

# Customer Examples



**ITT**

ENGINEERED FOR LIFE



# St. Louis Chemical Plant 75 HP TECO Motor

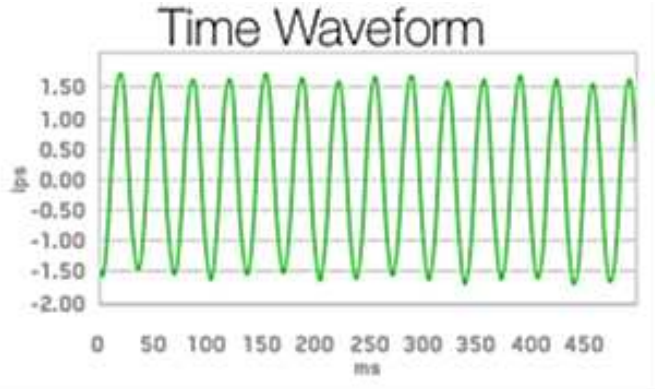
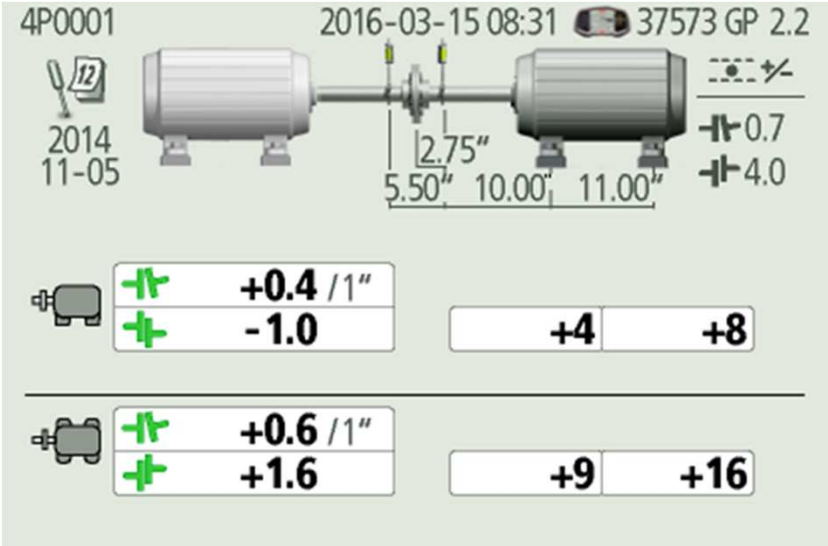
New Equipment Supplied by ITT Distributor

## Situation

A new 75 HP motor was installed and aligned to an existing pump by the local ITT Distributor but was not ready to be started up until the following day.

## Analysis

The Distributor rep returned to the site the next day and observed the equipment had already been placed in operation and found the *i-ALERT2* was recording vibration levels of over 1.7 IPS! Diagnostic data were collected from the *i-ALERT2* monitor and were sent to the distributor's vibration analyst while the equipment was switched over to the in-line spare.





# After detailed inspection...

## Result

The distributors vibration analyst utilized his multi-channel vibration analyzer to determine that the root cause of the vibration was that the **center of baseplate had broken free from the concrete floor and was flexing**. A temporary fix was implemented that lowered the vibration to 0.2 inches/second.

“Due to the location of this particular piece of equipment, it’s very possible that had the iAlert2 not been installed, this equipment could have run to failure prior to the next scheduled vibration route.”

“I think it’s important to remember that the iAlert2 is not meant to replace a customer’s vibration program, but to enhance it.”

## Commercial Impact

The customer has already put in a requisition for the Distributors team to engineer and install a permanent fix for the damaged baseplate.

Since the issue was caught and identified before any catastrophic damage occurred there was no risk of a prolonged, contentious warranty claim over the fidelity of the newly installed motor.

# US Chemical Company, 30 i-ALERTs



# US Chemical Company

## Easy Installation

2 Buildings, 30 i-ALERTs in 5 hours

## Efficient

Less than 20 minutes to walk around 2 buildings and collect status on all 30 machines

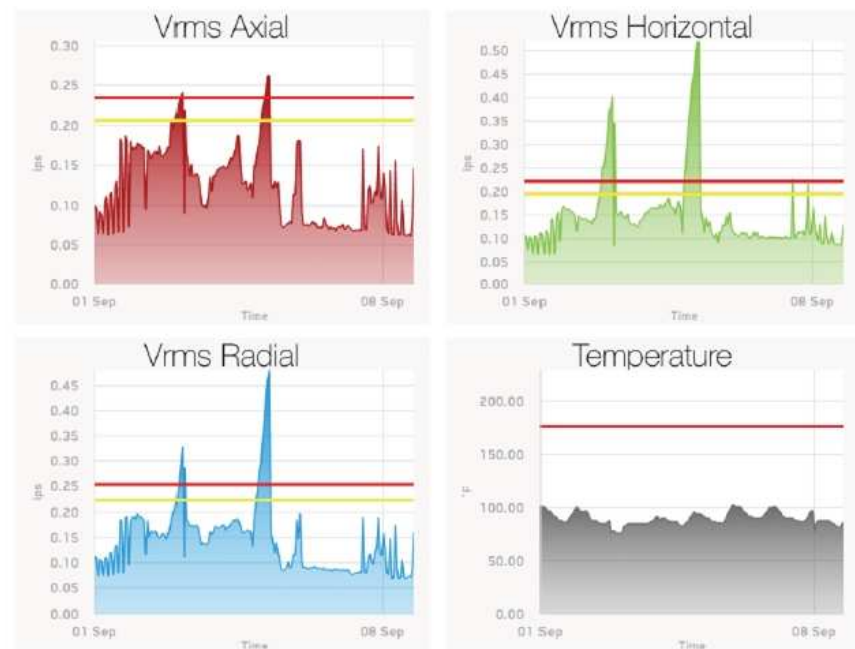
## Effective

Found operational issue with in the first week of installation. Time stamped trend data allowed the root cause to be traced back to an operational issue of low tank level causing pump cavitation.

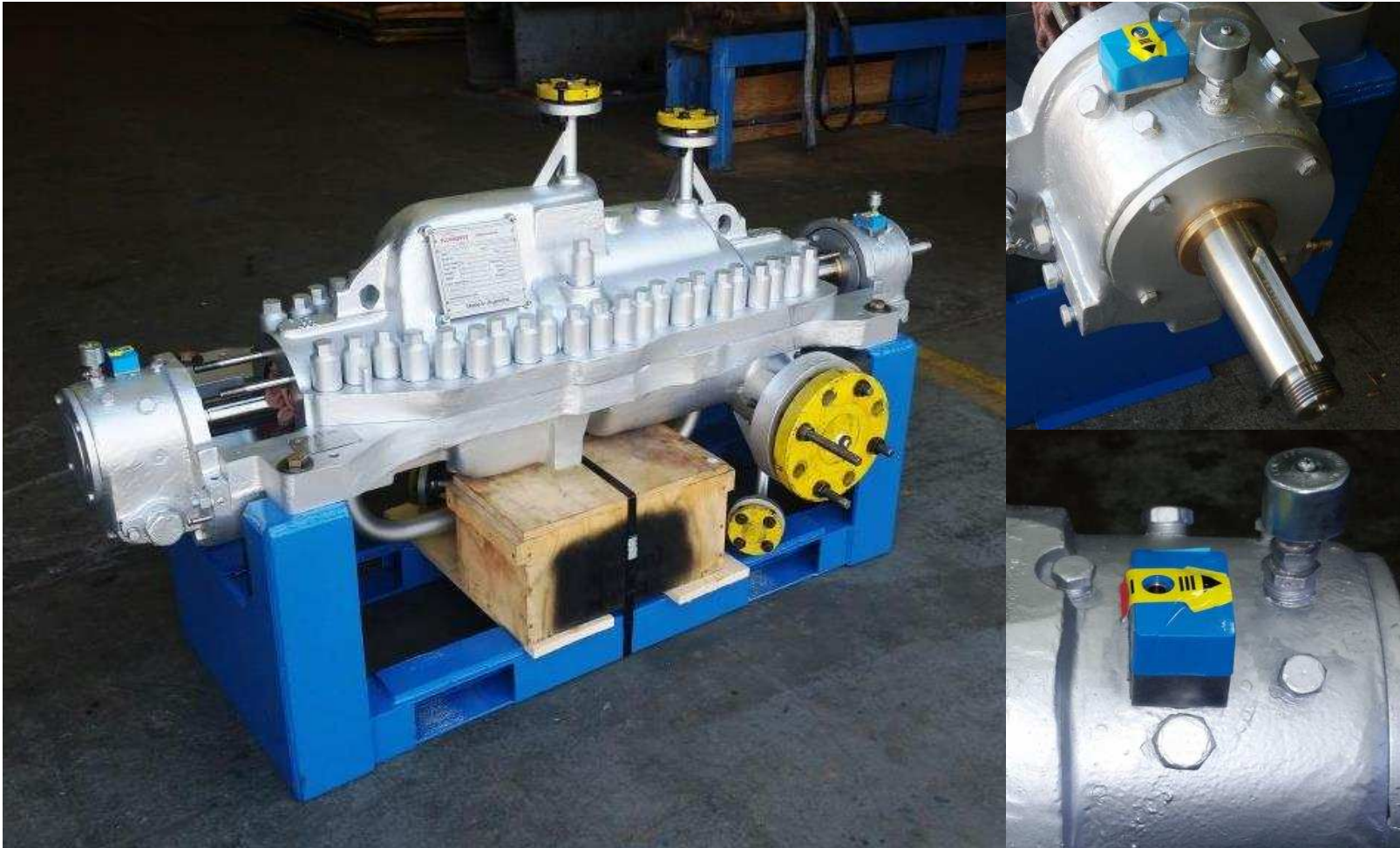
“The simplicity of it is just awesome. It has most of the basic functions covered, I don’t have to set anything, it will baseline for you. And it has the pump information right there.”

— Reliability Engineer

## i-ALERT Summary Report



# Canadian Oil Refinery BB3 7 Stage Pump Repaired ITT PRO Service Center



# 427 Hours Later.....

## Bad Actor

Pump had experienced several failures over the last two years.

## Pump Failure

Pump failed again after just 427 hours of run-time

## Analysis

Time stamped trend data allowed the exact moment of failure to be cross referenced against process data the DCS which traced the failure back to an operational issue.

“The customer was very appreciative for our interest in addressing the root causes and not just fixing another pump for them,” said Landon Worrell, ITT PRO Services Field Service Manager Canada.

## i-ALERT Summary Report

TAG ID: 3

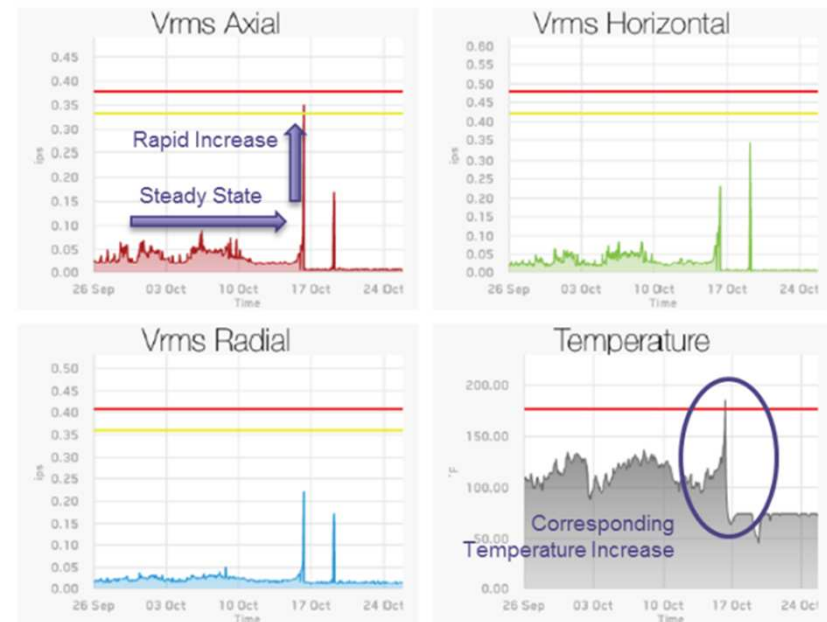
Serial #: (null)

Date: Oct 26, 2015 11:03

Runtime

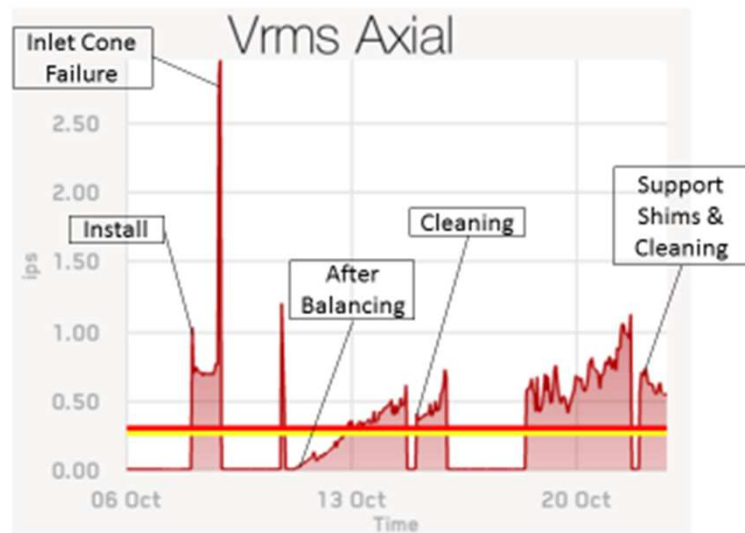


Equipment Class: Pump



# US Manufacturer

## iAlert Vibration Sensors Charmian Scrubber Fan



“The sensors are working great, we have been trending our scrubber fan bearings for 3 weeks now and we have a perfect history of the fan” – Reliability Engineer





# Diagnostic Examples



# Start-Up; Bent Shaft

TAG ID: P-7600-2B

Serial # [REDACTED]

i-ALERT ID: [REDACTED]

Date: Feb 12, 2016 08:15

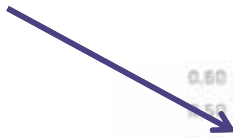
Runtime



Equipment Class: Pump

Elevated 1x Peak in all directions indicative of Bent Shaft.

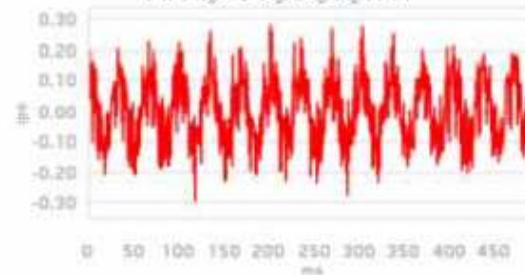
Physical measurements confirmed condition.



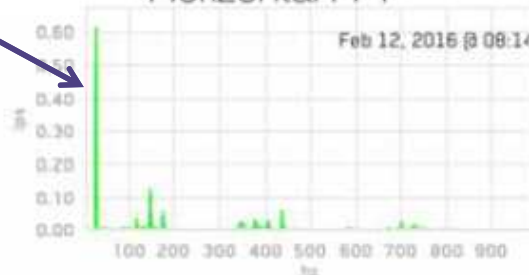
### Axial FFT



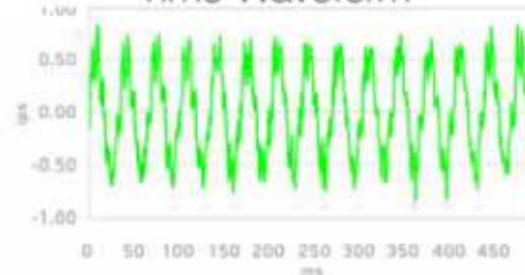
### Time Waveform



### Horizontal FFT



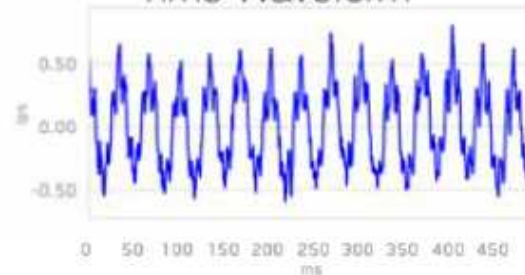
### Time Waveform



### Radial FFT



### Time Waveform



# Cavitation / Suction Recirculation

## i-ALERT Summary Report

TAG ID: SDKC P-200

Serial # [REDACTED]

i-ALERT ID: [REDACTED]

Date: Feb 12, 2016 14:35

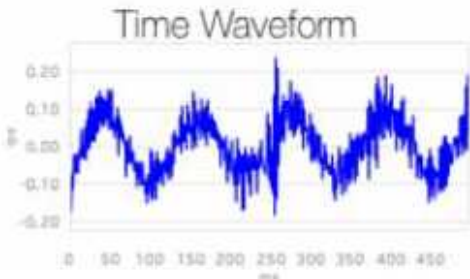
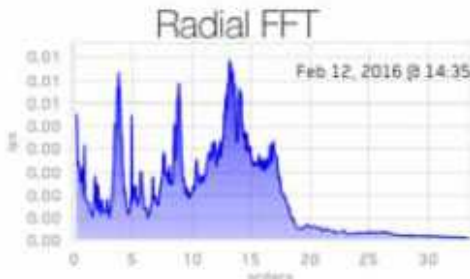
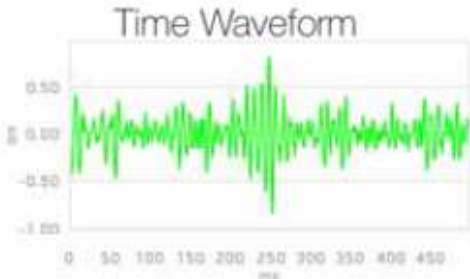
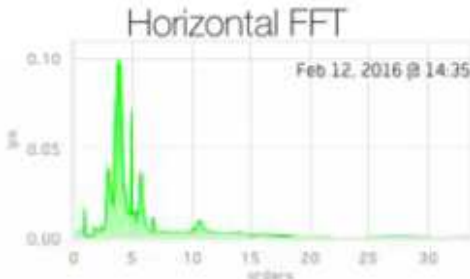
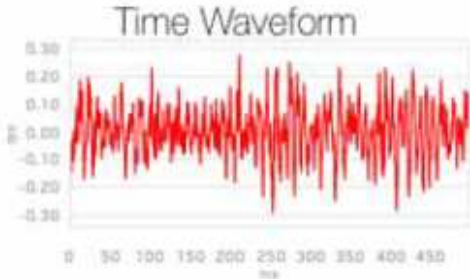
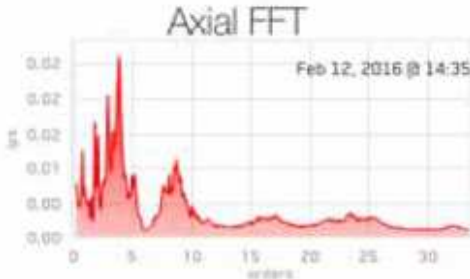


Equipment Class: Pump

RPM: 1785

Motor HP: 100.0 hp

Broadband energy in FFT and Impacting in TWF indicative of hydraulic faults





Thank You.

Visit [www.i-ALERT.com](http://www.i-ALERT.com) for additional information

