



AGENDA ITEM EXECUTIVE SUMMARY

Agenda Item:	Rebuild Spare Water Well Components		
Presenter & Title:	Bob Van Gyseghem, Superintendent of Water & Wastewater		
Date:	April 18, 2022		
Please Check Appropriate Box:			
<input checked="" type="checkbox"/>	Committee of the Whole Meeting	<input type="checkbox"/>	Special Committee of the Whole Meeting
<input checked="" type="checkbox"/>	City Council Meeting	<input type="checkbox"/>	Special City Council Meeting
<input type="checkbox"/>	Public Hearing	<input type="checkbox"/>	Other -
Associated Strategic Plan Goal/Objective: EMSII, ESII			
Estimated Cost: \$28,500	Budgeted?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Other Funding? <input type="checkbox"/> Yes <input type="checkbox"/> No
Executive Summary:			
<p>On November 15, 2021 the City Council awarded Municipal Well & Pump the contract for Well #13 rehabilitation. The pump and motor was removed and inspected. The inspection concluded that the pump and motor could not be rebuilt. The cost for a replacement pump bowl assembly is \$33,670 and a new motor is \$94,690.</p> <p>Over the years staff has retained surplus components from other projects. Fortunately, staff retained a pump bowl assembly and motor that is the size needed for Well #13. The manufacturer's representative Layne in Aurora, IL recently inspected the pump bowl assembly and motor. The motor is in excellent condition and will be utilized in Well #13 but the pump bowl assembly will need to be rebuilt at a cost of \$28,500. This results in an overall savings of \$99,860 as compared to the submitted bid.</p>			
Attachments: <i>(please list)</i>			
<ul style="list-style-type: none"> • Resolution • Quote and Inspection Report 			
Voting Requirements:			
<p><i>This motion requires 7 affirmative votes for passage.</i></p> <p><i>The Mayor may vote on three occasions: (a) when the vote of the aldermen or trustees has resulted in a tie; (b) when one half of the aldermen or trustees elected have voted in favor of an ordinance, resolution, or motion even though there is no tie vote; or (c) when a vote greater than a majority of the corporate authorities is required by state statute or local ordinance to adopt an ordinance, resolution, or motion.</i></p>			
Recommendation / Suggested Action: <i>(how the item should be listed on agenda)</i>			
<p>Recommend Approval of Resolution Waiving Competitive Bidding and Authorize the City Administrator to Execute Agreement with Layne, Aurora, IL at a cost not-to-exceed \$28,500.</p>			

**RESOLUTION NO. 2022-5:
RESOLUTION AUTHORIZING EXECUTION OF
AGREEMENT to
Rebuild Spare Water Well Components**

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF GENEVA, KANE COUNTY, ILLINOIS, as follows:

SECTION 1: That the City Administrator is hereby authorized to execute, on behalf of the City of Geneva, an agreement with Layne, Aurora, IL, for the rebuild of spare water well components.

SECTION 2: This Resolution shall become effective from and after its passage as in accordance with law.

PASSED by the City Council of the City of Geneva, Kane County, Illinois, this ____ day of _____, 2022

AYES: __ NAYS: __ ABSENT: __ ABSTAINING: __ HOLDING OFFICE: __

Approved by me this ____ day of _____, 2022.

Mayor

ATTEST:

City Clerk



Layne Christensen Company
721 W. Illinois Avenue
Aurora, IL 60506

630/897-6941
graniteconstruction.com

April 8, 2022

Mr. Bob Van Gyseghem, Superintendent of Water and Wastewater
City of Geneva Public Works Department
1800 South Street
Geneva, IL 60134

Re: Byron Jackson Spare Well Pump Components

Mr. Van Gyseghem:

The City delivered its spare Byron Jackson 300 HP, 2300V, 14", Type H motor and spare Byron Jackson 13 stage 13MQ/12MQL CIBF bowl assembly to Layne's yard on March 28. Please find Layne's *Geneva Spare Components Inspection Report* attached.

Based upon the recommendations of the Report, estimated project cost is as follows:

1. Labor and equipment to date to inspect motor and bowl	\$ 3,500
2. Estimate to rebuild and reassemble bowl	\$21,000
3. Estimate to move components to well 13 site, set motor, meg, and overbalance motor, make bowl/motor connection	<u>\$ 4,000</u>
Total Project Estimate	\$28,500

The City is encouraged to visit our yard to inspect the bowl and motor components at any convenient time.

If you have any questions or comments, please do not hesitate to contact me.

Layne Christensen Company

William Balluff, P.E.
Account Manager III



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CITY OF GENEVA
 SPARE COMPONENTS
 INSPECTION REPORT

JOB NAME	Geneva Spare Components		WELL NO.		DATE	04/08/2022
JOB NO.	1147838	INSPECTED BY	J. Iverson, J. Kopp			
		BOWL ASSEMBLY	Byron Jackson 14 stage 13MQ/12MQL			
		MOTOR	Byron Jackson 300 HP, 14", 2300V, Type H			

MOTOR



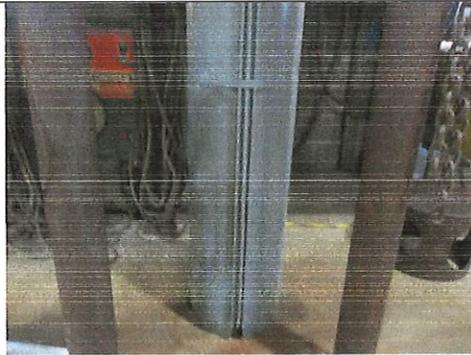
Byron Jackson 300 HP, 14", 2300V, Type H submersible motor in Layne inspection bay. S/N 14T-1003-4-1



Top of motor prior to shipping cap removal.



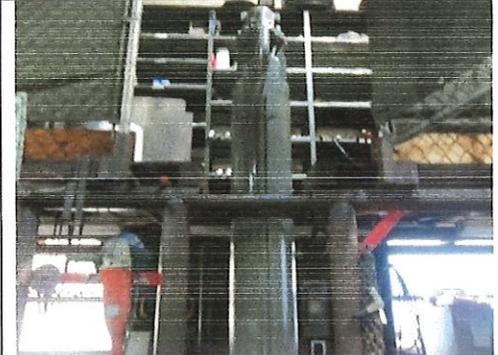
Top of motor after shipping cap removal.



Lower can



O-Ring joint between lower can and stator body



Stator body

Motor Observations

Motor S/N 14T-1003-4-1. Motor was Factory repaired in 2009 and has been in Geneva storage since that date.

Motor meets all specifications for return to service and appears in excellent condition. Reference attached Byron Jackson Motor Inspection – Type H report.

Motor Recommendations

Return to service.

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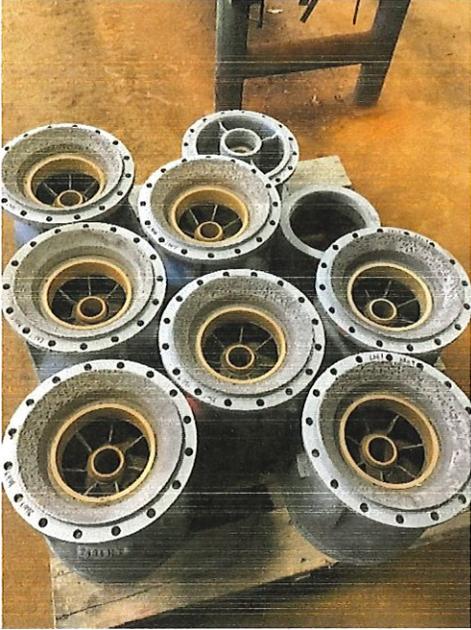
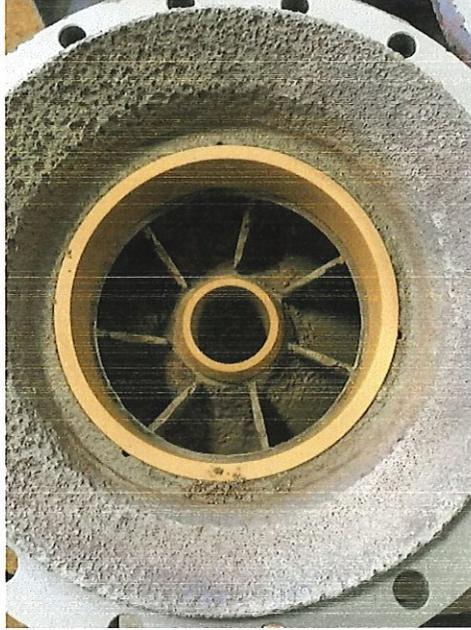
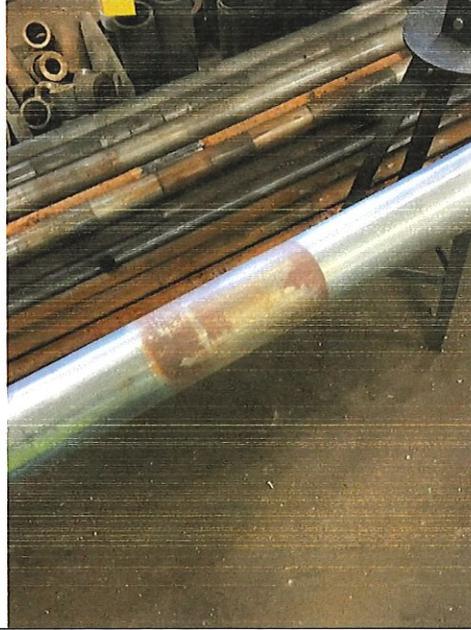
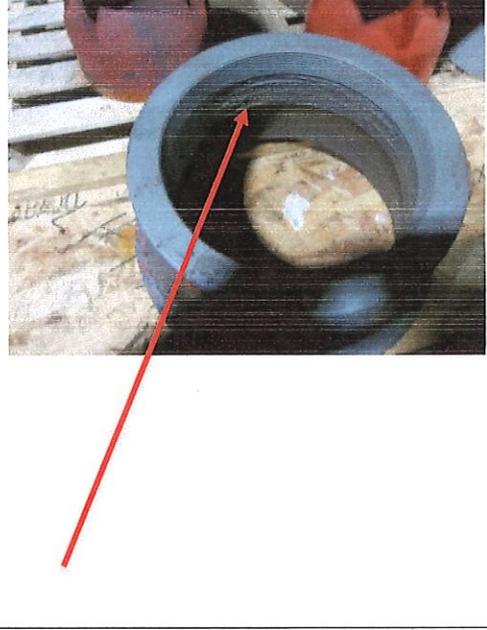
BYRON JACKSON MOTOR INSPECTION - TYPE H

Inspected By J. Iverson Date 04/08/2022Job Name Geneva Spare Components Job # 1147838HP 300 Size 14 Voltage 2300Motor Serial # 14T-1003-4-1Meg Overload all three legsShaft Projection Spec 7 13/16"Shaft Projection Measured 7 13/16"Shaft Run-Out .005"Rotation GreatFloat YesCondition of Stator Can ExcellentCondition of Lower Can ExcellentCondition of O-Ring Joint ExcellentCondition of Balance Tube ExcellentBalance Tube Clear? YesComments New as rebuilt by factoryIs Motor Field Service Eligible? Not applicableRecommendations: Return to service



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CITY OF GENEVA
SPARE COMPONENTS
INSPECTION REPORT

BOWL ASSEMBLY		
		
Representation of bowls after disassembly and sand blast	Upper casting (typ.)	Lower casting (typ.)
		
Impellers	Bushing location on impeller shaft (typ.)	Top Case flange with erosion to threads



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CITY OF GENEVA
SPARE COMPONENTS
INSPECTION REPORT

Bowl Assembly Observations

Factory built bowl installed new in 1995. Rebuilt with bushings and wear rings in 2003. Removed from Well 7 in 2008 and delivered to Geneva, as is, in 2008.

Wear ring clearances generally mic .034" to .042" with one at .056" and one at .064". Bushing clearances mic at .010" to .011". Impellers good for reuse. Outer cases are fair with moderate pitting. Interior cases have moderate vane erosion and side wall deterioration. Bowl does not have discharge pup. Fasteners are carbon steel. Stainless steel strainer and collets are OK for reuse. Impeller shaft is OK for reuse. Top case flange has wash out deterioration to threads.

Reference attached Bowl Inspection Report

Bowl Assembly Recommendations

Rebuild bowl with polish and straighten impeller shaft, deburr and polish collets, true impellers, new custom wear rings, apply steel epoxy to casting exterior pitting, and ceramic coat accessible casting interiors. Install 8" x 3' T&C epoxy coated discharge nipple.



BOWL ASSEMBLY INSPECTION REPORT

Project		Geneva, IL		Well No.	Spare	Date	4-7-2022
Project No.		1147838		Inspected by		John Kopp	
Serial No.		Byron Jackson CIBF		Bowl Assembly		13/12MQL – 14 Stage	
Stage No.	Wear Ring	Impeller Skirt	Clearance	Bearing ID	Impeller Shaft	Clearance	
1 (suction)	6.482	6.448	.034	1.948/1.947	1.937	.011/.010	
2	6.487	6.449	.042	1.947	1.937	.010	
3	6.482	6.448	.034	1.947	1.937	.010	
4	6.484	6.449	.035	1.948	1.937	.011	
5	6.477	6.413	.064	1.946	1.937	.009	
6	6.480	6.447	.033	1.947	1.937	.010	
7	6.486	6.449	.037	1.948	1.937	.011	
8	6.484	6.449	.035	1.948	1.937	.011	
9	6.484	6.449	.035	1.947	1.937	.010	
10	6.484	6.448	.036	1.948	1.937	.011	
11	6.490	6.450	.040	1.948	1.937	.011	
12	6.488	6.449	.039	1.947	1.937	.010	
13	6.506	6.450	.056	1.947	1.937	.010	
14	6.482	6.448	.034	1.948	1.937	.011	
			Top Case	1.948	1.937	.011	
			Port Body	1.948	1.937	.011	
<p>Note: Set up for use with 14" motor and 8" discharge (no pup installed), top case flange has threads washed out and needs to be replaced. I should have a good used option available.</p>							
Impeller Shaft	1-15/16" X 211-1/16", ok for reuse with polish and straighten						
Fasteners	Carbon Steel, replace with new stainless steel						
Strainer	SST, ok for reuse						
Collets	SST, ok for reuse						

COMMENTS: All impellers are ok for reuse. All cases have a fair exterior condition with some moderate pitting, which some of it has had steel epoxy already applied to it. Interior of all cases have moderate vane erosion and deterioration of side walls on the lower portion of the cases. Upper portion of the cases have moderate vane tip deterioration and skirt seat deterioration. If reusing, we recommend an application of ceramic coating at all eroded and deteriorated locations on the inside of cases. An application of steel epoxy is recommended on the exterior pits. Replacement of wear rings and true impellers as well. Reassemble with installation of 3' pup in end of pump. Standard application of Tnemec NSF epoxy to the exterior.

WATER RESOURCES