

January 21, 2021

ADM Flour Milling

Subject: January vibration service report

Most of the machines surveyed were found to be in good condition with the exception of the following:

QualiTest® uses a four step rating system for defects.

<u>Class I:</u> Defect is present, but effect on reliability is not clear; no immediate action is required. Continue to normally monitor.

<u>Class II</u>: Defect (s) present that may cause problem in long term (2-6 months.). Repair during normal maintenance scheduling. Continue to monitor.

<u>Class III</u>: Defect (s) present that may cause failure in short term (less than 2 months.). This should be addressed as soon as practical, with a high maintenance priority. Increase monitoring frequency.

<u>Class IV</u>; Defect (s) present that makes continued reliability unpredictable, and possibility of secondary damage is high. Repairs should be made ASAP. An unscheduled shutdown should be considered for repairs

Hi-Speed Industrial Service tests and inspects industrial machinery and equipment and makes recommendations concerning maintenance and repairs based on its experience in the field of industrial repair and maintenance. The information contained herein is provided as an opinion only, not as a guaranty or warranty of the matters discussed herein.

This completes our assessment of your equipment for this survey. Thank you for your business and don't hesitate to call if you have any comments or questions.

Sincerely,

David W. Shook Senior Reliability Specialist **QualiTest**
Diagnostics Division of *Hi-Speed* Industrial Service dshook@gohispeed.com

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Detailed Defects

Hammer Mill Lift Fan

This unit was reported the last survey. The fan bearings are in distress. Overall vibrations are over 1"/sec velocity peak and near 4.5G's RMS. Replace the fan bearings. Inspect the shafts, sheaves and belts for wear and alignment. **Rated a Class III Defect.**

Bolted Mill Filter Fan 1707

Data indicates the drive bearing is in very poor shape. The bearings should be replaced soon. Inspect all drive train components during repairs, replace worn components. **Rated a Class IV Defect.**

Observations

Flour Tower Fan 230

The vibration in the motor has risen significantly since the last survey. Motor shaft speed peak dominates the data. Inspect the motor and base for defects and loose fasteners. Ensure the motor sheave is not worn, has no run out, is clean and clear of buildup. Check the belts and fan sheave for wear also and make sure the sheaves are aligned. **Rated a Class II Defect.**

Bail master 1 Front Fan

Vibration data still indicates an issue with the fan shaft and/or belt drive components. Check for shaft and sheave run out, misalignment and sheave/belt wear. Check the structure for cracks. Rated a Class III Defect.

801 Fan

Fan speed vibration is up in the inboard fan bearing. Inspect the fan shaft and sheave for wear, run out and build up as time allows. Inspect the belts and motor sheave also. **Rated a Class II Defect.**

Hominy Lift Fan 222

The unit still has a dominant vibration at just below 60 Hz for all measurements. We suspect the fan is shaking the unit. Clean and inspect the fan wheel and check all fasteners and structures for defects. Inspect all drive train components for wear. **Rated a Class II Defect.**

Fan 267

Vibration data still shows what appears to be wear in the bearings. Expect to replace the bearings and inspect the sheaves. **Rated a Class II Defect.**

Fan 224

The unit still has what appears to be a fan shaft speed vibration in the motor, or possibly a belt vibration or harmonic at near 1"/sec velocity peak. Check the sheaves for wear, run out and alignment. Replace all worn components, as necessary. **Rated a Class II Defect.**

Fan 227

There is still a vibration at 53.2 Hz. The fan bearings have a few harmonic vibrations that can't be explained without specific defect frequencies. Inspect the unit for defects in structure, fasteners, and drive train components. **Rated a Class II Defect.**

Fan 803

There is an increase in a vibration for the motor axial measurement at 33.29 Hz and the first harmonic. We suspect worn drive train components are the main issue. Inspect all components for defects or wear as time allows. **Rated a Class II Defect.**

South Line Shaft

Data seems to indicate some distress in the motor drive end bearing. There has been an increase in what appears to be harmonics of non-synchronous vibration peaks in the spectrum. Inspect the drive train components for wear and alignment to reduce unnecessary loading. The first bearing also seems to suffer from early defects. Both **Rated a Class II Defect.**

North Line Shaft Bearing 1

This bearing shows signs of wear, but at a lower level than the South unit. Rated a Class I Defect.