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September 08, 2025

Ms. Gina Sabatini
Manager of Verification and Logistics
Tradewater, LLC
1550 W. Carroll, Suite 213
Chicago, Illinois
60607

Validation and Verification Report
Tradewater OOG 3 (ACR1043), Tradewater, LLC, Macoupin County, Illinois, United States, under ACR

Dear Ms. Sabatini

1. Introduction

Tradewater, LLC (Client, Tradewater) retained GHD Services Inc. (GHD) to undertake a validation and verification of project Tradewater OOG 3 (Project, TW OOG3) for the April 7, 2025 – April 7, 2045, crediting period and April 7, 2025 – April 8, 2025 reporting period. The Project involves three (3) wells located in Macoupin County, Illinois and follows the requirements of ACR (Program). The Project is listed under the Program ID: ACR1043.

The Program requires the validation of the Greenhouse Gas Project Plan (GHG Project Plan) for each crediting period and verification of the Monitoring Report (Monitoring Report) for each reporting period by an independent third-party accredited under *ISO 14065 Greenhouse Gases – Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition* (ISO 14065). GHD Limited is accredited by the ANSI National Accreditation Board (ANAB) under ISO 14065 as a greenhouse gas validation and verification body (VVB).

GHD has prepared this Validation and 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 and Verification Objective

The objective of the validation is to provide Client and the Program with an opinion on whether the GHG Project Plan for the Project is free of material misstatement 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 Program with an opinion on whether the Monitoring Report for the reporting period is free of material misstatement and that the information reported is accurate and consistent with the requirements of the Program.

3. Level of Assurance

The ACR does not specify a level of assurance for validation. GHD conducted the verification to a reasonable level of assurance.

4. Validation and Verification Standards

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

5. Validation and Verification Criteria

GHD applied the following validation and 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)
– IAF Mandatory Document for the Use of Information and Communication Technology (ICT) for Conformity Purposes: Issue 3, International Accreditation Forum, Inc., January 2025 (IAF MD 4:2025) *
– The ACR Standard: Requirements and Specifications for the Quantification, Monitoring, Reporting, Verification, and Registration of Project-Based GHG Emissions Reductions and Removals, ACR, Version 8.0, dated July 2023 (ACR Standard)
– ACR Validation and Verification Standard Version 1.1, ACR, dated May 2018 (ACR VV Standard)
– ACR Methodology for the Quantification, Monitoring, Reporting and Verification of Greenhouse Gas Emissions Reductions and Removals from Plugging Orphaned Oil and Gas Wells in the U.S. and Canada, ACR, Version 1.0, dated May 2023 (Methodology)
– Errata and Clarifications: ACR Methodology for the Quantification, Monitoring, Reporting and Verification of Greenhouse Gas Emissions Reductions and Removals from Plugging Orphaned Oil and Gas Wells in the U.S. and Canada, ACR, dated June 23, 2025 (E&C) *
– Tradewater OOG3 ACR Methane Measurement Method Approval Form (MMMAF) *

Note:

* - Denotes change from Proposal

6. Validation and Verification Team & Independent Reviewer

6.1 Roles, Responsibilities & Qualifications

Lead Validator/Verifier/Specialist	
Name	Sean Williams, P. Eng.
Role	The lead validator/verifier led the validation and verification and was responsible for development of the validation and verification plan. The lead validator/verifier reviewed the risk assessment and evidence gathering plan, recalculation of raw data, data management and draft findings. The lead validator/verifier prepared and signed the validation and verification opinion and validation and verification report. The lead validator/verifier conducted a site visit of the Facility.
Qualifications	Mr. Williams is a Project Manager, GHG Lead Verifier and Technical Expert and with over 10-years of experience in environmental consulting, and is a licensed Professional Engineer in the provinces of Alberta, British Columbia, Saskatchewan and Ontario. Mr. Williams has experience in completing greenhouse gas verifications, permit applications, air and noise compliance assessments, completion of annual inventory reports under various voluntary, provincial and federal regulations across Canada. Mr. Williams is an accredited lead verifier under the California Air Resources Board and Oregon Department of Environmental Quality. Mr. Williams has significant air and GHG expertise in a variety of industrial sectors, including oil sands extraction and upgrading, refineries, chemical plants, mining and mineral production, power generation facilities, waste management and metals production. Mr. Williams serves as the Greenhouse Gas Assurances Services (GGAS) Manager for GHD's ANAB accreditation.

Validator/Verifier	
Name	Angela Kuttemperoor, E.I.T.
Role	The validator/verifier developed and revised the validation/verification plan and evidence gathering plan, developed a risk assessment, recalculated raw data, reviewed management of data, and prepared draft findings and the draft validation and verification report.
Qualifications	Ms. Kuttemperoor is an Air EIT with GHD's Greenhouse Gas Assurances Services group, based out of the GHD Waterloo, Ontario office. Ms. Kuttemperoor has a Bachelor of Environmental Engineering from the University of Guelph, Ontario, and has 3.5 years of experience in greenhouse gas verifications. Ms. Kuttemperoor is experienced with programs including Ontario Emissions Performance Standards, Canadian Output-based Performance Standards and is a certified verifier under the Canadian Clean Fuel Regulations. Ms. Kuttemperoor possesses expertise with United States (US) and global offset validations and verifications for projects conducted under the US ACR registry including orphan well-plugging and ozone-depleting substances destruction projects. Ms. Kuttemperoor is a certified verifier under US Climate Action Reserve (CAR) and has experience with projects in accordance with the CAR US Landfill Gas Protocol, under the CAR and Verra: Verified Carbon Standard (VCS) registries. Ms. Kuttemperoor has experience with airline verifications under ICAO's Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA).

Validator/Verifier	
Name	Elnaz Senobari Vayghan, E.I.T., M.Sc.
Role	The validator/verifier developed and revised the validation/verification plan and evidence gathering plan, developed a risk assessment, recalculated raw data, reviewed management of data, and prepared draft findings and the draft validation and verification report.
Qualifications	Ms. Senobari is an Air and Climate professional with GHD based in Vancouver office and is a member of the air and greenhouse gas department. She graduated with a Masters degree in Chemical and Petroleum Engineer with specialization in Energy and Environmental Systems from the University of Calgary. She has extensive knowledge and experience in GHG quantification and verification in various sectors, including the oil and gas, mining and material production, and upgrading and refining sectors. She has experience being involved in carbon offsets projects and emission reduction projects in oil and gas and land use sector. She has been involved with reporting under the Greenhouse Gas Industrial Reporting and Control Act in British Columbia, The Management and Reduction of Greenhouse Gases in Saskatchewan and the Environmental Protection and Enhancement Act (APEA) as well as the Technology Innovation and Emissions Reduction (TIER) regulation in Alberta. She also has been involved with federal reports with NPRI, MSAPR, and SGRR.

Independent Reviewer/Specialist	
Name	Gordon Reusing, P. Eng., M.Sc.
Role	The independent reviewer conducted an independent review of the risk assessment, evidence gathering plan, working papers, validation and verification plan, validation and verification report, and findings. The independent reviewer approved the issuance of the opinion.
Qualifications	Mr. Reusing is a greenhouse gas (GHG) Lead Verifier, Lead Validator, and Peer Reviewer with extensive experience including GHG programmes in Alberta, British Columbia, Saskatchewan, 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). He 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, British Columbia, Alberta, Ontario, Quebec, and Nova Scotia.

7. Project Description

The Project involves plugging of the following orphan oil and gas wells located in Illinois, United States:

– Three (3) gas wells (permit # 37344, 36311 and 33810) located in Macoupin County, plugged during 2025:
  - Listed on May 1, 2024 Illinois Division of Oil and Gas List of Wells in Plugging Fund with status ‘PFO’ (wells placed into the State Plugging and Restoration Fund due to the well being deemed orphaned)

Per the ACR Orphan Well Plugging Methodology, the baseline scenario involved methane emissions released into the atmosphere in the absence of the requirement by any party to plug the well and prevent the release of emissions. The Project condition involved emissions released from the combustion of fossil fuels from mobile equipment during plugging operations. Illinois Department of Natural Resources (DNR, State) confirmed that all wells associated with project TW OOG3 listed above were orphaned, having no solvent or designated operator and that the Illinois DNR maintains oversight of the wells. Tradewater Well Services, LLC was granted approval

from the State to plug the wells in accordance with Illinois well plugging requirements as documented in the State-approved well Plugging Plans.

Baseline pre-plugging measurements were taken using a direct flow measurement method which requires a direct connection to the wellhead to take flow, methane and pressure readings. The measurement method was approved by ACR as documented in the approved Methane Measurement Method Approval Form (MMMAF). Baseline emissions were quantified using the chosen 2-hour stability period for each well. Fossil fuel usage for project emission quantification were determined using fuel invoices for plugging operations in 2025. Post-plugging confirmation sampling of the wells confirmed that methane concentrations were no more than 2ppm above ambient methane levels post-plugging. In accordance with the Methodology, emissions reductions were claimed over the 20-year crediting period per well. Tradewater Well Services, LLC transferred ownership of all credits to Tradewater, LLC through a Transfer of Rights agreement.

7.1 Client Contact

Ms. Gina Sabatini (Manager of Verification and Logistics) was GHD's Client contact for this validation and verification.

8. Validation and Verification Scope

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

8.1 Project Boundary

Table 1 below presents the sources, sinks, and reservoirs (SSRs) for the Project, that were included in the Project Boundary, as defined in the Project Methodology.

Table 1 Project's Sources, Sinks, Reservoirs

SSR		Source Description	GHG	Baseline (B) Project (P)	Included (I) or Excluded (E)
1.	Orphan O&G wells that emit methane	Emissions from orphan wells	CH_4	B	I
2.	Plugging Operations (Equipment)	Emissions from mobile mechanical equipment for plugging	CO_2 CH_4 N_2O	P	I

8.2 Geographical and Operational Boundaries

The validation and verification included the SSRs from the Project wells located at the following addresses in Illinois, United States.

Table 2 Project Well Locations

Well Name	Permit #	API Number	State Well Reference Number	County	Geographic Coordinates
Blackburn University #2	036311	1211722766	129109	Macoupin	39.15975, -89.97626
Haley #1	033810	1211722712	129114	Macoupin	39.17393, -89.96527
Lincoln Cameron #1	037344	1211722790	113306	Macoupin	39.146393, -90.031594

8.3 Reporting and Crediting Period

The start date for the Project is April 7, 2025. The crediting period for this validation for the Project is from April 7, 2025 – April 7, 2045.

The reporting period for this verification for the Project is from April 7, 2025 – April 8, 2025.

8.4 Use of this Report

The Validation and Verification report was prepared for the use of Client and the Program.

References from GHD's Validation and Verification Report must use the language in which the opinion was issued and reference the date of issuance of GHD's Validation and Verification Report, the applicable validation and verification period and the associated program for which the validation and 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 and 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.

8.5 Use of Information and Communication Technology

As part of the validation and verification process, GHD utilized information and communication technology (ICT) in accordance with IAF Mandatory Document for the use of Information and Communication Technology for Conformity Purposes (IAF MD 4:2025) for various aspects of the validation and verification, including conducting video/tele-conferencing with various personnel.

The decision to use ICT was permissible if GHD and Client agreed on using ICT. The agreed ICT method was MS Teams. By accepting GHD's proposal, Client agreed to the use of the afore mentioned ICT method and its associated information security, data protection and confidentiality measures. Any other ICT method(s) were 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 and verification process, including use of ICT, GHD abided by the confidentiality procedures.

8.6 Reported GHG Emissions and Emissions Reductions

The baseline emissions, project emissions and emissions reductions reported in the Monitoring Report are indicated in Table 3 below. Per Tradewater's calculation file, the baseline emissions are 285,607.7 tonnes CO_2e and were rounded down for reporting in the Monitoring Report. GHD verified that emissions reductions being claimed for the crediting period have been rounded down to the nearest whole number, as per Section 2.B.4 of the ACR Standard.

Table 3 Reported Emissions and Emissions Reductions

Vintage	Baseline Emissions (tonnes CO_2e)	Project Emissions (tonnes CO_2e)	GHG Reductions/Removals (ERRs) (tonnes CO_2e)	Deductions (tonnes CO_2e)
2025	285,607.7	8.5	271,319	14,280
Total	**285,607.7**	**8.5**	**271,319**	**14,280**

9. Strategic Analysis

To understand the activities and complexity of the Project, and to determine the nature and extent of the validation and verification activities, GHD completed a strategic analysis. The strategic analysis involved

consideration of the details of the Project Site and its operations, the GHG Project Plan and Monitoring Report and its preparation, and the validation and 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 GHG Project Plan assertion and Monitoring Report statement. 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 and verification risk to an acceptable level and specified the evidence (data and information) to be reviewed as part of the validation and verification in the evidence-gathering activities. The EGP was reviewed and approved by the Lead Validator/Verifier prior to issuing the validation and verification plan. The EGP is dynamic and was revised, as required, throughout the course of the validation and verification. Any modifications to the EGP were reviewed and approved by the Lead Validator/Verifier, with the final EGP completed prior to issuing the final validation and verification report and opinion.

12. Validation and Verification Plan

GHD developed a Validation and Verification Plan based on a preliminary review of the data initially provided. GHD submitted the Validation and Verification Plan to Client on January 17, 2025, prior to GHD's Site visit to the Blackburn University #2 and Haley #1 wells on January 22, 2025, prior to plugging and during the M2 measurement for Blackburn University #2 and the initial M2 measurement attempt for Haley #1. GHD's Validation and Verification Plan was revised, as required, throughout the course of the validation and 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 check conformance of the Project with the Program's Methodology requirements. Where data was not available, GHD conducted a qualitative assessment and assessed that the methodologies used in the development of the GHG Project Plan conform to the Program's applicable Methodology.

GHD used the data to recalculate and check the GHG emission calculations and assess the methodologies that were used in the development of the Monitoring Report.

14. Materiality Level

The quantitative materiality for this verification was set at 5 percent of the reported emissions reductions, as per the requirements of the Program. In addition, a series of discrete errors, omissions, or misrepresentations of individual or a series of qualitative factors, when aggregated, may have been considered material. Per the ACR Standard, individual or aggregation of errors or omissions greater than the ACR materiality threshold of ±5% required restating. Individual and aggregation of errors or omissions greater than ±1% but less than ±5% are required to be qualified in the Verification Opinion but do not require restating.

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

15. Validation and Verification Procedures

15.1 Conflict of Interest (COI) and Independence

GHD has undergone a thorough evaluation for conflict of interest (COI) and independence for this validation and verification work. This included a review of other potential work conducted by GHD for Client and Project listed in the scope of work. We have confirmed that this validation and verification work can be successfully completed without undue risk of impartiality and conflict of interest. We have assessed the following key aspects:

– Validation evaluation
– Verification evaluation
– Team evaluation

GHD has rigorous COI and validator and verifier competency evaluation procedures that are followed for every validation and verification project. Our documented procedures ensure that all COI and independence criteria are properly evaluated. GHD's COI program ensures that both the company and the Project Team have no potential COIs.

GHD has also evaluated and approved our Validation and Verification Team's competencies. GHD sets competency requirements in terms of education, validation and verification experience, and experience in the sector. GHD can attest that we have highly qualified staff with the appropriate technical expertise for the validation/verification work.

Based on the COI risk levels of the ACR Validation and Verification Standard, GHD identified a low risk for COI, based on the fact that GHD has previously only conducted validations and verifications for the Project Proponent and that project Tradewater OOG3 is the third Orphan Well Plugging project for which GHD has conducted a validation/verification for the Project Proponent.

GHD submitted the initial ACR COI form for project TW OOG3 to the ACR Registry on May 30, 2024, and ACR provided authorization to commence the validation and verification on May 31, 2024. GHD submitted a revised form on January 10, 2025 which was approved by ACR.

15.2 Kick-Off Call

Upon award of the contract, GHD conducted a kick-off call between Client and the GHD project team to review the validation and verification process and objectives, project operations, project schedule, site visit schedule and information requests. The kick-off call for TW OOG3 was held on January 11, 2025.

15.3 Issues Communications

During the course of the document review and interviews, questions and clarifications were identified by the Project Team; these were communicated with Client either verbally, by email, or in an Issues Log. Client and/or Project staff had the opportunity to respond to identified issues prior to the completion of GHD's draft and final validation and verification reports. Material issues identified by GHD were requested to be corrected by Client.

The Findings List is available in Appendix B.

15.4 Independent Review

GHD conducted an independent review of the validation and verification, which included a review of findings, emission calculations and opinion developed by the validation and verification team.

15.5 Methodologies Used to Assess/Validate and Verify Emissions Data

The validation and verification procedures were used to assess the following:

1. Accuracy and completeness of GHG 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 GHG 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
  - Comparison of reported emissions and emissions reductions with the previous reporting period(s)
– Follow-up Interviews:
  - On-site
  - Via telephone
  - Via email
  - Via ICT

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

The GHD Project Team's document review during the review process comprised of, but was not 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 Monitoring Report. 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 raw data samples to assess the pervasiveness of the errors or anomalies, as applicable. GHD identified the source and magnitude of data or methodology errors or anomalies; however, as a validation and verification body, GHD did not provide solutions to issues identified, where applicable.

15.6 Details of Site Visit

Sean Williams visited the Blackburn University #2 and Haley #1 wells during the validation/verification on January 22, 2025, prior to plugging and during baseline measurement 2 for both wells. GHD witnessed the following procedures associated with the baseline measurement.

Blackburn University #2:

– Measurement equipment set-up and installation of Silversmith flow meter, as suitable for high-flow regime wells (>20 MCD/day)
– Field calibration of Landtec methane analyzer
– Set up of Vaetrix and digital pressure chart recorder
– Several hours of data collected after which Tradewater stopped data collection

Haley #1

– Measurement equipment set-up and installation of Alicat flow meter, as suitable for low-flow regime wells (<20 MCD/day)
– Field calibration of Landtec methane analyzer
– Set up of Vaetrix and digital pressure chart recorder
– Data collection was stopped as the flow measurements were observed to be beyond the acceptable variance from the first baseline flow measurement results, and the data collected on January 22, 2025 was not used for credit quantification

GHD confirmed that Tradewater re-obtained baseline measurements for the second measurement on February 4, 2025 that was eligible for crediting and was used for credit quantification.

GHD interviewed the Emissions Measurement Specialists for the M2 measurements:

– Kapilan Tamilselvan, Environmental Project Manager, Project Expert, Tradewater

Through the site visits, GHD was able to verify the project boundary and location, confirm that procedures were conducted in accordance with Methodology requirements and that personnel responsible for project monitoring and data analysis were sufficiently trained and qualified.

16. Validation and Verification Findings

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

16.1 Effectiveness of ICT

Summary of ICT Techniques Used

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

Findings and Conclusions

The decision to use ICT was permissible if GHD and Client agreed on using ICT. The agreed ICT method was MS Teams. By accepting GHD’s proposal, Client agreed to the use of the afore mentioned ICT method and its associated information security, data protection and confidentiality measures.

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

GHD and Client encountered no issues using ICT as a part of this validation and verification; transfer of data between Client 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 and verification, and GHD was able to maintain the acceptable level of assurance. The ICT techniques were effective in supporting the validation and verification activities.

16.2 Validation Findings

16.2.1 Project Boundary

16.2.1.1 Geographic Boundary

GHD confirmed through assessment of geographic coordinates listed on the GHG Project Plan, raw measurement data files and conducting in-person site visits, that all three Project wells are located in Macoupin County, Illinois United States.

GHD reviewed the Project well Plugging Reports to confirm that all wells were plugged by Tradewater, as per the Methodology requirement that the project boundary be confined to all wells aggregated to be plugged by a single Project Proponent. GHD confirmed the Project followed the latest ACR Standard requirements for aggregation, as per details provided in the Multi-Site Design Document Appendix in the GHG Project Plan.

16.2.1.2 GHG Assessment 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 an in-person site visit and interviewed personnel
– Reviewed data management systems
– Reviewed MMMAF and direct flow set-up diagrams
– Reviewed fossil fuel invoice statements for plugging operations

Per the Methodology, physical boundaries of the project are orphaned wells identified as emitters. GHD confirmed that all wells were listed on Illinois DNR's Division of Oil and Gas List of Wells in Plugging Fund and confirmed through review of the leakage attestation and methane measurement raw data that all wells were identified as leaking. GHD confirmed that per the Methodology, baseline emissions as quantified in the project only consisted of active emissions directly connected to the well which are confirmed to cease upon plugging.

Per the Project fuel usage invoices, GHD observed that equipment and activities associated with plugging operations included pick-up trucks, water trucks, service rig, winch dozers and other transportation. GHD confirmed that these are mobile mechanical equipment for plugging and require diesel fuel.

During the site visits, GHD verified that all applicable baseline and project emission sources and sinks were included in the project boundary and GHG Project Plan.

16.2.2 ACR and Methodology Eligibility

GHD reviewed the Project operations to confirm that it meets the requirements of the ACR Standard and Methodology for the project.

The 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.

Table 4 ACR Project Eligibility

ACR Criterion	Definition	GHD Assessment
Start Date	ACR defines the Start Date for all non-AFOLU projects as the date on which the GHG Project began to reduce GHG emissions against its baseline. ACR defines the eligible Start Date(s) for AFOLU project types in Appendix A, "ACR Requirements for AFOLU Projects". All Start Date definitions also apply to Site-specific Implementation Dates within Programmatic Development Approach (PDA) projects.	See Table 5 Methodology Eligibility for review of project start date for conformance with the ACR Methodology. The project start date per the Methodology aligns with the ACR Standard start date definition, where the 20-year crediting period is calculated from the project start date, therefore the project start date is the date the project began to reduce emissions against its baseline.
Minimum Project Term	The minimum length of time for which a Project Proponent commits to project continuance, monitoring, reporting, and verification.	As per the ACR Standard, project types with no risk of reversal after crediting have no required Minimum Project Term. The ACR Well Plugging Methodology does not further outline a minimum project term. As there is no risk of reversal for orphan well projects, this criterion is not applicable for this project. Per the ACR Standard, Minimum Project Term applies only to AFOLU projects that have had ERTs issued that are associated with GHG removals (sequestration).

ACR Criterion	Definition	GHD Assessment
Crediting Period	Crediting Period is the finite length of time for which a GHG Project Plan is valid, and during which a GHG project can generate carbon credits against its baseline scenario. Crediting Periods are limited in temporal duration to require Project Proponents to reconfirm at intervals appropriate to the project type that the baseline scenario remains realistic and credible, the project activity remains additional, and GHG accounting best practice is being used.	See Table 5 Methodology Eligibility for review of project crediting period for conformance with the ACR Methodology. The crediting period per the Methodology aligns with the ACR Standard crediting period definition, where the 20-year crediting period is calculated from the project start date, therefore it is the finite period of time for which project can reduce emissions against its baseline and for which the GHG Project Plan is valid.
Real	A real credit is the result of a project action that yields quantifiable and verifiable GHG emission reductions and/or removals.	GHD reviewed the GHG Project Plan, raw data, photos and field notes documenting evidence of leakage to confirm that the well associated with the project was leaking and suitable to be plugged. GHD reviewed the activity data used to quantity baseline emissions including flow and methane concentration measurements to confirm that emissions reductions are real. GHD confirmed that this is documented in the GHG Project Plan.
Title	Title is a legal term representing rights and interests in a carbon credit, a future stream of credits, or a GHG project delivering credits.	Tradewater established a Transfer of Rights Agreement during project TW OOG2, with effective date April 1, 2024 and confirmed to be applicable to the current project TW OOG3. GHD reviewed the Transfer of Rights Agreement to confirm that Tradewater Well Services, LLC transferred all ownership rights for the project to Tradewater, LLC. GHD confirmed that Tradewater, LLC is listed as the party with rights to the project on the GHG Project Plan. An Attestation letter provided by Mr. Daniel M. Brennan of the Illinois DNR dated March 5, 2025, indicates that as of May 1, 2024, the three Project wells were not plugged and that no designated operator or solvent operator was responsible for plugging the wells. GHD reviewed the State-approved Plugging Plans to confirm that Tradewater was granted authority to plug the well upon submission of the Plugging Plans dated February 24, 2025.
Additional	GHG emission reductions and removals are additional if they exceed those that would have occurred in the absence of the project activity and under a business-as-usual scenario. Every GHG project shall demonstrate they either: Meet an ACR-approved performance standard and pass a regulatory surplus test, as detailed in the applicable methodology, or pass a three-pronged test of additionality in which the GHG Project: 1. Exceeds regulatory/legal requirements; 2. Goes beyond common practice; and	See Table 5 Methodology Eligibility for review of project additionality via the Regulatory Surplus Test and Practice-Based Performance Standard assessments, as specified by the ACR Methodology.

ACR Criterion	Definition	GHD Assessment
	3. Overcomes at least one of three implementation barriers: institutional, financial, or technical.	
Regulatory Compliance	Adherence to all national and local laws, regulations, rules, procedures, other legally binding mandates and, where relevant, international conventions and agreements directly related to project activities.	GHD reviewed the well Plugging Reports signed by Illinois DNR Well Inspector Carl Ladson to confirm that Illinois DNR approved of plugging operations and that plugging was completed in accordance with the State well plugging requirements. GHD confirmed with Tradewater that the DNR inspector was not on-site during plugging, and completed an on-site inspection after the well was plugged, which is per the Illinois DNR inspection processes. GHD confirmed that the Plugging Plans were submitted per the State requirements and approved by the State. GHD reviewed the project Land Access Agreements to confirm that Tradewater had permission to the properties for the purposes of plugging the wells. GHD confirmed that this is documented in the GHG Project Plan.
Permanent	Permanence refers to the longevity of GHG emission reductions and removals, and the risk of reversal (i.e., the risk that atmospheric benefit will not be permanent). Reversals may be unintentional or intentional.	GHD reviewed the post-plugging confirmation sampling raw data and photo evidence to confirm that all wells indicated emissions well within 2ppm above atmospheric methane concentration.
Net of Leakage	Leakage is an increase in GHG emissions or decrease in sequestration outside the project boundaries that occurs because of the project action.	Per the ACR Methodology, leakage is not applicable for the Orphan Well Plugging project type.
Independently Validated	Validation is the systematic, independent, and documented process for the evaluation of a GHG Project Plan against applicable requirements of the ACR Standard and approved methodology.	GHD has conducted an independent validation of the GHG Project Plan for the current crediting period.
Independently Verified	Verification is the systematic, independent, and documented assessment by a qualified and impartial third party of the GHG statement for a specific Reporting Period.	GHD has conducted an independent verification of the project Monitoring Report and statement for the current reporting period.
Environmental and Social Impact Assessments	GHG projects have the potential to generate positive and negative environmental and social impacts. Appropriate safeguard procedures can identify, evaluate, and manage potential negative impacts. Positive impacts can contribute to sustainable development objectives.	GHD reviewed the SDG contributions form, Social Impact Form, GHG Project Plan and Monitoring Report to confirm that SDG contributions and social impacts were appropriately identified and reported for the project. GHD confirmed the SDGs matched the descriptions and classifications set out in the ACR SDG Contributions tool. No negative impacts were associated for the project. GHD confirmed that SDG contributions reported in the GHG Project Plan matched the SDG contributions form. GHD confirmed that stakeholders and stakeholder engagement for the project were appropriate and reported.

The Methodology eligibility requirements are outlined in the ACR Methodology, as modified by the E&C. GHD reviewed the Project against the eligibility requirements as detailed below.

Table 5 Methodology Eligibility

Methodology Criterion	GHD Assessment
Eligibility	
The well is located in the U.S. or Canada	Per project documentation including geographic coordinates as listed on raw data, the wells are located in the state of Illinois, United States. GHD confirmed that this is documented in the GHG Project Plan.
The well is found to be emitting methane when first accessed by the parties involved in the project, as named in the GHG Project Plan, including the project proponent, project developer, entities holding title to the land, and other project participants such as technical consultants and qualified measurement specialists.	GHD reviewed the Leaking Well Attestation dated January 30, 2025, to confirm that all parties involved in the project attest that the Project wells were leaking. GHD confirmed that this is documented in the GHG Project Plan.
The well is included under any of the following categories – Wells with no designated operator – Wells considered "plugged" by the operator or regulator (if one was in place) or could have been inadequately or improperly plugged and are still leaking methane – Wells that do not appear on a jurisdictions orphaned well list. These wells do not have a solvent operator and would be classified as "unknown orphans"	All wells were listed on the May 1, 2024 Illinois Division of Oil and Gas List of Wells in Plugging Fund with status 'PFO'. Tradewater provided confirmation from Illinois DNR that these wells were placed into the State Plugging and Restoration Fund due to the well being deemed orphaned by the State of Illinois. Further confirmation was provided in the attestation provided by Illinois DNR that no designated operator or solvent operator was responsible for plugging the wells. Based on the well List, the original permits for all wells were issued in 1985. The wells can be classified under the Methodology classification of wells with no designated operator.
There is no regulatory or other legal requirement to prevent the release of methane	See Section Regulatory Surplus Test below for assessment.
Reporting Period	
The reporting period begins on the date that a well in the project first meets the post-plugging monitoring requirements of Section 4.7 of the Methodology. The reporting period ends on the date that the last well in the project meets the post-plugging monitoring requirements of Section 4.7 of the Methodology. For clarity, the duration of the reporting period is the time between the first and last wells completing post-plugging monitoring.	Per the E&C, the reporting period start date is the date of the first instance of post-plugging confirmation sampling that occurred for a well in the project. It occurred on April 7, 2025, for wells Blackburn University #2 and Lincoln Cameron #1. GHD reviewed the methane measurement raw data to confirm that it did not exceed 2ppm above the ambient measurement taken on that day. The final post-plugging sampling and confirmation of emissions mitigation occurred on April 8, 2025, for well Haley #1. Therefore, the project reporting period was correctly determined to be April 7, 2025 - April 8, 2025. GHD confirmed that this is documented in the GHG Project Plan.
Start Date	
For this methodology, the start date corresponds to the completion of plugging activities of the first plugged well included in a project, after demonstration that there are no emissions from the plugged well—according to Section 5.2. This date will be confirmed by the jurisdiction when the well is reclassified as plugged or decommissioned. All wells in a project must be plugged within 24 months of the project start date. Per Section 3 of the E&C, it is clarified that post-plugging monitoring is the trigger for the Start Date, start of the Reporting Period, and start date of the Crediting Period.	Per the E&C, the project start date aligns with the reporting period start date as described above, and the crediting period start date of April 7, 2025.

Methodology Criterion	GHD Assessment
Crediting Period	
The Crediting Period begins when it is first demonstrated through post-plugging measurements that there are no emissions from a well plugged as part of a project (i.e., the same date as the project start date and Reporting Period start date). The Crediting Period ends twenty years after it is demonstrated through post-plugging measurements that there are no emissions from the final well measured in the project (i.e., the same date as the Reporting Period end date). All wells in a project must be plugged and demonstrated through post-plugging measurements that there are no emissions within 24 months of the project start date, resulting in a maximum Crediting Period duration across all wells in the project of 22 years.	Per the E&C, the project crediting period start date aligns with project and reporting period start date as described above, of April 7, 2025. For a multi-well project, the crediting period end date is the reporting period end date plus 20 years. Therefore, the project crediting period is April 7, 2025 - April 7, 2045. GHD confirmed that this is documented in the GHG Project Plan.
Project Validation Deadline	
Validation must be completed within 12 months of the plugging of the last well in the project. The E&C clarifies that this refers to the date of plugging (e.g., cementing of a well) for the last well plugged in the project and that it is a distinction from the first post-plugging monitoring, which is the trigger for the Start Date, start of the Reporting Period, and start date of the Crediting Period.	GHD reviewed the signed well Plugging Report confirm that the last well plugged in the Project was for the Lincoln Cameron #1 on April 2, 2025. The validation deadline is 12 months from this date and is therefore April 2, 2026.
Regulatory Surplus Test	
The Regulatory Surplus test requires that OOG well plugging projects are surplus to regulations, i.e., the emission reductions achieved by plugging these wells are not required by applicable regulation.	GHD verified that Ill. Admin. Code tit. 62, Ch. I, Section 240.1115 requires the owner or operator to plug and abandon a well that is no longer permitted or in production. GHD verified that the regulation only applies to active owners, therefore the project wells were considered not applicable under the Code and plugging considered surplus to regulations.
Practice-Based Performance Standard	
All wells that meet this methodology's orphaned well description and eligibility section are considered to pass the performance standard.	As discussed in the Eligibility section above, the wells are considered to meet the ACR Methodology's orphan well description and eligibility requirements, thereby passing the performance standard additionality test.
Quantification of GHG Emissions Reductions	
Project Proponents shall submit a Methane Measurement Method Approval Form to ACR and obtain approval prior to collection of pre-plugging methane measurements. More detail provided in Section 4.1 of the ACR Methodology.	A Methane Measurement Method Approval Form (MMMAF) for the Project was approved by ACR on July 9, 2024 prior to the taking of pre-plugging measurements for all wells in the Project. The MMMAF was revised and approved on March 20, 2025, prior to plugging and the taking of post-plugging measurements for all wells in the Project. The final revision of the MMMAF, Version 10, was approved by ACR on July 24, 2025.
At least one qualified emissions measurement specialist will be needed to quantify methane prior to plugging and remediating a well. The measurement specialist should not only be proficient at using gas measurement instrumentation, but also able to recognize and avoid/mitigate safety hazards related to the oil and gas well, field conditions, weather variables, etc., to maintain personal safety.	The project MMMAF, GHG Plan and Monitoring Report indicate the emissions measurement specialists assigned to the Project and the equipment that they operated. GHD interviewed the above personnel during the site visits and confirmed that they oversee all monitoring activities and are qualified to perform functions.

Methodology Criterion	GHD Assessment
Ambient emissions measurements taken during pre-plugging sampling events and post-plugging measurements must be completed with a detection limit of 1 ppm or less. Ambient emissions measurements are not required during pre-plugging sampling events if measurement equipment is directly connected to the leaking well, and therefore not impacted by the ambient methane.	MMMAF indicates that QED Landtec SEM5000 methane detector is used for measurements and has a minimum detection limit of 0.5ppm GHD confirmed that the device operating manual indicates a minimum measurement range of either 0 ppm or 1 ppm. GHD confirmed that the specification fact sheet indicates a minimum detection limit of 0.5 ppm. Both indicate that the 1ppm or less requirement is met by the analyzer. The September 2024 E&C was released after the completion of project activities with post-confirmation sampling on January 22, 2024, and indicated that ambient emissions measurements are no longer required as per the original ACR Methodology, if equipment is directly connected to the leaking well. GHD confirmed through review of the MMMAF and conducting site visits that that the methane analyzer is directly connected to the leaking well within the measurement flow set-up, as enclosed within a diffusion box receiving flow, and unable to be impacted by the presence of ambient methane. Although not required, ambient pre-plugging measurements were taken but not used to correct baseline emissions per Equation B or C of the E&C, as appropriate.
To determine the net GHG reductions for wells, monitoring of methane emissions before and after plugging the well is required. The 100-year global warming potential value used in this chapter is specified in the most recent ACR Standard.	AR5 global warming potential per ACR Standard Version 8, has been used in baseline emissions quantification.
Methane Measurement Methods	
Project Proponents shall submit a Methane Measurement Method Approval Form to ACR for approval. The form shall be submitted during GHG Project Plan preparation (after project listing) and approved prior to collection of pre-plugging methane measurements. This form collects information about the parties participating in the project methane measurement activities, the name and qualifications of the qualified measurement specialist(s), and the proposed method(s) and equipment. Completed forms and any supplemental documents shall be uploaded to the Project Documents section for the applicable project on the ACR Registry. – Project Proponents must provide documentation that equipment was administered correctly, including calibration; demonstrate that the flow rates measured were within the specified range for the equipment used; and that the equipment, as administered in the field, met all accuracy and precision requirements set out in this methodology and the ACR Standard, including: The direct sampling approach yields a value with at least 95% confidence.	See 'Quantification of GHG Emissions Reductions' section for review of MMMAF submission requirements. Calibration records indicate that the Silversmith and Alicat model flow meters produces measurements at greater than 95% accuracy. The operating manual for the QEM Landtec methane analyzer indicates that it produces measurements at greater than 95% accuracy. GHD understands that this ensures that the direct sampling approach yields a value with at least 95% confidence.

Methodology Criterion	GHD Assessment
There can be confirmation of proper operation in accordance with manufacturer's specifications—ensuring data is accurately aggregated over the correct amount of time.	GHD reviewed equipment calibration records and data as found within the raw data files to confirm proper operation of the equipment and that data was aggregated over the correct amount of time. GHD notes that Tradewater re-confirms the length of the stability period as used for calculations, by determining the elapsed time for data collection from the equipment reading timestamps.
Measurements of methane concentration, well gas flow rate, and flowing pressure (if wellhead is present) must be measured and recorded simultaneously. Methane-specific flow rates may be collected in lieu of separate measurements for methane concentration and well gas flow rate. Each reading shall include documentation of the measurement date, time, and location so measured data can be verified	GHD confirmed that methane concentration, well gas flow rate and flowing pressure was measured and recorded simultaneously per reading times and frequencies recorded on measurement data. Methane and flow data was collected separately and calculated to obtain a methane-specific emissions rate. All readings included documentation of the measurement date and time. GHD reconfirmed the location of readings where necessary; to confirm they were associated with the project wells.
A qualified measurement specialist' shall have training and field experience with the specific equipment and methods that have been proposed and approved by ACR for use at the targeted well sites. Ideally the measurement specialist will have 20+ hours of training and experience with the specific equipment type and/or methods.	As stated in the MMMAF and GHG Project Plan, measurement specialists have the required experience and are qualified to conduct project activities per Methodology requirements.
Methane Analyzer Specifications	
The methane analyzer must be able to quantify methane-specific concentrations. Combustible gas or multi-gas sensors typically used for determining explosion risk shall not be used. Moreover, the analyzer shall meet or exceed the following specifications: – Working range of environmental conditions (e.g., temperature, humidity, well conditions such as flow rate, pressure, the presence of fluid, and must be used in a manner that ensures accuracy and safety)	Methane analyzer is not a multi-gas analyzer and quantifies methane-specific concentrations as confirmed by the operating manual and methane measurements. GHD reviewed the device operating manual to confirm that the methane analyzer meets working range of environmental conditions.
– Methane-specific detection must demonstrate that concentrations detected are within the factory specified range of detection equipment	Per page 6 of the device operating manual, the factory specified range of detection equipment is 0 -1,000,000 ppm. GHD confirmed that the methane measurements for each sampling event as used for emissions calculations was within the specified detection range. No negative values were identified, and no values were identified that indicated greater than 100% methane concentration.
Temporal Variation	
Emissions measurements are required to determine pre-plugging methane flow for every well in the project boundary. Two pre-plugging sampling events, at least 30-days apart, are required at each well, as demonstrated in Figure 3 of the ACR Methodology.	GHD confirmed that first (M1) and second (M2) baseline measurements were taken as follows and meet the minimum 30-day temporal variation: Blackburn University #2: M1: 12/18/2024, M2: 1/22/2025 Haley #1: M1: 11/20/2024, M2: 2/4/2025 Lincoln Cameron #1: M1: 11/19/2024, M2: 1/23/2025

Methodology Criterion	GHD Assessment
Baseline Emissions	
Baseline emissions will be calculated according to the following steps: – Immediately preceding or concurrent with each pre-plugging sampling event (if required) and the post-plugging measurements, background levels of methane must be recorded from a distance of 10-15 feet upwind of the well to be plugged. For the purposes of this requirement, 'upwind' means in the direction that the wind is blowing from at the time of measurement. This measurement may be taken with the same sampling device as the well measurements.	See 'Quantification of GHG Emissions Reductions' section for confirmation that pre-plugging ambient methane measurements were not required due to direct flow set-up. GHD reviewed time-stamped geo-referenced photos for each of the project wells to confirm that ambient methane measurements were taken 10-15 feet upwind of the well prior to the taking of post-plugging measurements.
– The sampling method shall encompass the emitting well and at least 10 cm of immediately adjacent soils to also capture any methane emissions that may be migrating up the well annulus.	GHD confirmed that this Methodology requirement does not apply to the project which uses a direct flow set-up and therefore does not encompass the emitting wells. The flow set up was approved by ACR via the MMMAF. Based on the site visits conducted, GHD understands that emissions are appropriately measured in alignment with the well configuration.
Emission Reductions from Plugging/ Permanence and Reversal Risk	
A methane detector shall be used to screen the ground surface and any portion of the plugged well casing that remains above grade after plugging. For buried wells, a surface area of 1 square meter (1 m^2) above the wellhead shall be measured. The detector can be a handheld methane sensor and shall have a lower detection limit of 1 ppm methane or less. The equipment shall be placed within 5 centimeters (5 cm) of the ground and/or well casing. Each area requiring screening shall be screened for at least 5 minutes. If a methane concentration exceeding 2 ppm above background is detected, the methane emissions rate must be measured in accordance with the approved Methane Measurement Method Approval Form. The methane emission rate, corrected for pressure and temperature, measured directly, or calculated from simultaneously measured methane concentration and well gas flow rate shall not exceed 1.0 gram per hour (g/hr.). If the measured methane emission rate exceeds 1.0 gram per hour (g/hr.), then the plugged well shall be re-plugged and re-tested prior to credits being issued for that well.	GHD reviewed raw data files and photo evidence to confirm that post-plugging measurements were taken as prescribed by the Methodology, using an eligible methane sensor and screening for both ambient and post-plugging measurements for all wells occurred for at least 5 minutes. Based on the review of the confirmation sampling methane measurement raw data, methane concentration exceedance beyond 2ppm was not observed for any wells. GHD confirmed that based on this evidence, no further testing was required.
Project Proponents must demonstrate that the well has been designated as "plugged", or equivalent, by the appropriate jurisdiction.	Per the State-approved well Plugging Reports which include sign-off by Illinois DNR well inspectors, plugging completion occurred on the following dates for each well: Blackburn University #2: April 1, 2025 Haley #1: April 1, 2025 Lincoln Cameron #1: April 2, 2025

Methodology Criterion	GHD Assessment
Monitoring and Data Collection	
Measurements of simultaneously collected methane concentrations, well gas flow rate, and flowing pressure (if wellhead is present) over reported sampling event – including time-stamped, georeferenced videos, pictures or reports	See 'Methane Measurement Methods' section for review of simultaneously collected measurement readings. GHD confirmed that time-stamped, georeferenced videos, pictures or reports were provided.
Documentation to be collected and reported to ACR per Section 5: Data Collection and Parameters to be Monitored of the ACR Methodology and Section 16, Errata: Data Collection and Parameters to be Monitored (2024-09-09) of the E&C.	GHD confirmed that all applicable project documentation was retained. Tradewater provided a license for the contracted plugging company indicating authorization to conduct plugging operations. GHD confirmed that the licensing requirements as indicated by the Methodology, were satisfied for the parties conducting well plugging.

16.2.3 Project Deviations

There were no applicable project deviations implemented by Tradewater for the project.

16.2.4 Double Issuance and Double Use of Carbon Credits

Per the ACR Standard, the Project Proponent is required to disclose any other registrations of the Project under other offset registries. As per Section 10.A of the ACR Standard, GHD reviewed registry project listings under registries including Climate Action Reserve and Verra: Verified Carbon Standard to confirm that the Project is not claiming emission reductions outside of ACR.

16.2.5 Monitoring Plan

16.2.5.1 Data Management System

Methane, flow and pressure readings are taken by the instruments and stored directly on the instrument or on the device's associated instrument software. Data is downloaded from the instrument or instrument software and transferred to a computer and subsequently uploaded to the Project's SharePoint. Raw data for methane and flow readings are available in excel format, while pressure readings are available in pdf format and converted to excel format for processing and data analysis. GHD confirmed data management procedures for the project, during the in-person site visits conducted.

16.2.5.2 Calibration Procedures

GHD reviewed calibration certificates for each monitoring device and confirmed the following calibration frequencies:

- SilverSmith flow meter: *annual,* as conducted by manufacturer Silversmith, Inc. or Transcat Calibration Laboratories. Tradewater attests that Silversmith does not mandate nor recommend a calibration schedule, and calibrations occur on an as-needed basis. GHD confirmed that calibrations/field checks occurred prior to use of the flow meter in the filed.
- Alicat flow meter: *annual,* as conducted by manufacturer Alicat Scientific, Inc.
- QED Landtec methane analyzer: *every two years,* as conducted by QED Environmental Systems, Inc. or Field Environmental Instruments Inc.
- Vaetrix: *annual,* as conducted by JM Test Systems, Inc.

GHD verified that all equipment was factory calibrated prior to use and used within the calibration window of the equipment as demonstrated in the below tables.

Table 6 Project Well Calibrations

Blackburn University #2						
Equipment:	**Manufacturer:**	**Serial Number:**	**Measurement Event**	**Event Date:**		**Factory Calibration Date (s):**
Flow meter	SilverSmith	2564-34183	M1/M2	12/28/2024	1//22/2025	2/20/2024
Pressure sensor	Vaetrix	1656612936	M1/M2	12/28/2024	1//22/2025	11/12/2024
Methane analyzer	QED Landtec	41286	M1/M2	12/18/2024	1//22/2025	11/10/2023
						11/13/2024
						12/12/2024
		50331	Post-plugging	4/7/2025		12/17/2024

Haley #1						
Equipment:	**Manufacturer:**	**Serial Number:**	**Measurement Event**	**Event Date:**		**Factory Calibration Date (s):**
Flow meter	Alicat	485553	M1/M2	11/20/2024	2/4/2025	4/18/2024
Pressure sensor	Vaetrix	1656612936	M1/M2	11/20/2024	2/4/2025	11/12/2024
Methane analyzer	QED Landtec	41286	M1	11/20/2024		11/10/2023
						11/13/2024
						12/12/2024
		50331	M2	2/4/2025		12/17/2024
			Post-plugging	4/8/2025		

Lincoln Cameron #1						
Equipment:	**Manufacturer:**	**Serial Number:**	**Measurement Event**	**Event Date:**		**Factory Calibration Date (s):**
Flow meter	Alicat	485553	M1/M2	11/19/2024	1/23/2025	4/18/2024
Pressure sensor	Vaetrix	1656612936	M1/M2	11/19/2024	1/23/2025	11/12/2024
Methane analyzer	QED Landtec	41286	M1	11/19/2024		11/10/2023
						11/13/2024
						12/12/2024
		50331	M2	1/23/2025		12/17/2024
			Post-plugging	4/7/2025		

Additionally, for the Landtec methane analyzers, field checks occur prior to use in the field, as prescribed by the device operating manual and documented to be completed for the project by the field check calibration certificates. GHD confirmed that field checks occurred prior to pre-plugging, post-plugging and all ambient measurements.

16.2.5.3 QA/QC Procedures

GHD confirmed that adequate QA/QC procedures occur internally for the project. On-site, these include monitoring of project data during the measurement events, analyzing for stability and collecting monitoring for sufficient durations to obtain enough data for stability analysis and quantification (>2 hours). GHD confirmed that Tradewater syncs the start time for readings for the different measurement devices to allow for similar processes of data collection between the equipment and accuracy of readings used for stability analysis.

GHD confirmed that raw data files as provided for verification were unmodified and data organization of files as located on the project SharePoint ensured that well data was kept separate and could be traced back to the

associated well. GHD confirmed that documentation procedures including photos, field notes and raw data allowed for the corroboration and confirmation of project data and occurrence of project events. GHD confirmed that the Tradewater team performs QA/QC of the data during data processing and analysis.

16.2.5.4 Sampling Methods

Sampling methods include pre-plugging measurements for baseline methane emissions rates and post-plugging measurements for the presence of post-plugging emissions. Baseline emissions measurements were taken using the project's approved direct flow sampling technique specified in the approved Methane Measurement Method Approval Form (MMMAF). During GHD's site visits to well Blackburn University #2 and Haley #1 for baseline measurement M2, GHD confirmed that baseline sampling procedures were conducted in accordance with the MMMAF and the Methodology. GHD notes the following differences in flow-set up and procedure for the following wells:

Blackburn University #2:

- Using Silversmith flow meter due to high flow regime observed for the well.
- Flow meter has been set to read temperature and pressure at 60°F and 0.997 atm. Simultaneous temperature and pressure readings not available with flow readings, therefore each 10-minute interval of collected data is normalized to the required STP of 60°F and 1 atm during emissions calculations, based on the known STP of instrument.
- Using gas-liquid separator.

Haley #1 & Lincoln Cameron #1:

- Using Alicat flow meter due to low flow regime observed for the well.
- Flow meter has not been set to perform internal pressure and temperature correction. Simultaneous temperature and pressure readings available with flow readings, therefore each 10-minute interval of collected data is normalized to the required STP of 60°F and 1 atm during emissions calculations, using the instrument's measured pressure and temperature readings.

GHD confirmed that all of the above-noted differences as observed during the site visit, are indicated in the approved MMMAF and that all methods and measurements occurred as specified by the MMMAF.

GHD confirmed that post-plugging sampling begins with taking an ambient methane measurement and is followed by screening of the exposed well casing for emissions confirmation. GHD reviewed the post-plugging sampling methane concentration measurement data and field check documentation to confirm that post-plugging sampling procedures were conducted in accordance with the approved MMMAF and the Methodology.

16.3 Verification Findings

16.3.1 SSR 1 – Baseline Emissions (Pre-Plugging Orphan Well Emissions)

16.3.1.1 Annual Emissions

GHD verified that annual emissions were calculated as follows, per Equation 1 of the Methodology E&C.

Table 7 Assessment of Parameters used in Equation 1 for the Calculation of Annual Emissions

Annual Emissions Equation Parameter	Assessment
Flow data	Blackburn University #2: Gas flow measured using the Silversmith flow meter produced readings in units of MCF LFG/day. Haley #1 & Lincoln Cameron #1: Gas flow measured using the Alicat flow meter produced readings in units of L/min. GHD confirmed that readings were converted to units of acf/hr prior to normalization.
Flow Data Adjustments – Normalization to Standard Temperature & Pressure (STP)	Blackburn University #2: GHD confirmed per calibration documentation that the Silversmith flow meter normalizes to a base pressure of 14.65 psi (0.996874 atm) and base temperature 60°F. Tradewater used the above known values of STP of the flow meter in Equation A of the E&C to further normalize the data to the standard pressure of 1 atm, as appropriate. Haley #1 & Lincoln Cameron #1: GHD confirmed per calibration documentation that the Alicat flow meter normalizes to a standard pressure of 14.69595 psia (1 atm) and base temperature of 25°C (77°F). Tradewater used the measured temperature and pressure as recorded by the instrument (concurrent with flow measurements), in Equation A of the E&C to normalize the data to the standard pressure of 1 atm and 60F as appropriate.
Methane data	Methane concentration for all wells was measured using the Landtec methane analyzer and raw data contained readings in units of ppm. All flow measurements were converted to units of % volume by division by 10000.
Methane Data Adjustments – No Ambient Methane Deductions Applied	GHD confirmed that due to the direct flow set up of the gas measurement system, methane concentration could not be detected within the gas methane concentrations measured as the methane analyzer is enclosed in a diffusion box which is properly sealed and only receiving well gas flow. Ambient methane concentration for the pre plugging requirements are not required as specified by the E&C, however, were taken. As per the above, ambient methane concentration deductions from the measured sampling event methane concentration were not required.
Emission Rate	Methane emission rates (scf/hr) were calculated using the corrected well gas flow measurements and methane concentration measurements.
Moisture	Blackburn University #2: Moisture factor of one (1) applied, as GHD confirmed that a moisture correction was not required as the properties of the gas are analyzed after the liquid has been removed by the gas separator and therefore the gas is already analyzed by equipment on a dry basis, as indicated on the MMMAF. Haley #1 & Lincoln Cameron #1: Moisture factor of one (1) applied, as a gas-liquid separator was not required.
Methane Density	GHD confirmed that Tradewater appropriately applied a methane density of 0.0423 lbs CH4/ scf CH4 associated with an STP of 60°F and 1 atm, in alignment with the STP of the normalized emission rates.
Calculation method	GHD verified that annual emissions were calculated for all wells based on the average emission rate of 25 data points from the 2 hour stabilized periods for the sampling events. Measurement 1 included 12 data points and measurement 2 included 13 data points. The emission rates were converted to units of Kg CH4/year using the factors specified in Equation 1.

Recalculation

GHD re-calculated annual emissions and identified the following errors which resulted in immaterial discrepancies:

– The 2-hour data period selected for stability analysis and annual emissions quantification, not matching exactly between all parameters e.g. flow, methane concentration and pressure measurements.
– Stability periods as used for annual emissions quantification being selected based on raw data that did not contain seconds or milliseconds that are present in timestamps in the raw measurement data.
– Annual emissions were calculated without the data from the 13th 10-minute interval within the selected 2-hour stability period for the M2 measurement.

Tradewater revised calculations to address the above-noted issues and no further discrepancies were identified.

16.3.1.2 Stability

GHD verified that stability was assessed in accordance with Section 12, Errata: Emissions Stabilization Requirements of the Methodology E&C.

The stability criteria associated with the various parameters including flow, methane concentration and pressure were analyzed using the same 2-hour period per baseline event for each well. Table 8 below indicates the 2-hour periods used for stability analysis, per timestamps found on the instrument raw data.

Table 8 Chosen Stability Periods for M1/M2 Baseline Measurements for Project Wells

Event	Blackburn University #2	Haley #1	Lincoln Cameron #1
M1	**12/18/2024** | 11:29:54 AM - 1:29:53 PM	**11/20/2024** | 10:41:58 AM - 12:41:57 PM	**11/19/2024**| 2:05:01 PM - 4:05:00 PM
M2	**1/22/2025** | 12:49:56 PM - 2:49:55 PM	**2/4/2025** | 5:08:24 PM - 7:08:23 PM	**1/23/2025** | 9:26:01 AM - 11:26:00 AM

GHD noted that for well Blackburn University #2, the flow data chosen for the M1 measurement 2-hour stability period was 1 hour later than the stability period chosen for methane and pressure data, based on timestamps found within the raw data files. Tradewater asserted that this is due to the internal clock time of the flow meter being 1 hour ahead of the clock time of the methane analyzer and pressure sensor, however that the stability periods chosen for the three instruments were the same in real-time. GHD verified that the chosen stability period was reasonable and aligned with the data chosen for stability analysis for the other instruments.

GHD verified that Tradewater applied excel formulas to appropriately aggregate data for the 10-minute interval averages, as required where measurement frequencies were greater than per minute. This includes the flow measurements, where timestamps did not exist at necessary points in the raw data to define the 10-minute intervals. GHD's assessment of stability for the Project wells is demonstrated in Table 9.

Table 9 Stability Assessment for Project Wells

Stability Criterion	Assessment
10-minute interval methane emission rates (scf/hr) over the minimum 2-hour stability period, corrected for moisture content (if applicable) and ambient methane concentration, fall within **±10% of the average methane emission rate.** The average is calculated as the arithmetic mean of the 10-minute interval methane emission rates (scf/hr) over the minimum 2-hour stability period, corrected for moisture content (if applicable) and ambient methane concentration. Over a 2-hour stability period, a minimum of eleven of the twelve 10-minute interval data points must fall within this bound. If the	Emission rates (scf/hr) were not corrected for moisture content and ambient methane concentration, as not applicable. Blackburn University #2 and Lincoln Cameron #1: For both baseline measurements M1 and M2, all emission rates were within 10% of the calculated average emission rate for each measurement event. Haley #1:

Stability Criterion	Assessment
stability period is longer than two hours, the minimum number of 10-minute interval points that must be within ±10% of the average increases proportionally and rounded up to the nearest whole number (e.g., 17 of 18 data points, 22 of 23 data points, and 22 of 24 data points must be within ±10%).	For baseline measurement M1, 11/12 emission rates were within 10% of the calculated average emission rate for each measurement event. For baseline measurement M2, all (13/13) emission rates were within 10% of the calculated average emission rate for each measurement event.
10-minute interval methane emission rates (standard cubic feet per hour, or scf/hr) over the minimum 2-hour stability period, corrected for moisture content (if applicable) and ambient methane concentration, do not vary from one another **by a factor greater than 10.** As clarified by ACR, this should not be assessed interval to interval but should be assessed for the highest and lowest interval averages per measurement event, which cannot vary by more than a factor of 10.	Emission rates (scf/hr) were not corrected for moisture content and ambient methane concentration, as not applicable. All wells For both baseline measurements M1 and M2, all emission rates were approximately within a factor of 1 (well within 10x) of the highest and lowest 10-min interval averages for the measurement event.
10-minute interval flowing pressure readings (psi) over the minimum 2-hour stability period fall within **±10% of the average flowing pressure.** The average is calculated as the arithmetic mean of the 10-minute interval methane emission rates (psi) over the minimum 2-hour stability period. Over a 2-hour stability period, a minimum of eleven of the twelve 10-minute interval data points must fall within this bound. If the stability period is longer than two hours, the minimum number of 10-minute interval points that must be within ±10% of the average increases proportionally and rounded up to the nearest whole number (e.g., 17 of 18 data points, 22 of 23 data points, and 22 of 24 data points must be within ±10%).	Blackburn University #2 and Haley #1: For both baseline measurements M1 and M2, all average pressure readings (psi) were well within 10% of the calculated average pressure for each measurement event. Lincoln Cameron #1: For baseline measurement M1, 11/12 pressure readings were within 10% of the calculated average pressure for each measurement event. For baseline measurement M2, all pressure readings were within 10% of the calculated average pressure for each measurement event.
Methane emission rate from second sampling event must be within **10% of the methane emission rate from the first sampling event.**	Blackburn University #2: The calculated average emission rate for M2 was within 2.5% of the calculated average emission rate for M1. Lincoln Cameron #1: The calculated average emission rate for M2 was within 6.9% of the calculated average emission rate for M1. Haley #1: The calculated average emission rate for M2 was within 10% of the calculated average emission rate for M1. Due to slight variations in GHD's re-calculation of stability, a 10.01% variation from the M1 measurement was observed, however GHD determined that the data sufficiently met the 10% threshold requirement.

16.3.1.3 Baseline Emissions

GHD verified that baseline emissions were calculated in accordance with Equation 2 of the Methodology E&C.

Baseline emissions were calculated using the sum of the annual emissions for all wells in the project. Per Equation 2 of the methodology, baseline emissions are to be calculated over a 20-year crediting period, as applicable to crediting period for an individual well in the project. GHD confirmed that baseline emissions were calculated for the length of the 20-year crediting period.

GHD confirmed that the 100-year global warming potential for methane used of 28, was from IPCC AR5, per ACR Standard V8.0.

Recalculation

GHD re-calculated baseline emissions and identified the discrepancies described in Section 16.3.1.1 for the calculation of annual emissions parameter, which were corrected. GHD confirmed that baseline emissions were appropriately reported in the GHG Project Plan and Monitoring Report.

16.3.2 SSR 2 – Project Emissions (On-site plugging equipment)

GHD verified that project emissions were calculated in accordance with Equation 3 of the Methodology E&C.

GHD reviewed the invoice dates on Tradewater's 2025 fuel usage invoices for proximity to the well plugging dates to confirm that they were associated with plugging operations for the wells in the project.

GHD verified that diesel emission factor used matched the value listed in the E&C (10.49 Kg CO_2e/gallon diesel). GHD confirmed that project emissions were not extrapolated over the length of the 20-year crediting period and were calculated once using fuel invoices rendered over the course of plugging activities for the wells.

Recalculation

GHD re-calculated project emissions and identified no discrepancies. GHD confirmed that project emissions were appropriately reported in the GHG Project Plan and Monitoring Report.

16.3.3 Emissions Reductions

GHD verified that emissions reductions were calculated in accordance with Equation 5 of the Methodology E&C. Emissions reductions were appropriately calculated as baseline minus project emissions. GHD verified that the uncertainty deduction of 5% was correctly applied to emission reductions. Emissions reductions as reported per vintage, were calculated by subtracting project emissions for the vintage year (2025) from baseline emissions for the vintage year and applying deductions.

Recalculation

GHD re-calculated total emissions reductions and identified no discrepancies. GHD confirmed that emissions reductions and deductions were appropriately reported in the GHG Project Plan and Monitoring Report.

GHD confirmed that the emissions reductions by vintage were appropriately reported on the ACR registry, as submitted for validation/verification.

16.3.4 Reporting Period Comparison

Orphan well projects only have one reporting period, therefore this is the first and only validation and verification conducted by GHD for the TW OOG3 project.

16.3.5 Verification of Monitoring Procedures

16.3.5.1 Monitoring Parameter

The following parameters have been monitored by Tradewater during the Project:

Table 10 Reported Monitoring Parameters in GHG Project Plan and Monitoring Report

Parameter	Q measured, i
As per Monitoring Report	
Units	Scf/hr

Parameter	Q measured, i
Description	Field measurement taken during two 2-hour minimum sampling events of volume flow of methane
Methodology Section	Errata and Clarification
Equation #(S)	A
Source of Data	SilversmithHIP6000 flow meter or Alicat mass flow meter
Measurement Frequency	Approximately every 5 minutes (Silversmith) or every 10 seconds (Alicat) over the course of two 2-hour-minimum sampling events, simultaneous to methane concentration and pressure
As per GHG Project Plan	
Unit of Measurement	Scf/hr (after being converted from MCF/day or LPM)
Project Implementation	Field measurement taken during two 2-hour minimum sampling events of volume flow of methane
Technical Description of Monitoring Task	Silversmith HIP6000 flow meter or Alicat mass flow meter is connected via a direct flow set up. For the Silversmith setup, the gas first passes through a separator where fluid is separated out to prevent anything but gas to flow through the flow meter. For the Alicat setup, the gas first passes through a particulate filter where solids are separated out to prevent anything but gas to know through the flow meter. The meters report data in MCF/day or LPM, which must be converted to Scf/hr to align with the Methodology. The Silversmith produced contains a data point approximately once every 5 minutes. The Alicat produced a data point approximately once every 10 seconds.
Data Source	Silversmith or Alicat, as approved in the submitted MMMAF
Data Collection Procedures	Data is stored on the instrument software and downloaded into a readable format (Excel) and then transferred to SharePoint
Methodology Reference	Equation A (E&C)
Data Uncertainty	Low
Monitoring Frequency	Approximately every 5 minutes over the course of two 2-hour-minimum sampling events
Reporting Procedure	Excel download
QA/QC Procedure	Raw files are saved and untouched, whereas data is processed in a separate file. During measurement, at least two team members are responsible for instrument observation and data output monitoring. All processed data is checked by an internal reviewer
Data Archiving	All measurements, regardless of inclusion in a project or not, are saved to the Tradewater SharePoint indefinitely.
Parties Involved	Project Developer: Methane Project Development Manager, Environmental Project Manager, and Qualified Emissions Measurement Specialist.
Responsibilities of Parties Involved	Set up sampling equipment, take measurements, save data, process data
Notes	Measured simultaneously with methane concentration and pressure.

Parameter	Conc measured, i
As per Monitoring Report	
Units	% volume
Description	Field measurement taken during two 2-hour minimum sampling events of methane concentration
Methodology Section	Errata and Clarifications
Equation #(S)	B,1

Parameter	Conc measured, i
Source of Data	SEM5000
Measurement Frequency	Once every second over the course of two 2-hour-minimum sampling events, simultaneous with methane flow and pressure.
As per GHG Project Plan	
Unit of Measurement	% volume
Project Implementation	Field measurement taken during two 2-hour minimum sampling events of methane concentration
Technical Description of Monitoring Task	The QED Landtec SEM5000 Portable Methane Detector is used to measure methane concentration. Measurements are taken at approximately ambient pressure by way of a diffusion box. An average methane concentration is then determined.
Data Source	SEM5000, as approved in the submitted MMMAF
Data Collection Procedures	Data is stored on the instrument, downloaded to instrument software, and then downloaded from instrument software into a readable format (Excel) and then transferred to SharePoint.
Methodology Reference	Equation B, 1
Data Uncertainty	Low
Monitoring Frequency	Once every second over the course of two 2-hour minimum sampling events
Reporting Procedure	Excel download
QA/QC Procedure	Raw files are saved and untouched, whereas data is processed in a separate file. During measurement, at least two team members are responsible for instrument observation and data output monitoring. All processed data is checked by an internal reviewer.
Data Archiving	All measurements, regardless of inclusion in a project or not, are saved to the Tradewater SharePoint indefinitely.
Parties Involved	Project Developer: Methane Project Development Manager, Environmental Project manager, and Qualified Emissions Measurement Specialist
Responsibilities of Parties Involved	Set up sampling equipment, take measurements, save data, process data
Notes	Measured simultaneously with methane flow and pressure

Parameter	Flowing Pressure
As per Monitoring Report	
Units	psi
Description	Field measurement taken during two 2-hour minimum sampling events of pressure
Methodology Section	Errata 11 and 16
Equation #(S)	Equation A
Source of Data	Vaetrix
Measurement Frequency	Every 10 seconds over the course of two 2-hour-minimum sampling events, simultaneous with methane concentration and flow
As per GHG Project Plan	
Unit of Measurement	psi
Project Implementation	Field measurement taken during two 2-hour minimum sampling events of pressure
Technical Description of Monitoring Task	The Vaetrix Digital Chart Recorder is connected using a tee setup to the existing wellhead

Parameter	Flowing Pressure
Data Source	Vaetrix, as approved in the submitted MMMAF
Data Collection Procedures	Data is stored on the instrument, downloaded to software, then downloaded to a computer in PDF form which is then uploaded to SharePoint.
Methodology Reference	Erratum 11 and 16, Equation A
Data Uncertainty	Low
Monitoring Frequency	Every 10 seconds over the course of two 2-hour minimum sampling events
Reporting Procedure	PDF download
QA/QC Procedure	Raw files are saved and untouched, whereas data is processed in a separate file. During measurement, at least two team members are responsible for instrument observation and data output monitoring. All processed data is checked by an internal reviewer.
Data Archiving	All measurements, regardless of inclusion in a project or not, are saved to the Tradewater SharePoint indefinitely.
Parties Involved	Project Developer: Methane Project Development Manager, Environmental Project manager, and Qualified Emissions Measurement Specialist
Responsibilities of Parties Involved	Set up sampling equipment, take measurements, save data, process data
Notes	Measured simultaneously with methane concentration and flow.

Parameter	n
As per Monitoring Report	
Units	Number of 10-minute intervals from pre-plugging sampling events
Description	Averaged from 10 minutes worth of data to create interval for assessing stability
Methodology Section	4.1.4
Equation #(S)	1
Source of Data	SEM5000, Silversmith or Alicat, Vaetrix
Measurement Frequency	Data is assessed for each parameter twice per project (measurement 1 and 2)
As per GHG Project Plan	
Unit of Measurement	Number of 10-minute intervals from pre-plugging sampling events
Project Implementation	Averaged from 10 minutes' worth of data to create interval for assessing stability
Technical Description of Monitoring Task	Simultaneous measurements of methane concentration, methane emission rate, and flowing pressure are taken using the respective instruments previously described and data is processed to identify 10-minute windows of data which are averaged to create a single interval. There are 24 intervals
Data Source	SEM5000, Silversmith or Alicat, Vaetrix
Data Collection Procedures	Data is downloaded from the three instruments and raw versions saved and untouched. Copies of the raw data are processed to assess and define the intervals.
Methodology Reference	4.1.4; Equation 1
Data Uncertainty	Low
Monitoring Frequency	Data is assessed for each parameter twice per project (Measurement 1 and 2)
Reporting Procedure	Excel document

Parameter	n
QA/QC Procedure	One member of the Tradewater team processes the data using custom-built tools, and a second team member reviews the tool and results for accuracy and conformity to the methodology.
Data Archiving	All measurements and assessments, regardless of inclusion in a project or not, are saved to the Tradewater SharePoint indefinitely.
Parties Involved	Project Developer: Methane Project Development Manager, Environmental Project Manager, and additional Tradewater team members
Responsibilities of Parties Involved	Process measured data and assess for conformity to the Methodology.
Notes	

Parameter	W
As per Monitoring Report	
Units	Wells
Description	Number of wells included in the project
Methodology Section	Section 4.1 and 5.2; E&C revised Equation 2
Equation #(S)	2
Source of Data	Documentation may include time-stamped georeferenced data, reports, and/or pictures including pictures of the deployed measurement system, as well as handwritten field notes
Measurement Frequency	Throughout project and confirmed prior to verification begins
As per GHG Project Plan	
Unit of Measurement	Wells
Project Implementation	Number of wells included in the project
Technical Description of Monitoring Task	Many wells are assessed prior to being added to a project, but the wells included must meet the criteria laid out in the Methodology to be eligible, stable, and leaking under the baseline scenario.
Data Source	Documentation may include time-stamped georeferenced data, reports, and/or pictures including pictures of the deployed measurement system, as well as handwritten field notes
Data Collection Procedures	An initial trip precedes official inclusion of a well in a project to determine whether an orphaned well with granted approval to access is first in fact leaking, and second is safe to proceed with measurement and plugging activities. Wells that meet all Methodology criteria and are successfully plugged will be counted as a well in the project.
Methodology Reference	Equation 2
Data Uncertainty	Low
Monitoring Frequency	Assessed throughout the scope of the project but definitively confirmed prior to the start of Verification.
Reporting Procedure	Number of wells confirmed in updated Project Set Up information and asserted in project documents.
QA/QC Procedure	The Tradewater team meets frequently to assess the makeup of the project.
Data Archiving	All wells investigated, whether they are included in the project or not, are saved to SharePoint indefinitely.
Parties Involved	Project Proponent

Parameter	W
Responsibilities of Parties Involved	Assess eligibility of wells for inclusion in the project.
Notes	

Parameter	FFj
As per Monitoring Report	
Units	Gallons
Description	Fuel used for plugging activities and considered for project emission deductions
Methodology Section	Errata & Clarifications; Section 4.4
Equation #(S)	3
Source of Data	Plugging company invoice
Measurement Frequency	1/fuel/plugging activity
As per GHG Project Plan	
Unit of Measurement	gallons
Project Implementation	Fuel used for plugging activities and considered for project emission deductions
Technical Description of Monitoring Task	The plugging contractor tracks the amount of time each fuel-burning piece of equipment is on site and used in a plugging activity on a day-by-day basis. This time is tracked in invoices, where the plugging contractor describes the amount of field used for the wells in the project. Fuel used is calculated or estimated using the known fuel burn for each piece of equipment. Fuel usage is then aggregated. The project proponent then converts the fuel usage into project emissions by using the working hours of the fossil fuel consuming equipment to calculate the fossil fuel usage based on the fuel consumption rate of each equipment.
Data Source	Plugging company invoice
Data Collection Procedures	The plugging contractor supplies Tradewater with the fuel invoice.
Methodology Reference	Equation 3
Data Uncertainty	Medium
Monitoring Frequency	1/fuel/plugging activity
Reporting Procedure	Invoice
QA/QC Procedure	The project proponent will accept fuel numbers across multiple sites, even sites not included in the project, to garner the most conservative value for fuel usage in the project. Any discrepancies or errors are discussed with the plugging contractor and rectified.
Data Archiving	All invoices, regardless of inclusion in a project or not, are saved to the Tradewater SharePoint indefinitely.
Parties Involved	The plugging contractor and Project Developer: Methane Project Development Manager
Responsibilities of Parties Involved	Invoice working hours of the fossil fuel consuming equipment and calculate the fossil fuel usage.
Notes	

Parameter	Post-plugging methane screening
As per Monitoring Report	
Units	ppm
Description	Field measurement taken after plugging the well
Methodology Section	Errata and Clarifications
Equation #(S)	N/A
Source of Data	SEM5000
Measurement Frequency	1/well
As per GHG Project Plan	
Unit of Measurement	ppm
Project Implementation	Field measurement taken after plugging the well
Technical Description of Monitoring Task	The QED Landtec SEM5000 Portable Methane Detector is used to measure methane concentration at the ground surface and any portion of the plugged well casing that remains above grade after plugging. In some cases, plugged wells have already been cut off below grade but not yet buried; in this instance, any portion of the casing that is visible is measured. Measurements are taken at ambient pressure and temperature.
Data Source	SEM5000
Data Collection Procedures	Data is stored on the instrument software, downloaded to instrument software, and then downloaded into a readable format (Excel) and then transferred to SharePoint.
Methodology Reference	Clarifications 3, 4, 8, 13, Errata 16
Data Uncertainty	Low
Monitoring Frequency	1/well
Reporting Procedure	Excel download
QA/QC Procedure	Raw files are saved and untouched, where data is processed in a separate file. During measurement, at least two team members are responsible for instrument observation and data output monitoring. All processed data is checked by an internal reviewer.
Data Archiving	All measurements, regardless of inclusion in a project or not, are saved to the Tradewater SharePoint indefinitely.
Parties Involved	Project Developer: Methane Project Development Manager and Emissions Specialist
Responsibilities of Parties Involved	Set up sampling equipment, take measurements, save data, process data
Notes	

Parameter	Pre-plugging: Conc measured, ambient Post-plugging: ambient methane emissions
As per Monitoring Report	
Units	ppm
Description	Field ambient measurement taken before and after plugging the well
Methodology Section	Errata and Clarifications
Equation #(S)	B
Source of Data	SEM5000

Parameter	Pre-plugging: Conc measured, ambient Post-plugging: ambient methane emissions
Measurement Frequency	Pre-plugging: 1/sampling event Post-plugging: 1/well
As per GHG Project Plan	
Unit of Measurement	ppm
Project Implementation	Field ambient measurement taken before and after plugging the well
Technical Description of Monitoring Task	The QED Landtec SEM5000 Portable Methane Detector is used to measure ambient methane concentration. Measurements are taken at ambient pressure and temperature.
Data Source	SEM5000, as approved in the submitted MMMAF
Data Collection Procedures	Data is stored on the instrument software and downloaded into a readable format (Excel) and then transferred to SharePoint.
Methodology Reference	Errata 16, Clarification 8 and Equation B
Data Uncertainty	Low
Monitoring Frequency	Pre-plugging: 1/sampling event Post-plugging: 1/well
Reporting Procedure	Excel download
QA/QC Procedure	Raw files are saved and untouched, where data is processed in a separate file. During measurement, at least two team members are responsible for instrument observation and data output monitoring. All processed data is checked by an internal reviewer.
Data Archiving	All measurements, regardless of inclusion in a project or not, are saved to the Tradewater SharePoint indefinitely.
Parties Involved	Project Developer: Methane Project Development Manager
Responsibilities of Parties Involved	Set up sampling equipment, take measurements, save data, process data
Notes	Conc measured, ambient = 0 due to direct flow measurements, "*Ambient emissions measurements are not required during pre-plugging sampling events if measurement equipment is directly connected to the leaking well, and therefore not impacted by the ambient methane*."

16.3.6 GHD Review of Monitoring Parameters

GHD reviewed the GHG Project Plan for this Project and determined that the parameters monitored, and the approach taken by the Project Proponent to determine the emission reductions conforms to the ACR Methodology. GHD confirmed that the monitoring parameters listed and described in the GHG Project Plan were appropriately reported in the Monitoring Report as included in Section 16.3.5.1 above.

GHD confirmed that the 'non-steady state enclosure-based measurement' associated monitoring parameters as provided in the E&C did not apply to the project and were not included as part of the project's monitoring parameters. GHD confirmed that all applicable parameters were included and aligned with the unit, source and frequency of monitoring requirements of Table 5.2.1 of the E&C.

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

Quantitative materiality for GHG emissions reductions for this 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 GHG Project Plan and Monitoring Report is 0 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 Methodology requirements. No material qualitative non-conformances were identified.

16.5 Corrections Made to GHG Project Plan

Tradewater made the following significant changes to the GHG Project Plan during the validation:

– Updated reported baseline emissions and emissions reductions per immaterial discrepancies identified
– Updated GHG Project Plan and appendices per qualitative issues identified

16.6 Corrections Made to Monitoring Report

Tradewater made the following changes to the Monitoring Report during the verification:

– Updated reported baseline emissions and emissions reductions per immaterial discrepancies identified

16.7 Follow up on Issues from Previous Validation/Verification

As this is GHD's first validation/verification of the TW OOG 3 project, follow-up from previous validations/verifications is not applicable.

16.8 GHG Data and Information

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

17. Validation and Verification Opinion

GHD has prepared this Validation and Verification Report for Client and Program. Client was responsible for the preparation and fair presentation of the GHG Project Plan dated **August 18, 2025**, and Monitoring Report dated **September 3, 2025**, for the Tradewater OOG 3 project in accordance with the Program criteria and engaging with a qualified third-party validator/verifier to validate and verify the GHG Project Plan and Monitoring Report. Project GHG-related activity is detailed in Sections 7 and 8.

GHD's objective and responsibility was to provide an opinion regarding whether the GHG 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 crediting period and reporting period, and accurate and consistent with the requirements of the Program.

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

17.1 Validation Conclusion

Based on the validation procedures undertaken, it is GHD's opinion that the GHG Project Plan is materially correct and is a fair and accurate representation of the Project, that the GHG Project Plan was prepared in accordance with the Program and that the Project meets the Program requirements.

17.2 Verification Conclusion

Client reported **271,319 tonnes CO_2e** as the total emissions reductions for the crediting period for the Project. This includes the GHG emissions reductions resulting from **April 7, 2025 – April 7, 2045.** The quantitative aggregated magnitude of errors, omissions, and misstatements is discussed in Section 16.

Based on the verification procedures undertaken to a reasonable level of assurance, it is GHD's opinion that the GHG Project Plan and Monitoring Report are materially correct and is a fair and accurate representation of the Project's total attributable emissions reductions for the crediting period; and that the GHG Project Plan and Monitoring Report was prepared, and emissions reductions were quantified in accordance with the Program.

This Opinion is effective as of the date of this Validation and Verification Report.

The ACR Validation and Verification Opinion form has been separately submitted on the ACR registry.

18. 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 and verification were 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 and 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 and verification were 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 Report and/or assertion were identified by GHD.

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

GHD's review of the GHG Project Plan and Monitoring Report included only the information discussed above. While the review included observation of the systems used for determination of the GHG 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

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Encl.

Copy to: Angela Kuttemperoor, Validator/Verifier
Elnaz Senobari Vayghan, Validator/Verifier

Appendices

Appendix A

Verification Plan

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Our ref: 12636696-LTR-1-Rev3

September 08, 2025

Ms. Gina Sabatini
Manager of Verification and Logistics
Tradewater, LLC
1550 W. Carroll, Suite 213
Chicago, Illinois
60607

Validation and Verification Plan
Tradewater OOG 3 (ACR1043), Tradewater, LLC, Macoupin County, Illinois, United States, under ACR

Dear Ms. Sabatini

1. Introduction

Tradewater, LLC (Client) retained GHD Services Inc. (GHD) to undertake a validation and verification of project Tradewater OOG 3 (Project) for the April 7, 2025 – April 8, 2025 reporting period and April 7, 2025 – April 7, 2045 crediting period. The Project involves three (3) wells located in Macoupin County, Illinois and follows the requirements of ACR (Program). The Project is listed under the Program ID: ACR1043.

The Program requires the validation of the Greenhouse Gas Project Plan (GHG Project Plan) for each crediting period and verification of the Monitoring Report (Monitoring Report) for each reporting period by an independent third-party accredited under *ISO 14065 Greenhouse Gases – Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition* (ISO 14065). GHD Limited is accredited by the ANSI National Accreditation Board (ANAB) under ISO 14065 as a greenhouse gas validation and verification body (VVB).

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

2. Validation and Verification Objective

The objective of the validation is to provide Client and the Program with an opinion on whether the GHG Project Plan for the crediting period is free of material misstatement 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 Program with an opinion on whether the Monitoring Report for the reporting period is free of material misstatement and that the information reported is accurate and consistent with the requirements of the Program.

3. Level of Assurance

The ACR Validation and Verification Standard does not specify a level of assurance for validation.

The verification will be conducted to a reasonable level of assurance.

Reasonable assurance is a high but not absolute level of assurance. Reasonable assurance provides a high level of confidence to intended users of verification opinions that the stated information is accurate and complete. If a verification opinion can be provided, it will be worded in a manner similar to "Based on our verification, the GHG emissions assertion is, in all material aspects, in accordance with the approved quantification methodologies."

The validation and verification opinions will be provided in the ACR Validation and Verification Opinion standard form, Version 1.2, dated October 11, 2024. As per ACR requirements, if a validation or verification opinion can be provided, the opinion type will be specified as either positive or negative.

4. Validation and Verification Standards

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

5. Validation and Verification Criteria

GHD will apply the following validation and 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)
– IAF Mandatory Document for the Use of Information and Communication Technology (ICT) for Conformity Purposes: Issue 3, International Accreditation Forum, Inc., January 2025 (IAF MD 4:2025) *
– The ACR Standard: Requirements and Specifications for the Quantification, Monitoring, Reporting, Verification, and Registration of Project-Based GHG Emissions Reductions and Removals, ACR, Version 8.0, dated July 2023 (ACR Standard)
– ACR Validation and Verification Standard Version 1.1, ACR, dated May 2018 (ACR VV Standard)
– ACR Methodology for the Quantification, Monitoring, Reporting and Verification of Greenhouse Gas Emissions Reductions and Removals from Plugging Orphaned Oil and Gas Wells in the U.S. and Canada, ACR, Version 1.0, dated May 2023 (Methodology)
– Errata and Clarifications: ACR Methodology for the Quantification, Monitoring, Reporting and Verification of Greenhouse Gas Emissions Reductions and Removals from Plugging Orphaned Oil and Gas Wells in the U.S. and Canada, ACR, dated June 23, 2025 (E&C) *
– Tradewater OOG3 ACR Methane Measurement Method Approval Form (MMMAF) *

Note:

* - Denotes change from Proposal

6. Validation and Verification Team & Independent Reviewer

6.1 Roles, Responsibilities & Qualifications

Lead Validator/Verifier/Specialist	
Name	Sean Williams, P. Eng.
Role	The lead validator/verifier will lead the validation/verification and is responsible for development of the validation/verification plan. The lead validator/verifier will review the risk assessment and evidence gathering plan, recalculation of raw data, data management and draft findings. The lead validator/verifier will prepare and sign the validation/verification statement and validation/verification report. The lead validator/verifier will conduct an in-person site visit of the Project site.
Qualifications	Mr. Williams is a Project Manager, GHG Lead Verifier and Technical Expert and with over 10-years of experience in environmental consulting, and is a licensed Professional Engineer in the provinces of Alberta, Saskatchewan and Ontario. Mr. Williams has experience in completing greenhouse gas verifications, permit applications, air and noise compliance assessments, completion of annual inventory reports under various voluntary, provincial and federal regulations across Canada. Mr. Williams is an accredited lead verifier under the California Air Resources Board and Oregon Department of Environmental Quality. Mr. Williams has significant air and GHG expertise in a variety of industrial sectors, including oil sands extraction and upgrading, refineries, chemical plants, mining and mineral production, power generation facilities, waste management and metals production. Mr. Williams serves as the Greenhouse Gas Assurances Services (GGAS) Manager for GHD's ANAB accreditation.

Validator/Verifier	
Name	Angela Kuttemperoor, E.I.T.
Role	The validator/verifier is responsible for development of the validation/verification plan. The validator/verifier will review the risk assessment and evidence gathering plan, recalculation of raw data, data management and draft findings. The validator/verifier will prepare the validation/verification statement and validation/verification report.
Qualifications	Ms. Kuttemperoor is an Air Engineer-In-Training with GHD's Greenhouse Gas Assurances Services Team and has 3.5 years of experience in greenhouse gas verification work. Ms. Kuttemperoor has a Bachelor of Environmental Engineering from the University of Guelph. Ms. Kuttemperoor has experience as a verifier under the Ontario Emissions Performance Standards program and federal Output-based Performance Standards program. Ms. Kuttemperoor has expertise in voluntary offset project validations and verifications conducted under the Climate Action Reserve, American Carbon Registry and Verified Carbon Standard for landfill gas destruction, ozone-depleting substances destruction and orphan well plugging projects. Ms. Kuttemperoor has experience with compliance offset verifications for ozone-depleting substances conducted under the California Air Resources Board. Ms. Kuttemperoor has experience in verifications conducted under the Carbon Offsetting and Reduction Scheme for International Aviation.

Validator/Verifier	
Name	Elnaz Senobari Vayghan, E.I.T., M.Sc.
Role	The validator/verifier is responsible for development of the validation/verification plan. The validator/verifier will review the risk assessment and evidence gathering plan, recalculation of raw data, data management and draft findings. The validator/verifier will prepare the validation/verification statement and validation/verification report.
Qualifications	Ms. Senobari is an Air and Climate professional with GHD based in Vancouver office and is a member of the air and greenhouse gas department. She graduated with a Masters degree in

Validator/Verifier	
	Chemical and Petroleum Engineer with specialization in Energy and Environmental Systems from the University of Calgary. She has extensive knowledge and experience in GHG quantification and verification in various sectors, including the oil and gas, mining and material production, and upgrading and refining sectors. She has experience being involved in carbon offsets projects and emission reduction projects in oil and gas and land use sector. She has been involved with reporting under the Greenhouse Gas Industrial Reporting and Control Act in British Columbia, The Management and Reduction of Greenhouse Gases in Saskatchewan and the Environmental Protection and Enhancement Act (APEA) as well as the Technology Innovation and Emissions Reduction (TIER) regulation in Alberta. She also has been involved with federal reports with NPRI, MSAPR, and SGRR.

Independent Reviewer/Specialist	
Name	Gordon Reusing, P. Eng., M.Sc.
Role	The independent reviewer will conduct an independent review of the risk assessment, evidence gathering plan, working papers, verification plan, verification report, and findings. The independent reviewer will approve the issuance of the opinion.
Qualifications	Mr. Reusing is a greenhouse gas (GHG) Lead Verifier, Lead Validator, and Peer Reviewer with extensive experience including GHG programmes in Alberta, British Columbia, Saskatchewan, 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). He 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, British Columbia, Alberta, Ontario, Quebec, and Nova Scotia.

7. Project Description

The Project involves the plugging of three (3) orphan oil and gas wells located in the state of Illinois, United States. During the baseline condition, the wells leak methane to the atmosphere. The project condition plugs these wells, resulting in a decrease of methane emissions.

7.1 Client Contact

Ms. Gina Sabatini (Manager of Verification and Logistics) is GHD's Client contact for this validation and verification.

8. Validation and Verification Scope

The following sections describe the scope of the validation and 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 ACR Methodology:

Table 8.1 Methodology Requirements

SSR		Source Description	GHG	Baseline (B) Project (P)	Included (I) or Excluded (E)
1.	Orphan O&G wells that emit methane	Emissions from orphan wells	CH_4	B	I
2.	Plugging Operations (Equipment)	Emissions from mobile mechanical equipment for plugging	CO_2 CH_4 N_2O	P	I

8.2 Geographical and Operational Boundaries

The validation and verification will include the SSRs from the Project which includes three (3) wells, as listed below and located at the following addresses in Illinois, United States.

Well Name	Permit #	API Number	State Well Reference Number	County	Geographic Coordinates
Blackburn University #2	036311	1211722766	129109	Macoupin	39.15975, -89.97626
Haley #1	033810	1211722712	129114	Macoupin	39.17393, -89.96527
Lincoln Cameron #1	037344	1211722790	113306	Macoupin	39.146393, -90.031594

8.3 Reporting and Crediting Period

The start date for the Project is April 7, 2025. The crediting period for this validation for the Project is from April 7, 2025 – April 7, 2045.

The reporting period for this verification for the Project is from April 7, 2025 – April 8, 2025.

8.4 Use of this Report

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

References from GHD's Validation and Verification Report must use the language in which the opinion was issued and reference the date of issuance of GHD's Validation and Verification Report, the applicable validation and verification period and the associated program for which the validation and 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 and 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.

8.5 Use of Information and Communication Technology

As part of the validation and 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 4:2025) for various aspects of the validation and verification, including conducting video/tele-conferencing with various personnel.

The decision to use ICT is permissible if GHD and Client agree on using ICT. The agreed ICT method will be MS Teams, Zoom, Google Meet, or Webex. By accepting GHD's proposal, 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 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 and verification process, including use of ICT, GHD will abide by the confidentiality procedures.

9. Site Visits

9.1 Site Visit Requirements

Per the ACR Standard, a site visit is required for validations and the first verification for the GHG Project. GHD will conduct an in-person site visit during baseline measurement 2, for 2 of the 3 wells in the project as listed below, as part of the validation and verification:

Well Name	Permit #	API Number	State Well Reference Number	County	Geographic Coordinates
Blackburn University #2	036311	1211722766	129109	Macoupin	39.15975, -89.97626
Haley #1	033810	1211722712	129114	Macoupin	39.17393, -89.96527

9.2 Site Visit Agenda

The site visit 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 and verification process:

- Opening Meeting - Introduction and sign in, safety review, and overview of validation and verification process and expectations (key personnel need to be present).
- Overview of emissions processes at the Project site, including description of key emission sources and a facility walkthrough.
- 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 calculations, and any 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 acquisition 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 and Verification Schedule

The following presents the validation and verification schedule:

- Submit Validation and Verification Plan to Client – January 17, 2025 (original submission)
- Validation of GHG Project Plan – February-May 2025
- Data checks and recalculations of Monitoring Report – February-May 2025

- Site Visit – January 22, 2025
- Review of data management, document retention and record keeping program – February-May 2025
- Submit issues log to Client and opportunity for Client to address issues and, if required, resubmit GHG Project Plan/Monitoring Report – February-May 2025
- Independent review by Independent Reviewer – May 2025
- Issue Draft Validation and Verification Report and Opinion – May 2025
- Issue Final Validation and Verification Report and Opinion – May 2025 (initial submission with final submission in September 2025)

11. Strategic Analysis

To understand the activities and complexity of the Project, and to determine the nature and extent of the validation and verification activities, GHD has completed a strategic analysis. The strategic analysis involves consideration of the details of the Project Site and its operations, the GHG Project Plan and Monitoring Report and its preparation, and the validation and 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 GHG Project Plan assertion and Monitoring Report statement. 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 and verification risk to an acceptable level and specifies the evidence (data and information) that will be reviewed as part of the validation and verification in the evidence gathering activities. The EGP was reviewed and approved by the Lead Validator and Verifier prior to issuing this validation and verification plan. The EGP is dynamic and will be revised, as required, throughout the course of the validation and verification. Any modifications to the EGP will be reviewed and approved by the Lead Validator and Verifier, with the final EGP to be completed prior to issuing the final validation and verification report and opinion.

14. Quantitative 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. Where data is not available, GHD will conduct a qualitative assessment and assess that the methodologies used in the development of the GHG Project Plan conform to the Program's applicable Protocol.

GHD will use the data to recalculate and check the GHG emissions reductions calculations and assess the methodologies that were used in the development of the Monitoring Report.

15. Materiality Level

The quantitative materiality for this verification is set at 5 percent of the reported emissions reductions, as per the requirements of the Program. In addition, a series of discrete errors, omissions, or misrepresentations of individual or a series of qualitative factors, when aggregated, may be considered material. Individual and aggregation of errors or omissions greater than ±1% but less than ±5% will be qualified in the Verification Opinion but do not require restating.

Materiality will 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 deviation.

16. Validation and Verification Methodology

The following provides a general overview of the validation and verification methodology that will be conducted.

Conflict of Interest (COI) and Independence

GHD has undergone a thorough evaluation for conflict of interest (COI) and independence for this validation and verification work. This included a review of other potential work conducted by GHD for Client and Project listed in the scope of work. We have confirmed that this validation and verification work can be successfully completed without undue risk of impartiality and conflict of interest. We have assessed the following key aspects:

– Validation evaluation
– Verification evaluation
– Team evaluation

GHD has rigorous COI and validator and verifier competency evaluation procedures that are followed for every validation and verification project. Our documented procedures ensure that all COI and independence criteria are properly evaluated. GHD's COI program ensures that both the company and the Project Team have no potential COIs.

GHD has also evaluated and approved our Validation and Verification Team's competencies. GHD sets competency requirements in terms of education, validation and verification experience, and experience in the sector. GHD can attest that we have highly qualified staff with the appropriate technical expertise for the validation/verification work.

Kick-Off Call

Upon award of the contract, GHD will conduct a kick-off call between Client and the GHD project team to review the validation and verification process and objectives, Project operations, project schedule, site visit schedule and information requests.

Risk-Based Approach

The GHD Project Team will use a risk-based assurance approach to focus and to determine the detailed scope of the validation and verification.

The key risks associated with the GHG Project Plan and GHG emission estimates are the elements that are critical for ensuring that the GHG Project Plan/an inventory is free of material misstatements:

– Based on the information provided in the GHG Project Plan and Monitoring Report, the GHD Project Team will identify the key risks associated with the assumptions and claims made, and the data sources used.
– The completeness, conservativeness, and accuracy of the underlying evidence for the assumptions/claims made, and data sources used, will be reviewed. Assumptions/claims and data sources that are well identified and discussed in the report, that are substantiated with information from reliable references, and which are sufficiently controlled through the QA/QC plan should thus be given less emphasis because of a lower level of risk.
– The results of this investigation shall then, together with the results of the review of other areas, give the necessary input for the validation and verification opinion.

Risks can be classified in risk categories (e.g., High, Moderate, and Low). A risk may be high, moderate or low depending on the issue's potential to cause a misstatement of the emissions. In addition, a non-compliance with Regulation can form a high-risk situation.

GHD has extensive experience in risk assessments. The classification of risk as high, moderate or low is largely subjective and will require the GHD Project Team's expert judgement. The designated GHD Lead Validator/Verifier has a thorough understanding of the risks and uncertainties applicable to the assignment.

If an issue is classified as high risk, appropriate Project staff shall clarify the situation, explain how the risk is reduced, and provide more information.

Documentation Review and Emissions Reductions Recalculations

GHD will review the information provided for the GHG Project Plan and will assess the validation. GHD will assess validation requirements determine whether there are any material issues.

GHD will review the information provided for the Project and will conduct recalculations of the baseline, project emissions and emissions reductions. GHD will assess the quantitative discrepancy based on the recalculations and determine whether there are any material issues.

The components of the document review and follow-up interviews are detailed below.

– Document Reviews:
  - Review of data and information to confirm the correctness and completeness of presented information.
  - Cross-checks between information provided in the GHG 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.
  - Comparison of reported emissions and emissions reductions with previous reporting period(s).
  - Assess compliance with all Program validation requirements.
– Follow-up Interviews:
  - On-Site
  - Via telephone
  - Via email

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

The GHD Project Team will interview Project staff in order to:

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

GHD will complete data checks from the data source(s) (meter, scale, etc.) through the plant data management system to the Monitoring Report. A sample of raw data will be collected for recalculation. 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 but, as a VVB, GHD cannot provide solutions to issues identified.

Issues Communications

During the course of the document review and interviews, questions and clarifications may be identified by the Project Team; these will be communicated with Client either verbally, by email, or in an Issues Log. Client and/or Project staff will have an opportunity to respond to identified issues prior to the completion of GHD's draft and final validation and verification reports. Material issues identified by GHD must be corrected by Client. It is expected that Client and/or Project Owner will respond promptly to issues raised by GHD. Extensive correspondence to address issues that require additional effort from GHD may result in extra costs to the validation and verification and will be discussed with Client.

Independent Review

GHD will conduct an independent review of the validation and verification, which will include a review of findings, emission calculations and opinion developed by the validation and verification team.

Documentation and Deliverables

GHD will prepare the following deliverables to document the validation and verification services provided:

– ACR-specific COI form
– Statement of Qualification (included in this proposal)
– Validation and Verification Plan (prior to site visit and after receiving relevant information)
– Draft Validation and Verification Report
– Final Validation and Verification Report
– Validation and Verification Opinion (included in Validation and Verification Report and using ACR Validation and Verification Opinion Template)

Support of Validation and Verification Report Findings

GHD will support and uphold the findings of the validation and verification if the report is subject to an audit by the Program. If the Program requires follow-up information that is determined to be significant in nature or outside of the original scope of work, GHD may require additional budget to cover the response(s).

16.1 Validation Activities

The following outlines the validation activities that may be conducted as part of GHD's validation process, in alignment with the Program-specific validation requirements.

Information/Records to be Reviewed

Information/records to be reviewed by GHD include the following:

– GHG Project Plan
– Operational and control procedures and records for ensuring GHG data quality
– Documentation of GHG Sources, Sinks and Reservoirs
– Documentation of quantification methodology
– Documentation of monitoring and measurement systems

Validating Project Boundaries

GHD will validate the Project boundaries outlined in the GHG Project Plan which will include the following:

– Physical or geographic boundaries
– GHG assessment boundary
– Temporal boundary

Validating Project Baselines

GHD will confirm that the baseline applied by the project proponent in the GHG Project Plan is appropriate per the applicable Program methodology. GHD will ensure there is verifiable data for the baseline scenario, including selection rationale and justification, that the required guidance was followed for baseline and project emissions estimation, and that there is consistency across post-baseline year project emissions calculations.

Validating Additionality

GHD will evaluate the components of the appliable Program additionality demonstration, which may include, for example:

– Regulatory Surplus Test
– Performance Standard Test
– Legal Compliance Test
– Financial Test

Validating Quantification Methods

GHD will validate the following:

– The required Program quantification method for each data parameter is clearly defined, and supporting documentation provided is adequate to support the level of assurance required.
– The methods are appropriate for accurately quantifying each data parameter based on the required level of assurance.
– The methods are applied consistently to develop estimates of emission reductions and removal enhancements.
– The principle of conservativeness is applied.

Validating Other Project Criteria

In addition to the above, GHD will review the following components within the GHG Project Plan:

– Start date
– Crediting period
– Minimum project term

– Offset title
– Impermanence and risk mitigation
– Leakage
– Environmental and community impacts
– Double issuance, double selling, and double use of offsets
– Project participating in other offset programs

16.2 Verification Activities

The following sections outline the activities that may be included in GHD's verification process.

Information/Records to be Reviewed

Information/records to be reviewed by GHD include the following:

– Monitoring Report
– GHG Assertion
– Operational and control procedures and records for ensuring GHG data quality
– Documentation of GHG Sources, Sinks and Reservoirs
– Documentation of quantification methodology
– Documentation of monitoring and measurement systems

Data Assessment and Management Systems

GHD will review data assessment and management system documentation that describes the process of data collection, entry, calculation, and management. GHD will review the following:

– Selection and management of GHG data and information
– Processes for collecting, processing, aggregating, and reporting
– Systems and processes to ensure accuracy
– Design and maintenance of the GHG data management system, including systems and processes that support it

GHD will assess effectiveness of the data assessment and management system and determine areas of risk.

Collection of Evidence

GHD will collect physical, documentary, and testimonial evidence to verify the Project.

Error Checking/Testing

GHD will independently calculate the final emission reductions using Client's raw data to ensure that the correct methodology and raw data was used.

During the verification process, GHD will consider both quantitative and qualitative information on emission reductions. Quantitative data is comprised of the Monitoring Report and supporting data. Qualitative data is comprised of information on internal management controls, calculation and transfer procedures, frequency of emissions reports, and review and internal audit of calculations/data transfers.

17. Closure

The Validation and 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 and verification process.

All of Which is Respectfully Submitted,

GHD

Sean Williams
Lead Validator/Verifier

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sean.williams@ghd.com

Copy to: Gordon Reusing, Independent Reviewer, GHD

Appendix B

Issues Log

Issues Log

Exported Copy

Revision 4-closed
Date May 23, 2025

Project Number	12636696
Program-Specific Project ID	ACR1043
Client	Tradewater, LLC
Facility Name	Tradewater OOG 3
Regulation / Program	ACR
Reporting Year	2025-04-07 to 2025-04-08

Issue No.	Issues / Questions	Explanation/Response	Status
1	Please provide link to Illinois Well Records Database and original permittee information for the wells. **GHD Response:** Per the PDF document, the Blackburn and Haley wells are listed and indicated as plugged with plugging date, however the Lincoln well is not listed. Please indicate what is the evidence that Illinois DNR has record of the Lincoln well as being plugged.	The database for wells as part of the Plugging and Restoration Fund (PRF) progam can be viewed here: https://dnr.illinois.gov/oilandgas/iija-federal-projects/wells-prf-program.html and accessed in PDF format here: https://dnr.illinois.gov/content/dam/soi/en/web/dnr/oilandgas/documents/oilandgasfillableforms/plugging-and-restoration-fund-well-list.pdf As these wells are orphaned, the original permittee is no longer responsible for the well and therefore not relevant to the project. Additional Response: The Lincoln well is evidenced as plugged via the completed plugging report issued by the IL DNR (included in the folder).	Closed
2	Please provide evidence/State attestation that plugging was carried out in accordance with the well Plugging Plans, to demonstrate that plugging/the project was in regulatory compliance. **GHD Response:** Please clarify whether the DNR inspector as noted on the Plugging Reports witnessed plugging operations on-site.	The signed Plugging Reports confirm that the plugging occurred according to the process outlined in the plan. These reports are have been added to the folder. Additional Response: The DNR inspector was not on-site during plugging, but instead completed an on-site inspection after plugging as is the IL DNR process.	Closed
3	**The following typographical issues/clarifications were identified in the GHG Project Plan:**		
Section A4	a) Per Illinois Orphan Well list, well name is Blackburn University #2, GHG Plan has #4.	Corrected.	Closed
	b) With reference to the following text: 'A cast iron bridge plug … below the surface and removed..' Please confirm and provide clarification in the GHG Plan that the plugging operations described, are applicable to all the wells plugged as part of the Project.	Yes, the process described is applicable to all wells in this project and the language has been adjusted in the GHG Plan.	Closed
	c) With reference to the following text: 'all equipment was used only within known specified ranges …', Consider clarification of statement to indicate rather that data obtained from equipment was found to meet the known equipment-specified ranges. Additinally, text 'when sampling occurred' refers only to methane analyzer, please consider adding wording 'measurements' which references the additional equipment used such as flow/pressure meters, if confirmed by Tradewater.	Language added.	Closed
	d) After text 'Characteristics of the well' consider adding words 'flow' or 'emissions data', as calibrations are with respect to parameters of the well flow/emissions.	Text edited.	Closed
	e) 'With reference to the following text: 'However, all the reported 10-minute measurement intervals contain data that were recorded simultaneously in all three instruments,' May want to additionally note that the 2-hour measurement interval of methane concentration, flow and pressure data, chosen for the emissions calculations/stability analysis for each baseline measurement was the same 2-hour data period between the parameters.	Added.	Closed
	f) With reference to the following text: '.. To easily match to the measurement event.' Consider modifying phrasing along the lines of 'to enable tracing the data to the correct measurement event.'	Language adjusted.	Closed

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Revision 4-closed
Date May 23, 2025

Project Number	12636696
Program-Specific Project ID	ACR1043
Client	Tradewater, LLC
Facility Name	Tradewater OOG 3
Regulation / Program	ACR
Reporting Year	2025-04-07 to 2025-04-08

Issue No.	Issues / Questions	Explanation/Response	Status
Section A5	g) Please fill in the reporting period, start date and crediting period once determined for all applicable sections of the GHG Project Plan. **GHD Response:** Crediting period contains error in Section A5, included as '04/07/2025 – 04/07/2025' instead of '04/07/2025 – 04/07/2045.'	Dates added. Additional Response: Corrected.	Closed
	h) Table 2 - With reference to the following text: 'There is no risk of reversal for this project. The minimum project term is therefore not applicable.' In all other instances within GHG Plan, it mentions that reversal risk is minimal instead of none. May consider clarifying the 'no risk of reversal' in Minimum Project term section to indicate that it is minimal however is therefore considered none according to the ACR Standard.	Done.	Closed
	i) Table 2 - section Regulatory Compliance - text indentation deviates from the formatting of the rest of Table 2.	Corrected.	Closed
Section A8	j) Please note that phone number for Janis Bacon does not match phone number on the Access Acknowledgement Form.	The contact number in the GHG Plan has been updated to match the number provided on the Access Form. Note that the Bacon householded uses both numbers.	Closed
	k) A8 - Access Acknowledgement Form may indicate that spelling of landowner name is Wittshire not Wiltshire, please reconfirm.	Confirmed that the landowner name is Wiltshire, not Wittshire.	Closed
	l) David Haley is listed as the landowner however is not listed as the landowner on the Access Acknowledgement Form. Additionally, there is no phone number listed on the Access Acknowledgement Form.	David Haley is the main contact for managing his mother's, Marjory L. Haley's, property, but she is the landowner and therefore represented on the access form. Her name has been added to the GHG Plan. The phone number provided in the GHG Plan and MSDD reflect the contact number.	Closed
Section B6	m) Mentions that the the plugging company had license to operate in Illinois. Please provide license. **GHD Response:** The fuel usage invoice as used for project emissions calculations, is produced by R & S OPERATING, LLC, however the Plugging Reports indicate that the plugging contractor was Franklin Well Services LLC. The license provided is for R & S OPERATING, LLC. Please clarify.	The license has been added to the folder. Additional response: Franklin Well Services LLC is a subcontractor of R & S Operating, LLC and was utilized for cementing operations.	Closed
	n) Plugging operations and distances described do not exactly match operations described in Section A4.	The language in A4 has been edited to align with B6.	Closed
	o) Please update Table 6 with the environmental conditions for wells 113330 and 129114.	Added.	Closed
Section G1	p) In this seciton, may want to include the dates of plugging plan approval for each well in the Project.	Added.	Closed
	q) Please indicate the role of Tradewater Well Services, LLC with respect to credit ownership.	Language added.	Closed
	r) Appendices table - please indicate what the * symbol refers to.	The asterisk if part of ACR's template and indicates that those documents must be submitted to the ACR Registry (as an appendix or separate file). To avoid confusin, the asterisks have been removed.	Closed
	s) Please provide the signed GHG Plan once all issues are resolved.	Once confirmed closed, we will have the GHG Plan signed	Closed
4	**The following issues were identified in the Multi-Site Design Document**		
	a) Note that Section IV question 6 is not required to be checked as Section IV is only relevant for PDA projects.	Corrected.	Closed
	b) Crediting period date listed for each well is to be updated based on the crediting period determined following the completion of final post-plugging monitoring activities.	Added.	Closed

Issues Log

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Revision 4-closed
Date May 23, 2025

Project Number	12636696
Program-Specific Project ID	ACR1043
Client	Tradewater, LLC
Facility Name	Tradewater OOG 3
Regulation / Program	ACR
Reporting Year	2025-04-07 to 2025-04-08

Issue No.	Issues / Questions	Explanation/Response	Status
	The following issues were identified based on re-calculation of baseline emissions for the Blackburn well.		
5	a) In the SEM Measurement windows file for M1, there is an error for the Gas value for the first 10-minute interval (cell AT6), where the gas value is not being expressed as a percentage.	Value is now expressed as a percentage.	Closed
	b) The timestamps in the M2 methane concentration raw data are duplicated, and the methane averages are being calculated based on duplicate concentration data.	Yes, it seems like the instrument recorded duplicates for each measurement. However, even if there are duplicate entries for some measurements, the average remains the same.	Closed
	c) The 2-hour stability period selected for the M1 flow calculations does not exactly match the period selected for M1 methane concentration calculations. Using the same window as the methane concentration data, the M1 flow average for the period appears to be 2% higher than calculated by Tradewater. **GHD Response:** The noted difference in the start time selected for the 2-hour periods is in the Measurement window files, where the Blackburn M1 methane concentration file has 12/18/2024 11:29:54 AM as the 'Timestamp start' where the Blackburn M1 flow file has 12/18/2024 12:24:53 PM as the 'Timestamp start'. The 1-hour difference has been explained due to the timezone issue however there was still a 5 minute difference. Based on re-calculations there is no discrepancy from using flow data starting on 12:29:54 PM to further align with the methane data start time. However, may choose to update the flow file per the above.	This issue seems to be related to the Silversmith Flowmeter recording data in another timezone, please review the following attestation "Armas Time Attestation for SilverSmith - Signed", it should clarify why we are reporting data that looks like if it was 1 hour behind, but it is actually syncronized data. Additional Response: We adjusted the file per GHD's comments.	Closed
	The following issues were identified based on re-calculation of baseline emissions for the Haley well.		
6	a) In the SEM Measurement windows file for M1, the data does not contain the milliseconds within the timestamp that is found in the raw data, resulting in the Elapsed time (column T) containing duplicate elapsed times. Using the start time of 5101 elapsed seconds per cell AM6 and including the milliseconds in the timestamps, GHD identified an atlernate period start time (10:42:20 AM), vs (10:42:01AM) per Tradewater calculations. The resulting discrepancy in average methane concentration for the period is immaterial however the data periods are required to match between the different measured data parameters. **GHD Response:** The milliseconds were not added to the latest provided Haley M1 SEM file '20241120_Haley_SEM5000.xlsx'. As our re-calcs are based on the raw data that contains the milliseconds, we observe that the updated selected stability period start time of 11/20/2024 10:41:48 AM begins at 5069 elapsed seconds instead of 5088. Per our stability analysis re-calc, this results in the second 10-minute interval being 10.011% higher than the M1 period emission rate average (along with the first interval at 13% above average) so 10/12 of the M1 intervals are then not stabilized. As no other signficant discrepancies were identified from re-calculation, the above-noted issue resulted in a 618 tCO2e (0.23%) discrepancy (GHD obtaining higher ERs using the millisecond data that resulted in the unstabilized interval).	There was an error while highlighting data from the the stability window for SEM5000. This error has been fixed. The two measurements still remain within 10% of each other. Additional Response: We have corrected the seconds issue again and picked a new stability window 10 seconds later that complies with all requirements. The documents have been added to the folder.	Closed

Issues Log

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Revision 4-closed
Date May 23, 2025

Project Number	12636696
Program-Specific Project ID	ACR1043
Client	Tradewater, LLC
Facility Name	Tradewater OOG 3
Regulation / Program	ACR
Reporting Year	2025-04-07 to 2025-04-08

Issue No.	Issues / Questions	Explanation/Response	Status
	b) The stability period selected for the M1 methane concentration calculations is not 2 complete hours, as the last timestamp in the raw data is short of the 39344 elapsed seconds that is required to complete 2 hours. **GHD Response:** The above issue included an error and was referring to the M2 methane concentration analysis. Tradewater corrected the issue.	We have modified the window to account for the missing time and the revised documents are in the data room.	Closed
	c) The 2-hour stability period selected for the M1 flow calculations does not exactly match the period selected for M1 methane concentration calculations. **GHD Response:** Updated 'Measuremenet window' files provided indicating that the start time of the selected 2-hour period matches within the methane concentration and flow data files (11/20/2024 10:41:48 AM).	We are unable to identify the issue you are pointing to. We have corrected the error in the SEM values above, and we observe all the timestamps are aligned to the proposed measurement windows and there's enough data to cover all of the proposed measurement windows.	Closed
7	**The following issues were identified based on re-calculation of baseline emissions for the Lincoln well.**		
	a) In the SEM Measurement windows file for M1, the data does not contain the milliseconds within the timestamp that is found in the raw data, resulting in the Elapsed time (column T) containing duplicate elapsed times, and resulting in an inaccurate period start time.	We included the seconds into the SEM Measurement Window File Column R , now the averages are more acurate and the data periods match.	Closed
	b) M1 concentrations per raw data are close to 100% , while M2 is closer to 90%. Please justify the reasonableness of the M1 concentrations.	We occasionally see differences in methane concentration between M1 and M2. Methane concentration equipment (SEM5000) was calibrated appropriately and as such, we believe the raw data obtained from the instrument is reasonable.	Closed
	c) In the SEM Measurement windows file for M2, the data does not contain the milliseconds within the timestamp that is found in the raw data, resulting in the Elapsed time (column T) containing duplicate elapsed times, and resulting in an inaccurate period start time.	We included the seconds into the SEM Measurement Window File Column R , now the averages are more acurate and the data periods match.	Closed
	d) Please note that any corrections applied to the selected time periods made based on the above noted issues ,should be applied to the flow data periods as well.	We are keeping the periods as they were, but now the averages are more accurate.	Closed
8	Please clarify why the following file references the 'Haley' well, did flow measurements for Haley occur on this day? 20250123_IL_Mesaurement_CameronLincoln_Haley_20250123.csv	On 1/23/2025, we did try to measure two wells on the same day: Lincoln Cameron #1 first and Haley #1 second. Unfortunately, an error in equipment setup combined with the environmental conditions led to unreliable data quality that made the second measurement unreliable. We scheduled a follow-up measurement for Haley #1 to ensure we obtained accurate flow values - the subsequent measurement was done on 2/4/2025.	Closed
9	The MMMAF V7 provided does not have the ACR approval signature on it. Please provide evidence of ACR approval of the MMMAF.	Approved version has been added.	Closed
10	Please clarify when MMMAF V5 was approved by ACR for TW OOG3 as this version has the measurement set-up diagrams for the new wells selected for OOG3. However it appears that measurements were being taken before it was approved. Please clarify.	Please reference the deviation granted for the out-of-order approval of the MMMAF.	Closed

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Issue No.	Issues / Questions	Explanation/Response	Status
11	Please provide evidence that the pressure measurement unit for the Haley well are originally in PSIG, as they appear to be corrected to PSIA for the stability calculations. Please confirm whether all well pressure measurements are originally in PSIG. **GHD Response:** Please clarify why only the Haley well pressure data, is being corrected to PSIA for the stability analyses.	All well pressure measurements are originally in PSIG. Additional Response: It was only necessary to correct in Haley because it is the only well that recorded near-zero gauge pressures, indicating the flow pressure is near atmospheric pressure. This results in a mathematical problem due to the proximity to zero, where even the smallest changes of 0.1 PSIg means a percentage change much higher than the 10% allowed. This occurs in every measurement, even when the maximum and minimum recorded pressures have a difference of only 0.66 PSIg. When you correct for atmospheric pressure, the issue is resolved due to the higher tolerance window permitted by comparing PSIa values, which are higher in magnitude than PSIg values.	Closed
12	Please note that as a result of issues 6a) and 7a) mentioned above, the 2-hour stability period determined and used for the pressure stability assessment for the Haley and Lincoln wells may be inaccurate.	We kept the same periods but did the adjustments as explained above.	Closed
13	Please note that the current Project listing form for TW OOG3 does not appear to be updated to include the current wells in the Project.	The edit requests have been made to ACR -- they require the project set-up page be revised but the fields are not editable by the Project Proponent.	Closed
14	Please provide the well Plugging Reports.	These have been added.	Closed
15	Please provide the Monitoring Report.	The report has been added to the Data Room.	Closed
16	In the Q pre-plugging calculation, the 13th 10-minute interval flow and methane concentration values were not included in the formula.	Tradewater provided updated ER calc file OOG3_ ERs_V2.xlsx.	Closed
17	Please provide the Final Monitoring Report and GHG Project Plan with the updated emissions reductions.	Provided ACR1043_GHG Plan_V5.3.pdf and ACR1043_MonitoringReport_V2.pdf.	Closed
18	Please submit the emissions reductions in the ACR Portal, for our review.	Tradewater submitted the credits in the ACR Portal, no issues were identfied.	Closed

Appendix C

Reviewed List

APPENDIX C - DOCUMENT REVIEW REFERENCE LIST
Tradewater, LLC
Tradewater OOG 3 Project Validation and Verification

No.	Document Title	Description
1	ACR1043_GHG Plan_V7.1.pdf	GHG Project Plan (Final Version)
2	ACR1043_MonitoringReport_V4.2.pdf	Monitoring Report (Final Version)
3	ACR1043_LeakingWellAttestation_V1 - signed.pdf	Leakage Evidence
	Photos of environmental conditions	
4	20240501_IL Plugging and Restoration Fund Well List.pdf	Eligibility
	20250129_IL DNR Jessica Donnelly Email - PRF Status.pdf	
	ILDNR Attestations.pdf	
5	Plugging Report Blackburn University.pdf	Regulatory Compliance
	Plugging Report Haley 1.pdf	
	Plugging Report Lincoln Cameron.pdf	
	129109_Blackburn University #2 Plugging Plan.signed.pdf	
	129114_Haley #1 Plugging Plan.signed.pdf	
	113306_Lincoln Cameron #1 Plugging Plan.signed.pdf	
	Certificate of Good Standing - plugging contractor license	
6	ACR1043_MMMAF_V5.pdf	Operating Procedures
	ACR1043_Measurement Method_V4_Approved.pdf	
	ACR1043_MMMAF_V7_Approved.pdf	
	ACR1043_MMMAF_V10_approved.pdf	
7	Manufacturer calibration certificates for flow meters, methane analyzers and pressure sensors	Calibration Certificates
8	Baseline measurement Landtec methane analyzer field checks	Field Check Certificates
	Post-plugging Landtec methane analyzer filed checks	
9	2398-sem5000-new-template.pdf	Equipment Manuals
	DOC-SPECS-M-HIGH.pdf	
	Vaetrix HTG Series Brochure_8-11-22.pdf	
	SilverSmith equipment manual powerpoint presentations	
10	Raw measurement data for flow, methane concentration and pressure readings	Baseline emissions quantification and evidence
	Measurement windows analyses files for selected measurement parameter windows	
	Field notes	
	Photos of well conditions and baseline measurement activities	
	Environmental conditions	
11	Blackburn University#2_ Stability and CH4 Emission Rate - V1.xlsx	Stability analyses
	Haley_ Stability and CH4 Emission Rate V4.xlsx	
	Lincoln Cameron _ Stability and CH4 Emission Rate.xlsx	
12	(Complete) Fuel Usage - Cohort 4.pdf	Project Emissions
13	Raw methane measurement data for ambient and confirmation sample activities	Post-plugging confirmation sampling
	Post-plugging analysis files	
14	https://dnr.illinois.gov/content/dam/soi/en/web/dnr/oilandgas/documents/oilandgasfillableforms/plugging-and-restoration-fund-well-list.pdf	Permanence
	Plugging Reports	
15	OOG3_ ERs_V2.xlsx	Emissions Reductions Quantification File
16	Wiltshire access acknowledgment form.pdf	Ownership and Title
	Haley access acknowledgment form.pdf	
	Bacon access acknowledgment form.pdf	
	Transfer of Rights Agreement V2.pdf	
17	ACR1043_Deviation_Approved_Rescinded.pdf	Deviation-related documents
18	ACR1043_GHG Plan_V7.1 Redacted.pdf	Redacted documents (Final versions)
	ACR1043_MonitoringReport_V4.2_Redacted.pdf	
	ACR1043_MMMAF_V10 - Redacted.pdf	