



QualiTest® Diagnostics

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The following is a summary of findings from the June 2022 monthly vibration survey at the USG Greenville, MS Plant. Please let us know if there are any questions or comments.

QualiTest® uses a four-step rating system for defects.

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

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

Class III: 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.

Class IV: 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.

Defects

Perlite

#5 Combustion Blower

Overall vibration has increased significantly at the blower inboard horizontal. Blower data shows a sub-synchronous vibration that may be belt related. Inspect belts and sheaves soon. Ensure belts are tightened properly and not worn or defective while also ensuring a good sheave alignment. Rated as a **CLASS III** defect.

#6 Combustion Blower

Blower data shows some high amplitudes with 1, 2, and 3 x rpm being dominant in spectra. This is likely some type of structural looseness and or bearing fit/shaft looseness. Inspect unit as scheduling allows. Rated as a **CLASS II** defect.

#7 Combustion Blower

The fan bearings were recently changed on this unit; however, vibration remains high. There appears to be ½ rpm harmonics in the fan spectra. This typically indicates fit looseness. Shaft may be worn. Ensure sheave hub is tight and perform lift check of fan shaft with dial indicator to confirm shaft deflection. Also ensure fan is tight on shaft. **Unit needs attention as scheduling allows.** Rated as a **CLASS II** defect.

#5 Expander Dust Collector

High 1 x rpm vibration is still present and indicates imbalance of the fan wheel. Fan wheel needs to be inspected as scheduling allows. **A field balance is likely necessary.** Rated as a **CLASS III** defect.

#6 Expander Dust Collector

1 x and 2 x fan rpm vibration is dominant in the fan inboard vertical spectral data. This is most likely due to a combination of imbalance and deteriorated grout around the fan base. Inspect and clean fan wheel. Base needs to be re-grouted in the near future. Rated as a **CLASS II** defect.

#8 Expander Dust Collector

Motor still has high amplitude/high frequency/non-synchronous vibration. **Drive end bearing is showing signs of significant defects/wear. Motor needs attention very soon.** Rated as a **CLASS III** defect.

Hydrapulper

Gearbox continues to show some signs of gear issue and possible bearing issue. Drive motor is also showing some signs of bearing defect(s) in the motor and possible rotor bar issue. Rated as a **CLASS II** defect for now.

Mix-up/Reclaim

Ultra-Sorter Screen

Motor base was found to be cracked last month, and it is unclear if this issue has been repaired. Motor vibration has decreased some; however, screen bearings are showing signs of wear. Screen bearings may need to be replaced in the near future. We will continue to monitor this issue closely. Rated as a **CLASS II** defect.

Dump Chest Agitator

Motor still has a significant 1 x rpm motor horizontal vibration with small rpm harmonics. This is an indication of structural or misalignment issue. Coupling may also, have issue. **Inspect/repair frame/base, inspect coupling and re-align motor to less than .003" offset and angularity.** Rated as a **CLASS II** defect.

#2 White Water Loop Pump

Vibration data of the motor indicates defects are present in the motor bearings. **Motor needs to be replaced as soon as practical.** Rated as a **CLASS III** defect.

Board Line 3

Machine Chest Pump 3B

Motor is showing signs of bearing defects in the motor bearings. Rated as a **CLASS II** defect.

#3 Top Press Roll Drive

Motor may be operating near a resonant frequency. Motor speed was around 1518 rpm and 1 x rpm amplitude was 1 .1 ips-pk. It is recommended to stay away from this range to help minimize vibration and other issues. Rated as a **CLASS II** defect.

Board Line Main Drive

Overall amplitude at motor is over 1 ips-pk. We have suspected this issue to be possible resonance but may also be issue such as sheave misalignment and or loose fasteners. Inspect for these issues soon. Rated as a **CLASS III** defect.

#1 Former White-Water Pit Pump

Vibration spectra of the motor signs of bearing defects of the drive end bearing. Inspect motor as scheduling allows. Rated as a **CLASS II** defect.

Vacuum Pumps (1,2, and 3)

We are seeing some mid to high frequency noise floor in the motor spectra on all three motors. We suspect the bearings are starting to develop electrical fluting of the races. This is a common issue with AC motors being operated by VFD's that do not having grounding protection. We highly recommend letting us install an Aegis Grounding ring inside the motor at the drive end and installing an insulated bearing on the outboard end of the motor. This will help tremendously with fluting issues. This should be done as soon as scheduling allows. Rated as **CLASS II** defects.

Wet End Combustion Blower

Blower bearings are continuing to trend upward on defect frequency vibration. Acceleration has also increased again this survey. These are signs of bearing defects/wear. **Bearings should be scheduled for replacement as soon as scheduling allows.** Rated as a **CLASS II** defect for now.

Finishing

Grinders 2 and 4

These motors have higher 1 x rpm vibration. May be related to grinding assembly issues such as imbalance. Inspect grinders as time allows. Rated as **CLASS II** defects.

Kiln Lube Oil Pump

The pump is showing signs of wear. Impacting can be seen in the vibration data along with pump vane harmonics. We will monitor this closely. Rated as a **CLASS II** defect.

Blue Oven 1 Zone 1 Circulation Fan 1

Vibration data indicates that the fan is out of balance. It is recommended to inspect the fan wheel for build-up and damage. Ensure sheaves are aligned properly and belts are in good shape and properly tightened. Rated as a **CLASS II** defect.

Blue Oven 1 Zone 1 Circulation Fan 2

Vibration data of the fan bearing indicates bearing faults more so in the bottom fan bearing. It is recommended to replace fan bearings as scheduling allows. Rated as a **CLASS II** defect.

Blue Oven 1 Zone 2 Circulation Fan 1 and 2

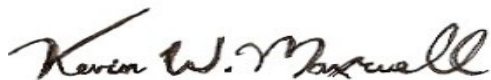
Motor and fan vibrations remain higher than normal. Vibration is at fan speed in the motor and fan. This may be due to build-up on the fan. Inspect fan wheel for build-up and damage ASAP. Inspect sheaves and belts as well. Rated as a **CLASS III** defect.

#3 Finishing Baghouse Dust Collector

Data of the motor and fan indicates some possible drivetrain issues such as sheave misalignment and or belt issues. Inspect sheaves and belts soon. Ensure sheaves do not have face run-out and are aligned properly. Rated as a **CLASS II** defect.

As always, it has been a pleasure to serve USG Greenville, MS. If there are any comments or questions, do not hesitate to contact us.

Sincerely,



ISO Certified Vibration Analyst, Category III



QualiTest® Diagnostics

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