The IMS diagnostic procedure accurately measures the strength, direction and position of the alternating magnetic field pattern produced by the drum in 3 locations along the axis of the drum, at the Drive End, Centre and Non Drive end.

A series of accurate curves clearly showing the magnetic profile. If they have a standard even shape the magnets are in good working order. A distorted shape means there is a problem and the system is not operating efficiently.

In this instance the irregular field pattern was due to the magnets having moved within the assembly. Other irregularities were due to faulty repair work, magnetite ingress covering the magnets and magnets damaged due to wear and tear while rubbing on the skin. All result in increased operating costs.

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Purpose Built Test Equipment for Magnetic Wet Drum Separators (Patent Pending)
WHY USE THE IMS DIAGNOSTIC TOOL?

You already know your plant is wasting Magnetite but you need to be absolutely sure that the drums are faulty before you commit to the significant expense of pulling them out of service.

The IMS test results will confirm if the condition of the Magnetic Wet Drum Separators are a contributing factor. The IMS test results will also give you the information you need to confidently decide whether you simply need to adjust them or go to the significant expense of pulling them out of service for repairs.

A basic test with a standard hand held probe will not give you the accurate repeatable information you need to make any decision with confidence.

Because the results from the IMS testing equipment and procedure are spot on accurate. If the results indicate an internal problem you can be sure it exists and that IMS can accurately interpret the results and advise if the drum should be pulled out for repair.

WHAT TESTING SHOWS:

The IMS testing procedure accurately measures the strength and position of these alternating Field patterns in 3 locations along the axis of the drum. At the Drive End, Centre and Non Drive end.

The graphical results show how these fields vary in strength and polarity. The graphs shown here indicate the North Pole in red portion and the South Pole in Blue portion of the graph. The test results show the Vertical and Horizontal field patterns together and separately at each test position.

These field patterns directly influence the recovery efficiency of the drum. Any alteration to the magnetic field pattern will result in lower recovery and higher magnetite losses.

The IMS system is so precise and accurate that any alteration to the magnetic system will show an obvious distortion to the pattern on the graphs.

HERE ARE A COUPLE OF EXAMPLES OF WHAT WE FIND WHEN THERE ARE ANOMALIES IN THE MAGNETIC DIAGNOSTIC RESULT GRAPHS:

DRUM MAGNET CONSTRUCTION:

The magnetic field coming from the drum is made using a series of magnets inside the drum. These magnets are arranged in alternating North South pattern facing radially from the drum. This arrangement creates a magnetic field profile that may be described as having 2 major directional components. One component (the Vertical) is in a radial direction from the drum while the other component (the Horizontal) follows around the circumference of the drum. They both alternate varying in strength and North South direction around the circumference of the drum.

Separators are a contributing factor. The IMS test results will confirm if the magnets are bad for repair.

There are many magnetic profiles to check for with the MAGNETITE losses.

Broken Magnet Banks showing significant differences in magnetic profile

Covered Magnets