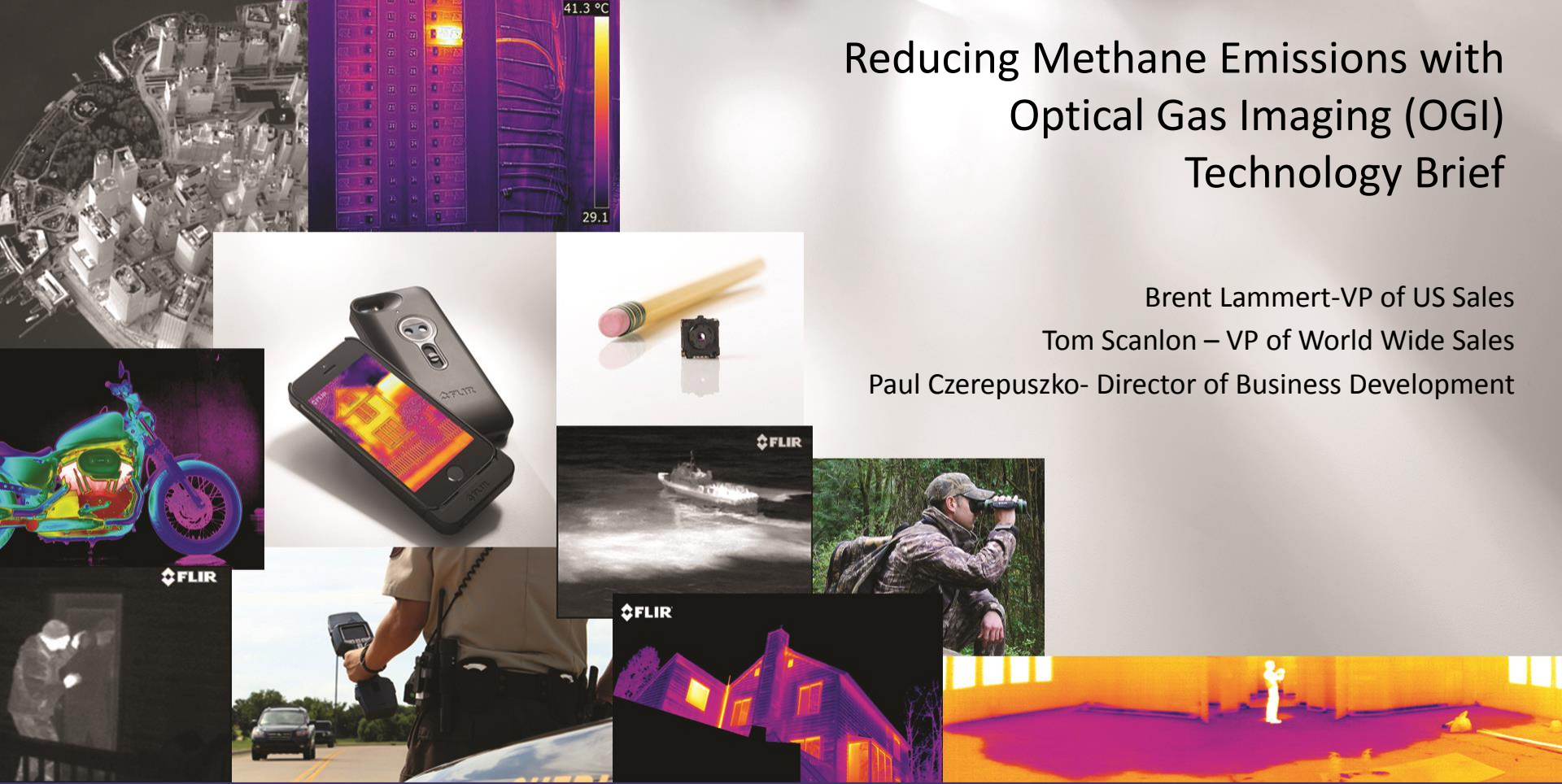


# Reducing Methane Emissions with Optical Gas Imaging (OGI) Technology Brief

Brent Lammert-VP of US Sales

Tom Scanlon – VP of World Wide Sales

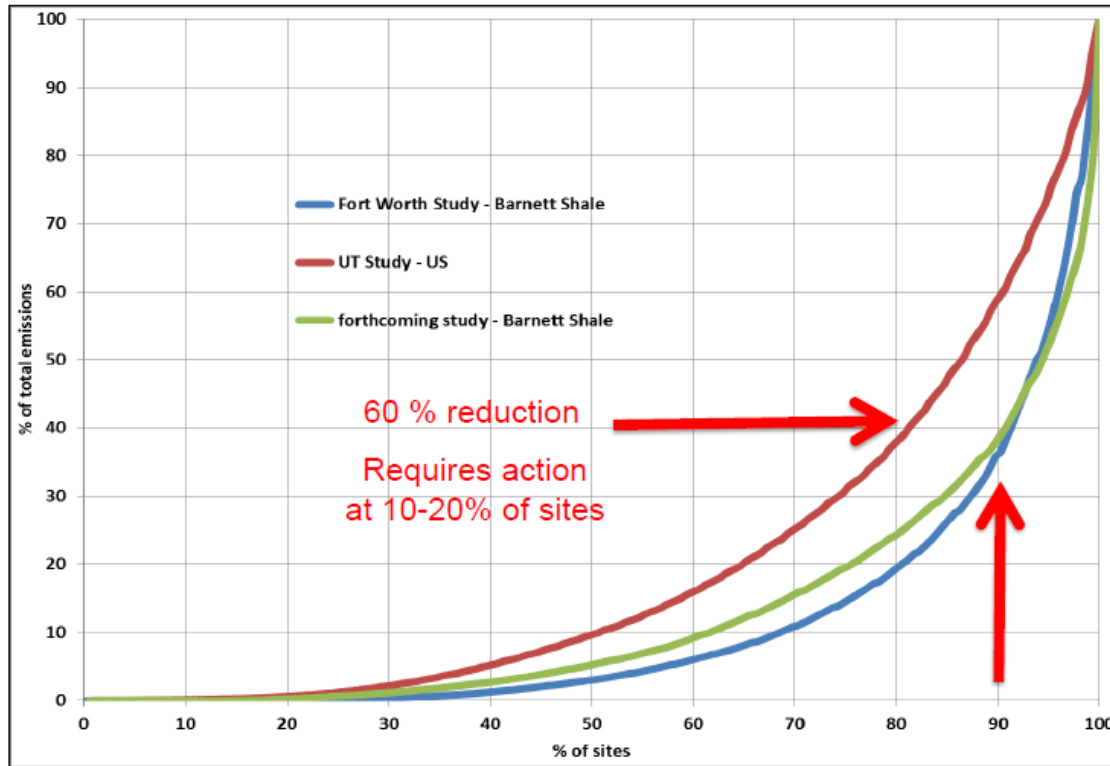
Paul Czerepuszko- Director of Business Development





Find Big Leaks Fast

# “Fat Tail” of well pad emissions



Hamburg, S. (2014). *Anthropogenic Methane Emissions: Climatic Impacts and Natural Gas* [PDF Document]. Retrieved from National Academy of Sciences Methane Emissions Conference October 23<sup>rd</sup>, 2014

FLIR™ HI

MANUAL

WH



0/10/06 1.01.12PM



# Safer Operations





Profitable



# ROI

**PetroTherm**  
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**IR Video #1 Chromatograph (Lab) Gas Analysis**

Gas Components		MOL %	Gallons LPG per 1000 standard cubic feet that can be condensed:
Carbon Dioxide	CO2	0.1	
METHANE	CH4	32.9	
Ethane	C2H6	20.3	5.5
Propane	C3H8	24.9	7.0
Butane	C4H10	14.0	4.5
Pentane	C5H12	4.9	1.9
Hexanes	C6H14	1.5	0.6
Heptanes plus	C7H16 +	1.4	0.7
Totals:		100.0 %	20.2 Gallons

Specific Gravity: 1.3 (Air = 1.0) Gross Heating Value: **2,159** BTU / SCF  
"This is \$12 gas"

(Note: Natural gas Spec. Gr. = 0.67 and heating value is 1030 BTU / SCF)



## Video of Failed Rupture Disk

at

## El Reno Booster

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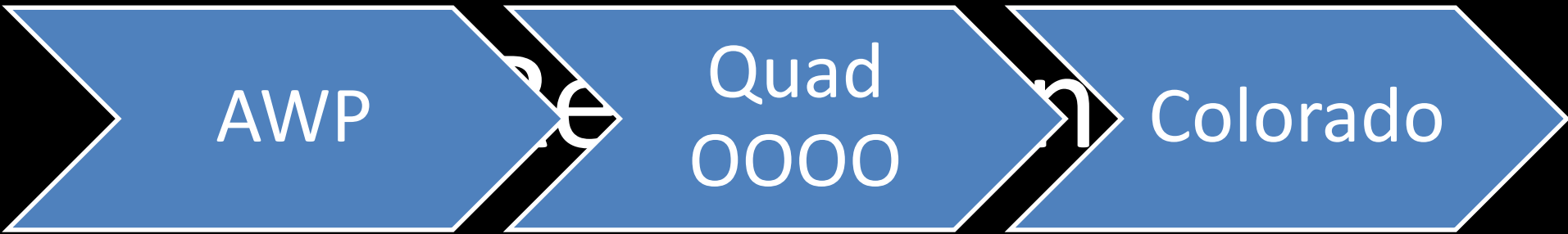
**IR Video #1 gas is**

**118,000 Scf / Day**

2159 BTU per standard cu ft: **"\$12 gas"**

**\$541,000 / year**

Energy equivalent of **41.2** barrels of oil (BOE)  
per day



1. What you can use
2. Frequency of inspection
3. Time to Repair

Gen 1  
GasFindIR



Gen 2  
HSM



Gen 3  
GF Series



VOC



SF6



CO



Refrigerant



CO2



## Multi Sensor Solution



## High Resolution



## CO<sub>2</sub>



## OEM GF Module





# Thank you.