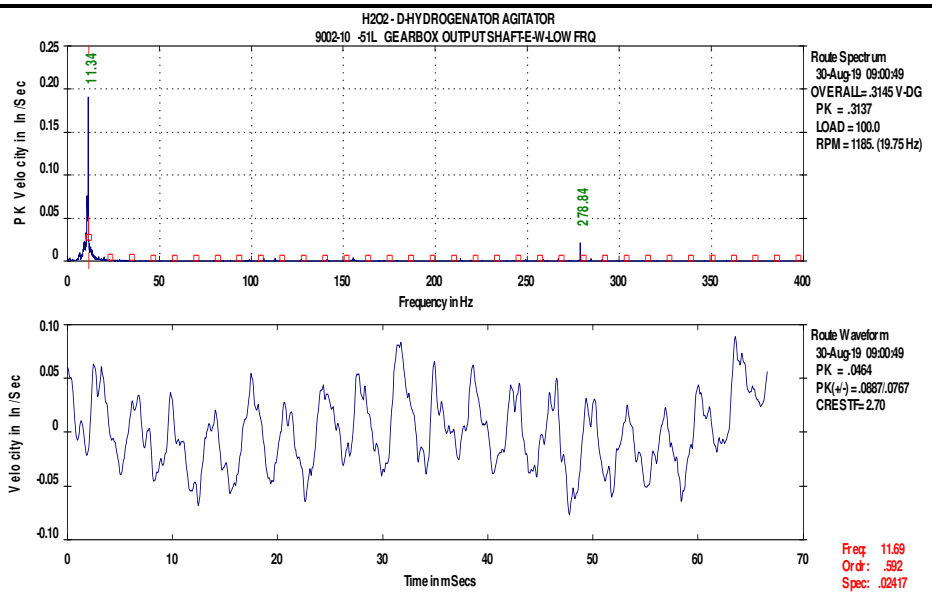
HI-SPEED PREDICTIVE MAINTENANCE

Machinery Vibration Report

Client	ARKEMA	**Survey Date**	8-30-19
Location	Memphis, TN	**Report Date**	8-30-19
Machine	D- Hydrogenator Agitator	**QMS No.**	140287
Component	Gearbox	**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

Multiple close vibrations are still producing a beat vibration in the gearbox.

Discussion / Repair recommendations

Data sets for the gearbox bearings show overall vibrations are still near 0.35"/sec velocity peak. Shaft speed fundamental is below the accelerometer high pass filter. Vibrations of interest are around 11 and 278 HZ. Modulation around the 11 HZ peak is causing a beat vibration. Gearbox and structure could be resonant. An internal inspection and oil analysis should be considered. Also, check the unit fasteners for tightness. **Rated a Class II Defect.** Please provide detailed information on the gearbox for further analysis.

Data