7030 Ryburn Dr. Millington, TN Phone: (901) 873-5300 Fax: (901) 873-5301 www.gohispeed.com

June 3, 2024

Terry Glover
USG-Greenville
Greenville, MS

Terry,

The following is a summary of findings from the May 2024 monthly vibration survey at the USG Greenville, MS Plant. Please note that we have added an abbreviated last measurement report which is at the end of this report.

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

Defects

Perlite

#5 Combustion Blower
There is a high sub-synchronous vibration in the motor axial. This may be a harmonic of belt frequency. Checks belts and sheaves for wear and misalignment soon. Rated as a **CLASS III** defect.

#5 Expander Dust Collector
New motor has elevated 1 x rpm vibration at motor rpm. This is likely a sheave issue or could also be a base issue. Check sheave alignment ensuring sheaves are aligned properly for offset and angularity. Check face run-out on motor sheave. There should not be no more than .003" face run-out. Check all fasteners and ensure motor base is not defective. Rated as a **CLASS II** defect.

#6 Expander Dust Collector
Fan has high vibration. Axial data shows a dominant 2 x fan rpm vibration. 1-4 x rpm vibration that can still be seen in all fan spectral data is likely due to a combination of issues such as bent or worn fan shaft and internal fan bearing fit looseness/wear. Inspect fan bearings for looseness by performing a lift check of the fan shaft. Should not have more than .003" lift max. Inspect fan shaft for run-out as well. There is also deteriorated grout around the fan base. Base needs to be re-grouted in the near future. Rated as a **CLASS III** defect.

#7 Expander Dust Collector
Motor has a beat vibration that appears to be near motor/fan rpm. This may be sheave/belt related**.** Check sheaves and belts for wear and misalignment and check all base fasteners. Check angularity and offset alignment. Rated as a **CLASS II** defect.

#8 Expander Dust Collector
Fan vibration has increased quite a bit over the past few surveys. Dominant vibration is at 1 x fan rpm which indicates imbalance. It is recommended to check the fan for build-up soon. A trim balance may be needed. Rated as a **CLASS III** defect.

Hydropulper
Gearbox data shows some signs of wear in the gearbox. Low level at this time. We will continue to monitor closely. Rated as a **CLASS I** defect.

Mix-up/Reclaim

Ultra-Sorter Screen
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.

#1 White Water Loop Pump
Motor data shows signs of bearing defects on the ODE motor bearing. Motor will need attention in the next few months. Rated as a **CLASS II** defect.

White Water Mix-up Pump
Motor was not running this survey; however, the following likely still applies: Motor data indicates defects in motor bearings. Replace motor as scheduling allows. Ensure motor is outdoor duty. Rated as a **CLASS II** defect.

Beater Tank Transfer Pump
Motor was not running this survey; however, the following likely still applies: The motor data shows motor to have bearing defects. There are two pumps by the beater. This motor is the newer looking motor with the newer pump. Motor needs to swapped out as time allows. Rated as a **CLASS II** defect.

Fiberglass

#1 Oven Circ. Fan
The motor and fan inboard side has high vibration at fan speed. This may be due to some type of sheave issue and/or structural flexibility. Inspect sheaves and belts soon. Ensure sheaves do not have face run-out and offset and angularity alignment is good. Ensure belts are tensioned properly. Rated as **CLASS II** defect.

#2 Oven Circ Fan
Data shows some 1, 2, and 3 x rpm vibrations present in the fan. The motor also has high vibration at 1 x fan rpm. Fan bearing fits may be bad and fan shaft may be bent and or worn. Fan may also have some imbalance due to build-up on fan blades. Rated as a **CLASS II** defect.

Board Line 3

Vacuum Pump MOTORS (1,2, and 3)
We are still seeing some mid to high frequency noise floor in the motor spectra on all three motors with Vac Pump Motor #1 being the highest amplitude of vibration. This issue appears to be stable; however, we suspect possible fluting of the motor bearings may be starting to develop. This is a common issue with AC motors being operated by VFD's that do not having grounding protection. We recommend installing an Aegis Grounding ring inside the motor at the drive end and installing an insulated bearing on the outboard end of the motor. **There are also signs of lubrication issue in #1 MOTOR. Ensure motors have adequate amounts of grease. Rated as CLASS I defect.**
NOTE that #1 Vacuum Motor is a CLASS II defect.

#3 Vacuum Pump
DE pump bearing spectral data continues to show defects are present in the DE pump bearing. We will continue to monitor this closely. Rated as a **CLASS III** defect.

Wet End Combustion Blower
Blower bearings are trending upward on defect frequency vibration. Acceleration has had a steady increase in amplitude. These are signs of bearing defects/wear. Bearings should be scheduled for replacement as soon as scheduling allows**.** Rated as a **CLASS II** defect.

White Water Pump (outside)
Motor/Pump base is loose to concrete and is causing a very high vertical vibration at 12 Hz (amplitude is 1.7 ips-pk) which appears to be pump speed. Base needs to be anchored soon. Rated as a **CLASS III** defect.

Wet End Circulation Fan
New motor looks good as far as vibration goes. Fan still has some slight 1 x rpm vibration likely due to fan imbalance. A trim balance may be needed in the future. Rated as a **CLASS I** defect.

Finishing

Finish Grinder #4
Drive motor still has elevated 1 x rpm vibration at the ODE of the motor. Horizontal amplitude was 1.55 ips-pk. This may be due to the motor operating near or at a resonant (natural frequency of the structure. Motor rpm was 1575 during testing. Check all fasteners and drive components. Change speed on VFD if possible. Rated as a **CLASS II** defect.

Blue Oven 1 Zone 1 Circulation Fan 1
Fan end fan bearing (outboard) data is showing signs of defects/wear. Motor and fan also have some 1 x rpm vibrations. Fan bearings will need attention soon. Also, 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
Fan end fan bearing (outboard) data is showing signs of defects/wear. Motor and fan also have some 1 x rpm vibrations. Fan bearings will need attention soon. Also, ensure sheaves are aligned properly and belts are in good shape and properly tightened. Rated as a **CLASS II** defect.

Blue Oven 1 Zone 2 Circulation Fan 1 and 2
Motor and fan vibrations remain high at well over 1.2 inches/second peak velocity. 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. Ensure fan bearings have adequate grease. Rated as a **CLASS III** defect.

#3 Finishing Baghouse Dust Collector
Vertical data of the motor and fan also indicate some possible drivetrain issues such as sheave misalignment and or belt issues. For now, inspect, sheaves and belts as scheduling allows. Ensure sheaves do not have face run-out and are aligned to spec. Check base springs to ensure they are in good shape and set properly. Rated as a **CLASS II** defect.

Hi-Pressure Water Pump
Motor data still shows signs of bearing defects and/or lube issue. Ensure motor bearings are getting adequate amount of grease. This will continue to be monitored closely. Rated as a **CLASS I** defect.

Abbreviated Last Measurement Summary

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Database: USG.rbm
Area: PERLITE

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
B2EXD02FAN - #5 COMBUSTION BLOWER	(31-May-24)	
	OVERALL LEVEL	1K-20KHz
MOH	.178 In/Sec	.282 G-s
MOV	.724 In/Sec	.094 G-s
MIH	.269 In/Sec	.179 G-s
MIV	.181 In/Sec	.042 G-s
MIA	1.104 In/Sec	.030 G-s
BIH	.195 In/Sec	3.114 G-s
BIV	.090 In/Sec	.497 G-s
BIA	.261 In/Sec	.363 G-s
BOH	.180 In/Sec	.658 G-s
BOV	.121 In/Sec	.174 G-s
B2EXD06FAN - #6 COMBUSTION BLOWER	(31-May-24)	
	OVERALL LEVEL	1K-20KHz
MOH	.075 In/Sec	.265 G-s
MOV	.244 In/Sec	.093 G-s
MIH	.079 In/Sec	.306 G-s
MIV	.206 In/Sec	.042 G-s
MIA	.322 In/Sec	.047 G-s
BIH	.376 In/Sec	1.500 G-s
BIV	.211 In/Sec	.170 G-s
BIA	.303 In/Sec	.176 G-s
BOH	.174 In/Sec	1.136 G-s
BOV	.116 In/Sec	.117 G-s
B2EXD07FAN - #7 COMBUSTION BLOWER	(31-May-24)	
	OVERALL LEVEL	1K-20KHz
MOH	.091 In/Sec	.334 G-s
MOV	.500 In/Sec	.072 G-s
MIH	.084 In/Sec	.299 G-s
MIV	.474 In/Sec	.058 G-s
MIA	.150 In/Sec	.061 G-s
BIH	.351 In/Sec	1.479 G-s
BIV	.182 In/Sec	.219 G-s
BIA	.181 In/Sec	.183 G-s
BOH	.163 In/Sec	1.947 G-s
BOV	.118 In/Sec	.362 G-s
B2EXD08FAN - #8 COMBUSTION BLOWER	(31-May-24)	
	OVERALL LEVEL	1K-20KHz
MOH	.102 In/Sec	.229 G-s
MOV	.320 In/Sec	.071 G-s
MIH	.117 In/Sec	.254 G-s
MIV	.387 In/Sec	.058 G-s
MIA	.173 In/Sec	.054 G-s
BIH	.247 In/Sec	2.577 G-s
BIV	.181 In/Sec	.461 G-s
BIA	.171 In/Sec	.348 G-s
BOH	.306 In/Sec	1.975 G-s
BOV	.235 In/Sec	.282 G-s
B2EXD02-5 - #5 EXPANDER DUST COLLECTOR	(31-May-24)	
	OVERALL LEVEL	1K-20KHz
MOH	.566 In/Sec	.350 G-s
MOV	.553 In/Sec	.098 G-s
MIH	.514 In/Sec	.610 G-s
MIV	.416 In/Sec	.134 G-s

MIA	.063 In/Sec	.088 G-s
FIH	.303 In/Sec	.429 G-s
FIV	.168 In/Sec	.230 G-s
FIA	.180 In/Sec	.085 G-s
FOH	.291 In/Sec	.506 G-s
FOV	.197 In/Sec	.154 G-s

B2EXD0306 - #6 EXPANDER DUST COLLECTOR (31-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.135 In/Sec	.261 G-s
MOV	.097 In/Sec	.107 G-s
MIH	.136 In/Sec	.431 G-s
MIV	.104 In/Sec	.185 G-s
MIA	.122 In/Sec	.234 G-s
FIH	.811 In/Sec	1.225 G-s
FIV	.466 In/Sec	.766 G-s
FIA	1.001 In/Sec	.195 G-s
FOH	.439 In/Sec	1.287 G-s
FOV	.203 In/Sec	.452 G-s

B2EXD04-7 - #7 EXPANDER DUST COLLECTOR (31-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.870 In/Sec	.558 G-s
MOV	.752 In/Sec	.110 G-s
MIH	.631 In/Sec	.496 G-s
MIV	1.183 In/Sec	.136 G-s
MIA	.300 In/Sec	.089 G-s
FIH	.230 In/Sec	.931 G-s
FIV	.156 In/Sec	.292 G-s
FIA	.308 In/Sec	.192 G-s
FOH	.277 In/Sec	1.916 G-s
FOV	.156 In/Sec	.570 G-s

B2EXD05-8 - #8 EXPANDER DUST COLLECTOR (31-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.157 In/Sec	.942 G-s
MOV	.167 In/Sec	.221 G-s
MIH	.130 In/Sec	2.171 G-s
MIV	.209 In/Sec	.793 G-s
MIA	.132 In/Sec	.616 G-s
FIH	.822 In/Sec	.998 G-s
FIV	.417 In/Sec	.622 G-s
FIA	.478 In/Sec	.205 G-s
FOH	.742 In/Sec	1.099 G-s
FOV	.386 In/Sec	.225 G-s

B2PUP02GEA - HYDRAPULPER (31-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.362 In/Sec	.421 G-s
MOV	.090 In/Sec	.488 G-s
MIH	.416 In/Sec	.404 G-s
MIV	.176 In/Sec	.971 G-s
MIA	.112 In/Sec	.411 G-s
GIH	.403 In/Sec	1.232 G-s
GIV	.253 In/Sec	.839 G-s
GIA	.308 In/Sec	2.268 G-s
GOH	.379 In/Sec	1.027 G-s

Area: MIX UP/RECLAIM

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD

B2PUP03AGT - DUMP CHEST AGITATOR (31-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.122 In/Sec	.238 G-s
MOV	.125 In/Sec	.095 G-s
MIH	.079 In/Sec	.246 G-s
MIV	.261 In/Sec	.075 G-s

MIA	.157 In/Sec	.077 G-s
AIH	.043 In/Sec	.173 G-s
AIV	.051 In/Sec	.032 G-s
AIA	.054 In/Sec	.047 G-s
AOH	.058 In/Sec	.345 G-s
AOV	.035 In/Sec	.156 G-s

REFNCHSTAG - REFINED CHEST AGITATOR (31-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.072 In/Sec	.295 G-s
MOV	.117 In/Sec	.044 G-s
MIH	.085 In/Sec	.287 G-s
MIV	.144 In/Sec	.058 G-s
MIA	.079 In/Sec	.081 G-s
AIH	.067 In/Sec	.179 G-s
AIV	.056 In/Sec	.055 G-s
AIA	.037 In/Sec	.039 G-s
AOH	.128 In/Sec	.117 G-s
AOV	.063 In/Sec	.090 G-s

1WWLOOPPMP - #1 WHITE WATER LOOP PUMP (31-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.183 In/Sec	.686 G-s
MOV	.450 In/Sec	.292 G-s
MIH	.395 In/Sec	1.315 G-s
MIV	.548 In/Sec	.356 G-s
MIA	.330 In/Sec	.371 G-s
PIH	.179 In/Sec	.224 G-s
PIV	.176 In/Sec	.051 G-s
PIA	.171 In/Sec	.055 G-s
POH	.160 In/Sec	.205 G-s
POV	.137 In/Sec	.072 G-s

B2WEL1PMP1 - #1 EAST WELL WATER PUMP (31-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.186 In/Sec	.459 G-s
MOV	.205 In/Sec	.321 G-s
MIH	.294 In/Sec	1.084 G-s
MIV	.336 In/Sec	.351 G-s
MIA	.265 In/Sec	.351 G-s
PIH	.056 In/Sec	.677 G-s
PIV	.085 In/Sec	.182 G-s
PIA	.180 In/Sec	.223 G-s
POH	.161 In/Sec	1.749 G-s
POV	.110 In/Sec	.172 G-s

B2BTR1AGIT - BEATER AGITATOR (31-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.208 In/Sec	.379 G-s
MOV	.130 In/Sec	.109 G-s
MIH	.207 In/Sec	.457 G-s
MIV	.118 In/Sec	.102 G-s
MIA	.070 In/Sec	.101 G-s
AIH	.101 In/Sec	.080 G-s
AIV	.039 In/Sec	.019 G-s
AIA	.104 In/Sec	.017 G-s
AOH	.044 In/Sec	.185 G-s
AOV	.030 In/Sec	.020 G-s

Area: FIBERGLASS

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD

F1-DCR - FIBERGLASS DC FAN OLD LINE (31-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.234 In/Sec	1.341 G-s
MOV	.351 In/Sec	.281 G-s
MIH	.225 In/Sec	1.343 G-s

MIV	.336 In/Sec	.308 G-s
MIA	.367 In/Sec	.416 G-s
FIH	.234 In/Sec	.423 G-s
FIV	.137 In/Sec	.130 G-s
FIA	.145 In/Sec	.072 G-s
FOH	.222 In/Sec	1.160 G-s
FOV	.126 In/Sec	.208 G-s

F1T1DCRFAN - FIBERGLASS DC FAN NEW LINE (31-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.065 In/Sec	.218 G-s
MOV	.087 In/Sec	.190 G-s
MIH	.079 In/Sec	.357 G-s
MIV	.079 In/Sec	.054 G-s
MIA	.087 In/Sec	.080 G-s
FIH	.070 In/Sec	.312 G-s
FIV	.079 In/Sec	.197 G-s
FIA	.129 In/Sec	.090 G-s
FOH	.117 In/Sec	.782 G-s
FOV	.108 In/Sec	.433 G-s

Area: BOARD LINE 3

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD

B3TFM05PMP - #3 MACHINE WHITE WATER PUMP (30-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.697 In/Sec	.905 G-s
MOV	.808 In/Sec	.209 G-s
MIH	.451 In/Sec	.959 G-s
MIV	1.058 In/Sec	.151 G-s
MIA	.294 In/Sec	.292 G-s
PIH	.276 In/Sec	.952 G-s
PIV	.867 In/Sec	.126 G-s
PIA	.109 In/Sec	.111 G-s
POH	.271 In/Sec	.298 G-s
POV	.581 In/Sec	.097 G-s

B3TFM3PMPA - MACHINE CHEST PUMP 3A (30-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.095 In/Sec	.706 G-s
MOV	.075 In/Sec	.214 G-s
MIH	.105 In/Sec	.751 G-s
MIV	.097 In/Sec	.159 G-s
MIA	.074 In/Sec	.191 G-s
PIH	.039 In/Sec	.509 G-s
PIV	.028 In/Sec	.081 G-s
PIA	.027 In/Sec	.256 G-s
POH	.027 In/Sec	.147 G-s
POV	.021 In/Sec	.060 G-s

B3-VAC-01 - LINE 3 VACUUM PUMP #1 (30-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.112 In/Sec	1.331 G-s
MOV	.124 In/Sec	.190 G-s
MIH	.101 In/Sec	1.104 G-s
MIV	.177 In/Sec	.261 G-s
MIA	.094 In/Sec	.215 G-s
PIH	.129 In/Sec	.221 G-s
PIV	.080 In/Sec	.074 G-s
PIA	.128 In/Sec	.053 G-s
POH	.222 In/Sec	1.077 G-s
POV	.147 In/Sec	.472 G-s

B3-VAC-02 - LINE 3 VACUUM PUMP #2 (30-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.093 In/Sec	1.294 G-s
MOV	.130 In/Sec	.310 G-s

MIH	.116 In/Sec	1.120 G-s
MIV	.165 In/Sec	.266 G-s
MIA	.119 In/Sec	.429 G-s
PIH	.102 In/Sec	.117 G-s
PIV	.120 In/Sec	.031 G-s
PIA	.161 In/Sec	.054 G-s
POH	.531 In/Sec	.067 G-s
POV	.174 In/Sec	.013 G-s

B3-VAC-03 - LINE 3 VACUUM PUMP #3 (30-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.122 In/Sec	1.431 G-s
MOV	.161 In/Sec	.307 G-s
MIH	.087 In/Sec	1.178 G-s
MIV	.114 In/Sec	.261 G-s
MIA	.059 In/Sec	.383 G-s
PIH	.142 In/Sec	.314 G-s
PIV	.123 In/Sec	.136 G-s
PIA	.144 In/Sec	.212 G-s
POH	.249 In/Sec	.108 G-s
POV	.095 In/Sec	.024 G-s

LOWVACFAN - LOW VACUUM FAN (30-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.229 In/Sec	.666 G-s
MOV	.452 In/Sec	.257 G-s
MIH	.155 In/Sec	.933 G-s
MIV	.240 In/Sec	.234 G-s
MIA	.087 In/Sec	.399 G-s
FIH	.184 In/Sec	.964 G-s
FIV	.284 In/Sec	.233 G-s
FIA	.077 In/Sec	.089 G-s
FOH	.068 In/Sec	.533 G-s
FOV	.119 In/Sec	.221 G-s

B3-VAC-06A - #2 FORMER WHITE WTR PIT PMP (30-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.289 In/Sec	.439 G-s
MOV	.470 In/Sec	.099 G-s
MIH	.089 In/Sec	.233 G-s
MIV	.177 In/Sec	.070 G-s
MIA	.100 In/Sec	.078 G-s
PIH	.085 In/Sec	.106 G-s
PIV	.078 In/Sec	.064 G-s
PIA	.105 In/Sec	.067 G-s
POH	.072 In/Sec	.456 G-s
POV	.053 In/Sec	.058 G-s

B3-VAC-10 - SEAL WATER RETURN PUMP (30-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.032 In/Sec	.587 G-s
MOV	.031 In/Sec	.123 G-s
MIH	.039 In/Sec	.763 G-s
MIV	.033 In/Sec	.264 G-s
MIA	.043 In/Sec	.139 G-s
PIH	.025 In/Sec	.121 G-s
PIV	.022 In/Sec	.043 G-s
PIA	.026 In/Sec	.042 G-s
POH	.015 In/Sec	.042 G-s
POV	.014 In/Sec	.015 G-s

B3FRM7SHW - HIGH PRESSURE SHOWER PUMP (30-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.057 In/Sec	.758 G-s
MOV	.113 In/Sec	.215 G-s
MIH	.044 In/Sec	.624 G-s
MIV	.108 In/Sec	.139 G-s
MIA	.081 In/Sec	.152 G-s
PIH	.226 In/Sec	.864 G-s
PIV	.209 In/Sec	.705 G-s

	PIA	.092 In/Sec	.335 G-s
	POH	.187 In/Sec	.607 G-s
	POV	.172 In/Sec	.213 G-s

B2PUP03AGT - C Tank Agitator (30-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.073 In/Sec	.138 G-s
MOV	.048 In/Sec	.032 G-s
MIH	.062 In/Sec	.211 G-s
MIV	.050 In/Sec	.040 G-s
MIA	.046 In/Sec	.034 G-s
AIH	.025 In/Sec	.084 G-s
AIV	.017 In/Sec	.030 G-s
AIA	.023 In/Sec	.018 G-s
AOH	.020 In/Sec	.101 G-s
AOV	.014 In/Sec	.046 G-s

2 - Machine Stock Holding Agitat (30-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.028 In/Sec	.108 G-s
MOV	.057 In/Sec	.029 G-s
MIH	.025 In/Sec	.167 G-s
MIV	.042 In/Sec	.018 G-s
MIA	.040 In/Sec	.012 G-s
AIH	.013 In/Sec	.028 G-s
AIV	.013 In/Sec	.0070 G-s
AIA	.025 In/Sec	.0084 G-s
AOH	.012 In/Sec	.026 G-s
AOV	.016 In/Sec	.0084 G-s

87 - White water agitator (30-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.100 In/Sec	.113 G-s
MOV	.087 In/Sec	.031 G-s
MIH	.087 In/Sec	.139 G-s
MIV	.070 In/Sec	.093 G-s
MIA	.038 In/Sec	.042 G-s
AIH	.024 In/Sec	.191 G-s
AIV	.019 In/Sec	.029 G-s
AIA	.023 In/Sec	.045 G-s
AOH	.022 In/Sec	.107 G-s
AOV	.032 In/Sec	.045 G-s

3 - #3 TOP PRESS ROLL DRIVE (30-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	1.080 In/Sec	.700 G-s
MOV	.213 In/Sec	.172 G-s
MIH	.226 In/Sec	.559 G-s
MIV	.144 In/Sec	.155 G-s
MIA	.486 In/Sec	.117 G-s
GIH	.331 In/Sec	.057 G-s
GIV	.175 In/Sec	.022 G-s
GIA	.085 In/Sec	.012 G-s
GOH	.202 In/Sec	.018 G-s
GOV	.196 In/Sec	.012 G-s
GOA	.101 In/Sec	.011 G-s

3b - #3 BOTTOM PRESS ROLL DRIVE (30-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.131 In/Sec	.699 G-s
MOV	.111 In/Sec	.145 G-s
MIH	.132 In/Sec	.929 G-s
MIV	.113 In/Sec	.224 G-s
MIA	.172 In/Sec	.289 G-s
GIH	.114 In/Sec	.031 G-s
GIV	.048 In/Sec	.025 G-s
GIA	.017 In/Sec	.043 G-s
GOH	.087 In/Sec	.034 G-s
GOV	.037 In/Sec	.020 G-s
GOA	.020 In/Sec	.011 G-s

B3FRM8ROLA - #2 TOP PRESS ROLL DRIVE (30-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.108 In/Sec	.493 G-s
MOV	.101 In/Sec	.071 G-s
MIH	.114 In/Sec	.427 G-s
MIV	.144 In/Sec	.188 G-s
MIA	.090 In/Sec	.127 G-s
GIH	.055 In/Sec	.057 G-s
GIV	.054 In/Sec	.019 G-s
GIA	.023 In/Sec	.014 G-s
GOH	.030 In/Sec	.032 G-s
GOV	.041 In/Sec	.010 G-s
GOA	.022 In/Sec	.011 G-s

B3FRM8ROLB - #2 BOTTOM PRESS ROLL DRIVE (30-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.167 In/Sec	.217 G-s
MOV	.155 In/Sec	.066 G-s
MIH	.108 In/Sec	.389 G-s
MIV	.137 In/Sec	.096 G-s
MIA	.071 In/Sec	.087 G-s
GIH	.086 In/Sec	.027 G-s
GIV	.044 In/Sec	.012 G-s
GIA	.032 In/Sec	.0091 G-s
GOH	.064 In/Sec	.018 G-s
GOV	.024 In/Sec	.0079 G-s
GOA	.036 In/Sec	.0067 G-s

1 - #1 TOP PRESS ROLL DRIVE (30-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.116 In/Sec	.669 G-s
MOV	.119 In/Sec	.083 G-s
MIH	.061 In/Sec	.674 G-s
MIV	.104 In/Sec	.154 G-s
MIA	.115 In/Sec	.165 G-s
GIH	.042 In/Sec	.052 G-s
GIV	.069 In/Sec	.024 G-s
GIA	.023 In/Sec	.022 G-s
GOH	.019 In/Sec	.023 G-s
GOV	.042 In/Sec	.018 G-s
GOA	.019 In/Sec	.010 G-s

1b - #1 BOTTOM PRESS ROLL DRIVE (30-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.272 In/Sec	.481 G-s
MOV	.210 In/Sec	.093 G-s
MIH	.070 In/Sec	.556 G-s
MIV	.162 In/Sec	.154 G-s
MIA	.527 In/Sec	.139 G-s
GIH	.034 In/Sec	.137 G-s
GIV	.082 In/Sec	.042 G-s
GIA	.020 In/Sec	.037 G-s
GOH	.021 In/Sec	.048 G-s
GOV	.040 In/Sec	.019 G-s
GOA	.026 In/Sec	.024 G-s

B3-FRM-11 - #3 BOARD LINE DRIVE (30-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.119 In/Sec	1.070 G-s
MOV	.129 In/Sec	.565 G-s
MIH	.219 In/Sec	.524 G-s
MIV	.317 In/Sec	.241 G-s
MIA	.158 In/Sec	.140 G-s
G1I	.030 In/Sec	.266 G-s
GIV	.068 In/Sec	.376 G-s
G1A	.056 In/Sec	.122 G-s
G1O	.023 In/Sec	.201 G-s
G2O	.026 In/Sec	.151 G-s
GOV	.044 In/Sec	.221 G-s

G2I	.025 In/Sec	.170 G-s
G2A	.057 In/Sec	.065 G-s

B3-KBS-02 - WET END CIRCULATION FAN (30-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.077 In/Sec	.342 G-s
MOV	.027 In/Sec	.099 G-s
MIH	.090 In/Sec	.385 G-s
MIV	.027 In/Sec	.084 G-s
MIA	.022 In/Sec	.105 G-s
FIH	.117 In/Sec	.032 G-s
FIV	.054 In/Sec	.039 G-s
FIA	.118 In/Sec	.032 G-s
FOH	.069 In/Sec	.016 G-s
FOV	.024 In/Sec	.0062 G-s
FOA	.058 In/Sec	.0048 G-s

B3KBS01BLW - WET END COMBUSTION BLOWER (30-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.058 In/Sec	.532 G-s
MOV	.064 In/Sec	.111 G-s
MIH	.079 In/Sec	.625 G-s
MIV	.239 In/Sec	.133 G-s
MIA	.068 In/Sec	.103 G-s
BIH	.108 In/Sec	1.155 G-s
BIV	.081 In/Sec	.703 G-s
BIA	.106 In/Sec	.517 G-s
BOH	.095 In/Sec	1.927 G-s
BOV	.174 In/Sec	.569 G-s

B3-KBS-05 - DRY END CIRCULATION FAN (30-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.092 In/Sec	.484 G-s
MIH	.055 In/Sec	1.261 G-s
MIV	.021 In/Sec	1.173 G-s
MIA	.014 In/Sec	.614 G-s
FIH	.082 In/Sec	.107 G-s
FIV	.019 In/Sec	.128 G-s
FIA	.030 In/Sec	.154 G-s
FOH	.055 In/Sec	.045 G-s
FOV	.0077 In/Sec	.045 G-s
FOA	.027 In/Sec	.019 G-s

B3-KBS-07 - LINE 3 KILN EXHAUST FAN (30-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.035 In/Sec	.586 G-s
MOV	.065 In/Sec	.594 G-s
MIH	.053 In/Sec	1.002 G-s
MIV	.068 In/Sec	1.037 G-s
MIA	.035 In/Sec	.576 G-s
FIH	.014 In/Sec	.0042 G-s
FIV	.012 In/Sec	.0036 G-s
FIA	.019 In/Sec	.0029 G-s
FOH	.0087 In/Sec	.0020 G-s
FOV	.0084 In/Sec	.0029 G-s
FOA	.024 In/Sec	.0025 G-s

Area: LINE 3 FINISHING

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD

HIPRSWTRP - HI-PRESSURE WATER PUMP (31-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.136 In/Sec	1.944 G-s
MOV	.220 In/Sec	.273 G-s
MIH	.139 In/Sec	2.569 G-s
MIV	.209 In/Sec	.603 G-s
MIA	.096 In/Sec	.567 G-s

P1H	.394 In/Sec	.603 G-s
P1V	.282 In/Sec	.237 G-s
P1A	.137 In/Sec	.179 G-s
P2H	.211 In/Sec	.960 G-s
P2V	.386 In/Sec	.376 G-s
P2A	.236 In/Sec	.281 G-s

FINSHSHRD - FINISHING SHEDDER (31-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.111 In/Sec	.623 G-s
MOV	.206 In/Sec	.168 G-s
MIH	.071 In/Sec	.667 G-s
MIV	.173 In/Sec	.159 G-s
MIA	.090 In/Sec	.084 G-s
GH	.064 In/Sec	.328 G-s
GV	.092 In/Sec	.058 G-s
GA	.056 In/Sec	.076 G-s
SH	.063 In/Sec	.544 G-s
SV	.080 In/Sec	.102 G-s
SA	.055 In/Sec	.205 G-s

F3-GRD-01 - LINE 3 FINISH GRINDER #1 (31-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.218 In/Sec	.334 G-s
MOV	.358 In/Sec	.102 G-s
MIH	.215 In/Sec	.262 G-s
MIV	.237 In/Sec	.154 G-s
MIA	.175 In/Sec	.076 G-s
GIH	.126 In/Sec	.209 G-s
GIV	.086 In/Sec	.051 G-s
GIA	.146 In/Sec	.050 G-s

F3-GRD-02 - LINE 3 FINISH GRINDER #2 (31-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.776 In/Sec	.686 G-s
MOV	.338 In/Sec	.403 G-s
MIH	.278 In/Sec	.584 G-s
MIV	.321 In/Sec	.117 G-s
MIA	.227 In/Sec	.096 G-s
GIH	.134 In/Sec	.285 G-s
GIV	.175 In/Sec	.059 G-s
GIA	.166 In/Sec	.068 G-s

F3-GRD-04 - LINE 3 FINISH GRINDER #4 (31-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	1.548 In/Sec	.458 G-s
MOV	.514 In/Sec	.135 G-s
MIH	.840 In/Sec	.161 G-s
MIV	.315 In/Sec	.061 G-s
MIA	.365 In/Sec	.043 G-s
GIH	.156 In/Sec	.273 G-s
GIV	.108 In/Sec	.092 G-s
GIA	.240 In/Sec	.057 G-s

F3-GRD-05 - LINE 3 GRINDER DRIVE (31-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.073 In/Sec	1.042 G-s
MOV	.076 In/Sec	.196 G-s
MIH	.075 In/Sec	.934 G-s
MIV	.068 In/Sec	.242 G-s
MIA	.042 In/Sec	.389 G-s
G1I	.069 In/Sec	.912 G-s
GIV	.070 In/Sec	.313 G-s
G1A	.052 In/Sec	.441 G-s
G2O	.072 In/Sec	.527 G-s
GOV	.087 In/Sec	.208 G-s
G2A	.042 In/Sec	.201 G-s

B3-KFS-04 - LINE 3 KILN DRIVE (31-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.035 In/Sec	.170 G-s
MIH	.026 In/Sec	.250 G-s
MIA	.043 In/Sec	.159 G-s
G1I	.066 In/Sec	.198 G-s
G1A	.047 In/Sec	.204 G-s
G2O	.062 In/Sec	.237 G-s
G2A	.054 In/Sec	.211 G-s

B3KFS4LUBP - L3 KILN GEARBOX LUBE OIL PMP (31-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.078 In/Sec	.340 G-s
MOV	.059 In/Sec	.217 G-s
MIH	.043 In/Sec	.437 G-s
MIV	.059 In/Sec	.145 G-s
MIA	.064 In/Sec	.162 G-s
GH	.049 In/Sec	.433 G-s
GV	.057 In/Sec	.198 G-s
GA	.051 In/Sec	.205 G-s
PH	.046 In/Sec	.064 G-s
PV	.051 In/Sec	.094 G-s
PA	.043 In/Sec	.095 G-s

F3-PAD-06 - BLUE OVEN 1 ZONE1 CIRC FAN 1 (31-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.251 In/Sec	.545 G-s
MOV	.248 In/Sec	.156 G-s
MIH	.458 In/Sec	.626 G-s
MIV	.349 In/Sec	.149 G-s
MIA	.435 In/Sec	.231 G-s
FIH	.434 In/Sec	.657 G-s
FIV	.502 In/Sec	.185 G-s
FIA	.328 In/Sec	.212 G-s
FOH	.235 In/Sec	2.094 G-s
FOV	.297 In/Sec	.651 G-s

OVN1ZNE1F2 - BLUE OVEN 1 ZONE1 CIRC FAN 2 (31-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.135 In/Sec	.807 G-s
MOV	.121 In/Sec	.121 G-s
MIH	.212 In/Sec	.539 G-s
MIV	.360 In/Sec	.092 G-s
MIA	.277 In/Sec	.090 G-s
FIH	.169 In/Sec	.874 G-s
FIV	.302 In/Sec	.215 G-s
FIA	.294 In/Sec	.231 G-s
FOH	.122 In/Sec	.666 G-s
FOV	.083 In/Sec	.179 G-s

OVN1ZNE2F1 - BLUE OVEN 1 ZONE2 CIRC FAN 1 (31-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	1.128 In/Sec	1.598 G-s
MOV	.865 In/Sec	.218 G-s
MIH	1.316 In/Sec	.446 G-s
MIV	1.461 In/Sec	.212 G-s
MIA	1.731 In/Sec	.178 G-s
FIH	1.097 In/Sec	1.240 G-s
FIV	1.190 In/Sec	.269 G-s
FIA	.627 In/Sec	.384 G-s
FOH	.283 In/Sec	1.830 G-s
FOV	.166 In/Sec	.382 G-s

OVN1ZNE2F2 - BLUE OVEN 1 ZONE2 CIRC FAN 2 (31-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.767 In/Sec	1.010 G-s
MOV	.367 In/Sec	.281 G-s
MIH	1.333 In/Sec	.821 G-s
MIV	.485 In/Sec	.218 G-s
MIA	.925 In/Sec	.342 G-s

FIH	.528 In/Sec	.500 G-s
FIV	1.348 In/Sec	.105 G-s
FIA	.605 In/Sec	.100 G-s
FOH	.312 In/Sec	4.313 G-s
FOV	.201 In/Sec	.686 G-s

OVEN2Z1FAN - BLUE OVEN 2 ZONE1 CIRC FAN (31-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.242 In/Sec	.674 G-s
MOV	.429 In/Sec	.150 G-s
MIH	.405 In/Sec	1.823 G-s
MIV	.603 In/Sec	.291 G-s
MIA	.319 In/Sec	.781 G-s
FIH	.139 In/Sec	.644 G-s
FIV	.370 In/Sec	.181 G-s
FIA	.255 In/Sec	.126 G-s
FOH	.162 In/Sec	2.489 G-s
FOV	.152 In/Sec	.386 G-s

OVEN2Z2FAN - BLUE OVEN 2 ZONE2 CIRC FAN (31-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.367 In/Sec	.762 G-s
MOV	.346 In/Sec	.155 G-s
MIH	.531 In/Sec	.567 G-s
MIV	.419 In/Sec	.121 G-s
MIA	.475 In/Sec	.184 G-s
FIH	.413 In/Sec	.927 G-s
FIV	.397 In/Sec	.198 G-s
FIA	.349 In/Sec	.152 G-s
FOH	.144 In/Sec	.556 G-s
FOV	.126 In/Sec	.099 G-s

D1DCR02EXH - #1 GRINDER BAGHOUSE DC FAN (31-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.171 In/Sec	.567 G-s
MOV	.183 In/Sec	.113 G-s
MIH	.061 In/Sec	1.281 G-s
MIV	.299 In/Sec	.180 G-s
MIA	.179 In/Sec	.245 G-s
FIH	.451 In/Sec	1.611 G-s
FIV	.176 In/Sec	.328 G-s
FIA	.735 In/Sec	.262 G-s
FOH	.162 In/Sec	2.081 G-s
FOV	.154 In/Sec	.325 G-s

D1DCR01EXH - #3 FINISHING DUST COLLECTOR (31-May-24)

	OVERALL LEVEL	1K-20KHz
MOH	.338 In/Sec	1.058 G-s
MOV	.715 In/Sec	.357 G-s
MIH	.231 In/Sec	1.158 G-s
MIV	.584 In/Sec	.374 G-s
MIA	.233 In/Sec	.325 G-s
FIH	.575 In/Sec	.925 G-s
FIV	.342 In/Sec	.186 G-s
FIA	.445 In/Sec	.229 G-s
FOH	.424 In/Sec	1.080 G-s
FOV	.208 In/Sec	.234 G-s

Clarification Of Vibration Units:

Acc --> G-s RMS

Vel --> In/Sec PK

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

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Cell: 901-486-4565
Email: kwilliam@gohispeed.com