HI-SPEED INDUSTRIAL SERVICE

MILLINGTON, TN

December 15, 2021

Bio Energy

Subject: December (Q4) vibration service

Most of the machines surveyed were found to be in good condition with the exception of the following: Supporting data included.

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.

This completes our assessment of your equipment for this survey. Thank you for your business and don't hesitate to call if you have any comments or questions.

Sincerely,

David W Shook

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Reportable equipment

PC 1526B
The motor bearings are still showing signs of distress. Lubrication could be an issue, but the bearings are hurt. Prepare to replace the motor in the near future. **Rated a Class II Defect.**

PD-1632B
Unit data shows multiple 11x RPM harmonic vibrations with shaft speed sidebands. Could be some looseness in the pump. We will watch for changes. **Rated a Class I Defect.**

PV-2115B
All measurements are up substantially at shaft speed. Inspect the unit coupling and alignment as well as all fasteners. Check for pipe strain. Check the pump shaft for excessive movement which could indicate excessive bearing housing fit wear. **Rated a Class III Defect.**

PC-4300A
Motor vibration data suggest 2 possible issues. There is a 1xRPM vibration as well as a probable 2x line frequency vibration. There could be an air gap issue in the motor or electrical imbalance. Check all electrical connections, voltage, and amperage. Inspect the coupling and perform an alignment as well as a soft foot check to confirm case distortion. **Rated a Class III Defect.**

PC-7101B
There is a probable 2x line frequency vibration in the motor. There could be an air gap issue in the motor or electrical imbalance. Check all electrical connections, voltage, and amperage. Inspect the coupling and perform an alignment as well as a soft foot check to confirm case distortion. Perform as time allows. **Rated a Class I Defect.**

PC-7101D
Outboard pump bearing vibration data shows possible early distress. Ensure the bearings receive periodic lubrication. **Rated a Class I Defect.**

PC-7210A
Motor bearing vibration data shows possible early distress in both bearings. Ensure the bearings receive periodic lubrication if applicable. **Rated a Class I Defect.**

PC-7220A
There is a probable 2x line frequency vibration in the motor. There could be an air gap issue in the motor or electrical imbalance. Check all electrical connections, voltage, and amperage. Inspect the coupling and perform an alignment as well as a soft foot check to confirm case distortion. Perform as time allows. **Rated a Class I Defect.**

PV 7245
Vibration data still shows a low amplitude shaft speed vibration in the unit. Inspect the unit for loose fasteners, broken fan, coupling wear, or shaft alignment issues. **Rated a Class I Defect.**

PC 7522B
Vibration data shows a low amplitude shaft speed vibration in the motor. Inspect the unit for loose fasteners, broken motor fan, coupling wear, or shaft alignment issues. **Rated a Class I Defect.**

PC 9432B
Vibration data shows a low amplitude 1x and 2x RPM vibration in the motor. Inspect the unit for loose fasteners, coupling wear, and shaft alignment as time allows. **Rated a Class I Defect.**

PC 9520A
Vibration data for the motor shows non-synchronous harmonic peaks in the spectrum. We suspect slight bearing race defects. The pump bearing spectral data shows a raised noise floor throughout either indicating strong cavitation or the bearings are in distress. Ensure the bearings have lubrication and check process parameters for correct flow and pressures. **Rated a Class II Defect.**

PC 9901B
Vibration data for the pump still shows synchronous and non-synchronous harmonic peaks in the spectrum. We suspect slight bearing race defects. No immediate action required other than ensure the bearings have lubrication. **Rated a Class I Defect.**

DAF INFULENT PUMP
Vibration data shows an increased shaft speed vibration in the unit. Inspect the unit for loose fasteners, broken fan, coupling wear, pump wear or imbalance. **Rated a Class II Defect.**

DRUM CIRCULATION PUMP
Vibration data shows an increased shaft speed vibration in the unit. Inspect the unit for loose fasteners, broken fan, coupling wear, pump wear or imbalance. **Rated a Class I Defect.**

Abbreviated Last Measurement Summary

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Database: Bio Energy .rbm
Station: BIO ENERGY
Report Date: 15-Dec-21 09:14

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD	MACHINE SPEED
1001 - PC 1001 A		(14-Dec-21)	
	OVERALL LEVEL	1 - 20 KHz	
MOH	.024 In/Sec	.522 G-s	1785.0 RPM
MOV	.019 In/Sec	.167 G-s	
MIH	.014 In/Sec	.421 G-s	
MIV	.025 In/Sec	.053 G-s	
MIA	.028 In/Sec	.064 G-s	
EIA	.042 In/Sec	.100 G-s	
EIH	.050 In/Sec	.434 G-s	
EIV	.046 In/Sec	.194 G-s	
EOH	.053 In/Sec	.620 G-s	
EOV	.034 In/Sec	.067 G-s	
1301 A - PC 1301 A		(14-Dec-21)	
	OVERALL LEVEL	1 - 20 KHz	
MOH	.035 In/Sec	.487 G-s	1785.0 RPM
MOV	.061 In/Sec	.056 G-s	
MIH	.040 In/Sec	.223 G-s	
MIV	.065 In/Sec	.027 G-s	
MIA	.019 In/Sec	.025 G-s	
EIA	.063 In/Sec	.101 G-s	
EIH	.103 In/Sec	.977 G-s	
EIV	.114 In/Sec	.236 G-s	
EOH	.067 In/Sec	1.335 G-s	
EOV	.086 In/Sec	.162 G-s	
1425 B - PC 1425 B		(14-Dec-21)	
	OVERALL LEVEL	1 - 20 KHz	
MOH	.051 In/Sec	.332 G-s	1785.0 RPM
MOV	.041 In/Sec	.057 G-s	
MIH	.058 In/Sec	.473 G-s	
MIV	.043 In/Sec	.145 G-s	
MIA	.015 In/Sec	.108 G-s	
EIA	.028 In/Sec	.339 G-s	
EIH	.059 In/Sec	.627 G-s	
EIV	.048 In/Sec	.238 G-s	
EOH	.059 In/Sec	.488 G-s	
EOV	.048 In/Sec	.092 G-s	
1430 A - PC 1430 A		(14-Dec-21)	
	OVERALL LEVEL	1 - 20 KHz	
MOH	.045 In/Sec	.135 G-s	1785.0 RPM
MOV	.024 In/Sec	.049 G-s	
MIH	.033 In/Sec	.140 G-s	

MIV	.016 In/Sec	.057 G-s	
MIA	.011 In/Sec	.036 G-s	
EIA	.014 In/Sec	.056 G-s	
EIH	.033 In/Sec	.185 G-s	
EIV	.021 In/Sec	.058 G-s	
EOH	.032 In/Sec	.174 G-s	
EOV	.023 In/Sec	.024 G-s	

1520 B - PC 1520 B (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.052 In/Sec	.553 G-s	1785.0 RPM
MOV	.138 In/Sec	.168 G-s	
MIH	.029 In/Sec	.893 G-s	
MIV	.127 In/Sec	.220 G-s	
MIA	.040 In/Sec	.334 G-s	
EIA	.042 In/Sec	.316 G-s	
EIH	.036 In/Sec	1.005 G-s	
EIV	.091 In/Sec	.472 G-s	

1526 B - PC 1526 B (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.089 In/Sec	1.336 G-s	1785.0 RPM
MOV	.103 In/Sec	.259 G-s	
MIH	.095 In/Sec	1.147 G-s	
MIV	.066 In/Sec	.333 G-s	
MIA	.060 In/Sec	.315 G-s	
EIA	.015 In/Sec	.059 G-s	
EIH	.019 In/Sec	.154 G-s	
EIV	.035 In/Sec	.229 G-s	
EOH	.016 In/Sec	.099 G-s	
EOV	.024 In/Sec	.090 G-s	

1536 B - PM 1536 B (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.023 In/Sec	.084 G-s	1785.0 RPM
MOV	.029 In/Sec	.052 G-s	
MIH	.017 In/Sec	.051 G-s	
MIV	.020 In/Sec	.020 G-s	
MIA	.014 In/Sec	.012 G-s	
EIA	.023 In/Sec	.0052 G-s	
EIH	.015 In/Sec	.034 G-s	
EIV	.013 In/Sec	.0087 G-s	
EOH	.013 In/Sec	.022 G-s	
EOV	.013 In/Sec	.016 G-s	

1621 A - PD 1621 A (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.017 In/Sec	.075 G-s	1785.0 RPM
MOV	.021 In/Sec	.054 G-s	
MIH	.013 In/Sec	.053 G-s	
MIV	.014 In/Sec	.063 G-s	
MIA	.015 In/Sec	.060 G-s	
EIA	.043 In/Sec	.043 G-s	
EIH	.017 In/Sec	.094 G-s	
EIV	.025 In/Sec	.103 G-s	
EOH	.017 In/Sec	.091 G-s	
EOV	.025 In/Sec	.097 G-s	

1621 B - PD 1621 B (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.017 In/Sec	.434 G-s	1785.0 RPM
MOV	.019 In/Sec	.066 G-s	
MIH	.015 In/Sec	.495 G-s	
MIV	.0098 In/Sec	.082 G-s	
MIA	.017 In/Sec	.088 G-s	
EIA	.016 In/Sec	.091 G-s	
EIH	.020 In/Sec	.129 G-s	
EIV	.010 In/Sec	.051 G-s	

1631 B - PM 1631 B (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.068 In/Sec	.106 G-s	1785.0 RPM
MOV	.043 In/Sec	.061 G-s	
MIH	.030 In/Sec	.046 G-s	
MIV	.023 In/Sec	.015 G-s	
MIA	.026 In/Sec	.010 G-s	
EIA	.046 In/Sec	.0064 G-s	
EIH	.018 In/Sec	.019 G-s	
EIV	.017 In/Sec	.012 G-s	
EOH	.018 In/Sec	.0098 G-s	
EOV	.014 In/Sec	.0078 G-s	

1632 B - PD 1632 B (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.064 In/Sec	.760 G-s	1785.0 RPM
MOV	.129 In/Sec	.195 G-s	
MIH	.066 In/Sec	1.465 G-s	
MIV	.090 In/Sec	.356 G-s	
MIA	.049 In/Sec	.739 G-s	
EIA	.037 In/Sec	.916 G-s	
EIH	.049 In/Sec	1.641 G-s	
EIV	.055 In/Sec	.477 G-s	
EOH	.055 In/Sec	1.137 G-s	
EOV	.165 In/Sec	.366 G-s	

2105 A - PC 2105 A (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.048 In/Sec	.467 G-s	1785.0 RPM
MOV	.043 In/Sec	.198 G-s	
MIH	.042 In/Sec	1.419 G-s	
MIV	.029 In/Sec	.224 G-s	
MIA	.012 In/Sec	1.216 G-s	
EIA	.060 In/Sec	.188 G-s	
EIH	.051 In/Sec	.418 G-s	
EIV	.075 In/Sec	.150 G-s	
EOH	.051 In/Sec	.426 G-s	
EOV	.083 In/Sec	.045 G-s	

2106 - PC 2106 (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.039 In/Sec	.286 G-s	1785.0 RPM
MOV	.047 In/Sec	.145 G-s	
MIH	.062 In/Sec	.516 G-s	
MIV	.114 In/Sec	.108 G-s	

MIA	.050 In/Sec	.106 G-s	
EIA	.060 In/Sec	.115 G-s	
EIH	.077 In/Sec	.172 G-s	
EIV	.064 In/Sec	.134 G-s	
EOH	.064 In/Sec	.211 G-s	
EOV	.048 In/Sec	.095 G-s	

2115 B - PV 2115 B (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.323 In/Sec	.403 G-s	1785.0 RPM
MOV	.493 In/Sec	.415 G-s	
MIH	.168 In/Sec	.331 G-s	
MIV	.376 In/Sec	.185 G-s	
MIA	.250 In/Sec	.164 G-s	
EIA	.260 In/Sec	.961 G-s	
EIH	.456 In/Sec	1.248 G-s	
EIV	.282 In/Sec	.982 G-s	
EOH	.715 In/Sec	1.203 G-s	
EOV	.242 In/Sec	.521 G-s	

2205 A - PC 2205 A (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.016 In/Sec	.450 G-s	1785.0 RPM
MOV	.022 In/Sec	.067 G-s	
MIH	.016 In/Sec	.261 G-s	
MIV	.027 In/Sec	.059 G-s	
MIA	.040 In/Sec	.078 G-s	
EIA	.016 In/Sec	.068 G-s	
EIH	.024 In/Sec	.075 G-s	
EIV	.026 In/Sec	.060 G-s	
EOH	.022 In/Sec	.072 G-s	
EOV	.022 In/Sec	.038 G-s	

2301 A - PC 2301 A (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.452 In/Sec	.160 G-s	1785.0 RPM
MOV	.072 In/Sec	.108 G-s	
MIH	.191 In/Sec	.235 G-s	
MIV	.051 In/Sec	.129 G-s	
MIA	.104 In/Sec	.071 G-s	
EIA	.040 In/Sec	.128 G-s	
EIH	.114 In/Sec	.187 G-s	
EIV	.042 In/Sec	.130 G-s	
EOH	.081 In/Sec	.393 G-s	
EOV	.041 In/Sec	.131 G-s	

2301 C - PC 2301 C (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.035 In/Sec	.135 G-s	1785.0 RPM
MOV	.086 In/Sec	.034 G-s	
MIH	.018 In/Sec	.125 G-s	
MIV	.029 In/Sec	.034 G-s	
MIA	.029 In/Sec	.041 G-s	
EIA	.024 In/Sec	.063 G-s	
EIH	.017 In/Sec	.081 G-s	
EIV	.028 In/Sec	.060 G-s	
EOH	.014 In/Sec	.085 G-s	

	EOV	.019 In/Sec	.011 G-s	

2310 B - PC 2310 B (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.024 In/Sec	.277 G-s	1785.0 RPM
MOV	.037 In/Sec	.285 G-s	
MIH	.025 In/Sec	.780 G-s	
MIV	.026 In/Sec	.133 G-s	
MIA	.018 In/Sec	.282 G-s	
EIA	.027 In/Sec	.076 G-s	
EIH	.042 In/Sec	.100 G-s	
EIV	.042 In/Sec	.129 G-s	
EOH	.019 In/Sec	.113 G-s	
EOV	.207 In/Sec	.068 G-s	

4101 B - PC 4101 B (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.023 In/Sec	.173 G-s	1785.0 RPM
MOV	.016 In/Sec	.067 G-s	
MIH	.016 In/Sec	.234 G-s	
MIV	.020 In/Sec	.135 G-s	
MIA	.013 In/Sec	.127 G-s	
EIA	.017 In/Sec	.030 G-s	
EIH	.017 In/Sec	.119 G-s	
EIV	.018 In/Sec	.037 G-s	
EOH	.015 In/Sec	.186 G-s	
EOV	.014 In/Sec	.099 G-s	

4110 A - PC 4110 A (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.014 In/Sec	.089 G-s	1785.0 RPM
MOV	.011 In/Sec	.026 G-s	
MIH	.013 In/Sec	.083 G-s	
MIV	.0086 In/Sec	.043 G-s	
MIA	.0050 In/Sec	.031 G-s	
EIA	.017 In/Sec	.034 G-s	
EIH	.023 In/Sec	.064 G-s	
EIV	.026 In/Sec	.025 G-s	
EOH	.011 In/Sec	.059 G-s	
EOV	.018 In/Sec	.042 G-s	

4125 A - PC 4125 A (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.016 In/Sec	.158 G-s	1785.0 RPM
MOV	.029 In/Sec	.272 G-s	
MIH	.014 In/Sec	.131 G-s	
MIV	.026 In/Sec	.044 G-s	
MIA	.0097 In/Sec	.053 G-s	
EIA	.027 In/Sec	.125 G-s	
EIH	.064 In/Sec	.303 G-s	
EIV	.031 In/Sec	.106 G-s	
EOH	.041 In/Sec	.254 G-s	
EOV	.023 In/Sec	.111 G-s	

4203 B - PC 4203 B (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.0048 In/Sec	.023 G-s	1785.0 RPM

MOV	.0089 In/Sec	.0080 G-s	
MIH	.0048 In/Sec	.031 G-s	
MIV	.018 In/Sec	.0060 G-s	
MIA	.0092 In/Sec	.0052 G-s	

4300 A - PC 4300 A (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.231 In/Sec	.108 G-s	1785.0 RPM
MOV	.522 In/Sec	.036 G-s	
MIH	.232 In/Sec	.097 G-s	
MIV	.523 In/Sec	.037 G-s	
MIA	.241 In/Sec	.051 G-s	
EIA	.024 In/Sec	.109 G-s	
EIH	.038 In/Sec	.563 G-s	
EIV	.023 In/Sec	.162 G-s	
EOH	.025 In/Sec	.531 G-s	
EOV	.020 In/Sec	.169 G-s	

4304 A - PC 4304 A (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.042 In/Sec	.295 G-s	1785.0 RPM
MOV	.039 In/Sec	.166 G-s	
MIH	.046 In/Sec	.327 G-s	
MIV	.026 In/Sec	.133 G-s	
MIA	.021 In/Sec	.206 G-s	
EIA	.046 In/Sec	.413 G-s	
EIH	.046 In/Sec	.502 G-s	
EIV	.049 In/Sec	.536 G-s	
EOH	.043 In/Sec	.846 G-s	
EOV	.061 In/Sec	.251 G-s	

4401 A - PC 4401 A (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.0066 In/Sec	.087 G-s	1785.0 RPM
MOV	.0074 In/Sec	.023 G-s	
MIH	.0070 In/Sec	.109 G-s	
MIV	.0086 In/Sec	.026 G-s	
MIA	.0067 In/Sec	.040 G-s	
EIA	.0055 In/Sec	.044 G-s	
EIH	.0059 In/Sec	.024 G-s	
EIV	.0067 In/Sec	.037 G-s	
EOH	.0046 In/Sec	.029 G-s	
EOV	.0066 In/Sec	.034 G-s	

4410 A - PC 4410 A (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.017 In/Sec	.102 G-s	1785.0 RPM
MOV	.017 In/Sec	.018 G-s	
MIH	.018 In/Sec	.377 G-s	
MIV	.015 In/Sec	.042 G-s	
MIA	.0087 In/Sec	.037 G-s	
EIA	.025 In/Sec	.039 G-s	
EIH	.059 In/Sec	.067 G-s	
EIV	.041 In/Sec	.025 G-s	
EOH	.038 In/Sec	.069 G-s	
EOV	.026 In/Sec	.044 G-s	

5201 A - PC 5201 A (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.018 In/Sec	.333 G-s	1785.0 RPM
MOV	.018 In/Sec	.170 G-s	
MIH	.016 In/Sec	.346 G-s	
MIV	.014 In/Sec	.058 G-s	
MIA	.0093 In/Sec	.044 G-s	
EIA	.023 In/Sec	.020 G-s	
EIH	.038 In/Sec	.064 G-s	
EIV	.025 In/Sec	.021 G-s	
EOH	.030 In/Sec	.120 G-s	
EOV	.033 In/Sec	.039 G-s	

6110 B - PC 6110 B (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.013 In/Sec	.171 G-s	1785.0 RPM
MOV	.016 In/Sec	.115 G-s	
MIH	.013 In/Sec	.215 G-s	
MIV	.019 In/Sec	.096 G-s	
MIA	.019 In/Sec	.154 G-s	
EIA	.024 In/Sec	.045 G-s	
EIH	.028 In/Sec	.091 G-s	
EIV	.018 In/Sec	.055 G-s	
EOH	.020 In/Sec	.107 G-s	
EOV	.025 In/Sec	.048 G-s	

6120 B - PC 6120 B (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.031 In/Sec	.153 G-s	1785.0 RPM
MOV	.029 In/Sec	.133 G-s	
MIH	.027 In/Sec	.139 G-s	
MIV	.021 In/Sec	.065 G-s	
MIA	.014 In/Sec	.082 G-s	
EIA	.015 In/Sec	.058 G-s	
EIH	.026 In/Sec	.235 G-s	
EIV	.024 In/Sec	.103 G-s	

6501 A - PC 6501 A (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.051 In/Sec	.159 G-s	1785.0 RPM
MOV	.023 In/Sec	.064 G-s	
MIH	.052 In/Sec	.077 G-s	
MIV	.024 In/Sec	.102 G-s	
MIA	.017 In/Sec	.050 G-s	
EIA	.021 In/Sec	.013 G-s	
EIH	.059 In/Sec	.037 G-s	
EIV	.025 In/Sec	.043 G-s	
EOH	.049 In/Sec	.042 G-s	
EOV	.026 In/Sec	.027 G-s	

7101 A - PC 7101 A (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.092 In/Sec	.321 G-s	1785.0 RPM
MOV	.110 In/Sec	.097 G-s	
MIH	.076 In/Sec	.192 G-s	
MIV	.089 In/Sec	.230 G-s	
MIA	.069 In/Sec	.098 G-s	

EIA	.093 In/Sec	.132 G-s	
EIH	.069 In/Sec	.290 G-s	
EIV	.051 In/Sec	.211 G-s	
EOH	.053 In/Sec	.453 G-s	
EOV	.042 In/Sec	.294 G-s	

7101 B - PC 7101 B (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.139 In/Sec	.176 G-s	1785.0 RPM
MOV	.226 In/Sec	.082 G-s	
MIH	.116 In/Sec	.117 G-s	
MIV	.129 In/Sec	.038 G-s	
MIA	.074 In/Sec	.059 G-s	
EIA	.088 In/Sec	.736 G-s	
EIH	.076 In/Sec	.610 G-s	
EIV	.075 In/Sec	.279 G-s	
EOH	.047 In/Sec	.636 G-s	
EOV	.048 In/Sec	.237 G-s	

7101 C - PC 7101 C (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.097 In/Sec	.350 G-s	1785.0 RPM
MOV	.038 In/Sec	.098 G-s	
MIH	.101 In/Sec	.166 G-s	
MIV	.091 In/Sec	.134 G-s	
MIA	.027 In/Sec	.076 G-s	
EIA	.053 In/Sec	.170 G-s	
EIH	.055 In/Sec	.398 G-s	
EIV	.052 In/Sec	.150 G-s	
EOH	.040 In/Sec	.659 G-s	
EOV	.040 In/Sec	.314 G-s	

7101 D - PC 7101 D (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.085 In/Sec	.148 G-s	1785.0 RPM
MOV	.097 In/Sec	.042 G-s	
MIH	.075 In/Sec	.267 G-s	
MIV	.092 In/Sec	.023 G-s	
MIA	.035 In/Sec	.066 G-s	
EIA	.102 In/Sec	.571 G-s	
EIH	.115 In/Sec	1.809 G-s	
EIV	.096 In/Sec	.408 G-s	
EOH	.060 In/Sec	2.186 G-s	
EOV	.106 In/Sec	.634 G-s	

7210 A - PC 7210 A (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.029 In/Sec	1.021 G-s	1785.0 RPM
MOV	.037 In/Sec	.932 G-s	
MIH	.033 In/Sec	1.194 G-s	
MIV	.065 In/Sec	.463 G-s	
MIA	.041 In/Sec	.946 G-s	
EIA	.043 In/Sec	.224 G-s	
EIH	.065 In/Sec	.824 G-s	
EIV	.051 In/Sec	.207 G-s	
EOH	.069 In/Sec	.703 G-s	
EOV	.047 In/Sec	.231 G-s	

7215 A	- PC 7215 A		(14-Dec-21)	
		OVERALL LEVEL	1 - 20 KHz	
	MOH	.028 In/Sec	.551 G-s	1785.0 RPM
	MOV	.032 In/Sec	.214 G-s	
	MIH	.028 In/Sec	.237 G-s	
	MIV	.031 In/Sec	.137 G-s	
	MIA	.024 In/Sec	.062 G-s	
	EIA	.042 In/Sec	.195 G-s	
	EIH	.070 In/Sec	.205 G-s	
	EIV	.039 In/Sec	.062 G-s	
	EOH	.047 In/Sec	.255 G-s	
	EOV	.030 In/Sec	.052 G-s	
7220 A	- PC 7220 A		(14-Dec-21)	
		OVERALL LEVEL	1 - 20 KHz	
	MOH	.226 In/Sec	.768 G-s	1785.0 RPM
	MOV	.058 In/Sec	.207 G-s	
	MIH	.225 In/Sec	.344 G-s	
	MIV	.056 In/Sec	.196 G-s	
	MIA	.036 In/Sec	.355 G-s	
	EIA	.058 In/Sec	.107 G-s	
	EIH	.067 In/Sec	.191 G-s	
	EIV	.050 In/Sec	.101 G-s	
	EOH	.050 In/Sec	.392 G-s	
	EOV	.056 In/Sec	.095 G-s	
7240 B	- PC 7240 B		(14-Dec-21)	
		OVERALL LEVEL	1 - 20 KHz	
	MOH	.018 In/Sec	.170 G-s	1785.0 RPM
	MOV	.026 In/Sec	.146 G-s	
	MIH	.016 In/Sec	.166 G-s	
	MIV	.014 In/Sec	.043 G-s	
	MIA	.012 In/Sec	.038 G-s	
	EIA	.015 In/Sec	.065 G-s	
	EIH	.014 In/Sec	.180 G-s	
	EIV	.014 In/Sec	.036 G-s	
	EOH	.015 In/Sec	.215 G-s	
	EOV	.020 In/Sec	.135 G-s	
7245	- PV 7245		(14-Dec-21)	
		OVERALL LEVEL	1 - 20 KHz	
	MOH	.069 In/Sec	.168 G-s	1785.0 RPM
	MOV	.190 In/Sec	.151 G-s	
	MIH	.110 In/Sec	.144 G-s	
	MIV	.313 In/Sec	.404 G-s	
	MIA	.148 In/Sec	.090 G-s	
	EIA	.136 In/Sec	.884 G-s	
	EIH	.151 In/Sec	1.234 G-s	
	EIV	.418 In/Sec	.805 G-s	
	EOH	.265 In/Sec	1.970 G-s	
	EOV	.231 In/Sec	.902 G-s	
7252 A	- PC 7252 A		(14-Dec-21)	
		OVERALL LEVEL	1 - 20 KHz	
	MOH	.031 In/Sec	.116 G-s	1785.0 RPM
	MOV	.022 In/Sec	.058 G-s	

MIH	.028 In/Sec	.121 G-s	
MIV	.017 In/Sec	.032 G-s	
MIA	.011 In/Sec	.036 G-s	
EIA	.016 In/Sec	.050 G-s	
EIH	.019 In/Sec	.119 G-s	
EIV	.013 In/Sec	.067 G-s	
EOH	.018 In/Sec	.130 G-s	
EOV	.015 In/Sec	.031 G-s	

7501 B - PC 7501 B (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.035 In/Sec	.290 G-s	1785.0 RPM
MOV	.027 In/Sec	.146 G-s	
MIH	.031 In/Sec	.440 G-s	
MIV	.025 In/Sec	.295 G-s	
MIA	.030 In/Sec	.420 G-s	
EIA	.020 In/Sec	.062 G-s	
EIH	.026 In/Sec	.116 G-s	
EIV	.018 In/Sec	.084 G-s	
EOH	.015 In/Sec	.068 G-s	
EOV	.023 In/Sec	.013 G-s	

7505 B - PC 7505 B (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.022 In/Sec	.424 G-s	1785.0 RPM
MOV	.020 In/Sec	.106 G-s	
MIH	.025 In/Sec	.619 G-s	
MIV	.020 In/Sec	.170 G-s	
MIA	.017 In/Sec	.181 G-s	
EIA	.017 In/Sec	.038 G-s	
EIH	.017 In/Sec	.104 G-s	
EIV	.022 In/Sec	.066 G-s	
EOH	.020 In/Sec	.183 G-s	
EOV	.021 In/Sec	.152 G-s	

9202 B - PC 9202 B (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.102 In/Sec	.180 G-s	1785.0 RPM
MOV	.108 In/Sec	.060 G-s	
MIH	.087 In/Sec	.123 G-s	
MIV	.089 In/Sec	.018 G-s	
MIA	.073 In/Sec	.053 G-s	

9305 A - PC 9305 A (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.082 In/Sec	.514 G-s	1785.0 RPM
MOV	.067 In/Sec	.162 G-s	
MIH	.080 In/Sec	.589 G-s	
MIV	.089 In/Sec	.080 G-s	
MIA	.027 In/Sec	.154 G-s	
EIA	.055 In/Sec	.140 G-s	
EIH	.077 In/Sec	.570 G-s	
EIV	.047 In/Sec	.256 G-s	
EOH	.042 In/Sec	.507 G-s	
EOV	.040 In/Sec	.298 G-s	

9305 B - PC 9305 B (14-Dec-21)

		OVERALL LEVEL	1 - 20 KHz	
	MOH	.158 In/Sec	.284 G-s	1785.0 RPM
	MOV	.135 In/Sec	.093 G-s	
	MIH	.145 In/Sec	.237 G-s	
	MIV	.121 In/Sec	.088 G-s	
	MIA	.021 In/Sec	.166 G-s	
	EIA	.073 In/Sec	.548 G-s	
	EIH	.107 In/Sec	.504 G-s	
	EIV	.088 In/Sec	.383 G-s	
	EOH	.076 In/Sec	.558 G-s	
	EOV	.050 In/Sec	.228 G-s	

9321 - PC 9321 (14-Dec-21)

		OVERALL LEVEL	1 - 20 KHz	
	MOH	.197 In/Sec	.409 G-s	1785.0 RPM
	MOV	.211 In/Sec	.102 G-s	
	MIH	.124 In/Sec	.197 G-s	
	MIV	.111 In/Sec	.069 G-s	
	MIA	.032 In/Sec	.118 G-s	
	EIA	.037 In/Sec	.180 G-s	
	EIH	.078 In/Sec	.199 G-s	
	EIV	.069 In/Sec	.193 G-s	
	EOH	.045 In/Sec	.326 G-s	
	EOV	.052 In/Sec	.195 G-s	

9322 - PC 9322 (14-Dec-21)

		OVERALL LEVEL	1 - 20 KHz	
	MOH	.081 In/Sec	.812 G-s	1785.0 RPM
	MOV	.104 In/Sec	.205 G-s	
	MIH	.076 In/Sec	.977 G-s	
	MIV	.113 In/Sec	.360 G-s	
	MIA	.044 In/Sec	.300 G-s	
	EIA	.035 In/Sec	.451 G-s	
	EIH	.044 In/Sec	.764 G-s	
	EIV	.087 In/Sec	.341 G-s	
	EOH	.032 In/Sec	.394 G-s	
	EOV	.044 In/Sec	.169 G-s	

9432 B - PC 9432 B (14-Dec-21)

		OVERALL LEVEL	1 - 20 KHz	
	MOH	.273 In/Sec	.100 G-s	1785.0 RPM
	MOV	.121 In/Sec	.049 G-s	
	MIH	.098 In/Sec	.196 G-s	
	MIV	.111 In/Sec	.231 G-s	
	MIA	.077 In/Sec	.167 G-s	
	EIA	.056 In/Sec	.152 G-s	
	EIH	.127 In/Sec	.726 G-s	
	EIV	.090 In/Sec	.237 G-s	
	EOH	.045 In/Sec	.652 G-s	
	EOV	.035 In/Sec	.244 G-s	

9435 BFAN - PK 9435 BOILER FAN (14-Dec-21)

		OVERALL LEVEL	1 - 20 KHz	
	MOH	.116 In/Sec	.603 G-s	1785.0 RPM
	MOV	.115 In/Sec	.246 G-s	
	MIH	.088 In/Sec	1.132 G-s	
	MIV	.069 In/Sec	.250 G-s	

	MIA	.101 In/Sec	.185 G-s	

9520 A - PC 9520 A (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.108 In/Sec	1.603 G-s	1785.0 RPM
MOV	.150 In/Sec	.446 G-s	
MIH	.087 In/Sec	.698 G-s	
MIV	.268 In/Sec	1.656 G-s	
MIA	.212 In/Sec	.737 G-s	
EIA	.175 In/Sec	.831 G-s	
EIH	.132 In/Sec	1.553 G-s	
EIV	.175 In/Sec	.543 G-s	
EOH	.188 In/Sec	3.236 G-s	
EOV	.132 In/Sec	.620 G-s	

9601 A - PC 9601 A (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.022 In/Sec	.191 G-s	1785.0 RPM
MOV	.079 In/Sec	.170 G-s	
MIH	.032 In/Sec	.135 G-s	
MIV	.150 In/Sec	.036 G-s	
MIA	.107 In/Sec	.035 G-s	
EIA	.034 In/Sec	.196 G-s	
EIH	.050 In/Sec	.297 G-s	
EIV	.041 In/Sec	.099 G-s	
EOH	.043 In/Sec	.357 G-s	
EOV	.045 In/Sec	.165 G-s	

9621 B - PC 9621 B (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.070 In/Sec	1.312 G-s	1785.0 RPM
MOV	.045 In/Sec	.647 G-s	
MIH	.042 In/Sec	.790 G-s	
MIV	.032 In/Sec	.212 G-s	
MIA	.034 In/Sec	.208 G-s	
EIA	.047 In/Sec	.660 G-s	
EIH	.041 In/Sec	.677 G-s	
EIV	.063 In/Sec	.414 G-s	
EOH	.039 In/Sec	.820 G-s	
EOV	.069 In/Sec	.702 G-s	

9901 B - PC 9901 B (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.044 In/Sec	.121 G-s	1785.0 RPM
MOV	.064 In/Sec	.051 G-s	
MIH	.041 In/Sec	.192 G-s	
MIV	.082 In/Sec	.120 G-s	
MIA	.035 In/Sec	.127 G-s	
EIA	.077 In/Sec	.482 G-s	
EIH	.100 In/Sec	.554 G-s	
EIV	.097 In/Sec	.444 G-s	
EOH	.075 In/Sec	1.217 G-s	
EOV	.087 In/Sec	.326 G-s	

INFLUENT - DAF INFULENT (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.425 In/Sec	.218 G-s	1785.0 RPM

MOV	.480 In/Sec	.108 G-s	
MIH	.133 In/Sec	.268 G-s	
MIV	.463 In/Sec	.122 G-s	
MIA	.393 In/Sec	.108 G-s	

CIRC PUMP - DRUM CIRCULATION PUMP (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.334 In/Sec	.457 G-s	1785.0 RPM
MOV	.452 In/Sec	.134 G-s	
MIH	.103 In/Sec	.441 G-s	
MIV	.174 In/Sec	.097 G-s	
MIA	.197 In/Sec	.114 G-s	

EFFULENT - DAF EFFULENT (14-Dec-21)

	OVERALL LEVEL	1 - 20 KHz	
MOH	.218 In/Sec	.260 G-s	1785.0 RPM
MOV	.157 In/Sec	.185 G-s	
MIH	.305 In/Sec	.316 G-s	
MIV	.190 In/Sec	.116 G-s	
MIA	.072 In/Sec	.142 G-s	

Clarification Of Vibration Units:

Acc	--> G-s	RMS
Vel	--> In/Sec	PK