Mountain Meadow WOOL

Wool Traceability



supplychaindive.com/news/ralph-lauren-traceability-system-supply-chain-visibility/566593/

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DIVE BRIEF

Ralph Lauren launches QR-based tracking system to boost supply chain visibility, fight counterfeits

Published Nov. 6, 2019



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Ralph Lauren Supply Chain Sustainability Policy – 2020 references: "Wool: RLC is committed to sourcing 100% recycled or Responsible Wool Standard (RWS) certified wool by 2025"

patagonia.com/our-footprint/

QA

Stories Sports

patagonia



98% of the products in our line are made with recycled materials.

88% of the products in our line are Fair Trade Certified[™] sewn

ibex.com/pages/supply-chain-1

MEN ACCESSORIES EXPLORE



LOG IN



OUR SUPPLY CHAIN PARTNERS

Our Materials and Trim suppliers hold the following quality and environmental accreditations.

QUALITY:

- Woolmark Certified
- Oekotex100
- RWS
- IS09001

ENVIRONMENTAL:

- IS014001
- ACO (Australian Certified Organic)
- GOTS (Global Organic Textile Standard)
- Natruetexx
- Bluesign
- Naturtextil

icebreaker.com/en-us/transparency.html

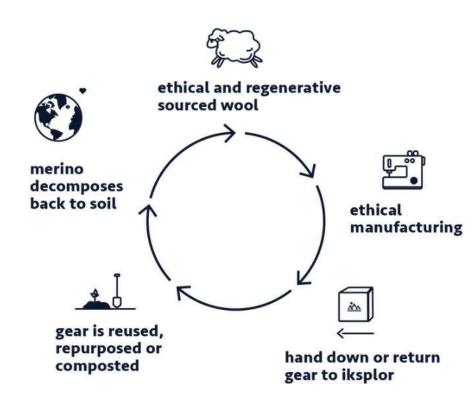
nen's	Kids' Our Story	icebreake Move to natura		
	Transparency Report		2021/2022	S
		Grower listin	g.	1 01 0
	icebreaker contracted growe	rs as of 2nd April 2022.		1 I I
	▼ Brand	. ▼Location		10 10
	AHURIRI DOWNS	Omarama	30.06.2021	Ľ
	ARDGOUR	Wanaka	20.08.2020	U
	AWAPIRI	Blenheim	26.08.2020	Ľ
	BALDWIN	Roxburgh	03.09.2020	ų
	BENMORE	Omarama	03.06.2020	N
	BLACKSTONE HILL	Omakau	10.03.2021	Ň
	BLUE MOUNTAIN	Fairlie	04.03.2021	N
	BLUFF	Kekerengu	29.07.2020	M
	BOG-ROY	Kurow	22.05.2020	M
	BONJEDWARD	North Canterbury	06.07.2020	M
	BRAEVAAR	Amberley	18.06.2020	M
	CAIRNMUIR	Cromwell	11.08.2020	M
	CARRICK	Cromwell	06.07.2020	M
	CASTLE RIDGE	Hakatere	24.11.2020	M
	CATHERINE FIELD	Pukaki	15.03.2021	м
	CECIL PEAK	Queenstown	10.08.2020	N
	CLAREVALE	Hawarden	14.01.2020	N
	CLUDEN	Cromwell	21.10.2020	0

Supply chain.		Chapter
▼ Brand	▼ Location	▼Audit Date
GRAMPIANS	Lake Tekapo	14.10.2019
GUIDE HILL	Lake Pukaki	11.02.2021
HARTFIELD	Ranfurly	15.06.2021
HUXLEY GORGE	Twizel	23.07.2020
IDA VALLEY	Oturehua	10.08.2020
LAKE COLERIDGE	Lake Coleridge	03.08.2020
LAKE HERON	Hakatere	14.08.2020
LAKE OHAU	Omarama	11.02.2021
LAKE TAYLOR	Hawarden	07.08.2020
LINDIS PEAKS	Tarras	12.11.2020
MAHERUA	Little River	18.02.2022
MANGAITI	Wanganui	16.05.2020
MATAKANUI	Omokau	18.06.2020
MIDDLEHURST	Blenheim	14.07.2021
MONAGHAN	Blenheim	27.07.2020
MTMASON	Hawarden	23.01.2020
MTNICHOLAS	Queenstown	26.08.2020
MTROSS	Middlemarch	17.08.2020
MTWHITNOW	Hawarden	06.07.2021
MULLER	Blenheim	13.07.2021
MUZZLE	Clarence Valley	12.06.2021
NOKOMAI	Lumsden	22.06.2020
NORTHBURN	Cromwell	06.08.2020
OMARAMA	Omarama	25.06.2020

Q

Search For Product

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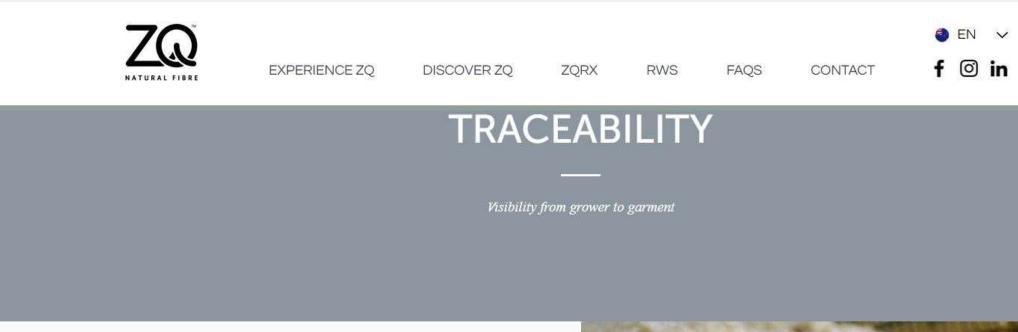


from sheep to shop, we want iksplor to be different - and better

The clothing industry is one of the planet's biggest contributors to global warming and environmental degradation. In the U.S. alone, each individual throws away an average of 70lbs of textile waste each year. So, we created a transparent and ethical business model, supply chain and product lifecycle to help protect the environment for future generations.

learn more about our merino

discoverzq.com/traceability



Traditionally, farmers sold their wool at auction with no knowledge of where it went or what it was to be used for.

With ZQ, our growers are connected to the brands that buy their wool, and they're proud to wear and use the products.

Being able to produce wool for a specific purpose adds a greater sense of achievement.

All ZQ bales are selected to meet brand specification, sent to our central wool store, where they are logged, tested and sampled, to ensure quality standards are met, before being sent on to the next stage of the supply chain.

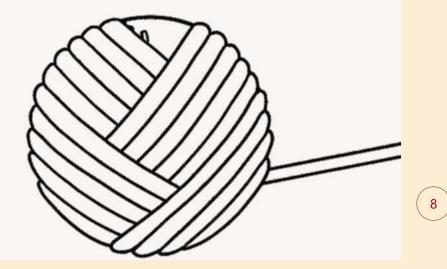


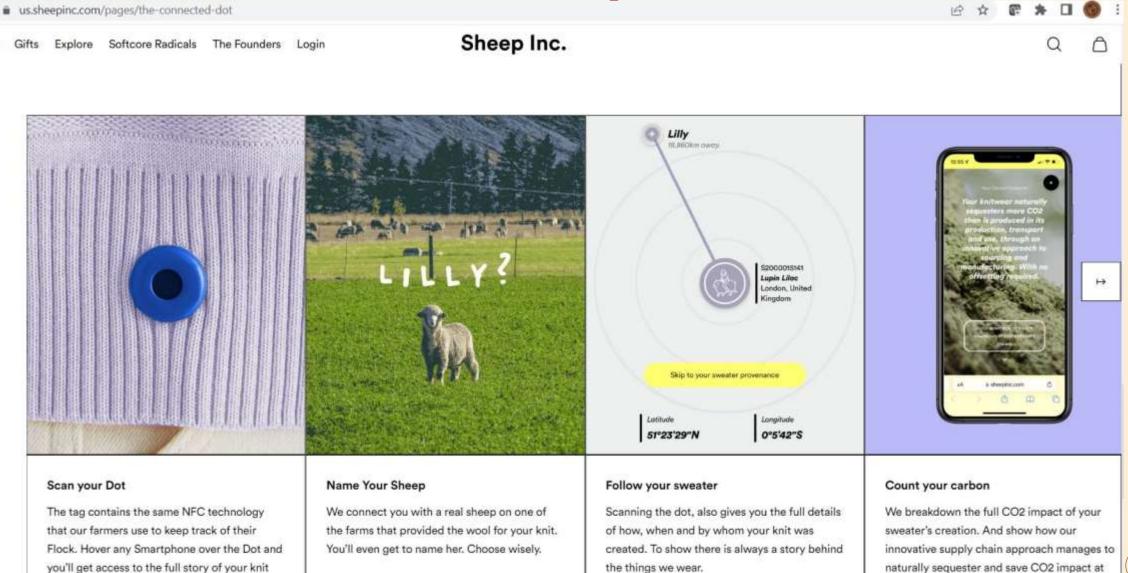
allbirds.com/pages/our-materials-wool B * . allbirds 8 NEW ARRIVALS SUSTAINABILITY RERUN STORES WOMEN KIDS SALE Inspired by the Flock In New Zealand, sheep outnumber humans about six to one. Thanks to their wool, our process uses 60% less energy than materials used in typical synthetic shoes.



Our Sheep Live The Good Life

We work with leading organizations like ZQ Merino to ensure our wool is held to high standards of farming, land management and animal welfare.

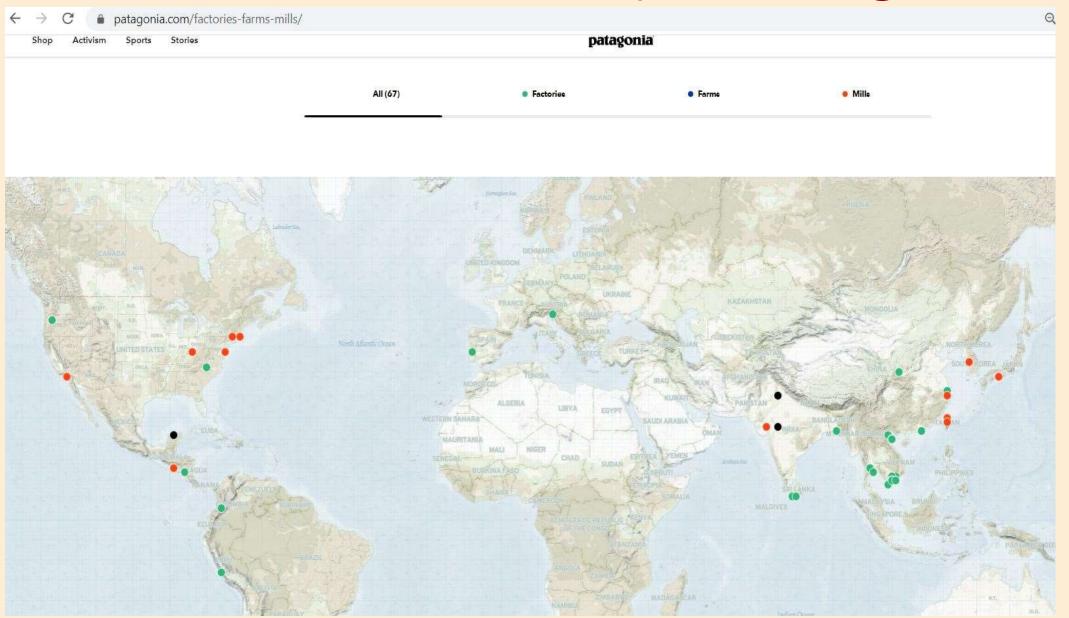




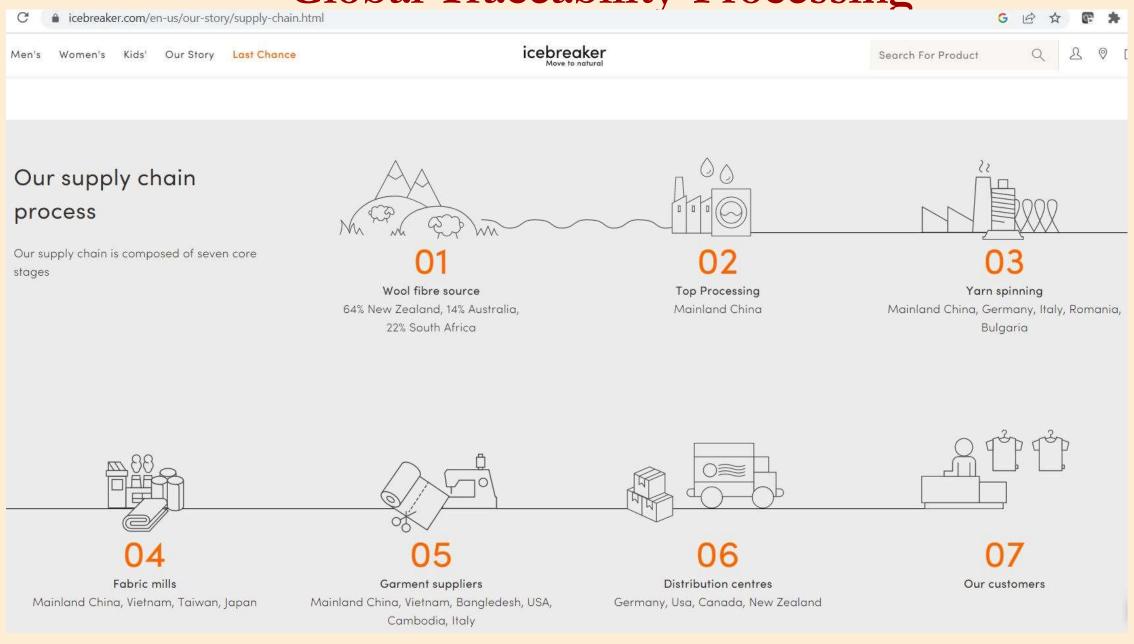
and you'll get to meet your sheep.

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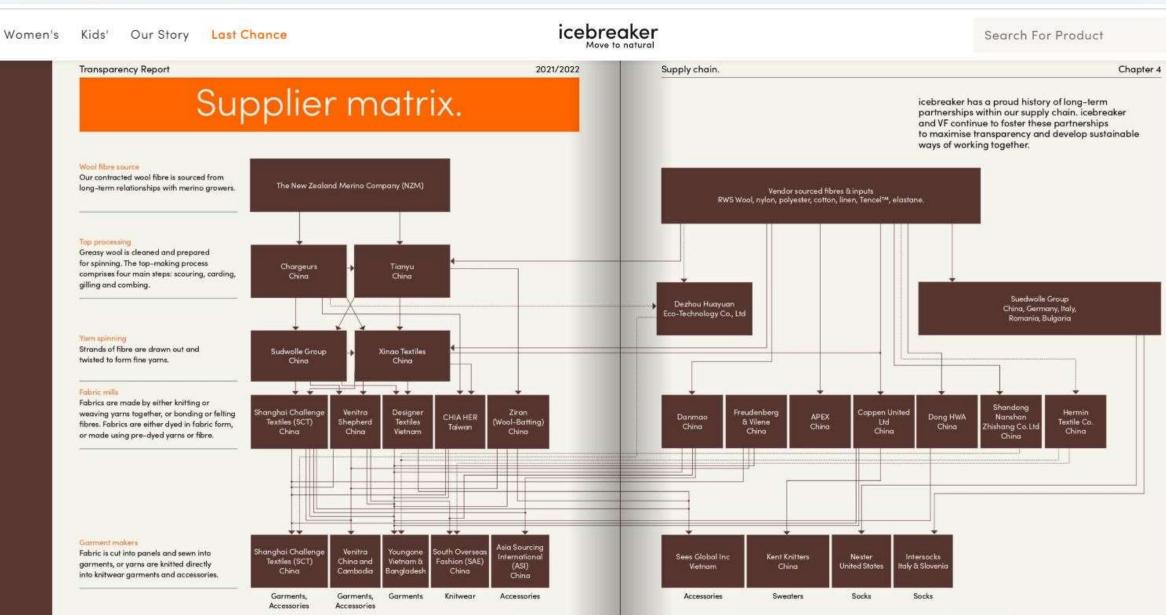
every stage.



■ ibex.com/pages/supply-chain-1 ibex LOG IN Q WOMEN ACCESSORIES EXPLORE EST. 1997 **OUR SUPPLY CHAIN PROCESS** 2. 3. **Yarn Spinning** Wool Fiber Source **Top Processing Fabric Mills** \$ (B) Australia, New Zealand, Australia, Germany, Italy Australia, China Australia, Turkey, USA South Africa, South America, USA 5. 6. 10 **Garment Suppliers Distribution centers Our Customers** Vietnam, USA, China USA USA and Canada



icebreaker.com/en-us/transparency.html



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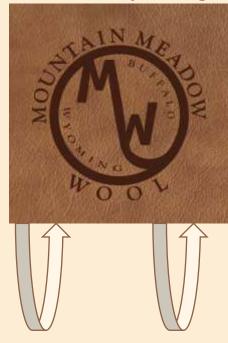
icebreaker.com/en-us/transparency.html

Kids' C)ur Story	Last Ch	ance		icebred						Search	n For Produc	c†
Transparency	Report				2021/2022	Supply chair	n						Chaj
Supplier				er lis	ting.	icebreaker 2022 supplier listing.				Data acquired through an icebreaker supplier survey			
▼ Supplier	▼Factory name	▼ Category	▼ Date of last audit	▼ Location	▼Address	▼ Total No employees	▼% Local	▼% Non local (From other regions)	▼% Migrant (from other country)	▼% Female	▼% Male	▼ Partnership commenced	▼ Lenght service
►AāG	AâE Dongmei Thread Manufacturing Co., Ltd	Trims Vendor Sourced		China	Nange Industrial Village Of Daojiao Town, Dongguan City Guangdong Province, China	369	25%	75%	0%	50%	50%	2013	7
►AāG	American & Efird Vietnam Thread LLC	Trims		Vietnam	Lot No 32-33, Nhon Trach 6 lp, Long The Commune, Nhon Trach District, Dong Nai Province, Vietnam	188	99%	1%	0%	34%	66%	2009	n
► Anabel Tekstil	Anabel Tekstil	Trims		Turkey	Mahmutşevketpaşa Mah. Mahmutşevketpaşa Cad. No:52 Beykaz/İst	20	100%	0%	0%	40%	40%	2008	12
►Арех	Apex (Zhejiang) Textile Co.,Ltd	Fabric Mill	11/1/2018	China	No.175, Ling Hao Road, Hangzhou Economic &Technological Development Area 30019, China.	321	96%	4%	0%	52%	48%	2018	2
►ASI Global Limited	Huaian Yuantong Headwear Mfg Co., Ltd.	Accessories	2/9/2020	China	No. 30, 32, And 99 Yan Huang Avenue, Lian Shui Economic Developmental District Huaian, Jiangsu, China	3694	99%	2%	0%	84%	16%	2012	8
►ASI Global Limited	Branch 1 - Greentech Headgear Company Limited in Dong Nai	Accessories	9/10/2019	Vietnam	Building# 3, 4, 5, 6, 22, 23, Road No. 3, Industrial Zone Nhon Trach 2 - Nhon Phu, Phu Hoi Commune Nhon Trach District, Dong Nai, Vietnam	1692	36%	64%	0%	80%	20%		
►ASI Global Limited	Jiangsu Asian Sourcing Headwear MFG. Co., Ltd	Accessories	23/10/2020	China	No. 2 Sauth Guangzhou Road Economic And Technology Development Zone, Huai An City, Jiangsu, China	1206	99%	1%	0%	87%	13%		
► Avery Dennison	Paxar Packaging Guang Zhou Limited	Trims	7/1/2018	China	Tanshan Village, Hualong Town, Panyu District, Guangzhou, Guangdong Province, China, 511 <mark>4</mark> 34	4069	17%	83%	0%	56%	44%	2007	13
▶ Bernis	Paxar Packaging Guang Zhou Limited	Trims		USA	1 Bernis Way, Shirley, MA 01464 USA	430	99%	1%	0%	30%	70%	2016	6



Scouring, Top Making, Spinning, Dyeing, Knitting, Distribution in Buffalo Wyoming

Premium Rambouillet, Targhee, Cormo, Merino from Wyoming, Montana, South Dakota, and Colorado. Registered under the trademark *Mountain Merino*®



Contract Top Making: Chargeurs, SC Contract Knitting (Gloves/Mittens): Newberry Knits, NY and United Glove, NC

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S minus33.com · https://www.minus33.com

Minus33 – Tagged USA Made Minus33 Merino Wool Clothing

Minus33® Merino Wool Clothing, Socks, Accessories, Long John



OUR SOCK STORY

After more than 15 years selling mid-priced socks using a hybrid of global materials and manufacturers, we were frustrated and unsatisfied. We decided our customers deserved a truly premium quality product, by utilizing our 100+ years of textile and wool expertise to its fullest. Now on is the great-great-great-great-nephew of the founder of the original L.W. Packard mill.

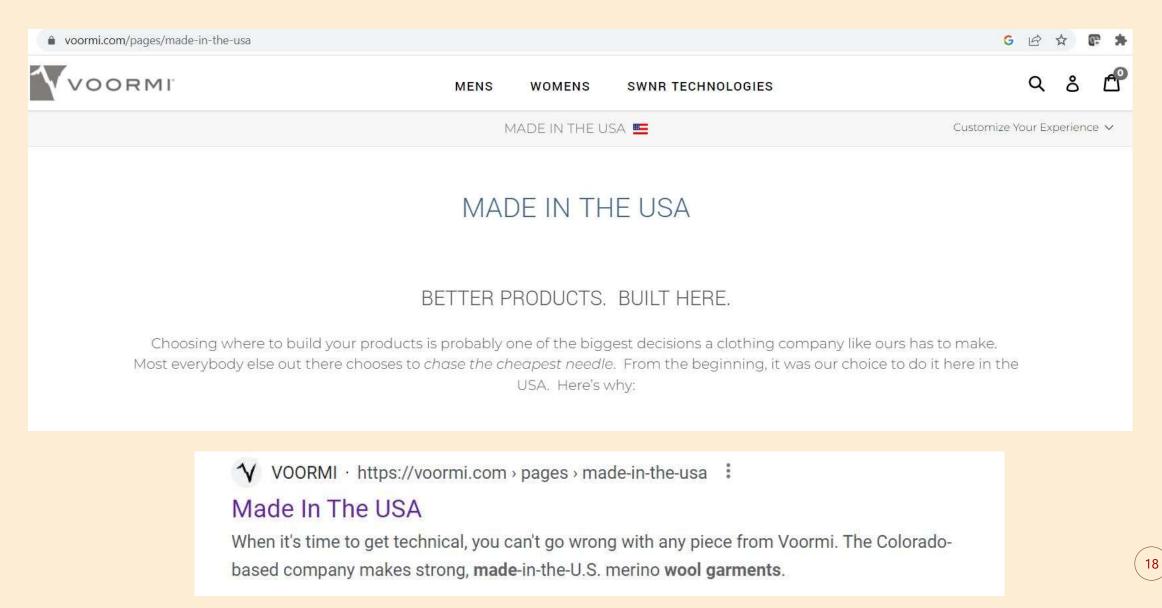


WHERE ARE YOUR PRODUCTS MADE?

The apparel industry is a complex and multilayered business operation. There are multiple levels to the supply chain - read below where each part of the garment-making process takes place, and which types of products have certain sources.

We take pride in vetting our suppliers thoroughly to make sure they are certified both environmentally and socially, while also delivering great quality materials to create our products. We understand that there are some concerns over certain countries, and we are always doing our best to evaluate our supply chains and make the best decisions possible whenever opportunities become available.

The reality is that a large majority of the mass production of wool in the world is now based in Asian countries, where they have established global operations and more advanced technology. We draw from our own personal experience in order to make sure the suppliers we work with are trusted, high quality, and ethically sound. We regularly travel to visit our suppliers and ensure things are running according to our standards.



Made in USA

Online Advertising and Marketing

Telemarketing



Selling 'American-Made' Products? What Businesses Need to Know About Making Made in USA Claims

According to the Federal Trade Commission, "Made in USA" means that "all or virtually all" the product has been made in America. That is, all significant parts, processing and labor that go into the product must be of U.S. origin.

ftc.gov/business-guidance/resources/selling-american-made-products-what-businesses-need-know-about-making-made-usa-claims

For textile and wool products: Under the Textile and Wool Acts, these products must be labeled to identify the country where they were processed or manufactured.

- Imported products must identify the country where they were processed or manufactured.
- Products made entirely in the U.S. of materials also made in the U.S. must be labeled "Made in USA" or with an equivalent phrase.
- Products made in the U.S. of imported materials must be labeled to show the processing or manufacturing that takes place in the U.S., as well as the imported component.
- Products manufactured in part in the U.S. and in part abroad must identify both aspects.

In addition, print and online catalogs must disclose whether a textile was made in USA, imported or both.

Traceability of American Wool Assurance Program Certified Wool through the U.S. Wool Supplychain and Potential Use of Blockchain Technology

Courtney E. Newman¹ Whit C. Stewart² Ben Hostetler³

¹Graduate Research Assistant, Department of Animal Science, University of Wyoming, Laramie, WY 82072
 ²Associate Professor- Extension Sheep Specialist, Department of Animal Science, University of Wyoming, Laramie, WY 82072
 82072

³Operations Manager, Mountain Meadow Wool Mill, Buffalo, WY, 82834





Blanket #230

Traceability Number: 25300-A6-B4-C3-E45-230

Wool Supply Chain Transfer Possibilities

1	LI Producer	Transfer	WB Buyer	Transfer	A First-Stage Processing	Transfer	C Spinning	Transfer	D Packaged Dyeing	Transfer	E/F Knitting/ Weaving
2	LI Producer	Transfer	A First-Stage Processing	Transfer	C Spinning	Transfer	D Packaged Dyeing	Transfer	E Knitting/ Weaving		
3	LI Producer	Transfer	WB Buyer	Transfer	A First-Stage Processing	Transfer	B Top Dyeing	Transfer	C Spinning	Transfer	E/F Knitting/ Weaving
4	LI Producer	Transfer	A First-Stage Processing	Transfer	B Top Dyeing	Transfer	C Spinning	Transfer	E/F Knitting/ Weaving		
5			WB/A/B/C/D/E/F Mill column denotes a transfe 5), 4 (4), 5 (1)	r of pro	ducts		LI L/ WB ⁽¹⁾ (A) S (B) T (C) S (D) F (E) K (F) V	ot Infor Wool B couring op Dye pinning	uyer/Broker g (first-stage pro r g d Dyeing	cessing)

Appendix

Table 2. Traceability data points and definitions collected by the traceability process at each stage of processing. (**shaded rows indicate private information only available to the governing firm, white/non-shaded row indicates data point available to all those in the supplychain**)

Stage (Below is process verified pre-fix)	Name of Data Point**	Definition**
· · · ·	AWA Lot Number (Assigned by AWA)	Assigned when wool clip is verified by AWA 5-digit number
	AWA Certificate Number	Given when verification process is completed by AWA
	Primary Operator	Contact person for entity
	Farm/Ranch Name	Name of entity
Producer (Lot Information)	Wool Origin Location	
	Date of Shearing	
LI	Total number of sheep shorn	
	Bale Weight(s)	
	Description of wool	
	Bale Log	
	Bale Numbers included in the Lot Report (on-farm	Assigned bale number by producer
	labeling)	Assigned bale humber by producer
	Internal Work Order	For internal use only
	AWA Lot Number	Assigned above
	Process Verified Number	Number assigned to wool buyer/broker by AWA designed by WB
	Location of firm	City and State
Wool Buyer/Broker	Traceability Number	Traceability Number at current stage
wool Buyer/Broker	Date Received	Date bales arrived to mill
WB	Weight in	Combined Weight of all bales
WD	Date Completed	Date bales left the mill
	Weight Out	Combined weight of all bales
	Core Test Information	Core test results attached
	Bale Number Correlation	If bales are relabeled, a correlation between WB numbers and producer numbers

Appendix

	Internal Work Order	For internal use only			
	AWA Lot Number	Assigned above			
	Bales Used	Bale numbers and weight used in each run of scouring			
	Process Verified Number	Number assigned to First Stage Processor by AWA designated by A			
First Stage Processing	Location of firm	City and State			
	Traceability Number	Traceability Number at current stage			
Α	Date Received	Date bales arrived to the mill			
	Weight In	Combined weight of all bales			
	Date Completed	Date clean wool left the mill			
	Weight Out	Weight of clean wool leaving			
	Completed Product Result (combed top/clean wool)	In what form the clean wool/ combed top left the mill			
	Internal WO	To aid in correlating with company's current system			
	AWA Lot Number	Assigned above			
	Process Verified Number	Number assigned to Type Dyer designated by B			
Dyeing	Location of firm	City and State			
	Traceability Number	Traceability Number at current stage			
В	Date Received	Date wool entered the firm			
	Weight In	Total weight of all the wool			
	Date Completed	Date wool left the firm			
	Weight Out	Total weight of all the wool			
	Internal Work Order	To aid in correlating with company's current system			
	AWA Lot Number	Assigned above			
	Process Verified Number	Number assigned to spinning designated by C			
Spinning	Location of firm	City and State			
	Traceability Number	Traceability Number at current stage			
С	Date Received	Date product entered firm			
	Weight In	Weight of all products			
	Date Completed	Date product left the firm			
	Weight Out	Weight of all product			

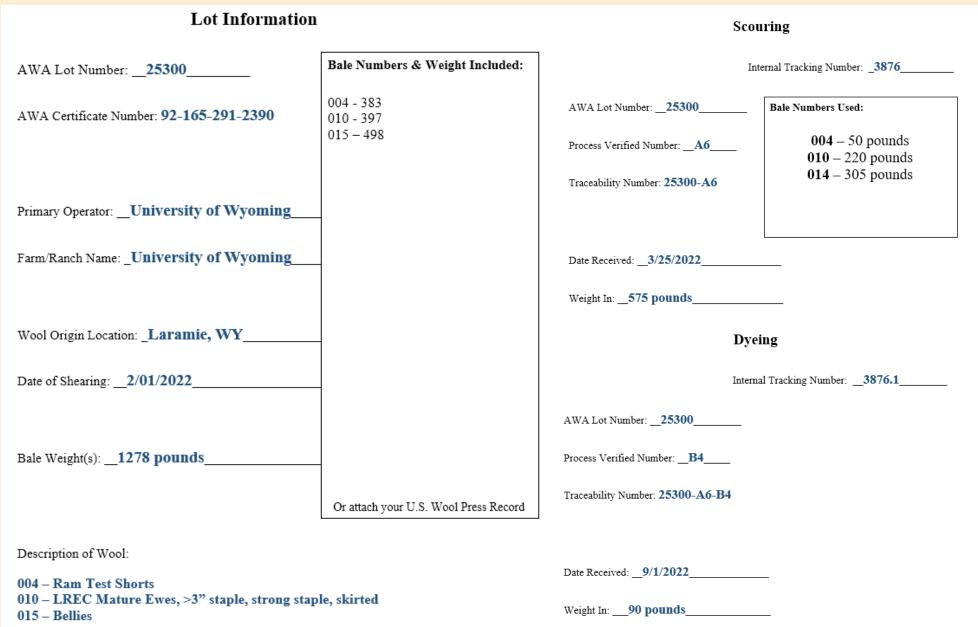
Internal WO To aid in correlating with company's current system AWA Lot Number Assigned Above Number assigned to knitter/weaver designated by D/E Process Verified Number (knitter/weaver) Knitting/Weaver Traceability Number at current stage Traceability Number Location of firm City and State D/E Date Received Date product entered the firm Weight In Weight of all product Date Completed Date product left the firm Weight & Quantity of Products out Weight and quantity of product leaving the firm AWA Lot Number Assigned above Number assigned to wholesaler designated by F Wholesaler Process Verified Number Location of Firm City and State F Date Received Date product arrived Date Completed Date Product left AWA Logo Final Traceability Number including: String of numbers associated each step in the 1. AWA Lot Number Retailer supplychain with a process verified number linking AWA Certificate Number 2. back to the firm. Scouring Number 3. AWA lot number is unique and specific to lot of wool G Dyeing Number 4. that will allow each traceability number (belonging to Spinning Number 5. group of products) to be unique. Knitting/Weaving Number 6. **Final Traceability Number Explanation** Lot Number-Wool Buyer/Broker-First Stage Processing-Top Dyer-Spinning-Knitting/Weaving-Wholesaler-Retailer - B### - C### - D##<u># -</u> E### - F### - G### ##### -AA### A### e.g., 25300-AA54-A6-B4-C3-D45-F301-G506 e.g., 00010-AA2-A3-C14-D6-E9-F203-G766

Note: The supplychain flow of each individual product will determine the set of process verified numbers used. Not all products will go through the entire process.

25

Appendix

Appendix



Appendix

Spinning
Internal Tracking Number: 3876.1 a & b
AWA Lot Number: _25300
Process Verified Number: <u>C3</u>
Traceability Number: 25300-A6-B4-C3
Knitting
Internal Tracking Number:3876.1a & b
AWA Lot Number: _25300
Process Verified Number:D45

Traceability Number: 25300-A6-B4-C3-D45

Next Steps

What else needs to be done prior to industry implementation?

- Feedback loop within industry stakeholders
- Large-Mid-Small scale pilot tests if needed and/or simulations
- Identify suitable database/tracking system
- Identify suitable data management entity
- Cost basis producer processor customer

MMW Recommendations:

- AWA to be a leader in implementation of a system but avoid an AWA exclusive system
 - Enables the use by existing leaders in traceability
 - Provides a mechanism for tracing other fiber properties (breed specific, ranch specific, etc)
- Focus on ease of implementation & use

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