



Receipt Date: March 18, 2019  
Cal. Date: March 20, 2019  
Report Date: March 21, 2019

Report No.: 340798  
Serial No.: 11-06413  
Barcode: 202099

## Calibration Certificate

O'DAY EQUIPMENT  
1301 40TH ST NW  
FARGO, ND 58102-2813

Contact: NICOLE DUNCOMB  
Phone: 701-282-9260  
PO Number: NONE  
Procedure: NIST SOP 19  
Technician ID: 20

Item(s) Submitted: 5 Gallon Measure  
Manufacturer: Seraphin  
Material: Stainless Steel  
Type: Measure  
Condition: Good/ Dirty  
Temperature: 19.3 °C  
Pressure: 735.3 mmHg  
Relative Humidity: 39.1 %  
Standard H<sub>2</sub>O Temp.: 9.8 °C  
Artifact H<sub>2</sub>O Temp.: 9.9 °C

Nominal		Calibrated				
Volume (gal)		Volume (gal)	Error (in <sup>3</sup> )	<i>k</i>	U (in <sup>3</sup> )	CCE (°F)
5	As Found	4.9996	-0.10	2.04	0.25	0.0000265
	As Left	4.9996	-0.10			

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

This measure has been calibrated as a "to contain after wet down" vessel with a pour time of 30 seconds followed by a drain time of 10 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 in<sup>3</sup> = 0.00378541 m<sup>3</sup>.

Anna Pierce

Metrologist

Reviewed by:

Erik Alfvin

Metrologist



**DEPARTMENT OF COMMERCE**  
**WEIGHTS & MEASURES DIVISION**

14305 Southcross Drive #150  
Burnsville, MN 55306-7008  
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651.539.1555 FAX 952.435.4040  
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Receipt Date: March 18, 2019  
Cal. Date: March 20, 2019  
Report Date: March 21, 2019

Report No.: 340799  
Serial No.: 15-92404  
Barcode: 202812

**Calibration Certificate**

O'DAY EQUIPMENT  
1301 40TH ST NW  
FARGO, ND 58102-2813

Contact: NICOLE DUNCOMB  
Phone: 701-282-9260  
PO Number: NONE  
Procedure: NIST SOP 19  
Technician ID: 20

Item(s) Submitted: 5 Gallon Measure  
Manufacturer: Seraphin  
Material: Stainless Steel  
Type: Measure  
Condition: Good/ Dirty  
Temperature: 19.3 °C  
Pressure: 735.3 mmHg  
Relative Humidity: 39.1 %  
Standard H<sub>2</sub>O Temp.: 10.4 °C  
Artifact H<sub>2</sub>O Temp.: 10.5 °C

Nominal Volume (gal)		Calibrated Volume (gal)	Error (in <sup>3</sup> )	k	U (in <sup>3</sup> )	CCE (°F)
5	As Found	4.9998	-0.05	2.04	0.25	0.0000265
	As Left	4.9998	-0.05			

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

This measure has been calibrated as a "to contain after wet down" vessel with a pour time of 30 seconds followed by a drain time of 10 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 in<sup>3</sup> = 0.00378541 m<sup>3</sup>.

Anna Pierce

Metrologist

Reviewed by:

Erik Alfvin

Metrologist





Receipt Date: March 18, 2019  
Cal. Date: March 20, 2019  
Report Date: March 21, 2019

Report No.: 340800  
Serial No.: 15-92453  
Barcode: 202815

## Calibration Certificate

O'DAY EQUIPMENT  
1301 40TH ST NW  
FARGO, ND 58102-2813

Contact: NICOLE DUNCOMB  
Phone: 701-282-9260  
PO Number: NONE  
Procedure: NIST SOP 19  
Technician ID: 20

Item(s) Submitted: 5 Gallon Measure  
Manufacturer: Seraphin  
Material: Stainless Steel  
Type: Measure  
Condition: Good/ Dirty  
Temperature: 19.3 °C  
Pressure: 735.3 mmHg  
Relative Humidity: 39.1 %  
Standard H<sub>2</sub>O Temp.: 10.6 °C  
Artifact H<sub>2</sub>O Temp.: 10.7 °C

Nominal		Calibrated				
Volume (gal)		Volume (gal)	Error (in <sup>3</sup> )	<i>k</i>	U (in <sup>3</sup> )	CCE (°F)
5	As Found	5.0028	0.65	2.04	0.25	0.0000265
	As Left	5.0004	0.10			

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


This measure has been calibrated as a "to contain after wet down" vessel with a pour time of 30 seconds followed by a drain time of 10 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 in<sup>3</sup> = 0.00378541 m<sup>3</sup>.

Anna Pierce

  
Metrologist

Reviewed by:

Erik Alfvin

  
Metrologist



Receipt Date: March 18, 2019  
 Cal. Date: March 20, 2019  
 Report Date: March 21, 2019

Report No.: 340801  
 Serial No.: 15-92451  
 Barcode: 202810

## Calibration Certificate

O'DAY EQUIPMENT  
 1301 40TH ST NW  
 FARGO, ND 58102-2813

Contact: NICOLE DUNCOMB  
 Phone: 701-282-9260  
 PO Number: NONE  
 Procedure: NIST SOP 19  
 Technician ID: 20

Item(s) Submitted: 5 Gallon Measure  
 Manufacturer: Seraphin  
 Material: Stainless Steel  
 Type: Measure  
 Condition: Good/ Dirty  
 Temperature: 19.3 °C  
 Pressure: 735.3 mmHg  
 Relative Humidity: 39.1 %  
 Standard H<sub>2</sub>O Temp.: 10.2 °C  
 Artifact H<sub>2</sub>O Temp.: 10.3 °C

Nominal	Calibrated				
Volume (gal)	Volume (gal)	Error (in <sup>3</sup> )	<i>k</i>	U (in <sup>3</sup> )	CCE (°F)
5	As Found	4.9974	-0.59	2.04	0.25 0.0000265
	As Left	5.0000	0.00		

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

This measure has been calibrated as a "to contain after wet down" vessel with a pour time of 30 seconds followed by a drain time of 10 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 in<sup>3</sup> = 0.00378541 m<sup>3</sup>.

Anna Pierce



Metrologist

Reviewed by:

Erik Alfvén



Metrologist



Receipt Date: March 18, 2019  
 Cal. Date: March 20, 2019  
 Report Date: March 20, 2019

Report No.: 340802  
 Serial No.: 42853  
 Barcode: 019892

## Calibration Certificate

O'DAY EQUIPMENT  
 1301 40TH ST NW  
 FARGO, ND 58102-2813

Contact: NICOLE DUNCOMB  
 Phone: 701-282-9260  
 PO Number: NONE  
 Procedure: NIST SOP 19  
 Technician ID: 20

Item(s) Submitted: 5 Gallon Measure  
 Manufacturer: Seraphin  
 Material: Mild Steel  
 Type: Measure  
 Condition: Dirty  
 Temperature: 19.3 °C  
 Pressure: 735.3 mmHg  
 Relative Humidity: 39.1 %  
 Standard H<sub>2</sub>O Temp.: 12.0 °C  
 Artifact H<sub>2</sub>O Temp.: 12.1 °C

Nominal		Calibrated				
Volume (gal)		Volume (gal)	Error (in <sup>3</sup> )	<i>k</i>	U (in <sup>3</sup> )	CCE (°F)
5	As Found	4.9996	-0.10	2.04	0.25	0.0000186
	As Left	4.9996	-0.10			

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

This measure has been calibrated as a "to contain after wet down" vessel with a pour time of 30 seconds followed by a drain time of 10 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 in<sup>3</sup> = 0.00378541 m<sup>3</sup>.

Anna Pierce

Metrologist

Reviewed by:

Erik Alfvín

Metrologist



Receipt Date: March 18, 2019  
Cal. Date: March 20, 2019  
Report Date: March 20, 2019

Report No.: 340803  
Serial No.: 40961  
Barcode: 019293

## Calibration Certificate

O'DAY EQUIPMENT  
1301 40TH ST NW  
FARGO, ND 58102-2813

Contact: NICOLE DUNCOMB  
Phone: 701-282-9260  
PO Number: NONE  
Procedure: NIST SOP 19  
Technician ID: 20

Item(s) Submitted: 5 Gallon Measure  
Manufacturer: Seraphin  
Material: Mild Steel  
Type: Measure  
Condition: Dirty  
Temperature: 19.3 °C  
Pressure: 735.3 mmHg  
Relative Humidity: 39.1 %  
Standard H<sub>2</sub>O Temp.: 12.5 °C  
Artifact H<sub>2</sub>O Temp.: 12.6 °C

Nominal Volume (gal)		Calibrated		<i>k</i>	U (in <sup>3</sup> )	CCE (°F)
		Volume (gal)	Error (in <sup>3</sup> )			
5	As Found	4.9985	-0.35	2.04	0.25	0.0000186
	As Left	4.9998	-0.05			

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

This measure has been calibrated as a "to contain after wet down" vessel with a pour time of 30 seconds followed by a drain time of 10 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 in<sup>3</sup> = 0.00378541 m<sup>3</sup>.

Anna Pierce

Metrologist

Reviewed by:

Erik Alfvin

Metrologist

Receipt Date:	March 18, 2019	Report No.:	340804
Cal. Date:	March 20, 2019	Serial No.:	29726
Report Date:	March 21, 2019	Barcode:	019891

## Calibration Certificate

O'DAY EQUIPMENT  
1301 40TH ST NW  
FARGO, ND 58102-2813

Contact: NICOLE DUNCOMB  
Phone: 701-282-9260  
PO Number: NONE  
Procedure: NIST SOP 19  
Technician ID: 20

Item(s) Submitted: 5 Gallon Measure  
Manufacturer: Seraphin  
Material: Mild Steel  
Type: Measure  
Condition: Dirty  
Temperature: 19.3 °C  
Pressure: 735.3 mmHg  
Relative Humidity: 39.1 %  
Standard H<sub>2</sub>O Temp.: 12.3 °C  
Artifact H<sub>2</sub>O Temp.: 12.4 °C

Nominal		Calibrated				
Volume (gal)		Volume (gal)	Error (in <sup>3</sup> )	<i>k</i>	U (in <sup>3</sup> )	CCE (°F)
5	As Found	5.0007	0.15	2.04	0.25	0.0000186
	As Left	5.0007	0.15			

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

This measure has been calibrated as a "to contain after wet down" vessel with a pour time of 30 seconds followed by a drain time of 10 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 in<sup>3</sup> = 0.00378541 m<sup>3</sup>.

Anna Pierce



Metrologist

Reviewed by:

Erik Alfvin



Metrologist

Receipt Date: March 22, 2019  
Cal. Date: March 25, 2019  
Report Date: March 25, 2019

Report No.: 340842  
Serial No.: 09-49760-11  
Barcode: 200945

## Calibration Certificate

O'DAY EQUIPMENT  
1301 40TH ST NW  
FARGO, ND 58102-2813

Contact: NICOLE DUNCOMB  
Phone: 701-282-9260  
PO Number: NONE  
Procedure: NIST SOP 19  
Technician ID: 11

Item(s) Submitted: 5 Gallon Prover  
Manufacturer: Seraphin  
Material: Stainless Steel  
Type: No Bottom Zero  
Condition: Good  
Temperature: 18.3 °C  
Pressure: 745.8 mmHg  
Relative Humidity: 37.7 %  
Standard H<sub>2</sub>O Temp.: 17.7 °C  
Artifact H<sub>2</sub>O Temp.: 17.7 °C

Nominal	Calibrated		<i>k</i>	U (in <sup>3</sup> )	CCE (°F)
Volume (gal)	Volume (gal)	Error (in <sup>3</sup> )			
5	As Found	4.9996	-0.10	2.04	0.25 0.0000265
	As Left	4.9996	-0.10		

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

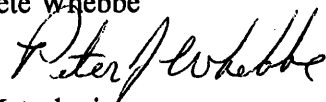
This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow.

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.

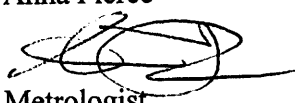
CCE is the cubical coefficient of thermal expansion, and the reference temperature is 60 °F.  
Conversion to SI unit: 1 gallon = 231 in<sup>3</sup> = 0.00378541 m<sup>3</sup>.

Pete Whebbe

  
Metrologist

Reviewed by:

Anna Pierce

  
Metrologist



Receipt Date: April 10, 2019  
 Cal. Date: April 22, 2019  
 Report Date: April 22, 2019

Report No.: 340971  
 Serial No.: 19-62803-59  
 Barcode: 203545

## Calibration Certificate

O'DAY EQUIPMENT  
 1301 40TH ST NW  
 FARGO, ND 58102-2813

Contact: NICOLE DUNCOMB  
 Phone: 701-282-9260  
 PO Number: NONE  
 Procedure: NIST SOP 19  
 Technician ID: 11

Item(s) Submitted: 5 Gallon Measure  
 Manufacturer: Seraphin  
 Material: Stainless Steel (304)  
 Type: Measure  
 Condition: New  
 Temperature: 18.9 °C  
 Pressure: 735.3 mmHg  
 Relative Humidity: 52.3 %  
 Standard H<sub>2</sub>O Temp.: 12.2 °C  
 Artifact H<sub>2</sub>O Temp.: 12.3 °C

Nominal Volume (gal)		Calibrated		k	U (in <sup>3</sup> )	CCE (°F)
		Volume (gal)	Error (in <sup>3</sup> )			
5	As Found	5.0038	0.87	2.04	0.25	0.0000288
	As Left	5.0003	0.07			

Neck Calibration: Chart meets NIST Handbook 105-3 specifications.

This measure has been calibrated as a "to contain after wet down" vessel with a pour time of 30 seconds followed by a drain time of 10 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 in<sup>3</sup> = 0.00378541 m<sup>3</sup>.

Pete Whebbe

  
 Metrologist

Reviewed by:

Anna Pierce

  
 Metrologist



Receipt Date: April 10, 2019  
 Cal. Date: April 22, 2019  
 Report Date: April 22, 2019

Report No.: 340972  
 Serial No.: 19-62803-60  
 Barcode: 203546

## Calibration Certificate

O'DAY EQUIPMENT  
 1301 40TH ST NW  
 FARGO, ND 58102-2813  
 Contact: NICOLE DUNCOMB  
 Phone: 701-282-9260  
 PO Number: NONE  
 Procedure: NIST SOP 19  
 Technician ID: 11

Item(s) Submitted: 5 Gallon Measure  
 Manufacturer: Seraphin  
 Material: Stainless Steel (304)  
 Type: Measure  
 Condition: New  
 Temperature: 18.9 °C  
 Pressure: 735.3 mmHg  
 Relative Humidity: 52.3 %  
 Standard H<sub>2</sub>O Temp.: 12.3 °C  
 Artifact H<sub>2</sub>O Temp.: 12.4 °C

Nominal Volume (gal)		Calibrated		<i>k</i>	U (in <sup>3</sup> )	CCE (°F)
		Volume (gal)	Error (in <sup>3</sup> )			
5	As Found	5.0013	0.30	2.04	0.25	0.0000288
	As Left	5.0003	0.07			

Neck Calibration: Chart meets NIST Handbook 105-3 specifications.

This measure has been calibrated as a "to contain after wet down" vessel with a pour time of 30 seconds followed by a drain time of 10 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 in<sup>3</sup> = 0.00378541 m<sup>3</sup>.

Pete Whebbe

Metrologist

Reviewed by:

Anna Pierce

Metrologist

Receipt Date: April 10, 2019  
Cal. Date: April 22, 2019  
Report Date: April 22, 2019

Report No.: 340973  
Serial No.: 19-62803-63  
Barcode: 203547

## Calibration Certificate

O'DAY EQUIPMENT  
1301 40TH ST NW  
FARGO, ND 58102-2813  
Contact: NICOLE DUNCOMB  
Phone: 701-282-9260  
PO Number: NONE  
Procedure: NIST SOP 19  
Technician ID: 11

Item(s) Submitted: 5 Gallon Measure  
Manufacturer: Seraphin  
Material: Stainless Steel (304)  
Type: Measure  
Condition: New  
Temperature: 18.9 °C  
Pressure: 735.3 mmHg  
Relative Humidity: 52.3 %  
Standard H<sub>2</sub>O Temp.: 12.6 °C  
Artifact H<sub>2</sub>O Temp.: 12.7 °C

Nominal Volume (gal)		Calibrated		<i>k</i>	U (in <sup>3</sup> )	CCE (°F)
		Volume (gal)	Error (in <sup>3</sup> )			
5	As Found	5.0005	0.11	2.04	0.25	0.0000288
	As Left	5.0005	0.11			

Neck Calibration: Chart meets NIST Handbook 105-3 specifications.

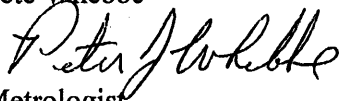
This measure has been calibrated as a "to contain after wet down" vessel with a pour time of 30 seconds followed by a drain time of 10 seconds after cessation of full flow.

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 in<sup>3</sup> = 0.00378541 m<sup>3</sup>.

Pete Whebbe

  
Metrologist

Reviewed by:

Anna Pierce

  
Metrologist



Receipt Date:	April 10, 2019	Report No.:	340974
Cal. Date:	April 22, 2019	Serial No.:	19-62803-64
Report Date:	April 22, 2019	Barcode:	203548

## Calibration Certificate

<b>O'DAY EQUIPMENT</b>	<b>Item(s) Submitted:</b>	5 Gallon Measure
1301 40TH ST NW	<b>Manufacturer:</b>	Seraphin
FARGO, ND 58102-2813	<b>Material:</b>	Stainless Steel (304)
<b>Contact:</b> NICOLE DUNCOMB	<b>Type:</b>	Measure
<b>Phone:</b> 701-282-9260	<b>Condition:</b>	New
<b>PO Number:</b> NONE	<b>Temperature:</b>	18.9 °C
<b>Procedure:</b> NIST SOP 19	<b>Pressure:</b>	735.3 mmHg
<b>Technician ID:</b> 11	<b>Relative Humidity:</b>	52.3 %
	<b>Standard H<sub>2</sub>O Temp.:</b>	11.5 °C
	<b>Artifact H<sub>2</sub>O Temp.:</b>	11.7 °C

Nominal		Calibrated				
Volume (gal)		Volume (gal)	Error (in <sup>3</sup> )	<i>k</i>	U (in <sup>3</sup> )	CCE (°F)
5	As Found	4.9999	-0.02	2.04	0.25	0.0000288
	As Left	4.9999	-0.02			

**Neck Calibration:** Chart meets NIST Handbook 105-3 specifications.


This measure has been calibrated as a "to contain after wet down" vessel with a pour time of 30 seconds followed by a drain time of 10 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.

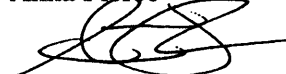
CCE is the cubical coefficient of thermal expansion, and the reference temperature is 60 °F.  
 Conversion to SI unit: 1 gallon = 231 in<sup>3</sup> = 0.00378541 m<sup>3</sup>.

Pete Whebbe

  
 Metrologist

Reviewed by:

Anna Pierce

  
 Metrologist





Receipt Date:	March 22, 2019	Report No.:	340844
Cal. Date:	March 26, 2019	Serial No.:	103 (short)
Report Date:	March 26, 2019	Barcode:	018789

## Calibration Certificate

O'DAY EQUIPMENT  
 1301 40TH ST NW  
 FARGO, ND 58102-2813

Contact: NICOLE DUNCOMB  
 Phone: 701-282-9260  
 PO Number: NONE  
 Procedure: NIST SOP 19  
 Technician ID: 20

Item(s) Submitted: 100 Gallon Prover  
 Manufacturer: Kleespie  
 Material: Mild Steel  
 Type: No Bottom Zero  
 Condition: Poor  
 Temperature: 18.5 °C  
 Pressure: 746.3 mmHg  
 Relative Humidity: 37.5 %  
 Standard H<sub>2</sub>O Temp.: 5.0 °C  
 Artifact H<sub>2</sub>O Temp.: 5.1 °C

Nominal		Calibrated				
Volume (gal)		Volume (gal)	Error (in <sup>3</sup> )	<i>k</i>	U (in <sup>3</sup> )	CCE (°F)
100	As Found	100.0076	1.8	2.00	2.2	0.0000186
	As Left	100.0076	1.8			

**\*\* Levels on prover are broke, level prover to the neck.**  
 Neck Calibration: No neck calibration was performed at this time.

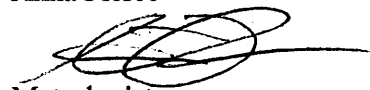
This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow.

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 in<sup>3</sup> = 0.00378541 m<sup>3</sup>.

Anna Pierce

  
 Metrologist

Reviewed by:  
 Pete Whebbe

  
 Metrologist



Receipt Date: March 22, 2019  
 Cal. Date: March 26, 2019  
 Report Date: March 26, 2019

Report No.: 340843  
 Serial No.: 3758 (Tall)  
 Barcode: 019923

## Calibration Certificate

O'DAY EQUIPMENT  
 1301 40TH ST NW  
 FARGO, ND 58102-2813

Contact: NICOLE DUNCOMB  
 Phone: 701-282-9260  
 PO Number: NONE  
 Procedure: NIST SOP 19  
 Technician ID: 11

Item(s) Submitted: 100 Gallon Prover  
 Manufacturer: Unknown  
 Material: Mild Steel  
 Type: No Bottom Zero  
 Condition: Fair  
 Temperature: 18.7 °C  
 Pressure: 743.9 mmHg  
 Relative Humidity: 41.3 %  
 Standard H<sub>2</sub>O Temp.: 5.4 °C  
 Artifact H<sub>2</sub>O Temp.: 5.6 °C

Nominal		Calibrated				
Volume (gal)		Volume (gal)	Error (in <sup>3</sup> )	<i>k</i>	U (in <sup>3</sup> )	CCE (°F)
100	As Found	100.0025	0.6	2.00	2.2	0.0000186
	As Left	100.0025	0.6			

**Prover does not have levels. Level prover to the neck.**

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 in<sup>3</sup> = 0.00378541 m<sup>3</sup>.

Pete Whebbe

  
 Metrologist

Reviewed by:

Anna Pierce

  
 Metrologist



Receipt Date: March 22, 2019  
 Cal. Date: March 26, 2019  
 Report Date: March 26, 2019

Report No.: 340841  
 Serial No.: 12640  
 Barcode: 019910

## Calibration Certificate

O'DAY EQUIPMENT  
 1301 40TH ST NW  
 FARGO, ND 58102-2813  
 Contact: NICOLE DUNCOMB  
 Phone: 701-282-9260  
 PO Number: NONE  
 Procedure: NIST SOP 21  
 Technician ID: 20

Item(s) Submitted: 100 Gallon LPG Prover  
 Manufacturer: Arrow Tank  
 Material: Mild Steel  
 Description: Zero Bottom  
 Condition: Poor  
 Temperature: 18.4 °C  
 Pressure: 746.3 mmHg  
 Relative Humidity: 38.5 %  
 Standard H<sub>2</sub>O Temp. 6.1 °C  
 Artifact H<sub>2</sub>O Temp.: 6.4 °C

Nominal		Calibrated				
Volume (gal)		Volume (gal)	Error (in <sup>3</sup> )	<i>k</i>	U (in <sup>3</sup> )	CCE (°F)
100	As Found (at 100 psig)	99.911	-20.6	2.01	4.7	0.0000186
	As Left (at 100 psig)	99.911	-20.6			

**\*\* No levels on prover, Level prover to the neck.**

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 reaching bottom neck. The prover 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 105-4 (2016). Uncertainty calculations contain the components in NIST SOP 21 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 in<sup>3</sup> = 0.00378541 m<sup>3</sup>.

Anna Pierce

Metrologist

Reviewed by:

Erik Alfvin

Metrologist

Receipt Date: March 22, 2019  
Cal. Date: March 26, 2019  
Report Date: March 26, 2019

Report No.: 340841  
Serial No.: 12640  
Barcode: 019910

## Pressure Correction Chart

O'DAY EQUIPMENT  
1301 40TH ST NW  
FARGO, ND 58102-2813

Contact: NICOLE DUNCOMB  
Phone: 701-282-9260  
PO Number: NONE  
SOP: NIST SOP 21  
Technician ID: 20

Item(s) Submitted: 100 Gallon LPG Prover  
Manufacturer: Arrow Tank  
Material: Mild Steel  
Description: Zero Bottom  
Condition: Poor  
Temperature: 18.4 °C  
Pressure: 746.3 mmHg  
Relative Humidity: 38.5 %

Pressure Gauge Reading (psig)	Corrected Volume (gal)
0	99.811
10	99.825
20	99.839
30	99.853
40	99.867
50	99.881
60	99.887
70	99.893
80	99.899
90	99.905
100	99.911
110	99.921
120	99.931
130	99.941
140	99.951
150	99.961
160	99.971
170	99.981
180	99.991
190	100.001
200	100.011

Anna Pierce



Metrologist

# United States Department of Commerce

## National Institute of Standards and Technology

Certificate of Metrological Traceability For:

# Minnesota

This laboratory has demonstrated evidence of an unbroken chain of metrological traceability of its standards to the international system of units (SI), documented measurement uncertainties, uses documented measurement procedures, successfully completed training and proficiency tests, documented calibration intervals, submitted a quality management system, and demonstrated suitable measurement assurance for the Scope listed on this certificate.

The Office of Weights and Measures Program assesses laboratories to NIST Handbook 143 - Program Handbook for State Weights and Measures Laboratories and ISO/IEC 17025:2005.

### Scope

Mass Echelon I	Mass Echelon III	Volume Gravimetric, I
20 kg to 1 mg	50 kg to 1 mg	20 L to 10 mL
Mass Echelon II	5000 lb to 0.001 lb	100 gal to 0.25 gal
5 kg to 1 mg	4 oz to 0.03125 oz	Volume Transfer, II
1000 lb to 250 lb	Weight Carts	1500 gal to 5 gal
50 lb to 0.001 lb	5 000 lb to 2000 lb	Volume Transfer, II LPG
	Wheel Load Weighers	200 gal to 25 gal
	12 000 lb to 2000 lb	
	Railroad Test Cars/Carts	
	110 000 lb to 80 000 lb	
	10 000 lb to 8 000 lb	



2019

*Douglas A. Olson*

Douglas A. Olson, Chief  
NIST Office of Weights and Measures

Effective Dates: 2019-01-01 to 2020-02-01