Validation Report for
True Manufacturing Company, Inc.

American Carbon Registry

May 2022

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TABLES

1. Introduction

First Environment, Inc. (First Environment) provides this validation report to True Manufacturing Co., Inc. (True) as a deliverable of the American Carbon Registry (ACR) project validation process. It covers the validation of the following Project and reporting period:

Project Name	ACR Project ID	Reporting Period
True Manufacturing FBA Project 002	ACR606	1/1/2019 – 12/31/2019

The Project reports emission reductions for a single 10-year crediting period beginning on January 1 of the reporting year.

During the validation/verification process, Dentons US LLP (Dentons) acted as the project advisor for True. As such, First Environment communicated directly with Dentons regarding most validation activities.

First Environment conducted validation activities from the date of the kickoff meeting through January 23, 2021.

2. Objectives

The purpose of the validation was, through review of appropriate evidence, to establish that:

- the objectives of the ACR Validation and Verification Standard Chapter 1.B are met; and
- the Project conforms to the requirements of the criteria discussed in Section 3 of this report.

Validation activities also include an assessment of the likelihood that implementation of the project will result in the emission reductions as stated by True in the GHG Project Plan.

3. Validation Scope & Criteria

Specific scope metrics for the validation are outlined in the table below:

Geographic Boundaries	True manufacturing plants located in: • O'Fallon, MO • Bowling Green, MO • Mexico, MO • Pacific, MO
Greenhouse Gases Included	Emissions reductions (expressed in units of Carbon Dioxide equivalents (CO_2-e) resulting from blowing agent replacement; Project emissions from use of eligible BA (Ecomate[1])
Crediting Period	1/1/2019 – 12/31/2028
Level of Assurance	Reasonable assurance
Definition of Materiality	Non-conformities with the Standards of Validation listed below are considered material

[1] The chemical name for Ecomate is methyl formate, the eligible BA listed in Table 9 of the Methodology.

The following outlines the guidance and protocols used to conduct the validation:

Standards of Validation	• ACR Standard, Version 6.0, July 2019 (ACR Standard) • Methodology for The Quantification, Monitoring, Reporting and Verification of Greenhouse Gas Emissions Reductions and Removals From for the Transition to Advanced Formulation Blowing Agents in Foam Manufacturing and Use, Version 2.0 (the Methodology)
Validation Process	• ACR Validation and Verification Standard, Version 1.1, May 2018 • ISO 14064-3: Specification with guidance for the validation and verification of greenhouse gas assertions, 2006

4. Project Description

True manufactures Small Retail Food Refrigeration units using Ecomate, an eligible foam blowing agent (BA) under the Methodology. Ecomate replaces a high global warming potential (GWP) BA, resulting in a net reduction in greenhouse gas (GHG) emissions during the foam blowing process and lifetime of manufactured foam materials.

The GHG Project Plan provides additional details about the Project.

5. Overview of the Validation Process

The following validation process was used:

- conflict of interest review;
- selection of Audit Team;
- initial interaction and kickoff meeting with primary True contacts;
- development of the validation plan and sampling plan;
- site visit;
- review and evaluation of GHG information systems;
- follow-up interaction with True contacts for corrective action or supplemental data as needed; and
- final statement and report development.

The validation process was utilized to evaluate whether the Project's approach, as outlined in the GHG Project Plan, is consistent with the ACR Standard and the approved ACR methodology.

5.1 Conflict of Interest Review

Prior to beginning any third-party assessment, First Environment conducts an evaluation to identify any potential conflicts of interest associated with the engagement. No potential conflicts were found for this Project. A project-specific conflict of interest form was also filed with the ACR.

5.2 Audit Team

First Environment's Audit Team consisted of the following individuals who were selected based on their validation experience, as well as familiarity with industrial gas operations:

Lead Assessor – Michael Carim
Validation Team – Emily Saul
Internal Reviewer – James Wintergreen

5.3 Audit Kick-off

The audit process was initiated with a kick-off meeting on December 4, 2020 with the primary True contacts. The meeting focused on confirming the scope, schedule, and data required for validation activities.

5.4 Development of the Validation Plan

The Audit Team formally documented the validation plan as well as determined the data sampling plan. The validation plan was informed by the kick-off meeting where key elements of the validation scope were discussed including project team members, project level of assurance, materiality threshold, and standards of reporting and evaluation. It also provided an outline of the validation processes and established project deliverables. True was afforded the opportunity to comment on the key elements of the plans for validation. A separate data-sampling plan was designed to review all project elements in areas of potentially high risk of inaccuracy or non-conformance.

5.5 Site Visit

Mr. Michael Carim performed a site visit at True's headquarters and manufacturing facility in O'Fallon, Missouri on November 14, 2019, and a site visit at True's Bowling Green, Missouri manufacturing facility on November 15, 2019 during validation/verification activities for a separate GHG assurance engagement. The site visits included interviews with key personnel and site tours to assess GHG project boundaries, site operations, data collection processes, and information management systems. The data management system assessed during these site visits is the same system utilized for data collection in the current Project; therefore, no additional on-site inspection was warranted for the current validation process.

5.6 Emissions Reduction Data and Calculation Assessment

This assessment used information and insights gained during the previous steps to evaluate the collected data and the reported emissions reduction quantities and identify if either contained material or immaterial misstatements.

5.7 Corrective Actions and Supplemental Information

The Audit Team made requests for corrective action during the validation process. True provided sufficient responses to all requests. These requests and True's responses are described in Appendix A of this report.

5.8 Validation Reporting

Validation reporting, represented by this report, documents the validation process, and identifies its findings and results. Validation reporting consists of this report for True, along with a validation conclusion. The report is submitted to ACR as part of the validation reporting process.

6. Validation Results

6.1 Project Boundary

The Project boundary is defined as emissions from Foam Manufacture (SSR 3) and Foam Usage (SSR 5). Fugitive emissions of BAs occur in the baseline and project scenarios during foam blowing and throughout the lifetime of manufactured foam products. Emission reductions occur from the replacement of a high-GWP BA with a low-GWP BA in the foam blowing process.

The Audit Team assessed the source, sink, and reservoir (SSR) determination included in the GHG Project Plan and found the justification accurate and in accordance with the Methodology.

Overall, True provided an accurate description of the Project boundary and a comprehensive justification for the project SSRs.

6.2 Baseline Scenario

The baseline scenario is defined as the continued use of the baseline BA in the production of rigid PU injected foam at True's manufacturing facilities. True utilized HCFC-22 for the baseline BA; therefore, a default BA was employed for the purposes of emission reduction calculations.

It was demonstrated that HFC-134a would have been the BA most likely to replace HCFC-22 if True had not transitioned to Ecomate. Industry and trade association documentation was provided to confirm that HFC-134a was the most likely replacement for HCFC-22 after its regulatory phase-out in 2010.

First Environment confirmed the baseline BA assigned to each True manufacturing location during a previous GHG assurance engagement.

6.3 Emission reduction quantification methodologies and calculations

Baseline emissions are quantified according to Equations 1 and 2 in the Methodology based on the quantity of eligible BA consumed and the Blowing Agent Ratio, the latter of which is used to determine the equivalent quantity of baseline BA that is required to produce a foam with equivalent thermal performance.

Project emissions are quantified directly from the quantity of eligible BA consumed according to Equation 3 in the Methodology.

The Project Activity does not result in the equipment used in the baseline being transferred to another location or activity in which a BA with a GWP greater than 30 is used; therefore, activity-shifting leakage emissions are not considered.

Service records related to BA transition were used to confirm that no activity-shifting leakage emissions occurred as a result of Project implementation.

Total net emission reductions are determined according to Equation 5 in the Methodology by subtracting project emissions from baseline emissions.

After reviewing the quantification procedure and supporting evidence, the Audit team concluded that the methodologies and the applicable tools have been applied correctly to calculate baseline emissions, project emissions, leakage, and net GHG emission reductions and removals.

6.4 Data Monitoring and Management System

The monitoring plan described within the GHG Project Plan includes all relevant data and parameters required to obtain a reliable result of generated emission reductions and meets the requirements of the Methodology. The primary variables to be monitored in order to determine and account for emission reductions are presented in Table 1 below.

TABLE 1: Monitoring Parameters

Monitoring Parameter	Method of Estimation	Frequency of Measurement	Unit of Measurement	Frequency of Recording
Blowing Agent Ratio (BAR)	Calculated	Once at validation	Dimensionless	N/A
Quantity of eligible BA used in the project (Q_{EBA})	BA purchase records	Continuous	Pounds	As purchased

The GHG Project Plan includes a description of the frequency, responsibility, and procedures for recording, storing, monitoring, and measuring all project data. All requirements in Sections 5.1 and 5.2.1 of the Methodology are addressed by the monitoring plan contained with the GHG Project Plan. The adequacy of the data management systems described in the monitoring plan was assessed during site visits conducted for previous validation/verification activities for True through reviewing data collection procedures and system controls with plant personnel and interviews with True management staff.

The requirements in Section 5.2.2 and 5.2.3 of the Methodology relevant to a formulator or systems house are not applicable to the project activity.

6.5 QA/QC Procedures

The GHG Project Plan includes QA/QC procedures for data that meet the requirements of the Methodology. Specifically, data contained in purchase and billing records originates from weigh scales at the supplier used for financial transactions, which are certified by the relevant authorities for commercial use. Due to weigh scales' use in financial transactions and customer billing, First Environment concluded that QA/QC activities are adequate for the purposes of GHG emission reduction reporting. Furthermore, True production data documenting the manufacture of Small Retail Food Refrigeration units and the quantity of BA consumed in the process can be compared to BA purchase records for data triangulation.

Due to the strong QA/QC procedures surrounding production and sales records, minimal data uncertainty is foreseen.

6.6 Project-specific Conformance to ACR Eligibility Criteria, Including Additionality

The Project meets the eligibility requirements set forth in the ACR Standard as described in Table 2 below.

TABLE 2: ACR Eligibility Criteria

Eligibility Requirement	Conformance Details	Validation Conclusion
Start Date	The start date for the project is January 1, 2019	Consistent with requirement.
Minimum Project Term	N/A – project type does not contain risk of emission reduction reversal	N/A
Crediting Periods	Ten years – January 1, 2019 – December 31, 2028	Consistent with requirement.
Real	N/A – ACR has issued an exemption to its forward crediting policy for the approved methodology applied by the Project.[2]	N/A
Emission or Removal Origin	The project proponent reduces non-energy direct emissions in its manufacturing processes.	Consistent with requirement. True maintains operational control over the process generating GHG emission reductions.
Offset Title	True retains rights to GHG emission reductions associated with the blowing agent transition through an agreement with the BA supplier regarding environmental attributes of the BA as well as equipment warranty terms and conditions with end users.	Consistent with requirement. True obtained offset title from the BA supplier and retains ownership of emission reductions through terms and conditions with its customers.
Additional	Project satisfies additionality test in approved methodology and Regulatory Test in ACR Standard.	Project conforms to ACR additionality criteria. See Section 6.7 below for conformance details.
Permanent	N/A – project type does not contain risk of emission reduction reversal.	N/A
Net of Leakage	Potential for leakage emissions is accounted for under project monitoring plan and emission reduction quantification equations.	First Environment confirmed that the project has implemented sufficient mechanisms to track any potential leakage emissions.
Independently Validated and Verified	True contracted First Environment, Inc. to provide independent, trustworthy, and objective third-party validation services to the Project.	First Environment is an ANAB-accredited and ACR-approved validation/verification body. Audit activities were performed independently and in accordance with all ACR requirements.

[2] ACR guidance on the methodology states: “In order to quantify avoided emissions associated with the transition to an advanced formulation blowing agent, it is necessary to utilize modeled emission rates over a 10-year crediting period. These avoided emissions are quantified during the project’s reporting period and Emission Reduction Tonnes (ERTs) are granted for the full 10 years of avoided emissions.”

Eligibility Requirement	Conformance Details	Validation Conclusion
Environmental & Community Assessments	No negative community or environmental impacts are identified. Net positive impact due to lower GHG emissions.	Consistent with requirement. Project occurs in foam blowing manufacturing processes at private industrial facilities. No external environmental or community impacts are created from the blowing agent transition.

The Project complies with the applicability requirements of the Methodology. The table below lists the relevant applicability requirements and identifies how the Project meets them.

TABLE 3: Methodology Criteria

Eligibility Requirement	Conformance Details	Validation Conclusion
Location	All True facilities are located within North America.	Consistent with requirement.
Foam Application	Small Retail Food Refrigeration	Consistent with requirement. The foam application falls within scope of the Methodology, specifically the allowable sub-applications within the rigid PU injected foam category.
Start Date	See Table 2 above	
Minimum two years of usage of a BA with GWP > 30 prior to the project activity	N/A – applies default BA	N/A – applies default BA

The Project does not participate in any other GHG emission trading or compliance programme nor has it been rejected by another GHG programme.

6.7 Additionality

The Project satisfies the requirements for the demonstration of additionality specified by the ACR Standard by passing an approved practice-based performance standard and a regulatory surplus test.

The Project consists of use of an eligible BA in the rigid PU injected foam application, which is an Eligible Foam Application listed in the Methodology; therefore, the project satisfies the performance standard specified by the Methodology.

No existing laws mandate the use of a low-GWP blowing agent in foam manufacture. True provided a signed management attestation to confirm the Project's voluntary implementation.

6.8 Approved Variance or Deviations

The Project Proponent did not request any deviations from ACR during the validation process.

The Project Proponent received approval from ACR to complete validation activities by January 31, 2021; however, this request was neither made nor granted as a formal deviation.

7. Audit Findings

To complete the validation process, First Environment issued corrective action requests. Through communications with the Audit Team, True resolved all requests made by First Environment during the validation processes. The findings issued, as well as True's responses, are summarized in Appendix A of this report.

8. Validation Conclusion and Statement

First Environment was retained to provide validation services to True for the Project's GHG emission reductions assertions based on the following fundamentals:

- *Level of assurance:* Reasonable assurance.
- *Objectives of validation:* To assure project conformance with the validation criteria and that the requirements of the ACR Validation and Verification Standard, Chapters 1.B. Validation objectives also include an assessment of the likelihood that implementation of the Project will result in the emission reductions stated in the GHG Project Plan.
- *Validation/Verification criteria*: American Carbon Registry Standard, Version 6.0, July 2019; Methodology for The Quantification, Monitoring, Reporting and Verification of Greenhouse Gas Emissions Reductions and Removals From for the Transition to Advanced Formulation Blowing Agents in Foam Manufacturing and Use, Version 2.0.
- *Definition of materiality:* Non-conformities with validation criteria are considered material.
- *Scope, including:*
    - *Boundaries of the assertion:* True refrigeration equipment manufacturing facilities where foam manufacture occurs and use phase of the manufactured foam product.
    - *The physical infrastructure, facilities, and activities within the assertion:* True facilities where foam manufacture occurs and use phase of the manufactured foam product.
    - *GHG sources, sinks, and reservoirs included within the assertion:* Emissions reductions (expressed in units of Carbon Dioxide equivalents (CO_2-e) resulting from blowing agent replacement in foam manufacturing and remaining years of foam use; Project emissions from use of eligible BA (Ecomate).
    - *Crediting Period:* January 1, 2019 to December 31, 2028.

Regarding the validation process, the review of the GHG Project Plan and the resolution of all corrective action requests have provided First Environment with sufficient evidence to determine the fulfillment of stated criteria to a reasonable level of assurance.

The total emission reductions from the Project are projected to be 49,766 metric tonnes of CO_2e over the selected crediting period. The emission reduction forecast has been checked, and it is

deemed likely that the stated amount will be realized given that the underlying assumptions do not change.

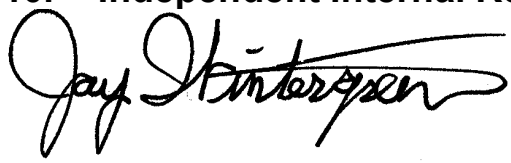
In summary, it is First Environment's opinion that the True Manufacturing FBA Project 002 project, as described in the GHG Project Plan, meets all relevant ACR requirements and correctly applies the Methodology.

The validation of the Project is based on the information made available to us and the engagement conditions detailed in this report. First Environment cannot guarantee the accuracy or correctness of this information. Hence, First Environment cannot be held liable by any party for decisions made or not made based on this report or opinion.

9. Lead Verifier Signature

Michael M. Carim
Senior Associate

10. Independent Internal Reviewer Signature



James Wintergreen
Senior Associate

APPENDIX A – Validation Findings

ID	Corrective Action Request	Summary of Participant Response	VVB Conclusion
1	The Monitoring Plan does not accurately reflect the data collection, monitoring and QA/QC procedures used by the Project.	The Monitoring Plan in Section D of the Project Plan was revised to specify that the quantity of eligible BA consumed will be determined from BA purchase records and credits for any BA returned to the supplier as heel. Monitoring methods and QA/QC procedures described were revised to reflect this monitoring approach.	Response is acceptable.
2	Section C1 of the Project Plan does not discuss relevant laws or regulations (in the US and Canada) that are relevant to the Project.	The Project Plan was revised to resolve the issue identified in C1.	Response is acceptable.
3	The following sections of the Project Plan contain inconsistencies or errors: • The project name in A1 does not match the project name in the ACR software. • The discussion of eligible foam application in A3 does not describe the general foam application from the Methodology applicable to the Project in the 'Proof of Project Eligibility' column. • The second paragraph of A7 does not describe the quantification of baseline emissions correctly. • Monitoring Box for Q_{LBA} in D1 references an incorrect equation. • E3 and Figure 6 (in Section E6) both reference incorrect equations for leakage emissions. • The logic in the final sentence in G1 with respect to the establishment of offset title is both incorrect and	The Project Plan was revised to resolve all errors and inconsistencies.	Response is acceptable.

ID	Corrective Action Request	Summary of Participant Response	VVB Conclusion
	inconsistent with the requirements of the ACR Standard. • H2 of the Project Plan does not address project term correctly.		
4	The following sections of the Project Plan contain artifacts from previous projects: • B3 states location information will be provided at verification. • B5 and D2 state the baseline blowing agent will be the actual blowing agent for some facilities.	The identified artifacts were removed from the Project Plan.	Response is acceptable.

ID	Clarification Request	Summary of Participant Response	VVB Conclusion
No requests for clarification were issued during the validation process.			

APPENDIX B: Addendum to Original Validation & Verification Reports

First Environment, Inc. (First Environment) provides this addendum to its validation report dated January 2021 and its verification report dated June 2021 for the True Manufacturing FBA Project 002 project (the "Project"). This addendum summarizes the results of First Environment's assessment of the Project's end-of-life (EOL) emissions quantified under *"Methodology for the Quantification, Monitoring, Reporting and Verification of Greenhouse Gas Emissions Reductions and Removals from The Transition to Advanced Formulation Blowing Agents in Foam Manufacturing and Use, Version 3.0"* (the Methodology v3.0).

The revised emission reduction calculations were reviewed to ensure consistency with the equations and quantification methods described in the Methodology. First Environment confirmed that the values applied for all monitored parameters in emission reduction calculations were consistent with the previously verified activity data for the Project. Calculations were updated to employ a leakage lifetime emission rate of 100 percent and all formulae for the quantification of baseline, project, and leakage emissions were updated to be consistent with the Methodology v3.0. First Environment also confirmed that the description of the project boundary and included GHG SSRs in the Project Plan were updated to include EOL emissions.

All aspects of the updated Project Plan and Monitoring Report relative to the validation and verification criteria remain the same as the previously assessed project documents, with the exception of the delineation of the project boundary and quantification of emission reductions, both of which were performed in accordance with the Methodology v3.0. Validation and verification conclusions with respect to all project eligibility and other requirements of the *"Methodology for the Quantification, Monitoring, Reporting and Verification of Greenhouse Gas Emissions Reductions and Removals from The Transition to Advanced Formulation Blowing Agents in Foam Manufacturing and Use, Version 2.0"* remain unchanged from the original assessment.

Verified results using leakage lifetime emission rates under v3.0 of the Methodology show:

January 1 to December 31, 2019	Total
Baseline Emissions (tCO_2e)	291,525
Project Emissions (tCO_2e)	228
Emissions Reductions (tCO_2e)	291,297

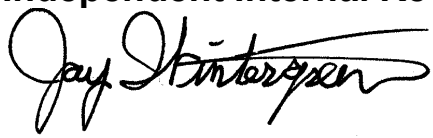
The verified outstanding Emission Reductions Tonnes (ERTs) to be issued are as follows:

January 1 to December 31, 2019	Total
New ERTs Total	291,297
Original ERTs Total	49,520
Total Outstanding ERTs	241,777

Lead Verifier Signature

Michael M. Carim
Senior Associate

Independent Internal Reviewer Signature



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