

Vibration analysis Long wall ranging arm

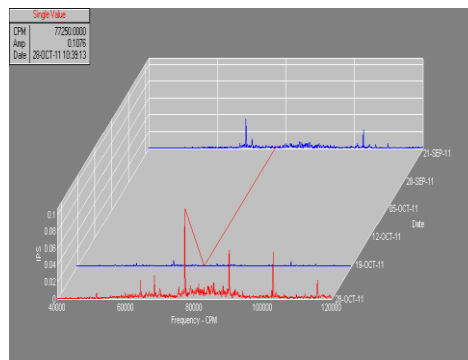


- Finding the bearing defect prevented unplanned downtime
- It prevented further damage to any other mechanical components which would require the entire arm replacement
- Saved many headaches

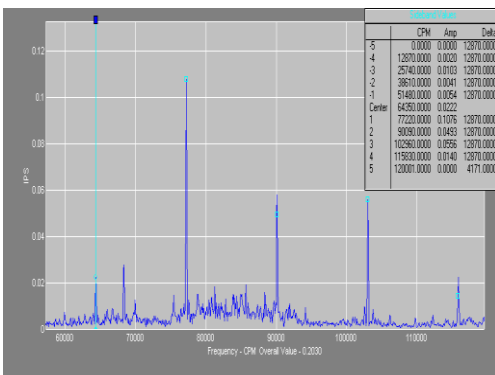
High speed gear bearing defect

Long wall shearer operators have noticed a high pitch sound coming from the head ranging arm. Vibration analysis on the unit was then completed in order to determine what mechanical component was making the noise, and the severity of the situation.

The vibration spectrums collected showed the outer race bearing defect on the high speed gear A, and gear B area is present. The recommendation to the mine was made to replace both gear A, and gear B bearings as soon as possible. The work was scheduled, and completed on Sunday without any production loss.



Waterfall showing the change since the last inspection



Spectrum showing the outer race bearing defect

After visually inspecting the replaced bearings, it was determined that motor side gear A bearing had damaged outer race. The damage most likely occurred in the load zone considering only half of the outer race showed spalling.

Vibration inspection has shown to be beneficial in preventing further damage to the other mechanical components inside the ranging arm. Replacing the bearings was scheduled on the weekend, with no production loss. Predictive maintenance work showed to be beneficial to the mine.



Outer race bearing defect of gear A bearing found through vibration analysis

Any questions feel free to contact Ivan Funcic
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Predictive maintenance extends the life of machinery, and saves money.