



Receipt Date: April 23, 2018
Cal. Date: April 23, 2018
Report Date: April 23, 2018

Report No.: 339314
Serial No.: 031111168-0103
Barcode: 201898

Calibration Certificate

WESTMOR FLUID SOLUTIONS LLC
14044 W. FREEWAY DRIVE
COLUMBUS, MN 55038
Contact: Ryan Hartin
Phone: 651-842-2551
PO Number: None
Procedure: NIST SOP 19
Technician ID: 19

Item(s) Submitted: 100 Gallon Prover
Manufacturer: Determan Brownie
Material: Stainless Steel (304)
Type: No Bottom Zero
Condition: Good
Temperature: 19.3 °C
Pressure: 741.8 mmHg
Relative Humidity: 42.0 %
Standard H₂O Temp.: 6.2 °C
Artifact H₂O Temp.: 6.3 °C

Nominal		Calibrated				
Volume (gal)		Volume (gal)	Error (in ³)	<i>k</i>	U (in ³)	CCE (°F)
100	As Found	99.9865	-3.1	2.00	2.2	0.0000288
	As Left	99.9865	-3.1			

Neck Calibration: No neck calibration was performed at this time.

This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow.

The vessel listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

All tolerances and specifications were evaluated according to NIST Handbook 105-3 (2010). Uncertainty calculations contain the components in NIST SOP 19 and conform to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008), including coverage factors (*k*) calculated at the approximate 95.45 % confidence level. Results apply to item identified in this report only.

CCE is the cubical coefficient of thermal expansion, and the reference temperature is 60 °F
Conversion to SI unit: 1 gallon = 231 in³ = 0.00378541 m³.

Erik Alfvín

Reviewed by:

Pete Whebbe

Metrologist

Metrologist

2 **WM-17-450** Filed: 5/2/2018 Pages: 4
Calibration Report

Westmor Fluid Solutions, LLC

5 **WM-17-434** Filed: 5/2/2018 Pages: 4
Calibration Report

Westmor Fluid Solutions, LLC



Receipt Date: May 1, 2018
Cal. Date: May 1, 2018
Report Date: May 1, 2018

Report No.: 339345
Serial No.: 051271555-0103
Barcode: 202102

Calibration Certificate

WESTMOR FLUID SOLUTIONS LLC
14044 W. FREEWAY DRIVE
COLUMBUS, MN 55038
Contact: Ryan Hartin
Phone: 651-842-2551
PO Number: None
Procedure: NIST SOP 19
Technician ID: 19

Item(s) Submitted: 100 Gallon Prover
Manufacturer: Determan Brownie Inc
Material: Stainless Steel (304)
Type: No Bottom Zero
Condition: Good
Temperature: 21.0 °C
Pressure: 731.6 mmHg
Relative Humidity: 46.0 %
Standard H₂O Temp.: 8.4 °C
Artifact H₂O Temp.: 8.4 °C

Nominal		Calibrated				
Volume (gal)		Volume (gal)	Error (in ³)	<i>k</i>	U (in ³)	CCE (°F)
100	As Found	99.9939	-1.4	2.00	2.2	0.0000288
	As Left	99.9939	-1.4			

Neck Calibration: No neck calibration was performed at this time.

This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow.

The vessel listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

All tolerances and specifications were evaluated according to NIST Handbook 105-3 (2010). Uncertainty calculations contain the components in NIST SOP 19 and conform to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008), including coverage factors (*k*) calculated at the approximate 95.45 % confidence level. Results apply to item identified in this report only.

CCE is the cubical coefficient of thermal expansion, and the reference temperature is 60 °F
Conversion to SI unit: 1 gallon = 231 in³ = 0.00378541 m³.

Erik Alfvin

Metrologist

Reviewed by:

Pete Whebbe

Metrologist

Receipt Date: May 1, 2018
Cal. Date: May 1, 2018
Report Date: May 1, 2018



Report No.: 339344
Serial No.: 031271251-0101
Barcode: 202101

Calibration Certificate

WESTMOR FLUID SOLUTIONS LLC
14044 W. FREEWAY DRIVE
COLUMBUS, MN 55038
Contact: Ryan Hartin
Phone: 651-842-2551
PO Number: None
Procedure: NIST SOP 19
Technician ID: 19

Item(s) Submitted: 500 Gallon Prover
Manufacturer: Determan Brownie Inc
Material: Stainless Steel (304)
Type: No Bottom Zero
Condition: Good
Temperature: 20.3 °C
Pressure: 731.7 mmHg
Relative Humidity: 53.7 %
Standard H₂O Temp.: 8.4 °C
Artifact H₂O Temp.: 8.6 °C

Nominal		Calibrated				
Volume (gal)		Volume (gal)	Error (in ³)	<i>k</i>	U (in ³)	CCE (°F)
500	As Found	500.027	6	2.00	11	0.0000288
	As Left	500.027	6			

Neck Calibration: No neck calibration was performed at this time.

This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow.

The vessel listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

All tolerances and specifications were evaluated according to NIST Handbook 105-3 (2010). Uncertainty calculations contain the components in NIST SOP 19 and conform to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008), including coverage factors (*k*) calculated at the approximate 95.45 % confidence level. Results apply to item identified in this report only.

CCE is the cubical coefficient of thermal expansion, and the reference temperature is 60 °F
Conversion to SI unit: 1 gallon = 231 in³ = 0.00378541 m³.

Erik Alfvin

Metrologist

Reviewed by:

Pete Whebbe

Metrologist



Receipt Date: April 24, 2018
Cal. Date: April 24, 2018
Report Date: April 24, 2018

Report No.: 339315
Serial No.: 5956670-01
Barcode: 019278

Calibration Certificate

WESTMOR FLUID SOLUTIONS LLC
14044 W. FREEWAY DRIVE
COLUMBUS, MN 55038
Contact: Ryan Hartin
Phone: 651-842-2551
PO Number: None
Procedure: NIST SOP 19
Technician ID: 19

Item(s) Submitted: 500 Gallon Prover
Manufacturer: Brownie
Material: Mild Steel
Type: No Bottom Zero
Condition: Good/Fuel Left Inside*
Temperature: 19.2 °C
Pressure: 740.8 mmHg
Relative Humidity: 40.2 %
Standard H₂O Temp.: 7.1 °C
Artifact H₂O Temp.: 7.3 °C

Nominal		Calibrated				
Volume (gal)		Volume (gal)	Error (in ³)	<i>k</i>	U (in ³)	CCE (1/°F)
500	As Found	499.926	-17	2.00	11	0.0000186
	As Left	499.926	-17			

Neck Calibration: No neck calibration was performed at this time.
***1 to 2 gallons of fuel left inside prover.**

This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow.

The vessel listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

All tolerances and specifications were evaluated according to NIST Handbook 105-3 (2010). Uncertainty calculations contain the components in NIST SOP 19 and conform to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008), including coverage factors (*k*) calculated at the approximate 95.45 % confidence level. Results apply to item identified in this report only.

CCE is the cubical coefficient of thermal expansion, and the reference temperature is 60 °F
Conversion to SI unit: 1 gallon = 231 in³ = 0.00378541 m³.

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