

September 19, 2022

M&C 00069-0047

Paul Biagiotti, Construction Manager
Brunswick County Public Utilities Operations Center
250 Grey Water Rd. NE
Supply, NC 28462

**RE: Northeast Brunswick Regional Water Reclamation Facility 2.5 MGD
Facility Expansion Project
Final Adjusting Change Order No. 3**

Dear Mr. Biagiotti :

On Nov. 8, 2019, Brunswick County Public Utilities entered into a contract with TA Loving Construction Co. for a 2.5 MGD expansion of the NEBRWRF. Currently, the plant is on line and has been certified to the State. In addition, a temporary certificate of occupancy has been issued and only a minor amount of construction remains. The completion of these tasks continue to be impacted as was the plant construction by supply chain issues resulting from the pandemic.

As we are very near the completion of the project, we have assembled the Final Adjusting Change Order 3 for the project. This letter recognizes and documents the final cost amounts and final contract time extension.

Contract Time Extension

As noted herein, there were challenges in completing and starting up the plant. As they were discovered, additional work was ordered to address the issues. During this process and as was previously noted, material/equipment delays impacted completion and start up. As a result, the Contractor made the County aware of those concerns as they arose and tried to address them as best possible. As a result and in summary, the Contractor has provided documentation (TALCO letter dated Sept. 17, 2022) and has requested the addition of 280 calendar days to the project duration. Including the requested days will make the plant completion date November 27, 2022. BCPU staff has reviewed and agreed to the request.

Additional Contract Work Cost Adjustments Since Last Change Order

As with all construction, there are problems/changes/ unforeseen issues that only arise during construction which must be dealt with through the construction administration process outlined in the contract documents. Items documented herein have been resolved in accordance with that process.

The following is a list of those items (back up for each is attached along with a summation spreadsheet):

Item 53*: PCO 31 Addition of 30 inch Gate Valve for Future Influent Connection

Contractor assumed during the bid that the 30 inch gate valve shown for the future influent line to the headworks was in fact part of the future influent line itself and thus did not include it in the contract price. It was the intent of the project design that this valve be installed at this point so that the future force main connection could be done without a plant and/ or force main shutdown. Owner directed the Contractor to install the valve. The resulting additional cost is shown below.

- Add cost \$38,670.19.

*** Items 1 through 52 were included in previous Change Orders.**

Item 54: PCO 68 Effluent Pump Station Alternate Flow Meter

After start up of the plant, issues with the installed effluent flow mag-meter became apparent. It was determined that as the pump station emptied, air was induced into the flow meter. This air impacted the accuracy of the meter as a mag-meter is not designed to meter flow in a partially filled pipe. Contractor was directed to install a Krohne meter in its place as these meters are designed to read in a partial flow environment. The existing meter will be removed intact and placed into storage for future use. The cost of the meter replacement and associated start up was included in the price of the work.

- Add cost \$58,621.77

Item 55: RCP 40/PCO 69 Rev.2 Drum Screen PLC Addition

Owner's plant staff requested the method of control for the influent screens be changed from local control panels to PLC based controls and networked with the new SCADA system for monitoring. The resulting additional cost is shown below.

- Add cost \$66,837.51.

Item 56: RCP 43/PCO 70 Combined Sampler Station

The design of the facility included an effluent sampling station for the effluent produced from the plant expansion. This created a condition wherein the County would be testing and reporting the results from two locations for the same plant/permit. State effluent reporting requirements only allow for the results of one sample per permit. The Owner and Engineer worked to create a situation where the samples from both plants could be combined and then sampled together so as to be in accordance with the one permit one sample rule of reporting. The resulting additional cost is shown below.

- Add cost \$22,374.72.

Item 57: PCO 71 Addition of Knox Locks on Back Gates

As a result of the Fire Marshall's inspection of the facility, the Marshall noted that the back gates required Emergency Access Locks compliant with the approved/required type. Owner directed Contractor to install the new locks and security boxes. The cost of the system and installation is shown below.

- Add cost \$1,897.16.

Item 58: PCO 72 Replacement of Existing Entrance Gate with New Controller

As a result of the Fire Marshall's inspection of the facility, the Marshall noted that the existing gate did not have the required YELP system (necessary for Police and Fire emergency access). Project documents required a new larger gate be installed however a new control system was not required. Owner directed Contractor to install a new YELP compliant system. The cost of the system and installation is shown below.

- Add cost \$14,143.50.

Item 59: PCO 55 Addition of Control Power Circuit to Disk Filter (TDF) Control Panel and Automatic Cleaning System (ACS) Control Panel

After installation of both control panels, it was determined that both would need to be fed 120v control power separate from each other. Originally it was understood the ACS would be fed from a receptacle on the TDF however since the TDF was not included in the Kruger scope of work but was acquired separately from another vendor, this control power circuit was not provided. The cost of the work represents a substantial reconfiguring of already installed conduit and the addition of another power circuit.

- Add cost \$4,273.96.

Item 60: PCO 74 Addition of ATAD Central Mixer Reversing Feature

During a review of the installed ATAD equipment provided by Kruger, Kruger noted that the central ATAD mixer mounted atop each ATAD tank was not provided with a required reversing feature. Basically this feature allows the mixer to be periodically run backwards to clear any accumulations on the mixing blades that would impact mixing performance. This requirement was not shown as part of the original scope of work and thus was added during construction. The bulk of the work for which the cost represents involved adding devices and rewiring portions of the MCCs that feed power to the mixers.

- Add cost \$9,545.64.

Item 61: RCP 37 PCO 57 MCC and Motor Starter Modifications

Various MCCs, RVSSs, FVNRs, and VFDs (39 in total) were modified in the field by Siemens to accommodate necessary interrelated controls between devices/motors that were unknown at the time of bid. The main modification to all buckets included the installation of auto restart functionality. The cost for the modifications are included in the pricing.

- Add cost \$13,263.14.

Item 62: PCO 71 Contractor's Bond Adjustment

Due to changes documented herein and in Change Order 1 and 2, the overall cost

of the project has increased. As a result of this increase, the Contractor has been accessed additional bond cost. Contractor requested via PCO 71 to be reimbursed for this cost and has provided documentation to support the request. Owner agreed to the request and the cost is shown below.

- Add cost \$9,397.47.

SUMMARY ADDITIONAL CONTRACT WORK COSTS

Description	Cost	
Item 53: PCO 31	\$38,670.19	
Item 54: PCO 68	\$58,621.77	
Item 55: RCP 40/PCO 69	\$66,837.51	
Item 56: RCP 43/PCO 70	\$22,374.72	
Item 57: PCO 71	\$1,897.16	
Item 58: PCO 72	\$14,143.50	
Item 59: PCO 55	\$4,273.96	
Item 60: PCO 74	\$9,545.64	
Item 61: RCP 37 PCO 57	\$13,263.14	
Item 62: PCO 76	\$9,397.47	
Total of Outstanding Work Costs	\$239,025.06	

CONTRACT CLOSEOUT- UNIT PRICE ITEMS and ALLOWANCE

The contract bid amount included several unit price items for which the total to be used was unknown at time of bid. Over the course of construction, some item totals were not used and some were exceeded. The attached summation sheet Schedule 1 identifies those items for which a credit is due to the Owner and those for which additional payment is needed. Totaling these items results in an additional cost of \$166,429.69.

In addition, the contract bid included a \$100,000.00 allowance for the Owner to use in administering changes without exceeding the project budget. An accounting of this allowance so shown on the attachment Schedule 1 along with the unused amount to be credited back to the Owner. Totaling these items results in a credit back to the Owner in the amount of \$65,691.65.

Also included in the contract bid, was an allowance for Construction Materials Testing in the amount of \$175,000.00 for the Owner to use in paying for materials

testing on a monthly basis as the work progressed. An accounting of this allowance results in a credit back to Owner in the amount of \$18,778.36.


Summary

Based on the items detailed in this letter, the Engineer recommends the contract amount be increased by \$320,984.74 and the contract time be amended to include an additional 280 calendar days.

If you have any questions, please do not hesitate to contact us.

Sincerely,

McKIM & CREED, INC.



Stacey Magnus
Senior Construction Administrator

Enclosures:

Final Adjusting Change Order No.3 Schedule 1- Summation

TALCO letter dated Sept. 17, 2022

Item 53: PCO 31

Item 54: PCO 68

Item 55: RCP 40/PCO 69

Item 56: RCP 43/PCO 70

Item 57: PCO 71

Item 58: PCO 72

Item 59: PCO 55

Item 60: PCO 74

Item 61: RCP 37 PCO 57

Item 62: PCO 76

cc: File 00069-0047.64