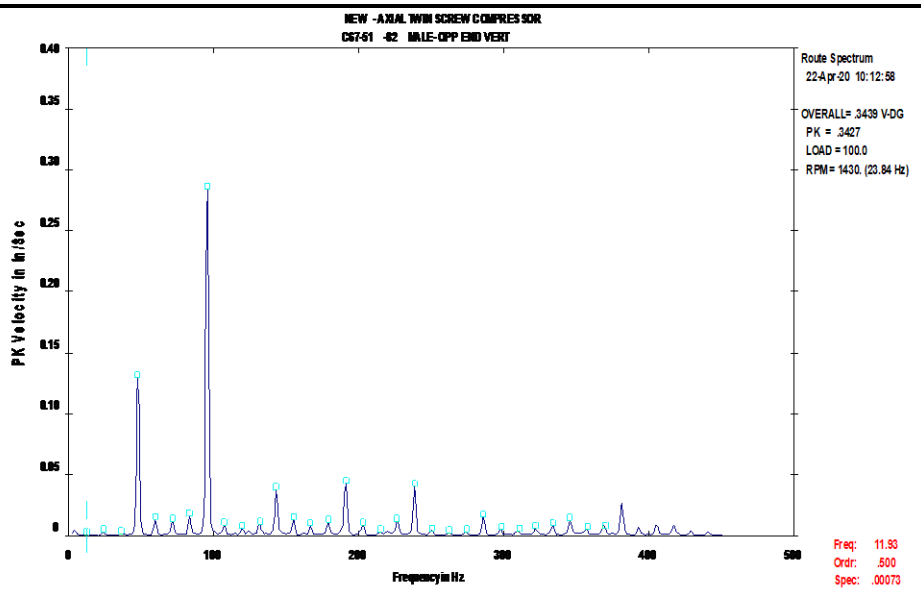
HI-SPEED PREDICTIVE MAINTENANCE

Machinery Vibration Report

Client	Penn A Kem	**Survey Date**	4-22-2020
Location	Memphis, TN	**Report Date**	4-23-2020
Machine	C56-51 Twin Screw Compressor	**QMS No.**	142350
Component	Lobe Pass	**Analyst**	DWS

Defect Rating for this machine	**Class II**
Defect Rating System	
Class I: Defect is present, but effect on reliability is not clear; no immediate action is required. Continue normal monitoring.	**Class III;** Defect (s) present that may cause failure in short term (less than 2 mos.). Should be addressed as soon as practical, with a high maintenance priority. Increase monitoring frequency.
Class II: Defect (s) present that may cause problem in long term (2-6 mos.). Repair during normal maintenance scheduling. Continue to monitor.	**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.***

Vibration Data



Analysis

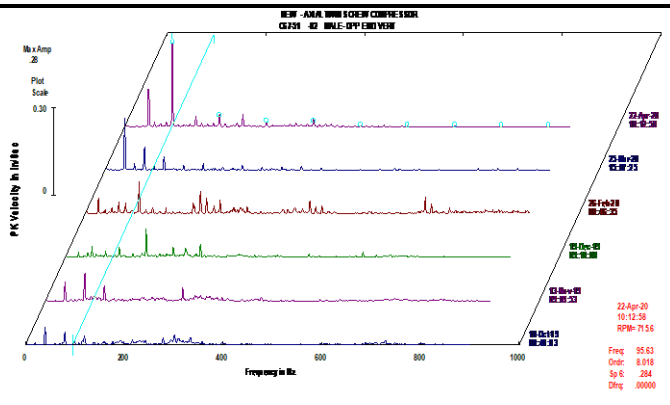
Dominant lobe pass vibrations peak in the spectrum of the male blower shaft.

Discussion / Repair recommendations

Low level harmonics, or possibly sidebands of female shaft speed and 2x/4x vibrations of Male shaft speed are evident in the gear end of the Male shaft. No significant bearing defect frequency vibration peaks have suggested distress in the bearings yet. Lobe pass vibrations dominate the data up to our current F-max. We believe the unit is under high load and or the lobe clearances are reduced and allowing possible contact between the rotors. We need to confirm the gear mesh frequency. Please provide tooth count.

Rated a Class II Defect.

Trend Data



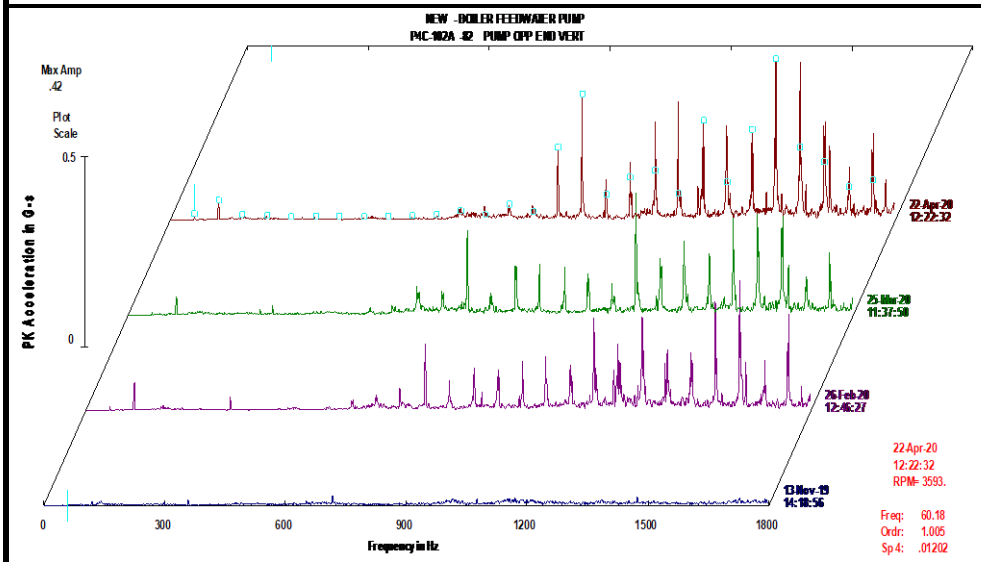
HI-SPEED PREDICTIVE MAINTENANCE

Machinery Vibration Report

Client	Penn A Kem	**Survey Date**	4-22-2020
Location	Memphis, TN	**Report Date**	4-23-2020
Machine	P4C-102A Boiler Feed Water Pump	**QMS No.**	142350
Component	Bearings	**Analyst**	DWS

Defect Rating for this machine	**Class II**
Defect Rating System	
Class I: Defect is present, but effect on reliability is not clear; no immediate action is required. Continue normal monitoring.	**Class III;** Defect (s) present that may cause failure in short term (less than 2 mos.). Should be addressed as soon as practical, with a high maintenance priority. Increase monitoring frequency.
Class II: Defect (s) present that may cause problem in long term (2-6 mos.). Repair during normal maintenance scheduling. Continue to monitor.	**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.***

Vibration Data



Analysis

Increase in apparent shaft speed harmonics.

Discussion / Repair recommendations

The pump bearings seem to be in mechanical distress due to the large jump in harmonics. Inspect the unit bearings as well as all other components for looseness. Seal water also seemed to be leaking profusely. **Rated a Class II Defect.**

Trend Data