



# City of Grand Island

Tuesday, March 12, 2013

Council Session

## Item G14

**#2013-67 - Approving Change Order No. 5 for Aeration Basin Improvements at the Wastewater Treatment Plant; Project No. WWTP-2010-3**

Staff Contact: Terry Brown, Interim Public Works Director

# **Council Agenda Memo**

**From:** Marvin Strong, Wastewater Treatment Plant Engineer

**Meeting:** March 12, 2013

**Subject:** Approving Change Order No. 5 for Aeration Basin Improvements at the Wastewater Treatment Plant; Project No. WWTP-2010-3

**Item #'s:** G-14

**Presenter(s):** Terry Brown, Interim Public Works Director

## **Background**

The City Council awarded the contract for construction to Oakview dck, LLC of Red Oak, Iowa in the amount bid of \$3,487,000 for the Aeration Basin Improvements for the Wastewater Treatment Plant on December 7, 2010. The primary purpose of the Aeration Basin Improvements project is to replace existing aeration equipment that is at or near the end of its useful life. Two existing blowers have been replaced with two high efficiency units that improve reliability and reduce energy usage and operating costs. The two new blowers operate with the two existing blowers which have remained in service. In addition to the blowers, the aeration basin piping and aeration equipment is modified or replaced to optimize process controls and replace aged equipment.

August 9, 2011, City Council approved a unit cost Change Order No. 1 for structural concrete sealing in joint work, in the amount of \$89,252.00, for a revised contract is \$3,576,252.00.

September 13, 2011, City Council approved a unit cost Change Order No.2 for Spiral Screw Pump modifications, in the amount of \$397,897.00, for a revised contract is \$3,974,149.00.

March 13, 2012, City Council approved a unit cost Change Order No.3 for miscellaneous changes to the work scope:

Delete Field Painting of New Steel Frame in Blower Building, and  
Paint Existing Basin Aeration Pipe Supports, and  
Repair Existing Welds on Screw Pump No.3, and  
Relocate New Dissolved Oxygen Probes in Basins, and  
Change Mounting of New Disconnects for Basin Mixers and Valves, and  
Relocate New Blower Local Control Panels, and  
Add Power Monitoring of New Blowers, and  
Blower Power Penalty

This resulted in a credit of \$(30,124.00), for a revised contract price of \$3,944,025.00.

June 26, 2012, City Council approved a time extension Change Order No. 4 covering substantial completion contract time extension for the blower, aeration basin improvements, and for the screw pump rehabilitation work, additionally a final completion contract time extension was granted. Change Order No. 4 added no additional costs to the contract amount of \$3,944,025.00.

## **Discussion**

The Aeration Basin Improvements Construction Project is complete, the new blowers, and aeration diffuser systems have been in service for the past month. Varying warranty work items in the project are still outstanding.

Change Order No. 5 covers miscellaneous changes to the work as described below, and in the attached change order summary.

Replace Stairs in Northwest Corner of Aeration Basins, and  
Existing Expansion Joints in Discharge Piping of Blower Nos. 2 and 3, and  
Re-use Existing Diffuser Piping Floor Supports in the Aeration Basins, and  
Repair Existing Welds on Screw Pump Nos. 1 and 2, and  
Repair Grout in Screw Pump No. 2 Channel, and  
Repair Grout in Screw Pump No. 1 Channel, and  
Hardware for Screw Pump Deflector Plates, and  
Adjustment for Floor Concrete Repair in Basin No. 4, and  
Adjustment for Floor Concrete Repair in Basin Nos. 1, 2, and 3, and  
Adjustment for Floor Expansion Joint Repair in Basin Nos. 1, 2, and 3, and  
Adjustment for Caulking of Wall Expansion Joints in Basin Nos. 1, 2, and 3, and  
Repair Receptacles on Basin Walkways, and  
Repair Screw Pump Channel Walls, and  
Field Paint Screw Pump Gear Reducers and Guards, and  
Contract Time Extension for Project Final Completion

This results in a credit of \$(14,443.25), for a revised contract price of \$3,929,581.75.

The current contract time for final completion is five hundred twenty (520) calendar days, or July 5, 2012. The days to achieve final completion for the project will be extended two hundred fifteen (215) calendar days to February 5, 2013, to accommodate both the rehabilitation of the mixed liquor screw pumps, and blower and aeration basin improvements warranty work.

## **Alternatives**

It appears that the Council has the following alternatives concerning the issue at hand. The Council may:

1. Move to approve a resolution granting miscellaneous changes to the work and authorizing the Mayor to execute Change Order No. 5 with Oakview dck, LLC of Red Oak, Iowa.
2. Refer the issue to a Committee.
3. Postpone the issue to future date.
4. Take no action on the issue.

### **Recommendation**

City Administration recommends that the Council approve Change Order No. 5 in miscellaneous changes to the work for Aeration Basin Improvement to Oakview dck, LLC of Red Oak, Iowa at the Wastewater Treatment Plant.

### **Sample Motion**

Move to approve Change Order No. 5 to the contract for Aeration Basin Improvement to Oakview dck, LLC of Red Oak, Iowa.

**CITY OF GRAND ISLAND, NEBRASKA  
WASTEWATER TREATMENT PLANT  
AERATION BASIN IMPROVEMENTS PROJECT**

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**CITY PROJECT WWTP-2010-3  
BLACK & VEATCH PROJECT NO. 163132**

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**CHANGE ORDER NO. 5**

Change Order No. 5 covers quantity adjustments for the aeration basin concrete and joint repair items included in Change Order No. 1, repairs associated with the screw pumps, a contract time adjustment for completion of the screw pump rehabilitation work, and other miscellaneous changes related to the basins and blowers.

Item CO5-1. Replace Stairs in Northwest Corner of Aeration Basins

Initiated by: Engineer

This change involves replacing the existing wooden stairs from the top of the basins to existing grade with aluminum stairs.

Item CO5-2. Replace Existing Expansion Joints in Discharge Piping of Blower Nos. 2 and 3

Initiated by: Owner

This change involves replacing one 24-inch expansion joint in the discharge piping of each existing blower, Nos. 2 and 3.

Item CO5-3. Re-use Existing Diffuser Piping Floor Supports in the Aeration Basins

Initiated by: Engineer

The bid documents were based on replacing the existing floor supports for the new diffuser piping in the oxic zones of the aeration basins. Several of the supports were able to be salvaged and re-used. This change covers the credit for the supports returned to the manufacturer.

Item CO5-4. Repair Existing Welds on Screw Pump Nos. 1 and 2

Initiated by: Engineer

Under Change Order No. 2, sandblasting and re-painting the existing screws for Pump Nos. 1, 2, and 3 was included. Following sandblasting of Pump Nos. 1 and 2, some welds required repair prior to field painting. This change covers compensation for the repairs performed. Compensation for Pump No. 3 weld repairs was included in Change Order No. 3.

2/5/2013

CO5-1

Item CO5-5. Repair Grout in Screw Pump No. 2 Channel

Initiated by: Owner

Upon removal of the screw for Pump No. 2, significant deterioration of the grout in the inclined channel was evident. This change covers the compensation for sawcutting and removing the grout, preparing and forming the areas, and placing up to 33 cubic feet of mortar repair product, BASF Emaco 10-61.

Item CO5-6. Repair Grout in Screw Pump No. 1 Channel

Initiated by: Owner

Upon removal of the screw for Pump No. 1, some minor grout repair was needed in the inclined channel. This change covers the compensation grout repair up to 1.5 cubic feet using mortar repair product, BASF Emaco 10-61.

Item CO5-7. Replace Hardware for Screw Pump Deflector Plates

Initiated by: Engineer

The deflector plates for each pump screw were originally anchored to the walls with carbon steel threaded rods and turnbuckles. The deteriorated hardware was replaced with stainless steel components. This change covers purchase and installation of the stainless steel hardware for all three pump screws.

Item CO5-8. Adjustment for Floor Concrete Repair in Basin No. 4

Initiated by: Owner

Change Order No. 1, Item CO1-1 included a cost of \$15,600 based on an estimated quantity of 40 cubic feet for concrete floor repair in Basin No. 4. The actual quantity following repairs was 10 cubic feet, resulting in a credit of \$11,700 for 30 cubic feet at a unit cost of \$390.00.

Item CO5-9. Adjustment for Floor Concrete Repair in Basin Nos. 1, 2, and 3

Initiated by: Owner

Change Order No. 1, Item CO1-4 included a cost of \$58,500 based on an estimated quantity of 150 cubic feet for concrete floor repair in Basin Nos. 1, 2, and 3. The actual quantity following repairs was 27.5 cubic feet, resulting in a credit of \$47,775 for 122.5 cubic feet at a unit cost of \$390.00.

2/5/2013

CO5-2

Item CO5-10. Adjustment for Floor Expansion Joint Repair in Basin Nos. 1, 2, and 3

Initiated by: Owner

Change Order No. 1, Item CO1-5 included a cost of \$7,524 based on an estimated quantity of 792 cubic feet for floor expansion joint repair in Basin Nos. 1, 2, and 3. The actual quantity following repairs was 1,424.5 cubic feet, resulting in an additional cost of \$6,088.75 for 632.5 cubic feet at a unit cost of \$9.50.

Item CO5-11. Adjustment for Caulking of Wall Expansion Joints in Basin Nos. 1, 2, and 3

Initiated by: Owner

Change Order No. 1, Item CO1-6 included a cost of \$3,840 based on an estimated quantity of 480 cubic feet for wall expansion joint repair in Basin Nos. 1, 2, and 3. The actual quantity following repairs was 520 cubic feet, resulting in an additional cost of \$320.00 for 40 cubic feet at a unit cost of \$8.00.

Item CO5-12. Repair Receptacles on Basin Walkways

Initiated by: Owner

Some of the existing basin receptacles were not functional. This change covers troubleshooting the existing circuits and repair of wiring and connections.

Item CO5-13. Repair Screw Pump Channel Walls

Initiated by: Owner

Upon removal of the screws, some deterioration of the concrete walls above the inclined channels was evident. This change covers the compensation for applying an epoxy-modified cementitious mortar (Tnemec mortarclad) to the walls for each screw.

Item CO5-14. Field Paint Screw Pump Gear Reducers and Guards

Initiated by: Owner

This change covers the compensation for field coating the gear reducers, belt drive guards, and coupling guards of each screw pump. Each component will be prepared and field coated with a primer (Tnemec Series 27 Typoxy) and a finish coat (Tnemec Series 1075 aliphatic polyurethane).

Item CO5-15. Contract Time Extension for Substantial Completion of the Screw Pump Rehabilitation Work and Project Final Completion.

Initiated by: Owner

2/5/2013

CO5-3

The unexpected grout repair work in Screw Pump No. 2 channel (Item CO5-5) extended the completion date for the screw pump rehabilitation work. All work was completed on October 10, 2012. This completion date is reasonable and represents an additional 17 calendar days to be added to the current substantial completion date of September 23, 2012 (adjusted by Change Order No. 4). The current project final completion date of October 23, 2012 (adjusted by Change Order No. 4) was delayed due to field painting of the of the screw pump gear reducers and guards (Item CO5-14), resolution of the automatic operation of blower discharge valves, and completion of project closeout items. All work was completed on February 5, 2013 and represents an additional 105 calendar days.

2/5/2013

CO5-4



**CITY OF GRAND ISLAND, NEBRASKA  
WASTEWATER TREATMENT PLANT  
AERATION BASIN IMPROVEMENTS PROJECT**

**CITY PROJECT WWTP-2010-3  
BLACK & VEATCH PROJECT NO. 163132**

**SUMMARY**

**CHANGE ORDER NO. 5**

The Contract Price shall be modified as follows as a result of the changes described by this modification request. Additions to the Contract Price are indicated by a "+" in front of the amount, deductions by a "-".

<u>Effect on Contract Price</u>		Increase/Decrease In Contract Price (+/-)
<u>Item</u>	<u>Description</u>	
CO5-1	Replace Stairs in Northwest Corner of Aeration Basins	+\$6,326.00
CO5-2	Existing Expansion Joints in Discharge Piping of Blower Nos. 2 and 3	+\$11,751.00
CO5-3	Re-use Existing Diffuser Piping Floor Supports in the Aeration Basins	-\$10,070.00
CO5-4	Repair Existing Welds on Screw Pump Nos. 1 and 2	+\$1,791.00
CO5-5	Repair Grout in Screw Pump No. 2 Channel	+\$19,564.00
CO5-6	Repair Grout in Screw Pump No. 1 Channel	+\$600.00
CO5-7	Hardware for Screw Pump Deflector Plates	+\$1,806.00
CO5-8	Adjustment for Floor Concrete Repair in Basin No. 4	-\$11,700.00
CO5-9	Adjustment for Floor Concrete Repair in Basin Nos. 1, 2, and 3	-\$47,775.00
CO5-10	Adjustment for Floor Expansion Joint Repair in Basin Nos. 1, 2, and 3	+\$6,008.75
CO5-11	Adjustment for Caulking of Wall Expansion Joints in Basin Nos. 1, 2, and 3	+\$320.00
CO5-12	Repair Receptacles on Basin Walkways	+\$462.00
CO5-13	Repair Screw Pump Channel Walls	+\$1,504.00
CO5-14	Field Paint Screw Pump Gear Reducers and Guards	+\$4,969.00
NET CHANGE IN CONTRACT PRICE		-\$14,443.25
BID AMOUNT OF ORIGINAL CONTRACT		\$3,487,000.00
PREVIOUS CHANGE ORDER ADJUSTMENTS		<u>+\$457,025.00</u>

2/5/2013

CO5-5

Effect on Contract Price

Increase/Decrease  
In Contract  
Price  
(+/-)

ItemDescription

CURRENT CONTRACT AMOUNT \$3,944,025.00

CHANGE ORDER NO. 5 -\$14,443.25

ADJUSTED CONTRACT AMOUNT \$3,929,581.75

Effect on Contract Time

--	Substantial Completion for Original Contract, Calendar Days (Date)	460 (May 6, 2012)
--	Final Completion for Original Contract, Calendar Days (Date)	520 (July 5, 2012)
--	Current Contract Time for Substantial Completion of Blower and Basin Work, Calendar Days (Date)	60 (July 5, 2012)
--	Current Contract Time for Substantial Completion of Screw Pump Rehabilitation, Calendar Days (Date)	80 (September 23, 2012)
CO5-15	Contract Time Extension for Substantial Completion of Screw Pump Rehabilitation, Calendar Days (Date)	17 (October 10, 2012)
--	Current Contract Time for Project Final Completion, Calendar Days (Date)	110 (October 23, 2012)
CO5-15	Contract Time Extension for Project Final Completion, Calendar Days (Date)	105 (February 5, 2013)

No additional claims shall be made for changes in Contract Time arising from these work items.

This change order includes all costs, direct, indirect, and consequential, and all changes in Contract Time arising from the work included in the items for Change Order No. 5. No additional claims shall be made for changes in Contract Price or Contract Time arising from these work items.

All other provisions of the contract remain unchanged.

2/5/2013

CO5-6

Agreed to this \_\_\_\_\_ day of \_\_\_\_\_, 2013

Recommended:  
Black & Veatch Corporation

By: \_\_\_\_\_  
Project Manager

Date: \_\_\_\_\_

Approved:  
City of Grand Island

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved:  
Oakview dck, LLC

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to Form \_\_\_\_\_

March 12, 2013 City Attorney

2/5/2013

CO5-7

## RESOLUTION 2013-67

WHEREAS, on December 7, 2010, by Resolution 2010-342, the City of Grand Island awarded Oakview dck, LLC of Red Oak, Iowa the bid in the amount of \$3,487,000 for furnishing materials and services for WWTP-2010-3 Aeration Basin Improvements project at the Wastewater Treatment Plant; and

WHEREAS, on August 9, 2011, by Resolution 2011-207, City Council approved a unit cost Change Order No. 1 for structural concrete sealing in joint work, in the amount of \$89,252.00, for a revised contract in \$3,576,252.00; and

WHEREAS, on September 13, 2011, by Resolution 2011-243, City Council approved a unit cost Change Order No. 2 for Spiral Screw Pump modifications, in the amount of \$397,897.00, for a revised contract in \$3,974,149.00; and

WHEREAS, on March 13, 2012, by Resolution 2012-63, City Council approved a unit cost Change Order No. 3 for miscellaneous changes to the work scope, in the credit amount of \$(30,124.00), for a revised contract in \$3,944,025.00; and

WHEREAS, on June 26, 2013, by Resolution 2012-163, City Council approved a time extension Change Order No. 4 for blower, aeration basin improvements, and screw pump rehabilitation work covering substantial, and final completion contract time extension, in the no cost change of \$0.00, for the contract amount of \$3,944,025.00; and

WHEREAS, such miscellaneous changes to the work have been negotiated as fair and reasonable, and incorporated into Change Order No. 5, at a credit of \$(14,443.25), for a revised contract amount of \$3,929,581.75; and

NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND COUNCIL OF THE CITY OF GRAND ISLAND, NEBRASKA, that Change Order No. 5 with the contracting firm, Oakview dck, LLC of Red Oak, Iowa, for WWTP-2010-3 Aeration Basin Improvements project at the Wastewater Treatment Plant is hereby approved.

BE IT FURTHER RESOLVED, that the Mayor is hereby authorized and directed to execute such contract on behalf of the City of Grand Island.

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Adopted by the City Council of the City of Grand Island, Nebraska, March 12, 2013.

\_\_\_\_\_  
Jay Vavricek, Mayor

Attest:

\_\_\_\_\_  
RaNae Edwards, City Clerk

Approved as to Form	<input type="checkbox"/> _____
February 12, 2013	<input type="checkbox"/> City Attorney