455 Phillip Street, Unit 100A
Waterloo, Ontario N2L 3X2
Canada
www.ghd.com

Our ref: 12588069-LTR-3

18 August 2023

Ms. Adriana Vargas Corrales
Verification and Logistics Associate
Tradewater, LLC
San Jose, Costa Rica

Validation/Verification Report
Project Plan and Monitoring Report for Tradewater – Thailand 3 (ACR844), Tradewater, LLC, Samutprakarn, Muang Samutprakarn, Thailand under the American Carbon Registry (ACR)

Dear Ms. Corrales

1. Introduction

Tradewater, LLC (Client) retained GHD Services Inc (GHD) to undertake a validation/verification of the Tradewater - Thailand 3 Offset Project (Project) for the April 27, 2023 – May 30, 2023 reporting period. The Project is located in Samutprakarn, Muang Samutprakarn, Thailand and follows the requirements of the in American Carbon Registry (Program). The Project is listed under the Program ID: ACR844.

Tradewater is the Project Proponent for the Project and is responsible for the preparation and fair presentation of the Project Plan, Monitoring Report, and emissions reductions.

GHD Limited is accredited under ISO 14065 by ANAB as Validation/Verification Body (VVB) and is recognized by ACR. GHD Services Inc. is a GHD affiliated company permitted to conduct verifications through an inter-company agreement with GHD Limited.

The Project utilizes the "Methodology for the Quantification, Monitoring, Reporting and Verification of Greenhouse Gas Emissions Reductions and Removals from the Destruction of Ozone Depleting Substances from International Sources", Version 1.0, dated April 2021 (ACR Methodology).

GHD has prepared this Validation/Verification Report in accordance with ISO Standard *ISO 14064 Greenhouse gases - Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions (ISO 14064-3:2019)* and with the Program requirements.

2. Validation/Verification Objective

The objective of the validation is to provide the Client and the Program with an opinion on whether the Project Plan for the reporting period meets the validation criteria identified in the Program and is free of material misstatements and that the information reported is accurate and consistent with the requirements of the Program.

The objective of the verification is to provide Client and the Program with an opinion on whether the Project Monitoring Report (Report) for the reporting period is free of material misstatements and that the information reported is accurate and consistent with the requirements of the Program.

GHD is responsible for expressing an opinion on the reported GHG emissions reductions based on the validation/verification.

3. Level of Assurance

The verification was conducted to a reasonable level of assurance as per the requirements of the ACR standard.

Based on this level of assurance, GHD determined whether the Project's assertions are:

– Materially correct, free of misstatements and an accurate representation of the GHG data and information.
– The Project Report and documentation were prepared in accordance with the requirements of the ACR Standard and in accordance with the applicable GHG quantification, monitoring and reporting, standards or practices.

If validation/verification opinions could be provided, they were worded in a manner to meet the requirements set forth in the ACR standard.

4. Validation/Verification Standards

For the validation/verification, GHD applied ISO 14064-3:2019 and the Program validation/verification standards.

5. Validation/Verification Criteria

GHD applied the following validation/verification criteria:

– ISO 14064 Greenhouse gases - Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements, ISO, April 2019 (ISO 14064-2)
– ISO 14064 Greenhouse Gases - Part 3: Specification with guidance for the verification and validation of greenhouse gas statements, ISO, April 2019 (ISO 14064-3)
– International Accreditation Forum Mandatory Document for the Use of Information and Communication Technology for Auditing/Assessment Purposes: Issue 2, July 2018 (IAF MD 4: 2018)
– *The American Carbon Registry Standard, Requirements and Specifications for the Quantification, Monitoring, Reporting, Verification, and Registration of Project Based GHG Emissions Reductions and Removals,* Version 7.0, December 2020 (ACR Standard) *
– *The American Carbon Registry Validation and Verification Standard*, Version 1.1, May 2018 (ACR V/V Standard)

– *Methodology for the Quantification, Monitoring, Reporting and Verification of Greenhouse Gas Emissions Reductions and Removals from the Destruction of Ozone Depleting Substances from International Sources,* Version 1.0, April 2021 (Methodology)

Note:

* - Denotes change from Proposal/Verification Plan

6. Validation/Verification Team and Independent Reviewer

6.1 Roles and Responsibilities

Lead Validator/Verifier/Technical Expert – **Gordon Reusing** – Mr. Reusing led the validation/verification and was responsible for development of the validation/verification plan. Mr. Reusing reviewed the risk assessment and evidence gathering plan, recalculation of raw data, data management and draft findings. Mr. Reusing reviewed and signed the validation/verification opinion and validation/verification report.

Co-*Lead Validator/Verifier/Technical Expert* – **Anothai Setameteekul** – Ms. Setameteekul led the validation/verification and was responsible for development of the validation/verification plan. Mr. Reusing reviewed the risk assessment and evidence gathering plan, recalculation of raw data, data management and draft findings. Ms. Setameteekul and signed the validation/verification opinion and validation/verification report. Ms. Setameteekul conducted a site visit of the Project Site.

Validator/Verifier **– Angela Kuttemperoor** – Ms. Kuttemperoor developed and revised the validation/verification plan and evidence gathering plan, developed a risk assessment, recalculated raw data, reviewed management of data quality and prepared draft findings. Ms. Kuttemperoor conducted a site visit of the Project Site.

Independent Reviewer/Technical Expert — **Deacon Liddy** – Mr. Liddy conducted an independent review of the risk assessment, validation/verification plan, validation/verification report, and findings. Mr. Liddy approved the issuance of the opinion.

6.2 Qualifications

Gordon Reusing, M. Sc., P. Eng.	Role: Lead Validator/Verifier
Professional Summary | Mr. Reusing is a greenhouse gas (GHG) Lead Verifier, Lead Validator, and Peer Reviewer with extensive experience including GHG programmes in Alberta, British Columbia, Ontario, Quebec, Nova Scotia, California, and programmes operated by the United Nations Framework Convention on Climate Change (UNFCCC) Clean Development Mechanism (CDM), The Gold Standard, The Climate Registry (TCR), the Carbon Disclosure Project (CDP), and Verra: Verified Carbon Standard (VCS). Mr. Reusing has completed numerous GHG quantification studies for the oil and gas sector, including upstream, midstream, and downstream facilities. Mr. Reusing has conducted GHG verifications as a Lead Verifier, Technical Expert and Peer Reviewer in many jurisdictions, including, but not limited to, the Alberta Carbon Competitiveness Incentive Regulation (CCIR), Ontario Regulations, British Columbia Greenhouse Gas Reduction (Cap and Trade) Act, (B.C. Reg. 272/2009), and Quebec Regulation R.Q.c.Q 2, r.15 (Quebec Regulation).	

Anothai Setameteekul, P. Eng.	Role: Co-Lead Validator/Verifier
Professional Summary | Ms. Setameteekul is a GHG and Air Emissions Engineer based in GHD's Calgary office and is a licensed Professional Engineer in the provinces of Alberta and Saskatchewan. She has extensive knowledge and experience in GHG quantification and verification in particular industrial facilities – Oil Sands (In Situ, Mining, Upgrader operations), Hydrogen Production, Petrochemical, Cement, Refinery, Natural Gas Processing, Natural Gas Power Generation with Cogeneration, and Steel Manufacturing. She is familiar with the GHG Regulation in Canadian jurisdictions including British Columbia, Alberta, and Ontario. Ms. Setameteekul is also accredited by the California Air Resource Board as a lead verifier of greenhouse gas emissions for Oil and Gas system, process emissions sectors, fuel	

Anothai Setameteekul, P. Eng.	Role: Co-Lead Validator/Verifier
pathways, alternative fuel transactions and petroleum-based fuel report. Ms. Setameteekul is also accredited by the Washington State as a verifier. Ms. Setameteekul also has experience working in the accreditation audit process for GHD by ANAB and has training and knowledge of the ISO 14064 and ISO 14065 standards. Ms. Setameteekul graduated with a Masters degree in Industrial System Engineering from the University of Regina. Ms. Setameteekul worked as a research assistant in International Testing Center for CO2 Capture (ITC). Her work was related to CO2 capture using chemical absorption process. Ms. Setameteekul also worked as a process engineer to evaluate process performance such as process efficiency, air emissions, liquid effluent, waste, and utility consumption at a carbon capture test facility.	

Angela Kuttemperoor, E.I.T.	Role: Validator/Verifier
Professional Summary | Ms. Kuttemperoor is an Air Engineer-In-Training with GHD's Greenhouse Gas Assurances Services Team and has retained 1.5 years of experience in greenhouse gas verification work. Ms. Kuttemperoor is a Bachelors of Environmental Engineering graduate (co-op) from the University of Guelph, located in Guelph, Ontario. Ms. Kuttemperoor has involved in numerous verifications for the Ontario greenhouse gas reporting program under Ontario regulation 390/18, and the Federal OBPS program, for a wide variety of sectors. Ms. Kuttemperoor has involved in carbon offset project verifications for sites located within the United States and regulated under various voluntary offset credit programs including the Climate Action Reserve (CAR), Verra: Verified Carbon Standard (VCS) and The Climate Registry (TCR). Ms. Kuttemperoor has experience with verifications for ODS offset projects regulated by the California Air Resources Board (ARB).	

Deacon Liddy, P. Eng.	Role: Technical Reviewer and Technical Expert
Professional Summary | Mr. Liddy is a Principal with GHD and an experienced GHG validator and verifier, having completed over 100 GHG validation/verifications with 17 years of experience. Mr. Liddy works with large industrial facilities, Provincial governments, and offset project developers to complete risk-based verifications. Mr. Liddy has been the lead verifier for completion of greenhouse gas verifications conducted on behalf of Alberta Environment for emission offset projects for landfill gas, biomass, tillage, composting and fuel switching for lumber kilns. Mr. Liddy has completed verifications of greenhouse gas emission intensity baseline applications and annual compliance reports under the Alberta Specified Gas Emitters Regulation and British Columbia Mandatory Reporting Regulation. Mr. Liddy is a professional engineer in BC, Alberta, and Saskatchewan.	

7. Project Description

The Project consisted of the destruction of CFC-12 which is an eligible ODS refrigerants under the Methodology. The refrigerant was obtained from the Government of Thailand Customs Department which maintained a stockpile of the ODS that was stockpiled prior to and until 2007. The ODS was transferred to WMS for consolidation and destruction. Upon arrival at WMS, ownership of the ODS, including any offset credits that resulted from the destruction of the ODS, was transferred to Tradewater.

7.1 Client Contact

Ms. Adriana Vargas Corrales, Mr. Tip Stama and Ms. Gina Sabatini were GHD's Client contacts for this validation/verification.

8. Validation/Verification Scope

The following sections describe the scope of the validation/verification.

8.1 Project Boundary

The Project is broken down into the following greenhouse gas Sources, Sinks and Reservoirs (SSRs) to be included, as defined in the Program's Protocol:

Baseline:

– SSR 6 – Emissions from ODS from use, leaks and servicing through continued operation of equipment – (ODS)

Project:

– SSR 5 – Transport to Destruction Facility – Carbon Dioxide (CO_2)

– SSR 6 – Emissions of substitute from use, leaks and servicing through continued operation of equipment – CO_2e

– SSR 7:

- Emissions from ODS from incomplete destruction at destruction facility (ODS)
- Emissions from the oxidation of carbon contained in destroyed ODS (CO_2)
- Fossil fuel emissions from the destruction of ODS at destruction facility (CO_2)
- Indirect emissions from the use of grid-delivered electricity (CO_2)

8.2 Geographical and Operational Boundaries

The validation/verification included the SSRs from the Project Site located at the following address:

Waste Management Siam Company Ltd
965 Moo 2 Soi 3B Bangpoo Industrial Estate
Sukhumvit Rd Bangpoo Mai
Muang Samutprakarn
Samutprakarn 10280
Thailand

8.3 Project Start Date, Reporting and Crediting Period

The start date for the Project is April 27, 2023 The crediting period is from April 27, 2023 to April 26, 2033.

The reporting period for the verification for the Project is from April 27, 2023 to May 30, 2023.

8.4 Use of this Report

The validation/verification report was prepared for the use of Client and the Program.

References from GHD's Validation/Verification Report must use the language in which the opinion was issued, and reference the date of issuance of GHD's report, the applicable validation/verification period and the associated program for which the validation/verification was conducted. The GHG assertion provided by GHD can be freely used by Client for marketing or other purposes other than in a manner misleading to the reader. The GHD mark shall not be used by Client in any way that might mislead the reader about the validation/verification status of the organization. The GHD mark can only be used with the expressed consent of GHD and then, only in relation to the specific time period validated/verified by GHD.

8.5 Use of Information and Communication Technology

As part of the validation/verification process, GHD utilized information and communication technology (ICT) in accordance with IAF Mandatory Document for the use of Information and Communication Technology for Auditing/Assessment Purposes (IAF MD 4:2018) for various aspects of the validation/verification, including conducting video/tele-conferencing with various personnel up to full virtual site visits.

The decision to use ICT permissible if GHD and Client agreed on using ICT. The agreed ICT method was MS Teams. By accepting GHD's proposal dated May 30, 2023, Client agreed to the use of the afore mentioned ICT methods and their associated information security, data protection and confidentiality measures. Any other ICT method(s) was agreed to in writing (email) between GHD and Client prior to use. The parties did not agree to the use of an ICT method which either party did not have the necessary infrastructure to support. Throughout the entire validation/verification process, including use of ICT, GHD abided by the confidentiality procedures.

8.6 Reported GHG Emissions and Emissions Reductions

The reported baseline and project emissions and emissions reductions includes the following, as listed in the Monitoring Report and Project Plan:

Table 8.1 Reported Emissions

Vintage	Baseline Emissions (tonnes CO_2e)	Project Emissions (tonnes CO_2e)	GHG Reductions/Removals (Emissions Reduction Tonnes)
Reporting Period during 2023	205,837	13,786	192,051

9. Strategic Analysis

To understand the activities and complexity of the Project, and to determine the nature and extent of the validation/verification activities, GHD has completed a strategic analysis. The strategic analysis involves consideration of the details of the Project Site and its operations, the Project Plan and Monitoring Report and their preparation, and the validation/verification requirements per the Program. The information considered in the strategic analysis is documented in GHD's working papers and was used to inform the assessment of risks and the development of an evidence gathering plan.

10. Assessment of Risk and Magnitude of Potential Errors, Omissions or Misrepresentations

GHD conducted an assessment of the risk and magnitude of potential errors, omissions or misrepresentations associated with the Project Plan assertion and Monitoring Report. GHD then identified areas where qualitative or quantitative errors could occur and assigned risks to the areas. The inherent and control risks were evaluated, and detection risks were established. The risks were identified as high, medium and low. The risk assessment was a key input to developing an effective evidence gathering plan.

11. Evidence-Gathering Plan

GHD developed an Evidence Gathering Plan (EGP) for internal use based on review of the objectives, criteria, scope, and level of assurance detailed above, along with consideration of the strategic analysis and assessment of risks. The EGP was designed to lower the validation/verification risk to an acceptable level and specified the evidence (data and information) to be reviewed as part of the validation/verification in the evidence gathering activities. The EGP was reviewed and approved by the Lead Validator/Verifier prior to issuing the validation/verification plan. The EGP is dynamic and was revised, as required, throughout the course of the validation/verification. Any modifications to the EGP were reviewed and approved by the Validator/Verifier, with the final EGP completed prior to issuing the final validation/verification report and opinion.

12. Validation/Verification Plan

GHD developed a Validation/Verification Plan based on a preliminary review of the data initially provided. GHD submitted the Validation/Verification Plan to Client on July 7, 2023, prior to GHD's remote Site visit on July 10, 2023. GHD's Validation/Verification Plan was revised, as required, throughout the course of the validation/verification to address questions or initial concerns with data originally provided.

A copy of the final Validation/Verification Plan is included in Appendix A.

13. Quantitative Testing

Quantitative data or raw data was made available to GHD. GHD used the data to recalculate and check the GHG emissions reductions calculations and assess the methodologies that were used in the development of the Project Plan and Monitoring Report.

14. Materiality Level

ACR requires that the materiality threshold for the discrepancies between the reported emissions reductions and those estimated by GHD be less than +/-5%. Before a verification statement will be accepted, the individual and aggregation of errors or omissions which are found to be greater than the ACR materiality threshold, require correcting.

The % error can be calculated using the following equation:

$$Percent\ Error = \frac{[Project\ Emission\ Reduction\ Assertion - Verifier\ Emission\ Reduction\ Recalculation\ ]\ x\ 100\ percent}{Verifier\ Emission\ Reduction\ Recalculation}$$

Materiality was also assessed on a qualitative level, including conformance with the applicable Program and Protocol requirements. Non-conformance with Program requirements may have been considered a material error unless the Program approved a deviation request.

15. Validation/Verification Procedures

15.1 Methodologies Used to Assess/Verify Emissions Data

The validation procedures were used to assess the following:

1. Accuracy and completeness of Project Plan and Monitoring Report
2. Uncertainty of external data sources used
3. Emission assumptions
4. Accuracy of emission calculations
5. Potential magnitude of errors and omissions

To sustain a risk-based assessment, the GHD Project Team identified and determined risks related to the GHG emissions during the desk reviews, site visit and the follow-up interviews as applicable. The GHD Project Team

focused on the accuracy and completeness of provided information. The components of the document review and follow-up interviews were:

– Document Review:
  - Review of data and information to confirm the correctness and completeness of presented information.
  - Cross-checks between information provided in the Project Plan and Monitoring Report and information from independent background investigations.
  - Determine sensitivity and magnitude analysis for parameters that may be the largest sources of error.
– Follow-up Interviews:
  - Remote site visit
  - Via telephone
  - Via email
  - Via ICT

The document review established to what degree the presented Project Plan and Monitoring Report documentation met the validation/verification standards and criteria.

The GHD Project Team's document review during the review process comprised of, but was not be limited to, an evaluation of whether or not:

– The documentation is complete and comprehensive and follows the structure and criteria required by the Program.
– The monitoring methodologies are justified and appropriate.
– The assumptions behind the inventory are conservative and appropriate.
– The GHG emission calculations are appropriate and use conservative assumptions for estimating GHG emissions and emissions reductions.
– The GHG information system and its controls are sufficiently robust to minimize the potential for errors, omissions, or misrepresentations.

The GHD Project Team interviewed Project staff to:

– Cross-check information provided
– Test the correctness of critical formulae and calculations
– Review data management and recording procedures

GHD completed checks of data from point of collection (meter, scale, etc.), through the Project data management systems, then it's use in the development of the Project Plan and Monitoring Report. Where available, a sample of raw data was collected for checks and recalculations as applicable. Where errors or anomalies were identified that could lead to a material misstatement, GHD requested further information to assess the pervasiveness of the errors or anomalies, as applicable. Where applicable, GHD identified the source and magnitude of data or methodology errors or anomalies; however, as a validation/verification body, GHD did not provide solutions to issues identified, where applicable.

15.2 Details of Site Visit

The ACR indicated that a remote site visit was acceptable and sufficient for this validation/verification. GHD had previously conducted an in-person site visit for the Thailand 1.0 validation/verification in October 2022. Ms. Anothai Setameteekul and Ms. Angela Kuttemperoor of the GHD Project Team performed a remote site assessment using Microsoft Teams on July 10, 2023 during the validation/verification of the Project Plan and Monitoring Report.

GHD interviewed the following people:

– Panjamas Thaengthonglang (Tradewater)
– Tip Stama (Tradewater)
– Adriana Vargas (Tradewater)
– Sutthida Fakkum (Waste Management Siam Ltd. (WMS)/Bangpoo Environmental Complex Co. Ltd. (BPEC))
– Prin Hanthanon (WMS)
– Ampol Ruttanasang (WMS)
– Arpakon Prompet (WMS)

During the site visit, GHD personnel interviewed participants about the Project regarding an overview of the process, review of major emission sources, the Project boundary and the data management system in place at the Facility. Through this inspection, GHD was able to verify that personnel responsible for the GHG Project Plan and Monitoring Report preparation were sufficiently trained and qualified. GHD reconfirmed that the location of the Project has not changed from GHD's in-person Site visit to WMS Destruction Facility for Tradewater International – Thailand 1.0.

16. Validation/Verification Findings

The following provides details of GHD's findings as well as GHD's conclusions.

16.1 Effectiveness of ICT

GHD discussed with Client the availability of ICT technologies. Client agreed to the use if ICT by accepting GHD's proposal. GHD reviewed and confirmed the effectiveness of these techniques.

The decision to use ICT permissible if GHD and Client agreed on using ICT. The agreed ICT method was MS Teams. By accepting GHD's proposal dated May 30, 2023, Client agreed to the use of the afore mentioned ICT methods and their associated information security, data protection and confidentiality measures.

GHD and Tradewater successfully used MS Teams to hold calls, video conferences and share screens. GHD and Tradewater used an online SharePoint folder (Dropbox) and email to share files.

The remote Site visit of the Project used MS Teams and some client calls between Tradewater and GHD occurred via MS Teams. GHD and Tradewater encountered no issues using ICT as a part of this validation/verification; transfer of data between Tradewater and GHD was smooth, and MS Teams calls did not encounter any technical issues.

Based on GHD's review, the ICT technologies used were acceptable and reasonable for use in the validation/verification, and GHD was able to maintain the acceptable level of assurance. The ICT techniques were effective in supporting the verification activities.

16.2 Project Boundary

GHD reviewed the Project operations to confirm that all emission sources and sinks are included in the Report. Specifically, GHD completed the following:

– Conducted a remote site visit and interviewed personnel
– Reviewed data management systems
– Reviewed process flow diagram

During the remote site visit, GHD confirmed the baseline and Project emission sources and sinks were included in the Report.

16.3 Project Deviations

The Project involved a deviation from the Methodology for the calculation of the weight of ODS destroyed, with the purpose of increasing accuracy of the ODS weight measurement, avoiding the need to account for truck fuel weights for ODS weight determination and using a method that is in alignment with international tipping standards. The deviation consisted of an adaptation of requirement I.B.iii.g in Appendix B of the Methodology, for the scenario relevant to the Project, where the same transportation vehicle is used for transport of containers pre- and post-destruction at the destruction facility. The requirement in the Methodology is as follows:

"If different transportation vehicles are used to transport containers to a destruction facility and to pick up the empty containers after destruction, each transport vehicle shall be weighed both upon its arrival and departure from the destruction facility. If the vehicle transporting the full ODS containers to the destruction facility weighs more than the vehicle carrying the empty ODS containers from the facility, the mass discrepancy must be subtracted, as applicable from Qrefr,i in Equation 2, and QODS in Equation 5."

Per the deviation, the requirement was adapted for the scenario where the same truck is used for the transportation of containers. The calculation methodology as described was followed and uses the procedure of measuring the tare truck weights, to discount any weight discrepancies between the inbound and outbound trucks, mainly due to fuel tank levels. The procedures and equation used by Tradewater, as outlined in the ACR deviation request is as follows:

$$ODS\ destroyed = (inbound\ weight - inbound\ tare\ weight) - (outbound\ weight - outbound\ tare\ weight)$$

Before destruction:

– Weigh truck attached to the full ISO tank when arriving to the destruction facility (inbound weight).
– Weigh truck immediately after detaching ISO tank to obtain truck tare weight (inbound tare weight).

After destruction:

– Weigh truck when it arrives to the destruction facility, immediately before attaching the empty ISO tank (outbound tare weight).
– Weigh truck attached to the empty ISO tank to obtain the truck tare weight (outbound weight).

The deviation was approved by ACR on June 29, 2023. GHD reviewed the approved deviation request and confirmed that the deviation procedures were followed. GHD confirmed that the modified ODS weight calculation was applied appropriately in the GHG Assertion. GHD confirmed that the trucks pre- and post-destruction from the destruction facility had the same licence place number and were same trucks.

16.4 Project Applicability

As per Sections 2, 3 and 6 of the ACR Methodology, the applicability requirements for the Project are detailed below.

16.4.1 Location

During GHD's validation/verification of Project Tradewater International – Thailand 1.0, GHD conducted an in-person Site visit to the Facility and verified that the Project location is at the WMS destruction facility, Samutprakarn, Thailand. During the remote Site assessment that was conducted for the current Project Tradewater – Thailand 3, GHD confirmed that the Project location has not changed.

During the validation/verification of Project Tradewater International – Thailand 1.0, GHD confirmed that all ODS obtained for the Project were originally stockpiled prior to 2007 at the Government of Thailand's customs

department and transferred to WMS, before all ownership was transferred to Tradewater. For the current Project Tradewater - Thailand 3, GHD confirmed that a third transfer of ODS from the Government of Thailand's customs department to WMS did not occur, and instead that ODS at WMS from the original transfer from Thailand Government was destroyed, as the ODS is being destroyed in stages.

16.4.2 Eligible Destruction Facilities

The destruction facility is regulated by the Industrial Estate Authority of Thailand (IEAT) and is not subject to RCRA standards as required for facilities located in the United States. The WMS destruction facility was reviewed for compliance with the Montreal Protocol's TEAP standards; the United Nations Environment Programme (UNEP) *Report of the Technology and Economic Assessment Panel, April 2018, Volume 2, Decision Xxix/4 Teap Task Force Report on Destruction Technologies for Controlled Substances.*

The fluidized-bed incineration destruction technology that the WMS destruction facility uses is not currently listed in the TEAP standards. Through review of email correspondence, GHD determined that ACR confirmed that it is not required that the facility use a technology listed in the TEAP Report, as long as the facility meets the TEAP standards. Furthermore, ACR provided information on the fluidized-bed incineration destruction technology to Tradewater in the form of a study commissioned by US EPA that lists the technology as one of the approved methods for ODS destruction. GHD reviewed the study, *ODS Destruction in The United States of America and Abroad, May 2009, ICF International for U.S. EPA's Stratospheric Protection Division* and identified that fluidized-bed incineration was listed an approved method for ODS destruction. GHD assessed the WMS facility against all TEAP screening criteria for destruction facilities including:

1. Destruction and Removal Efficiency (DRE)
2. Emissions of dioxins and furans (PCDDs/PCDFs)
3. Emissions of other pollutants (acid gases, particulate matter, and carbon monoxide)
4. Technical capability

GHD reviewed the *6th CFC DRE Report* for the Facility which demonstrates a destruction efficiency of 99.99% for refrigerants and emission levels for contaminants carbon monoxide, hydrogen fluoride, hydrogen chloride/chlorine gas, particulates and dioxins and furans. GHD reviewed the stack test emission level analysis reports as prepared by United Analyst and Engineering Consultant Co., Ltd for the remaining contaminants including hydrogen bromide.

GHD reviewed the emissions levels for the contaminants and identified that concentrations as demonstrated in the Analysis reports were expressed on differing standard conditions from the standard conditions used for determining emissions limits in the TEAP standards. GHD observed that under the conditions as listed in the original emissions analysis reports of 0°C, stack gas corrected to 11% O_2, all pollutants were under the TEAP limits, except for PCDDs/PCDFs as demonstrated in Table 8.1. Results were converted to the TEAP standard conditions of 25°C, stack gas corrected to 7% O_2 and resulted in all contaminants being below the TEAP emission level thresholds. GHD reviewed Tradewater's conversions to TEAP standards and identified that the temperature conversion was omitted. Tradewater updated the conversions and Project Plan to include the emissions at TEAP standard conditions. Furthermore, the destruction facility met the technical capability requirements under TEAP for destruction removal efficiency and processing capability as shown in Table 8.2.

Table 16.1 TEAP Performance Criteria

Performance Qualification	Limit (Concentrated Sources)	WMS Facility Results (lab test conditions[2])	WMS Facility Results (TEAP standard conditions[1])
Destruction Removal Efficiency (DRE)	99.99%	99.99%	99.99%
PCDDs/PCDFs	0.2 ng-ITEQ/Nm^3	0.25 ng-ITEQ/Nm^3	0.19 ng-ITEQ/Nm^3
HCl/Cl_2	100 mg/m^3	0.68 mg/m^3	0.53 mg/Nm^3

Performance Qualification	Limit (Concentrated Sources)	WMS Facility Results (lab test conditions[2])	WMS Facility Results (TEAP standard conditions[1])
HF	5 mg/m^3	0.192 mg/m^3	0.149 mg/Nm^3
HBr/Br_2	5 mg/m^3	<0.001 mg/m^3	<0.001 mg/Nm^3
Particulates	50 mg/m^3	1.12 mg/m^3	0.87 mg/Nm^3
CO	100 mg/m^3	0.1 mg/m^3	0.08 mg/Nm^3

Notes:

[1] All concentrations of pollutants in stack gases and stack gas flow rates are expressed on the basis of dry gas at normal conditions of 0 °C and 101.3 kPa, and with the stack gas corrected to 11% O_2 (as referred to by normal cubic metre, Nm^3).

[2]Concentrations for pollutants as reported in the *6th CFC DRE Report* were determined on the basis of dry gas at normal conditions of 25°C and 101.3 kPa, and with stack gas corrected to 7% O_2.

Table 16.2 TEAP Technical Capability for ODS Destruction

Technical Capability	Limit (Concentrated Sources)	WMS Facility Results
It has been demonstrated to have destroyed ODS to the technical performance criteria, on at least a pilot scale or demonstration scale (recommended for approval); OR It has been demonstrated to have destroyed a refractory chlorinated organic compound other than an ODS, to the technical performance criteria, on at least a pilot scale or demonstration scale, which indicates that the technology is considered to have a high potential for application with ODS but has not actually been demonstrated with ODS (recommended as high potential); and	99.99% maximum	Facility demonstrated to destroy ODS to the technical performance criteria, a DRE of 99.99% for refrigerants.
The processing capacity of an acceptable pilot plant or demonstration plant must be no less than 1.0 kg/hr of the substance to be destroyed, whether ODS or a suitable surrogate.	1.0 kg/hr minimum	25 kg/hr

16.4.3 Eligible ODS

GHD confirmed that destruction took place under one Certificate of Destruction and that all required information was included on the destruction certificate. GHD confirmed with Tradewater that Thailand does not require certifications for the handling, recovery and disposal of ODS refrigerants, however that technicians were certified under relevant bodies and were trained in accordance with the Facility's standard operating procedures (SOPs) including sampling. Other SOPs that the Facility maintains includes SOPs for ODS Transport and Storage, Filling and Maintenance procedures. GHD confirmed that Mr. Ampol Rattanasang, as listed on the ODS Sampling certificate as the technician taking the sample was certified by Laboratory Registration under Department of Industrial Works (Thai Government) with Certificate Number ว-320-ค-9257. GHD confirmed that the certificate is valid until February 2024. GHD confirmed that Mr. Victor Molina who conducted the training session for sampling procedures, was certified with EPA 608 certification number 2019-02-ACCTECH-0019.

GHD confirmed that the refrigerants destroyed include CFC- 12, which is eligible ODS under the Methodology.

16.4.4 Project Start Date, Reporting Period and Crediting Period

ACR defines the Start Date for all projects other than AFOLU as the date on which the project began to reduce GHG emissions against its baseline. For ODS projects, the Project start date is listed on the Certificate of Destruction, when the destruction of ODS occurs. The start of destruction listed on the Certificate of Destruction is April 27, 2023. GHD confirmed that the start date aligns with activity data including the CEMS

data that indicates the start time of feeding of the ODS to the ISO tanks. GHD confirmed that the Project's reporting and crediting period begin on the Project start date, and that the reporting period falls within the crediting period. The crediting period for this type of Project (i.e., non AFOLU) per the ACR Standard is 10 years. GHD confirmed that the reporting period ended on May 30, 2023 and therefore is less than 12 consecutive months. GHD confirmed that the Project only has one reporting period. Only one destruction event took place within the reporting period.

16.4.5 Government Stockpile Requirement

GHD reviewed documents relating to Thailand regulations concerning the destruction of ODS including the *Meeting Minutes of Cooperation between the Customs Department and the Department of Industrial Works Waste Management Siam Company Limited and The Creagy Company Limited*, which described that the ODS refrigerant is considered a national item under the Thailand Customs Law. The Customs Law takes precedence over other laws such as the Hazardous Substance Act B.E. 2535 which requires destruction of hazardous substances. Additionally, there is no requirement to destroy a national item under the Customs law. Therefore, GHD confirmed that the ODS, as obtained from a government stockpile was not required to be destroyed or converted, as per ACR Methodology Section 6.1 IV.

16.4.6 Project Eligibility

Project eligibility requirements are outlined in Chapter 3 of the ACR Standard. GHD reviewed the Project against the eligibility requirements in the Standard as detailed below.

16.4.7 Minimum Project Term

The minimum project term is not applicable for the ODS Project type.

16.4.8 Real

Per the ACR Standard, any GHG emission reduction or removal must be real and have already occurred prior to credit issuance on this Project. GHD verified the Project Start date to confirm that the emissions reductions are real and ex ante. In addition, GHD reviewed Facility records including CEMS data to verify the emissions reductions are real and verifiable. Based on GHD's review, the reported emissions reductions meet the criteria for real offsets outlined in the ACR standard.

16.4.9 Emissions Removal or Origin

An emission or removal is direct if it originates from sources or sinks over which the Project Proponent has control and indirect if it originates at sources or sinks over which the Project Proponent does not have control.

GHD reviewed the transfer of ownership letters from the Thailand government Customs department and transfer of ownership letters from WMS to Tradewater, to confirm that Tradewater retains ownership of all emission reductions and credits generated by the project.

16.4.10 Offset Title

GHD reviewed the Project's chain of custody and transfer of ownership documents to confirm whether the Project has a valid offset title. Tradewater reviewed the letters detailing the transfer of ODS and ownership from the Thailand Government Customs Department to WMS and WMS to Tradewater with effective dates September 26, 2022, October 3, 2022, October 14, 2022, October 21, 2022, October 27, 2022 and November 14, 2022. GHD confirmed with Tradewater that the Government transfers to WMS and WMS to Tradewater occurred during the previous Tradewater International – Thailand 1.0 Project, during which a first batch of ODS destroyed. Therefore, all ODS was already located at the WMS warehouse at the start of the current destruction Project and a third batch of ODS was destroyed during the current Project. GHD confirmed

that ODS destroyed during the Project, credits generated, and transfer of ownership of the credits from WMS to Tradewater are demonstrated in the signed Consolidation Report, which includes a list of the containers and total weight of ODS that was destroyed and is the offset title for the Project.

GHD identified that the transfer of ownership letters from WMS to Tradewater indicate transfer to entity "Tradewater International, SRL." Tradewater confirmed that any mention of Tradewater International within the project documentation is self-same as Tradewater LLC, as described in the GHG Project Plan. During GHD's validation/verification of Tradewater International – Thailand 1.0, GHD confirmed that there was a merger between the two entities.

16.4.11 Additional

16.4.11.1 Legal Requirement Test

Under the Methodology, the Project Proponent must demonstrate that the emission reductions achieved by a project using this Methodology must exceed those required by any law, regulation or legally binding mandate.

There is no mandate in Thailand that requires the destruction of ODS. Thus, all emission reductions resulting from the Project are considered to be not legally required, and therefore are eligible for crediting.

16.4.11.2 Performance Standard Evaluation

As the Project meets the ODS project definition and all other eligibility requirements in the Methodology, then the performance standard evaluation is satisfied.

16.4.12 Regulatory Compliance

GHD reviewed the following information to confirm that WMS Destruction Facility was in regulatory compliance during the reporting period:

The WMS destruction facility is regulated by the Industrial Estate Authority of Thailand (IEAT). GHD reviewed the following information to confirm that the facility was in regulatory compliance during the reporting period:

– BPEC Permit: Letter of Permission for Land Utilization and Business Operations in Industrial Estate Under the Industrial Authority of Thailand Act B.E. 2522 (1979), Permit Number 2-02-1-109-81584-2565 (2022), Industrial Estate Authority of Thailand, December 29, 2022. Effective January 1, 2023.
– BPEC Permit for waste residue stream: Waste or Unused Material Transferred Onsite to Disposal Permit, January 22, 2023, Valid February 26, 2023 to February 25, 2024, Permit Number 6501-334, Department of Industrial Waste
– The Report of Changes in the Project in the Report of Environmental Impact Assessment for Projects, Business, or Operations Which Might Possible To Provide Strongly Impact Natural Resources, Environment Quality, Health, Sanitation, Well-Being Of People In The Community. Central Waste Treatment (1st extension) (2nd)

GHD confirmed that the most recent BPEC permit provided by Tradewater, dated December 29, 2022, was applicable to the current ODS destruction Project. The permit is valid until the BPEC ownership of land possessory is terminated. GHD confirmed that it has not been terminated. GHD confirmed that the BPEC permit for waste residue stream had expired in February 25, 2023 and the renewed permit was provided, that is applicable to the reporting period. The permit is relevant to this Project in authorizing the transport of the waste to the WMS/BPEC warehouse in preparation of destruction for the original shipments from the Thailand Government Customs Department.

GHD reviewed Section 2: Waste Receiving Capacity for the Fluidized Bed Fixed Combustion Furnace of the above listed Report which indicated that ODS is received at 0.6% of the maximum capacity for the destruction facility at 150 tons/day. Through review of the applicable IEAT permits and reports, GHD confirmed that WMS was in regulatory compliance during the reporting period.

16.4.13 Permanent

Due to the nature of this Project, there is no risk of reversal. Once the ODS is destroyed, the associated GHG reductions are fixed. As such, GHD verified the emission reductions are permanent as defined in Section 5 of the ACR Standard. As there is no risk of reversal, no further action was required regarding risk mitigation to meet the permanence criteria per the ACR Standard.

16.4.14 Net of Leakage

GHD verified that leakage assessment is not applicable under the ACR Methodology.

16.4.15 Environmental and Community Assessments

As per the GHG Project Plan Tradewater determined that there are no negative environmental impacts resulting from the Project and the reduction in emissions from the Project is expected to bring net positive impacts to the local environment and community. GHD reviewed the Project Plan to ensure Tradewater had evaluated community and environmental impacts. Based on GHD's review, community and environmental impacts were evaluated by Tradewater. Tradewater reported net positive impacts from the Project and reported the Project meets three United Nations Sustainable Development Goals (SDG9, SDG12 and SDG13). GHD confirmed that a mitigation plan was not required as no negative impacts from the Project were foreseen.

16.5 Double Issuance, Double Selling and Double Use of Offsets

GHD confirmed that the Project is not claiming emission reductions on another GHG registry or platform by checking other registries as per Section 10.A of the ACR Standard. GHD reviewed the following registries to confirm this:

– Climate Action Reserve
– Verra

In addition, GHD reviewed other asset programs (such as Climate Forward) and confirmed that the project was not claiming other environmental assets elsewhere. Per the ACR Standard, the Project Proponent is required to disclose any other registrations of the Project.

GHD also verified ownership of the Facility as outlined in Sections 8.3.1-8.3.4 to verify that no double-claiming of emission reductions may occur as per Section 10.B of the ACR Standard.

16.6 QA/QC Data Management Systems, and Document Retention

Summary of Data Management Procedures

The WMS destruction facility monitors and records destruction parameters in the CEMS data system which collects data per hour. Parameters including pressure and flow rate are monitored continuously on a separate stage of the furnace for gaseous substances such as ODS and this is collected every half hour. On-site personnel monitor destruction in order to prevent any occurrences of errors, exceedances, or other impacts to the project.

Scales used for determining weight of ODS are calibrated periodically by third-party, with requirement by Thai government for recalibrations every two years. WMS undergoes annual procedure reviews and required readings. Qualified technicians are constantly monitoring the emission levels during burns. The destruction facility is regulated by the Industrial Estate Authority of Thailand (IEAT). Tradewater reviews all paperwork to ensure that it satisfies protocol requirements.

Sampling is conduced by WMS before destruction by a technician who is unaffiliated with the Project Proponent and is trained in the sampling process. Sample is taken with a clean, fully evacuated sample bottle that meets applicable DOT requirements and is over one pound at liquid state. The sample is individually

labeled, tracked, with the required information recorded on the ODS Sampling Certificate per the ACR Methodology.

Samples are sent to Bureau Veritas Belgium, an ISO/IEC 17025-certified lab where project samples are analyzed to confirm the mass percentage and identification of each component of the sample.

WMS has retention policy up to lifetime of facility. All documents are stored physically and digitally backed-up. Tradewater has a retention policy of 15 years. Documents are stored on a third-party cloud system that is backed up on a regular basis, with hard copies saved on-site wherever possible.

Assessment of Procedures

Based on discussions with Project personnel and GHD's review of the supporting documentation, the Project Proponent retains all GHG information and supporting documentation required by the ACR Standard at the Project Site for a minimum of 12-years. GHD reviewed the sampling and weighing procedures conducted by the facility and confirmed that they conformed to the ACR Methodology and that all required documentation requirements were met.

GHD reviewed the weigh scale calibration conducted by Siam Scales & Engineering Co. Ltd. on March 25, 2023. and confirmed that the scale (SN. 050240314, ID No.:006-48) was calibrated to 5% accuracy. GHD confirmed that the weigh scale is calibrated at quarterly intervals in accordance with the ACR Methodology. The Thai government also has a requirement for recalibrations every two years. The Based on GHD's review the data management procedures at the Facility are robust and in accordance with the ACR Standard.

17. Validation/Verification of Quantification Methods

17.1 Activity Data

Tradewater calculated emissions using activity data for the Project Period. The activity data consisted of the following parameters:

– Weight of ODS Destroyed
– Composition of Batch make-up

GHD reviewed the Project Proponent's documentation and procedures to determine conformance with the requirements of ACR Standard and the Methodology. Data checks included all documents as detailed in Appendix B. No issues were identified with the activity data and emission reductions re-calculations.

17.2 Assessment of the Emission Reduction Calculations

The following summarizes the emissions calculations completed by Tradewater and verified by GHD, and presents any material and immaterial discrepancies that GHD identified during the validation/verification.

GHD reviewed the emission factors and calculation methodologies used by Tradewater to verify if they were in accordance with the ACR Methodology and ACR Standard. In addition, GHD performed independent calculations of the emissions to determine if there were any discrepancies, omissions or misreporting that could result in an offset material misstatement in the total reported emissions.

17.2.1 Weight of ODS Destroyed

GHD performed a re-calculation of the weight of ODS sent for destruction using the ACR-approved deviation methodology and weight calculation and identified no discrepancies. GHD confirmed that the determined ODS weight was used appropriately to determined project and baseline emissions and emissions reductions.

17.2.2 Project Emissions

GHD reviewed the calculation methodology used by Tradewater and found it to be in accordance with the ACR Methodology. The Project Proponent utilized Equations 3, 4 and 5 from the ACR Methodology to calculate Project Emissions. GHD reviewed the refrigerant sample analysis reports as certified by the laboratory to confirm composition. GHD reviewed mass determination procedures and the mass used in Tradewater's calculations.

Per the ACR Methodology, Tradewater has removed mass applicable to the high boiling residue, moisture, and ineligible ODS (as determined by the laboratory analysis). GHD confirmed Tradewater used the correct emission factors for substitute refrigerants. Tradewater used the default emission factor for ODS transportation and destruction per the ACR Methodology.

GHD performed an independent calculation of baseline emissions and found no discrepancy to Tradewater's GHG Assertion, Monitoring Report and GHG Project Plan.

17.2.3 Baseline Emissions

GHD reviewed the calculation methodology used by Tradewater and found it to be in accordance with the ACR Methodology. The Project Proponent utilized Equation 2 from the ACR Methodology to calculate Baseline Emissions. GHD reviewed the refrigerant sample analysis reports as certified by the laboratory to confirm composition.

GHD reviewed mass determination procedures and the mass used in Tradewater calculations. Per the ACR Methodology, Tradewater has removed mass applicable to the high boiling residue, moisture, and ineligible ODS (as determined by the laboratory analysis).

GHD confirmed Tradewater used the correct 10-year cumulative emission rate and 100-year global warming potential for the R-12 refrigerant.

GHD performed an independent calculation of baseline emissions and found no discrepancy to Tradewater's GHG Assertion, Monitoring Report and GHG Project Plan.

18. Monitoring Plan

GHD reviewed the monitoring plan for this Project and determined that the parameters monitored and the approach taken by the Project Proponent to determine the emission reduction conforms to the ACR Methodology.

Per Section V (2) of the Monitoring Report, the following information should be included and documented in the Monitoring Plan:

- Personnel names and roles/responsibilities for each party involved in monitoring the offset project
- Description of the GHG management system employed including:
  - The location and recordkeeping/retention requirements for all stored data
  - Methods used to generate data
  - Transfer points and methods of non-automated transfer of data
- Calibration procedures and the frequency with which calibration and other maintenance requirements are performed
- Internal audit and other quality assurance/quality control procedures
- Sampling methods utilized and performed during the reporting period

Per Section 6.1 of the ACR Methodology the following information should be included and documented as part of project Monitoring (excluding those items not applicable to this specific project):

– Source of ODS including owner, physical address, serial or ID number of containers and additional information as applicable.
– Chain of custody and ownership of the ODS including contact information and mass of ODS.
– For projects destroying ODS sourced from government stockpiles or inventories, the Project Proponent must maintain documentation that the ODS is not required to be destroyed or converted.
– Composition and mass analysis information including sample time and date, name of Project Proponent and technician taking sample, employer of technician taking sample, volume of sample container, ambient air temperature and sampling chain of custody.
– Information from the destruction facility on parameters of destruction including feed rate, operating temperature and pressure, effluent discharge and emissions of carbon monoxide during destruction (if applicable).
– Information showing conformance with the procedures in Appendix B: ODS Mass and Composition – Quantification Methodology of the ACR Methodology.
– Evidence of minimum quarterly inspections for scales per and calibrations per an RCRA permit, or for non-RCRA facilities, calibrated at least quarterly to 5% or better accuracy.
– Retention of documentation including all data inputs for emission reductions calculations including sampled data, project-related regulatory permits, destruction facility monitoring and maintenance information, chain of custody and sourcing documentation and ODS composition and mass determinations.

GHD reviewed the Monitoring Plan and confirmed that the above information was included as required per the ACR Methodology.

18.1 Parameters to be Monitored

The following parameters have been monitored by Tradewater:

Parameter	Mass of ODS mixture in each container
Unit	Kilograms
Description	The total quantity of ODS refrigerant in a container.
Methodology Section	Manual weight tickets taken pre and post destruction for each individual container
Source of Data	Section 5.1 of Methodology
Data uncertainty	Low
Monitoring Frequency	Once per project
Reporting Procedure	Gross weight of cylinders using calibrated scale, taken before and after destruction Tradewater received a deviation from the procedure for containers weighed with the transportation vehicle included, when the vehicle utilized is the same when weighing before destruction and after destruction, following the procedure detailed below. Before destruction: • Weigh the truck attached to the full ISO tank when arriving to the destruction facility (Inbound weight). • Weigh the truck attached to the empty ISO tank to obtain the truck tare weight (inbound tare weight).

Parameter	Mass of ODS mixture in each container
	After destruction: • Weigh the truck when it arrives at the destruction facility, immediately before attaching the empty ISO tank to obtain the tare weight (outbound tare weight). • Weigh the truck attached to the empty ISO tank (outbound weight). With this information, the amount of ODS destroyed will be calculated as follows: ODS destroyed = (Inbound weight – inbound tare weight) – (outbound weight – outbound tare weight).
QA/QC	Scale calibrations, CEMs data confirms destruction parameter throughout process

Parameter	Concentration of ODS mixture in each container
Unit	Percent
Description	The distribution of ODS refrigerant in each container (along with any other contaminants, moisture, or HBR)
Methodology Section	Sample data via lab analysis provided by an ISO 17025 certified third-party laboratory
Source of Data	Appendix C of Methodology
Data uncertainty	Low
Monitoring Frequency	Once per project
Reporting Procedure	Lab analysis report
QA/QC	Composition and concentration are analyzed at an ISO 17025-certified laboratory that is not affiliated with the project proponent using the AHRI Standard 700.

Parameter	$Q_{refr,i}$
Unit	MT
Description	The total weight of ODS refrigerant sent for destruction (baseline).
Methodology Section	Weight tickets taken both pre- and post-destruction coupled with lab analysis
Source of Data	Section 5.1 of Methodology
Data uncertainty	Low
Monitoring Frequency	Once per project
Reporting Procedure	Net weight of cylinders using calibrated scale. Tradewater received a deviation from the procedure for containers weighed with the transportation vehicle included, when the vehicle utilized is the same when weighing before destruction and after destruction, following the procedure detailed below. Before destruction: • Weigh the truck attached to the full ISO tank when arriving at the destruction facility (Inbound weight). • Weigh the truck attached to the empty ISO tank to obtain the truck tare weight (inbound tare weight). After destruction: • Weigh the truck when it arrives at the destruction facility, immediately before attaching the empty ISO tank to obtain the tare weight (outbound tare weight). • Weigh the truck attached to the empty ISO tank (outbound weight). With this information, the amount of ODS destroyed will be calculated as follows: ODS destroyed = (Inbound weight – inbound tare weight) – (outbound weight – outbound tare weight).

Parameter	$Q_{refr,i}$
QA/QC	Scale calibrations; CEMs data confirms destruction; lab analysis confirms mass percentage and identification of ODS refrigerant

Parameter	Q_{ODS}
Unit	MT
Description	The total quantity of ODS refrigerant (including the mass of all eligible and ineligible ODS, moisture, HBR, and other accompanying material), transported to the destruction facility.
Methodology Section	Weight tickets taken both pre- and post-destruction coupled with lab analysis and quantifications
Source of Data	Section 5.2 of Methodology
Data uncertainty	Low
Monitoring Frequency	Once per project
Reporting Procedure	Net weight of cylinders using calibrated scale; lab analysis
QA/QC	Scale calibrations performed CEMs data confirms destruction; lab analysis confirms mass percentage and identification of ODS refrigerant

Parameter	Legal Requirement Test
Unit	N/A
Description	Emissions reductions achieved through this project and methodology must not be required by any existing law or regulation
Methodology Section	Section 3.3.1
Source of Data	Thailand Customs Department and The National Ozone Protection Division from the Department of Industrial Works (DIW)
Data uncertainty	Low
Monitoring Frequency	Once per project
Reporting Procedure	Review of existing laws around ODS refrigerant management
QA/QC	Regular review of current laws and regulations surrounding ODS refrigerants, particularly CFCs

A summary of the Findings/Issues Log is provided in Appendix C of this Validation/Verification Report.

18.2 Summary of Errors, Omissions, Misstatements or Non-Compliances Identified

Quantitative materiality for GHG emissions reductions for the verification was set at plus or minus 5 percent of the total reported emissions reductions. The quantitative aggregated magnitude of offset errors, omissions, and misstatements for the emissions reductions within the Project Plan and Monitoring Report is 5 percent, which is less than the materiality threshold of 5 percent.

Materiality was also assessed on a qualitative level, including conformance with the applicable Program and Protocol requirements. The Project received approval for a deviation from the ACR Methodology for the calculation of the weight of ODS destroyed, as measured using truck weigh scales. GHD reviewed the approved deviation request and identified no qualitative discrepancies.

18.3 Corrections Made to Project Plan and Monitoring Report

Client to make changes to the Project Plan and Monitoring Report based on the issues identified in the Validation/Verification Findings. Changes made included:

- Updating Project Eligibility TEAP requirements section of Project Plan to include updated destruction facility emissions that reflect the appropriate TEAP emissions limits.
- Project Plan updated to include updated reporting procedure for weight of ODS per approved deviation request, in Monitoring Parameters section.
- Added reference to signed Consolidation Report in Offset Title section in Project Plan.
- Clarification added in Project Plan Section D1 that parameters in the section, other than the Legal requirements test, only include the measured monitoring parameters, tagged as 'Measured' within the ACR ODS Methodology table 6.4.
- Typos corrected in Project Plan.

18.4 Follow up on Issues from Previous Validation/Verification

GHD has reviewed the issues from the previous Project Tradewater – Thailand 2's validation/verification report. There were no issues from the previous validation/verification report that required follow-up.

18.5 GHG Data and Information

The data and information obtained during the validation/verification is listed in Appendix B.

19. Validation/Verification Opinion

GHD has prepared this Validation/Verification Report for Client and Program. Client was responsible for the preparation and fair presentation of the Project Plan dated June 22, 2023 and Monitoring Report dated July 19, 2023 for the Tradewater - Thailand 3 in accordance with the Program criteria and engaging with a qualified third-party validator/verifier to validate the Project Plan and verify the Monitoring Report. Project GHG-related activity is detailed in Section 8.

GHD's objective and responsibility was to provide an opinion regarding whether the Project Plan and Monitoring Report for the Project was free of material misstatement and that the information reported is a fair and accurate representation of the operations for the Project, and accurate and consistent with the requirements of the Program.

The criteria used by GHD for the validation/verification of the Project Plan and Monitoring Report is detailed in Section 5. GHD completed the validation/verification of the Project Plan and Monitoring Report in accordance with ISO 14064-3:2019. GHD completed the validation/verification to a reasonable level of assurance.

The Validation/Verification Opinion is provided as Appendix D.

20. Limitation of Liability

Because of the inherent limitations in any internal control structure, it is possible that fraud, error, or non-compliance with laws and regulations may occur and not be detected. Further, the validation/verification was not designed to detect all weakness or errors in internal controls so far as they relate to the requirements set out above as the validation/verification has not been performed continuously throughout the period and the procedures performed on the relevant internal controls were on a test basis. Any projection of the evaluation of

control procedures to future periods is subject to the risk that the procedures may become inadequate because of changes in conditions, or that the degree of compliance with them may deteriorate.

This validation/verification was based on a risk-based approach that follows rigorous methodology with the expectation that it will capture the majority of errors with the potential for a material misstatement. However, GHD does not warrant or guarantee that all errors or omissions, including material issues, made by Client in its Project Plan and/or assertion and Monitoring Report were identified by GHD.

The validation/verification opinion expressed in this report has been formed on the above basis.

GHD's review of the Project Plan and Monitoring Report included only the information discussed above. While the review included observation of the systems used for determination of the Project Plan and Monitoring Report, GHD did not conduct any direct field measurements and has relied on the primary measurement data and records provided by Client as being reliable and accurate. No other information was provided to GHD or incorporated into this review. GHD assumes no responsibility or liability for the information with which it has been provided by others.

The information and opinions rendered in this report are exclusively for use by Client. GHD will not distribute or publish this report without Client's consent except as required by law or court order. The information and opinions expressed in this report are given in response to a limited assignment and should only be evaluated and implemented in connection with that assignment. GHD accepts responsibility for the competent performance of its duties in executing the assignment and preparing this report in accordance with the normal standards of the profession but disclaims any responsibility for consequential damages.

Should you have any questions on the above, please do not hesitate to contact us.

Regards

Gord Reusing
Lead Validator/Verifier

+1 519 340-4231
gordon.reusing@ghd.com

Deacon Liddy
Independent Reviewer

+1 778 229-3370
deacon.liddy@ghd.com

Anothai Setameteekul
Co-Lead Validator/Verifier
+1 403 538-8617
anothai.setameteekul@ghd.com

Encl.

Copy to: Angela Kuttemperoor, GHD

Appendices

Appendix A

Validation/Verification Plan

6001 Shellmound Street, #850
Emeryville, California 94608
United States
www.ghd.com

Our ref: 12588069-LTR-2

July 07, 2023

Ms. Adriana Vargas Corrales
Verification and Logistics Associate
Tradewater, LLC
San Jose, Costa Rica

Validation/Verification Plan
Project Plan and Monitoring Report for Tradewater – Thailand 3 (ACR844), Tradewater, LLC, Samutprakarn, Thailand under the American Carbon Registry (ACR)

Dear Ms. Corrales

1. Introduction

Tradewater, LLC (Client) retained GHD Services Inc (GHD) to undertake a validation/verification of the Tradewater - Thailand 3 Offset Project (Project) for the April 27, 2023 – May 30, 2023 reporting period. The Project, involving the destruction of Ozone Depleting Substances (ODS) is located at the Waste Management Siam Company Ltd (WMS) destruction facility in Samutprakarn, Thailand and follows the requirements of the American Carbon Registry (Program). The Project is listed under the Program ID: ACR844.

The ACR defines validation as "the systematic, independent, and documented process for the evaluation of a GHG Project Plan against applicable requirements of the ACR Standard, the applicable ACR-approved methodology, and any other applicable audit criteria."

ACR defines verification as "the systematic, independent, and documented process for the evaluation of a GHG assertion against specific criteria. The verification process is intended to assess the degree to which a project has correctly quantified net GHG reductions or removals per the validated GHG Project Plan and correctly utilizes ACR methodologies and tools. A successful verification provides reasonable assurance that the GHG assertion is without material misstatement."

GHD has prepared this Validation/Verification Plan in accordance with ISO Standard *ISO 14064 Greenhouse gases - Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions* (ISO 14064-3:2019) and with the Program requirements.

2. Validation/Verification Objective

The objective of the validation is to provide the Client and the Program with an opinion on whether the Project Plan for the reporting period meets the validation criteria identified in the Program and is free of material misstatements and that the information reported is accurate and consistent with the requirements of the Program.

The objective of the verification is to provide Client and the Program with an opinion on whether the Monitoring Report (Report) for the reporting period is free of material misstatements and that the information reported is accurate and consistent with the requirements of the Program.

3. Level of Assurance

The validation will be conducted to a reasonable level of assurance. If a validation opinion can be provided, it will be worded in a manner similar to "Based on the procedures undertaken, it is our opinion that the assertions in the Project Plan are materially correct and the Project Plan fairly represents the eligibility, methodology and other requirements of the Program applicable to the Project."

The verification will be conducted to a reasonable level of assurance. If a verification opinion can be provided, it will be worded in a manner similar to "Based on the procedures undertaken, it is our opinion that the assertions in the Monitoring Report are materially correct and are a fair and accurate representation of the total emissions reductions claimed for the reporting period and the Monitoring Report was prepared and the emissions reductions reported in it were quantified in accordance with the Program requirements."

4. Validation/Verification Standards

For the validation/verification, GHD will apply ISO 14064-3:2019 and the Program validation/verification standards.

5. Validation/Verification Criteria

GHD will apply the following validation/verification criteria:

- ISO 14064 Greenhouse gases - Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements, ISO, April 2019 (ISO 14064-2)
- ISO 14064 Greenhouse Gases - Part 3: Specification with guidance for the verification and validation of greenhouse gas statements, ISO, April 2019 (ISO 14064-3)
- International Accreditation Forum Mandatory Document for the Use of Information and Communication Technology for Auditing/Assessment Purposes: Issue 2, July 2018 (IAF MD 4: 2018)
- *The American Carbon Registry Standard, Requirements and Specifications for the Quantification, Monitoring, Reporting, Verification, and Registration of Project Based GHG Emissions Reductions and Removals*, Version 8.0, July 2023 (ACR Standard) *
- *The American Carbon Registry Validation and Verification Standard*, Version 1.1, May 2018 (ACR V/V Standard)
- *Methodology for the Quantification, Monitoring, Reporting and Verification of Greenhouse Gas Emissions Reductions and Removals from the Destruction of Ozone Depleting Substances from International Sources*, Version 1.0, dated April 2021 (ACR Methodology)

Note:

* - Denotes change from Proposal

6. Validation/Verification Team and Independent Reviewer

6.1 Roles and Responsibilities

Lead Validator/Verifier/Technical Expert – **Gordon Reusing**– Mr. Reusing will lead the validation/verification and is responsible for development of the validation/verification plan. Mr. Reusing will review the risk assessment, recalculation of raw data, data management and draft findings Mr. Reusing will prepare and sign the validation/verification opinion and validation/verification report.

Co-Lead Validator/Verifier/Technical Expert – Anothai Setameteekul – Ms. Setameteekul will lead the validation/verification and is responsible for development of the validation/verification plan. Ms. Setameteekul will review the risk assessment, recalculation of raw data, data management and draft findings
Ms. Setameteekul will prepare and sign the validation/verification opinion and validation/verification n report.
Ms. Setameteekul will conduct a site visit of the Project Site.

***Verifier* – Angela Kuttemperoor** – Ms. Kuttemperoor will develop and revise the validation/verification plan and evidence gathering plan, develop a risk assessment, recalculate raw data, review management of data quality and prepare draft findings.

Independent Reviewer/Technical Expert — **Deacon Liddy** – Mr. Liddy will conduct an independent review of the risk assessment, validation/verification plan, validation/verification report, and findings.

6.2 Qualifications

Gordon Reusing, M.Sc., P. Eng. – Mr. Reusing is a greenhouse gas (GHG) Lead Verifier, Lead Validator, and Peer Reviewer with extensive experience including GHG programmes in Alberta, British Columbia, Ontario, Quebec, Nova Scotia, California, and programmes operated by the United Nations Framework Convention on Climate Change (UNFCCC) Clean Development Mechanism (CDM), The Gold Standard, The Climate Registry (TCR), the Carbon Disclosure Project (CDP), and Verra: Verified Carbon Standard (VCS). Mr. Reusing has completed numerous GHG quantification studies for the oil and gas sector, including upstream, midstream, and downstream facilities. Mr. Reusing has conducted GHG verifications as a Lead Verifier, Technical Expert and Peer Reviewer in many jurisdictions, including, but not limited to, the Alberta Carbon Competitiveness Incentive Regulation (CCIR), Ontario Regulations, British Columbia Greenhouse Gas Reduction (Cap and Trade) Act, (B.C. Reg. 272/2009), and Quebec Regulation R.Q.c.Q 2, r.15 (Quebec Regulation).

Anothai Setameteekul, P. Eng. – Ms. Setameteekul is a GHG and Air Emissions Engineer based in GHD's Calgary office and is a licensed Professional Engineer in the provinces of Alberta and Saskatchewan. She has extensive knowledge and experience in GHG quantification and verification in particular industrial facilities – Oil Sands (In Situ, Mining, Upgrader operations), Hydrogen Production, Petrochemical, Cement, Refinery, Natural Gas Processing, Natural Gas Power Generation with Cogeneration, and Steel Manufacturing. She is familiar with the GHG Regulation in Canadian jurisdictions including British Columbia, Alberta, and Ontario.
Ms. Setameteekul is also accredited by the California Air Resource Board as a lead verifier of greenhouse gas emissions for Oil and Gas system, process emissions sectors, fuel pathways, alternative fuel transactions and petroleum-based fuel report. Ms. Setameteekul is also accredited by the Washington State as a verifier.
Ms. Setameteekul also has experience working in the accreditation audit process for GHD by ANAB and has training and knowledge of the ISO 14064 and ISO 14065 standards.

Ms. Setameteekul graduated with a Masters degree in Industrial System Engineering from the University of Regina. Ms. Setameteekul worked as a research assistant in International Testing Center for CO2 Capture (ITC). Her work was related to CO2 capture using chemical absorption process. Ms. Setameteekul also worked as a process engineer to evaluate process performance such as process efficiency, air emissions, liquid effluent, waste, and utility consumption at a carbon capture test facility.

Angela Kuttemperoor, E.I.T. – Ms. Kuttemperoor is an Air Engineer-In-Training with GHD's Greenhouse Gas Assurances Services Team and has retained 1.5 years of experience in greenhouse gas verification work. Ms. Kuttemperoor is a Bachelors of Environmental Engineering graduate (co-op) from the University of Guelph, located in Guelph, Ontario. Ms. Kuttemperoor has involved in numerous verifications for the Ontario greenhouse gas reporting program under Ontario regulation 390/18, and the Federal OBPS program, for a wide variety of sectors. Ms. Kuttemperoor has involved in carbon offset project verifications for sites located within the United States and regulated under various voluntary offset credit programs including the Climate Action Reserve (CAR), Verra: Verified Carbon Standard (VCS) and The Climate Registry (TCR). Ms. Kuttemperoor has experience with verifications for ODS offset projects regulated by the California Air Resources Board (ARB).

Deacon Liddy, P. Eng. – Mr. Liddy is a Principal with GHD and an experienced GHG validator and verifier, having completed over 100 GHG validation/verifications with 17 years of experience. Mr. Liddy works with large industrial facilities, Provincial governments, and offset project developers to complete risk-based verifications. Mr. Liddy has been the lead verifier for completion of greenhouse gas verifications conducted on behalf of Alberta Environment for emission offset projects for landfill gas, biomass, tillage, composting and fuel switching for lumber kilns. Mr. Liddy has completed verifications of greenhouse gas emission intensity baseline applications and annual compliance reports under the Alberta Specified Gas Emitters Regulation and British Columbia Mandatory Reporting Regulation. Mr. Liddy is a professional engineer in BC, Alberta, and Saskatchewan.

7. Project Description

The Project involves the destruction of eligible ODS refrigerant which was obtained from a government stockpile of ODS stockpiled on or before 2007 at the Thailand's Customs Department on or before 2007. The ODS material was aggregated at the WMS Warehouse, prior to transport to the WMS destruction facility in Samutprakarn, Thailand.

7.1 Client Contact

Ms. Adriana Vargas Corrales, Mr. Tip Stama and Ms. Gina Sabatini are GHD's contacts at Tradewater for this validation/verification.

8. Validation/Verification Scope

The following sections describe the scope of the validation/verification.

8.1 Project Boundary

The Project is broken down into the following greenhouse gas Sources, Sinks and Reservoirs (SSRs) to be included or excluded, as defined in the Program's Protocol:

Baseline:

– SSR 6 – Emissions from ODS from use, leaks and servicing through continued operation of equipment – (ODS)

Project:

- SSR 5 – Transport to Destruction Facility – Carbon Dioxide (CO_2)
- SSR 6 – Emissions of substitute from use, leaks and servicing through continued operation of equipment – CO_2e
- SSR 7:
  - Emissions from ODS from incomplete destruction at destruction facility (ODS)
  - Emissions from the oxidation of carbon contained in destroyed ODS (CO_2)
  - Fossil fuel emissions from the destruction of ODS at destruction facility (CO_2)
  - Indirect emissions from the use of grid-delivered electricity (CO_2)

8.2 Geographical and Operational Boundaries

The validation/verification will include the SSRs from the Project located at the following address:

Waste Management Siam Company LTD Destruction Facility
965 Moo 2 Soi 3B Bangpoo Industrial Estate
Sukhumvut Rd Bangpoo Mai
Muang Samutprakarn
Samutprakarn 10280
Thailand

8.3 Reporting and Crediting Period

The reporting period is April 27, 2023 – May 30, 2023. The crediting period is April 27, 2023 to April 26, 2033.

8.4 Project Deviations

The Project is expected to involve one deviation consisting of a deviation from the ACR Methodology for the calculation of the weight of ODS destroyed.

8.5 Use of this Report

The validation/verification report will be prepared for the use of Client and the Program.

References from GHD's Validation/Verification Report must use the language in which the opinion was issued, and reference the date of issuance of GHD's Validation/Verification Report, the applicable validation/verification period and the associated program for which the validation/verification was conducted. The GHG assertion provided by GHD can be freely used by the Client for marketing or other purposes other than in a manner misleading to the reader. The GHD mark shall not be used by Client in any way that might mislead the reader about the validation/verification status of the organization. The GHD mark can only be used with the expressed consent of GHD and then, only in relation to the specific time period validated and verified by GHD.

8.6 Use of Information and Communication Technology

As part of the validation/verification process, GHD may utilize information and communication technology (ICT) in accordance with IAF Mandatory Document for the use of Information and Communication Technology for Auditing/Assessment Purposes (IAF MD 4:2018) for various aspects of the validation/verification, including conducting video/tele-conferencing with various personnel up to full virtual site visits.

The decision to use ICT is permissible if GHD and the client agree on using ICT. The agreed ICT method will be MS Teams, Skype, Zoom, Google Meet, or Webex. By accepting GHD’s proposal, the Client agreed to the use of the afore mentioned ICT methods and their associated information security, data protection and

confidentiality measures. Any other ICT method(s) will be agreed to in writing (email) between GHD and the Client prior to use. The parties will not agree to the use of an ICT method which either party does not have the necessary infrastructure to support. Throughout the entire validation/verification process, including use of ICT, GHD will abide by the confidentiality procedures.

9. Site Visits

9.1 Site Visit Requirements

The ODS Methodology requires a site visit every calendar year for a project. Clarification was requested from ACR on the timing requirement for the next site visit for Tradewater ODS projects in Thailand. Mr. Megesh Tiwari from ACR stated in an email dated December 21, 2022, the following:

“One year refers to a calendar year (Jan 1 to Dec 31). However, if the VVB will be verifying multiple projects for TW in 2023 that involves ODS destruction at the Thailand facility, then the in person site visit can be conducted for any one of the projects verified in 2023. Especially, since the last in person site visit was conducted in Nov 2022, the next one can be timed for 3rd quarter of 2023 (if there are any projects planned for that time).”

During the validation/verification of Tradewater International – Thailand 1.0, GHD conducted a site visit to the destruction facility in November 2022. GHD and Tradewater agree that an in-person site visit for this Project, Tradewater Thailand 3 would not be required because Tradewater will do an in-person site visit for a project later in 2023. An in-person site visit is expected to be conducted for Tradewater Thailand 5. For Tradewater Thailand – 3 GHD will conduct a remote site assessment.

9.1.1 Remote Site Assessment

Per guidance from ACR during the verification of Thailand #2, a remote site visit is required when an in-person site visit is not completed for the Tradewater Thailand ODS offset projects.

Virtual site visits must be conducted in accordance with the Regulation, International Accreditation Forum Mandatory Document for the Use of Information and Communication Technology for Auditing/Assessment Purposes: Issue 2 (IAF MD 4:2018), and any related guidance.

9.2 Site Visit Agenda

The site visit, if applicable, will generally adhere to the following agenda. Deviations from the proposed agenda may be necessary to respond to data gaps and or issues identified during the validation/verification process:

– Opening Meeting - Introduction and sign in, safety review, and overview of validation/verification process and expectations (key personnel need to be present).
– Overview of Project operations and activities, including description of key emission sources.
– Assessment of eligibility and additionality criteria against the Project and Project boundary.
– Review of monitoring practices, quality control and quality assurance procedures, GHG data and emission reductions calculations, conformance with Program Protocol requirements, and any personnel activities that have a potential to impact materiality.
– Review of meter calibration certificates and accuracy specifications for key meters.
– Interviews with key personnel and review of data collection process from meter through distributed control system or transcription and data entry, as applicable.
– Walkthrough to view Project boundaries, physical infrastructure, and equipment and measuring devices.
– Closing Meeting – Review issues identified and next steps.

10. Validation/Verification Schedule

The following presents a draft validation/verification schedule. The overall validation/verification process is expected to take approximately 4 weeks.

– Submit Validation/Verification Plan to Client – July 7, 2023
– Data checks and recalculations of Project Plan and Monitoring Report – Week of July 10, 2023
– Remote Site Assessment – July 10, 2023
– Review of data management, document retention and record keeping program –July 2023
– Submit issues log to Client and opportunity for Client to address issues and, if required, resubmit Project Plan and Monitoring Report – July 2023
– Independent review by Independent Reviewer – Within 2 weeks following resolution of all issues in the Issues Log
– Issue Draft Validation/Verification Report and Opinion – Within 1 week following completion of the independent review
– Issue Final Validation/Verification Report and Opinion – August 2023

11. Strategic Analysis

To understand the activities and complexity of the Project, and to determine the nature and extent of the validation/verification activities, GHD has completed a strategic analysis. The strategic analysis involves consideration of the details of the Project Site and its operations, preparation of the Project Plan and Monitoring Report, and the validation/verification requirements per the Program. The information considered in the strategic analysis is documented in GHD's working papers and was used to inform the assessment of risks and the development of an evidence gathering plan.

12. Assessment of Risk and Magnitude of Potential Errors, Omissions or Misrepresentations

GHD conducted an assessment of the risk and magnitude of potential errors, omissions or misrepresentations associated with the Project Plan and Monitoring Report statement/assertion. GHD then identified areas where qualitative or quantitative errors could occur and assigned risks to the areas. The inherent and control risks were evaluated, and detection risks were established. The risks were identified as high, medium and low. The risk assessment was a key input to developing an effective evidence gathering plan.

13. Evidence-Gathering Plan

GHD has developed an Evidence Gathering Plan (EGP) for internal use based on review of the objectives, criteria, scope, and level of assurance detailed above, along with consideration of the strategic analysis and assessment of risks. The EGP is designed to lower the validation/verification risk to an acceptable level and specifies the evidence (data and information) that will be reviewed as part of the validation/verification in the evidence gathering activities. The EGP was reviewed and approved by the Lead Validator/Verifier prior to issuing this validation/verification plan. The EGP is dynamic and will be revised, as required, throughout the

course of the verification. Any modifications to the EGP will be reviewed and approved by the Lead Validator/Verifier, with the final EGP to be completed prior to issuing the final validation/verification report and opinion.

14. Qualitative Testing

Quantitative data or raw data will be made available to GHD. Where possible, GHD will use the data to check conformance of the Project with the Program's Protocol requirements and GHG emissions reductions calculations. Where data is not available, GHD will conduct a qualitative assessment and assess that the methodologies used in the development of the Project Plan conform to the Program's applicable Protocol.

15. Materiality Level

The quantitative materiality for this validation and verification is set at ±5 percent of the expected emission reductions as per the ACR Standard. In addition, a series of discrete errors, omissions, or misrepresentations of individual or a series of qualitative factors, when aggregated, may be considered material.

Materiality will also be assessed on a qualitative level, including conformance with the applicable Program and Protocol requirements. Non-conformance with Program requirements may be considered a material error unless the Program provides a variance.

16. Validation/Verification Procedures

The validation/verification procedures will be used to assess the following:

1. Accuracy and completeness of Project Plan and Monitoring Report
2. Uncertainty of external data sources used
3. Emission assumptions
4. Accuracy of emission calculations
5. Potential magnitude of errors and omissions

To sustain a risk-based assessment, the GHD Project Team will identify and determine risks related to the GHG emissions during the desk reviews, site visit and the follow-up interviews as applicable. The GHD Project Team will focus on the accuracy and completeness of provided information. The components of the document review and follow-up interviews are:

– Document Review:
    - Review of data and information to confirm the correctness and completeness of presented information
    - Cross-checks between information provided in the Project Plan, Monitoring Report and information from independent background investigations
    - Determine sensitivity and magnitude analysis for parameters that may be the largest sources of error
    - Comparison of reported emissions and emissions reductions with the previous reporting period(s)
– Follow-up Interviews:
    - Remote site visit
    - Via telephone

- Via email
- Via ICT

The document review shall establish to what degree the presented Project Plan and Monitoring Report documentation meets the validation/verification standards and criteria.

The GHD Project Team's document review during the review process shall comprise, but not be limited to, an evaluation of whether or not:

– The documentation is complete and comprehensive and follows the structure and criteria required by the Program
– The monitoring methodologies are justified and appropriate.
– The assumptions behind the inventory are conservative and appropriate.
– The GHG emission calculations are appropriate and use conservative assumptions for estimating GHG emissions and emissions reductions.
– The GHG information system and its controls are sufficiently robust to minimize the potential for errors, omissions, or misrepresentations.

The GHD Project Team will interview Project staff to:

– Cross-check information provided
– Test the correctness of critical formulae and calculations
– Review data management and recording procedures

GHD will complete checks of data from point of collection (meter, scale, etc.), through the Project data management systems, then it’s use in the development of the Project Plan and Monitoring Report. Where available, a sample of raw data will be collected for checks and recalculations as applicable. Should errors or anomalies be identified that could lead to a material misstatement, GHD will request further raw data samples to assess the pervasiveness of the errors or anomalies. GHD will identify the source and magnitude of data or methodology errors or anomalies; however, as a validation/verification body, GHD may not provide solutions to issues identified.

17. Closure

The Validation/Verification Plan is considered to be a dynamic document that may require modification and adaptation to project conditions as encountered during the completion of the validation/verification process.

All of Which is Respectfully Submitted,

GHD

Gord Reusing
Lead Validator/Verifier
+1 519 340-4231
gordon.reusing@ghd.com

Anothai Setameteekul
Co-Lead Validator/Verifier
+1 403 538-8617
anothai.setameteekul@ghd.com

Copy to: Deacon Liddy, GHD

Appendix B

Document Review Reference List

APPENDIX B - DOCUMENT REVIEW REFERENCE LIST
Tradewater, LLC
Tradewater - Thailand 2 Project Validation and Verification

No.	Document Title	Description
1	ACR844_GHGPlan_v2.0	Project Plan
2	ACR844_MonitoringReport_v2.0	Monitoring Report
3	ACR844-RP1_QuantificationAssertions_v1.0	GHG Assertion
4	ACR844-RP1_CertificateOfDestruction_2023-08-02.pdf	Evidence of Destruction
5	ACR844-RP1_SamplingCertificate_2023-08-02	Evidence of Sampling
	ACR844_RP1_SampleResults_2023-03-07	
	Solubility Chart	
6	ACR844-RP1_PostDestructionWeightTicket_2023-05-31	Weight Tickets and signed weight forms
	ACR844-RP1_PreDestructionWeightTicket_2023-04-27	
	AR844_PostDestructionWeightTicketPhoto	
7	ACR844-RP1_ContinousData_2023-04-27-to-2023-05-30	CEMS Data
8	ACR844-RP1_ConsolidationrReport	ISO Filling Tank /Offset title
	ACR844-RP1_ConsolidationReport (excel)	
9	22.09.26 Transfer of ownership I	Transfer of Ownership Documentation WMS - Tradewater
	22.10.03 Transfer of ownership II	
	22.10.14 Transfer of ownership III	
	22.10.21 Transfer of ownership IV	
	22.10.27 Transfer of ownership V	
	22.11.14 Transfer of ownership VI	
10	Chain of custody Diagram	Transfer of Ownership Documentation Customs to WMS
	Customs to WMS letter - English	
	Customs to WMS letter - Thai	
	Handling over the refrigerants seized under the Customs Department - English	
	Handling over the refrigerants seized under the Customs Department - Thai	
	Guidelines for the destruction of refrigerants under the supervision of Customs Department - Eng	
	Guidelines for the destruction of refrigerants under the supervision of Customs Department - Thai	
11	Airway bill and Shipper' declaration	Sampling Chain of Custody
	Proof of delivery	
12	License	Bureau Veritas Compliance Documentation
	Certified Services	
	ISO IEC 17025	
13	BPEC latest permit	WMS Compliance Documentation
	BPEC Waste acceptance List	
	Waste Receiving Capacity	
	BPEC WSP for latest for year 2023-2024	
	ACR844-RP1_ScaleCalibration_2023-03-25	
	CFC DRE 6th report	
	R-12 result (Feb)	
	air emission testing Hbr Freon 12_BPEC_8 Aug 65 (2)	
	2022.08.11 Destruction SOP's WMS- ACR	
	2022.09.08 Sampling procedure fo ISOs and B1000	
	2022.09.08 Transport and Storage procedure	
	2022.09.09 Maintenance Procedure	
	2022.09.14 Filling Procedure	
	WMS Sampling Procedures Meeting attendee list	
	Victor Molina Cert	
	BPEC LAB License (2021)	
	BPEC LAB License (2022)	
14	1a_ScaleBridge_11-07-2023	BPEC Equipment images and SOP
	1b_ScaleSerialNumber_11-07-2023	
	2_ISOTankFeedingLine_2-05-2023	
	3_SamplingPort_2-05-2023	
	4_Flowmeter_2-05-2023	
15	ACR 844_Methodology Deviation Request_ODS Weighing procedure_APPROVED	Deviation documenation

Appendix C

Findings List

Issues Log

Revision 5
Date August 15, 2023

Project Number 12588069
Program-Specific Project ID ACR844
Client TRADEWATER, LLC
Facility Name TRADEWATER - THAILAND 3
Regulation / Program AMERICAN CARBON REGISTRY (ACR)
Reporting Year 2023-04-27 to 2023-05-30

Issue No.	Issues / Questions	Explanation/Response	Status
1	In the Project Plan Section A3 TEAP section, please include the original pollutant concentrations for each TEAP pollutant as demonstrated by the pollutant sampling reports, and also provide the concentrations as converted to TEAP standard conditions. Please also provide GHD the calculations for review. GHD response: Please note that a temperature correction factor is not being applied, as required to convert from the 0 oC and 101.3 kPa stack testing conditions to the 25oC and 101.3 kPa TEAP standard conditions. GHD response(8/8/23): In the Project Plan, please include a sentence above the table with the TEAP limits, explaining that the pollutant concentration limits are at 11% O2 and 0C (the TEAP standard criteria). In the table with the actual and corrected pollutant concentrations, please update the 'Emissions at 0 degrees C' column heading to include 0 degrees C and 11% O2.	Information added to the section A3. Calculations have been provided and can be found in the folder path **Verificacion\Compliance\WMS Compliance Documentation\Stack Testing** TW response: Updated calculations have been added in the folder path **Verificacion\Compliance\WMS Compliance Documentation\Stack Testing** Values have been updated in the GHG plan TW response: clarifications have been added to the GHG plan	Closed
2	Project Plan Section B.3 Project boundaries, missing comma after April 26.	Corrected	Closed
3	Project Plan Section C.1 typo within phrases including 'not law', 'letter lo'	Corrected	Closed
4	Project Plan Section C4. Note that reference to 'Chain of Custory folder' is not required.	Corrected	Closed
5	Please clarify in Project Plan Section D1 that parameters in the section, other than the Legal requirements test, only include the measured monitoring parameters, tagged as 'Measured' within the ACR ODS Methodology table 6.4.	Corrected	Closed
6	In Project Plan Section D1, please note that the reporting procedure for parameters relating to the weight measurement of the ODS do not describe the deviation to the weight measurement that is being applied. GHD Response (8/8/23): Description of the approved deviation should also be added to the Project Plan. GHD Response (8/10/23): Modifications made to Monitoring Parameter section of Project Plan should be made to Monitoring Report.	The deviation to the weight measurements can be found in the Monitoring report **TW response**: Information added.	Closed
7	Please note that Project Plan Section G1 Proof of Title, does not make reference to the Signed Consolidation report as the Offset title for the Project.	Corrected	Closed
8	Please note that ODS sampling certificate 'volume of container sampled' is provided as a mass instead of a volume. Not that it potentially also contains a comma instead of a decimal.	Noted. It will be updated in the following project.	Closed

Revision	5	**Project Number**	12588069
Date	August 15, 2023	**Program-Specific Project ID**	ACR844
		Client	TRADEWATER, LLC
		Facility Name	TRADEWATER - THAILAND 3
		Regulation / Program	AMERICAN CARBON REGISTRY (ACR)
		Reporting Year	2023-04-27 to 2023-05-30

Issue No.	Issues / Questions	Explanation/Response	Status
9	Please note that tracking number on Airway Bill and Annex 7: 176-5267 8894/PLC23030002 does not match tracking number on Proof of Delivery provided.	Correct Proof of Delivery project has been added. It can be found in the folder path **Verificacion\Chain of custody\Sampling**	Closed
10	Please confirm and provide evidence that the Certificate of Analysis is linked to the Sample. A reference ID for the sample is not provided on the Certificate of Analysis. GHD response: the ID reference number shown on the certificate of analysis is the lab's internal ID number. We requiere the Tradewater sample ID which is the Reference ID, the fourth line on the left, which is blank. GHD response (8/8/23): The information provided has not linked the lab Certificate of Analysis to the sample.	Certificate of analysis with ID reference number was provided in the folder path **Verificacion\Chain of custody\Sampling** TW response: Updated COD has been provided in folder path **Verification\Destruction\Certificate of Destruction** **TW response:** Updated versions of the document **(ACR844_RP1_SampleResults_2023-03-07)** contain the ID number that links the sample with the Sampling Certificate and the corresponding airway Bill provided previously.	Closed
11	Please note that the Destruction Certificate Feed Tank Serial Number and ISO tank number do not match the ODS Sampling Certificate; BNFU6221110 ISO #3 vs BNFU6221106 (ISO-TANK NO.1). Weight ticket indicates BNFU622**110** ISO #3 CEMS data indicates ISO 2. GHG Assertion indicates BNFU622107 4 (ISO 02). GHD Response: Please note that destruction certificate must be updated to correct serial number. GHD Response (8/8/23): Please note that the serial number added on the destruction certificate is not correct and must be updated to correct serial number.	Noted. Errors correspond to operator misktake when filling thje templates. The correct serial corresponds to BNFU6221109 TW response: Updated COD has been provided in folder path **Verification\Destruction\Certificate of Destruction** **TW response:** Please note that the updated version of the COD (**ACR844-RP1_CertificateOfDestruction_2023-08-02)**has the correct ISO serial number that matches the Assertion Spreadsheet and the photos provided after the site visit	Closed
12	GHD Response: Please note that destruction certificate must be updated to correct serial number. GHD Response (8/10/23): Please note that the feed tank serial number on the COD does not match the weight tickets. The COD number has one extra 1.	Noted. TW response: Updated COD has been provided in folder path **Verification\Destruction\Certificate of Destruction** **TW response** Response in issue 11	Closed
13	Please provide the weight ticket pictures for the post-destruction weight measurement, as provided for the pre-destruction weight measurement.	Provided in folder path **Verificacion\Destruction\Weight Tickets**	Closed
14	Please provide the Monitoring Report	Provided in folder path **Verificacion\Monitoring**	Closed
15	Please submit the credits on the ACR portal	Credits added	Closed
16	Please provide the 2023 BPEC Lab License for Ampol Ruttanasang and any other personnel involved in sampling and destruction activities.	The license provided is valid until February 2024	Closed

Revision	5	**Project Number**	12588069
Date	August 15, 2023	**Program-Specific Project ID**	ACR844
		Client	TRADEWATER, LLC
		Facility Name	TRADEWATER - THAILAND 3
		Regulation / Program	AMERICAN CARBON REGISTRY (ACR)
		Reporting Year	2023-04-27 to 2023-05-30

Issue No.	Issues / Questions	Explanation/Response	Status
17	Please note that: '- BPEC permit for waste residue stream transport documentation expired on February 25, 2023. Please provide the latest permit. '- BPEC Latest permit issued on December 29, 2022. **This permit is no longer valid when the BPEC ownership of land possessory is terminated. Please confirm whether a more recent permit is available, or whether this permit is still valid.	BPEC permit is still valid as a ownership of land possesory hasn't been terminated. BPEC permit for waste residue is in process, but BPEC Latest permit includes Tansportation of Dangerpus Goods in point 12.	Closed
18	Please clarify whether the ACR844-RP1_ScaleCalibration_2023-03-25 calibration provided, is for the truck weigh scales. Please clarify whether the truck weigh scales are calibrated to 5% or better accuracy and calibrated atleast quarterly. Please provide the calibrations.	The calibrations provided correspond to the truck weight scales.	Closed
19	Please note that the weight of ODS on the consolidation report is less than the weight as determined by weight tickets: 20180 vs 19900. Please clarify.	The weight report in the Consolidation report is more than the one reflected in the weight tickets. This is a consecuence of small scales calibration when creating the consolidation report, and operational factors during destruction	Closed
20	Project Plan TEAP section states, 'WMS exceeds the TEAP requirements on all emissions', this should be changed to 'meets', to avoid the conclusion that limits are exceeded.	Noted and corrected	Closed
21	Project Plan title page, 'nd' after date June 22 is not required or should be in superscript.	Noted and corrected	Closed

Appendix D

Validation/Verification Statement

VVB Name

Validation and Verification Opinion

Section I: Validation/Verification Body (VVB) Details		
1	**VVB**	GHD Limited
2	**VVB Physical Address** **(i.e., Street Name and Number, City, State, Zip)**	100A – 455 Phillip Street Waterloo, Ontario N2L 3X2, Canada
3	**VVB Mailing Address (if different)**	Same as above
4	**VVB Email Address**	Gord.Reusing@ghd.com
5	**VVB Phone Number**	15193404231
Section II: Project Details		
1	**Project Title**	Tradewater - Thailand 3
2	**ACR Project ID**	ACR844
3	**Project Proponent**	Tradewater, LLC
Section III: Criteria Used to Form the Opinion		
1	**ISO 14064–2 (Version Publication Date)**	April 2019
2	**ISO 14064–3 (Version Publication Date)**	April 2019
3	**ACR Standard (Version Number and Publication Date)**	Version 7.0, December 2020
4	**ACR Validation and Verification Standard (Version Number and Publication Date)**	Version 1.1, May 2018
5	**ACR-Approved Methodology (Name and Version Number)**	Methodology for the Quantification, Monitoring, Reporting and Verification of Greenhouse Gas Emissions Reductions and Removals from the Destruction of Ozone Depleting Substances from International Sources, Version 1.0
6	**Other Criteria (e.g., Errata & Clarifications)**	
Section IV: Validation Opinion Details (If Applicable)		
1	**Is a validation opinion being provided?**[1] ☒**Yes** ☐**No** ***If Yes, complete remaining question in this section.***	

[1] If both validation and verification services were conducted at the same time by the same VVB, complete Section IV as well as Section V.

2	**Crediting Period Dates** **Start Date: 4/27/2023** **End Date: 4/26/2033**
3	**Validated GHG Project Plan (provide exact filename, including any appendices)** ACR844_GHGPlan_v2.0.docx
4	**Validated GHG Project Plan Date** **6/22/2023**
5	**Responsibility (provide the Project Proponent name)** **The GHG Project Plan and its contents are the responsibility of:** Tradewater, LLC
6	**Does the VVB attest that the GHG Project Plan has been validated in accordance with the criteria identified in Section III?** ☒**Yes** ☐**No**
7	**As a result of validation, what type of opinion is the VVB providing?** ☒**Positive** ☐**Negative**
8	**If Negative, describe the reasons the VVB is providing this validation opinion.**
9	The actual GHG emission reductions and removals achieved may differ from the validated forecast of future GHG emission reductions and removals, as the forecast is based on assumptions that may change in the future. Note that there is no forecast of future GHG emissions reductions and removals in this project, the project was validated and the actual emissions reductions and removals were verified.
Section V: Verification Opinion Details (If Applicable)	
1	**Is a verification opinion being provided?** ☒**Yes** ☐**No** ***If Yes, complete remaining question in this section.***
2	**Reporting Period Dates** **Start Date: 4/27/2023** **End Date: 5/30/2023**
3	**Level of Assurance** Reasonable
4	**Verified Monitoring Report (provide exact filename, including any appendices** ACR844_MonitoringReport_v2.0.pdf
5	**Verified Monitoring Report Date** **7/19/2023**
6	**Responsibility (provide the Project Proponent name)** **The Monitoring Report and its contents are the responsibility of:** Tradewater, LLC
7	**Does the VVB attest that the Monitoring Report has been verified to the specified Level of Assurance in accordance with the criteria identified in Section III?** ☒**Yes** ☐**No**

8	**Does the VVB attest that the GHG statement, as detailed by the Monitoring Report and provided in Section VI below, is without material misstatement (as defined by the ACR Standard)?** **☒Yes ☐No**
9	**As a result of verification, what type of opinion is the VVB providing?** **☒Positive ☐Negative**
10	**If Negative, describe the reasons the VVB is providing this verification opinion.**

Section VI: GHG STATEMENT (APPLICABLE FOR VERIFICATION OPINIONS)[2]

Omit or provide additional rows for Vintages as needed

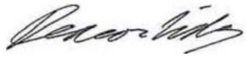
All GHG Projects		AFOLU & Geologic Sequestration Projects Only[3]			
Vintage	**Total Emission Reductions / Removals**	**Buffer Pool / Reserve Account Contribution**	**Net Emission Reductions / Removals**	**Removals Subset (if applicable)**	**Emission Reductions Subset (if applicable)**
2023	192,051				
Totals*	**192,051**				

**Totals may not sum due to rounding*

Section IV: Attestation

Lead Validator/Verifier Signature	X 

Lead Validator/Verifier Name	Gordon Reusing
Lead Validator/Verifier Title	Lead Validator/Verifier, Business Group Leader
Lead Validator/Verifier Organization	GHD Limited
Lead Validator/Verifier Date	8/18/2023

Independent Reviewer Signature	X 

Independent Reviewer Name	Deacon Liddy
Independent Reviewer Title	Independent Reviewer, Business Group Leader
Independent Reviewer Organization	GHD Limited
Independent Reviewer Date	8/18/2023

[2] Omit or provide additional rows for Vintages as needed. The reported units must be metric tons CO_2e.

[3] If calculating Removals according to an approved Methodology, report the Removals and Emissions Reductions subsets of the Net Emission Reductions and Removals for the Reporting Period, allocated by Vintage.