HI-SPEED INDUSTRIAL SERVICE

MILLINGTON, TN

October 2, 2019

Hill Service

Subject: 157 Poplar Chiller analysis

Vibration data was collected on the Chiller at 157 Poplar on Friday 9-27-2019. Detailed analysis follows. This machine is called 100 in this database. The motor is rated **Class I** at this time.

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,

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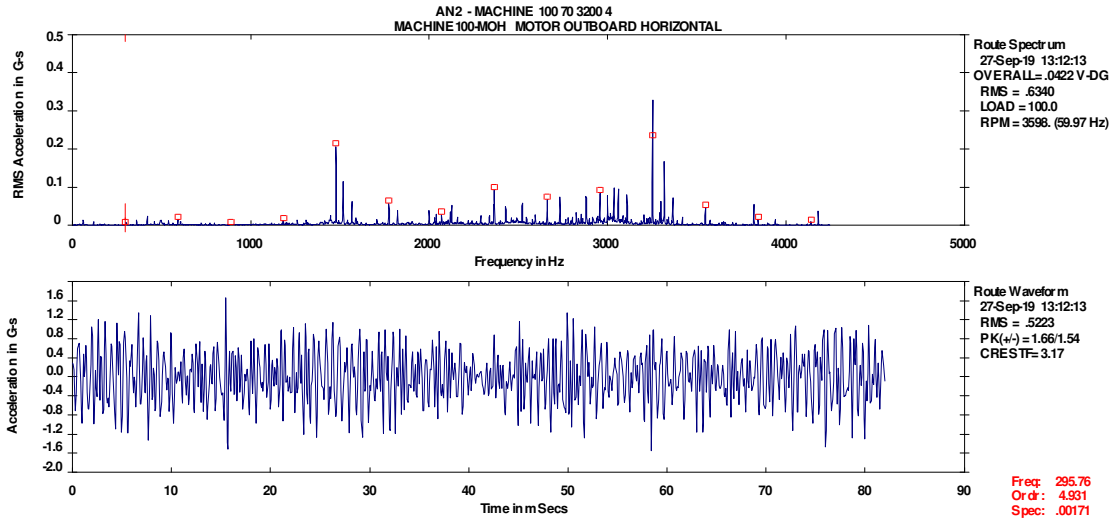
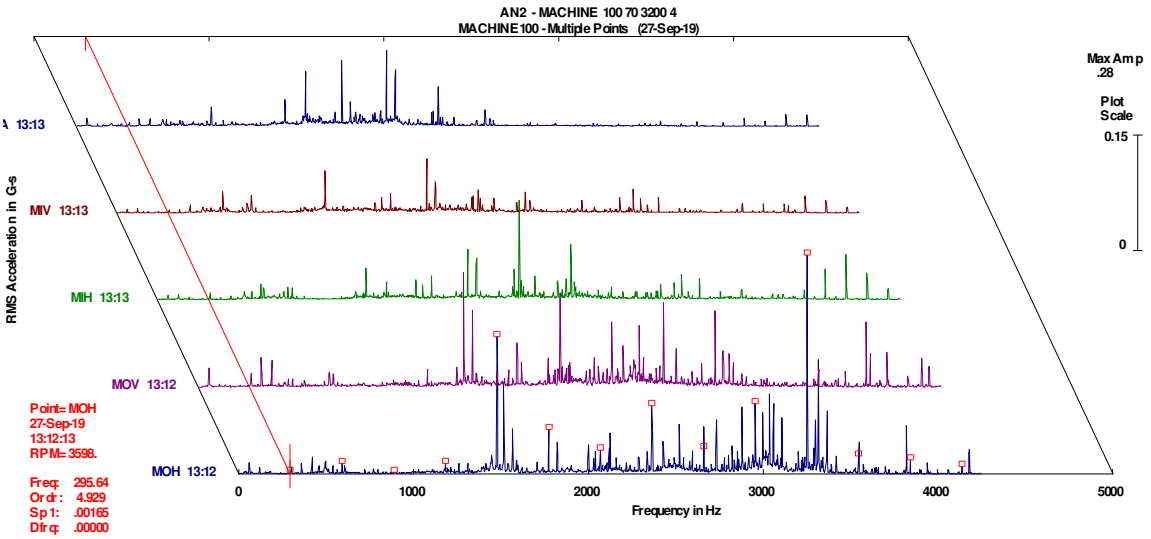
Data was collected after the unit was run up to maximum allowable output.
Vibration spectra and time waveform below show what look to be non-synchronous vibration peaks with Impacting in the time domain. The Waterfall and empirical data show that the outboard bearing has the highest vibration. RMS acceleration is below 1 g for all points.





Due to the appearance of what looks to be non-synchronous vibrations in the bearings we will rate this unit at a **Class I** category for now. Periodic monitoring is recommended going forward.

Abbreviated Last Measurement Summary

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Database: Analysis.rbm
Area: ANALYSIS 2
Report Date: 02-Oct-19 15:12

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
MACHINE100 - MACHINE 100 70 3200 4	(27-Sep-19)	
	OVERALL LEVEL	1K-20KHz
MOH - MOTOR OUTBOARD HORIZONTAL	.042 In/Sec	.705 G-s
MOV - MOTOR OUTBOARD VERTICAL	.049 In/Sec	.437 G-s
MIH - MOTOR INBOARD HORIZONTAL	.021 In/Sec	.270 G-s
MIV - MOTOR INBOARD VERTICAL	.019 In/Sec	.187 G-s
MIA - MOTOR INBOARD AXIAL	.027 In/Sec	.260 G-s

Clarification Of Vibration Units:

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