NEBRAS	KA	Nebi	raska Standards Labord	atorv	Director of Agriculture Sherry Vinton		
Good Life. Great F			3721 West Cuming St. Lincoln, NE 68524	2	P.O. Box 94947 Lincoln, NE 68509-4947		
			(402)-471-2087		(402) 471-2341		
DEPARTMENT OF AGRIC	CULTURE	Calibrat	ion Cortificat		www.nda.nebraska.gov		
		Calibrat	ion Certificat	-			
Calibration Date:	July 24, 2023			Certificate Number:	2023-104-1		
Submitted By:	FSCP Area 80			Point of Contact: Seth Buck			
	3721 West Cumi	ng St.		Ph. 402-471-3	3422		
	Lincoln, NE 6852	24		email: seth.buck@ne	ebrska.gov		
				PO Number: N/A			
	: 22-Avoirdupois v	weights		Date Receiv	red: July 24, 2023		
ID / Asset Number			Artifact(s) Description:		(s): See Next Page		
Manufacture					ion: NIST Class F		
Material	: Cast Iron			Condit	ion: Good (some wear)		
Reference Standards L	Jsed:		Procedure Used:	<u>Equi</u>	pment Used:		
NSL lb standards			NIST HB 6969, SOP 8 (2019)	Mettler XPR32	.003		
			<u>Metrologist:</u> JPL				
			JFL				
Environmental Cond.	Temp:	24.1 °C Pressure	ç	Relative Humidity: 54.8 %			
			Pertinent Information				
				m permissible error for the specifi urement uncertainty is equal to or			
		-	-	the Laboratory to adjust the artif			
-			-	f the tolerances and design specifi			
hardness and ma	agnetism) were ev	aluated according	to ASTM E617 (2018) and/or N	NST HB 105-1 (2019) for the artifa	cts designated class.		
• All corrections sta	ated in this report		nventional Mass" (CM), also k and an air density of 1.2 mg	nown as "apparent mass", scale ve /cm³ at 20 °C.	erses 8.0 g/cm ³ reference		
				ements outlined in NIST Handbook ercial (Legal for Trade) scales.	x 44 (2022),		
			Traceability Statement				
The artifact(s) describe	d in this certificat	e have been compa	ared to the Standards of the	State of Nebraska. The Standards	of the State of Nebraska are		
				dards and Technology (NIST) and a			
		-		raceability within the level of unc nber to be used in referencing me			
taboratory. The calibra	action number for t		tifact(s) described in this cer	-	astrement traceability for		
			Uncertainty Statement				
			•	, uncertainties associated with the			
				n surveillance limits and the stand Incertainty is multiplied by a cover			
				ence. The expanded uncertainty p			
consistent with the	Guide to the Exp	ression of Uncertai	nty in Measurement (2008, re	evised 2012). Some components of	of the calibration can be		
_				by the statistical analysis (standa			
UDSELVALIUNS LAKEN. N	המצווכנול נפגנוווא ח	as not been perioff	nea, mereiore, mere dre no	components for the effects of it i	n the uncertainty budget.		



Nebraska Standards Laboratory

3721 West Cuming St. Lincoln, NE 68524 (402)-471-2087 Director of Agriculture Sherry Vinton P.O. Box 94947 Lincoln, NE 68509-4947 (402) 471-2341 www.nda.nebraska.gov

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DEPARTMENT OF AGRICULTURE

Calibrati	ion Date: Ju	y 24, 2023			Certificat	e Numbe	r: 2023-104-	1
Calibration 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	NIST Class F MPE ± (g)	Assumed Density (g/cm³)
15 lb	WM15-11	-0.420	Ν	-0.420	0.085	2.01	0.68	7.2
15 lb	WM15-12	-0.220	N	-0.220	0.085	2.01	0.68	7.2
25 lb	NE-1	-1.04	Y	0.06	0.14	2.01	1.1	7.2
25 lb	NE-2	-0.95	Y	0.32	0.14	2.01	1.1	7.2
25 lb	NE-3	-0.44	N	-0.44	0.14	2.01	1.1	7.2
25 lb	NE-4	-1.03	Y	0.10	0.14	2.01	1.1	7.2
<u>25 lb</u>	<u>NE-5</u>	-0.70	N	-0.70	0.14	2.01	1.1	7.2
<u>25 lb</u>	<u>NE-6</u>	-1.00	Y	0.05	0.14	2.01	1.1	7.2
25 lb	NE-7	-0.22	N	-0.22	0.14	2.01	1.1	7.2
<u>25 lb</u>	<u>NE-8</u>	-0.07	N	-0.07	0.14	2.01	1.1	7.2
25 lb	<u>NE-9</u>	-0.69	N	-0.69	0.14	2.01	1.1	7.2
<u>25 lb</u>	<u>NE-10</u>	-0.18	N	-0.18	0.14	2.01	1.1	7.2
25 lb	<u>NE-11</u>	-0.55	<u>N</u>	-0.55	0.14	2.01	1.1	7.2
25 lb	<u>NE-12</u>	-0.27	<u>N</u>	-0.27	0.14	2.01	1.1	7.2
25 lb	NE-13	-0.27	<u>N</u>	-0.27	0.14	2.01	1.1	7.2
25 lb	<u>NE-14</u>	-0.18	N	-0.18	0.14	2.01	1.1	7.2
25 lb	NE-15	-0.34	N	-0.34	0.14	2.01	1.1	7.2
25 lb	<u>NE-16</u>	-0.88	N	-0.88	0.14	2.01	1.1	<u>7.2</u> 7.2
25 lb	NE-17	-0.65	N	-0.65	0.14	2.01	1.1	
25 lb	NE-18	-0.44	<u>N</u>	-0.44	0.14	2.01	1.1	7.2
25 lb	NE-19	-0.41	<u>N</u>	-0.41	0.14	2.01	<u> </u>	7.2
25 lb	NE-20	-0.11	IN	-0.11	0.14	2.01	1.1	1.4

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

8/9/2023

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 Standards Laboratory

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Beta Production Disc. 7.04020 Cathrien on Line					Li	ncoln, NE 68524				Sherry Vinton P.O. Box 9494 incoln, NE 68509-494
Outward reference Outward refere	DEPARTMENT O	FAGRICULTURE			_		-		w	. ,
	Calibratio	on Date:	7/24/2023				on	Certifi	cate Number:	2023-104-2
<text><text><text><text><text><text><form><form><form><form><form><form><form><form><form><form><form><form><form><form><form><form></form></form></form></form></form></form></form></form></form></form></form></form></form></form></form></form></text></text></text></text></text></text>					0. 10			1		
<text><text><text><text></text></text></text></text>				Items Subm	itted:		Submitted By:		ving St	
<form> </form>		Quantity	Nominal Volume	Manu	facturer	Туре			•	
<text></text>		2	5 gal	Ser	aphin	Test Measure 4" Neck	POC:	Sam White		
The result Invariant on the standard in the standard interest of the standard of the standard interest						•			obrocko dov	
with the series of the seri					Te	st Results	T	Samuel.winteen	icorasita.gov	
 			Serial Number	Material	Coefficient of	Volume Delivered @	Volume Delivered @	Uncertainty (U)	(<i>k</i>)	
The data in this report only applies to three items specifically listed on this report. True 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:		5 gal	4393-5-B	SS	0.0000265	4.9993 gal	4.9993 gal	0.0012 gal	2.02	
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. Second 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. Pig = 21° f		5 gal	39423-C	SS	0.0000265	5.0010 gal	5.0010 gal	0.0012 gal	2.02	
Image: Sector				The data in th	nis report only ap	oplies to those items s	pecifically listed on this	s report.		
1 gal = 231 m² 1 gal = 3.785 412 E-03 m² Fraceability 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 on Junis (S) through the National Institute of Standards and Technology (NIST) and are part of a comprehensive measurement assume program for ensuring continued accuracy and neasurement traceability of the He eV of uncertainty reported by this laboratory. The calibration number for this report is the only unique calibration number to be used in referencing neasurement traceability to the artifact(s) described in this report. International 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 uncerrected errors. The combined standard uncertainty is multiplied by a coverage fact (A) to go the expanded uncertainty, includes uncertainty with a Galaxa the Standard Uncertainty in Measurement (2006, revised 2012). Some components of the calibration can be evaluated through a Type A evaluation, or the method of evaluation of meetainty by the statistical analysis (standard deviation) from the doservations take. Partient Information: Evaluation for the tostration 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 he correction and uncertainty for Calibration: The cartificion listed above have been found and/or left wi		Volume d	lelivered at 60°F after a 30	second pour a	and 10 second d	rain for test measures	. For provers a 30 sec	ond drain time wo	ould apply.	
harding of the result of the second of the second of the standards of the State of Nebraska. The Standards of the State of Nebraska are traceable to the International System Initia (S) through the National Institute of Standards and Technology (NIST) and are part of a comprehensive measurement assurance program for ensuring continued accuracy and neasurement traceability for the artifact(s) described in this report. http://www.international.international institute of Standards and Technology (NIST) and are part of a comprehensive measurement assurance program for ensuring continued accuracy and neasurement traceability for the artifact(s) described in this report. http://www.international.international institute of Standards and Technology (NIST) and are part of a comprehensive measurement assurance program for ensuring continued accuracy and neasurement traceability for the artifact(s) described in this report. http://www.international.international institute of Standards and Technology (NIST) and are part of a comprehensive measurement process, uncertainties for any observed deviations from the combined standard uncertainty is multiplied by a coverage fact, by the statistical analysis (standard deviation) from the observations taken. Partient Information Partient Information Technology the statistical analysis (standard deviation) from the observations taken. Partient Information Technology the statistical analysis (standard deviation) from the observations taken. Partient Information Technology the statistical analysis (standard deviation) from the observations taken. Partient Information Technology the statistical analysis (standard deviation) from the observations taken. Partient Information Technology the statistical analysis (standard deviation) form the correction and uncertainty exceed 95% of the maximum permissible error for the specification stated above, except as noted. An artifact is considered in-compliance the correction plus the measurement uncertainty includes astander taken.		1 gal = 3.785 4	12 E-03 m³							
Julis (S) through the National Institute of Standards and Technology (NIST) and are part of a comprehensive measurement assurance program for ensuring continued accuracy and neasurement taxeability for the artifact(s) described in this report. Interstitut Statement: The combined standard uncertainty includes uncertainties reported for the standard, uncertainty for any uncorrected errors. The combined standard uncertainty is multiplied by a coverage fact (s) to gue the expanded uncertainty, which defines an interval with a '8 5.4 percent level of confidence. The expanded uncertainty is multiplied by a coverage fact (s) to gue the expanded uncertainty, which defines an interval with a '8 5.4 percent level of confidence. The expanded uncertainty is multiplied by a coverage fact (s) to gue the expanded uncertainty, which defines an interval with a '8 5.4 percent level of confidence. The expanded uncertainty 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 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 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 plus the measurement and the 's is found and'or left within the maximum permissible error. It is the decision of the Laboratory to adjust the artifact(s) when the sum of the correction plus the measurement process. Condition of term(s) Submitted for Calibration: Laboratory Reference Standard Used; Cleaned and ready for calibration: 5 ga ISP NE 1586	raceability Stat	ement:								
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 the torrection 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).	neasurement trac <u>Uncertainty Stat</u> The combined stat (rom reference val (k), to give the exp he Expression of	eability for the a ement: Indard uncertain lues which are le banded uncertain Uncertainty in M	rtifact(s) described in this ty includes uncertainties r ass than surveillance limits nty, which defines an inter leasurement (2008, revise	report. eported for the s and the stand rval with a 95.4 ed 2012). Som	standard, uncer lard uncertainty 5 percent level o le components o	rtainties associated wit for any uncorrected er of confidence. The exp	th the measurement pr rors. The combined st panded uncertainty pres	ocess, uncertain andard uncertaint sented in this rep	ties for any obs ty is multiplied to ort is consisten	served deviations by a coverage factor t with the Guide to
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: Cleaned and ready for calibration Laboratory Reference Standard Used: 5 gal SP NE 1586 Treatment of Item(s) before Calibration: Tested as Found Procedure Used: NISTIR 7383, SOP 19 (2019) Converted in the of calibration: Temp 'C 24.2 Temp 'C 24.2 Humidity % 55.5 Pressure mmHg 729.10 Condition for the Laboratory or NIST. This document may not be reproduced, except in full This document does not represent or imply endorsement by the State of Nebraska, the Nebraska Standards Laboratory or NIST. This document may not be reproduced, except in full				· ·						
Cleaned and ready for calibration 5 gal SP NE 1586 Treatment of Item(s) before Calibration: Procedure Used: Tested as Found NISTIR 7383, SOP 19 (2019) Environmental conditions at time of calibration: Water temperature at time of calibration: Temp °C 24.2 Humidity % 55.5 Pressure mmHg 729.10 Date Submitted: 7/24/2023 Joel P. Lavicky, Metrologist State of Nebraska, the Nebraska Standards Laboratory or NIST. This document may not be reproduced, except in full	when the correction	on plus the meas	surement uncertainty is eq	ual to or less th	han the maximur	m permissible error. It	is the decision of the L	aboratory to adju	st the artifact(s) when the sum of
Tested as Found NISTIR 7383, SOP 19 (2019) Environmental conditions at time of calibration: Water temperature at time of calibration: Temp °C 24.2 Humidity % 55.5 Pressure mmHg 729.10 Date Submitted: 7/24/2023 Jone R J 8/9/2023 Joel P. Lavicky, Metrologist Issue Date: This document does not represent or imply endorsement by the State of Nebraska, the Nebraska Standards Laboratory or NIST. This document may not be reproduced, except in full								ce Standard Use	ed;	
Temp °C 24.2 Humidity % 55.5 67.15 °F Pressure mmHg 729.10 0	Treatment of Iter							9 (2019)		
Pressure mmHg 729.10 Date Submitted: 7/24/2023 Description 8/9/2023 Jone P. Javicky, Metrologist Issue Date: This document does not represent or imply endorsement by the State of Nebraska, the Nebraska Standards Laboratory or NIST. This document may not be reproduced, except in full	Environmental c	onditions at tin	ne of calibration:				Water temperature a	at time of calibra	ation:	
Date Submitted: 7/24/2023 Jone R J 8/9/2023 Joel P. Lavicky, Metrologist Issue Date: This document does not represent or imply endorsement by the State of Nebraska, the Nebraska Standards Laboratory or NIST. This document may not be reproduced, except in full	Temp °C	24.2		55.5]					
Jone P. Javicky, Metrologist 8/9/2023 Joel P. Lavicky, Metrologist Issue Date: This document does not represent or imply endorsement by the State of Nebraska, the Nebraska Standards Laboratory or NIST. This document may not be reproduced, except in <u>full</u>			L							
Joel P. Lavicky, Metrologist Issue Date: This document does not represent or imply endorsement by the State of Nebraska, the Nebraska Standards Laboratory or NIST. This document may not be reproduced, except in <u>ful</u>	Date Submitted:	7/24/2023								
Joel P. Lavicky, Metrologist Issue Date: This document does not represent or imply endorsement by the State of Nebraska, the Nebraska Standards Laboratory or NIST. This document may not be reproduced, except in <u>ful</u>	9000	R3			8	/9/2023				
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NEBRASKA

Nebraska Standards Laboratory

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402-471-3422

samuel.white@nebraska.gov

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DEPARTMENT OF	AGRICULTURE					wv	ww.nda.nebraska.gov
Calibratio	Calibration Date: 7/24/2023		Certificate of Calibration of Volume Transfer			Certificate Number:	2023-104-3
			01 10				
			Items Submitted:		Submitted By:	FSCP Area 90	
	Quantity	Nominal Volume	Manufacturer	Туре		3721 West Cuming St. Lincoln, NE 68524	
	3	5 gal	Seraphin	"Special" J Prover	POC:	Sam White	

	Test Results						
Nominal Volume	Serial Number	Material	Cubical Coefficient of Expansion (/°F)	As Found Volume Delivered @ 60 °F	As left Volume Delivered @ 60 °F	Uncertainty (U)	(k)
5 gal	20-64572-10	304 SS	0.0000288	5.00066 gal	5.00066 gal	0.00082 gal	2.01
5 gal	20-64572-11	304 SS	0.0000288	5.00056 gal	5.00056 gal	0.00082 gal	2.01
5 gal	20-64572-12	304 SS	0.0000288	5.00065 gal	5.00065 gal	0.00082 gal	2.01

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 Cleaned and ready for		Laboratory Reference Standard Used; 5 gal SP NE 1586				
<u>Treatment of Item(s) before Calib</u> Tested as Fou			Procedure Used: NISTIR 7383, SOP 19 (2019)			
Environmental conditions at time	e of calibration:		Water temperature at time of calibration:			
Temp °C 24.0	Humidity % 53.3		68.18 °F			
Pressure mmHg 727.70						
Date Submitted: 7/24/2023						
Joe P3		8/9/2023				
Joel P. Lavicky, Metrologist		Issue Date:				
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