HI-SPEED INDUSTRIAL SERVICE QualiTest® Diagnostics

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April 1, 2025

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Terry,

The following is a summary of findings from the March 2025 monthly vibration survey at the USG Greenville, MS Plant.

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
A high sub-synchronous vibration also remains in the motor axial. Check belts and sheaves for wear and misalignment soon. Ensure fan shaft does not have run out. Rated as a **CLASS II** defect.

#7 Combustion Blower
Fan data shows looseness/wear of the bearings/fits. Fan needs attention soon. Rated as a **CLASS III** defect.

#5 Expander Dust Collector
The new fan appears to have some excessive vibration that apparently began after balancing the fan on 03/17/25. Overall vibration was low after balancing fan. The majority of the vibration was at 1 x rpm after piping and re-anchoring fan base. It is unclear if the vibration is actually from imbalance. A trim balance may lower vibration. If balancing does not lower vibration, then it is recommended to perform an in depth inspection of the fan wheel looking for cracks in the welds. Rated as a **CLASS IV** defect.

#6 Expander Dust Collector
Fan data shows non-synchronous peaks throughout spectra. This appears to be rolling element defects. For now, ensure bearings have adequate grease. Bearings will likely need attention in the next few months. Rated as a **CLASS II** defect.

#8 Expander Dust Collector
Motor data suggests defects are forming in the motor bearings. We are monitoring this issue closely. For now, ensure motor bearings are receiving adequate grease. Rated as a **CLASS I** defect.

Hydropulper
Motor has elevated 1 x rpm vibration and may indicate an issue with the fluid coupling assembly such as imbalance or internal wear of the assembly. Gearbox spectral data shows gear mesh harmonics with sidebands of output rpm indicating some slight wear in the gearbox. Monitoring these issues closely. Rated as a **CLASS II** defect.

Mix-up/Reclaim

Well Pump #1
Motor data indicates defects in motor bearings. It is recommended to swap out motor during next available down time Rated as a **CLASS II** defect.

Fiberglass

#1 Oven Circ. Fan

Belts were off of the motor sheave. Motor was running but fan was not turning. Check belts and sheaves asap. Personnel was notified while on site last week. Previous data showed that 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

NEW SHAFT GUARD NEEDS TO BE MODIFIED TO GAIN ACCESS TO FAN BEARINGS. Previous data showed 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.

#2 Oven Exhaust Fan

Outboard (ODE) fan bearing data shows some rpm harmonics in the mid-frequency of the spectrum. This may be some fit looseness starting to progress. We are monitoring this closely. Rated as a **CLASS I** 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 the vac pump motors. 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. Rated as **CLASS I** defect.

Vacuum Pump 1 and 3

Both new pumps still have elevated vane pass frequency vibration in the pumps. For now, ensure pump flows are normal. Rated as a **CLASS I** defect.

Hi-Pressure Shower Pump

Motor has signs of bearing defects according to spectral data. Seems low level at this time. Check motor as time allows. Rated as a **CLASS II** 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.

Wet End Circulation Fan

Fan has some slight 1 x rpm vibration likely due to fan imbalance or shaft run out. A trim balance may be needed at some point; however, amplitudes are low at this time. Rated as a **CLASS I** defect.

Finishing

Grinder Drive
Motor and geardrive data both shows signs of defects/wear of the bearing and geardrive shows signs of gear wear as well .Unit will likely need attention in the near future. Watching this closely. 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 III** 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.

#1 Finishing Baghouse Dust Collector
Data shows high amplitude at the DE fan axial. Amplitude is over .9 ips -pk which is high compared to the average for this machine. Fan wheel may have imbalance. Fan shaft may also have run out, sheave eccentricity or sheave run out. Check fan, fan shaft and sheave for these issues soon. Rated as a **CLASS II** defect.

#2 Finishing Baghouse Dust Collector
Fan was not running; however, the following still applies: Motor DE vibration data shows some peaks in spectral data that are very likely associated with bearing cage frequency. This is very concerning. For now, ensure belts are not too tight and motor bearing is greased properly. DE motor bearing likely has bearing defects due to appearance of cage modulation. Rated as a **CLASS II** 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. Fan also has some 1 x rpm vibration and likely has some imbalance. Rated as a **CLASS II** defect.

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                    Abbreviated Last Measurement Summary
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            Database:  USG.rbm
            Area:      PERLITE

MEASUREMENT POINT              OVERALL LEVEL       HFD / VHFD
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B2EXD02FAN - #5 COMBUSTION BLOWER          (27-Mar-25)
                                OVERALL LEVEL     1K-20KHz
       MOH                       .213 In/Sec       .305 G-s
       MOV                       .423 In/Sec       .107 G-s
       MIH                       .086 In/Sec       .224 G-s
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MIV	.188 In/Sec	.063 G-s
MIA	.976 In/Sec	.034 G-s
BIH	.179 In/Sec	1.084 G-s
BIV	.132 In/Sec	.438 G-s
BIA	.340 In/Sec	.315 G-s
BOH	.255 In/Sec	.966 G-s
BOV	.223 In/Sec	.228 G-s

B2EXD06FAN - #6 COMBUSTION BLOWER (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.098 In/Sec	.241 G-s
MOV	.199 In/Sec	.109 G-s
MIH	.095 In/Sec	.358 G-s
MIV	.195 In/Sec	.036 G-s
MIA	.208 In/Sec	.043 G-s
BIH	.297 In/Sec	.773 G-s
BIV	.153 In/Sec	.177 G-s
BIA	.220 In/Sec	.127 G-s
BOH	.159 In/Sec	1.204 G-s
BOV	.120 In/Sec	.136 G-s

B2EXD07FAN - #7 COMBUSTION BLOWER (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.176 In/Sec	.334 G-s
MOV	1.139 In/Sec	.122 G-s
MIH	.179 In/Sec	.250 G-s
MIV	1.116 In/Sec	.063 G-s
MIA	.270 In/Sec	.055 G-s
BIH	.604 In/Sec	1.860 G-s
BIV	.457 In/Sec	.606 G-s
BIA	.581 In/Sec	.399 G-s
BOH	.730 In/Sec	1.714 G-s
BOV	.557 In/Sec	.263 G-s

B2EXD08FAN - #8 COMBUSTION BLOWER (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.153 In/Sec	.340 G-s
MOV	.393 In/Sec	.073 G-s
MIH	.146 In/Sec	.315 G-s
MIV	.362 In/Sec	.086 G-s
MIA	.256 In/Sec	.093 G-s
BIH	.468 In/Sec	.721 G-s
BIV	.298 In/Sec	.093 G-s
BIA	.276 In/Sec	.129 G-s
BOH	.240 In/Sec	.872 G-s
BOV	.233 In/Sec	.467 G-s

B2EXD02-5 - #5 EXPANDER DUST COLLECTOR (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.438 In/Sec	.361 G-s
MOV	.593 In/Sec	.091 G-s
MIH	.584 In/Sec	.431 G-s
MIV	.352 In/Sec	.080 G-s
MIA	.390 In/Sec	.102 G-s

B2EXD0306 - #6 EXPANDER DUST COLLECTOR (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.076 In/Sec	.391 G-s
MOV	.089 In/Sec	.169 G-s
MIH	.082 In/Sec	1.303 G-s
MIV	.075 In/Sec	.234 G-s
MIA	.051 In/Sec	.218 G-s
FIH	.294 In/Sec	2.375 G-s
FIV	.268 In/Sec	.539 G-s
FIA	.509 In/Sec	.297 G-s
FOH	.250 In/Sec	1.037 G-s
FOV	.208 In/Sec	.258 G-s

B2EXD04-7 - #7 EXPANDER DUST COLLECTOR (27-Mar-25)

	OVERALL LEVEL	1K-20KHz

MOH	.158	In/Sec	1.060 G-s
MOV	.127	In/Sec	.144 G-s
MIH	.093	In/Sec	1.135 G-s
MIV	.144	In/Sec	.241 G-s
MIA	.087	In/Sec	.245 G-s
FIH	.168	In/Sec	1.774 G-s
FIV	.241	In/Sec	.275 G-s
FIA	.245	In/Sec	.265 G-s
FOH	.166	In/Sec	1.740 G-s
FOV	.234	In/Sec	.672 G-s

B2EXD05-8 - #8 EXPANDER DUST COLLECTOR (27-Mar-25)

	OVERALL LEVEL		1K-20KHz
MOH	.293	In/Sec	1.560 G-s
MOV	.574	In/Sec	.434 G-s
MIH	.194	In/Sec	3.072 G-s
MIV	.158	In/Sec	.710 G-s
MIA	.250	In/Sec	.640 G-s
FIH	.225	In/Sec	1.303 G-s
FIV	.184	In/Sec	.202 G-s
FIA	.284	In/Sec	.137 G-s
FOH	.175	In/Sec	.615 G-s
FOV	.159	In/Sec	.214 G-s

B2PUP02GEA - HYDRAPULPER (27-Mar-25)

	OVERALL LEVEL		1K-20KHz
MOH	.473	In/Sec	.393 G-s
MOV	.230	In/Sec	.353 G-s
MIH	.583	In/Sec	.363 G-s
MIV	.207	In/Sec	.198 G-s
MIA	.121	In/Sec	.159 G-s
GIH	.432	In/Sec	2.688 G-s
GIV	.364	In/Sec	.631 G-s
GIA	.120	In/Sec	.625 G-s
GOH	.428	In/Sec	2.568 G-s
GOV	.173	In/Sec	.637 G-s
GOA	.271	In/Sec	.277 G-s

Database: USG.rbm
Area: MIX UP/RECLAIM

MEASUREMENT POINT	OVERALL LEVEL		HFD / VHFD

B2PUP03AGT - DUMP CHEST AGITATOR (27-Mar-25)

	OVERALL LEVEL		1K-20KHz
MOH	.146	In/Sec	.235 G-s
MOV	.095	In/Sec	.076 G-s
MIH	.098	In/Sec	.473 G-s
MIV	.167	In/Sec	.188 G-s
MIA	.096	In/Sec	.175 G-s
AIH	.057	In/Sec	.227 G-s
AIV	.044	In/Sec	.045 G-s
AIA	.032	In/Sec	.044 G-s
AOH	.073	In/Sec	.250 G-s
AOV	.059	In/Sec	.072 G-s

REFNCHSTAG - REFINED CHEST AGITATOR (27-Mar-25)

	OVERALL LEVEL		1K-20KHz
MOH	.120	In/Sec	.280 G-s
MOV	.180	In/Sec	.043 G-s
MIH	.113	In/Sec	.306 G-s
MIV	.163	In/Sec	.042 G-s
MIA	.093	In/Sec	.055 G-s
AIH	.048	In/Sec	.138 G-s
AIV	.064	In/Sec	.073 G-s
AIA	.033	In/Sec	.067 G-s
AOH	.077	In/Sec	.134 G-s
AOV	.065	In/Sec	.091 G-s

1WWLOOPPMP - #1 WHITE WATER LOOP PUMP (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.377 In/Sec	.721 G-s
MOV	.225 In/Sec	.298 G-s
MIH	.444 In/Sec	.881 G-s
MIV	.469 In/Sec	.193 G-s
MIA	.457 In/Sec	.235 G-s
PIH	.319 In/Sec	.292 G-s
PIV	.177 In/Sec	.113 G-s
PIA	.345 In/Sec	.113 G-s
POH	.243 In/Sec	.207 G-s
POV	.213 In/Sec	.080 G-s

B2WEL1PMP1 - #1 EAST WELL WATER PUMP (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.186 In/Sec	1.853 G-s
MOV	.211 In/Sec	.454 G-s
MIH	.317 In/Sec	1.346 G-s
MIV	.427 In/Sec	.314 G-s
MIA	.292 In/Sec	.375 G-s
PIH	.049 In/Sec	.666 G-s
PIV	.062 In/Sec	.154 G-s
PIA	.163 In/Sec	.245 G-s
POH	.164 In/Sec	1.629 G-s
POV	.098 In/Sec	.307 G-s

B2BTR1AGIT - BEATER AGITATOR (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.181 In/Sec	.327 G-s
MOV	.093 In/Sec	.163 G-s
MIH	.168 In/Sec	.402 G-s
MIV	.119 In/Sec	.104 G-s
MIA	.158 In/Sec	.101 G-s
AIH	.094 In/Sec	.096 G-s
AIV	.045 In/Sec	.050 G-s
AIA	.109 In/Sec	.046 G-s
AOH	.049 In/Sec	.109 G-s
AOV	.037 In/Sec	.042 G-s

Area: FIBERGLASS

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD

F1T1DCRFAN - FIBERGLASS DC FAN NEW LINE (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.051 In/Sec	.179 G-s
MOV	.062 In/Sec	.228 G-s
MIH	.074 In/Sec	.332 G-s
MIV	.078 In/Sec	.062 G-s
MIA	.086 In/Sec	.062 G-s
FIH	.049 In/Sec	.536 G-s
FIV	.072 In/Sec	.301 G-s
FIA	.082 In/Sec	.150 G-s
FOH	.073 In/Sec	.722 G-s
FOV	.081 In/Sec	.147 G-s

1PPDEF - 1ST PASS PAINT DRY EXH FAN (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.056 In/Sec	.109 G-s
MOV	.047 In/Sec	.035 G-s
MIH	.050 In/Sec	.109 G-s
MIV	.047 In/Sec	.031 G-s
MIA	.035 In/Sec	.023 G-s
FIH	.084 In/Sec	.307 G-s
FIV	.058 In/Sec	.087 G-s
FIA	.248 In/Sec	.098 G-s
FOH	.059 In/Sec	.159 G-s

	FOV	.082 In/Sec	.076 G-s

F1T1EDG41M - 2ND PASS PAINT DRYING EX FAN (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.114 In/Sec	.111 G-s
MOV	.195 In/Sec	.033 G-s
MIH	.149 In/Sec	.149 G-s
MIV	.265 In/Sec	.034 G-s
MIA	.102 In/Sec	.028 G-s
FIH	.059 In/Sec	.406 G-s
FIV	.051 In/Sec	.129 G-s
FIA	.258 In/Sec	.135 G-s
FOH	.065 In/Sec	.404 G-s
FOV	.107 In/Sec	.152 G-s

1FOEF - #1 OVEN EXH FAN (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.048 In/Sec	.124 G-s
MOV	.054 In/Sec	.039 G-s
MIH	.043 In/Sec	.280 G-s
MIV	.061 In/Sec	.039 G-s
MIA	.040 In/Sec	.069 G-s
FIH	.101 In/Sec	.011 G-s
FIV	.087 In/Sec	.023 G-s
FIA	.090 In/Sec	.010 G-s
FOH	.131 In/Sec	.022 G-s
FOV	.097 In/Sec	.064 G-s

2FOCF - #2 OVEN CIRC FAN (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.231 In/Sec	.164 G-s
MOV	.662 In/Sec	.052 G-s
MIH	.246 In/Sec	.357 G-s
MIV	.847 In/Sec	.152 G-s
MIA	.274 In/Sec	.114 G-s

2FOEF - #2 OVEN EXH FAN (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.056 In/Sec	.212 G-s
MOV	.044 In/Sec	.046 G-s
MIH	.051 In/Sec	.159 G-s
MIV	.047 In/Sec	.040 G-s
MIA	.039 In/Sec	.024 G-s
FIH	.085 In/Sec	.020 G-s
FIV	.049 In/Sec	.081 G-s
FIA	.074 In/Sec	.018 G-s
FOH	.127 In/Sec	.031 G-s
FOV	.083 In/Sec	.177 G-s

Area: BOARD LINE 3

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD

B3TFM05PMP - #3 MACHINE WHITE WATER PUMP (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.209 In/Sec	.778 G-s
MOV	.232 In/Sec	.237 G-s
MIH	.299 In/Sec	1.097 G-s
MIV	.366 In/Sec	.168 G-s
MIA	.279 In/Sec	.270 G-s
PIH	.265 In/Sec	.714 G-s
PIV	.106 In/Sec	.075 G-s
PIA	.123 In/Sec	.160 G-s
POH	.205 In/Sec	.262 G-s
POV	.251 In/Sec	.085 G-s

B3TFM3PMPA - MACHINE CHEST PUMP 3A (27-Mar-25)

	OVERALL LEVEL	1K-20KHz

MOH	.078 In/Sec	.875 G-s
MOV	.057 In/Sec	.196 G-s
MIH	.096 In/Sec	1.066 G-s
MIV	.083 In/Sec	.249 G-s
MIA	.080 In/Sec	.243 G-s
PIH	.038 In/Sec	.200 G-s
PIV	.025 In/Sec	.021 G-s
PIA	.022 In/Sec	.031 G-s
POH	.029 In/Sec	.236 G-s
POV	.018 In/Sec	.064 G-s

B3-VAC-01 - LINE 3 VACUUM PUMP #1 (26-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.126 In/Sec	2.824 G-s
MOV	.091 In/Sec	.645 G-s
MIH	.069 In/Sec	1.577 G-s
MIV	.104 In/Sec	.384 G-s
MIA	.046 In/Sec	.292 G-s
PIH	.188 In/Sec	.175 G-s
PIV	.318 In/Sec	.057 G-s
PIA	.130 In/Sec	.063 G-s
POH	.644 In/Sec	.064 G-s
POV	.239 In/Sec	.036 G-s

B3-VAC-02 - LINE 3 VACUUM PUMP #2 (26-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.084 In/Sec	1.546 G-s
MOV	.078 In/Sec	.331 G-s
MIH	.111 In/Sec	2.335 G-s
MIV	.128 In/Sec	.209 G-s
MIA	.065 In/Sec	.895 G-s
PIH	.059 In/Sec	.084 G-s
PIV	.058 In/Sec	.030 G-s
PIA	.062 In/Sec	.029 G-s
POH	.151 In/Sec	.070 G-s
POV	.068 In/Sec	.023 G-s

B3-VAC-03 - LINE 3 VACUUM PUMP #3 (26-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.115 In/Sec	2.213 G-s
MOV	.252 In/Sec	.614 G-s
MIH	.114 In/Sec	1.476 G-s
MIV	.103 In/Sec	.172 G-s
MIA	.068 In/Sec	.430 G-s
PIH	.315 In/Sec	.173 G-s
PIV	.617 In/Sec	.045 G-s
PIA	.250 In/Sec	.076 G-s
POH	.449 In/Sec	.215 G-s
POV	.365 In/Sec	.060 G-s

LOWVACFAN - LOW VACUUM FAN (26-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.235 In/Sec	.688 G-s
MOV	.474 In/Sec	.356 G-s
MIH	.203 In/Sec	1.236 G-s
MIV	.253 In/Sec	.239 G-s
MIA	.096 In/Sec	.365 G-s
FIH	.177 In/Sec	1.545 G-s
FIV	.308 In/Sec	.270 G-s
FIA	.080 In/Sec	.166 G-s
FOH	.062 In/Sec	.789 G-s
FOV	.133 In/Sec	.183 G-s

B3-VAC-06B - #1 FORMER WHITE WTR PIT PMP (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.201 In/Sec	.377 G-s
MOV	.464 In/Sec	.118 G-s
MIH	.245 In/Sec	.559 G-s
MIV	.219 In/Sec	.159 G-s
MIA	.132 In/Sec	.107 G-s

PIH	.056 In/Sec	.116 G-s
PIV	.077 In/Sec	.051 G-s
PIA	.253 In/Sec	.063 G-s
POH	.075 In/Sec	.112 G-s
POV	.222 In/Sec	.030 G-s

B3-VAC-10 - SEAL WATER RETURN PUMP (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.025 In/Sec	.914 G-s
MOV	.048 In/Sec	.086 G-s
MIH	.063 In/Sec	.529 G-s
MIV	.055 In/Sec	.146 G-s
MIA	.053 In/Sec	.123 G-s
PIH	.087 In/Sec	.102 G-s
PIV	.052 In/Sec	.028 G-s
PIA	.028 In/Sec	.027 G-s
POH	.032 In/Sec	.074 G-s
POV	.028 In/Sec	.024 G-s

B3FRM7SHW - HIGH PRESSURE SHOWER PUMP (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.061 In/Sec	.483 G-s
MOV	.087 In/Sec	.179 G-s
MIH	.081 In/Sec	.528 G-s
MIV	.131 In/Sec	.126 G-s
MIA	.061 In/Sec	.173 G-s
PIH	.114 In/Sec	1.142 G-s
PIV	.222 In/Sec	.148 G-s
PIA	.089 In/Sec	.470 G-s
POH	.065 In/Sec	1.810 G-s
POV	.145 In/Sec	.289 G-s

WECTAGIT - WET END COATING TANK AGIT (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.065 In/Sec	.129 G-s
MOV	.050 In/Sec	.051 G-s
MIH	.051 In/Sec	.198 G-s
MIV	.040 In/Sec	.024 G-s
MIA	.042 In/Sec	.041 G-s
AIH	.021 In/Sec	.078 G-s
AIV	.020 In/Sec	.035 G-s
AIA	.026 In/Sec	.019 G-s
AOH	.017 In/Sec	.072 G-s
AOV	.022 In/Sec	.037 G-s

MSHTAGIT - MACHINE STOCK HOLDING TNK AG (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.044 In/Sec	.090 G-s
MOV	.046 In/Sec	.033 G-s
MIH	.022 In/Sec	.159 G-s
MIV	.036 In/Sec	.022 G-s
MIA	.031 In/Sec	.020 G-s
AIH	.014 In/Sec	.025 G-s
AIV	.012 In/Sec	.0062 G-s
AIA	.019 In/Sec	.0086 G-s
AOH	.015 In/Sec	.030 G-s
AOV	.014 In/Sec	.0074 G-s

WWAGIT - WHITE WATER AGITATOR (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.081 In/Sec	.847 G-s
MOV	.098 In/Sec	.170 G-s
MIH	.075 In/Sec	.348 G-s
MIV	.068 In/Sec	.171 G-s
MIA	.060 In/Sec	.182 G-s
AIH	.018 In/Sec	.113 G-s
AIV	.028 In/Sec	.031 G-s
AIA	.020 In/Sec	.045 G-s
AOH	.017 In/Sec	.073 G-s
AOV	.027 In/Sec	.040 G-s

3 - #3 TOP PRESS ROLL DRIVE (26-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.140 In/Sec	.483 G-s
MOV	.125 In/Sec	.135 G-s
MIH	.079 In/Sec	.912 G-s
MIV	.100 In/Sec	.172 G-s
MIA	.098 In/Sec	.207 G-s
GIH	.092 In/Sec	.144 G-s
GIV	.084 In/Sec	.028 G-s
GIA	.028 In/Sec	.012 G-s
GOH	.052 In/Sec	.054 G-s
GOV	.052 In/Sec	.016 G-s
GOA	.027 In/Sec	.010 G-s

3b - #3 BOTTOM PRESS ROLL DRIVE (26-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.038 In/Sec	.605 G-s
MOV	.127 In/Sec	.098 G-s
MIH	.056 In/Sec	.520 G-s
MIV	.121 In/Sec	.163 G-s
MIA	.069 In/Sec	.147 G-s
GIH	.035 In/Sec	.036 G-s
GIV	.018 In/Sec	.0077 G-s
GIA	.014 In/Sec	.0078 G-s
GOH	.025 In/Sec	.012 G-s
GOV	.012 In/Sec	.0085 G-s
GOA	.013 In/Sec	.0045 G-s

B3FRM8ROLA - #2 TOP PRESS ROLL DRIVE (26-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.101 In/Sec	.239 G-s
MOV	.089 In/Sec	.037 G-s
MIH	.083 In/Sec	.223 G-s
MIV	.081 In/Sec	.083 G-s
MIA	.080 In/Sec	.054 G-s
GIH	.091 In/Sec	.092 G-s
GIV	.073 In/Sec	.013 G-s
GIA	.048 In/Sec	.020 G-s
GOH	.053 In/Sec	.090 G-s
GOV	.036 In/Sec	.015 G-s
GOA	.037 In/Sec	.0073 G-s

B3FRM8ROLB - #2 BOTTOM PRESS ROLL DRIVE (26-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.069 In/Sec	.225 G-s
MOV	.155 In/Sec	.044 G-s
MIH	.053 In/Sec	.573 G-s
MIV	.135 In/Sec	.109 G-s
MIA	.063 In/Sec	.138 G-s
GIH	.047 In/Sec	.026 G-s
GIV	.042 In/Sec	.010 G-s
GIA	.011 In/Sec	.0092 G-s
GOH	.053 In/Sec	.053 G-s
GOV	.039 In/Sec	.0060 G-s
GOA	.012 In/Sec	.0082 G-s

1 - #1 TOP PRESS ROLL DRIVE (26-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.070 In/Sec	.439 G-s
MOV	.078 In/Sec	.076 G-s
MIH	.064 In/Sec	.638 G-s
MIV	.067 In/Sec	.126 G-s
MIA	.120 In/Sec	.140 G-s
GIH	.062 In/Sec	.060 G-s
GIV	.028 In/Sec	.015 G-s
GIA	.026 In/Sec	.020 G-s
GOH	.047 In/Sec	.035 G-s
GOV	.023 In/Sec	.0078 G-s
GOA	.027 In/Sec	.0089 G-s

1b - #1 BOTTOM PRESS ROLL DRIVE (26-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.309 In/Sec	.302 G-s
MOV	.085 In/Sec	.054 G-s
MIH	.124 In/Sec	.139 G-s
MIV	.095 In/Sec	.018 G-s
MIA	.466 In/Sec	.013 G-s
GIH	.036 In/Sec	.042 G-s
GIV	.037 In/Sec	.024 G-s
GIA	.018 In/Sec	.026 G-s
GOH	.025 In/Sec	.037 G-s
GOV	.030 In/Sec	.015 G-s
GOA	.020 In/Sec	.011 G-s

B3-FRM-11 - #3 BOARD LINE DRIVE (26-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.064 In/Sec	.835 G-s
MOV	.065 In/Sec	.186 G-s
MIH	.062 In/Sec	.569 G-s
MIV	.137 In/Sec	.255 G-s
MIA	.065 In/Sec	.262 G-s
G1I	.014 In/Sec	.084 G-s
GIV	.017 In/Sec	.054 G-s
G1A	.016 In/Sec	.029 G-s
G1O	.012 In/Sec	.081 G-s
G2O	.011 In/Sec	.036 G-s
GOV	.032 In/Sec	.065 G-s
G2I	.014 In/Sec	.066 G-s
G2A	.025 In/Sec	.027 G-s

B3-KBS-02 - WET END CIRCULATION FAN (26-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.111 In/Sec	.272 G-s
MOV	.036 In/Sec	.039 G-s
MIH	.088 In/Sec	.355 G-s
MIV	.024 In/Sec	.076 G-s
MIA	.026 In/Sec	.127 G-s
FIH	.102 In/Sec	.052 G-s
FIV	.033 In/Sec	.022 G-s
FIA	.104 In/Sec	.019 G-s
FOH	.084 In/Sec	.021 G-s
FOV	.044 In/Sec	.0059 G-s
FOA	.053 In/Sec	.0049 G-s

B3KBS01BLW - WET END COMBUSTION BLOWER (26-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.055 In/Sec	.825 G-s
MOV	.066 In/Sec	.120 G-s
MIH	.070 In/Sec	.773 G-s
MIV	.258 In/Sec	.177 G-s
MIA	.091 In/Sec	.118 G-s
BIH	.101 In/Sec	1.504 G-s
BIV	.058 In/Sec	.555 G-s
BIA	.091 In/Sec	.301 G-s
BOH	.114 In/Sec	1.624 G-s
BOV	.203 In/Sec	.609 G-s

B3-KBS-05 - DRY END CIRCULATION FAN (26-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.094 In/Sec	.864 G-s
MOV	.082 In/Sec	.169 G-s
MIH	.090 In/Sec	.763 G-s
MIV	.085 In/Sec	.145 G-s
MIA	.043 In/Sec	.133 G-s
FIH	.054 In/Sec	.129 G-s
FIV	.021 In/Sec	.129 G-s
FIA	.027 In/Sec	.067 G-s
FOH	.046 In/Sec	.066 G-s
FOV	.022 In/Sec	.027 G-s

FOA	.025 In/Sec	.021 G-s

B3KBS04BLW - DRY END COMBUSTION BLOWER (26-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.050 In/Sec	.355 G-s
MOV	.098 In/Sec	.108 G-s
MIH	.064 In/Sec	.785 G-s
MIV	.082 In/Sec	.149 G-s
MIA	.093 In/Sec	.159 G-s
BIH	.125 In/Sec	1.081 G-s
BIV	.057 In/Sec	.178 G-s
BIA	.195 In/Sec	.124 G-s
BOH	.110 In/Sec	.699 G-s
BOV	.138 In/Sec	.134 G-s

B3-KBS-07 - LINE 3 KILN EXHAUST FAN (26-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.035 In/Sec	.746 G-s
MOV	.075 In/Sec	.203 G-s
MIH	.059 In/Sec	1.201 G-s
MIV	.080 In/Sec	.524 G-s
MIA	.034 In/Sec	.158 G-s
FIH	.013 In/Sec	.0034 G-s
FIV	.012 In/Sec	.0032 G-s
FIA	.017 In/Sec	.0025 G-s
FOH	.013 In/Sec	.0011 G-s
FOV	.0075 In/Sec	.0026 G-s
FOA	.020 In/Sec	.0026 G-s

Area: LINE 3 FINISHING

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD

HIPRSWTRP - HI-PRESSURE WATER PUMP (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.143 In/Sec	1.684 G-s
MOV	.428 In/Sec	.260 G-s
MIH	.088 In/Sec	.536 G-s
MIV	.223 In/Sec	.217 G-s
MIA	.144 In/Sec	.315 G-s
P1H	.412 In/Sec	.773 G-s
P1V	.353 In/Sec	.295 G-s
P1A	.172 In/Sec	.298 G-s
P2H	.156 In/Sec	1.927 G-s
P2V	.624 In/Sec	.486 G-s
P2A	.255 In/Sec	.361 G-s

FINSHSHRD - FINISHING SHEDDER (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.122 In/Sec	.423 G-s
MOV	.191 In/Sec	.196 G-s
MIH	.100 In/Sec	.849 G-s
MIV	.152 In/Sec	.089 G-s
MIA	.069 In/Sec	.154 G-s
GH	.078 In/Sec	.239 G-s
GV	.146 In/Sec	.099 G-s
GA	.065 In/Sec	.069 G-s
SH	.065 In/Sec	.175 G-s
SV	.110 In/Sec	.052 G-s
SA	.057 In/Sec	.064 G-s

F3-GRD-01 - LINE 3 FINISH GRINDER #1 (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.219 In/Sec	.285 G-s
MOV	.177 In/Sec	.136 G-s
MIH	.129 In/Sec	.307 G-s
MIV	.245 In/Sec	.094 G-s
MIA	.139 In/Sec	.109 G-s

GIH	.070 In/Sec	.127 G-s
GIV	.102 In/Sec	.051 G-s
GIA	.103 In/Sec	.046 G-s

F3-GRD-02 - LINE 3 FINISH GRINDER #2 (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.169 In/Sec	.669 G-s
MOV	.256 In/Sec	.248 G-s
MIH	.213 In/Sec	.282 G-s
MIV	.187 In/Sec	.103 G-s
MIA	.057 In/Sec	.093 G-s
GIH	.032 In/Sec	.168 G-s
GIV	.107 In/Sec	.051 G-s
GIA	.084 In/Sec	.063 G-s

F3-GRD-04 - LINE 3 FINISH GRINDER #4 (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.187 In/Sec	.222 G-s
MOV	.340 In/Sec	.096 G-s
MIH	.072 In/Sec	.353 G-s
MIV	.121 In/Sec	.173 G-s
MIA	.119 In/Sec	.099 G-s
GIH	.070 In/Sec	.290 G-s
GIV	.067 In/Sec	.082 G-s
GIA	.106 In/Sec	.062 G-s

F3-GRD-05 - LINE 3 GRINDER DRIVE (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.044 In/Sec	.640 G-s
MOV	.133 In/Sec	.245 G-s
MIH	.097 In/Sec	1.085 G-s
MIV	.088 In/Sec	.266 G-s
MIA	.089 In/Sec	.227 G-s
G1I	.089 In/Sec	.770 G-s
GIV	.094 In/Sec	.190 G-s
G1A	.122 In/Sec	.265 G-s
G2O	.066 In/Sec	.507 G-s
GOV	.097 In/Sec	.145 G-s
G2A	.059 In/Sec	.248 G-s

B3-KFS-04 - LINE 3 KILN DRIVE (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.032 In/Sec	.603 G-s
MOV	.049 In/Sec	.850 G-s
MIH	.036 In/Sec	.635 G-s
MIV	.058 In/Sec	.570 G-s
MIA	.076 In/Sec	.398 G-s
G1I	.069 In/Sec	.280 G-s
GIV	.097 In/Sec	.193 G-s
G1A	.054 In/Sec	.312 G-s
G2O	.059 In/Sec	.282 G-s
GOV	.072 In/Sec	.200 G-s
G2A	.058 In/Sec	.268 G-s

B3KFS4LUBP - L3 KILN GEARBOX LUBE OIL PMP (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.122 In/Sec	.450 G-s
MOV	.071 In/Sec	.251 G-s
MIH	.061 In/Sec	.512 G-s
MIV	.078 In/Sec	.093 G-s
MIA	.074 In/Sec	.125 G-s
GH	.070 In/Sec	.421 G-s
GV	.076 In/Sec	.166 G-s
GA	.043 In/Sec	.154 G-s
PH	.257 In/Sec	.163 G-s
PV	.124 In/Sec	.097 G-s
PA	.237 In/Sec	.108 G-s

F3-PAD-06 - BLUE OVEN 1 ZONE1 CIRC FAN 1 (27-Mar-25)

	OVERALL LEVEL	1K-20KHz

MOH	.332 In/Sec	.581 G-s
MOV	.166 In/Sec	.241 G-s
MIH	.722 In/Sec	.944 G-s
MIV	.313 In/Sec	.324 G-s
MIA	.581 In/Sec	.375 G-s
FIH	.622 In/Sec	.598 G-s
FIV	.456 In/Sec	.203 G-s
FIA	.276 In/Sec	.191 G-s
FOH	.243 In/Sec	1.968 G-s
FOV	.398 In/Sec	.546 G-s

OVN1ZNE1F2 - BLUE OVEN 1 ZONE1 CIRC FAN 2 (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.194 In/Sec	.892 G-s
MOV	.201 In/Sec	.132 G-s
MIH	.173 In/Sec	.727 G-s
MIV	.321 In/Sec	.065 G-s
MIA	.392 In/Sec	.056 G-s
FIH	.275 In/Sec	.880 G-s
FIV	.402 In/Sec	.128 G-s
FIA	.249 In/Sec	.189 G-s
FOH	.157 In/Sec	.801 G-s
FOV	.242 In/Sec	.278 G-s

OVN1ZNE2F1 - BLUE OVEN 1 ZONE2 CIRC FAN 1 (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.341 In/Sec	.913 G-s
MOV	.739 In/Sec	.262 G-s
MIH	.945 In/Sec	.584 G-s
MIV	.729 In/Sec	.202 G-s
MIA	2.357 In/Sec	.255 G-s
FIH	.812 In/Sec	1.055 G-s
FIV	1.295 In/Sec	.165 G-s
FIA	.636 In/Sec	.117 G-s
FOH	.303 In/Sec	1.136 G-s
FOV	.133 In/Sec	.195 G-s

OVN1ZNE2F2 - BLUE OVEN 1 ZONE2 CIRC FAN 2 (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.453 In/Sec	.613 G-s
MOV	1.055 In/Sec	.531 G-s
MIH	.578 In/Sec	.669 G-s
MIV	1.949 In/Sec	.271 G-s
MIA	.335 In/Sec	.224 G-s
FIH	.793 In/Sec	.847 G-s
FIV	1.824 In/Sec	.182 G-s
FIA	.754 In/Sec	.159 G-s
FOH	.417 In/Sec	3.132 G-s
FOV	.220 In/Sec	.428 G-s

OVEN2Z1FAN - BLUE OVEN 2 ZONE1 CIRC FAN (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.215 In/Sec	.383 G-s
MOV	.766 In/Sec	.089 G-s
MIH	.468 In/Sec	.360 G-s
MIV	.768 In/Sec	.077 G-s
MIA	.503 In/Sec	.085 G-s
FIH	.422 In/Sec	.520 G-s
FIV	.529 In/Sec	.290 G-s
FIA	.422 In/Sec	.104 G-s
FOH	.181 In/Sec	2.234 G-s
FOV	.299 In/Sec	.283 G-s

OVEN2Z2FAN - BLUE OVEN 2 ZONE2 CIRC FAN (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.439 In/Sec	.880 G-s
MOV	.391 In/Sec	.168 G-s
MIH	1.105 In/Sec	.695 G-s
MIV	.526 In/Sec	.196 G-s
MIA	.878 In/Sec	.275 G-s

	FIH	.817 In/Sec	.717 G-s
	FIV	.476 In/Sec	.169 G-s
	FIA	.604 In/Sec	.117 G-s
	FOH	.157 In/Sec	.372 G-s
	FOV	.118 In/Sec	.184 G-s

D1DCR02EXH - #1 GRINDER BAGHOUSE DC FAN (27-Mar-25)

	OVERALL LEVEL	1K-20KHz
MOH	.260 In/Sec	.180 G-s
MOV	.895 In/Sec	.165 G-s
MIH	.246 In/Sec	.887 G-s
MIV	.541 In/Sec	.064 G-s
MIA	.278 In/Sec	.134 G-s
FIH	.484 In/Sec	.518 G-s
FIV	.270 In/Sec	2.822 G-s
FIA	.901 In/Sec	.695 G-s
FOH	.306 In/Sec	.684 G-s
FOV	.388 In/Sec	3.674 G-s

D1DCR01EXH - #3 FINISHING DUST COLLECTOR (27-Mar-25)

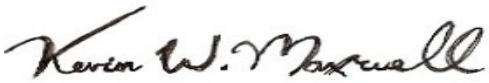
	OVERALL LEVEL	1K-20KHz
MOH	.275 In/Sec	.742 G-s
MOV	.767 In/Sec	.179 G-s
MIH	.205 In/Sec	.952 G-s
MIV	.577 In/Sec	.204 G-s
MIA	.254 In/Sec	.203 G-s
FIH	.382 In/Sec	1.400 G-s
FIV	.304 In/Sec	.535 G-s
FIA	.387 In/Sec	.148 G-s
FOH	.371 In/Sec	.864 G-s
FOV	.201 In/Sec	.641 G-s

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,



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