Case Study

TRAC Case Study:
Restoring Screen Performance Through Accurate Vibration Analysis

Equipment: Cedarapids TSV Series, 8'x20'- 3 Deck (Simplicity Model ES Series)
Location: Wendling Quarries – Cedar Rapids, IA - Q4 2025
Application: Processing limestone creating base material for a construction project.
Engineer: Ryan Mumm, Vibratory Engineer – Cedarapids, Simplicity & Canica

The Challenge:
During a site visit, a Terex Vibratory Engineer noticed that the customer's vibrating screen was not processing material as it should. While material was moving correctly at the feed end, it was being held up at the discharge end, limiting throughput and overall production efficiency. An initial visual inspection did not reveal any obvious mechanical failures, making this issue difficult to diagnose using traditional analytical methods.

The Solution: The TRAC Vibration Analyzer
This scenario is the perfect situation to gain a complete understanding of how the screen box was behaving in real operating conditions and in real time. Using the four synchronized sensors, the TRAC system measured: Stroke, Stroke Angle, G-force, and Speed; Capturing data from all four corners of the screen at the exact same moment in time, providing a precise, real-time picture of the screen motion.

What TRAC Revealed:
The TRAC data showed that symmetric screen motion, which means the left and right sides were moving together at the same time and in the same direction. However, the G-forces were significantly lower than the expected 7 Gs. Further review of the data revealed the screen was operating at approximately 700 RPM, well below its normal operating speed of 830 RPM.

The low operating speed resulted in lower G-forces preventing near-size material from moving efficiently across the discharge end of the screen. This explained why material was hanging up despite the screen appearing to operate normally.

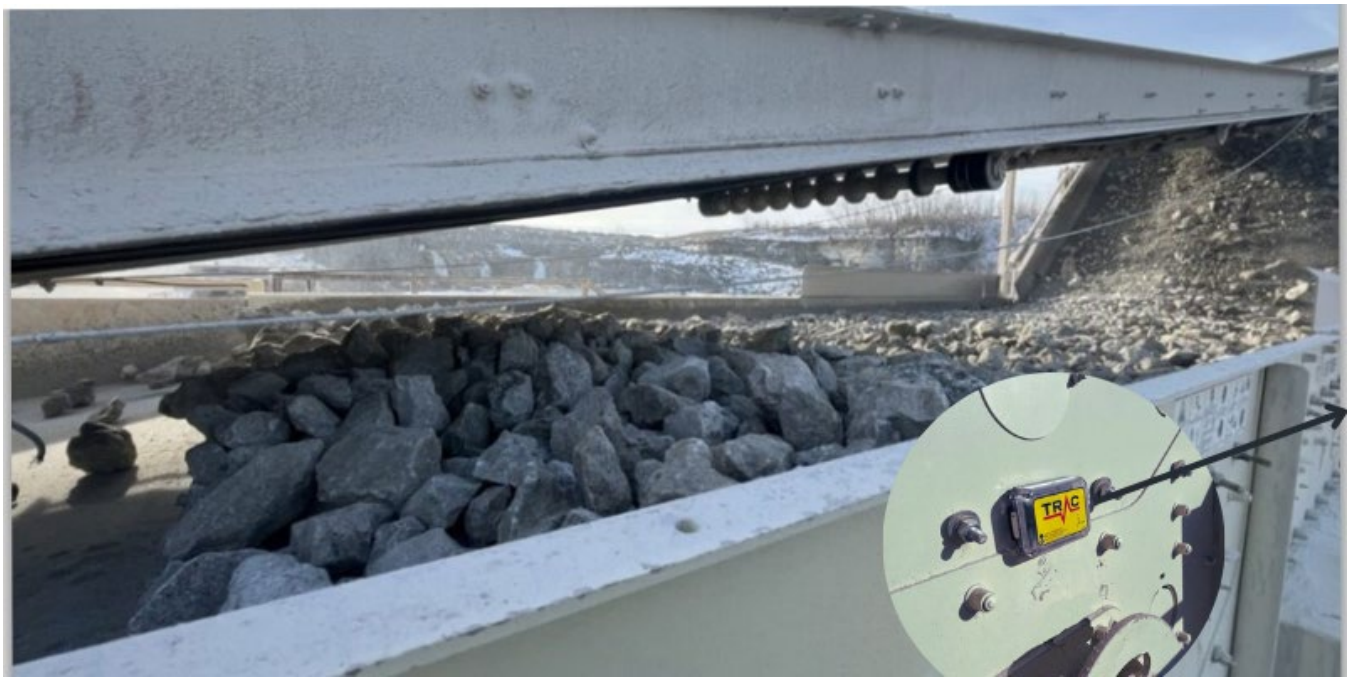
The Source of the Issue
TRAC clearly pointed out the speed-related issue pointing the engineer to inspect the screen drive. The inspection revealed a broken spring in the V-belt tensioner causing the V-belt to slip on the pulley and therefore unable to maintain proper operating speed. Without TRAC's analyzer software, it would have been difficult to identify this issue without accurate vibration and speed data.

The Result:
After replacing the V-belt tensioner and V-belt, the screen returned to its optimal operating speed, material flow normalized and the customer was back to full production.

The Benefits of TRAC
This scenario demonstrates how TRAC helps dealers and customers:

- Diagnosing performance issues quickly and accurately
- Eliminate guesswork and unnecessary downtime
- Identify root cases that are not visible during a routine inspection
- Restore production faster

TRAC listens to your vibratory equipment, turning complex vibration behavior into clear, actionable insight.



Material collecting at the end of discharge end, when it should be flowing freely.
Cause: V-belt has a broken spring causing the V-belt to slip on the pulley and therefore unable to maintain proper speed.