	/ ^						Director of Agriculture
NEBRAS			Nebra	ska Standards Labor	atory		Steve Wellman
Good Life. Great F	Roots			3721 West Cuming St. Lincoln, NE 68524			P.O. Box 94947 Lincoln, NE 68509-4947
	(0005)			(402)-471-2087			(402) 471-2341
DEPARTMENT OF AGRIC	ULTURE						www.nda.nebraska.gov
		Calil	brati	on Certificat	e of Mass		
Calibration Date:	August 29, 202	22			Certificate Nu	mber:	2022-117-1
Cub mitte d Duu	ESCD Area EQ				Deint of Contrato T	om Domuth	
Submitted By:	FSCP Area 50 3721 West Curr	ning St			Point of Contact: To	n. 402-471-3	477
	Lincoln, NE 685	-					Pnebraska.gov
	,				PO Number: N		
— (1)							
I est Item(s) ID / Asset Number	: Lb and Kg hand	d weights		Artifact(c) Description			ed: August 24, 2022 (s): See next page
Manufacture				Artifact(s) Description:			on: NIST Class F
	: Cast Iron & Sta	inless Stee	I		Class	•	on: Good (some wear)
	•			_			
Reference Standards	<u>Used:</u>			Procedure Used:			ment Used:
NSL lb standards				NIST HB 6969, SOP 8 (2019)	Me	ttler XPR320	003
OPI & /Den Metric				<u>Metrologist:</u> JPL			
				0. 2			
Environmental Cond.	Temp:	23.4 °C	Pressure:	729.3 mmHg Pertinent Information	Relative Humidity:	47.8 %	
 maximum permissible the sum of the corre (except density, hardn All corrections stat It is the end user's Appendix A Fundament The artifact(s) describe 	e error. RED prin ection and the un ess and magneti ed in this report responsibility to al Considerations ed in this certific	t indicates ncertainty (sm) were e correlate mas verify that s, when usi cate have b	an out-of- exceed 959 valuated a to a "Conv s density a the weigh ng the wei	when the correction plus to compliance reading. It is the 6 of the maximum permissi according to ASTM E617 (20 class. entional Mass" (CM), also ke and an air density of 1.2 mg ofts meet the accuracy requing ths for calibration of com <u>Traceability Statement</u> ared to the Standards of the prough the National Institute	ne decision of the Labo ble error. All of the t 18) and/or NIST HB 10 nown as "apparent ma g/cm ³ at 20 °C. irements outlined in N mercial (Legal for Trac e State of Nebraska. T	oratory to ac colerances an 5-1 (2019) fo ss", scale ve IIST Handboo de) scales.	Jjust the artifact(s) when nd design specifications or the artifacts designated erses 8.0 g/cm ³ reference ok 44 (2022),
The combined stand uncertainties for ar uncorrected errors asso expanded uncertainty consistent with the o evaluated through	laboratory. The m ard uncertainty i by observed devi ociated with air l y, which defines <i>Guide to the Exp</i> a Type A evalua	calibration easuremen includes un ations from buoyance c an interval pression of tion, or the	number for t traceabil certainties reference orrections with a 95 <i>Uncertaint</i> e method o	ing continued accuracy and or this certificate is the onl ity for the artifact(s) descr <u>Uncertainty Statement</u> reported for the standard values which are less thar . The combined standard u .45 percent level of confide y in Measurement (2008, re f evaluation of uncertainty ed, therefore, there are no	y unique calibration n ibed in this certificate , uncertainties associa n surveillance limits an ncertainty is multiplie ence. The expanded un evised 2012). Some co by the statistical anal	umber to be the with the d the stands d by a cover ncertainty p omponents o lysis (standa	e used in referencing e measurement process, ard uncertainty for any rage factor (k) , to give the resented in this report is of the calibration can be rd deviation) from the

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DEPARTMENT OF AGRICULTURE

Calibrati	on Date: A	ugust 29, 2022			Certificat	te Numbe	r: 2022-117-	·1
			Ca	libration Resul	ts			
Nominal Mass	Serial Number / ID	As Found Conventional Mass Correction (g)	Adjusted (Y/N)	As Left Conventional Mass Correction (g)	Uncertainty ± (g)	(k) factor	NIST Class F MPE ± (g)	Assumed Density (g/cm ³)
15 lb	WM15-13	-0.680	Y	-0.225	0.084	2	0.68	7.2
15 lb	WM15-14	-0.215	Y	0.190	0.084	2	0.68	7.2
25 lb	WM25-27	-0.80	N	-0.80	0.14	2	1.1	7.2
25 lb	WM25-29	-0.39	N	-0.39	0.14	2	1.1	7.2
25 lb	WM25-42	0.01	Ν	0.01	0.14	2	1.1	7.2
25 lb	WM25-44	-0.97	Y	-0.04	0.14	2	1.1	7.2
25 lb	WM25-65	0.17	N	0.17	0.14	2	1.1	7.2
25 lb	WM25-66	-0.40	N	-0.40	0.14	2	1.1	7.2
25 lb	WM25-67	-0.62	Ν	-0.62	0.14	2	1.1	7.2
25 lb	WM25-68	0.49	N	0.49	0.14	2	1.1	7.2
25 lb	WM25-69	-0.34	N	-0.34	0.14	2	1.1	7.2
25 lb	WM25-70	0.51	N	0.51	0.14	2	1.1	7.2
25 lb	WM25-71	0.00	Ν	0.00	0.14	2	1.1	7.2
25 lb	WM25-72	0.45	Ν	0.45	0.14	2	1.1	7.2
25 lb	WM25-73	-0.88	Y	0.05	0.14	2	1.1	7.2
25 lb	WM25-74	0.85	N	0.85	0.14	2	1.1	7.2
25 lb	WM25-106	-0.46	Ν	-0.46	0.14	2	1.1	7.2
25 lb	WM25-113	0.35	Ν	0.35	0.14	2	1.1	7.2
25 lb	WM25-114	-0.56	N	-0.56	0.14	2	1.1	7.2
25 lb	WM25-116	-0.59	Ν	-0.59	0.14	2	1.1	7.2
25 lb	WM25-117	-0.55	Ν	-0.55	0.14	2	1.1	7.2
25 lb	WM25-119	-0.73	Ν	-0.73	0.14	2	1.1	7.2
4 kg	WM-9	0.008	Ν	0.008	0.048	2	0.4	7.84

Conversion Factors

1 ounce (avoirdupois) (oz) = 28.349 52 g

1 pound (avoirdupois) (lb) = 453.592 37 g exactly

Joel P. Lavicky Metrologist

8/31/2022

Date of Issue

The results in this certificate only applies to those item specifically listed in this certificate. This certificate cannot be considered complete unless it contains <u>all</u> pages. This document may not be reproduced except in <u>full</u>, without the written consent of the Nebraska Standards Laboratory.

NEBRASKA Good Life. Great Roots. DEPARTMENT OF AGRICULTURE		ka Standards Lo 3721 West Cuming S Lincoln, NE 68524 (402)-471-2087		/		Lincoln	or of Agriculture Steve Wellman P.O. Box 94947 h, NE 68509-4947 (402) 471-2341 da.nebraska.gov
	Calibrat	ion Certific	ate of I	Mass			
Calibration Date: Aug	ust 30, 2022		Certific	ate Num	ber:	2022-1	17-2
	ea 50 est Cuming St. , NE 68524		Point of Co	Pt email: tor	om Demuth n. 402-471-3 m. <i>demuth@ne</i> N/A)V
Test Item(s): lb weigh Serial Number(s): 123A9 / Manufacture: Troemne Material: Stainless	6A11 er	Artifact(s) Descriptio		ID / Asse Class Spe	Received: et Number: ecification: Condition:	Area 50 NIST Cla) ass F
Reference Standards Used		Procedure Used:			Equipn	nent Us	ed:
NSL lb standards	_	NIST HB 6969, SOP 8 (20 <u>Metrologist:</u> JPL	19)		rius CC 1201 tler XPR 205		rtorius CCE6
Environmental Cond. Ter	np: 21.31 °C Pressur	re: 733.99 mmHg	Relative Hur	nidity:	49.6 %		
• The artifact(s) listed in thi above, except as noted. An a than the maximum permissib artifact(s) when the sum of t design specifications (except c	rtifact is considered in- le error. RED print indic he correction and the u lensity, hardness and ma	compliance when the cor cates an out-of-complian ncertainty exceed 95% of	the maximum rection plus th ce reading. It i the maximum d according to	e measure s the deci permissit	ement uncer sion of the L ble error. A	tainty is aborator Il of the	equal to or less ry to adjust the tolerances and
• All corrections stated in t		a "Conventional Mass" (C lensity and an air density				scale ver	ses 8.0 g/cm ³
 It is the end user's response Appendix A Fundamenta 		the weights meet the acc nen using the weights for Traceability Stateme	calibration of				
The artifact(s) described in t Nebraska are traceable to the part of a comprehensive measu uncertainty reported by this ref	International System of prement assurance prog b laboratory. The calibra	n compared to the Stand f Units (SI) through the N ram for ensuring continu	ards of the Sta lational Institu ed accuracy ar cificate is the o	te of Stan Id measure only uniqu	dards and Te ement tracea e calibratior	echnolog ability w	y (NIST) and are ithin the level of

Uncertainty Statement

The combined standard uncertainty includes uncertainties reported for the standard, uncertainties associated with the measurement process, uncertainties for any observed deviations from reference values which are less than surveillance limits and the standard uncertainty for any uncorrected errors associated with air buoyance corrections. The combined standard uncertainty is multiplied by a coverage factor (k), to give the expanded uncertainty, which defines an interval with a 95.45 percent level of confidence. The expanded uncertainty presented in this report is consistent with the Guide to the Expression of Uncertainty in Measurement (2008, revised 2012). Some components of the calibration can be evaluated through a Type A evaluation, or the method of evaluation of uncertainty by the statistical analysis (standard deviation) from the observations taken. Magnetic testing has not been performed, therefore, there are no components for the effects of it in the uncertainty budget.



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DEPARTMENT OF AGRICULTURE

Calibra	ation Date:	August 30, 202	22		Certific	ate Numb	oer: 2022	-117-2
			Ca	alibration Resul	ts			
Nominal Mass	Serial Number / ID	As Found Conventional Mass Correction (g)	Adjusted (Y/N)	As Left Conventional Mass Correction (g)	Uncertainty ± (g)	(k) factor	NIST Class F MPE ± (g)	Assumed Density (g/cm ³)
2 lb	1	0.039	n	0.039	0.011	2	0.091	7.84
2 lb	2	-0.048	n	-0.048	0.011	2	0.091	7.84
2 lb	3	-0.037	n	-0.037	0.011	2	0.091	7.84
2 lb	4	-0.050	n	-0.050	0.011	2	0.091	7.84
2 lb	5	-0.020	n	-0.020	0.011	2	0.091	7.84
2 lb	6	-0.011	n	-0.011	0.011	2	0.091	7.84
2 lb	7	0.002	n	0.002	0.011	2	0.091	7.84
2 lb	8	-0.046	n	-0.046	0.011	2	0.091	7.84
2 lb	9	-0.019	n	-0.019	0.011	2	0.091	7.84
2 lb	10	0.014	n	0.014	0.011	2	0.091	7.84
2 lb	11	-0.032	n	-0.032	0.011	2	0.091	7.84
2 lb	12	-0.018	n	-0.018	0.011	2	0.091	7.84
2 lb	13	-0.029	n	-0.029	0.011	2	0.091	7.84
2 lb	14	0.013	n	0.013	0.011	2	0.091	7.84
1 lb	15	-0.0453	n	-0.0453	0.0083	2	0.07	7.84
1 lb	16	-0.0346	n	-0.0346	0.0083	2	0.07	7.84
0.3 lb		-0.0005	n	-0.0005	0.0033	2	0.027	7.84
0.2 lb		-0.0144	n	-0.0144	0.0022	2	0.018	7.84
0.1 lb		-0.0021	n	-0.0021	0.0011	2	0.0091	7.84
0.05 lb	*	0.00143	n	0.00143	0.00054	2	0.0045	7.84
0.03 lb		-0.00205	n	-0.00205	0.00032	2	0.0027	7.84
0.02 lb	*	0.00007	n	0.00007	0.00022	2	0.0018	7.84
0.01 lb		-0.00064	n	-0.00064	0.00018	2	0.0015	7.84
0.005 lb		0.00023	n	0.00023	0.00014	2	0.0012	2.7
0.003 lb		0.00071	n	0.00071	0.00012	2	0.00099	2.7
0.002 lb		-0.00049	n	-0.00049	0.00011	2	0.00087	2.7
0.001 lb		0.000524	n	0.000524	0.000083	2	0.0007	2.7
0.001 lb	*	-0.000178	n	-0.000178	0.000083	2	0.0007	2.7
8 oz		-0.0032	n	-0.0032	0.0054	2	0.045	7.84
4 oz		-0.0081	n	-0.0081	0.0028	2	0.023	7.84
2 oz		-0.0017	n	-0.0017	0.0013	2	0.011	7.84
1 oz		0.00127	n	0.00127	0.00064	2	0.0054	7.84
1/2 oz		0.00075	n	0.00075	0.00034	2	0.0028	7.84
1/4 oz		-0.00031	n	-0.00031	0.00021	2	0.0017	7.84
1/8 oz		0.00026	n	0.00026	0.00016	2	0.0013	7.84
1/16 oz		0.00064	n	0.00064	0.00013	2	0.0011	7.84
1/16 oz	*	-0.00012	n	-0.00012	0.00013	2	0.0011	7.84

Conversion Factors

1 ounce (avoirdupois) (oz) = 28.349 52 g

1 pound (avoirdupois) (lb) = 453.592 37 g exactly

e P. 3

Joel P. Lavicky Metrologist

9/1/2022 Date of Issue

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NEBRAS				Director of Agriculture
NLDHAN	Nebro	aska Standards Laborat	tory	Steve Wellman
Good Life. Great	Doots	3721 West Cuming St.		P.O. Box 94947
GOOD LITE. Great	RUULS.	Lincoln, NE 68524		Lincoln, NE 68509-4947
DEPARTMENT OF AGRI		(402)-471-2087		(402) 471-2341
DEPARTMENT OF AGRI			<u> </u>	www.nda.nebraska.gov
	Calibr	<u>ation Certificate a</u>	•	
Calibration Date:	August 30, 2022	Cer	tificate Number:	2022-117-3
Submitted By:	FSCP Area 50	Point o	o <mark>f Contact:</mark> Tom Demu	uth
	3721 West Cuming St.		Ph. 402-47	71-3422
	Lincoln, NE 68524		email: tom.demuth	@nebraska.gov
		<u>P0</u>	<u>Number:</u> N/A	
Test Item(s):	lb weight kit		Date Receive	ed: August 24, 2022
Serial Number(s):	9-OPI-3	Artifact(s) Description:	ID / Asset Numb	er: Area 50
Manufacture:	Troemner		Class Specification	on: NIST Class F
Material:	Stainless Steel & Aluminum		Conditio	on: Good (some wear)
Reference Standarc	ls Used:	Procedure Used:	Eau	ipment Used:
NSL lb standards	<u> </u>	NIST HB 6969, SOP 8 (2019)	Sartorius CC 1	
HSE (B Standards		Metrologist:	Mettler XPR	
		JPL		
Environmental Cond				
Environmental Cond.	Temp: 21.31 °C Pre	ssure: 733.99 mmHg Relative Pertinent Information	e Humidity: 49.6 %	
• The artifact(s) list	ed in this document have be	een found and/or left within the maxim	num permissible error f	or the specification stated
		in-compliance when the correction p		-
-		ndicates an out-of-compliance reading		
	-	ne uncertainty exceed 95% of the max	-	
design specifications (except density, hardness and	d magnetism) were evaluated accordi	ng to ASTM E617 (2018)	and/or NIST HB 105-1 (2019)
		for the artifacts designated class.		
• All corrections st	atad in this report correlate	to a "Conventional Mass" (CM) also I	nown as "apparent mas	an and warran 9.0 g/cm ³
• All corrections sta		to a "Conventional Mass" (CM), also ass density and an air density of 1.2 m		s", scale verses 8.0 g/cm ³
 It is the end use 		nat the weights meet the accuracy rec	-	IIST Handbook 44 (2020).
		, when using the weights for calibratio		
		Traceability Statement		,
The artifact(s) descri	bed in this certificate have	been compared to the Standards of th	e State of Nebraska. Th	e Standards of the State of
.,		m of Units (SI) through the National II		
	-	program for ensuring continued accura		
uncertainty reporte		libration number for this certificate is		
	referencing measureme	ent traceability for the artifact(s) des	cribed in this certificate	2.
		Uncertainty Statement		
The combined stan	dard uncertainty includes ur	ncertainties reported for the standard	, uncertainties associate	ed with the measurement
	-	ations from reference values which ar		
	-	ed with air buoyance corrections. The		
		ainty, which defines an interval with		
uncertainty presente	d in this report is consistent	t with the Guide to the Expression of	Uncertainty in Measurer	nent (2008, revised 2012) .

statistical analysis (standard deviation) from the observations taken. Magnetic testing has not been performed, therefore, there are no components for the effects of it in the uncertainty budget.

Some components of the calibration can be evaluated through a Type A evaluation, or the method of evaluation of uncertainty by the



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DEPARTMENT OF AGRICULTURE

Calibra	ation Date:	August 30, 202	22		Certific	ate Numb	ber: 2022	-117-3
			Ca	alibration Resul	ts			
Nominal Mass	Serial Number / ID	As Found Conventional Mass Correction (g)	Adjusted (Y/N)	As Left Conventional Mass Correction (g)	Uncertainty ± (g)	(k) factor	NIST Class F MPE ± (g)	Assumed Density (g/cm ³)
2 lb	1	0.014	n	0.014	0.011	2	0.091	7.84
2 lb	2	0.038	n	0.038	0.011	2	0.091	7.84
2 lb	3	0.028	n	0.028	0.011	2	0.091	7.84
1 lb	4	-0.0048	n	-0.0048	0.0083	2	0.07	7.84
0.3 lb		-0.0005	n	-0.0005	0.0033	2	0.027	7.84
0.2 lb		-0.0079	n	-0.0079	0.0022	2	0.018	7.84
0.1 lb		-0.0073	n	-0.0073	0.0011	2	0.0091	7.84
0.05 lb		0.00272	n	0.00272	0.00054	2	0.0045	7.84
0.03 lb		0.00202	n	0.00202	0.00032	2	0.0027	7.84
0.02 lb		0.00002	n	0.00002	0.00022	2	0.0018	7.84
0.01 lb		0.00000	n	0.00000	0.00018	2	0.0015	7.84
0.005 lb		-0.00033	n	-0.00033	0.00014	2	0.0012	2.7
0.003 lb		0.00041	n	0.00041	0.00012	2	0.00099	2.7
0.002 lb		0.00070	n	0.00070	0.00011	2	0.00087	2.7
0.001 lb		0.000271	n	0.000271	0.000083	2	0.0007	2.7
0.001 lb	*	-0.000255	n	-0.000255	0.000083	2	0.0007	2.7
8 oz		-0.0081	n	-0.0081	0.0054	2	0.045	7.84
4 oz		-0.0086	n	-0.0086	0.0028	2	0.023	7.84
2 oz		0.0057	n	0.0057	0.0013	2	0.011	7.84
1 oz		0.00021	n	0.00021	0.00064	2	0.0054	7.84
1/2 oz		-0.00003	n	-0.00003	0.00034	2	0.0028	7.84
1/4 oz		0.00044	n	0.00044	0.00021	2	0.0017	7.84
1/8 oz		-0.00073	n	-0.00073	0.00016	2	0.0013	7.84
1/16 oz		0.00030	n	0.00030	0.00013	2	0.0011	7.84
1/16 oz	*	0.00033	n	0.00033	0.00013	2	0.0011	7.84

Conversion Factors

1 ounce (avoirdupois) (oz) = 28.349 52 g 1 pound (avoirdupois) (lb) = 453.592 37 g exactly

P. 3

Joel P. Lavicky Metrologist

8/31/2022 Date of Issue

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DEPARTMENT OF AGRICULTURE

Calibration Certificate of Mass

Calibration Date:	August 30, 2022			Certificate Numbe	er: 2	022-117-4
<u>Submitted By</u> :	FSCP Area 50 3721 West Cuming St.			Point of Contact: To Ph	om Demuth h. 402-471-3422	2
	Lincoln, NE 68524			<u>email:</u> to	om.demuth@nebr	aska.gov
				PO Number: N	/A	
Test Item(s):	Metric Weight Kit	:	Artifact(s) Description	: Da	te Received: 8	/24/2022
Serial Number(s)	WM-G89-10			ID / As	set Number: A	rea 50
Condition	Good (some wear)			Class S	pecification: A	STM 4
Material	Stainless Steel			٨	Manufacture: T	roemner
Reference Standards	Used:		Procedure Used:		<u>Equipme</u>	nt Used:
NSL & /Den Metric		N	ST HB 6969, SOP 8 (201	9) Sartor	ius CC10000S	Mettler XPR 205
Voland-1707			Metrologist:	Sarto	orius CC 1201	Sartorius CCE6
			JPL			
Environmental Cond.	Temp: 21.18 °C	Pressure:	732.2 mmHg	Relative Humidity:	50.96 %	
			Pertinent Information			

• The artifact(s) listed in this document have been found and/or left within the maximum permissible error for the specification stated above, except as noted. An artifact is considered in-compliance when the correction plus the measurement uncertainty is equal to or less than the maximum permissible error. RED print indicates an out-of-compliance reading. It is the decision of the Laboratory to adjust the artifact(s) when the sum of the correction and the uncertainty exceed 95% of the maximum permissible error. All of the tolerances and design specifications (except density, hardness and magnetism) were evaluated according to ASTM E617 (2018) and/or NIST HB 105-1 (2019) for the artifacts designated class.

• All corrections stated in this report correlate to a "Conventional Mass" (CM), also known as "apparent mass", scale verses 8.0 g/cm³ reference mass density and an air density of 1.2 mg/cm³ at 20 °C.

• The Artifacts in "red" do not meet ASTM 4 tolerances but do meet ASTM 5 tolerances and should be evaluated before use.

• It is the end user's responsibility to verify that the weights meet the accuracy requirements outlined in NIST Handbook 44 (2020), Appendix A Fundamental Considerations, when using the weights for calibration of commercial (Legal for Trade) scales.

Traceability Statement

The artifact(s) described in this certificate have been compared to the Standards of the State of Nebraska. The Standards of the State of Nebraska are traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST) and are part of a comprehensive measurement assurance program for ensuring continued accuracy and measurement traceability within the level of uncertainty reported by this laboratory. The calibration number for this certificate is the only unique calibration number to be used in referencing measurement traceability for the artifact(s) described in this certificate.

Uncertainty Statement

The combined standard uncertainty includes uncertainties reported for the standard, uncertainties associated with the measurement process, uncertainties for any observed deviations from reference values which are less than surveillance limits and the standard uncertainty for any uncorrected errors associated with air buoyance corrections. The combined standard uncertainty is multiplied by a coverage factor (*k*), to give the expanded uncertainty, which defines an interval with a 95.45 percent level of confidence. The expanded uncertainty presented in this report is consistent with the *Guide to the Expression of Uncertainty in Measurement (2008, revised 2012)*. Some components of the calibration can be evaluated through a Type A evaluation, or the method of evaluation of uncertainty by the statistical analysis (standard deviation) from the observations taken. Magnetic testing has not been performed, therefore, there are no components for the effects of it in the uncertainty budget.



Nebraska Standards Laboratory

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DEDADTMENT OF ACDICIUTUDE

Calibrati	on Date: Au	ugust 30, 2022			Certifica	te Number:	2022-117-4	
			Cal	ibration Results				
Nominal Mass	Serial Number / ID	As Found Conventional Mass Correction (g)	Adjusted (Y/N)	As Left Conventional Mass Correction (g)	Uncertainty ± (g)	(k) factor	ASTM 4 MPE ± (g)	Assumed Density (g/cm ³)
300 g		0.00261	n	0.00261	0.00089	2	0.006	7.84
200 g		0.00219	n	0.00219	0.0006	2.004	0.004	7.84
100 g		0.00114	n	0.00114	0.00024	2.001	0.002	7.84
50 g		0.00083	n	0.00083	0.00015	2.003	0.0012	7.84
30 g		0.00031	n	0.00031	0.00011	2.003	0.0009	7.84
20 g		0.000141	n	0.000141	0.000094	2.003	0.0007	7.84
10 g		0.000322	n	0.000322	0.000063	2.009	0.0005	7.84
5 g		0.000235	n	0.000235	0.000045	2.001	0.00036	7.84
3 g		0.000293	n	0.000293	0.000038	2.001	0.0003	7.84
2 g		0.000107	n	0.000107	0.000033	2.001	0.00026	7.84
1 g		0.000024	n	0.000024	0.000025	2.004	0.0002	7.84

Conversion Factors

1 ounce (avoirdupois) (oz) = 28.349 52 g

1 pound (avoirdupois) (lb) = 453.592 37 g exactly

Jone P. 3 Joel P. Lavicky Metrologist

9/1/2022 Date of Issue

The results in this certificate only applies to those item specifically listed in this certificate. This certificate cannot be considered complete unless it contains all pages. This document may not be reproduced except in full, without the written consent of the Nebraska Standards Laboratory.

DEBRAS	at Roots. griculture	8/29/2022	Ne	3721 Lind (4) Certifica	andards Lab West Cuming St. coln, NE 68524 02) 471-2087 ate of Calibra ume Transfei	tion	Certificate	Number:	Director of Agriculture Steve Wellman P.O. Box 94947 Lincoln, NE 68509-4947 (402) 471-2341 www.nda.nebraska.gov 2022-117-5
	Quantity	Nominal Volume	Items Sul Man		Туре	Submitted By:	FSCP Area 50 3721 West Cumir Lincoln, NE 68524	-	
	2	5 gal	Se	eraphin	Test Measure 4" Neck		Tom Demuth		
				Te	est Results		402-471-3422 tom.demuth@neb	raska.gov	
	Nominal Volume	Serial Number	Material	Cubical Coefficient of Expansion (/°F)	As Found Volume Delivered @ 60 °F	As left Volume Delivered @ 60 °F	Uncertainty (U)	(<i>k</i>)	
	5 gal	39423 E	SS	0.0000265	4.9994 gal	4.9994 gal	0.0013 gal	2.02	
	5 gal	39423 F	SS	0.0000265	5.0000 gal	5.0000 gal	0.0013 gal	2.02	
			e data in this	s report only app	lies to those items s	specifically listed or	this report.		

The data in this report only applies to those items specifically listed on this report.

Volume delivered at 60°F after a 30 second pour and 10 second drain for test measures. For provers a 30 second drain time would apply.

Conversion Factors:

1 gal = 231 in³ 1 gal = 3.785 412 E-03 m³

Traceability Statement:

The artifact(s) described in this report have been compared to the Standards of the State of Nebraska. The Standards of the State of Nebraska are traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST) and are part of a comprehensive measurement assurance program for ensuring continued accuracy and measurement traceability within the level of uncertainty reported by this laboratory. The calibration number for this report is the only unique calibration number to be used in referencing measurement traceability for the artifact(s) described in this report.

Uncertainty Statement:

The combined standard uncertainty includes uncertainties reported for the standard, uncertainties associated with the measurement process, uncertainties for any observed deviations from reference values which are less than surveillance limits and the standard uncertainty for any uncorrected errors. The combined standard uncertainty is multiplied by a coverage factor (k), to give the expanded uncertainty, which defines an interval with a 95.45 percent level of confidence. The expanded uncertainty presented in this report is consistent with the Guide to the Expression of Uncertainty in Measurement (2008, revised 2012). Some components of the calibration can be evaluated through a Type A evaluation, or the method of evaluation of uncertainty by the statistical analysis (standard deviation) from the observations taken.

Pertinent Information:

The artifact(s) listed above have been found and/or left within the maximum permissible error for the specification stated above, except as noted. An artifact is considered in-compliance when the correction plus the measurement uncertainty is equal to or less than the maximum permissible error. It is the decision of the Laboratory to adjust the artifact(s) when the sum of the correction and uncertainty exceed 95% of the maximum permissible error. All of the tolerances and specifications were evaluated according to NIST HB 105-3 (2010).

Condition of Item(s) Submitted for Calibration:

Good

Laboratory Reference Standard Used; 5 gal SP NE 1586

Treatment of Item(s) before Calibration:

Procedure Used:

NISTIR 7383, SOP 19 (2019)

Temp °C	23.4	ime of calibration: Humidity %	48.0	<u>Water temperature at time of calibration:</u> 73.80 °F
Pressure mmHg	728.30			
ate Submitted:	8/24/2022			
0				
(O	P. C	3		8/31/2022
you	Contraction of the local division of the loc			

DEPARTMENT OF AGRICULTURE Nebraska Standards Laboratory Size Calibration Date: 8/30/2022 Calibration Date: 8/30/2022				
Certificate Number:		2022-117-6		
ming S 524	St.			
POC: Tom Demuth				
nebras	aska.gov			
(۲	(<i>k</i>)			
	2.01			
	2.01	7		
	2.01	1		

Volume delivered at 60°F after a 30 second pour and 10 second drain for test measures. For provers a 30 second drain time would apply.

Conversion Factors:

1 gal = 231 in³ 1 gal = 3.785 412 E-03 m³

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Condition of Item(s) Submitted for Calibration:

Laboratory Reference Standard Used; 5 gal SP NE 1586

Treatment of Item(s) before Calibration:

Tested as Found

Good

Environmental conditions at time of calibration:

Temp °C	22.8	Humidity %	45.6
Pressure mmHg	734.50		

Date Submitted: 8/24/2022

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Joel P. Lavicky, Metrologist

8/30/2022

Issue Date:

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Procedure Used: NISTIR 7383, SOP 19 (2019)

Water temperature at time of calibration:

72.01 °F