

Company Name

Street

City

Postcode

Country

Dear [Recipient name]

Re: JPS Reliability: Vibration Analysis Assessment Report

I would firstly like to thank you for the courtesy and co-operation shown to JPS Reliability Limited during my recent site visit. Following the survey at your facility I have pleasure in presenting for your attention a comprehensive Vibration Analysis Assessment report.

Please contact JPS Reliability Limited for any machinery reliability issues or required health verification, we offer full technical/diagnostic back up which includes:

- Conventional vibration analysis
- Phase analysis
- Resonance testing
- Bearing / gear analysis
- Oil analysis
- On Site dynamic fan balancing
- Laser alignment
- Thermal imaging
- Ultrasonic air leak energy saving surveys
- Shaft Voltage Bearing discharge surveys

Date of survey:

- X

Next Survey due:

- X

Executive Summary:

- X

Instrumentation:

This survey was performed using the CSI 2140 Dual channel Machinery Health Analyser. Data analysis was carried out using the CSI AMS Machinery Health manager software V5.61.

Methodology:

Vibration data including Velocity, Acceleration and bearing condition unit PeakVue was collected from each bearing location as close as possible to the source. Where applicable additional data including high resolution vibration data was collected.

Recommended Maintenance Actions:

Throughout the data there is an electrical signature from the drive. This electrical frequency will deteriorate the lubricating capability of the grease and cause bearing race damage.

1. Trial a braided Earth strap on the three pump sets.
2. Due to pump house location trial auto greasers on the motor grease points.
3. Re-gather data once this is corrected to confirm the bearing levels have remained steady or reduced with the additional grease.

Findings:

- Pump Sets 1, 2&3. Throughout the data there is an electrical signature from the drive. This electrical frequency will deteriorate the lubricating capability of the grease and cause bearing race damage. Trial a braided Earth strap on the three pump sets and auto greasers on the motor grease points.
- Pump Set 1: PeakVue Acceleration levels are elevated across the motor bearings (highest at the motor non-drive end), no bearing frequencies present (**See figure 1**). Increase greasing frequency at the motor bearings/fit auto greasers.
- Cavitation is evident at Pump 1 when running the pumps 1 & 3 at the same time. Site is going to run the pump independently at the next available opportunity to see if the pipe configuration is the cause of the audible cavitation.
- Pump set 2: The motor has been overhauled and there are no bearing frequencies in the data (**See figure 2**). Electrical drive frequency throughout the data, increase greasing frequency at the motor bearings/fit auto greasers.
- Pump Set 3: PeakVue Acceleration levels are elevated across the motor bearings (highest at the motor non-drive end), no bearing frequencies present (**See figure 3**). Increase greasing frequency at the motor bearings/fit auto greasers. Cavitation present at the pump end when running pumps 2&3 together.

Further information required:

Nothing.

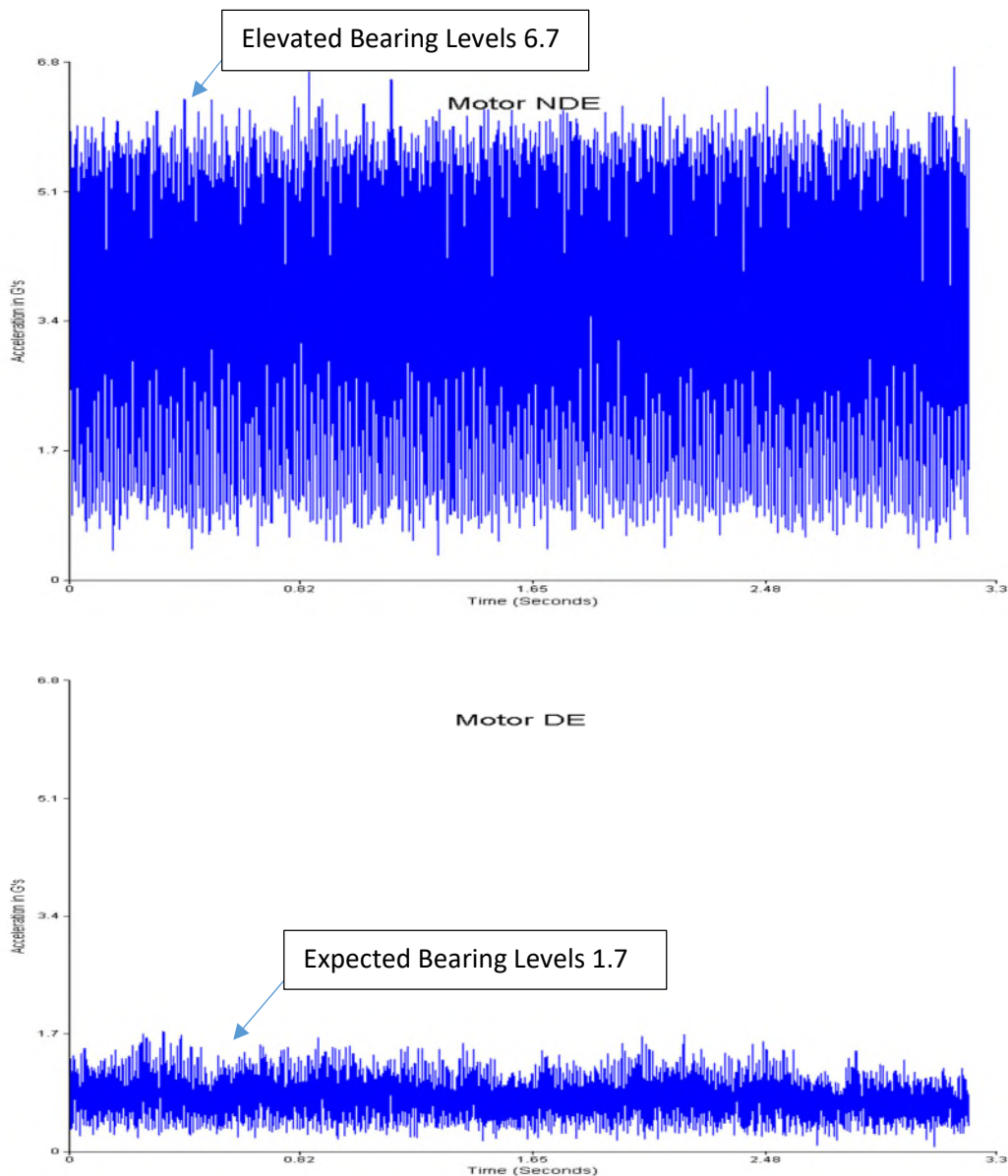
Pump Set 1

The motor non-drive end (NDE) is running with elevated PeakVue acceleration levels and there is an electrical signature from the drive in the data.

Figure 1 compares the PeakVue time waveforms at the motor drive end and non-drive end. From the time waveforms below, you can see the non-drive end is running with higher stress levels.

Increase greasing frequency/install automatic greasers.

Fig 1:



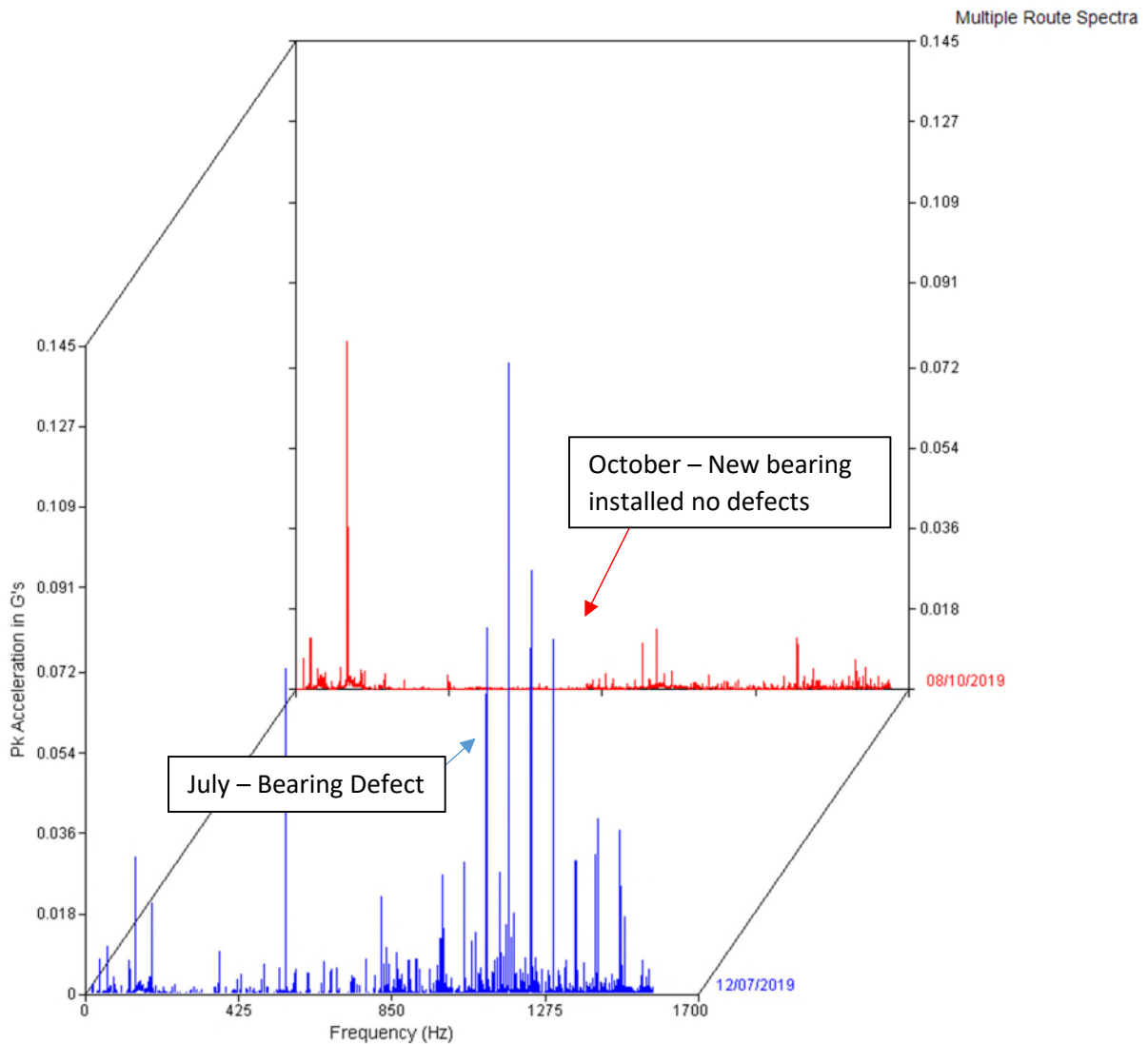
Pump Set 2

The motor has been overhauled and there are no bearing frequencies present in the data.

Figure 2 compares the Acceleration spectra for the last two surveys at the motor non-drive end. There is an electrical signature in the data and no match for an outer race frequency this survey.

Increase greasing frequency/install automatic greasers.

Fig 2:



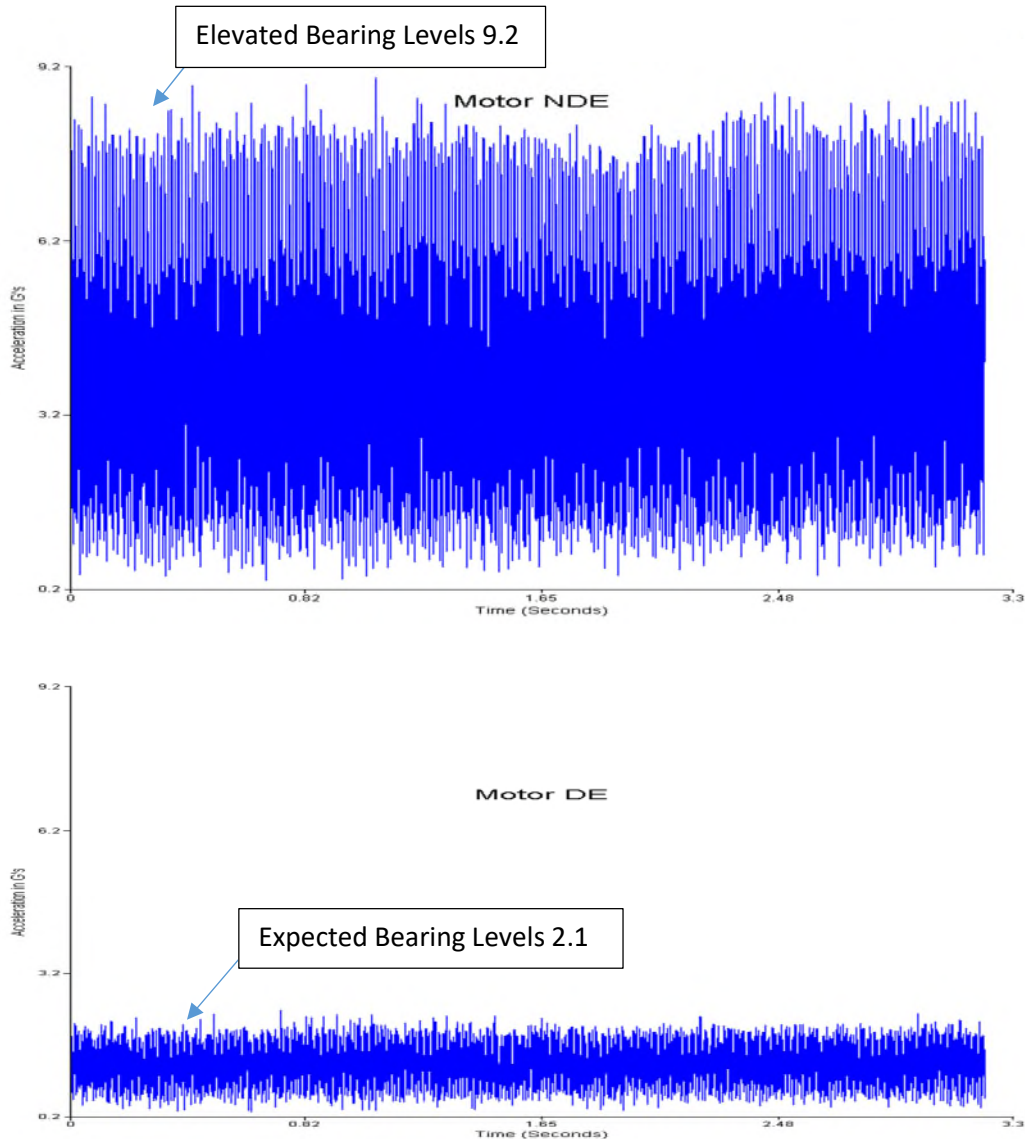
Pump Set 2

The motor non-drive end is running with elevated PeakVue acceleration levels and there is an electrical signature from the drive in the data.

Figure 3 compares the PeakVue time waveforms at the motor drive end and non-drive end. From the time waveforms below, you can see the non-drive end is running with higher stress levels.

Increase greasing frequency/install automatic greasers.

Fig 3:



Additional:

In the interests of reliability and case history, we would appreciate feedback on work undertaken and the details of components used.

We trust that this will be acceptable to your requirements, however, should you require any additional information please contact the undersigned.

Kind Regards

Technician

Technician

Reliability Services



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