

Receipt Date: July 5, 2017
 Cal. Date: July 5, 2017
 Report Date: July 5, 2017

Report No.: 337926
 Serial No.: 44588
 Barcode: 202232

Calibration Certificate

RJT TESTING & SERVICE
 49134 150TH ST
 DONNELLY, MN 56235
 Contact: Randy Fults
 Phone: 320-589-4421
 PO Number: None
 Procedure: NIST SOP 21
 Technician ID: 19

Item(s) Submitted: 100 Gallon LPG Prover
 Manufacturer: Arrow Tank
 Material: Mild Steel
 Description: Zero Bottom
 Condition: Good
 Temperature: 23.3 °C
 Pressure: 737.5 mmHg
 Relative Humidity: 53.4 %
 Standard H₂O Temp. 16.9 °C
 Artifact H₂O Temp.: 17.4 °C

Nominal		Calibrated				
Volume (gal)		Volume (gal)	Error (in ³)	<i>k</i>	U (in ³)	CCE (°F)
100	As Found (at 100 psig)	99.9765	-5.4	2.02	5.3	0.0000186
	As Left (at 100 psig)	99.9765	-5.4			

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 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.

Erik Alfvin

Metrologist

Reviewed by:

Pete Whebbe

Metrologist

6 WM-16-735 Filed: 7/17/2017 Pages: 3
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RJT Testing and Services LLC





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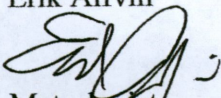
Pressure Correction Chart

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Pressure Gauge Reading (psig)	Corrected Volume (gal)
0	99.822
10	99.841
20	99.860
30	99.879
40	99.899
50	99.918
60	99.929
70	99.940
80	99.951
90	99.962
100	99.973
110	99.980
120	99.987
130	99.994
140	100.001
150	100.008
160	100.015
170	100.023
180	100.030
190	100.038
200	100.045

Erik Alfvin


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



2017

Georgia L. Harris
Georgia L. Harris, Acting Chief
NIST Office of Weights and Measures

Effective Dates: 2017-01-01 to 2017-12-31

Amended: 2016-12-31

Scope modified for 2017.