Environmental Claims Validation: Offsetting 110% of the Climate Footprint for AERA Footwear

Prepared for:

The Humble Shoe Company, Inc.

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Introduction

Humble Shoe, Inc. (Humble Shoes) seeks to demonstrate their environmental stewardship in the fashion industry by creating products that do no harm and in fact, leave the world a better place. For each product, Humble strives to quantify the environmental impacts and offset those impacts to the extent possible by 110%.

To meet this goal, the environmental impacts of their initial product offering, *AERA* shoes, have been quantified using a Life Cycle Assessment (LCA) methodology. Specifically, the carbon footprint of the *AERA* footwear is quantified, including production and distribution of the footwear, and the quantity of offsets needed to cover 110% of the greenhouse gas emissions are estimated. Based on these results, Humble Shoes has subsequently purchased the necessary carbon offsets for retirement to offset 110% of their greenhouse gas impacts.

Objective

The goals of SCS' verification seek to satisfy the following objectives:

- 1) Assess the potential environmental impacts associated with the manufacture and distribution of the AERA footwear using a lie cycle assessment approach;
- 2) Quantify the carbon footprint of the *AERA* footwear, over the 'cradle-to-delivered' product life cycle, and determine the required carbon credits necessary to offset 110% of the greenhouse gas impacts of the products; and,
- 3) Verify Humble Shoe's carbon offset purchases and retirements to account for 110% of the greenhouse impact from the manufacture of Humble Shoe's *AERA* shoes.

The AERA footwear products within the scope of verification include the following:

Table 1. Humble Shoe's AERA production through September 2019.

Product Style	Production, through May 2019 (# of pairs)
The Platform	42
The 95 Pump	230
The Mule	100
The 95 Slingback	193
The 75 Slingback	293
Ballerina	133
Slingback Flat	168
The Slipper	192
The Loafer	37
The Derby	40
The Ankle Boot	175
The Rockerboot	59

Product Style	Production, June through September 2019 # of pairs)
The Gaby / Heeled Boot	109
The Gisele / Knee-high Boot	78
The Eliza / Pump	96
The Virginie / The Shootie	37
The 75 Slingback	102
Ballerina	186
Slingback Flat	31
The Stefy / Rockerboot	138



Verification Process

Humble Shoes has elected to offset 110% of the greenhouse gas emissions associated with their current production of AERA footwear by purchasing and retiring carbon offsets through *3Degrees* (https://3degreesinc.com/services/), a third-party broker of RECs and carbon offsets.

In order to quantify the potential environmental impacts of the *AERA* footwear production, a Life Cycle Assessment (LCA) was conducted of the footwear products manufactured at two locations in the Veneto region of Italy. The seventeen (17) styles of the *AERA* fashion footwear product line (Table 1), available with various outer materials encompassing 69 unique products, are included in the LCA study. For the purposes of verification, the Global Warming Potential (GWP) is the appropriate environmental impact indicator for assessment of carbon offsets for the products to mitigate the greenhouse gas emissions from production and distribution of the footwear.

LCA addresses the environmental aspects and potential environmental impacts throughout a product's life cycle including raw material extraction and processing, transport to manufacturing facilities, product manufacturing, packaging; and product distribution.

The study was conducted in conformance with the requirements of ISO 14040 and ISO 14044 for LCA, and considered the potential environmental impacts associated with the manufacture and distribution of the products to consumer markets in the United States. The LCA study scope, methodology, data sources, assumptions, and limitations used to calculate indicator results are documented in the LCA Study Report¹.

The results of the assessment for the Global Warming Potential (GWP), in kg CO_2e , are summarized below. Tables 2 and 3 presents the results based on product distribution via ocean freighter, while Tables 4 and 5 presents results for distribution via air freight. Included are estimated GWP results on a per pair basis as well for total production (through September 2019) of each shoe style considered. Additionally, the results presented have been adjusted to account for carbon offsets associated with the packaging materials included in the assessment.

¹ Life Cycle Assessment of AERA Footwear. SCS Global Services Report. Prepared for The Humble Shoe Company, Inc. September 2019.





Table 2. Estimated GWP for 2019 production of the *AERA* footwear, in kg CO₂e (May 2019). Results based on ocean freight for product distribution.

Style Name	Style Name Description		Global Warming Potential	
	<u> </u>	2019 Production	kg CO₂e/pair	Total kg CO₂e
The Platform	Gold python-effect	24	5.54	133
	Metallic lurex with gold mirror strap	18	5.38	97
	Patchwork python-effect	85	4.70	399
	Nude patent-effect	40	5.17	207
The 95 Pump	Black suede-effect	38	4.83	184
	Natural python-effect	30	4.63	139
	Metallic lurex	37	4.78	177
TI 0.0 I	Navy suede-effect	33	5.35	176
The Mule	Black suede-effect	43	5.35	230
	Natural python-effect	24	5.01	120
	Patchwork python-effect	53	4.44	236
The 95 Slingback	Gold python-effect	75 26	4.59	344
	Black suede-effect	36 30	4.55	164
	Metallic lurex	29 51	4.50 4.44	131
	Patchwork python-effect Nude patent-effect	36	4.44 4.78	227 172
	•	35	4.78 4.78	172
	Fuschia patent-effect Black patent-effect	32 37	4.78 4.78	153 177
The 75 Slingback	White patent-effect	35	4.78 4.78	167
	Silver mirror	33 37	4.69	174
	Gold mirror	37	4.69	174
	Natural python-effect	28	4.40	123
	Silver python-effect	44	4.81	212
Ballerina	Gold python-effect	43	4.81	207
Daneima	Natural python-effect	46	4.53	208
	Patchwork python-effect	52	4.47	233
	Nude patent-effect	41	4.84	199
Slingback Flat	Fuschia patent-effect	40	4.84	194
	Black patent-effect	35	4.82	169
	Black patent-effect	49	6.67	327
	Black suede-effect	49	6.25	306
The Tuxedo	Natural python-effect	43	6.35	273
	Metallic lurex	51	6.07	309
Th - 1 6	Navy suede-effect	19	6.25	119
The Loafer	Beige suede-effect	18	6.25	112
The Outerd	Black patent-effect	19	6.67	127
The Oxford	Black calf-effect	21	6.47	136
	Black patent-effect	21	9.48	199
	Navy suede-effect	40	8.63	345
The Ankle Boot	Beige suede-effect	15	8.63	130
	Natural python-effect	42	8.84	371
	Black calf-effect	57	9.09	518
	Metallic lurex	18	8.33	150
The Rockerboot	Natural python-effect	23	8.89	204
	Black calf-effect	18	9.14	165
Total		1,662		9,314





Table 3. Estimated GWP for production of the *AERA* footwear, in kg CO₂e (September 2019). Results based on ocean freight for product distribution.

Style Name	Style Name Description 2019 Production Global Warming		bal Warming Potential	
			kg	Total kg CO2e
			CO₂e/pair	
The Gaby / Heeled	Black	44	8.1	358
Boot	Military Green	33	8.1	269
	Tan	32	8.1	260
The Gisele / Knee-high	Black	26	10.0	260
Boot	Tan	26	10.0	260
	Natural python-effect	26	9.4	244
The Eliza / Pump	Black	32	5.5	176
	Nude	32	5.8	186
	Natural python-effect	32	5.3	169
The Virginie / The Shootie	Black	37	7.2	265
The 75 Slingback	Olive snake-effect	31	4.4	136
	Fuchsia python-effect	31	4.4	136
	Cuoio snake-effect	40	4.4	178
Ballerina	Blueberry python-effect	32	4.5	145
	Pink python-effect	26	4.5	118
	Fuchsia python-effect	32	4.5	145
	Cuoio snake-effect	32	4.5	145
	Olive snake-effect	32	4.5	144
	Cognac leopard-effect	32	4.5	143
Slingback Flat	Metallic lurex	31	4.5	141
The Stefy / Rockerboot	Black	36	9.1	329
	Natural python-effect	34	8.5	289
	Cuoio snake-effect	36	8.5	306
	Olive snake-effect	32	8.4	269
	Total	777		5,072





Table 4. Estimated GWP for 2019 production of the AERA footwear, in kg CO_2e (May 2019). Results based on air freight for product distribution.

Style Name	Description	2019 Production	Global Warm kg CO₂e/pair	ing Potential Total kg CO₂e
71 01 16	Gold python-effect	24	14.8	354
The Platform	Metallic lurex with gold mirror strap	18	14.5	261
	Patchwork python-effect	85	9.69	824
	Nude patent-effect	40	10.6	425
The 95 Pump	Black suede-effect	38	10.0	381
	Natural python-effect	30	9.61	288
	Metallic lurex	37	9.90	366
	Navy suede-effect	33	11.1	366
The Mule	Black suede-effect	43	11.1	477
	Natural python-effect	24	10.4	250
	Patchwork python-effect	53	9.29	493
The 95 Slingback	Gold python-effect	75	9.59	720
The 95 Sinigback	Black suede-effect	36	9.53	343
	Metallic lurex	29	9.44	274
	Patchwork python-effect	51	9.27	473
	Nude patent-effect	36	9.93	358
	Fuschia patent-effect	32	9.93	318
The 75 Slingback	Black patent-effect	37	9.93	367
The 75 Sinigback	White patent-effect	35	9.93	348
	Silver mirror	37	9.75	361
	Gold mirror	37	9.76	361
	Natural python-effect	28	9.22	258
	Silver python-effect	44	9.61	423
Ballerina	Gold python-effect	43	9.61	413
	Natural python-effect	46	9.09	418
	Patchwork python-effect	52	9.19	478
Slingback Flat	Nude patent-effect	41	9.91	406
Sinigback Flat	Fuschia patent-effect	40	9.91	396
	Black patent-effect	35	9.85	345
	Black patent-effect	49	13.8	676
The Tuxedo	Black suede-effect	49	13.0	639
THE TUXEUU	Natural python-effect	43	13.3	571
	Metallic lurex	51	12.7	646
The Loafer	Navy suede-effect	19	13.0	248
The Loujer	Beige suede-effect	18	13.0	235
The Oxford	Black patent-effect	19	13.8	262
тие Охјога	Black calf-effect	21	13.4	281
	Black patent-effect	21	20.1	421
	Navy suede-effect	40	18.5	741
The Ankle Boot	Beige suede-effect	15	18.5	278
	Natural python-effect	42	19.0	800
	Black calf-effect	57	19.3	1,100
	Metallic lurex	18	18.0	324
The Rockerboot	Natural python-effect	23	19.3	443
	Black calf-effect	18	19.5	351
Total		1,662		19,555



Table 5. Estimated GWP for 2019 production of the *AERA* footwear, in kg CO₂e (September 2019). Results based on air freight for product distribution.

Style Name	Description	2019	Global Warming Poter	
		Production	kg CO₂e/pair	Total kg CO2e
The Gaby / Heeled Boot	Black	44	19.3	849
	Military Green	33	19.3	637
	Tan	32	19.3	618
The Gisele / Knee-high	Black	26	24.2	630
Boot	Tan	26	24.2	630
	Natural python-effect	26	23.0	598
The Eliza / Pump	Black	32	12.1	389
	Nude	32	12.8	408
	Natural python-effect	32	11.7	376
The Virginie / The Shootie	Black	37	17.6	651
The 75 Slingback	Olive snake-effect	31	9.2	285
	Fuchsia python-effect	31	9.2	286
	Cuoio snake-effect	40	9.3	372
Ballerina	Blueberry python-effect	32	9.1	292
	Pink python-effect	26	9.1	237
	Fuchsia python-effect	32	9.1	292
	Cuoio snake-effect	32	9.1	291
	Olive snake-effect	32	9.1	290
	Cognac leopard-effect	32	9.0	287
Slingback Flat	Metallic lurex	31	9.4	290
The Stefy / Rockerboot	Black	36	19.5	701
	Natural python-effect	34	18.4	624
	Cuoio snake-effect	36	18.3	660
	Olive snake-effect	32	18.2	583
	Total	777		11,275

 Table 6. Summary of carbon offset purchases and retirements, and remaining credits.

110% carbon offsets	Metric tons CO₂eq. (Ocean Freight)	Metric tons CO₂ eq. (Air Freight)
Carbon offsets to offset 110% of May production	10.2	21.5
Carbon offsets to offset 110% of June through September production	5.58	12.4
Total Carbon offsets required to offset 110% of impact	15.8	33.9

Based on the LCA results summarized in Table 6 above, to offset 110% of the GWP impacts of Humble Shoes' 2019 production of *AERA* footwear requires approximately **15.8 metric tons CO₂e** for ocean distribution and approximately **33.9 metric tons CO₂e** for product distribution via air freight. The required carbon offsets, in kg CO₂e, are summarized in Table 7, below.



Table 7. Required CO₂e emissions offsets to account for 110% of 2019 production of the AERA footwear.

	Total Cradle-to-Consumer GWP (kg CO₂ eq)		
Product	Ocean Freight	Air freight	
The Platform	253	676	
The 95 Pump	1,216	2,512	
The Mule	579	1,203	
The 95 Slingback	961	2,012	
The 75 Slingback	1,503	3,127	
Ballerina	690	1,379	
Slingback Flat	873	1,788	
The Tuxedo	1,337	2,785	
The Loafer	254	530	
The Oxford	289	598	
The Ankle Boot	1,720	3,670	
The Rockerboot	571	1,230	
The Gaby/ Heeled Boot	976	2,315	
The Gisele/ Knee-high Boot	841	2,044	
The Eliza/ Pump	584	1,290	
The Virginie/ The Shootie	291	716	
The 75 Slingback	495	1,037	
Ballerina	925	1,857	
Slingback Flat	155	319	
The Stefy/ Rockerboot	1,312	2,824	
Total	15,824	33,913	

Verification Results

Humble Shoe expects to sustain their commitment to environmental stewardship on a continuing basis and has purchased 80 metric tons of carbon offsets, through 3Degrees, to address current and future production. Confirmation of the offset purchase was provided in the form of a certificate issued by 3Degrees².

According to Humble Shoes, their initial and subsequent offering of the *AERA* footwear (through September 2019) is distributed via air freight. Accordingly, based on the estimated carbon footprint of the products, *33.9 metric tons*³ of CO_2e are required to offset 110% of the GWP impacts for their production to date. Table 8 summarizes the carbon offset purchases and allocations for the production of the *AERA* footwear.

² Welcome Letter_ NEW Customers - Humble Shoe Co - 2019 Carbon Offsets.pdf

³ Note that the May LCA results indicated this value at 21.4 metric tons. This value has been subsequently revised upward to 21.51 metric tons to account for corrections in the LCA calculations.



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Table 8. Summary of carbon offset purchases and retirements, and remaining credits.

Item	Metric tons CO₂ eq.
Purchased offsets	80.0
Metric tons CO₂e reqd. for 110% offset – through May 2019	21.51
Metric tons CO₂e reqd. for 110% offset – June to September 2019	12.4
Remaining carbon offset balance	46.09

Based on the table, above, Humble Shoe has 46.09 metric tons CO₂eq remaining to be allocated to future batches of production of *AERA* footwear.

The achievement for Humble Shoe, is communicated through an SCS certificate. To maintain the status of the certification, Humble Shoe, will need to communicate the status of future production of AERA footwear, to ensure that sufficient carbon offsets have been acquired to offset the climate footprint.





Appendix: Environmental Claim Validation Logos

The following logos may be used by The Humble Shoe Company, Inc. to communicate the claim of offsetting 110% of the climate footprint. Electronic versions of the logos are available from SCS.





