

**Array-Based Flowmeter, Accurate in the Presence of Magnetite - No Magnetic Field, Wraps Around the Outside of Pipe, NON-Ultrasonic**

Coal Prep Plants are designed to clean impurities, such as soil, sand and rock from coal, to ready it for transportation to power plants and coking facilities for use in steel processing.

Critical process improvements in coal prep plants can be achieved with the use of accurate and reliable instrumentation, resulting in improved market value of the coal and reduced shipping costs.

Monitoring flow through the coal prep process can be difficult as the coal is abrasive and can cause inaccuracies and maintenance issues for intrusive instruments. CiDRA's *SONARtrac* Volumetric Flow Meter has been designed specifically for applications like these. The non-intrusive, clamp-on design of the *SONARtrac* system enables slurry flows to be accurately measured without process down time or costly maintenance issues.

The *SONARtrac* system is not affected by magnetite addition, as used in dense media separation, and will not suffer from drifts or offsets that commonly occur with magnetic flow meters. Processing Plants around the world are utilizing the *SONARtrac* Systems to gain process efficiencies and to provide pipeline leak detection on tailings and slurry lines.

# Array-Based Flowmeter for Tailings Leak Detection and Cyclone Operation

### Sensor Band

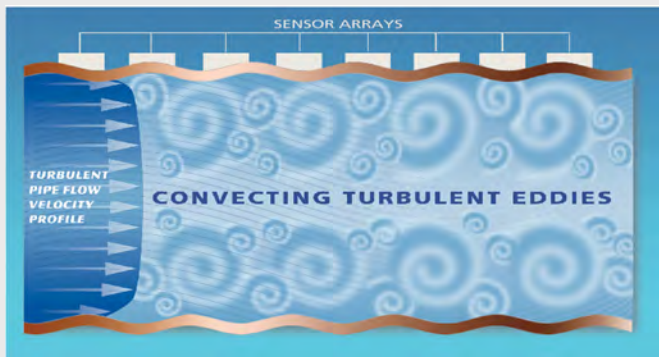


### Protective Cover



### Volumetric Flow

Tracks and Measures Flow Rate of Naturally Occurring Turbulent Eddies through Wrap-Around Array of Passive Sensors



#### Accurate, Stable Flow Measurements

Drift-free  
Unprecedented leak detection capability

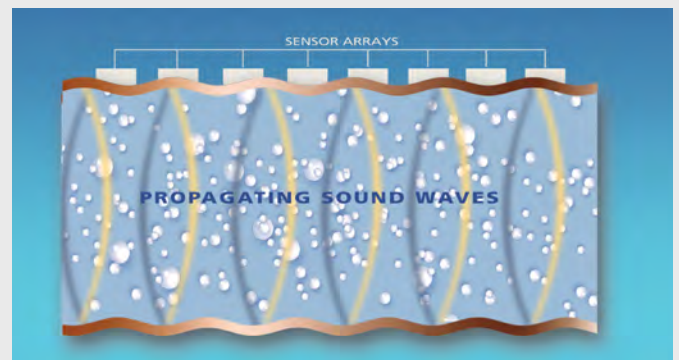
#### Naturally Immune to Magnetite

#### No Contact with Fluid

Does not wear out  
Maintenance-free

### Gas Volume Fraction

Determines Volume of Entrained Air Bubbles via Speed of Sound Measurement (From 0.01% to 20% Entrained Air Levels)



#### No Contact with Fluid

Does not wear out  
Maintenance-free

#### Nuclear Density Gauge Correction in Presence of Entrained Air

Allows control of specific gravity  
Improves mass flow rate calculations

Applications for the SONARtrac system include:

Coal Slurry  
Tailings lines  
Cyclone Feed Lines

Magnetite Slurry  
Slurry Pipe Lines  
Density Measurement Correction