19 – 21 NOVEMBER 2017 HILTON KUWAIT RESORT , AL DORRA BALLROOM

KUWAIT 3rd FLOW MEASUREMENT TECHNOLOGY CONFERENCE



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إحـدى شركـات مؤسسـة البتـرول الكويتيـة A Subsidiary of Kuwait Petroleum Corporation



BEN LEACH Managing Director, Swinton Technology Measurement Enhancements through Technology





ABOUT SWINTON TECHNOLOGY



Leading Provider Oil and Gas Metering Computer System Solutions

WWW.KUWAIT-MEASUREMENT.COM

METERING COMPUTER SYSTEM



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ST THROUGH THE YEARS





CHALLENGE TO REMAIN PROFITABLE

With the decline in oil price every drop is important to an organisation to remain profitable













PROFITABILITY VS MEAS. ACCURACY

- Measurement Accuracy ([↑]) is directly proportional to
 Profitability ([↑])
- Measurement Error (\uparrow) is inversely proportional to Profitability (\downarrow)
- Operation & Maintenance plan with proper traceability system will improve efficiency and profitability of an organisation
 - Today there are Technological Tools that enable Enhanced Measurement









MEASUREMENT ENHANCEMENTS



Marc Bayham



"GCAS has helped reduced troubleshooting time, great value for money and it gives the metering team confidence on a weekly basis that the GC are performing as they should be."

Troubleshooting when problem arises



MEASUREMENT ENHANCEMENTS



Calum Hardie



"We use **Prognosis** as part of validation of our export orifice meters. The Prognosis historical data has been used as part of justification to reduce maintenance activities on both orifice plate inspections and DP Transmitter calibrations. This has helped to **significantly reduce the cost of maintenance** activities on the gas export metering system. We continue to use Prognosis with the help of Swinton Technology's support to provide confidence in the orifice meter system's performance."

57% reduction in meter maintenance



MEASUREMENT ENHANCEMENTS



Steve Peterson

GUSM

"53 calibrations have been performed on the 5 meters spanning 10 years with no in-service shift exceeding 0.3%, the current trigger level for processing a mis- measurement investigation."

No significant shift in 10 years



METERING TECHNOLOGY EVOLUTION





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WHAT IS CBM?



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'ikipedia)

aintenance he or more equipment eriorating.

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ermine the years have n data, the aintenance onnel to do intenance.

likes cars (and good coffee)

WHY USE CBM?





METER VERIFICATION

- Combination of CBMs e.g. compare GC data with USM data
 - High precision flow calculation validation •







WHAT IS UNCERTAINTY?



You don't have to be a mechanic to drive a car ...





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Alarm 12 Unacc 13 **Region Overview** Login **Exposure By Region** Ras Tanura Ju'aymah Ras Tanura Max Uncertainty 0.95 Max Uncertainty 0.88 Ju avmah Ave Uncertainty 0.67 % Ave Uncertainty 0.65 % Jubail Exposure 2464.65 S/m Exposure 1563.76 \$/m Dahran View Region 2 Jeddah View Region Yanbu Jubail Dahran Max Uncertainty 1.26 Max Uncertainty 1.3 % Ave Uncertainty 0.87 % Ave Uncertainty 0.94 % Exposure 2654.32 S/m Exposure 3756.65 S/m View Region View Region 0 Jeddah Al Qasim Yanbu Max Uncertainty 1.01 % Max Uncertainty 2.07 % Ave Uncertainty Ave Uncertainty 0.84 % 0.74 % Exposure 5758.99 \$/m Exposure 1254.65 \$/m View Region View Region 6 Ar Riyād Ash Sharqiyah

COMPANY-WIDE PERFORMANCE VIEW

5 Region Overview - TruST User Interface - Connected directly to the TruST server Alarms on Duty Server Events Region Overview

Thursday, April 13, 2017 14:33:53 Not logged in ارامكو السعودية Saudi Aramco Al Jawf Al Hudüd ash Shamāliyah Tabük Han Al Madinah Makkah Al Báhah 'Asir Najrān Built on TruST - Swinton Technology Ltd. CAP NUM SCRL www.swintentechnology.com

IN SUMMARY



Or more



Thanks for Attention