ACR736: 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 materials were collected and moved through a traceable chain of custody to a qualified destruction facility; 2) a Certificate of Destruction for the ODS material contained in the Project; 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 (EURU502032 - 9 - T158208) at Tradewater's warehouse for movement, sampling, and final destruction at a qualified destruction facility (Heritage Thermal Services).

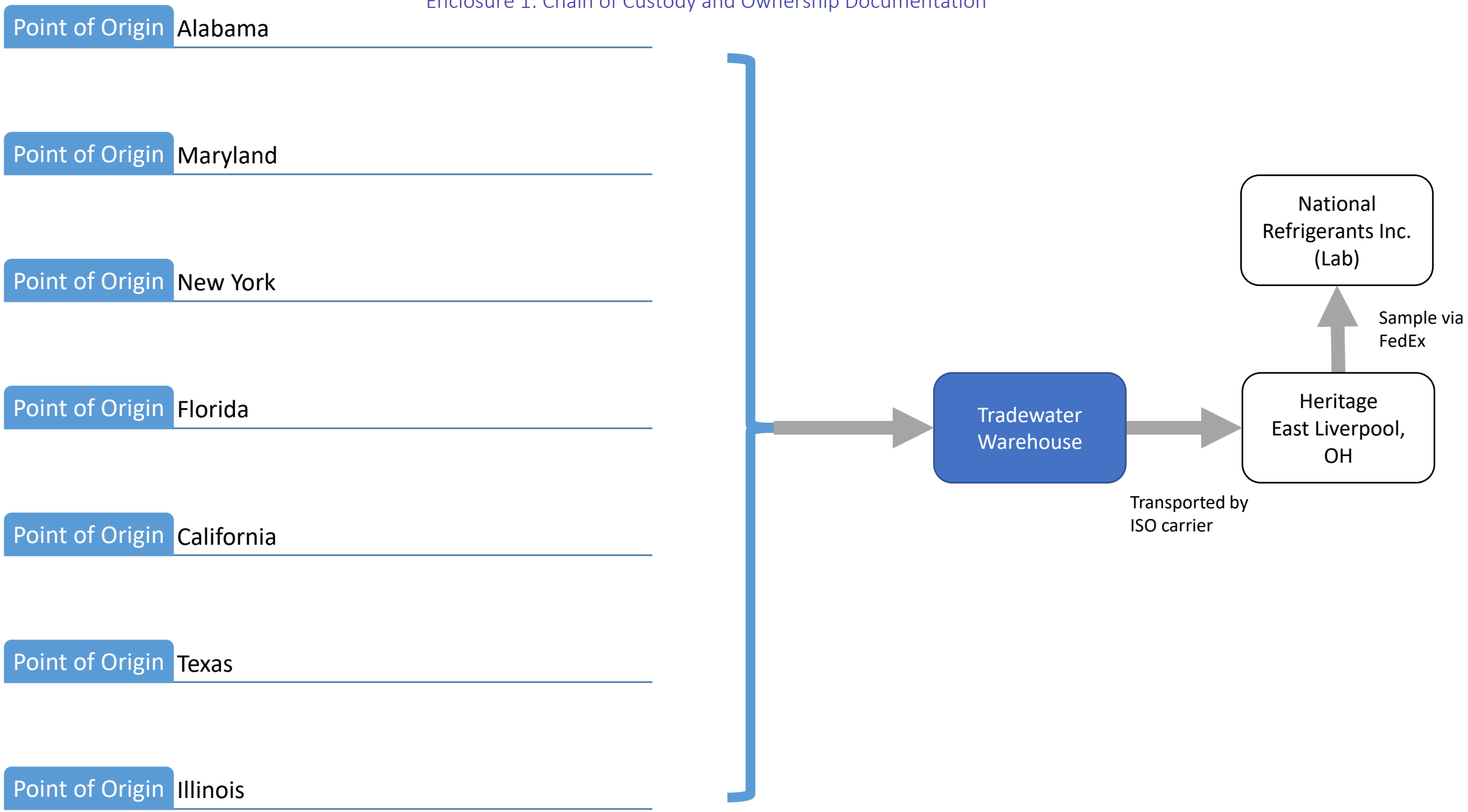
Enclosure 2: Certificate of Destruction

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 (EURU502032 - 9 - T158208) 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 EURU502032 - 9 - T158208 and destroyed at Heritage Thermal Services). Calculation methods, factors, and constants are applied per the provisions and equations in the Methodology.

Enclosure 1: Chain of Custody and Ownership Documentation



HERITAGE THERMAL SERVICES

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: EURU 502032-9 – T158208 – 2.7.2022

MANIFEST #: 3885811

CONTAINER ID # EURU 502032-9

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: 155776-5

R-11: 66.45%, R-113: 28.81%, R-123: 4.48%, R-10: 0.08%, R-21: 0.07%, R-133a: 0.03%, R-12: 0.02%, R-114: 0.01%, R-134a: 0.01%, R-20: 0.01%, R-1110: 0.01%

METHOD OF DESTRUCTION: Incineration- H040

DESTRUCTION START: 15:30 pm / 2.05.2022

DESTRUCTION END: 15:15 pm / 2.07.2022

WEIGHT: 15,280 lbs

Product Manager Coordinator 2/7/2022

HTS REPRESENTATIVE/TITLE/DATE

Enclosure 3: GHG Emissions Reduction Assertion 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 (tCO2e/tODS)	SE	686	223	7144	220	659	1139	Sec 5.2.1 (Table 5.4)
Global Warming Potential (tCO2e/tODS)	GWP	10900	4750	14400	6130	10000	7370	Sec. 5.1 (Table 5.1)
Default Emission Factor for Transportation and Destruction of ODS (tCO2e/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 Detroyed (metric tonnes)	GHG Emissions from Substitute Refrigerants	Quantity of ODS Transported to Destruction Facility	Transportation and Destruction Default Emissions Factor (tCO2e)	Total Project Emissions (tCO2e)	Total Project Baseline Emissions (tCO2e)	Total GHG Emissions Reductions (tCO2e)
			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
					$Q_g = m \times c$			$Q = Q_g - (Q_g \times mr) - (Q_g \times hbr)$	Qref = Q x .45359/1000	Sub_{ref} = Qref x SE		Def = Q_t x EF	PE = Sub_{ref} + Def	Be_{ref} = Q_{ref} x ER x GWP	ER = BE_{ref} - PE
EURU502032 - 9 - T158208 (1)	EURU502032 - 9 - T158208 (1)	CFC-12	15280.0	0.03%	4.58	0.000035	0.03782	4.41	0.00	1.37	6.93086	51.98	1465	21	27806
	EURU502032 - 9 - T158208 (1)	CFC-11		66.34%	10136.75			9753.03	4.42	986.52				18702	
	EURU502032 - 9 - T158208 (1)	CFC-13		0.00%	0.00			0.00	0.00	0.00				0	
	EURU502032 - 9 - T158208 (1)	CFC-113		28.98%	4428.14			4260.52	1.93	425.16				10543	
	EURU502032 - 9 - T158208 (1)	CFC-114		0.01%	1.53			1.47	0.00	0.44				5	
	EURU502032 - 9 - T158208 (1)	CFC-115		0.00%	0.00			0.00	0.00	0.00				0	
EURU502032 - 9 - T158208 (2)	EURU502032 - 9 - T158208 (2)	CFC-12	15280.0	0.02%	3.06	0.000028	0.03856	2.94	0.00	0.91	6.93086	51.98	1463	14	27748
	EURU502032 - 9 - T158208 (2)	CFC-11		66.45%	10153.56			9761.75	4.43	987.41				18719	
	EURU502032 - 9 - T158208 (2)	CFC-13		0.00%	0.00			0.00	0.00	0.00				0	
	EURU502032 - 9 - T158208 (2)	CFC-113		28.81%	4402.17			4232.30	1.92	422.34				10473	
	EURU502032 - 9 - T158208 (2)	CFC-114		0.01%	1.53			1.47	0.00	0.44				5	
	EURU502032 - 9 - T158208 (2)	CFC-115		0.00%	0.00			0.00	0.00	0.00				0	
													1463	**29211**	**27748**