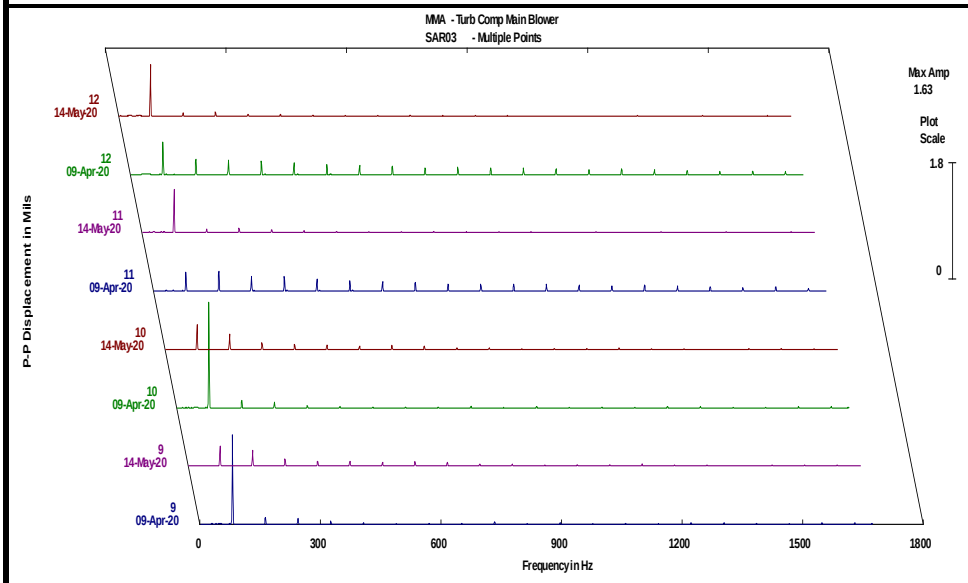
HI-SPEED PREDICTIVE MAINTENANCE

Machinery Vibration Report

Client	Lucite	**Survey Date**	5-14-20
Location	Memphis, TN	**Report Date**	5-21-20
Machine	SAR 03 Turbine Compressor Main Blower	**QMS No.**	142511
Component	Unit	**Analyst**	DWS

Defect Rating for this machine	**Class I**
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



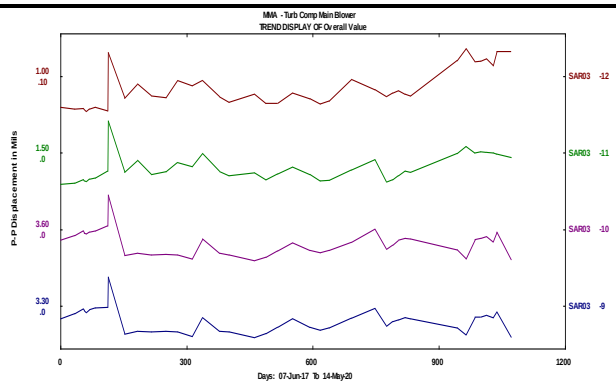
Analysis

Historical data appears to have been switched between the inboard and outboard proximity probes to better communicate actual positions.

Discussion / Repair recommendations

The data seems to indicate the proximity probes have been switched most likely on the rack. This will help to better identify actual location of anomalies. The vibrations are also mostly down for the compressor readings after service; however, we are going to keep this unit under surveillance due to the harmonics still seen in the data and **Rate this a Class I for now.**

Trend Data



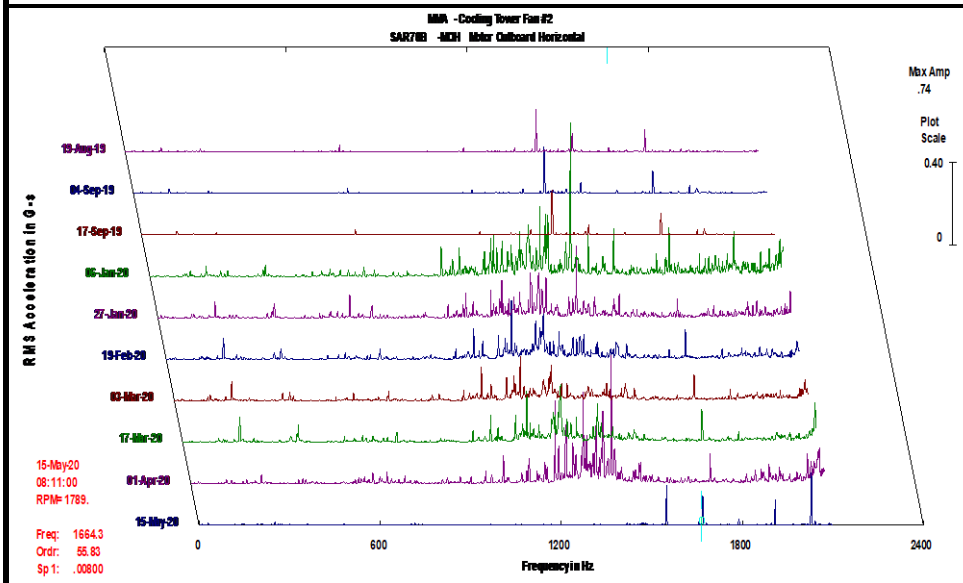
HI-SPEED PREDICTIVE MAINTENANCE

Machinery Vibration Report

Client	Lucite	**Survey Date**	5-14-20
Location	Memphis, TN	**Report Date**	5-21-20
Machine	SAR78B Cooling Tower Fan #2	**QMS No.**	142511
Component	Motor	**Analyst**	DWS

Defect Rating for this machine	**NA**
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



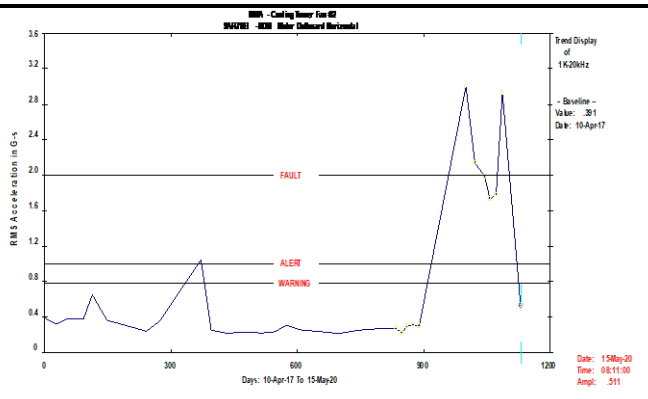
Analysis

The waterfall spectra seem to indicate the motor was replaced.

Discussion / Repair recommendations

The vibration data indicates the motor was replaced. No further actions are warranted.

Trend Data



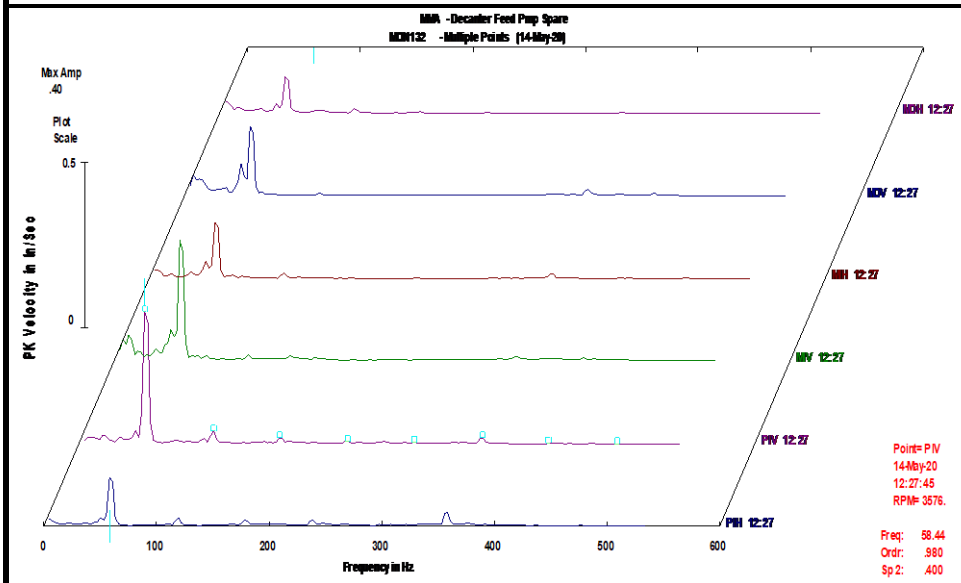
HI-SPEED PREDICTIVE MAINTENANCE

Machinery Vibration Report

Client	Lucite	**Survey Date**	5-14-20
Location	Memphis, TN	**Report Date**	5-21-20
Machine	MON132 Decanter Feed Pump Spare	**QMS No.**	142511
Component		**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



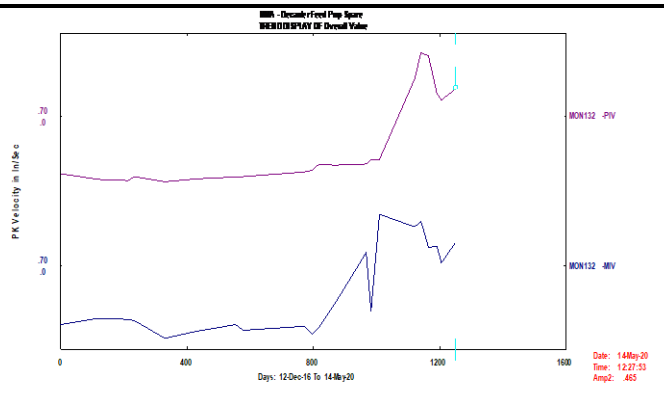
Analysis

Both inboard verticals are high at shaft speed.

Discussion / Repair recommendations

A high 1xRPM vibration still appears to be in both the pump and motor bearings in the vertical. Inspect the unit for loose fasteners and structural issues. Check the coupling for wear and perform an alignment check and a shaft run out check. **Rated a Class II Defect.**

Trend Data



HI-SPEED PREDICTIVE MAINTENANCE

Machinery Vibration Report

Client	Lucite	**Survey Date**	5-14-20
Location	Memphis, TN	**Report Date**	5-21-20
Machine	ACN 13B #2 Kettle Transfer Pump	**QMS No.**	142511
Component	Motor 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.
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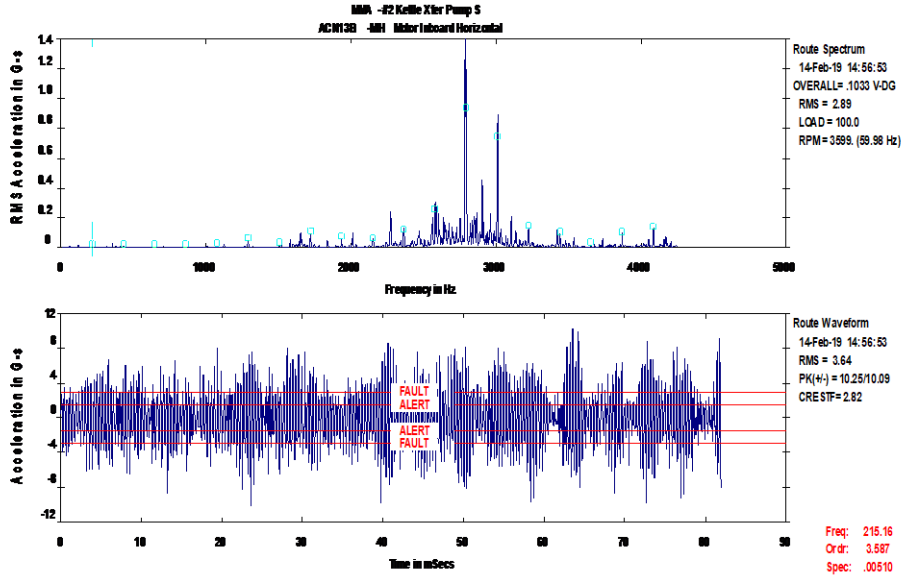
Vibration Data



Analysis

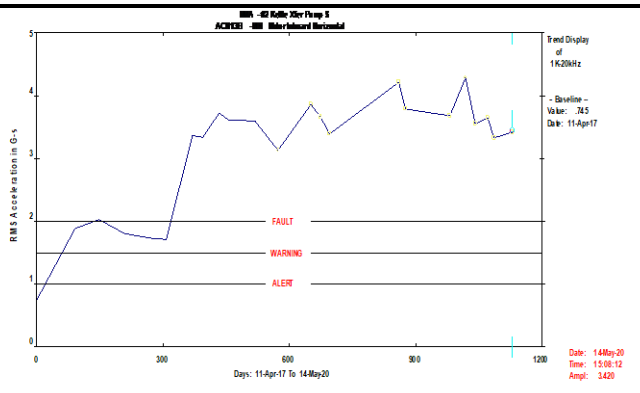
Multiple non-synchronous vibration peaks are marked.

Discussion / Repair recommendations

The inboard motor bearing is showing signs of distress. Non-synchronous vibration harmonic peaks are evident in the data; however, the overall level has not changed much lately. We suggest replacing the motor this year.

Rated a Class II Defect.

Trend Data



HI-SPEED PREDICTIVE MAINTENANCE

Machinery Vibration Report

Client	Lucite	**Survey Date**	5-14-20
Location	Memphis, TN	**Report Date**	5-21-20
Machine	SAR55A Neutralization Pump North	**QMS No.**	142511
Component	Motor 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.
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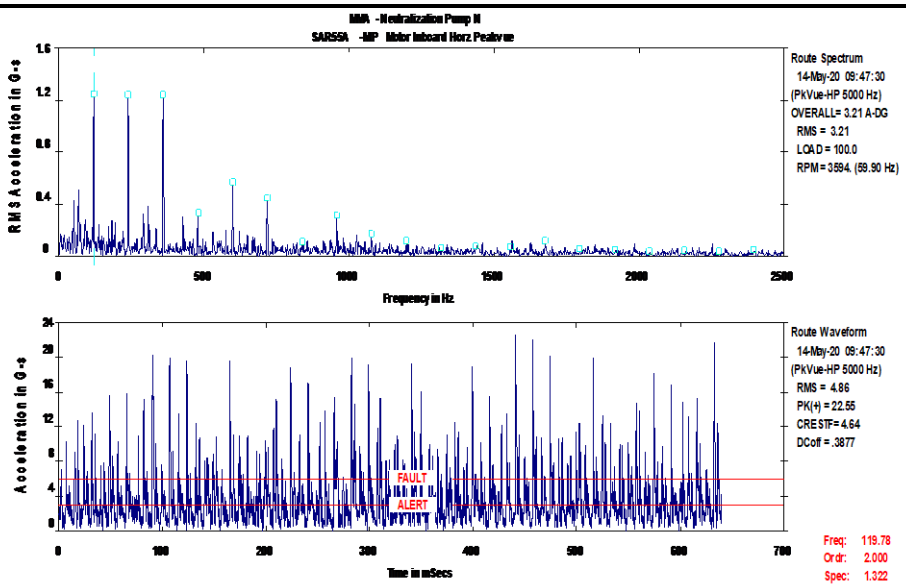
Vibration Data



Analysis

Large jump in amplitude of spectral peaks.

Discussion / Repair recommendations

Data indicates a sudden change in the motor bearings since the last survey. We believe they are in distress. Recommend replacing the motor in the next few months or possibly sooner. **Rated a Class II Defect for now.**

Trend Data