

AGENDA ITEM

TO: Tim Vandall, City Administrator
FROM: Anthony J. Zell, Jr., Wastewater Utility Director 
DATE: October 13, 2022
SUBJECT: Aeration Basin Gearbox and Motor Repair Estimate

In the fall of 2021, one of the three aeration basins at the treatment plant needed to be taken offline due to a gearbox malfunction. Staff and a contractor pumped the contents of the aeration basin (designated D1) into aeration basin D2. Upon completion of the pumping operation, approximately one foot of solids and inorganic material remained at the bottom of the tank and associated chambers. Staff hired Environmental Works to remove the materials and prep the tank for a mechanical contractor to remove the damaged gearbox and motor.

The motor and gearbox were removed and taken to a local shop for diagnosis, cleaning, and a repair estimate. While inconclusive, it appears that when the motor to gearbox coupling failed (after 17 years of continuous use) the remnants of the coupling caused damage to both the motor output shaft and the gearbox input shaft. Small parts of the coupling and its housing fell into the gearbox. The motor's shaft and lower bearing were damaged, which seems to be the cause of the coupling failure.

The mechanical contractor has recommended the replacement of the motor with a current model, while the gearbox can be repaired and put back into service. A cost breakdown is shown on the attached repair estimate.

Staff recommends replacing the motor at a total cost of \$25,722.22. Due to the large capital cost of a new gearbox, staff recommends damaged and normal wear components be replaced, for a total cost of \$78,847.73. The lead time for parts to complete the repairs are 16 to 18 weeks.

Policy Consideration: N/A

Financial Consideration: Funds for this are available in the Utility's base budget.

Action: A motion to approve the cost estimate from Fluid Equipment Company to perform the quoted work on the aeration basin motor and gearbox.

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SERVICE ESTIMATE

Customer: City Of Lansing Wastewater Treatment Contact : Ron Lake Date: 10/12/2022 Phone: 913-705-0536 Fax: Project: Reliance Electric 6709448 - Repair Quote #: 7046237 Opp #: OP-538625	Fluid - Municipal Kansas City 4525 NW 41st St, Suite 400 Riverside, MO 64150 Phone: 816-795-8511 Fax: 816-795-8926
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Dear Ron,

We are pleased to offer the following estimate for your review.

Line No	Quantity	Description of Unit	Net Each	Net Ext.
1		75HP,1200,405TSD,TEFC Motor - Replacement Serial Number - LEAD TIME: 16-18 WEEKS	Total	\$25,722.22
2		Philadelphia Gearbox - Repair Serial Number - LEAD TIME: 16-18 WEEKS	Materials	\$70,967.73
			Labor	\$7,880.00
			Total	\$78,847.73
3		Philadelphia Gearbox - Replacement Serial Number - LEAD TIME: 32-26 WEEKS	Total	\$246,992.50

Disassembly, Cleaning, Inspection and Estimating Charge **\$2,745.00**

Amount due if this unit is not repaired. An invoice for this charge will automatically generate within 90 days of this estimate. This charge is for DCI (Disassembly, Clean and Inspect). All units left at our facility for more than 6 months will be scrapped unless written notification is received.

Delivery: 16 - 18 week(s) after receipt of P.O.
 FOB Point: Shipping Point
 Terms of Payment: Upon Receipt
 Quote Validity: 15 Days

Thank you for the opportunity to provide you with this estimate. Please let us know how you would like to proceed.

Quoted By:
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Salesrep:
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 dplumer@fluidequip.com