

## Case Study

### Vinacomin Cua Ong Site. Vietnam

Vinacomin

#### MEASURING TASK

Determination of slurry density in the coal processing plant.

Pipe diameter:	250mm (10 inch)
Pipe material:	Steel
Solids:	Magnetite Fe <sub>3</sub> O <sub>4</sub>
Density:	1.200 – 2.300 g/l
Temperature:	7°C – 40 °C

#### INSTRUMENT USED

The ultrasonic Slurry Density Meter (SDM) of Rhosonics.

#### ASSIGNMENT

Vinacomin wanted to prove the performance of the SDM with an indication out of a 30-day trial. This instrument was used to measure the density in the coal flocculation tanks.

This trial consisted of two different sampling methods. With each sampling method being examined four times. These samples were both manually measured and with the Rhosonics SDM. Afterwards, the density values were evaluated and determined how much the SDM deviated from the actual results. They have applied the SDM in one of their largest capacity processing plants, which is named Vinacomin Cua Ong Site.

#### CUSTOMER



Vinacomin (Vietnam National Coal and Mineral Industries Group) is the biggest mining company in Vietnam. Vinacomin is operative in many different industries, which one of them is in the Coal exploitation. Vinacomin currently has 20 open-pit mines and has a processing capacity of 100,000 - 2 million tons per year. One of their largest plants is the Vinacomin Cua Ong Site, which is where our SDM was applied.

*“We can confirm that the SDM trial at Vinacomin Cua Ong Site. was successful. Therefore, we will be integrating the Rhosonics SDM in our plant by the end of 2021.”*

Pham Hong Thanh  
Deputy Director, Vinacomin Cua Ong Site.



## 1<sup>st</sup> TRIAL

The first trial that was done, was by adding water each time to the new sample. The starting sample had a density of 1650 g/l. In the first trial, water had been added three times. Therefore, a total of four samples had been taken. Out of these four samples the total average deviation was 0,62%. The graph on the right showcases all the measurement results from the SDM compared to the manual results.

## 2<sup>nd</sup> TRIAL

The second trial that was done, was by adding magnetite ( $Fe_3O_4$ ) to each new sample. For the first sample, the starting density was 1337 g/l. Like the first trial, four samples had been taken each with a different density. Out of these four samples the total average deviation was 0,725%. The graph on the right showcases all the measurement results from the SDM compared to the manual results.

## CONCLUSION

During a period of two months (from November 2020) the ultrasonic density meter from Rhosonics was evaluated by a team of experts from the Cua Ong Coal Company. The SDM fulfilled the requirements of Vinacomin, and the team was satisfied with the easy calibration and stable measuring results.

## RESULTS

This trial led for Vinacomin to order several Rhosonics slurry density meters. It provided them with real-time (non-nuclear) density measurement results. The SDM would not require a radiation safety officer and comes with a payback period of approximately two years.

## FOR FURTHER INFORMATION

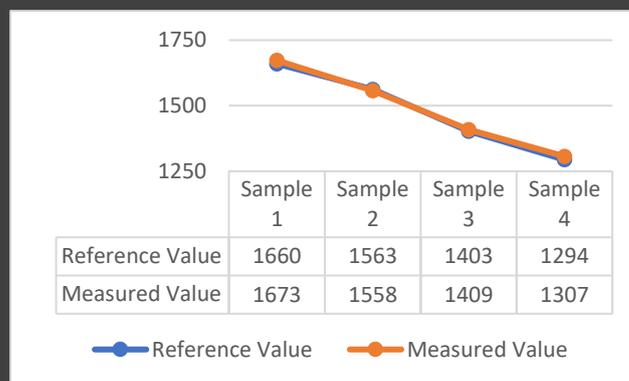
### Please contact Rhosonics

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 Website: [www.rhosonics.com](http://www.rhosonics.com)

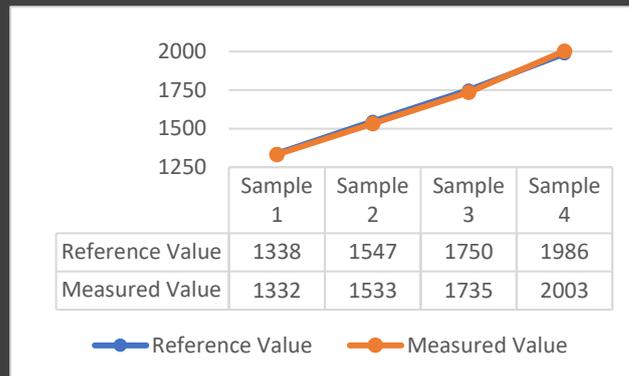
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## MEASURING DATA

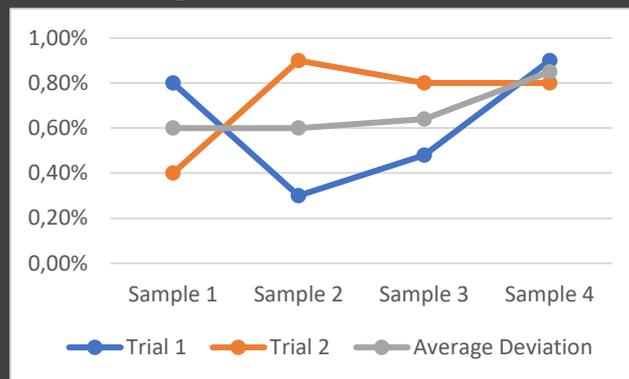
### 1st Trial (Adding Water)



### 2nd Trial (Adding $Fe_3O_4$ )



### Total Average Deviation



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