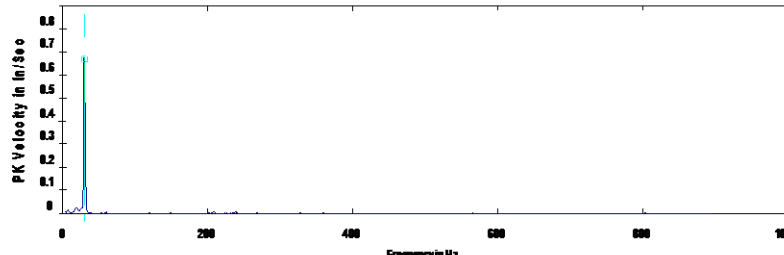
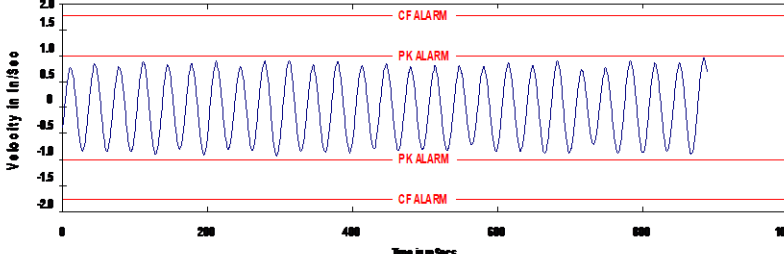
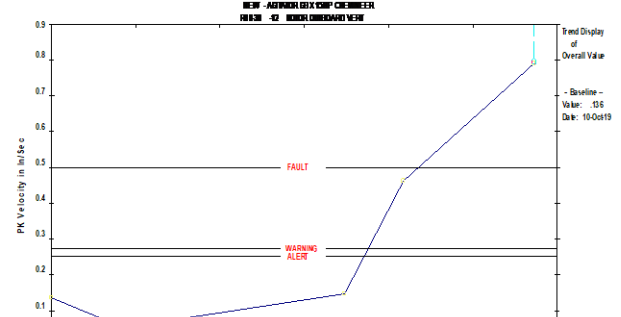




Client	Penn-A-Kem	Survey Date	5-26-2020
Location	Memphis, TN	Report Date	5-27-2020
Machine	R80-30 Agitator gearbox	QMS No.	142527
Component		Analyst	DWS

Defect Rating for this machine	Class III
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.

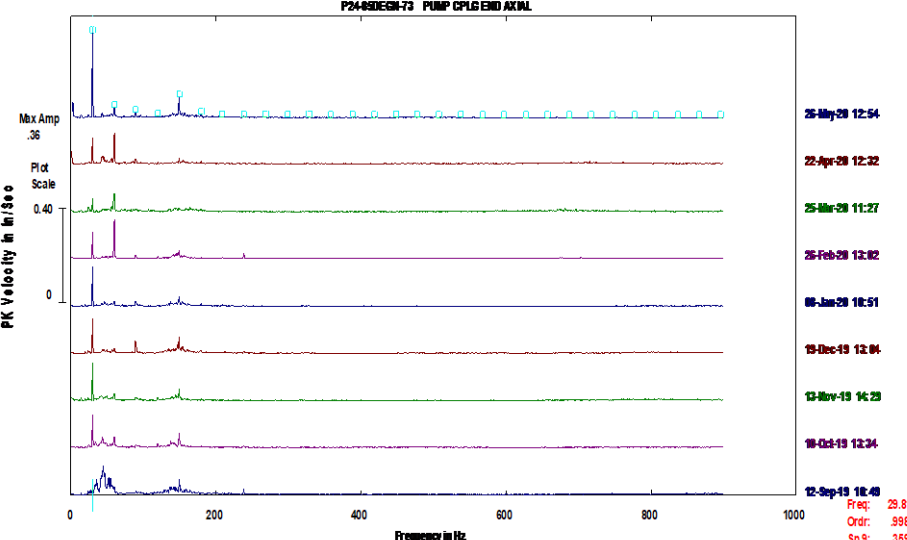
Vibration Data	Analysis
<p>NEW - AGITATOR GEARBOX CHEMIEER R80-30 - 42 MOTOR OUBOARD VERT</p>  <p>Route Spectrum 26-May-20 15:02:26 OVERALL= .7905 V-DG PK = .7894 LOAD = 100.0 RPM = 1788, (29.81 Hz)</p>  <p>Route Waveform 26-May-20 15:02:26 PK = .8294 PK(+) = .9823/.9368 CRE STF= 1.64</p> <p>CF ALARM PK ALARM PK ALARM CF ALARM</p> <p>Freq: 29.81 Ordr: 1.000 Spec: .785 Dirq: .00000</p>	<p>The back end of the motor shows a large shaft speed vibration.</p>

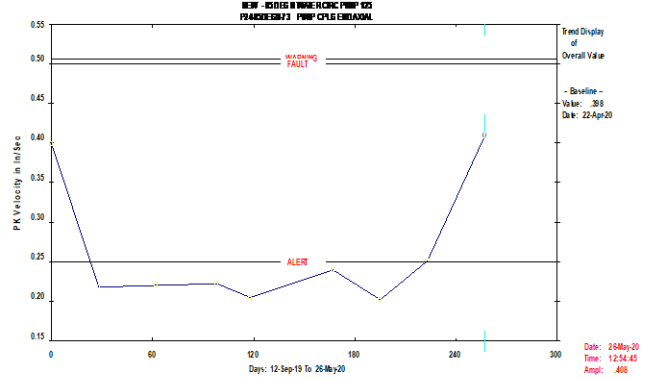
Discussion / Repair recommendations	Trend Data
<p>The motor shaft speed vibration is very high at nearly 1"/sec velocity peak in the time domain. Inspect the unit ASAP to determine the cause. We believe there could be damage to the fan, loose fasteners, broken feet or structure, or a coupling issue. Rate a Class III Defect.</p>	 <p>Trend Display of Overall Value</p> <p>Baseline Value: .65 Date: 10-Oct-19</p> <p>FAULT WARNING ALERT</p> <p>Days: 10-Oct-19 to 26-May-20</p> <p>Date: 26-May-20 Time: 15:02:25 Ampl: .791</p>



Client	Penn-A-Kem	Survey Date	5-26-2020
Location	Memphis, TN	Report Date	5-27-2020
Machine	P24 85 Degree Pump North	QMS No.	142527
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
<p>NEW - 85 DEGREE WATER CIRC PUMP 125 P24-85DEGR-73 PUMP CPLE END AXIAL</p>  <p>25-May-20 12:54 22-Apr-20 12:32 25-Mar-20 11:27 26-Feb-20 12:02 09-Jan-20 10:51 19-Dec-19 12:04 12-Nov-19 14:29 18-Oct-19 12:34 12-Sep-19 10:40</p> <p>Max Amp: 0.36 Plot Scale: 0.40 PK Velocity in in/sec Frequency in Hz</p> <p>Freq: 29.81 Ordr: 998 Sp 9: 359</p>	<p>Large increase in the shaft fundamental vibration.</p>

Discussion / Repair recommendations	Trend Data
<p>Vibration data shows an increase at shaft speed and vane pass (5x) for the inboard pump bearing. Water is now leaking from the seal also. Inspect for defects as time allows. Rated a Class II Defect.</p>	 <p>NEW - 85 DEGREE WATER CIRC PUMP 125 P24-85DEGR-73 PUMP CPLE END AXIAL</p> <p>Trend Display of Overall Value</p> <p>Baseline - 0.30 Date: 22-Apr-20</p> <p>Alert</p> <p>Days: 12-Sep-19 To 26-May-20</p> <p>Date: 24-May-20 Time: 12:54:45 Ampl: 408</p>