



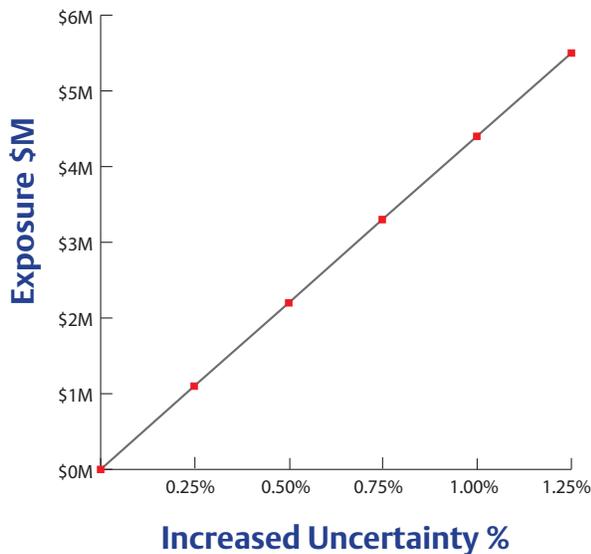
## Reduce your risks

With the volatile prices of natural gas and petroleum products, a seemingly small measurement error can have a significant impact on your operation's bottom line.

If left unchecked, preventable uncertainty in custody transfer or fiscal flow measurement can amplify over time, resulting in millions of dollars of financial exposure (see Chart 1 & 2).

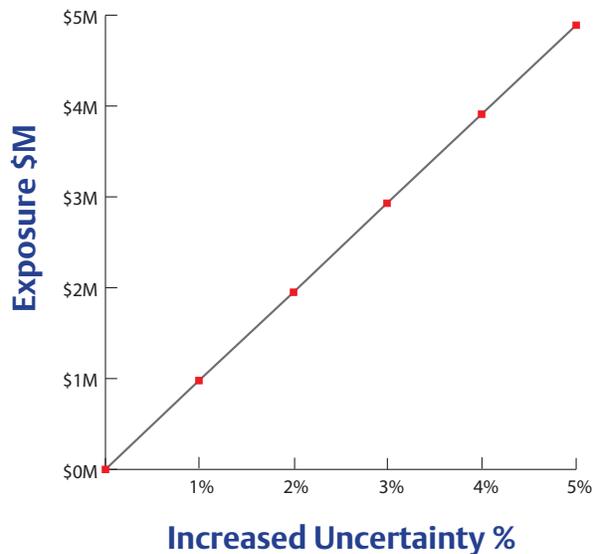
Measurement uncertainty\* can be quantified with the help of certified metering experts equipped with state-of-the-art tools, and managed with appropriate actions. Some factors known to adversely affect measurement uncertainty are listed in Table 1 on next page.

**Chart 1: Crude Oil Annual Increase of Exposure**



Note: based on crude oil at \$60/bbl and 20,000 bbl/day

**Chart 2: Natural Gas Annual Increase of Exposure**



Note: based on production of 100 MMSCF/day at \$6/MM BTU

\*The term "uncertainty," as used herein, reflects the industry's understanding of accepted deviation in measurement.

## Mitigate Uncertainty

Daniel Measurement Uncertainty Analysis reduces your risk of losing the value of any product volumes that can not be confirmed. Our certified measurement technicians will visit the site, survey and test equipment, and review design specifications. This information will be used to quantify the level of uncertainty in your metering installation and recommend solutions that reduce the uncertainty level. The result is substantial savings, improved accuracy and greater loss control (see Table 2 for some of the best practices to mitigate uncertainty).

Table 1

### Factors contributing to increased measurement uncertainty

#### Flow distortion

- Faulty system design
- Excessive flow

#### Contamination

- Liquid in gas
- Wax
- Lube oil
- Soot

#### Phase change

- Retrograde condensate
- Gas break-out

#### Debris or damage

- Installation issues
- Operating conditions

#### Operating conditions differing from design conditions

## Get started today

Daniel's highly trained certified technicians are located worldwide, providing you with service and support in more than 80 countries.

For a Measurement Uncertainty Analysis quotation customized to meet your particular needs, please contact your nearest Daniel Measurement and Control Sales and Service office as indicated below, or submit a service request online at [www.daniel.com](http://www.daniel.com).

Table 2

### Best practices to mitigate uncertainty

#### Design considerations

##### Measurement system audit

- Assess level of accepted uncertainty
- Identify of elements or practices causing deviation and actions to bring back into conformance

##### Recertification and verification

- Compare measurement performance with design
- Validate performance and reported figures in conjunction with operating practices

##### Operational and maintenance practices

- Training of personnel
- Establish regular maintenance schedule for each key equipment item or device
- Periodic equipment health checks

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### Keeping you at peak performance

*Daniel is the world leader in custody transfer and fiscal flow measurement products, systems and services. We understand the importance of your flow metering measurement, and in an environment of volatile oil and gas prices, the financial risk due to measurement uncertainty is greater than ever before. That's why Daniel is committed to helping reduce your metering equipment uncertainty anytime and anywhere.*

*Our global reach, broad range of services and certified service specialists supported by over 80 years of oil and gas industry experience enable Daniel to support you for the life of your metering installations – and that's a certainty.*

