HI-SPEED INDUSTRIAL SERVICE

QualiTest® Diagnostics

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

July 16th, 2025

Josh Cavitt
Sonoco
Memphis, TN

Josh,

The following is a summary of findings from the quarterly vibration survey performed at your facility on 6/27/25. Please let us know if there are any questions or comments.

QualiTest® uses a four step rating system for defects.

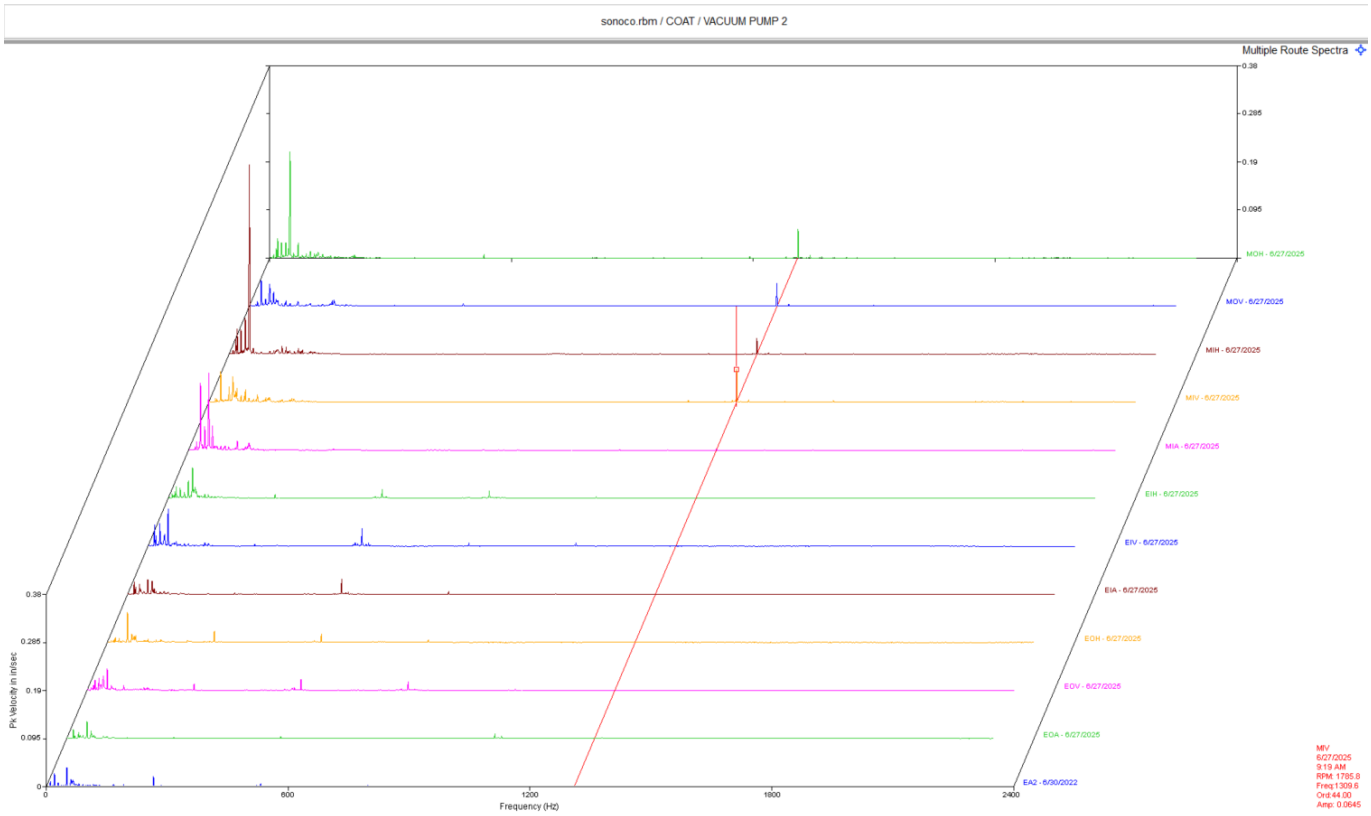
Class I: Defect is present, but effect on reliability is not clear; no immediate action is required. Continue to normally monitor.

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.

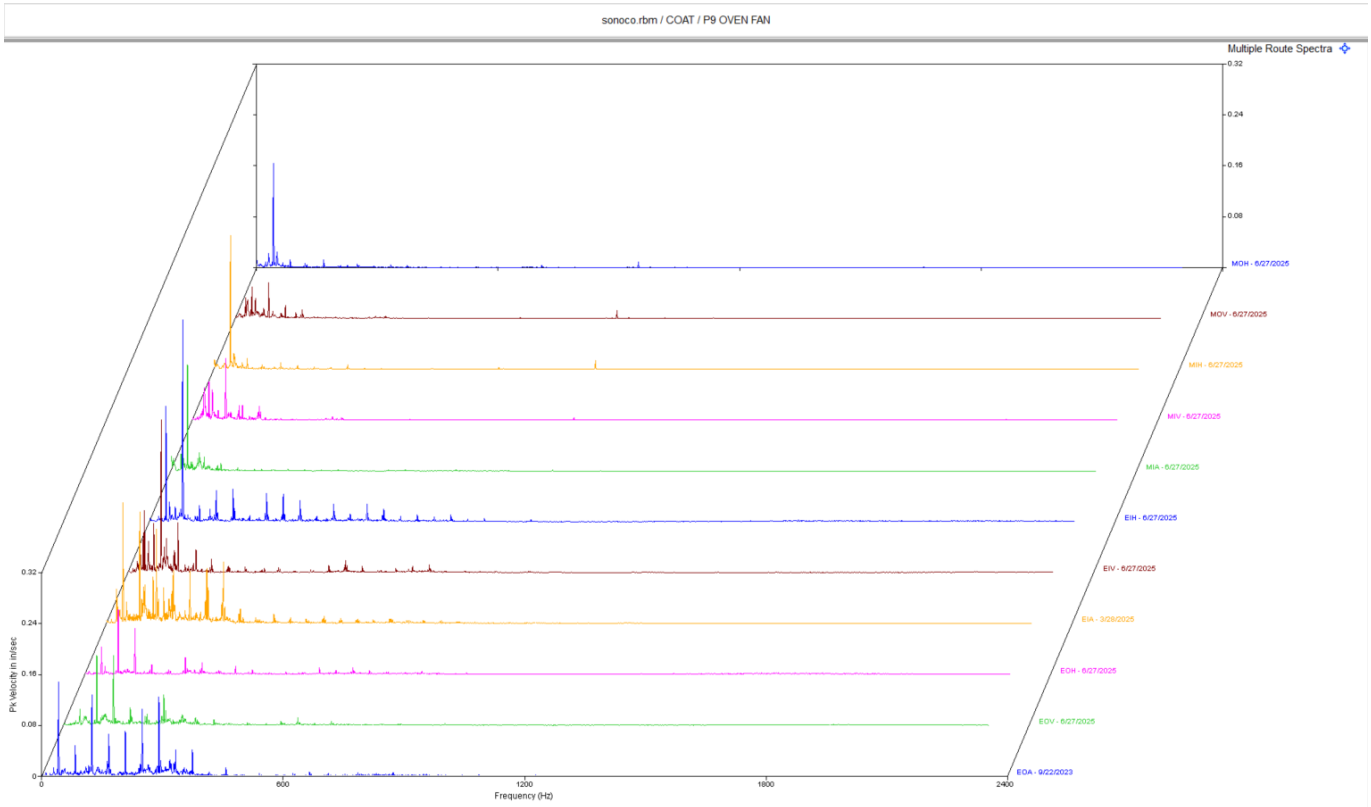
Class IV; Defect (s) present that makes continued reliability unpredictable, and possibility of secondary damage is high. Repairs should be made ASAP. An unscheduled shutdown should be considered for repairs

Defects



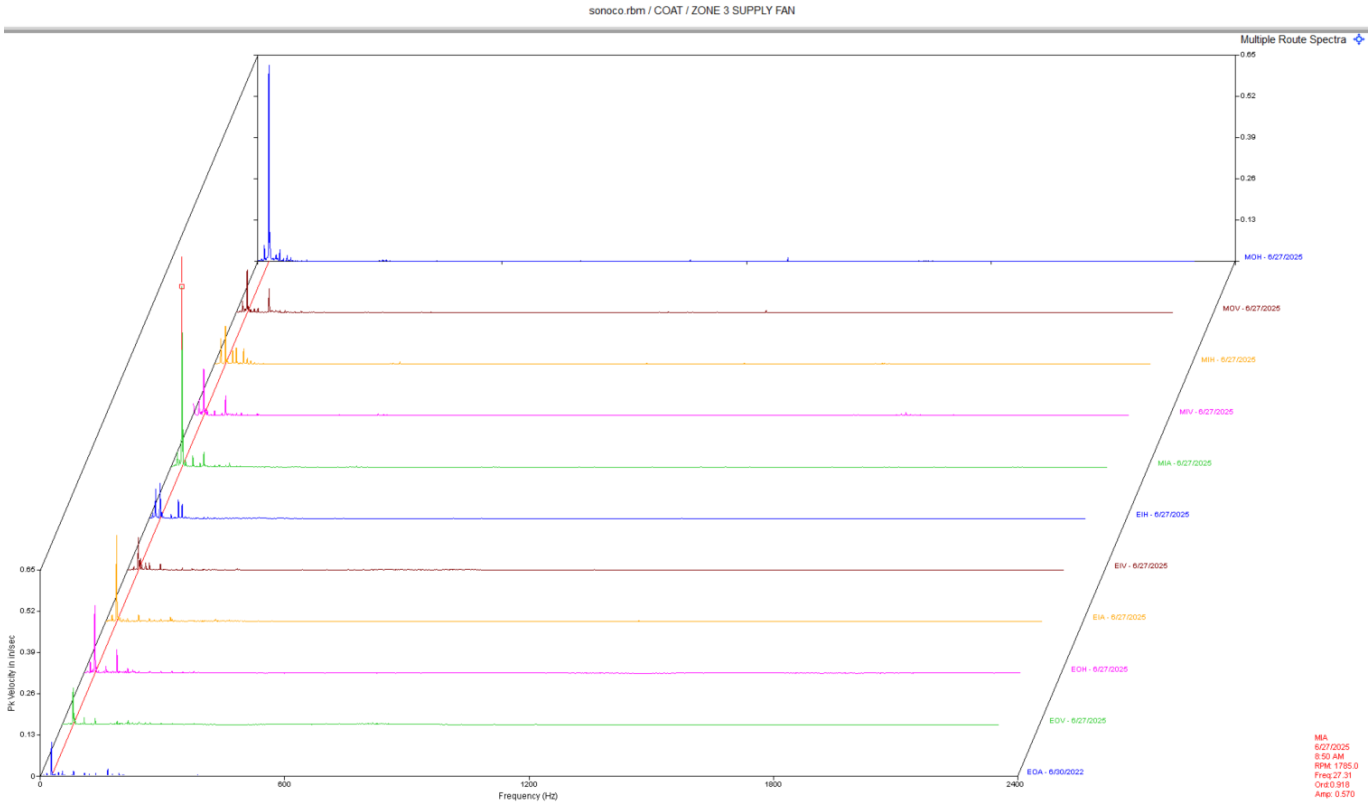
CLASS I Vacuum Pump #2 MOTOR

Multi-point spectra above is the motor and pump. Motor data shows a peak at 44 orders of motor rpm that is growing in amplitude. This peak is likely associated with rotor bar frequency. This is indication of possible rotor faults. Motor also has a high vibration at a frequency tht may be related to belt issues. Check belts and sheaves for issues such as looseness and wear. This will be monitored closely in the upcoming surveys.



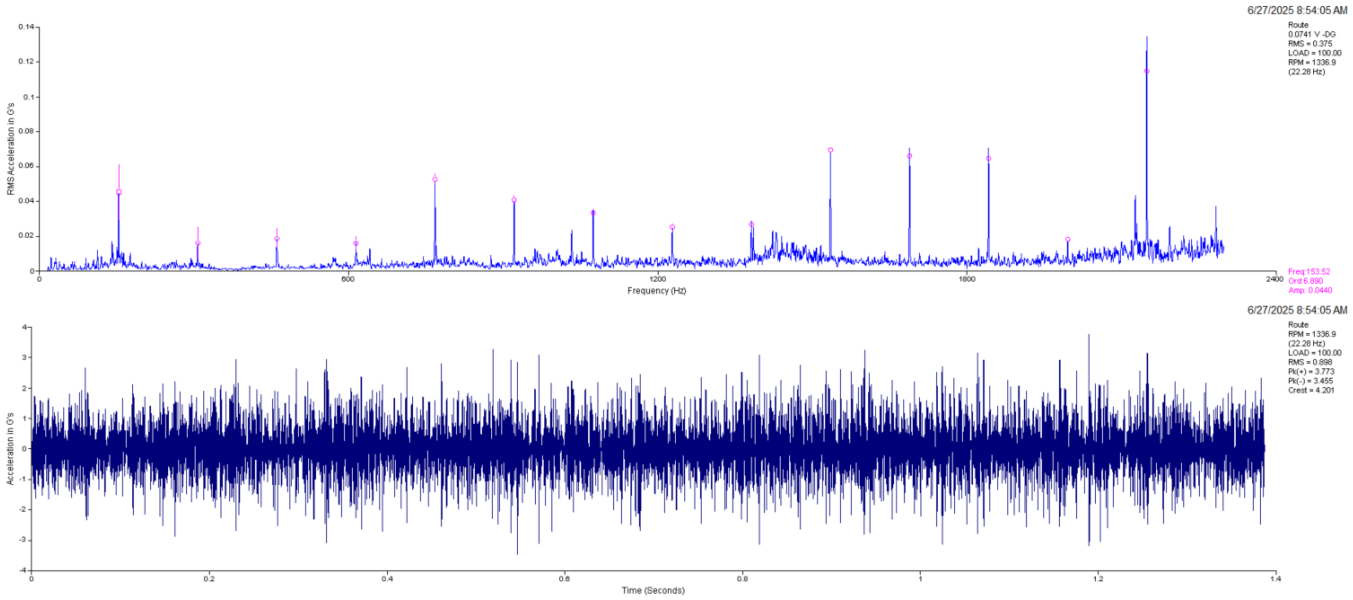
CLASS II P9 Oven Fan

Multipoint spectra of motor and fan shows fan data to have impacting with rpm harmonics. This is indication of mechanical fit looseness and or likely axial thrusting of the fan bearing. One bearing should be set to float and one fan bearing should be set fixed. This allows for axial thermal expansion of the fan shaft. If beairngs are not set properly, then axial thrusting can occurr and cause premature failure. It is recommended to check bearings ensuring they are set propely and check fan bearings for looseness.



CLASS II Zone 3 Supply Fan

Motor data (MOH-MIA) shows sub-synchronous vibration that may be associated with belt frequency. Check belts and sheaves and ensure check all motor base fasteners as time allows.



CLASS II Zone 5 Supply Fan

Fan inboard (DE) bearing data shows non-synchronous harmonics in the spectrum. This is an indication of bearing defects. Inspect fan bearings for defects and wear as scheduling allows.

Abbreviated Last Measurement Summary

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Database: sonoco.rbm
Station: COATER

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
VACPUMP1 - VACUUM PUMP 1	(27-Jun-25)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.083 In/Sec	.393 G-s
MOV	.224 In/Sec	.516 G-s
MIH	.136 In/Sec	.943 G-s
MIV	.213 In/Sec	.615 G-s
MIA	.129 In/Sec	.138 G-s
EIH	.077 In/Sec	.337 G-s
EIV	.052 In/Sec	.297 G-s
EIA	.036 In/Sec	.166 G-s
EOH	.052 In/Sec	.196 G-s
EOV	.044 In/Sec	.188 G-s
VACPUMP2 - VACUUM PUMP 2	(27-Jun-25)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.285 In/Sec	1.102 G-s
MOV	.114 In/Sec	.913 G-s
MIH	.445 In/Sec	1.027 G-s
MIV	.147 In/Sec	1.293 G-s
MIA	.261 In/Sec	.836 G-s
EIH	.114 In/Sec	.097 G-s
EIV	.129 In/Sec	.249 G-s
EIA	.077 In/Sec	.228 G-s
EOH	.091 In/Sec	.143 G-s
EOV	.094 In/Sec	.176 G-s
EOA	.060 In/Sec	.235 G-s
CTPUMP1 - COOLING TOWER PUMP 1	(27-Jun-25)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.038 In/Sec	.480 G-s
MOV	.068 In/Sec	.368 G-s
MIH	.046 In/Sec	.213 G-s
MIV	.048 In/Sec	.321 G-s
MIA	.052 In/Sec	.546 G-s
CTPUMP2 - COOLING TOWER PUMP 2	(27-Jun-25)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.029 In/Sec	.349 G-s
MOV	.065 In/Sec	.367 G-s
MIH	.032 In/Sec	.242 G-s
MIV	.060 In/Sec	.420 G-s
MIA	.049 In/Sec	.304 G-s
P9OVENFAN - P9 OVEN FAN	(27-Jun-25)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.176 In/Sec	.069 G-s
MOV	.121 In/Sec	.068 G-s
MIH	.223 In/Sec	.053 G-s
MIV	.170 In/Sec	.172 G-s
MIA	.199 In/Sec	.013 G-s
EIH	.408 In/Sec	1.186 G-s
EIV	.340 In/Sec	.887 G-s
EOH	.160 In/Sec	1.127 G-s
EOV	.210 In/Sec	.876 G-s
P11OVENFAN - P11 OVEN FAN	(27-Jun-25)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.151 In/Sec	.053 G-s
MOV	.173 In/Sec	.048 G-s
MIH	.214 In/Sec	.052 G-s

MIV	.213 In/Sec	.037 G-s
EIH	.294 In/Sec	.581 G-s
EIV	.383 In/Sec	.629 G-s
EOH	.196 In/Sec	.795 G-s
EOV	.313 In/Sec	.762 G-s

MAINXHAUST - MAIN EXHAUST FAN (27-Jun-25)

	OVERALL LEVEL	1 - 20 KHz
MOH	.128 In/Sec	.581 G-s
MOV	.316 In/Sec	.687 G-s
MIH	.128 In/Sec	.552 G-s
MIV	.193 In/Sec	.732 G-s
MIA	.089 In/Sec	.081 G-s
EIH	.182 In/Sec	1.078 G-s
EIV	.153 In/Sec	1.676 G-s
EOH	.181 In/Sec	.781 G-s
EOV	.126 In/Sec	1.163 G-s

ZONE1FAN - ZONE 1 SUPPLY FAN (27-Jun-25)

	OVERALL LEVEL	1 - 20 KHz
MOH	.116 In/Sec	.401 G-s
MOV	.220 In/Sec	.700 G-s
MIH	.122 In/Sec	1.122 G-s
MIV	.141 In/Sec	1.033 G-s
MIA	.230 In/Sec	.212 G-s
EIH	.188 In/Sec	.641 G-s
EIV	.116 In/Sec	.819 G-s
EIA	.181 In/Sec	.472 G-s
EOH	.164 In/Sec	.320 G-s
EOV	.163 In/Sec	.166 G-s

ZONE2FAN - ZONE 2 SUPPLY FAN (27-Jun-25)

	OVERALL LEVEL	1 - 20 KHz
MOH	.179 In/Sec	.346 G-s
MOV	.172 In/Sec	.304 G-s
MIH	.269 In/Sec	.267 G-s
MIV	.197 In/Sec	.425 G-s
MIA	.239 In/Sec	.268 G-s
EIH	.268 In/Sec	.303 G-s
EIV	.109 In/Sec	.352 G-s
EIA	.371 In/Sec	.188 G-s

ZONE3FAN - ZONE 3 SUPPLY FAN (27-Jun-25)

	OVERALL LEVEL	1 - 20 KHz
MOH	.711 In/Sec	.315 G-s
MOV	.185 In/Sec	.185 G-s
MIH	.188 In/Sec	.305 G-s
MIV	.207 In/Sec	.530 G-s
MIA	.661 In/Sec	.211 G-s
EIH	.185 In/Sec	1.073 G-s
EIV	.144 In/Sec	.137 G-s
EIA	.312 In/Sec	.915 G-s
EOH	.262 In/Sec	1.156 G-s
EOV	.152 In/Sec	.113 G-s

ZONE4FAN - ZONE 4 SUPPLY FAN (27-Jun-25)

	OVERALL LEVEL	1 - 20 KHz
MOH	.268 In/Sec	.232 G-s
MOV	.143 In/Sec	.226 G-s
MIH	.234 In/Sec	.286 G-s
MIV	.210 In/Sec	.255 G-s
MIA	.255 In/Sec	.036 G-s
EIH	.264 In/Sec	.314 G-s
EIV	.061 In/Sec	.132 G-s
EIA	.276 In/Sec	.273 G-s
EOH	.117 In/Sec	.178 G-s
EOV	.188 In/Sec	.026 G-s

ZONE5FAN - ZONE 5 SUPPLY FAN (27-Jun-25)

	OVERALL LEVEL	1 - 20 KHz

MOH	.098 In/Sec	.425 G-s
MOV	.097 In/Sec	.129 G-s
MIH	.142 In/Sec	.159 G-s
MIV	.091 In/Sec	.230 G-s
MIA	.144 In/Sec	.180 G-s
EIH	.108 In/Sec	.859 G-s
EIV	.074 In/Sec	2.171 G-s
EIA	.116 In/Sec	.553 G-s

ZONE6FAN - ZONE 6 SUPPLY FAN (27-Jun-25)

	OVERALL LEVEL	1 - 20 KHz
MOH	.428 In/Sec	.061 G-s
MOV	.552 In/Sec	.085 G-s
MIH	.279 In/Sec	.053 G-s
MIV	.490 In/Sec	.118 G-s
MIA	.350 In/Sec	.033 G-s
EIH	.217 In/Sec	.419 G-s
EIV	.292 In/Sec	.586 G-s
EIA	.274 In/Sec	.226 G-s
EOH	.172 In/Sec	.367 G-s
EOV	.291 In/Sec	.286 G-s

EXHAUSTFAN - EXHAUST FAN (27-Jun-25)

	OVERALL LEVEL	1 - 20 KHz
MOH	.318 In/Sec	.099 G-s
MOV	.273 In/Sec	.191 G-s
MIH	.259 In/Sec	.191 G-s
MIV	.312 In/Sec	.210 G-s

COOLFAN A - COOLING FAN A (27-Jun-25)

	OVERALL LEVEL	1 - 20 KHz
MOH	.096 In/Sec	.343 G-s
MOV	.361 In/Sec	.236 G-s
MIH	.116 In/Sec	.407 G-s
MIV	.354 In/Sec	.429 G-s
MIA	.169 In/Sec	.260 G-s
EIH	.106 In/Sec	.137 G-s
EIV	.117 In/Sec	.236 G-s
EIA	.134 In/Sec	.052 G-s
EOH	.105 In/Sec	.160 G-s
EOV	.156 In/Sec	.289 G-s
EOA	.124 In/Sec	.090 G-s

CLNESNCBLW - C LINE SPENCER BLOWER (27-Jun-25)

	OVERALL LEVEL	1 - 20 KHz
MOH	.112 In/Sec	.191 G-s
MOV	.083 In/Sec	.104 G-s
MIV	.117 In/Sec	.104 G-s

DLNESNCBLW - D LINE SPENCER BLOWER (27-Jun-25)

	OVERALL LEVEL	1 - 20 KHz
MOH	.251 In/Sec	.108 G-s
MOV	.270 In/Sec	.026 G-s
MIH	.175 In/Sec	.048 G-s
MIV	.192 In/Sec	.084 G-s

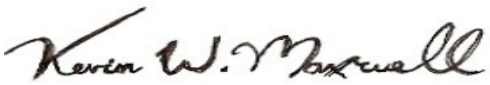
Clarification Of Vibration Units:

Acc --> G-s RMS

Vel --> In/Sec PK

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

Sincerely,



Senior Reliability Specialist
ISO Certified Vibration Analyst, Category III

HI-SPEED INDUSTRIAL SERVICE

QualiTest® Diagnostics

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