



**ERIE COUNTY WATER AUTHORITY**  
**INTEROFFICE MEMORANDUM**

October 22, 2018

To: Terrence D. McCracken, Secretary to the Authority

From: Leonard F. Kowalski, Senior Distribution Engineer *LFK*

Subject: Contract OBG-012-A  
Sturgeon Point and Van de Water Improvement Project  
ECWA Project No. 201500169

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Attached is Change Order request No. 2 for the above referenced project. This Change Order was developed to provide the Contractor, H&K Services, Inc. with an additional 127 days for Substantial Completion and an additional 155 days for Final Completion of the project. Delays in the project were caused by additional work items being added due to unforeseen conditions related to the original scope of work, safety concerns that needed to be addressed, and shutdown delays that were caused by the repair work on the 42" transmission main near the High Service Pump Station. The work being performed on the 42" transmission main had numerous ramifications on the entire treatment plant. Shutdowns that were typically routine were no longer possible due to the temporary modifications that were in place to keep filter maintenance activities up and running and to keep the plants chlorination system online. The work associated with the 42" transmission main caused significant delays to the contractor that were beyond their control. The contractor was very understanding during this process and modified their construction schedule to work around the delays caused by the work on the 42" transmission main.

This was a large-scale project that affected numerous components throughout the Sturgeon Point Water Treatment Plant. Repair work was performed in the coagulation basins and during the work pipe support brackets were found deteriorated, bracing for the hydraulic system was found damaged and the several of the hydraulic rams required repairs to make the super scrapper system fully operational again. The work also included the separation of potable water systems versus non-potable systems throughout the entire treatment plant. The installation of RPZ's associated with this work involved numerous shutdowns and on several occasions, valves required for the shutdowns were found inoperable and required replacement to keep the project moving along. With all the chemical systems modifications that were done under this contract, the Authority required additional modifications to our control systems that couldn't be fully completed until the modifications were completed. The Authority uses a preferred vendor to do our Control System integration work and this work is included in the contract.

During construction a leak developed in the flash mixer and began to hinder progress on the project for the contractor and for the Authority. The leak was causing safety concerns inside and

outside of the plant. The leak was causing a large icing issue in the southeast parking lot that could not be controlled by routine salting. The water from the leak was also freezing behind the brick façade and causing the brick wall to deteriorate. The contractor was used to fix the leak which eliminated the fall hazard in the parking lot and stopped the leak inside of the plant.

A total contract increase of \$130,400.00 is being requested and the budget line will need to be increased to adequately fund the request. All the work performed was required to complete the contract. The total expense of change orders number 1 and 2 is 13.7% of the original contract price, which is less than the 15% allowed by the Authority's enabling legislation.

The following documents are attached:

- Blue Authorization Form - this form provides the project name and project number, the action that is being requested of the Board, and it provides a list of approvals that are required prior to being acted on by the Board.
- Four (4) original Change Order requests for execution by Chairman.

LFK:jmf

Attachments

cc: R.Stoll

CONT-OBG-012-A-1501-I-186-B

**CHANGE ORDER NO. 2**

**Erie County Water Authority  
350 Ellicott Square Building  
295 Main Street  
Buffalo, New York 14203**

Contract No.                      Project No. 201500169                      Date: October 3, 2018

Project:                      Contract OBG-12A  
Sturgeon Point and Van de Water  
Improvements Project

Contractor:                      H&K Services, Inc.  
12025 Leon Road  
Leon, NY 14751

Engineer:                      O'Brien and Gere Engineers, Inc.  
400 Andrews Street, Harro East Building, Suite 710  
Rochester, NY 14604

**DESCRIPTION OF CHANGE:**

1. Delete the following under Section 00500 Agreement, Article 3 – Contract Times, 3.02 Days to Achieve Substantial Completion and Final Payment:  
  
    “A. The Work shall be substantially completed by February 23, 2018 as provided in Paragraph 2.03 of the General Conditions, and completed and ready for final payment by April 20, 2018, in accordance with paragraph 14.07 of the General Conditions.
  
2. Insert the following under Section 00500 Agreement, Article 3 – Contract Times, 3.02 Days to Achieve Substantial Completion and Final Payment:  
  
    “A. The Work shall be substantially completed by June 1, 2018 as provided in Paragraph 2.03 of the General Conditions, and completed and ready for final payment by August 31, 2018, in accordance with paragraph 14.07 of the General Conditions.
  
3. Delete the following under Section 01 21 00, Allowances, Article 3.1.

**3.1 SCHEDULE OF ALLOWANCES**

<b>Contract Bid /Payment Item No.</b>	<b>Allowance Name</b>	<b>Include Contingency Allowance Amount Of</b>
Item 8	Contingency Allowance – Miscellaneous Improvements Allowance	\$600,000

Item 9	Cash Allowance – Security Allowance	\$0
Item 11	Cash Allowance – Control System Integration Allowance	\$125,000
Item 12	Cash Allowance – Potassium Permanganate Pump Allowance	\$30,000

4. Insert the following under Section 01 21 00, Allowances, Article 3.1.

### 3.1 SCHEDULE OF ALLOWANCES

<b>Contract Bid /Payment Item No.</b>	<b>Allowance Name</b>	<b>Include Contingency Allowance Amount Of</b>
Item 8	Contingency Allowance – Miscellaneous Improvements Allowance	\$691,194.80
Item 9	Cash Allowance – Security Allowance	\$0
Item 11	Cash Allowance – Control System Integration Allowance	\$176,844.80
Item 12	Cash Allowance – Potassium Permanganate Pump Allowance	\$17,360.40

### REASON FOR CHANGE:

1. The existing Substantial Completion and Final Completion dates are being deleted as new dates are being established.
2. New Substantial Completion and Final Completion dates are being established for the Contract. The completion schedule was delayed due to multiple construction modifications that were implemented as part of this project under Bid Item 8, Miscellaneous Improvement Allowance, and Bid Item 11, Control System Integration Allowance. Numerous shutdowns were also delayed due to repair work being performed on the 42-inch transmission main near the High Service Pumping Station.
3. The existing Miscellaneous Improvements Allowance and Control System Integration Allowance are being changed to provide additional funding for construction modifications.
4. During construction, several unforeseen conditions and safety concerns were identified. These modifications included reliability improvements to the caustic

system and plant water system at the Sturgeon Point WTP along with overall facility improvements. These modifications included the following:

**a. Mod No. 17 – Additional repairs in the Coagulation Basins**

Reason Required: After entering the basins, several unforeseen repairs were identified by the Owner including pipe support replacement, bracing repairs and hydraulic rod repairs. These repairs were essential to restoring the basins to full operating order.

Cost: \$8,358.20

**b. Mod No. 33c – Sludge Bunker (Piping, installation & accessories)**

Reason Required: After starting installation of the piping within the Sludge Bunker, multiple unforeseen conditions arose. Additional piping, fitting and supports were needed to accommodate the manufacturer supplied air release valve for the sludge pump. To avoid multiple utility conflicts, the sludge piping exited the Sludge Bunker through the ceiling and required a spool piece.

Cost: \$3,971.13

**c. Mod No. 42 – Miscellaneous construction services to the Owner**

Reason Required: During construction, the following miscellaneous construction services were provided:

- When installing the plant water system at the Delivered Water Pump Station, it was identified that the 2-1/2" pressure reducing valve was not operational and required replacement for effective functioning of the system.
- After start-up of the potassium permanganate system, it was identified that solids were being transferred to the potassium permanganate pumps and affecting their performance. To resolve this unforeseen condition, the pump suction piping was modified.
- After start-up of the fluoride fill piping, it was identified that the piping experienced additional force and vibration during the fill process than was anticipated. As a result, additional pipe supports were installed.
- After start-up of the fluoride fill piping, it was identified that the containment volume of the fill station needed to be increased to accommodate the operating procedures of the chemical delivery company.
- In order to complete the work in Coagulation Basin Nos. 1 and 2, the Contractor needed to take the basin out of service twice during construction. The original contract only included one mobilization and demobilization per basin. Entering Coagulation Basin Nos. 1 and 2 a second time was an unforeseen condition.

Cost: \$17,919.86

**d. Mod No. 45 – Aluminum channel pipe support**

Reason Required: During pipe installation in the basement of the Control Building, the Contractor raised concern regarding the location of pipe supports. To increase operator safety while walking underneath the piping, an aluminum channel was installed as part of the pipe support system.

Cost: \$7,097.40

**e. Mod No. 48 – 10” isolation valve on surface wash header**

Reason Required: The valve was installed to provide additional reliability and flexibility in the surface wash system for the operators, especially during emergency conditions or plant water shortages.

Cost: \$2,280.60

**f. Mod No. 50 – Sludge bunker wall repair**

Reason Required: During construction within the Sludge Bunker at the Van de Water WTP, it was identified by the Owner that the existing wall was leaking and potentially creating a safety concern for the new equipment and operators working in the bunker.

Cost: \$2,934.75

**g. Mod No. 53 – Additional services from KAMAN**

Reason Required: The transformer within the Permanganate Process Control Panel needed to be upsized to provide enough power to the permanganate flow meters and control valves. This upsizing was unforeseen during design and a result of the actual pumps that were purchased and installed by the Contractor.

Cost: \$1,230.11

**h. Mod No. 54 – 4” valve work (chlorine secondary feed)**

Reason Required: During construction, the Owner identified multiple 4” diameter butterfly valves that were broken on the plant water line within the Control Building. It was assumed that the valves were operable and in good working condition. The valve replacement was a condition that was identified as necessary.

Cost: \$2,142.94

**i. Mod No. 56 – Flash mixer leak**

Reason Required: During construction, a leak was identified by the Owner in the Rapid Mix Basins. The leak was exiting the building through the exterior brick façade and causing ice buildup in the parking lot. Routine salting was

unable to control the ice and it was a safety hazard. The brick façade also began to deteriorate from the water freezing behind the brick and expanding.

Cost: \$21,876.75

**j. Mod No. 57 – Guard rail in control building garage**

Reason Required: Due to the vehicular traffic within the garage, the client requested that a guardrail system be installed to protect the RPZs and plant water piping. RPZs and plant water piping within the garage are critical to the operation of the filter and chlorination system at the Sturgeon Point WTP.

Cost: \$5,401.11

**k. Mod No. 60 – Rate PLC panel relay replacement**

Reason Required: During construction, it was identified that the designed relay within the Rate PLC Panel would not control and operate the valves as requested by the Owner. A new relay was installed within the Rate Panel PLC to provide the necessary hardware for proper operation of the valves.

Cost: \$1,194.85

**l. Mod No. 61 – Additional painting of caustic and plant water piping**

Reason Required: Because of safety concerns with the integrity and condition of the existing caustic piping, the caustic piping in the Delivered Water Pump Station was replaced under Change Order No. 1. To improve the longevity of the piping within the humid environment within the Delivered Water Pump Station, the caustic and plant water piping was painted under this change order.

Cost: \$4,147.50

**m. Additional Control System Integration**

Reason Required: During construction, the following additional control system integration services were provided:

- Under Change No. 1, modifications to the carrier water system for the Potassium Permanganate System was authorized. Under this modification, Kaman provided a control panel, flow meters, control valves, programming, wiring and PLC as-built drawings. The scope and cost for this modification couldn't be estimated until the system was fully designed.
- Under Change Order No. 1, the sludge mixing system at the Van de Water WTP was authorized. Under this modification Kaman provided VFD and VFD panel, PLC control panel, fiber optic wiring, iso-ring and pressure transducer, heat tracing, programming, wiring and PLC as-built drawings. The scope and cost for this modification couldn't be estimated until the system was fully designed by the Owner.

Cost: \$51,844.80

**CHANGE IN CONTRACT PRICE:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Allowance Increase: \$130,400.00

**CHANGE IN CONTRACT TIME:**

1. Not Applicable
2. Addition of 98 days to the Substantial Completion Date and an addition of 133 days to the Final Completion Date of the Project.
3. Not Applicable
4. Not Applicable

**APPROVALS - CHANGE ORDER NO. 2**

Erie County Water Authority: \_\_\_\_\_ Date: \_\_\_\_\_  
Chairman

Contractor: \_\_\_\_\_ Date: \_\_\_\_\_  
H&K Services, Inc.

Engineer: \_\_\_\_\_ Date: \_\_\_\_\_  
O'Brien and Gere Engineers, Inc.



## SUMMARY

### **CHANGE IN CONTRACT PRICE:**

**Original contract price:**  
\$2,957,800.00

**Net changes from previous change orders:**  
No. 1: \$275,000

**Contract price prior to this change order:**  
\$3,232,800.00

**Net increase of this change order:**  
\$130,400.00

**Contract price with all approved change orders:**  
\$3,363,200.00

### **CHANGE IN CONTRACT TIME:**

**Original contract time:**  
Notice to proceed: January 12, 2017  
Substantial completion: October 19, 2017  
Final completion: November 16, 2017

**Net changes from previous change orders:**  
Substantial completion: 127 days  
Final completion: 155 days

**Contract time prior to this change order:**  
Substantial completion: February 23, 2018  
Final completion: April 20, 2018

**Net increase of this change order:**  
Substantial completion: 98 days  
Final completion: 133 days

**Contract times with all approved change orders:**  
Substantial completion: June 1, 2018  
Final completion: August 31, 2018