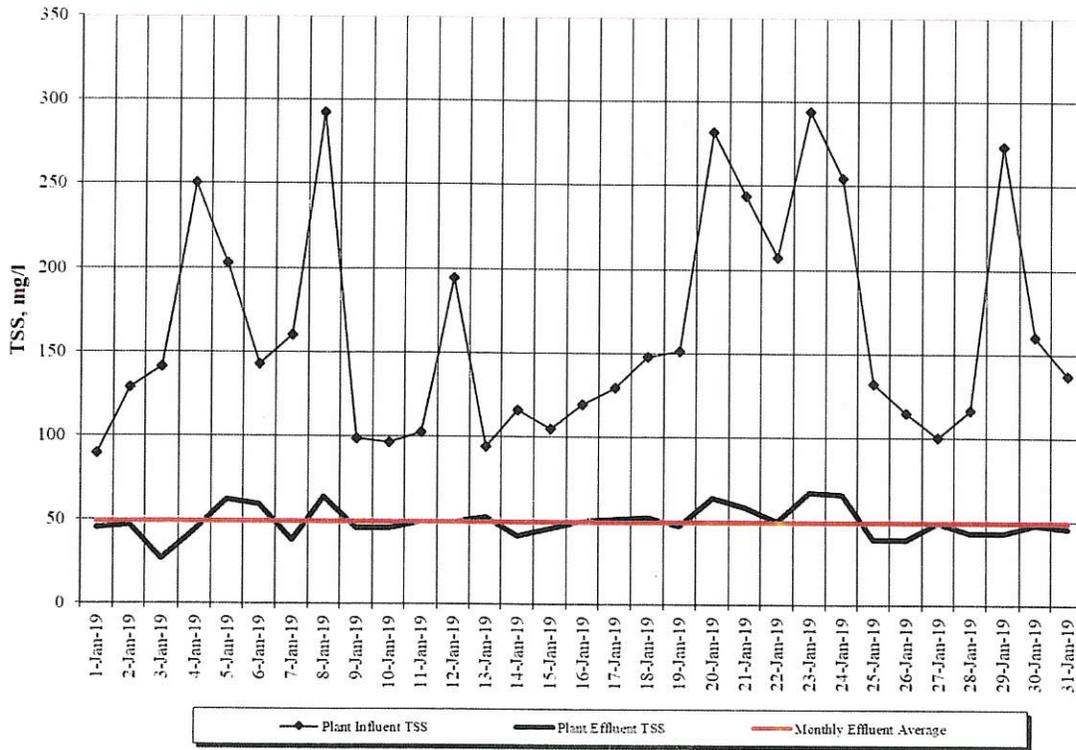


CBOD5 Concentrations

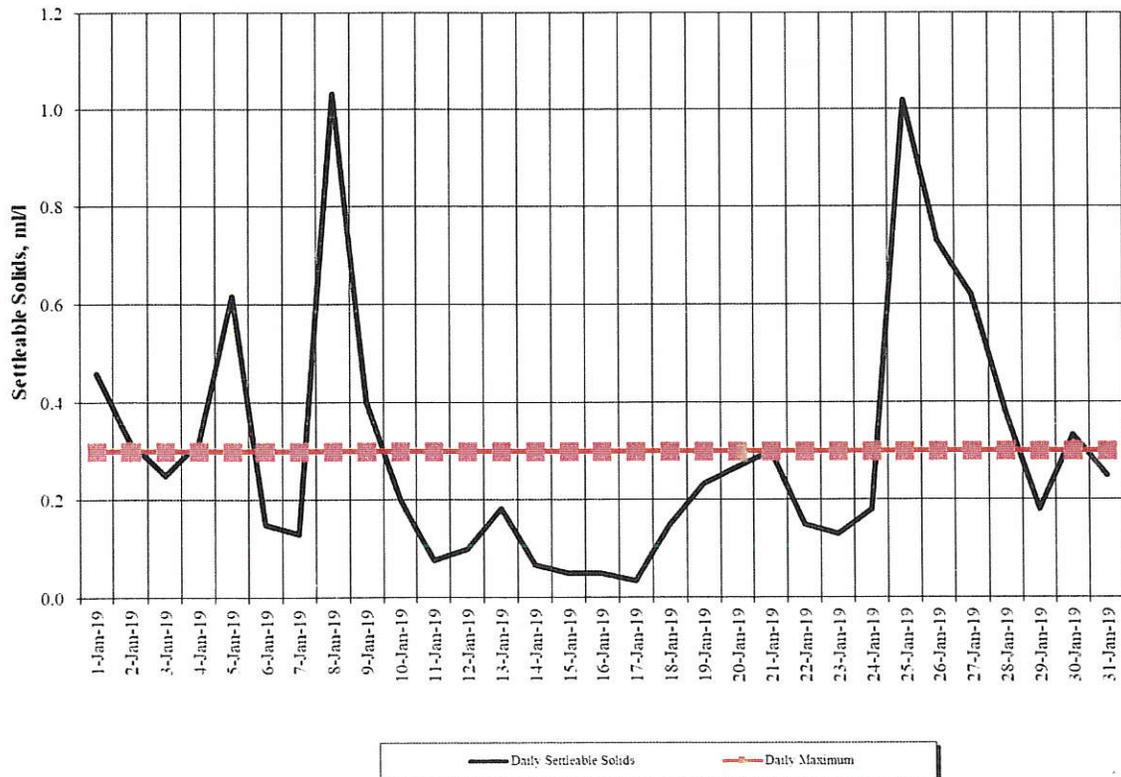
Binghamton - Johnson City JSTP



TSS Concentrations Binghamton - Johnson City JSTP

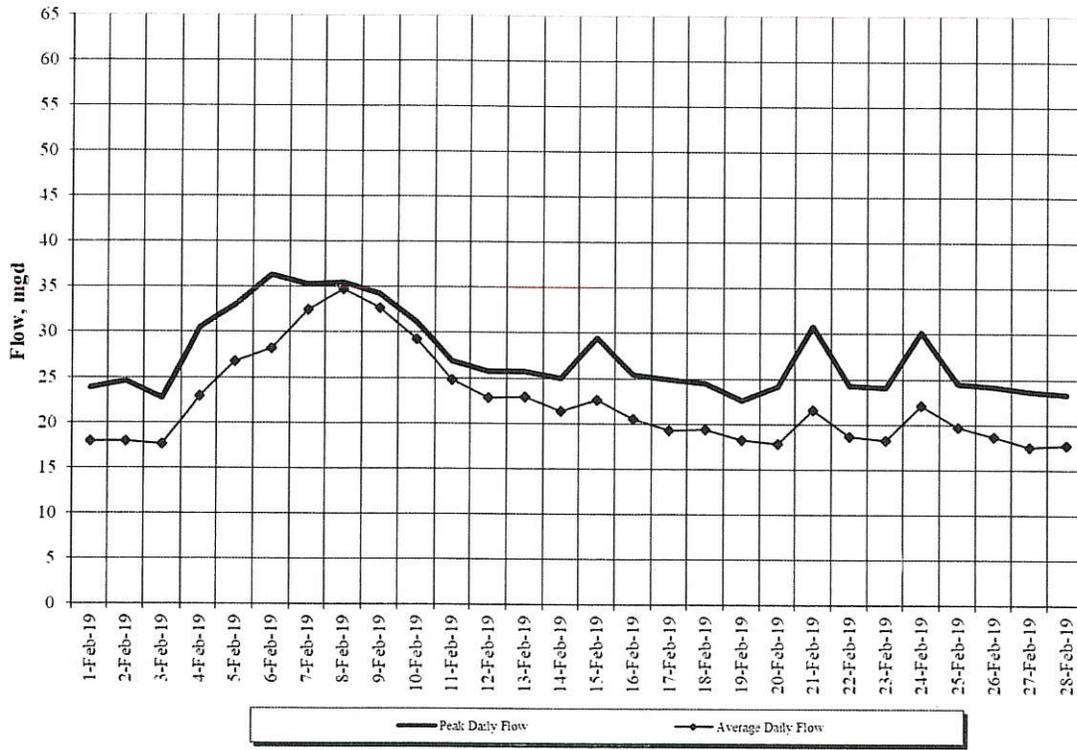


Settleable Solids Binghamton - Johnson City JSTP



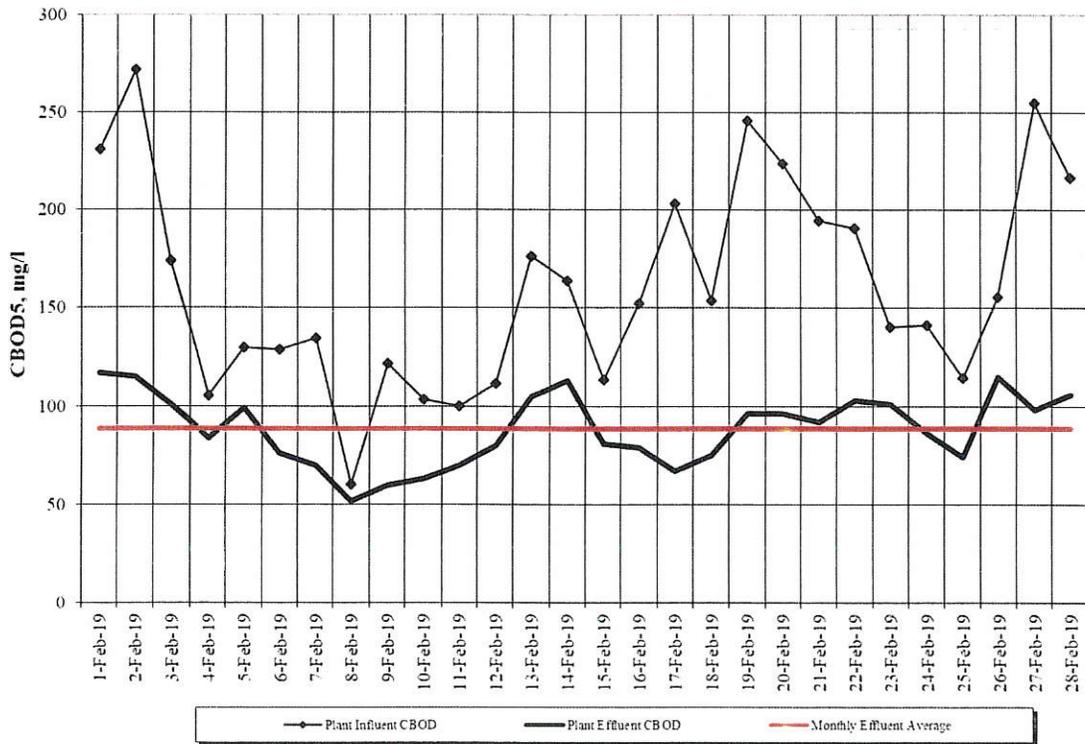
Daily Flows

Binghamton - Johnson City JSTP

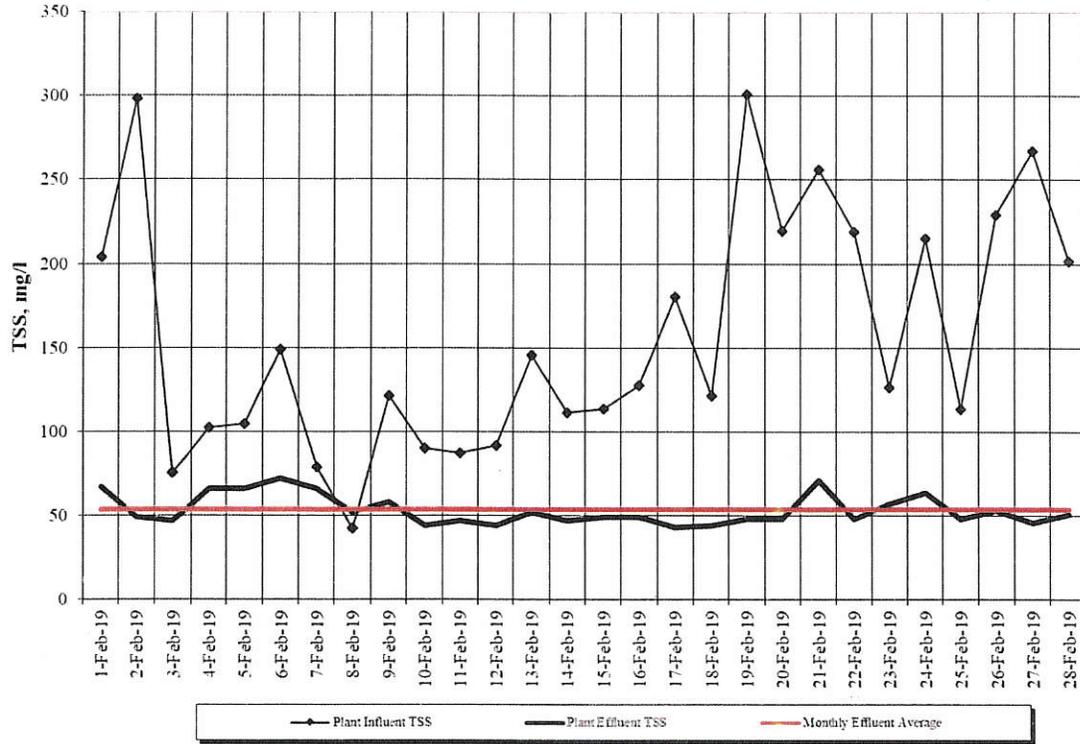


CBOD5 Concentrations

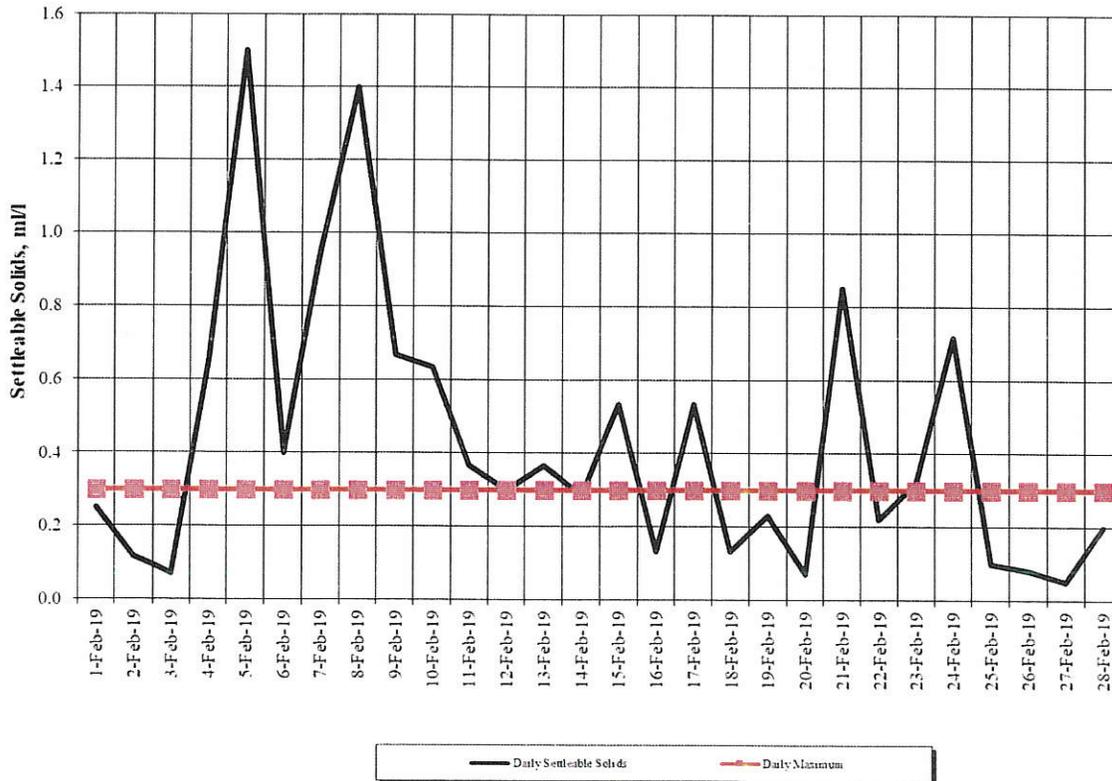
Binghamton - Johnson City JSTP



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-Dec-18	27.70			11.60	15.83	1.30	10					
2-Dec-18	30.82			8.50	7.94	1.47	20					
3-Dec-18	30.43			11.00	12.57	1.32	41					
4-Dec-18	29.17	6.60	7.09	11.90	8.68	1.39	20	1.40	1.64	4.54	29.17	1104
5-Dec-18	26.81			10.70	12.13	1.45	121					
6-Dec-18	24.80			8.90	11.85	1.37	10			3.35	24.80	693
7-Dec-18	22.65			12.40	14.75	1.23	20					
8-Dec-18	21.82			11.10	14.78	1.23	41					
9-Dec-18	20.55			12.30	16.36	1.20	10					
10-Dec-18	20.17			13.00	17.21	1.14	41					
11-Dec-18	19.79	11.00	10.71	19.80	15.74	1.29	41	1.90	2.17	6.86	19.79	1132
12-Dec-18	18.74			12.40	20.56	1.26	52					
13-Dec-18	18.16			12.40	16.32	1.14	10			5.74	18.16	869
14-Dec-18	18.01			16.40	25.86	1.13	41					
15-Dec-18	17.22			12.30	20.45	1.18	20					
16-Dec-18	22.59			11.40	15.57	1.18	63					
17-Dec-18	19.12			12.20	9.50	1.21	10					
18-Dec-18	18.27	9.70	9.96	15.60	12.90	1.25	10	1.60	1.71	5.64	18.27	859
19-Dec-18	17.16			16.70	20.98	1.31	10					
20-Dec-18	17.34			15.10	13.97	1.35	10			5.58	17.34	807
21-Dec-18	25.10			12.10	13.72	1.44	10					
22-Dec-18	24.70			10.80	12.23	1.35	10					
23-Dec-18	21.50			11.80	13.13	1.47	10					
24-Dec-18	21.05			11.00	14.11	1.40	75					
25-Dec-18	18.82	9.20	8.86	12.50	12.36	1.36	10	0.84	1.15	4.43	18.82	695
26-Dec-18	18.57			11.30	15.65	1.17	10					
27-Dec-18	18.29			12.90	17.57	1.26	10			4.81	18.29	734
28-Dec-18	19.92			12.90	11.59	1.15	20					
29-Dec-18	18.39			13.00	16.30	1.20	10					
30-Dec-18	17.68			14.20	20.84	1.37	10					
31-Dec-18	20.42			14.30	14.58	1.22	10					
	21.48	9.13	9.2	12.66	15.0	1.47	18	1.44	1.67	5.12	20.58	879
	TOTAL FLOW	Final Eff. Avg as N mg/l	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	Monthly Avg Iron lbs/day

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-Jan-19	21.86	7.10	7.2	13.30	12.6	1.27	10	1.1	1.5	3.92	21.86	715
2-Jan-19	19.72			14.00	16.2	1.29	75					
3-Jan-19	19.51			13.10	17.8	1.47	40			5.58	19.51	908
4-Jan-19	18.56			14.10	19.8	1.23	63					
5-Jan-19	22.65			12.10	15.1	1.34	160					
6-Jan-19	19.00			14.20	13.4	1.26	231					
7-Jan-19	18.25			14.30	21.5	1.01	31					
8-Jan-19	19.87	8.00	7.1	13.90	19.4	1.2	31	1.50	2.7	5.26	19.87	872
9-Jan-19	27.34			10.70	12.7	1.26	160					
10-Jan-19	21.38			12.00	12.6	1.16	20			2.47	21.38	440
11-Jan-19	19.70			14.60	13.5	1.3	10					
12-Jan-19	18.44			13.20	14.9	1.29	10					
13-Jan-19	17.97			12.60	14.9	1.15	10					
14-Jan-19	17.72			14.80	15.3	1.36	10					
15-Jan-19	17.05	10.60	12.1	12.20	18.8	1.16	10	1.80	2.7	5.49	17.05	781
16-Jan-19	16.47			16.10	21.7	1.21	31					
17-Jan-19	15.86			17.30	19.2	1.28	10			5.64	15.86	746
18-Jan-19	15.77			17.10	19.8	1.27	10					
19-Jan-19	15.26			18.10	20.8	1.32	10					
20-Jan-19	15.26			15.30	21.5	1.31	10					
21-Jan-19	15.59			18.80	26.2	1.17	41					
22-Jan-19	16.05	12.20	13.3	18.10	24.1	1.22	20	1.90	3.7	4.88	16.05	653
23-Jan-19	18.23			16.5	24.8	1.43	10					
24-Jan-19	34.78			7.9	8.9	1.3	31			5.06	34.78	1468
25-Jan-19	32.28			24	12.1	1.28	107					
26-Jan-19	26.40			10.7	3.7	1.09	243					
27-Jan-19	23.96			12	12.5	1.19	40					
28-Jan-19	21.95			13.8	13.4	1.29	30					
29-Jan-19	20.55	10.8	11.3	15.9	19.5	1.3	10	2.4	4.3	5.76	20.55	987
30-Jan-19	19.36			14.7	17.5	1.37	10					
31-Jan-19	18.52			15.8	18.3	1.3	10			5.25	18.52	811
	20.17	9.74	10.2	14.55	16.9	1.47	25.73	1.74	2.98	4.93	20.54	845
	TOTAL FLOW	Final Eff. Avg as N mg/l	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	Monthly Avg Iron lbs/day

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-Feb-19	17.95			18	19.2	1.27	10					
2-Feb-19	17.90			16.8	14.5	1.26	10					
3-Feb-19	17.63			15.9	13.9	1.39	10					
4-Feb-19	22.96			14.7	11.3	1.18	31					
5-Feb-19	26.75	6.8	8.2	14.1	14.2	1.5	10	2	1.3	5.25	26.75	1171
6-Feb-19	28.24			15.1	16.8	1.48	41					
7-Feb-19	32.47			12.6	12.4	1.33	75			4.49	32.47	1216
8-Feb-19	34.79			11.3	8.9	1.13	226					
9-Feb-19	32.69			12.7	11.4	1.25	554					
10-Feb-19	29.26			10.7	15.5	1.51	1616					
11-Feb-19	24.84			16.9	15.3	1.4	10					
12-Feb-19	22.87	6.8	9.3	14.8	18.1	1.47	10	0.94	1.7	4.76	22.87	908
13-Feb-19	22.93			12	15.4	1.39	74					
14-Feb-19	21.35			15.4	15.8	1.61	20			4.88	21.35	869
15-Feb-19	22.61			12.5	14.8	1.58	20					
16-Feb-19	20.59			12	16.5	1.39	10					
17-Feb-19	19.29			13	15.9	1.27	10					
18-Feb-19	19.44			15.3	15.4	1.37	10					
19-Feb-19	18.25	10.1	12.0	11.3	29.9	1.21	10	2	2.2	5.19	18.25	790
20-Feb-19	17.80			21.8	19.8	1.19	10					
21-Feb-19	21.61			18.3	18.3	1.26	31			5.44	21.61	980
22-Feb-19	18.66			19.4	22.7	1.26	10					
23-Feb-19	18.25			16.8	16.2	1.33	10					
24-Feb-19	22.13			16.5	10.8	1.18	41					
25-Feb-19	19.67			14.8	16.2	1.21	10					
26-Feb-19	18.64	12.4	11.5	19.5	21.6	1.31	10	1.8	40.4	5.55	18.64	863
27-Feb-19	17.49			16.7	14.8	1.3	10					
28-Feb-19	17.70			19.4	17.9	1.31	20			5.62	17.70	830
	22.31	9.03	10.3	15.30	16.2	1.61	23.06	1.69	11.40	5.15	22.46	964
	TOTAL FLOW	Final Eff. Avg as N mg/l	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	Monthly Avg Iron lbs/day

APPENDIX B

Photos

Contract 5 – BJCJSTP
Restoration and
Rehabilitation, April 2019
Construction Progress
Photos

2019/04/04 14:23

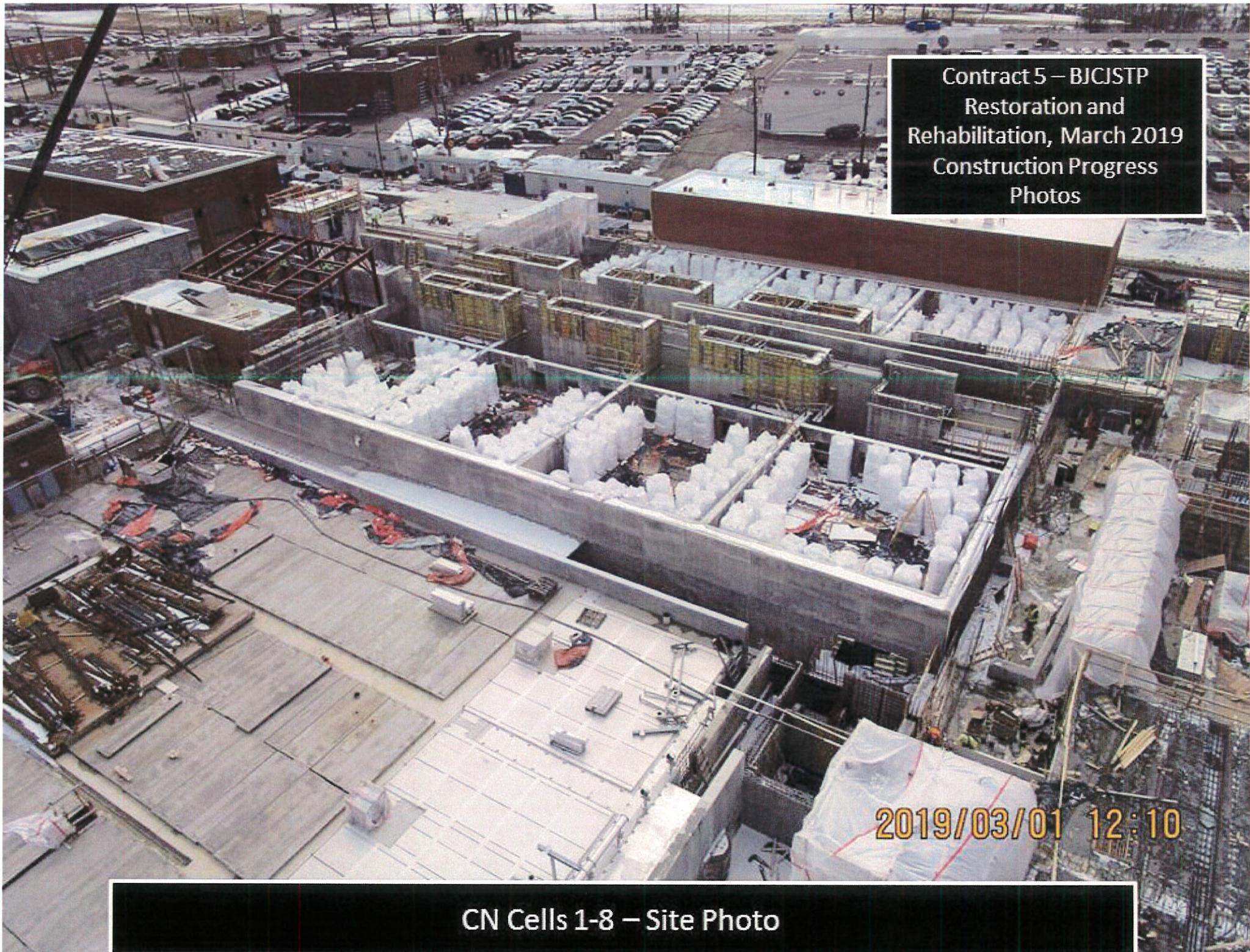
DN Cells 1-4 – Process Piping Installation

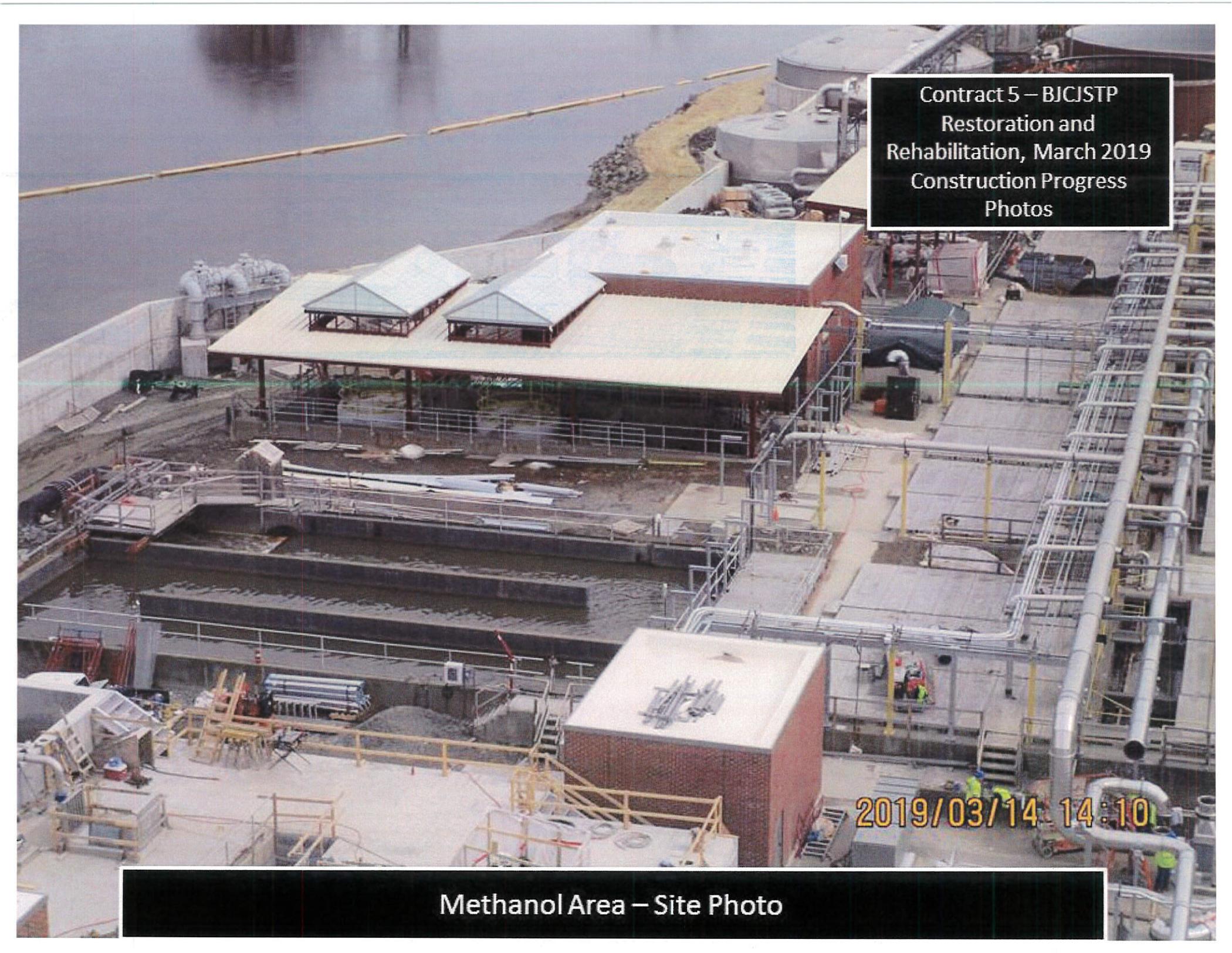


Contract 5 – BJCJSTP
Restoration and
Rehabilitation, March 2019
Construction Progress
Photos

2019/03/01 12:10

CN Cells 1-8 – Site Photo





Contract 5 – BJCJSTP
Restoration and
Rehabilitation, March 2019
Construction Progress
Photos

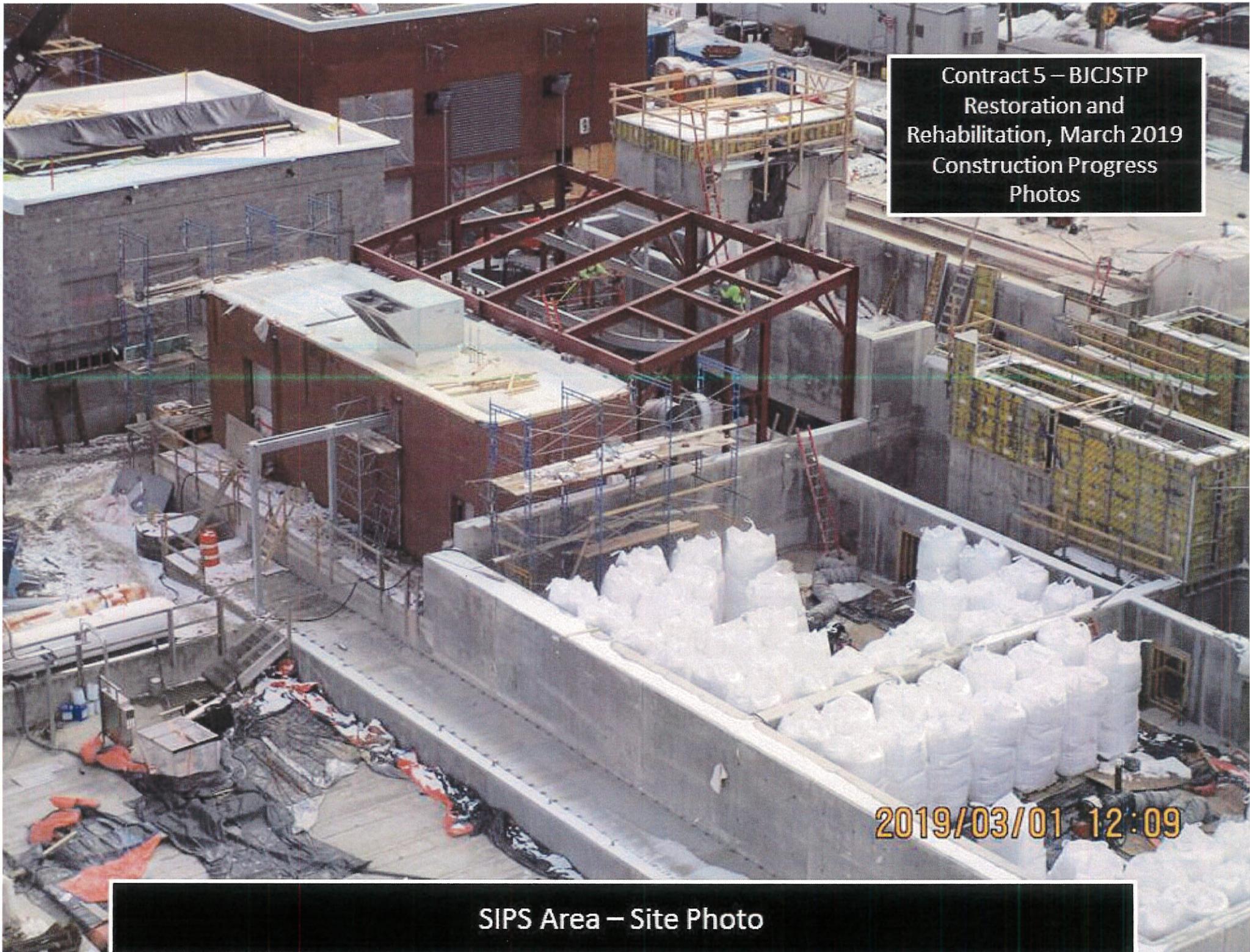
2019/03/14 14:10

Methanol Area – Site Photo

Contract 5 – BJCJSTP
Restoration and
Rehabilitation, March 2019
Construction Progress
Photos

2019/03/01 12:09

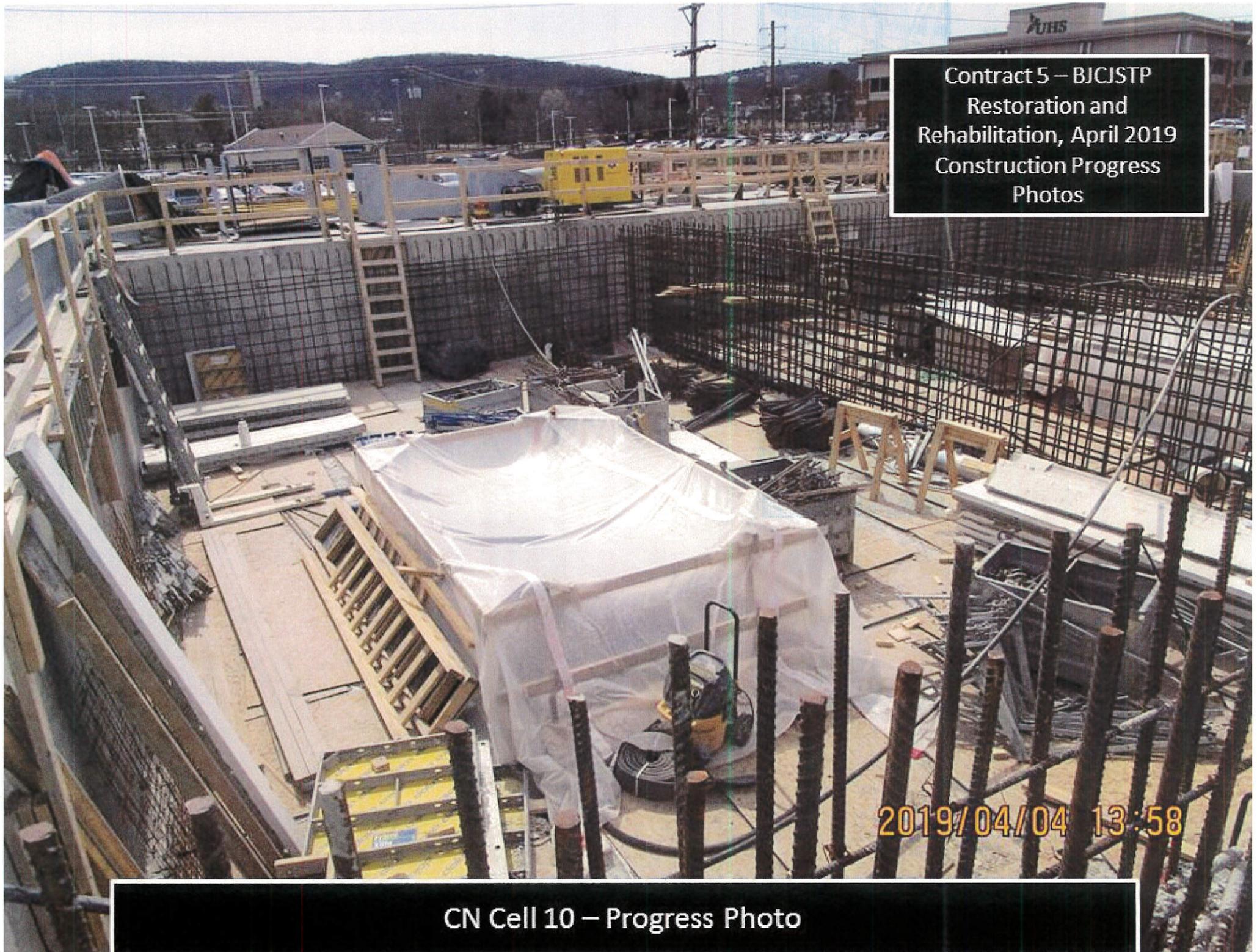
SIPS Area – Site Photo



Contract 5 – BJCJSTP
Restoration and
Rehabilitation, April 2019
Construction Progress
Photos

2019/04/04 13:58

CN Cell 10 – Progress Photo





Contract 5 – BJCJSTP
Restoration and
Rehabilitation, April 2019
Construction Progress
Photos

2019/04/04 14:10

CN Cell 9-14 – Site Photo

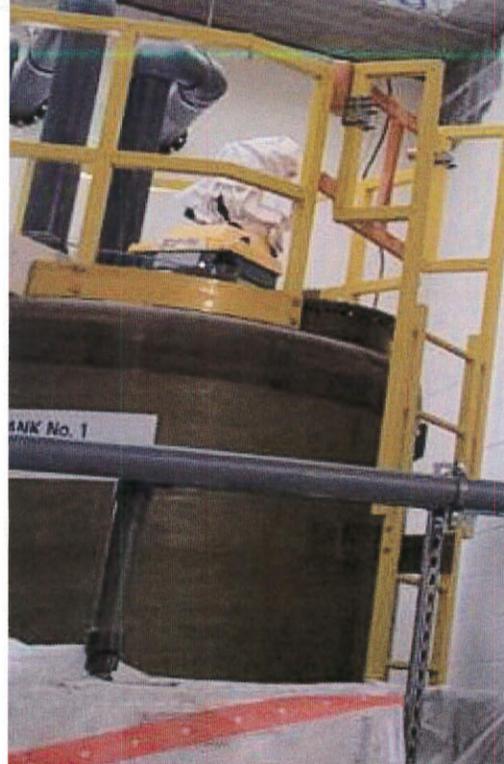
Contract 8 – BJCJSTP
Restoration and
Rehabilitation, March 2019
Construction Progress
Photos

BAF Backwash Facility – Water Connections to Polymer System

Mar 4, 2019 10:22:29

EMERGENCY
EYE WASH

HEALTH PROTECTION
EQUIPMENT

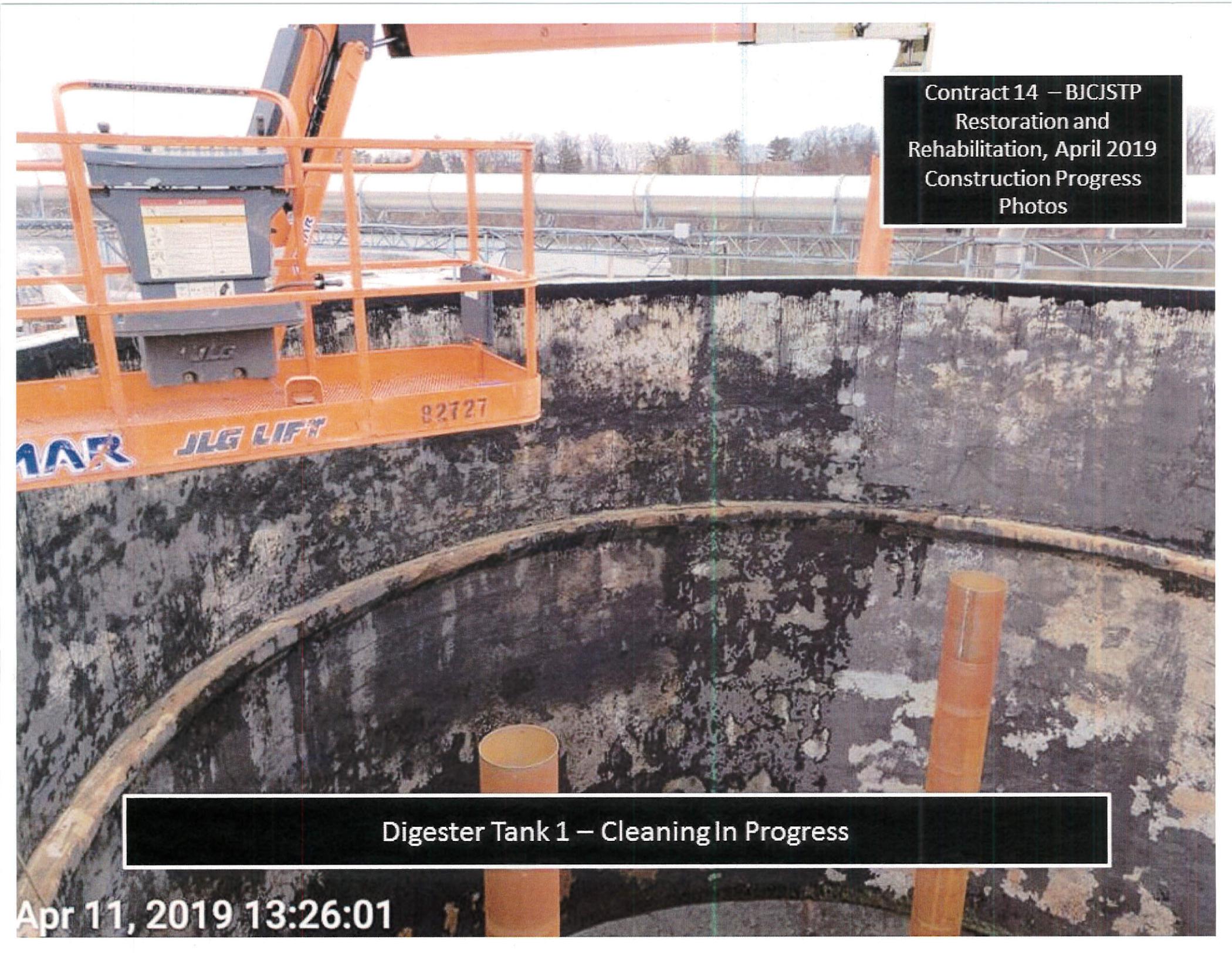


TANK No. 1

Contract 10 – BJCISTP
Restoration and
Rehabilitation, April 2019
Construction Progress
Photos

Digester Tank 3 – Cover Installation

Apr 1, 2019 09:39:09



Contract 14 – BJCISTP
Restoration and
Rehabilitation, April 2019
Construction Progress
Photos

Digester Tank 1 – Cleaning In Progress

Apr 11, 2019 13:26:01