



Prover Calibration Report

Company Information

Customer:	GAGE WESTERN	Purchase Order #.:	1
Address:	7907 W INDUSTRIAL AVE MIDLAND TX 79706	Work Order #:	PRIMARY 20 GALLON
Owner:	GAGE WESTERN		

Equipment Information

Manufacturer:	FMD	Calibration Date:	11/14/2024
Model #:	H44025(TT)1AASGAAWCS	Due Date:	11/14/2027
Description:	UNIDIRECTIONAL SVP	Temperature:	63 °F
Serial #:	736	Humidity:	56 % RH
ID #:	PORTABLE FMD25	Barametric Pressure:	29.860 inHg
Tube Wall Thickness:	0.958 inches	Technician:	ZACKARY CURRIE
Tube Inside Diameter:	16.999 inches	Procedure Used:	API 4.9.4
		Calibration Location:	CFLM LAB NEW CANEY TX

Conditions Statement USED, GOOD CONDITON

This instrument listed on this certificate has been calibrated against standards traceable thru National Institute of Standards and Technology (NIST), to the International System of Units (SI). Coastal Flow Liquid Measurement's quality system complies with applicable requirements of ISO/IEC 17025:2017. The reported uncertainties and/or "test uncertainties ratios" (TUR's) are expressed as expanded uncertainty values at approximately the 95% confidence level using a coverage factor of K=2. Statement of compliance, where applicable, are based on test results falling within specified limits with the uncertainty of the measurement taken into account. All results contained herein relate only to items(s) calibrated. This certificate shall not be reproduced except in full, without the written permission of Coastal Flow Liquid Measurement.

Data Results

Volume of 75.7172 Liters at 60 F & 0 PSIG
Volume of 20.0024 U.S. Gallons at 60 F & 0 PSIG
Volume of 0.476247 Barrels (42 Gal) at 60 F & 0 PSIG



Customer Satisfaction Survey

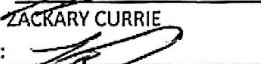
Authorized By: Shannon Thomas, Waterdraw Supervisor
Coastal Flow Liquid Measurement, Inc.

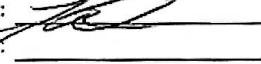
Customer:	GAGE WESTERN	Prover Manufacturer:	FMD
Report #:	WO-24-60327	Model #:	H44025(TT)1AASGAAWCS
Service Location:	CFLM LAB NEW CANEY TX	Serial #:	736
Elevation:	110	Flow Tube Material:	304 Stainless
Standard Temperature (°F):	60.0	Detector Bar Material:	304 Stainless
Standard Pressure (psig):	0.0	Area Thermal Expansion Coefficient (Ga):	1.92E-05
Reference Weight Density (gm/cc):	8.00	Detector Thermal Expansion Coefficient (GI):	9.60E-06
Field Test Weight Density (gm/cc):	7.84	Modulus of Elasticity (flow tube) (E):	2.80E+07
Compressibility factor:	3.20E-06	Flow Tube Inside Diameter (inches) (ID):	16.999
		Flow Tube Wall Thickness (inches) (WT):	0.958

	Run 1	Run 2	Run 3	Run 4	Run 5
Flow Rate (GPM)	7.743	5.310	8.109	5.406	7.693
Acquired Data					
Expected Mass of Water (Ww) (gm)	75512.4	75519.4	75511.8	75512.0	75510.8
Air Temperature (°F)	63.0	61.5	62.4	64.6	64.8
Detector Bar Temperature (Td) (°F)	57.3	57.3	57.3	57.6	57.8
Prover Temperature (Tp) (°F)	70.1	70.1	70.2	70.2	70.3
Prover pressure (Pp) (psig)	65.0	65.0	65.0	65.0	65.0
Water Electrical Conductivity (µS)	4.0	4.0	4.0	4.0	4.0
Calculated Densities					
Density of Air (ρ _A) (gm/cc)	0.001212	0.001215	0.001213	0.001208	0.001208
Density of Distilled Water (ρ _D) (gm/cc)	0.997958	0.997958	0.997945	0.997945	0.997933
Density of VSMOW (gm/cc)	N/A	N/A	N/A	N/A	N/A
K value of VSMOW (µS/cm)	N/A	N/A	N/A	N/A	N/A
Density of Water in container (g/cm3)	0.997958	0.997958	0.997945	0.997945	0.997933
Volume Calculation					
Correction for Buoyancy of Weights (CBW)	1.001064	1.001067	1.001065	1.001061	1.001061
Corrected Mass of Water (Mw) (gm)	75592.745	75599.979	75592.220	75592.118	75590.917
Volume of Water (Vw) (ml)	75747.421	75754.670	75747.882	75747.780	75747.487
Factors for Correction to Standard Conditions					
Effect of Temp on Flow Tube Steel (CTS)	1.000168	1.000168	1.000170	1.000173	1.000177
Effect of Press. On Flow Tube (CPSp)	1.000041	1.000041	1.000041	1.000041	1.000041
Effect of Press. on Water (CPLp)	1.000208	1.000208	1.000208	1.000208	1.000208
Temp. correction CTS for SVP (CTSp)	0.999832	0.999832	0.999830	0.999827	0.999823
WD Volume Corrected for CTSp	75734.695	75741.943	75735.005	75734.676	75734.080
WD value for single cal. Corrected CPSp, CPLp	75715.841	75723.087	75716.151	75715.822	75715.226
Calibrated Prover Volume per Run, (CPV)	75715.841	75723.087	75716.151	75715.822	75715.226
Calculated Deviation from Average Volume	-0.0018%	0.0077%	-0.0014%	-0.0019%	-0.0026%
Repeatability: 0.010%		75717.225	ml	13.08	Expanded Uncertainty by Unit of Measure
Environment Details		75.7172	liters	0.01	
Humidity: 56.0 % rh		0.0757172	cubic meters	0.00	
Barametric Pressure: 29.9 In. Hg		20.0024	gallons	0.00	
Ambient Temperature: 63.0 °F		4620.5486	cubic inches	0.80	
		0.476247	barrels	0.00	
Notes:		Previous Calibration Date: 11/5/21		0.02% Expanded Uncertainty expressed as Percentage	
		Previous Volume: 20.00259 gallons			
		% Change in BPV: 0.001 %			

Performed By: 

ZACKARY CURRIE

Witness: 

Witness: 

For: Coastal Flow Liquid Msmt.

Date: 11/14/2024

For: GAGE WESTERN

Date: 11/14/2024

For:

Date: 11/14/2024

Customer: GAGE WESTERN
Report #: WO-24-60327
Scale Serial #: 26610126
Scale Range (kg): 0 - 300 Kg

Prover Model #: H44025(TT)1AASGAAWCS
Prover Serial #: 736
Nominal Volume (gal): 20.0026
Container Mass (kg): 25.000
Expected Mass (kg): 75.718
Target Mass (kg): 80.574 to 120.862

Test Weights				
Serial #	Cert. Date	Nominal Mass	As Left Mass	Aggregate Mass
38Q0	5/16/2023	25.0 kg	0.00001 kg	25.0000 kg
38Q1	2-9-2022	25.0 kg	0.00001 kg	25.0000 kg
2BAK	2-9-2022	25.0 kg	0.00001 kg	25.0000 kg
2BAL	2-9-2022	25.0 kg	0.00001 kg	25.0000 kg
Total Aggregate Mass:				100.0000 kg

Verification	Target Mass (kg)	Scale Indication (kg)	Zero (kg)	Difference (kg)	Allowable Diff (kg)
Test 1	100.0000	100.0000	0.0008	0.0000	0.0050
Test 2	100.0000	100.0000	0.0004	0.0000	0.0050
Test 3	100.0000	100.0000	0.0000	0.0000	0.0050

Equipment	Serial #	Range	Calibration Date	Traceability #	Asset ID
Temperature	1033	0-120 F	11/13/2024	92789	1033
Pressure	901551	0-100 PSI	8/6/2024	92789	901551
Scale 1	26610126	0 - 300 Kg	6/12/2023	2039.01	26610126
Scale 2	N/A	N/A	N/A	N/A	N/A
Water Conductivity	556295	0-10000 Ms	11/4/2022	ND006243	556295
Barometer	230588623	400 - 1070 mbh/hPa	8/30/2023	400-14169058	230588623

Performed By: 
ZACKARY CURRIE

For: Coastal Flow Liquid Msmt.

Date: 11/14/2024

Witness: 

For: GAGE WESTERN

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Date: 11/14/2024

Customer Name: GAGE WESTERN
 Service Location: CFLM LAB NEW CANEY
 Report No: WO-24-60327

Manufacturer: FMD
 Prover Type: PORTABLE UNIDIRECTIONAL SVP
 Model No: H44025(TT)1AASGAAWCS
 Serial No: 736
 Flow Tube Material: 304 SS
 Detector Bar Material: 304 SS
 Flow Tube Wall Thickness (WT): 0.958 in
 Flow Tube Inside Diameter (ID): 16.999 in
 Previous Volume: 20.00259 gal
 Date: 11/5/2021

Elevation: 110 ft
 Relative Humidity: 56 % rh
 Barometric Pressure: 29.86 in. Hg
 Ambient Temperature: 63 °F

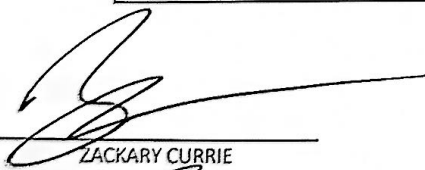
	Run 1	Run 2	Run 3	Run 4	Run 5
Run Time (sec)	<u>155</u>	<u>226</u>	<u>148</u>	<u>222</u>	<u>156</u>
Acquired Data					
Scale #1 Mass of Water (Ww) (g)	<u>75512.4</u>	<u>75519.4</u>	<u>75511.8</u>	<u>75512.0</u>	<u>75510.8</u>
Scale #2 Mass of Water (Ww) (g)					
Scale #3 Mass of Water (Ww) (g)					
Scale #4 Mass of Water (Ww) (g)					
Total Mass of Water (Ww) (g)					
Air Temperature (°F)	<u>63</u>	<u>61.5</u>	<u>62.4</u>	<u>64.6</u>	<u>64.8</u>
Detector Bar Temperature (Td) (°F)	<u>57.3</u>	<u>57.3</u>	<u>57.3</u>	<u>57.6</u>	<u>57.8</u>
Prover Temperature (Tp) (°F)	<u>70.1</u>	<u>70.1</u>	<u>70.2</u>	<u>70.2</u>	<u>70.3</u>
Prover pressure (Pp) (psig)	<u>65</u>	<u>65</u>	<u>65</u>	<u>65</u>	<u>65</u>
Water Electrical Conductivity (µS)	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>

Scale #1

Zero in Kg	Target Mass in Kg	Scale Indication in Kg
<u>.0008</u>	100	<u>100.0200</u>
<u>.0004</u>	100	<u>100.0060</u>
<u>.0000</u>	100	<u>100.0000</u>

Scale #2

Zero in Kg	Target Mass in Kg	Scale Indication in Kg

Performed By: 
 ZACKARY CURRIE

For: Coastal Flow Liquid Msmt.

Date: 11/14/2024

Witnessed By: 

For: GAGE WESTERN

Date: 11/14/2024

Witnessed By: _____

For: _____

Date: 11/14/2024

Comments: _____
