

ACR758: Supplemental Project Documentation

February 14, 2023

ODS projects result in permanent destruction of greenhouse gases. The key components that establish the quantifiable impact of these projects include documentation that 1) establishes that the ODS gases were collected and moved through a traceable chain of custody to a destruction facility; 2) a Certificate of Destruction for the material contained in the produce; 3) calculations of the climate impact based on emission factors and requirements of the offset protocol.

Enclosure 1: Chain of Custody and Ownership Documentation

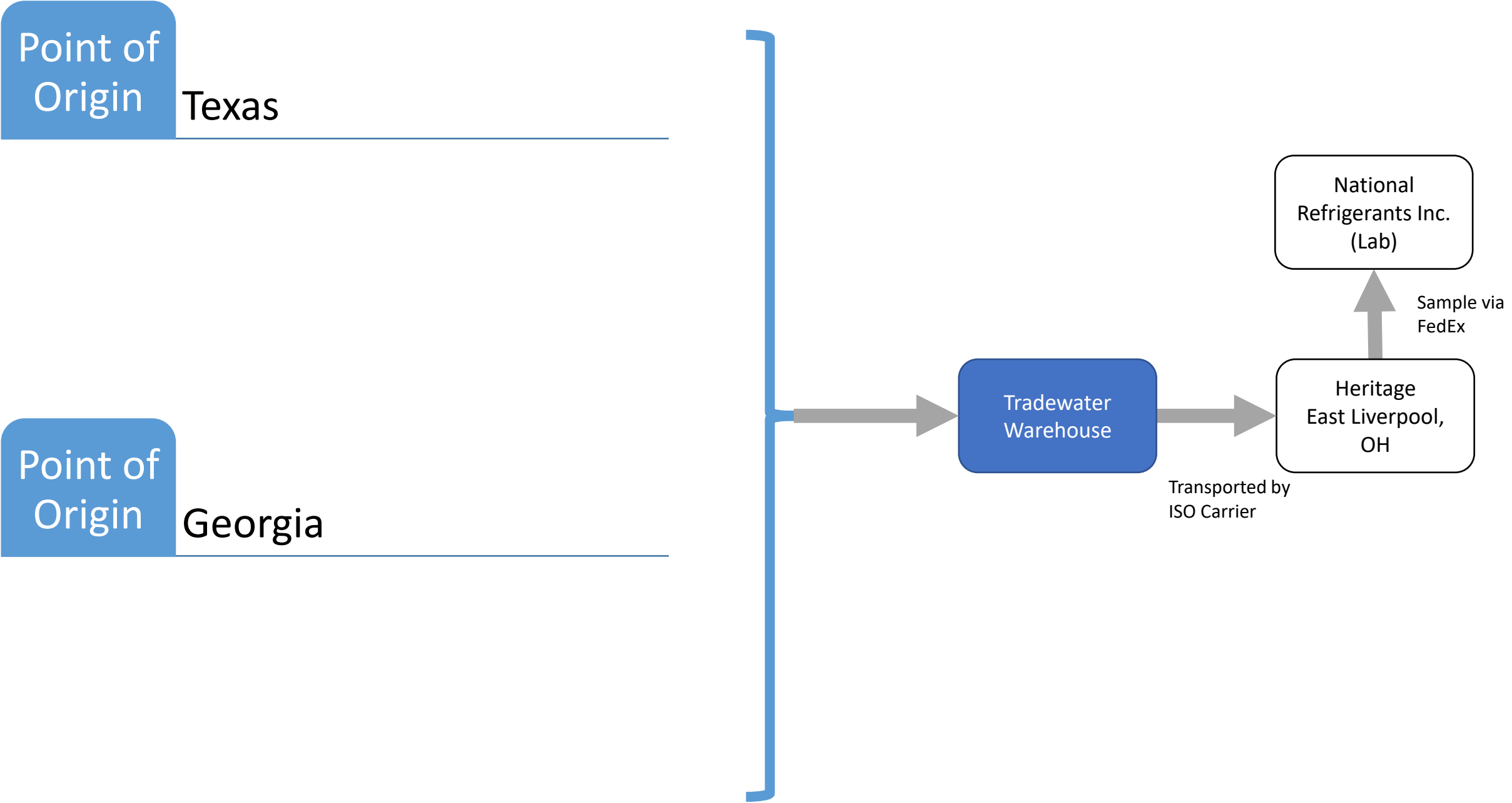
Chain of custody and ownership documentation is collected and maintained beginning at the point of origin through destruction. This flow diagram outlines the parties involved throughout the custody and material movement process. Material from multiple point of origins is aggregated into an ISO container (TMLU224222 - 8 - T15974) at Tradewater's warehouse for movement, sampling, and final destruction at a qualified destruction facility (Heritage Thermal Services).

Enclosure 2: Certificate of Destruction

The Certificate of Destruction is provided by the qualified destruction facility (Heritage Thermal Services) certifying the date, mass, and species of materials contained in the ISO container (TMLU224222 - 8 - T15974) and destroyed.

Enclosure 3: GHG Emissions Reduction Assertion Spreadsheet

Project data and greenhouse gas emissions reductions are quantified by comparing actual project emissions to calculated baseline emissions in the absence of the project (the destruction of materials contained in the ISO TMLU224222 - 8 - T15974 and destroyed at Heritage Thermal Services). Calculation methods, factors, and constants are applied per the provisions and equations in the Methodology.





HERITAGE THERMAL SERVICES
1250 St. George Street
East Liverpool, Ohio 43920-3400

CERTIFICATE OF DESTRUCTION

Offset Project Operator: Tradewater, LLC
650 Morse Avenue
Elk Grove Village, IL 60007

Generator: Tradewater, LLC
650 Morse Avenue
Elk Grove Village, IL 60007

GENERATOR EPA ID # NON HAZARDOUS ONLY COD ID: TMLU 224222-8 – T159743 - 5.24.2022

MANIFEST #: 3965273

CONTAINER ID # TMLU 224222-8

Heritage Thermal Services certifies and assures to our Customers that the transaction described below, including treatment, storage, and destruction of your waste has been handled in compliance with all applicable federal, state, and local regulations and laws.

MANIFEST LINE NUMBER: 01

PROFILE #/ DESCRIPTION: 155776-3

R-11: 90.87%, R-113: 7.98%, R-123: 0.94%, R-10: 0.02%, R-21: 0.02%, R-12: 0.01%, TCE: 0.01%,
R-141b: 0.14%

METHOD OF DESTRUCTION: Incineration- H040

DESTRUCTION START: 17:18 pm / 5.23.2022

DESTRUCTION END: 14:01 pm / 5.24.2022

WEIGHT: 11,440 lbs

HTS REPRESENTATIVE/TITLE/DATE

A handwritten signature in black ink, appearing to read "J. Nye", is written over the line for the HTS Representative.

Product Management Coordinator 5/24/2022

Enclosure 3: GHG Emissions Reduction Assertions Spreadsheet

Reference Values Obtained from ODS Protocol for CFC-12, CFC-11, CFC-113, CFC-114, CFC-115

	CFC-12	CFC-11	CFC-13	CFC-113	CFC-114	CFC-115	
CFC-12 10-Year Cumulative Emissions Rate (%/10 Years)	ER	95%	89%	61%	89%	78%	61% Sec. 5.1.1 (Table 5.2)
Refrigerant Substitute Emissions Factor (tCO ₂ e/tODS)	SE	686	223	7144	220	659	1139 Sec 5.2.1 (Table 5.4)
Global Warming Potential (tCO ₂ e/tODS)	GWP	10900	4750	14400	6130	10000	7370 Sec. 5.1 (Table 5.1)
Default Emission Factor for Transportation and Destruction of ODS (tCO ₂ e/tODS)	EF	7.5					Sec. 5.2.3

COD		Refrigerant Type	Measured Values		Gross Quantity of Refrigerant Destroyed (lbs)	Moisture Reduction	High Boiling Residue Reduction	Total Eligible Refrigerant Destroyed (lbs)	Quantity of Refrigerant Destroyed (metric tonnes)	GHG Emissions from Substitute Refrigerants	Quantity of ODS Transported to Destruction Facility	Transportation and Destruction Default Emissions Factor (tCO ₂ e)	Total Project Emissions (tCO ₂ e)	Total Project Baseline Emissions (tCO ₂ e)	Total GHG Emissions Reductions (tCO ₂ e)
			Mass of ODS in COD in LBS	Concentration of ODS in Tranche											
			m	c	Q _g	mr	hbr	Q	Q _{ref}	Sub _{ref}	Q _t	Def	PE	BE _{ref}	ER
			Q _g = m x c					Q = Q _g - (Q _g x mr) - (Q _g x hbr)	Q _{ref} = Q x .45359/1000	Sub _{ref} = Q _{ref} x SE	Def = Q _t x EF		PE = Sub _{ref} + Def	BE _{ref} = Q _{ref} x ER x GWP	ER = BE _{ref} - PE
TMLU224222 - 8 - T159743	TMLU224222 - 8 - T159743	CFC-12		0.01%	1.14			1.14	0.00	0.35				5.36	
	TMLU224222 - 8 - T159743	CFC-11		90.87%	10395.53			10363.60	4.70	1048.28				19873	
	TMLU224222 - 8 - T159743	CFC-13	11440.0	0.00%	0.00	0.000041	0.00303	0.00	0.00	0.00	5.18907	38.92	1178	0	20952
	TMLU224222 - 8 - T159743	CFC-113		7.98%	912.91			910.11	0.41	90.82				2252	
	TMLU224222 - 8 - T159743	CFC-114		0.00%	0.00			0.00	0.00	0.00				0	
	TMLU224222 - 8 - T159743	CFC-115		0.00%	0.00			0.00	0.00	0.00				0	
													1178	22130	20952