HI-SPEED INDUSTRIAL SERVICE

QualiTest® Diagnostics

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December 20, 2024

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Tracy,

The following is a summary of findings from the quarterly vibration survey that was performed on December 11, 2024.

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.

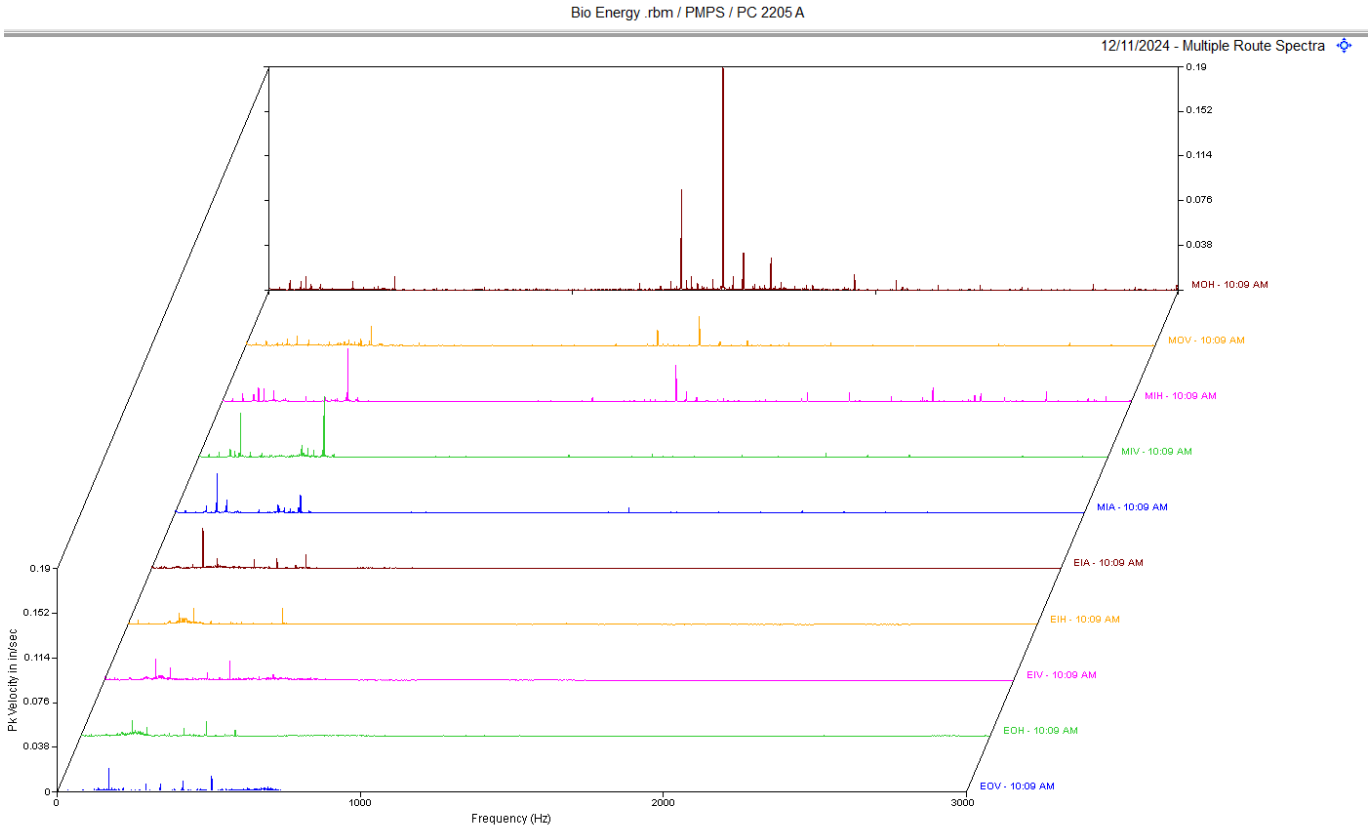
CLASS II: Defect (s) present that may cause problem in long term (2-6 months). Repair during normal maintenance scheduling. Continue to monitor.

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

Defect Summary

PC 2205 A CLASS II



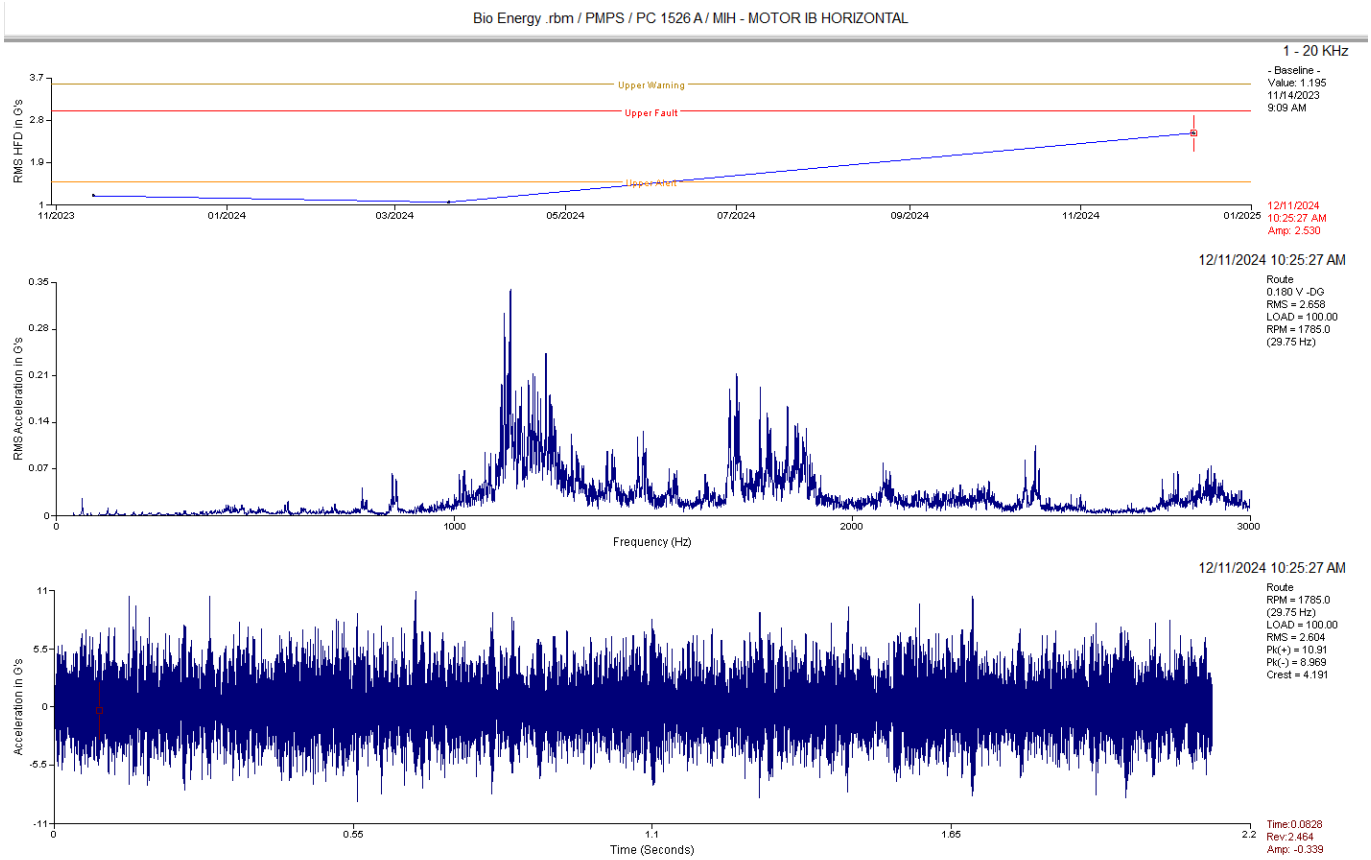
Observation:

Multi-point spectra shows peaks in motor outboard spectrum that are non-synchronous peaks that are harmonics of 4.36 orders of rpm.

Recommendation:

Data suggests bearing issues in the motor. Check motor for bearing defects/we as scheduling allows.

PC 1526 A CLASS II



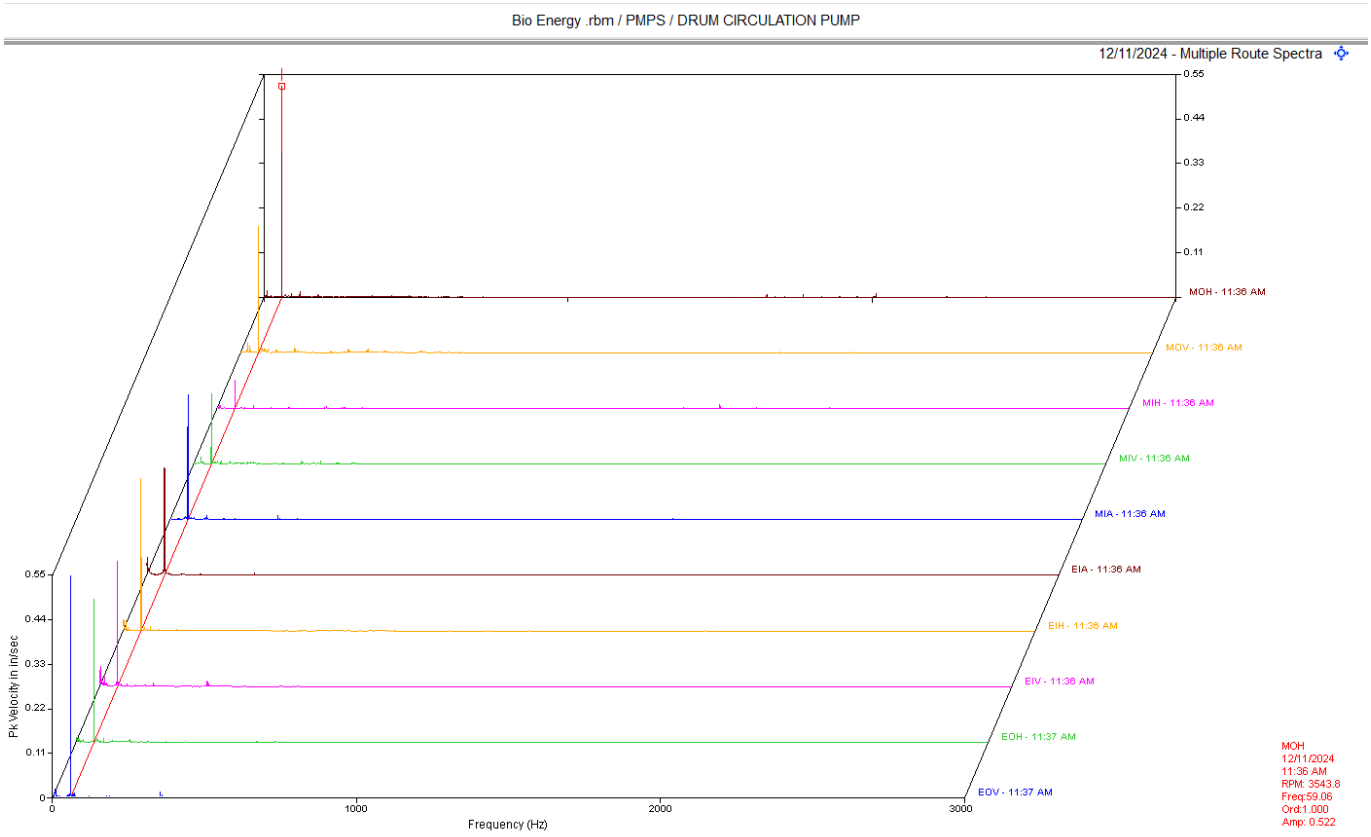
Observation:

Motor inboard data shows non-synchronous vibrations with noise floor. G's have increased some this survey.

Recommendation:

Data suggests bearing issues such as lack of lube and or defects in the motor bearings. Check motor for bearing defects as scheduling allows. Ensure motor bearings have adequate grease.

Drum Circulation Pump CLASS III



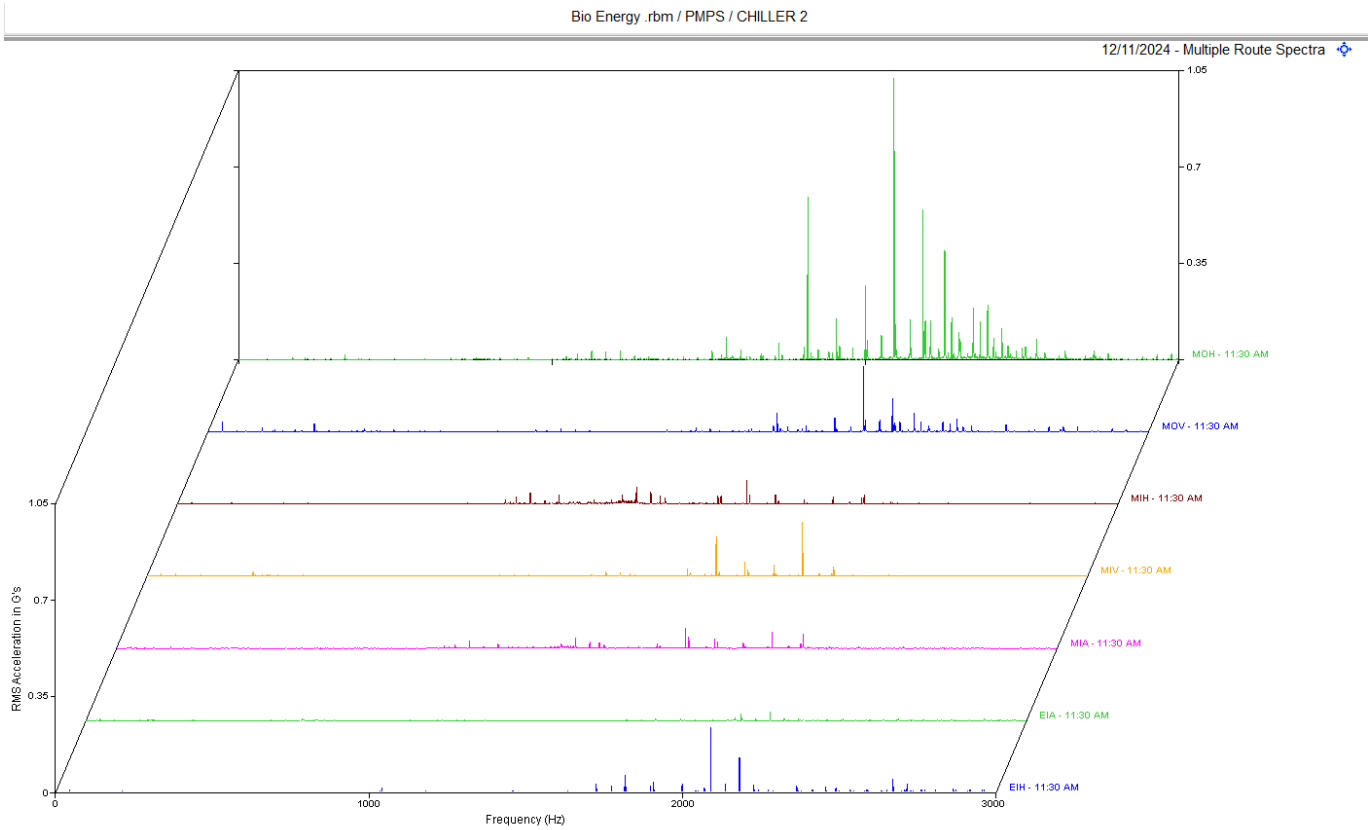
Observation:

Multi-point spectra above are the motor and pump. Data shows a dominant 1 x rpm vibration in motor and pump.

Recommendation:

Either pump impeller is out of balance, motor/pump shaft bent, or the fact that the motor is not anchored to the base is likely cause of 1 x rpm vibration. Inspect pump impeller and check motor shaft if possible. The motor is flange mounted but also may need to be mounted to the base. Shim motor to fill gap between motor foot and base. This should lower 1 x rpm vibration.

Chiller 2 CLASS I



Observation:

Multi point spectra shows some low level non-synchronous peaks in motor outboard. Both outboard and inboard motor data show some electrical vibrations that may be associated with rotor eccentricity/ air-gap variation in motor.

Recommendation:

The motor has evidence of bearing and electrical vibrations, but amplitudes remain low. We will continue to monitor this closely.

Abbreviated Last Measurement Summary

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Database: Bio Energy .rbm
Station: Pumps

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
4125 A - PC 4125 A	(11-Dec-24)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.014 In/Sec	.137 G-s
MOV	.018 In/Sec	.061 G-s
MIH	.014 In/Sec	.093 G-s
MIV	.018 In/Sec	.026 G-s
MIA	.013 In/Sec	.025 G-s
EIA	.020 In/Sec	.082 G-s
EIH	.027 In/Sec	.177 G-s
EIV	.031 In/Sec	.073 G-s
EOH	.023 In/Sec	.172 G-s
EOV	.027 In/Sec	.047 G-s
2106 - PC 2106	(11-Dec-24)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.019 In/Sec	.366 G-s
MOV	.045 In/Sec	.034 G-s
MIH	.020 In/Sec	.251 G-s
MIV	.043 In/Sec	.152 G-s
MIA	.024 In/Sec	.134 G-s
EIA	.026 In/Sec	.062 G-s
EIH	.071 In/Sec	.267 G-s
EIV	.062 In/Sec	.083 G-s
EOH	.066 In/Sec	.210 G-s
EOV	.071 In/Sec	.053 G-s
7210 B - PC 7210 B	(11-Dec-24)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.049 In/Sec	.229 G-s
MOV	.044 In/Sec	.084 G-s
MIH	.046 In/Sec	.315 G-s
MIV	.035 In/Sec	.140 G-s
MIA	.038 In/Sec	.160 G-s
EIA	.042 In/Sec	.372 G-s
EIH	.072 In/Sec	.925 G-s
EIV	.048 In/Sec	.359 G-s
EOH	.093 In/Sec	1.821 G-s
EOV	.064 In/Sec	.709 G-s
7229 - PC 7229	(11-Dec-24)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.077 In/Sec	.225 G-s
MOV	.246 In/Sec	.080 G-s
MIH	.075 In/Sec	.167 G-s
MIV	.189 In/Sec	.074 G-s
MIA	.103 In/Sec	.095 G-s
EIA	.097 In/Sec	.377 G-s
EIH	.155 In/Sec	.733 G-s
EIV	.225 In/Sec	.266 G-s
EOH	.208 In/Sec	.895 G-s
EOV	.239 In/Sec	.674 G-s
7240 A - PC 7240 A	(11-Dec-24)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.035 In/Sec	.122 G-s
MOV	.041 In/Sec	.029 G-s
MIH	.034 In/Sec	.085 G-s

MIV	.038 In/Sec	.042 G-s
MIA	.015 In/Sec	.035 G-s
EIA	.023 In/Sec	.092 G-s
EIH	.020 In/Sec	.341 G-s
EIV	.030 In/Sec	.119 G-s
EOH	.019 In/Sec	.535 G-s
EOV	.027 In/Sec	.084 G-s

7215 B - PC 7215 B (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.073 In/Sec	.180 G-s
MOV	.075 In/Sec	.032 G-s
MIH	.062 In/Sec	.173 G-s
MIV	.073 In/Sec	.042 G-s
MIA	.031 In/Sec	.047 G-s
EIA	.113 In/Sec	.416 G-s
EIH	.173 In/Sec	.866 G-s
EIV	.101 In/Sec	.357 G-s
EOH	.188 In/Sec	2.338 G-s
EOV	.101 In/Sec	.434 G-s

6110 B - PC 6110 B (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.033 In/Sec	.229 G-s
MOV	.030 In/Sec	.106 G-s
MIH	.029 In/Sec	.179 G-s
MIV	.024 In/Sec	.093 G-s
MIA	.016 In/Sec	.092 G-s
EIA	.018 In/Sec	.031 G-s
EIH	.023 In/Sec	.204 G-s
EIV	.018 In/Sec	.026 G-s
EOH	.018 In/Sec	.134 G-s
EOV	.017 In/Sec	.045 G-s

6120 A - PC-6120 A (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.022 In/Sec	.183 G-s
MOV	.026 In/Sec	.074 G-s
MIH	.020 In/Sec	.160 G-s
MIV	.020 In/Sec	.052 G-s
MIA	.0096 In/Sec	.054 G-s
EIA	.0092 In/Sec	.033 G-s
EIH	.022 In/Sec	.102 G-s
EIV	.021 In/Sec	.056 G-s
EOH	.021 In/Sec	.153 G-s
EOV	.024 In/Sec	.036 G-s

2105 B - PC 2105 B (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.042 In/Sec	.584 G-s
MOV	.054 In/Sec	.191 G-s
MIH	.042 In/Sec	.606 G-s
MIV	.051 In/Sec	.212 G-s
MIA	.017 In/Sec	.352 G-s
EIA	.029 In/Sec	.049 G-s
EIH	.024 In/Sec	.198 G-s
EIV	.030 In/Sec	.080 G-s
EOH	.021 In/Sec	.206 G-s
EOV	.021 In/Sec	.032 G-s

1621 B - PD 1621 B (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.027 In/Sec	.353 G-s
MOV	.037 In/Sec	.210 G-s
MIH	.017 In/Sec	.472 G-s
MIV	.024 In/Sec	.105 G-s
MIA	.023 In/Sec	.183 G-s
EIA	.024 In/Sec	.309 G-s
EIH	.038 In/Sec	1.082 G-s
EIV	.026 In/Sec	.191 G-s

	EOH	.025 In/Sec	.621 G-s
	EOV	.026 In/Sec	.254 G-s

2115 A - PV 2115 A (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.277 In/Sec	.475 G-s
MOV	.227 In/Sec	.136 G-s
MIH	.100 In/Sec	.698 G-s
MIV	.203 In/Sec	.102 G-s
MIA	.223 In/Sec	.125 G-s
EIA	.162 In/Sec	.346 G-s
EIH	.241 In/Sec	1.246 G-s
EIV	.182 In/Sec	.279 G-s
EOH	.293 In/Sec	2.383 G-s
EOV	.112 In/Sec	.448 G-s

2205 A - PC 2205 A (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.237 In/Sec	4.095 G-s
MOV	.044 In/Sec	.536 G-s
MIH	.069 In/Sec	1.109 G-s
MIV	.074 In/Sec	.304 G-s
MIA	.048 In/Sec	.232 G-s
EIA	.053 In/Sec	.061 G-s
EIH	.041 In/Sec	.303 G-s
EIV	.050 In/Sec	.140 G-s
EOH	.037 In/Sec	.275 G-s
EOV	.053 In/Sec	.102 G-s

2510 B - PV 2510 B (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.052 In/Sec	.050 G-s
MOV	.281 In/Sec	.026 G-s
MIH	.025 In/Sec	.048 G-s
MIV	.160 In/Sec	.013 G-s
MIA	.080 In/Sec	.016 G-s
EIA	.068 In/Sec	.012 G-s
EIH	.021 In/Sec	.045 G-s
EIV	.131 In/Sec	.017 G-s
EOH	.016 In/Sec	.060 G-s
EOV	.047 In/Sec	.017 G-s

2501 A - PC 2501 A (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.032 In/Sec	.202 G-s
MOV	.067 In/Sec	.058 G-s
MIH	.014 In/Sec	.193 G-s
MIV	.041 In/Sec	.042 G-s
MIA	.029 In/Sec	.040 G-s
EIA	.027 In/Sec	.033 G-s
EIH	.012 In/Sec	.078 G-s
EIV	.033 In/Sec	.022 G-s
EOH	.020 In/Sec	.185 G-s
EOV	.034 In/Sec	.077 G-s

2301 C - PC 2301 C (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.031 In/Sec	.162 G-s
MOV	.061 In/Sec	.050 G-s
MIH	.019 In/Sec	.194 G-s
MIV	.028 In/Sec	.057 G-s
MIA	.023 In/Sec	.034 G-s
EIA	.019 In/Sec	.032 G-s
EIH	.013 In/Sec	.068 G-s
EIV	.028 In/Sec	.034 G-s
EOH	.014 In/Sec	.083 G-s
EOV	.030 In/Sec	.025 G-s

2301 A - PC 2301 A (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz

	MOH	.031 In/Sec	.184 G-s
	MOV	.054 In/Sec	.030 G-s
	MIH	.016 In/Sec	.186 G-s
	MIV	.036 In/Sec	.095 G-s
	MIA	.025 In/Sec	.039 G-s
	EIA	.020 In/Sec	.032 G-s
	EIH	.014 In/Sec	.080 G-s
	EIV	.036 In/Sec	.020 G-s
	EOH	.018 In/Sec	.183 G-s
	EOV	.032 In/Sec	.032 G-s

2310 A - PC 2310 A (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.026 In/Sec	.167 G-s
MOV	.042 In/Sec	.018 G-s
MIH	.024 In/Sec	.052 G-s
MIV	.030 In/Sec	.030 G-s
MIA	.021 In/Sec	.025 G-s
EIA	.048 In/Sec	.206 G-s
EIH	.060 In/Sec	.244 G-s
EIV	.065 In/Sec	.135 G-s
EOH	.045 In/Sec	.279 G-s
EOV	.045 In/Sec	.116 G-s

4110 B - PC 4110 B (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.0088 In/Sec	.076 G-s
MOV	.014 In/Sec	.028 G-s
MIH	.0090 In/Sec	.097 G-s
MIV	.013 In/Sec	.018 G-s
MIA	.0068 In/Sec	.021 G-s
EIA	.021 In/Sec	.011 G-s
EIH	.038 In/Sec	.035 G-s
EIV	.029 In/Sec	.0083 G-s
EOH	.024 In/Sec	.026 G-s
EOV	.021 In/Sec	.0086 G-s

5201 B - PC 5201 B (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.024 In/Sec	1.043 G-s
MOV	.021 In/Sec	.274 G-s
MIH	.033 In/Sec	.533 G-s
MIV	.023 In/Sec	.177 G-s
MIA	.014 In/Sec	.101 G-s
EIA	.030 In/Sec	.098 G-s
EIH	.062 In/Sec	.289 G-s
EIV	.043 In/Sec	.116 G-s
EOH	.039 In/Sec	.166 G-s
EOV	.045 In/Sec	.058 G-s

7501 A - PC 7501 A (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.023 In/Sec	.417 G-s
MOV	.032 In/Sec	.202 G-s
MIH	.023 In/Sec	.464 G-s
MIV	.033 In/Sec	.156 G-s
MIA	.017 In/Sec	.188 G-s
EIA	.073 In/Sec	.035 G-s
EIH	.157 In/Sec	.070 G-s
EIV	.109 In/Sec	.025 G-s
EOH	.110 In/Sec	.130 G-s
EOV	.116 In/Sec	.029 G-s

7506 B - PC 7506 B (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.0042 In/Sec	.017 G-s
MOV	.0058 In/Sec	.0033 G-s
MIH	.0041 In/Sec	.019 G-s
MIV	.0053 In/Sec	.0037 G-s
MIA	.0051 In/Sec	.0036 G-s

EIA	.0056 In/Sec	.0090 G-s
EIH	.0064 In/Sec	.0067 G-s
EIV	.0065 In/Sec	.0069 G-s
EOH	.0042 In/Sec	.0079 G-s
EOV	.0056 In/Sec	.0044 G-s

1526 A - PC 1526 A (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.159 In/Sec	1.616 G-s
MOV	.118 In/Sec	.292 G-s
MIH	.180 In/Sec	2.530 G-s
MIV	.107 In/Sec	1.105 G-s
MIA	.068 In/Sec	.532 G-s
EIA	.028 In/Sec	.170 G-s
EIH	.031 In/Sec	.410 G-s
EIV	.042 In/Sec	.273 G-s
EOH	.039 In/Sec	.784 G-s
EOV	.029 In/Sec	.161 G-s

9901 A - PC 9901 A (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.029 In/Sec	.126 G-s
MOV	.028 In/Sec	.046 G-s
MIH	.026 In/Sec	.172 G-s
MIV	.030 In/Sec	.034 G-s
MIA	.018 In/Sec	.052 G-s
EIA	.087 In/Sec	.221 G-s
EIH	.057 In/Sec	.692 G-s
EIV	.089 In/Sec	.243 G-s
EOH	.035 In/Sec	.505 G-s
EOV	.051 In/Sec	.244 G-s

3110 A - PC 3110 A (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.085 In/Sec	.439 G-s
MOV	.151 In/Sec	.106 G-s
MIH	.079 In/Sec	.419 G-s
MIV	.154 In/Sec	.097 G-s
MIA	.099 In/Sec	.072 G-s
EIA	.077 In/Sec	.207 G-s
EIH	.094 In/Sec	1.497 G-s
EIV	.109 In/Sec	.281 G-s
EOH	.034 In/Sec	.430 G-s
EOV	.037 In/Sec	.179 G-s

4101 B - PC 4101 B (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.039 In/Sec	.656 G-s
MOV	.053 In/Sec	.175 G-s
MIH	.048 In/Sec	.896 G-s
MIV	.048 In/Sec	.265 G-s
MIA	.032 In/Sec	.186 G-s
EIA	.020 In/Sec	.047 G-s
EIH	.021 In/Sec	.156 G-s
EIV	.027 In/Sec	.025 G-s
EOH	.019 In/Sec	.247 G-s
EOV	.035 In/Sec	.055 G-s

4211 A - PC 4211 A (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.027 In/Sec	.162 G-s
MOV	.031 In/Sec	.041 G-s
MIH	.028 In/Sec	.121 G-s
MIV	.031 In/Sec	.020 G-s
MIA	.017 In/Sec	.014 G-s
EIA	.052 In/Sec	.091 G-s
EIH	.051 In/Sec	.280 G-s
EIV	.046 In/Sec	.061 G-s
EOH	.048 In/Sec	.273 G-s
EOV	.059 In/Sec	.083 G-s

7522 B - PC 7522 B (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.034 In/Sec	.109 G-s
MOV	.058 In/Sec	.049 G-s
MIH	.030 In/Sec	.286 G-s
MIV	.059 In/Sec	.077 G-s
MIA	.058 In/Sec	.082 G-s
EIA	.033 In/Sec	.173 G-s
EIH	.031 In/Sec	.302 G-s
EIV	.050 In/Sec	.119 G-s
EOH	.031 In/Sec	.406 G-s
EOV	.055 In/Sec	.159 G-s

9520 A - PC 9520 A (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.047 In/Sec	.350 G-s
MOV	.045 In/Sec	.126 G-s
MIH	.053 In/Sec	.448 G-s
MIV	.042 In/Sec	.134 G-s
MIA	.042 In/Sec	.108 G-s
EIA	.119 In/Sec	.378 G-s
EIH	.076 In/Sec	1.151 G-s
EIV	.088 In/Sec	.594 G-s
EOH	.144 In/Sec	2.143 G-s
EOV	.096 In/Sec	.722 G-s

9701 A - PC 9701 A (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.129 In/Sec	.618 G-s
MOV	.074 In/Sec	.129 G-s
MIH	.103 In/Sec	.748 G-s
MIV	.224 In/Sec	.147 G-s
MIA	.130 In/Sec	.199 G-s
EIA	.110 In/Sec	.185 G-s
EIH	.279 In/Sec	.403 G-s
EIV	.230 In/Sec	.187 G-s
EOH	.052 In/Sec	1.013 G-s
EOV	.061 In/Sec	.241 G-s

9621 B - PC 9621 B (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.105 In/Sec	1.621 G-s
MOV	.072 In/Sec	.774 G-s
MIH	.050 In/Sec	.672 G-s
MIV	.033 In/Sec	.249 G-s
MIA	.039 In/Sec	.163 G-s
EIA	.087 In/Sec	.623 G-s
EIH	.077 In/Sec	.894 G-s
EIV	.085 In/Sec	.580 G-s
EOH	.045 In/Sec	.732 G-s
EOV	.069 In/Sec	.545 G-s

9521 A - PC 9521 A (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.022 In/Sec	.208 G-s
MOV	.118 In/Sec	.036 G-s
MIH	.034 In/Sec	.199 G-s
MIV	.183 In/Sec	.064 G-s
MIA	.187 In/Sec	.046 G-s
EIA	.038 In/Sec	.133 G-s
EIH	.035 In/Sec	.240 G-s
EIV	.039 In/Sec	.253 G-s
EOH	.044 In/Sec	.796 G-s
EOV	.049 In/Sec	.261 G-s

1202 - PC 1202 (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.015 In/Sec	.070 G-s
MOV	.019 In/Sec	.058 G-s

	MIH	.013 In/Sec	.051 G-s
	MIV	.030 In/Sec	.034 G-s
	MIA	.016 In/Sec	.041 G-s
	EIA	.024 In/Sec	.049 G-s
	EIH	.016 In/Sec	.153 G-s
	EIV	.023 In/Sec	.073 G-s
	EOH	.015 In/Sec	.070 G-s
	EOV	.022 In/Sec	.0094 G-s

2101 B - PC 2101 B (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.014 In/Sec	.315 G-s
MOV	.012 In/Sec	.162 G-s
MIH	.011 In/Sec	.428 G-s
MIV	.013 In/Sec	.131 G-s
MIA	.0068 In/Sec	.116 G-s
EIA	.0063 In/Sec	.0065 G-s
EIH	.0054 In/Sec	.039 G-s
EIV	.0060 In/Sec	.0065 G-s
EOH	.0046 In/Sec	.040 G-s
EOV	.0073 In/Sec	.0098 G-s

7260 - PC 7260 (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.067 In/Sec	.111 G-s
MOV	.055 In/Sec	.030 G-s
MIH	.070 In/Sec	.089 G-s
MIV	.044 In/Sec	.030 G-s
MIA	.017 In/Sec	.036 G-s
EIA	.038 In/Sec	.227 G-s
EIH	.038 In/Sec	.320 G-s
EIV	.028 In/Sec	.231 G-s
EOH	.037 In/Sec	.327 G-s
EOV	.034 In/Sec	.138 G-s

1520 B - PC 1520 B (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.138 In/Sec	.283 G-s
MOV	.264 In/Sec	.140 G-s
MIH	.105 In/Sec	.519 G-s
MIV	.232 In/Sec	.117 G-s
MIA	.044 In/Sec	.112 G-s
EIA	.048 In/Sec	.168 G-s
EIH	.099 In/Sec	.632 G-s
EIV	.207 In/Sec	.209 G-s
EOH	.089 In/Sec	.785 G-s
EOV	.194 In/Sec	.343 G-s

6501 A - PC 6501 A (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.039 In/Sec	.042 G-s
MOV	.024 In/Sec	.035 G-s
MIH	.040 In/Sec	.078 G-s
MIV	.022 In/Sec	.046 G-s
MIA	.013 In/Sec	.041 G-s
EIA	.028 In/Sec	.015 G-s
EIH	.055 In/Sec	.060 G-s
EIV	.032 In/Sec	.032 G-s
EOH	.033 In/Sec	.037 G-s
EOV	.026 In/Sec	.013 G-s

1538 B - PC 1538 B (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.095 In/Sec	.460 G-s
MOV	.143 In/Sec	.186 G-s
MIH	.104 In/Sec	.845 G-s
MIV	.149 In/Sec	.250 G-s
MIA	.248 In/Sec	.220 G-s
EIA	.217 In/Sec	.189 G-s
EIH	.089 In/Sec	1.163 G-s

	EIV	.081 In/Sec	.288 G-s
	EOH	.093 In/Sec	.637 G-s
	EOV	.064 In/Sec	.280 G-s

7252 B - PC 7252 B (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.025 In/Sec	.241 G-s
MOV	.041 In/Sec	.037 G-s
MIH	.023 In/Sec	.411 G-s
MIV	.045 In/Sec	.098 G-s
MIA	.037 In/Sec	.163 G-s
EIA	.027 In/Sec	.043 G-s
EIH	.046 In/Sec	.125 G-s
EIV	.028 In/Sec	.125 G-s
EOH	.040 In/Sec	.089 G-s
EOV	.031 In/Sec	.148 G-s

1531 - PC 1531 (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.090 In/Sec	.160 G-s
MOV	.080 In/Sec	.055 G-s
MIH	.068 In/Sec	.224 G-s
MIV	.046 In/Sec	.107 G-s
MIA	.028 In/Sec	.100 G-s
EIA	.028 In/Sec	.095 G-s
EIH	.062 In/Sec	.375 G-s
EIV	.051 In/Sec	.082 G-s
EOH	.058 In/Sec	.537 G-s
EOV	.038 In/Sec	.115 G-s

4304 A - PC 4304 A (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.044 In/Sec	.259 G-s
MOV	.038 In/Sec	.075 G-s
MIH	.044 In/Sec	.498 G-s
MIV	.044 In/Sec	.061 G-s
MIA	.050 In/Sec	.109 G-s
EIA	.045 In/Sec	.150 G-s
EIH	.052 In/Sec	.326 G-s
EIV	.046 In/Sec	.159 G-s
EOH	.038 In/Sec	.457 G-s
EOV	.041 In/Sec	.116 G-s

1430 B - PC 1430 B (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.018 In/Sec	.131 G-s
MOV	.024 In/Sec	.028 G-s
MIH	.016 In/Sec	.196 G-s
MIV	.019 In/Sec	.041 G-s
MIA	.018 In/Sec	.056 G-s
EIA	.011 In/Sec	.060 G-s
EIH	.017 In/Sec	.176 G-s
EIV	.017 In/Sec	.058 G-s
EOH	.014 In/Sec	.249 G-s
EOV	.022 In/Sec	.114 G-s

1425 B - PC 1425 B (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.072 In/Sec	.390 G-s
MOV	.103 In/Sec	.081 G-s
MIH	.071 In/Sec	.390 G-s
MIV	.090 In/Sec	.095 G-s
MIA	.029 In/Sec	.099 G-s
EIA	.023 In/Sec	.190 G-s
EIH	.072 In/Sec	.627 G-s
EIV	.092 In/Sec	.137 G-s
EOH	.067 In/Sec	.633 G-s
EOV	.094 In/Sec	.139 G-s

7130 B - PC 7130 B (11-Dec-24)

		OVERALL LEVEL	1 - 20 KHz
	MOH	.020 In/Sec	.080 G-s
	MOV	.034 In/Sec	.087 G-s
	MIH	.020 In/Sec	.177 G-s
	MIV	.040 In/Sec	.083 G-s
	MIA	.016 In/Sec	.058 G-s
	EIA	.120 In/Sec	.141 G-s
	EIH	.135 In/Sec	.414 G-s
	EIV	.053 In/Sec	.161 G-s
	EOH	.071 In/Sec	.423 G-s
	EOV	.125 In/Sec	.232 G-s

9003 - PC 9003 (11-Dec-24)

		OVERALL LEVEL	1 - 20 KHz
	MOH	.012 In/Sec	.097 G-s
	MOV	.017 In/Sec	.060 G-s
	MIH	.012 In/Sec	.171 G-s
	MIV	.014 In/Sec	.021 G-s
	MIA	.0083 In/Sec	.044 G-s
	EIA	.012 In/Sec	.067 G-s
	EIH	.014 In/Sec	.224 G-s
	EIV	.015 In/Sec	.053 G-s
	EOH	.013 In/Sec	.161 G-s
	EOV	.023 In/Sec	.087 G-s

7101 C - PC 7101 C (11-Dec-24)

		OVERALL LEVEL	1 - 20 KHz
	MOH	.060 In/Sec	.476 G-s
	MOV	.042 In/Sec	.093 G-s
	MIH	.066 In/Sec	.216 G-s
	MIV	.059 In/Sec	.139 G-s
	MIA	.021 In/Sec	.066 G-s
	EIA	.057 In/Sec	.103 G-s
	EIH	.044 In/Sec	.443 G-s
	EIV	.042 In/Sec	.137 G-s
	EOH	.030 In/Sec	.330 G-s
	EOV	.035 In/Sec	.096 G-s

1001 - PC 1001 A (11-Dec-24)

		OVERALL LEVEL	1 - 20 KHz
	MOH	.026 In/Sec	.468 G-s
	MOV	.037 In/Sec	.170 G-s
	MIH	.024 In/Sec	.586 G-s
	MIV	.034 In/Sec	.156 G-s
	MIA	.042 In/Sec	.180 G-s
	EIA	.143 In/Sec	.060 G-s
	EIH	.199 In/Sec	.301 G-s
	EIV	.153 In/Sec	.153 G-s
	EOH	.144 In/Sec	.355 G-s
	EOV	.114 In/Sec	.064 G-s

9202 - PC-9202 (11-Dec-24)

		OVERALL LEVEL	1 - 20 KHz
	MOH	.062 In/Sec	.359 G-s
	MOV	.064 In/Sec	.035 G-s
	MIH	.062 In/Sec	.117 G-s
	MIV	.057 In/Sec	.037 G-s
	MIA	.026 In/Sec	.017 G-s
	EIA	.018 In/Sec	.022 G-s
	EIH	.061 In/Sec	.038 G-s
	EIV	.062 In/Sec	.021 G-s

9301 - PT-9301 (11-Dec-24)

		OVERALL LEVEL	1 - 20 KHz
	MOH	.155 In/Sec	.227 G-s
	MOV	.136 In/Sec	.091 G-s
	MIH	.127 In/Sec	.380 G-s
	MIV	.109 In/Sec	.157 G-s
	MIA	.199 In/Sec	.103 G-s

INFLUENT - DAF INFULENT (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.100 In/Sec	.152 G-s
MOV	.152 In/Sec	.057 G-s
MIH	.077 In/Sec	.133 G-s
MIV	.080 In/Sec	.039 G-s
MIA	.047 In/Sec	.019 G-s
EIA	.063 In/Sec	.018 G-s
EIH	.077 In/Sec	.029 G-s
EIV	.091 In/Sec	.0099 G-s
EOH	.060 In/Sec	.012 G-s
EOV	.107 In/Sec	.0051 G-s

CIRC PUMP - DRUM CIRCULATION PUMP (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.524 In/Sec	.329 G-s
MOV	.321 In/Sec	.051 G-s
MIH	.073 In/Sec	.245 G-s
MIV	.180 In/Sec	.024 G-s
MIA	.311 In/Sec	.078 G-s
EIA	.286 In/Sec	.033 G-s
EIH	.382 In/Sec	.044 G-s
EIV	.324 In/Sec	.019 G-s
EOH	.354 In/Sec	.070 G-s
EOV	.554 In/Sec	.030 G-s

EFFULENT - DAF EFFULENT (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.138 In/Sec	.089 G-s
MOV	.205 In/Sec	.030 G-s
MIH	.067 In/Sec	.119 G-s
MIV	.191 In/Sec	.039 G-s
MIA	.111 In/Sec	.026 G-s
EIA	.185 In/Sec	.019 G-s
EIH	.141 In/Sec	.018 G-s
EIV	.195 In/Sec	.015 G-s

CHILLER1 - CHILLER 1 (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.027 In/Sec	.507 G-s
MOV	.041 In/Sec	.141 G-s
MIH	.041 In/Sec	.929 G-s
MIV	.034 In/Sec	.280 G-s
MIA	.022 In/Sec	.216 G-s
EIA	.026 In/Sec	.557 G-s
EIH	.044 In/Sec	.904 G-s
EIV	.033 In/Sec	.421 G-s
EOH	.022 In/Sec	.292 G-s
EOV	.025 In/Sec	.064 G-s
EOA	.018 In/Sec	.071 G-s

CHILLER2 - CHILLER 2 (11-Dec-24)

	OVERALL LEVEL	1 - 20 KHz
MOH	.071 In/Sec	1.607 G-s
MOV	.081 In/Sec	.350 G-s
MIH	.020 In/Sec	.207 G-s
MIV	.026 In/Sec	.279 G-s
MIA	.023 In/Sec	.192 G-s
EIA	.020 In/Sec	.096 G-s
EIH	.028 In/Sec	.511 G-s
EIV	.035 In/Sec	.140 G-s

Clarification Of Vibration Units:

Acc --> G-s RMS

Vel --> In/Sec PK

As always, it has been a pleasure to serve Bio-Energy Memphis, TN. If there are any comments or questions, do not hesitate to contact us.

Sincerely,

ISO Certified Vibration Analyst, Category III

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