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September 26, 2024

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

Validation and Verification Report
Tradewater OOG 2 (ACR915), Tradewater, LLC, Greene County, Indiana, 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 the Tradewater OOG 2 (Project) for the January 22, 2024 – January 21, 2044 crediting period and January 22, 2024 – January 22, 2024 reporting period. The Project is located in Greene County, Indiana, United States and follows the requirements of the ACR (Program). The Project is listed under the Program ID: ACR915.

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)
- International Accreditation Forum Mandatory Document for the Use of Information and Communication Technology for Auditing/Assessment Purposes: Issue 2, July 2018 (IAF MD 4: 2018)
- ACR Validation and Verification Standard Version 1.1, dated May 2018
- The ACR Standard Requirements and Specifications for the Quantification, Monitoring, Reporting, Verification, and Registration of Project-Based GHG Emissions Reductions and Removals Version 8.0, dated July 2023
- 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, 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, dated 2024-09-13(E&C) *

Note:

* - Denotes change from Validation/Verification Plan

6. Validation and Verification Team & Independent Reviewer

6.1 Roles, Responsibilities & Qualifications

Lead Validator/Verifier/Technical Expert	
Name	Gordon Reusing, P. Eng., M.Sc.
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. 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.

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 Engineer-In-Training with GHD's Greenhouse Gas Assurances Services Team and has 2.5 years of experience in greenhouse gas verification work. Ms. Kuttemperoor has a Bachelor's of Environmental Engineering (co-op) 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 and ozone-depleting substances destruction 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 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/Technical Expert	
Name	Sean Williams, P. Eng.
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. 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.

7. Project Description

The Project involves plugging of one orphan oil and gas well located in Greene County, Indiana, United States resulting in emissions reductions under the Methodology. The well (Permit/ ID: 35105) was listed on the April 2023 Indiana Department of Natural Resources (DNR), Division of Reclamation, Orphan Well List with status as permit 'revoked'. The DNR Indiana Oil and Gas Well Records Viewer indicated that the well had no solvent operator. Although Indiana DNR maintains oversight of the well, the government authority was not mandated to plug the well. Tradewater Well Services, LLC was granted approval from the State to plug the well in accordance with Indiana well plugging requirements and documented in the Indiana well plugging plans and report. Post-plugging confirmation sampling of the well indicated that methane concentrations were no more than 2ppm above ambient methane levels post-plugging, and the well site was buried and remediated.

Pre-plugging methane measurements were performed in accordance with the project's Methane Measurement Method Approval Form (MMMAF) and was in accordance with ACR Methodology requirements. The MMMAF documented a direct flow measurement method which requires direct connection to the well to enable flow and methane measurements. 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 involved in well-plugging operations. In accordance with the Methodology, emissions reductions were claimed over the 20-year crediting period. 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 located at the following address:

Greene County, Indiana, United States
Well ID: 35105
Geographic Coordinates: 38.997292, -87.110474

8.3 Reporting and Crediting Period

The start date for the Project is January 22, 2024. The crediting period for this validation for the Project is from January 22, 2024 – January 21, 2044.

The reporting period for this verification for the Project is from January 22, 2024 – January 22, 2024.

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 Auditing/Assessment Purposes (IAF MD 4:2018) 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, Skype, 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) 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 reported baseline and project emissions and emissions reductions includes the following, as listed in the Monitoring Report and GHG Project Plan:

Table 2 Reported Emissions and Emissions Reductions

Vintage	Baseline Emissions (tonnes CO_2e)	Project Emissions (tonnes CO_2e)	GHG Reductions/Removals (ERRs) (tonnes CO_2e)
2024	856,498	44	813,632

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 March 29, 2024, prior to GHD's Site visit on April 25, 2024. 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% were qualified in the Verification Opinion but did 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 this was the first validation/verification conducted by GHD for the Tradewater OOG2 Project.

GHD submitted the ACR COI form to the ACR Registry on February 21, 2024 and re-submitted on February 28, 2024. ACR provided authorization to commence the validation and verification on March 4, 2024 and the revised form is listed as approved on the ACR registry.

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 was held on March 7, 2024, and attended by Elnaz Senobari Vayghan (Verifier, GHD), Angela Kuttemperoor (Verifier, GHD), Tim Brown (CEO, Tradewater), Gina Sabatini (Manager of Verification and Logistics, Tradewater) and Tip Stama (Director, Verification & Logistics, Tradewater).

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 be limited to, an evaluation of whether or not:

– The documentation is complete and comprehensive and follows the structure and criteria required by the Program.
– The monitoring methodologies are justified and appropriate.
– The assumptions behind the inventory are conservative and appropriate.

– The GHG emission calculations are appropriate and use conservative assumptions for estimating GHG emissions and emissions reductions.
– The GHG information system and its controls are sufficiently robust to minimize the potential for errors, omissions, or misrepresentations.

The GHD Project Team interviewed Project staff to:

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

GHD completed checks of data from point of collection (meter, scale, etc.), through the Project data management systems, then it's use in the development of the 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

Gordon Reusing of the GHD Project Team visited the Site on April 25, 2024, during the validation and verification of the GHG Project Plan and Monitoring Report. This site visit also covered all sites for the site visits for GHD's subsequent validation and verification of project Tradewater OOG1 which is expected to occur after the completion of OOG2.

GHD interviewed the following people:

– Tim Brown, CEO, Tradewater who was responsible for preparation of the Measurement Technique Memo in conjunction with Cassandra Whitford, one of the two project emissions measurement specialists.

During the site visit, GHD personnel interviewed participants about the Project regarding an overview of the process, review of major emission sources, the Project boundary, and the data management system in place at the Facility. Through this inspection, GHD was able to verify that personnel responsible for the GHG Project Plan and Monitoring Report preparation were sufficiently trained and qualified. GHD observed the ambient measurement for the plugged wells that were buried and remediated. For the well associated with the current project OOG2 (Permit No. 35105), GHD confirmed through witness of measurement by Tradewater, a methane concentration of 2.5 ppm to 2.6 ppm both upwind and around the well at ground, simulating the ambient and post-plugging sampling measurements previously conducted by Tradewater for post-plugging measurement requirements per the methodology. GHD's post-plugging sampling (ground) measurement did not exceed 2ppm above the ambient (upwind) measurement therefore did not exceed the allowable threshold for post-plugging emissions per the Methodology. As noted, this was previously confirmed by Tradewater for the exposed well before burying, as part of procedures for the post-plugging confirmation sampling, that the 2ppm threshold was not exceeded. GHD witnessed calibration of the methane analyzer with zero air and methane at 500 ppm before measurements were taken by Tim Brown of Tradewater.

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 if 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, Skype, Zoom, Google Meet, or Webex. 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

Validation Procedure

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 process flow diagram

Validation Findings

During the site visit, GHD confirmed the baseline and project emission sources and sinks were included in the GHG Project Plan. GHD confirmed that the well associated with the project was associated with permit number 35105 and located in Greene County, Indiana, United States. GHD confirmed that baseline emissions involved two measurements that were taken at least 30 days minimum apart from each other was based on the average of the two measurements. GHD confirmed that the two measurements were based on well gas flow data and methane concentration data from the same 2 hour data period of stabilized data per measurement, with minor variations on the 2 hour period, as discussed in Section 16.3.1. GHD confirmed that all baseline emissions data was associated with well ID: 35105.

GHD confirmed that all project emissions data was associated with well ID: 35105 and consumption of fossil fuels during plugging operations for the well. Tradewater explained that due to various operations and plugging activities occurring for different projects at the same time, it is difficult to accurately quantify project emissions. GHD reviewed the fuel invoices rendered during the project period and confirm that they aligned with the dates of project operation and activities for the current project OOG2.

16.2.2 Project Deviations

GHD verified that a deviation was approved by ACR on September 10, 2024 to allow the MMMAF to be submitted out of sequence and after the occurrence of project activities, due to the form not being available

during the start-up of project activities. The Measurement Technique Memo was originally submitted on June 9, 2023 and approved by the ACR in an dated June 21, 2023.

16.2.3 ACR and Methodology Eligibility

Validation Procedure

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

ACR Eligibility Findings

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 3 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 4 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 tor 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.
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 4 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 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.

ACR Criterion	Definition	GHD Assessment
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.	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. The Attestation of Process letter provided by Mr. Brian Royer of the Indiana DNR dated September 25, 2024, indicates that as of April 5, 2023, the well was not properly plugged and had no designated operator and no solvent operator responsible for plugging the well. It attests that Tradewater was granted authority to plug the well upon submission of the Plugging Plan and the authority began on September 5, 2023. GHD confirmed that the initial version of the Plugging Plan, was submitted on August 31, 2023, by Tradewater, and approved on September 5, 2023 as signed by the DNR.
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.	GHD reviewed email correspondence between Indiana DNR and Tradewater to confirm that the well being listed as revoked by the DNR had no solvent operator and that the State also did not have mandate to conduct plugging operations. GHD confirmed that Indiana regulations that mandate well plugging only apply to wells with solvent operators, therefore Tradewater pursuing the well plugging project was additional to existing regulatory requirements and the business-as-usual scenario. GHD confirmed that this is documented in the GHG Project Plan.
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 confirmed that well plugging was conducted in accordance with the Indiana Regulations and a state-approved Plugging Plan. This was additionally confirmed in the Attestation of Process letter provided by Mr. Brian Royer of the Indiana DNR dated September 25, 2024, where the plugging date and the DNR's approval of plugging was provided in an attestation. The DNR confirmed that plugging was done in conformance with the approved Plugging Plan and State regulations. GHD reviewed the land access agreement to confirm that Tradewater had permission to the property for the purposes of plugging the well. GHD confirmed that this is documented in the GHG Project Plan.

ACR Criterion	Definition	GHD Assessment
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 confirmed through the site visit and witness of upwind and ground measurements, that the buried OOG2 well was not leaking beyond the allowable threshold of 2ppm above atmospheric methane concentration and that measurements were near atmospheric. GHD confirmed through review of the post-plugging confirmation sampling documentation of the unburied well, that there was no leakage above the threshold on January 22, 2024, 14 days after the well was plugged. GHD confirmed that this is documented in the GHG Project Plan.
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 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 noted that SDG contributions that were met by the project were included officially in the SDG contributions form. GHD confirmed that stakeholders and stakeholder engagement for the project were appropriate and reported.

Methodology Eligibility

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 4 Methodology Eligibility

Methodology Criterion	GHD Assessment
Eligibility	
The well is located in the U.S. or Canada	The well is located in Greene County, Indiana, United States. GHD confirmed that this is documented in the GHG Project Plan.

Methodology Criterion	GHD Assessment
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 evidence of leakage as provided in the form of methane concentration measurements (ppm) on the date of the first pre-plugging sampling event (June 27, 2023) to confirm a leaking well it was identified that the well was leaking when first accessed by Tradewater, the project proponent/project developer. The project Landowner Access Agreement Form indicates that Indiana DNR, Fish and Wildlife Division is the landowner, attests to the well being orphaned by the State of Indiana and provides Tradewater authorization to plug the well. 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"	GHD confirmed that the well fell under the category of wells with no designated operator, due to no longer having a solvent operator. GHD confirmed that the well did appear on the January 2023 State orphan well list and that it was not originally inadequately or to any extent plugged. GHD confirmed that this is documented in the GHG Project Plan.
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 post-plugging confirmation sampling which occurred on January 22, 2024. GHD confirmed through review of the methane measurement data (ppm) dated January 22, 2024, that confirmation sampling occurred on this date and indicated that the measurement did not exceed 2ppm above the ambient measurement taken on that day. As there is only one well in the project, the end date of the reporting period is the same date as the start date, January 22, 2024. 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 January 22, 2024.
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	Per the E&C, the project crediting period start date aligns with project and reporting period start date as described above, of January 22, 2024. For a one-well project, the crediting period extends 20 years from the project start date which is January 21, 2044. GHD confirmed that this is documented in the GHG Project Plan.

Methodology Criterion	GHD Assessment
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.	
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 confirmed that date of plugging as evidenced by the well Plugging Report is January 8, 2024. Therefore, the validation deadline is 12 months from this date and is January 7, 2025. GHD confirmed that this is documented in the Monitoring Report.
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.	The Methane Measurement Method Approval Form (MMMAF) template was released on June 26, 2024, after the completion of well-plugging and project activities. GHD reviewed the ACR approval email dated June 21, 2023 of the original Measurement Technique Memo (MTM) submitted by Tradewater on June 9, 2023, to confirm that Tradewater obtained approval of the measurement technique prior to the collection of pre-plugging measurements. Furthermore, on September 10, 2024, ACR approved a deviation for Tradewater to submit the MMMAF out-of-sequence, after the completion of project activities, due to the form not being available at the time of GHG Plan preparation, and an MMMAF required to be submitted as clarified by a June 13, 2024 Methodology E&C.
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.	MMMAF includes Cassandra Whitford and Kevin Lock as qualified emissions measurement specialists. Video evidence as provided by Tradewater shows Cassandra performing all measurement procedures in accordance with the approved measurement method and safety procedures.
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 reviewing the original MTM, MMMAF and reviewing video evidence of the measurement flow set-up, that the methane analyzer is directly connected to the leaking well, as enclosed within a diffusion box receiving flow, and unable to be impacted by the presence of ambient methane. Ambient pre-plugging measurements were taken, however were verified to no longer be a requirement of the Methodology per the E&C.

Methodology Criterion	GHD Assessment
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 is being used per ACR Standard Version 8.
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 flow meter 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.
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. GHD notes that field notes and photos could not corroborate instrument recorded measurement times due to varying default equipment clock settings. GHD notes that this is an opportunity for improvement for future well plugging projects, where it is expected that documentation prepared at the site can corroborate instrument-recorded information.
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 well.

Methodology Criterion	GHD Assessment
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 specialist 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 pre-plugging measurement which occurred on June 27, 2023, and second measurement which occurred on August 25, 2023, were taken greater than 30 days apart.
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 confirmed with Tradewater that the post-plugging confirmation methane measurement was taken a distance of 10-15 feet upwind of the well. GHD did not witness the post-plugging measurement however notes that this aligns with video evidence of Tradewater's post-plugging sampling procedures for other orphan wells.
– 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.	The original MTM submitted for the project as approved by ACR, describes that a more conservative approach was taken regarding this requirement, as described: The direct flow measurement technique does not encompass the emissions source and 10 cm of soil surrounding the emissions source. The surface and reservoir pressures of the orphaned wells described here indicate that the vast majority of methane that would otherwise be emitted to the atmosphere is migrating up through the well casing. Thus, omitting the measurement of the encompassing area is a conservative choice. Additionally, because plugging these wells involves circulating cement on the backside of the well

Methodology Criterion	GHD Assessment
	and placing cast-iron bridge plugs or cement plugs at key depths inside the casing, any migration from around the well should be prevented. The post-plugging ambient methane measurement and confirmation sample will be used to prove methane migration from around the casing is prevented. GHD determined that due to the direct flow measurement method as evidenced in the MMMAF subsequently submitted for the project, the sampling method could not encompass the well and surrounding soils. As a result, GHD confirmed that Tradewater's approach was conservative in excluding the associated emissions and justified.
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.	Tradewater took the post-plugging confirmation sample before the well was buried and GHD confirmed that measurement data indicated no methane enhancements beyond 2ppm of the ambient methane concentration. During the site visit, GHD witnessed Tradewater perform another confirmation sample following the procedure for buried wells and re-confirmed that the measurement was not beyond 2ppm above the ambient measurement. As the post-plugging monitoring requirements in the ACR Methodology have not changed per the corresponding E&C, GHD confirmed that post-confirmation sampling for the surface well that was later buried was conducted in accordance with the methodology.
Project Proponents must demonstrate that the well has been designated as "plugged", or equivalent, by the appropriate jurisdiction.	As per the project's well Plugging Report submitted to the Indiana DNR, the well was plugged January 8, 2024, and is confirmed to be plugged by the DNR upon approval of the well Plugging Report and DNR's upload to the Indiana DNR Well Records Viewer. GHD confirmed that this is documented in the GHG Project Plan. This was additionally confirmed in an Attestation of Process letter provided by Mr. Brian Royer of the Indiana DNR dated September 25, 2024, where the plugging date and the DNR's approval of plugging was provided in an attestation. The DNR confirmed that plugging was done in conformance with the approved Plugging Plan and State regulations. GHD also notes that the well was listed on the December 2023 publication of the Indiana DNR Orphan Well list, as publicly available, and was not on the January 2024 publication of the State Orphan Well List, as appropriate for plugged wells.

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. As previously noted, GHD notes that field notes and photos could not corroborate instrument recorded measurement times due to varying default equipment clock settings. GHD notes that this is an opportunity for improvement for future well plugging projects, where it is expected that documentation prepared at the site can corroborate instrument-recorded information.
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. Per the Attestation of Process letter provided by Mr. Brian Royer of the Indiana DNR dated September 25, 2024, Indiana rules and regulations do not contain any licensing requirements for pipe pullers or well pluggers in the oil and gas industry. Therefore no related documentation was retained or required to be retained by Tradewater.

16.2.4 Double Issuance and Double Use of Carbon Credits

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

– Climate Action Reserve
– Verra

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

16.2.5 QA/QC Data Management Systems and Document Retention

Summary of Data Management Procedures

Data management procedures as detailed in the project Monitoring Report were as follows:

Data is generated during field work via instrument readings. Each instrument used, as outlined in the Measurement Method Approval form, has its own software. This software is utilized to take readings, display readings, or download readings containing the key pieces of data for this project (methane concentration, flow rate, pressure).

– If data is stored directly on the instrument, this data is downloaded from the instrument and then transferred to SharePoint after readings have been completed.
– If data is stored in the instrument software, this data is downloaded from the instrument software as a readable file type (CSV, Excel Workbook, PDF, etc.) and transferred to SharePoint after readings have been completed.
– If the software allows for direct storage onto a computer, the data is written to the computer during the measurement process and transferred to SharePoint after readings have been completed.

Raw data remains untouched and a copy of the raw data is utilized for data processing. Processed data is reviewed by a second team member ahead of compiling in a packaged data set.

Calibration Procedures: All calibration procedures are outlined in the Measurement Method Approval Form for each instrument. In short, when applicable factory calibration procedures and field calibration procedures are performed as described in each instrument's manual. In the absence of an instrument manual, the calibration procedures are performed as recommended by third party contractor experts. In the case of Landtec's SEM5000, calibrations are performed prior to use in the field and every 2 years per the manufacturer's requirements.

Internal QA/QC Procedures: QA/QC for managing data and information began with the approval of the Measurement Method Form.

Additional QA/QC procedures include the following, as applicable: following calibration procedures as outlined by the equipment manuals, saving raw files and completing necessary data processing in a separate file, assessing data stability, utilizing field notes and instrument data outputs to corroborate timestamps, and periodic reviews of instrument outputs while taking data as well as while plugging. Moreover, at least two project members employed by the Project Developer are assigned to perform and/or observe measurement activities. Any data integration or analysis is performed by a project member and checked by an internal reviewer, both of whom are employed by the Project Developer. If any reports used include an extensive amount of data that is manually assessed or migrated, the project Developer selects a subset of data in each report to assess via a sampling and quality check process.

Sampling methods utilized during the reporting period include pre-plugging sampling and post-plugging monitoring. For pre-plugging sampling measurements 1 and 2, taken prior to plugging the well, flow rate and methane concentration are recorded using a custom setup directly connected to the wellhead. The gas/liquid stream is sent from the wellhead to a separator and then the gas stream is sent to a flow meter. A methane concentration sample line is teed off from this gas stream and sent to a rotameter (as needed) and then to a diffusion box used to house the methane detector. Additionally, flowing pressure is measured by a digital chart recorder attached directly to the wellhead or to in-line auxiliary well surface equipment upstream of the separator. Pre-plugging sampling measurements are taken for a minimum of two hours and the raw data is later analyzed. Post-plugging monitoring is taken using a laser-based methane detector with a detection limit of 0.5 ppm. First, an ambient emissions measurement is taken upwind of the well to obtain the background methane concentration. Next, post-plugging sampling is taken with the same device, screening any exposed equipment (casing) for a minimum of 5 minutes.

Assessment of Procedures

GHD reviewed the 2022 and 2023 calibration certificates for the Landtec methane analyzers (SN. 18919, 41056 and 19338) used in ambient sampling, pre-plugging measurements and post-plugging confirmation sampling to confirm that calibrations occur every 2 years and field checks occur prior to use in the field. GHD re-confirmed that a field check was conducted on the date of the post-plugging confirmation sampling.

GHD reviewed the 2023 calibration certificates for the VAETRIX model (DCR-3K-I-05-BT-2RTD) digital chart recorder/pressure sensor (SN. 1662566265) to confirm that the equipment was calibrated by JM Test Systems in May 2023, prior to the baseline measurement events.

GHD reviewed the 2023 calibration certificates for the Silversmith flow meter (SN. 2564-34183) to confirm that the equipment was calibrated by Transcat Calibration Laboratories in February 2023, and calibrated Tradewater personnel in May 2023 prior to the baseline measurement events.

GHD confirmed that all QA/QC and sampling procedures were conducted in accordance with the approved MMMAF and Methodology.

16.3 Verification Findings

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

Scope Item Verified

The quantification methodology, data selection, and emission calculations were reviewed and verified.

Verification Findings

Emissions measurements were taken using the project's approved direct flow sampling technique specified in the Measurement Technique Memo and Methane Measurement Approval Form. Methane emission rates were calculated using well gas flow as measured by the Silversmith flow meter and methane concentration as measured using the Landtec methane analyzer. Annual emissions were calculated per Equation 1 of the E&C and based on the average emission rate of 24 data points from the 2 hour stabilized periods for the sampling events. The emission rates were normalized to STP and converted to units of Kg CH_4/year using the factors specified in Equation 1. Methane emission rates as measured in ppm were appropriately converted to %/fractions, and flow rates in MCF/day converted into SCF/hour, for use in the Q pre-plugging annual emissions equation.

Stability (Requirements as modified by E&C)

The analysis for 2 hours of stability was conducted on the calculated methane emission rate and measured pressure for each sampling event. The Methodology as originally published specifies the following criteria be met to demonstrate stability:

- Methane emission rate must not increase or decrease by more than 1% (Methodology Section 4.1.2).
- Consecutive, twelve 10-minute average flow measurements are within a factor of 10, comparing N to N+1 (Methodology Section 4.1.4).
- Each of the twelve (12) measurements is within a factor of 10 of the average of all 12 measurements comparing n to N-average (Methodology Section 4.1.4).
- Methane emission rate from second sampling event must be within 10% of the methane emission rate from the first sampling event (Methodology Section 4.1.4).

The Methodology was modified by the September 2024 E&C to:

- Replace the requirement relating to demonstration of an emission rate slope being within 1%, with a requirement that 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, 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 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%).
- Removed the requirement that each of the twelve (12) measurements be within a factor of 10 of the average of all 12 measurements comparing n to N-average.
- Replaced the requirement that consecutive, twelve 10-minute average flow measurements be within factor of 10, comparing N to N+1, with a requirement that the 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. During ACR's project review, it was clarified that 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.

- Added requirement for flowing pressure to be monitored, 10-minute average pressure measurements to be measured or calculated and analyzed for stability, however, remains excluded from direct use for emission reductions calculations.
- Added requirement that the 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%).
- Retained the requirement that methane emission rate from second sampling event must be within 10% of the methane emission rate from the first sampling event.

GHD verified that stability was reached per the following results for each of the stability criteria:

- Emissions rate stabilization was no longer analyzed for demonstration of the 1% slope criteria.
- Emissions rates (standard cubic feet per hour, or scf/hr) were well within a factor of 10x, when comparing the highest and lowest average emission rates of the twelve intervals, for each of the two sampling events.
- Emission rates (standard cubic feet per hour, or scf/hr) using the original selected 2-hour stability period were within 10% of the average emission rate for the second sampling event. For the first sampling event, less than 11 (10), of 12 data points were within the average emission rate. Tradewater shifted the selected 2-hour period of measured flow and methane concentration used for the stability analysis, to approximately 20 minutes earlier to achieve 11 of 12 data points being within the average, therefore meeting this stability criteria.
- All 12 data points for pressure (psi) were within 10% of the average pressure determined, for both sampling events.
- The average emission rate for the second sampling event was within 10% of the average emission rate for the first sampling event. The second emission rate, as taken after 30 days of the first event, was around 3% less than the first sampling event.

GHD verified that all stability criteria associated with the various parameters including flow, methane concentration and pressure were analyzed using approximately the same 2-hour period, as re-selected for the first sampling event in order to meet the requirements specified by the E&C:

- First sampling event: 6/27/2023 2:09:19 PM - 4:09:19 PM
- Second sampling event: 8/25/2023 12:03:20 PM - 2:03:20 PM

Due to the various parameters (flow, methane concentration and pressure) having different measurement frequencies, GHD noted that the 2-hour stability periods selected for the various stability analyses per sampling event did not match exactly and were within seconds more or less than 2 hours in some cases. GHD re-calculated all stability analyses to confirm that results did not change if some additional data was included or excluded. GHD verified that Tradewater applied excel formulas to appropriately select data for the 10-minute interval averages, as required especially where measurement frequencies were greater than a minute and intervals were not clearly defined.

Data Adjustments (Requirements added by E&C)

Normalization to Standard Temperature & Pressure (STP)

GHD confirmed that Tradewater appropriately applied any applicable data adjustments. As the flow meter used already normalizes temperature to 60F however normalizes pressure to just below 1 atm at 14.65 psia (0.996874 atm), Tradewater used Equation A of the E&C to further normalize the data to the standard pressure of 1 atm. GHD confirmed that the Silversmith flow meter's May 2023 calibration documentation indicates that instrument normalizes to a base pressure of 14.65 psia and base temperature 60 F. GHD confirmed that Tradewater appropriately applied the corresponding methane density of 0.0423 lbs CH4/ scf CH4 associated with an STP of 60F and 1 atm, as included within the September 13, 2024 E&C.

GHD notes that the methane density listed in the MMMAF was 0.708 kg/m3 as proposed to be used, however this was before the release of the E&C. GHD confirmed that Tradewater appropriately transitioned to the gas characteristics listed in the E&C.

Moisture

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.

Ambient Methane Concentration

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 project activities occurred prior to the release of the E&C. As per the above, ambient methane concentration deductions from the measured sampling event methane concentration were not required.

Global Warming Potential

GHD confirmed that per ACR Standard Version 8, the 100-year global warming potential for methane was to be obtained from IPCC AR5 and was 28. GHD confirmed that baseline emissions were calculated for the length of the 20-year crediting period in accordance with Methodology section 4.3.

Recalculation Source/Sinks

GHD re-calculated baseline emissions and identified no discrepancies.

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

Scope Item Verified

The quantification methodology, data selection, and emission calculations were reviewed and verified.

Verification Findings

GHD verified through review of invoices and correspondence that the diesel amount used to quantify project emissions was appropriate and aligned with plugging operation dates and activities and was conservative where there were inconsistencies. GHD that all inconsistencies would be immaterial. GHD verified that diesel emission factor used matched the value listed in the E&C (10.49 Kg CO_2e/gallon diesel) which was updated from Section 4.4 of the Methodology. GHD confirmed that project emissions were calculated on a per-project one time basis.

Recalculation Source/Sinks

GHD re-calculated project emissions and found no discrepancy.

16.3.3 Emissions Reductions

Scope Item Verified

Emissions reductions calculations from baseline subtract project emissions and uncertainty deduction

Verification Findings

Emissions reductions were appropriately calculated as baseline minus project emissions. GHD verified that the uncertainty deduction of 5% was applied to emission reductions in accordance with Section 4.6 of the Methodology and Equation 5 of the E&C. GHD identified a transcription error in the deductions reported for which the Monitoring Report was updated. Deductions were appropriately reported in Section VI (3) of the Monitoring Report.

Recalculation Source/Sinks

GHD re-calculated total emissions reductions and identified no discrepancies.

16.3.4 Reporting Period Comparison

As this is the first validation and verification conducted by GHD for the Tradewater OOG2 project, comparison of previously reported information is not applicable.

16.3.5 Verification of Monitoring Procedures

16.3.5.1 Monitoring Parameter

The following parameters have been monitored by Tradewater:

Parameter	Q measured, i
As per Monitoring Report	
Units	Scf/hr
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
Measurement Frequency	Approximately every 5 minutes 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)
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 is connected via a direct flow set up. The gas first passes through a separator where fluid is separated out to prevent anything but gas to flow through the Silversmith meter. The meter reports data in MCF/day which must be converted to Scf/hr to align with the Methodology. The table produced contains a data point approximately once every 5 minutes.
Data Source	Silversmith, as approved in the submitted Methane Measurement Method Approval Form

Parameter	Q measured, i
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 and Emissions 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
Source of Data	SEM5000
Measurement Frequency	Every 10 seconds 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 Methane Measurement Method Approval Form
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	Every 10 seconds over the course of two 2-hourminimum sampling events
Reporting Procedure	Excel download

Parameter	Conc measured, i
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 and Emissions 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	Erratta 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.
Data Source	Vaetrix, as approved in the submitted Methane Measurement Method Approval Form
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 and Emissions 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, 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, 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
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 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

Parameter	w
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	Validation trips precede official inclusion of a well in a project to determine whether an orphaned well identified through a desk audit of possible wells (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
Responsibilities of Parties Involved	Assess viability 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

Parameter	FFj
	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

Parameter	Post-plugging methane screening
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
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 Methane Measurement Method Approval Form
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

Parameter	Pre-plugging: Conc measured, ambient Post-plugging: ambient methane emissions
Notes	Conc measured, ambient = 0 due to direct flow measurements, "*Ambient emissions measurements are not required during preplugging 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 Plan were appropriately reported in the Monitoring Report as included in Section 16.3.5.1 above. GHD confirmed that the GHG Plan and Monitoring Report were updated to align with the monitoring parameters included in Table 5.2.1 of the Methodology E&C. As E&C table parameters only include measured parameters, GHD confirmed that Tradewater updated documentation to remove any calculated and non-field measurement related parameters. GHD confirmed that the 'non-steady state encloser-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 per the E&C were included and aligned with the unit, source and frequency of monitoring requirements of Table 5.2.1.

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 2023 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

Client to make changes to the GHG Project Plan based on the issues identified in the Validation Findings. Changes made included:

- Updates surrounding applicability of Indiana plugging regulations for wells with no solvent operator
- Removal of Tip Stama from project team
- Descriptions added for well plugging plan for regulatory compliance section
- Update of reported dates to align with actual project events
- Update of monitoring parameter tables to align with actual project parameters
- Update of SDG goals and descriptions to align with SDG Contributions Tool

16.6 Corrections Made to Monitoring Report

Client to make changes to the Monitoring Report based on the issues identified in the Verification Findings. Changes made included:

- Inclusion of deduction quantity corresponding to uncertainty quantity associated with emission reductions as specified in Methodology
- Addition of sampling techniques in data management system section
- Clarification of all updates required to listing form based on actual project conditions

– Clarification on which SDG goals were met for the current project
– Correction to fix a transcription error in the reported deductions

16.7 Follow up on Issues from Previous Validation/Verification

As this is GHD's first validation/verification of the Tradewater OOG 2 project, follow-up from previous validations/verifications are 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 September 26, 2024, and Monitoring Report dated September 23, 2024, for the Tradewater OOG2 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 813,632 tonnes CO_2e as the total emissions reductions for the crediting period for the Project. This includes the GHG emissions reductions resulting from the Project from January 22, 2024 – January 21, 2044. 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 reporting 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 Validation and Verification Opinion is provided as Appendix D.

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 was not designed to detect all weakness or errors in internal controls so far as they relate to the requirements set out above as the validation 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 was based on a risk-based approach that follows rigorous methodology with the expectation that it will capture the majority of errors with the potential for a material misstatement. However, GHD does not warrant or guarantee that all errors or omissions, including material issues, made by Client in its 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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Lead Validator/Verifier

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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-2

28 March 2024

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

Validation and Verification Plan
Tradewater OOG 2 (ACR915), Tradewater, LLC, Greene County, Indiana, United States, under ACR

Dear Ms. Sabatini

1. Introduction

Tradewater, LLC (Client) retained GHD Services Inc (GHD) to undertake a validation and verification of the Tradewater OOG 2 (Project) for the January 8, 2024 – January 7, 2044 crediting period and January 8, 2024 – January 23, 2024 reporting period. The Project is located in Greene County, Indiana, United States and follows the requirements of the ACR (Program). The Project is listed under the Program ID: ACR915.

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 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 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 1.1, dated October 20, 2023. 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)
– International Accreditation Forum Mandatory Document for the Use of Information and Communication Technology for Auditing/Assessment Purposes: Issue 2, July 2018 (IAF MD 4: 2018)
– ACR Validation and Verification Standard Version 1.1, dated May 2018
– The ACR Standard Requirements and Specifications for the Quantification, Monitoring, Reporting, Verification, and Registration of Project-Based GHG Emissions Reductions and Removals Version 8.0, dated July 2023.
– ACR Methodology for the Quantification, Monitoring, Reporting and Verification of Greenhouse Gas Emissions Reductions and Removals from Plugging Orphan Oil and Gas Wells in the U.S. and Canada, Version 1.0, dated May 2023 (Methodology)

Note:

* - Denotes change from Proposal

6. Validation and Verification Team & Independent Reviewer

6.1 Roles, Responsibilities & Qualifications

Lead Validator/Verifier/Technical Expert	
Name	Gordon Reusing, P. Eng., M.Sc.
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. Reusing is a greenhouse gas (GHG) Lead Verifier, Lead Validator, and Independent Reviewer with extensive experience including GHG programmes in Alberta, British Columbia, Ontario, Quebec, Nova Scotia, California, and programs 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 Independent Reviewer in many jurisdictions, including, but not limited to, the Alberta Carbon Competitiveness Incentive Regulation (CCIR), Ontario Regulations, British Columbia Greenhouse Gas Reduction (Cap and Trade) Act, (B.C. Reg. 272/2009), and Quebec Regulation R.Q.c.Q 2, r.15 (Quebec Regulation).

Validator/Verifier	
Name	Angela Kuttemperoor, E.I.T.
Role	The validator/verifier will develop and revise the validation/verification plan and evidence gathering plan, develop a risk assessment, recalculate raw data, review management of data, and prepare draft findings and the draft validation/verification report.
Qualifications	Ms. Kuttemperoor is an Air Engineer-In-Training with GHD's Greenhouse Gas Assurances Services Team and has 2.5 years of experience in greenhouse gas verification work. Ms. Kuttemperoor has a Bachelor's of Environmental Engineering (co-op) 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 and ozone-depleting substances destruction 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 will develop and revise the validation/verification plan and evidence gathering plan, develop a risk assessment, recalculate raw data, review management of data, and prepare draft findings and the draft validation/verification report.

Validator/Verifier	
Qualifications	Ms. Senobari is an Air and Climate engineer 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/Technical Expert	
Name	Sean Williams, P. Eng.
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. Williams has a Bachelor of Applied Science in Chemical Engineering from the University of Waterloo and is a licensed Professional Engineer in the provinces of Alberta, Saskatchewan and Ontario. Mr. Williams has experience in completing permit applications, air and noise compliance assessments, completion of annual inventory reports under O. Reg. 455 and NPRI, and greenhouse gas verifications under the applicable Alberta, Ontario and Quebec regulations the California Air Resources Board and The Climate Registry. Mr. Williams has 5 years of experience as a lead verifier under multiple sectors and jurisdictions, including oil sands mining and extraction, refineries, chemical plants, power generation facilities and steel mills. Mr. Williams has undergone training of the ISO 14064 and ISO 14065 standards and is an accredited lead verifier as per GHD's ANAB-approved lead verifier competency requirements. Mr. Williams also has experience working in the accreditation audit process for GHD by ANAB.

7. Project Description

The Project involves plugging of an orphan oil and gas well located in Greene County, Indiana, United States. During the baseline condition, the well was leaking 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 Program's Protocol:

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 located at the following address:

Greene County, Indiana, United States *
Well ID: 35105
Geographic Coordinates: 38.997292, -87.110474

Note:

* - Denotes change from Proposal

8.3 Reporting and Crediting Period

The start date for the Project is January 8, 2024. The crediting period is from January 8, 2024 – January 7, 2044.

The reporting period for this validation and verification for the Project is from January 8, 2024 – January 23, 2024.

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 4:2018) for various aspects of the validation and verification, including conducting video/tele-conferencing with various personnel up to full virtual site visits.

The decision to use ICT is permissible if GHD and Client agree on using ICT. The agreed ICT method will be MS Teams, Skype, 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

As all Project validations require a site visit as per the Program, GHD must conduct an in-person site visit to the Project Site. As this is the first validation and verification conducted by GHD for the Project, GHD must conduct an in-person site visit to the Project Site, as required by the Program.

9.2 Site Visit Agenda

The site visit, if applicable, will generally adhere to the following agenda. Deviations from the proposed agenda may be necessary to respond to data gaps and or issues identified during the validation 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 a draft validation and verification schedule. The overall validation and verification process is expected to take approximately 4 weeks.

- Submit Validation and Verification Plan to Client – March 28, 2024
- Validation of GHG Project Plan – March-April 2024
- Data checks and recalculations of Monitoring Report – March – April 2024
- Site Visit - April 23 and/or 24, 2024
- Review of data management, document retention and record keeping program – March – April 2024

– Submit issues log to Client and opportunity for Client to address issues and, if required, resubmit GHG Project Plan/Monitoring Report – March – April 2024
– Independent review by Independent Reviewer – April 2024
– Issue Draft Validation and Verification Report and Opinion – End of April 2024
– Issue Final Validation and Verification Report and Opinion – End of April 2024

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/Virtual visit
  - Head office visit
  - 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 in 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 the 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.

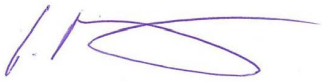
During the verification process, GHD will consider both quantitative and qualitative information on emission reductions. Quantitative data is comprised of the Monitoring Report and supporting data. Qualitative data is comprised of information on internal management controls, calculation and transfer 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



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Copy to: Sean Williams, Independent Reviewer, GHD

Appendix B

Issues Log

Issues Log

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Revision 8 - closed
Date September 26, 2024

Project Number	12636696
Program-Specific Project ID	ACR915
Client	Tradewater, LLC
Facility Name	Tradewater OOG 2
Regulation / Program	ACR
Reporting Year	2024-01-22 to 2024-01-22

Issue No.	Issues / Questions	Explanation/Response	Status
1	GHG Project Plan Section A5 Well Classification description indicates 'The well included in the Project was registered on the Indiana Department of Natural Resources List of Orphan Sites as of January 2024.' Well does not seem to be on 2024 list, however is on the April 2023 state orphan well list provided. Please clarify or update GHG Project Plan as required.	This was a misphrasing and the GHG Plan has been updated under version 3.0.	Closed
2	Well classification for well 35105 on April 2023 state orphan well list is 'Revoked' as opposed to 'Orphaned.' Please confirm that the well meets the well classification set out in the ACR Protocol, to satisfy eligibility. **GHD Response:** Please additionally clarify whether the well can be classified under any of the options specifically provided in the Protocol for orphan well classification or if it is a variation of one of these: -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 jurisdiction’s orphan well list. These wells do not have a solvent operator and would be classified as “unknown orphans”	The terms “orphaned” and “revoked” are treated as the same by Indiana DNR, with a revoked status indicating a type of orphaned well. Wells with a “revoked” status are subject to a formal hearing in front of an administrative law judge to change their status to revoked, and are subsequently defined and treated as orphaned wells by the state. The state is not responsible for the plugging of the well. Please reference the email file named "IndianaDNR_WellClassifications_Email_2021-10-19" for confirmation. **Additional clarification:** The well included in this project has no designated operator.	Closed

Issues Log

Exported Copy

Revision 8 - closed
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Program-Specific Project ID	ACR915
Client	Tradewater, LLC
Facility Name	Tradewater OOG 2
Regulation / Program	ACR
Reporting Year	2024-01-22 to 2024-01-22

Issue No.	Issues / Questions	Explanation/Response	Status
3	Please clarify what temperature and pressure levels were used for the flow and methane concentration measurements are consistent. **GHD Response:** Based on re-calculations, using the methane density from engineering toolbox determined at 25C, which is close to the temperature during the day of Measurement 1 (26C), a 9% material discrepancy is identified in total emissions reductions and they are being 9% underreported using the methane density at 0C. Using a methane density from engineering toolbox determined at 35C, which is the temperature during the day of Measurement 2, a 13% discrepancy in total emissions reductions is identified. As the temperature of the gas is expected to be above 0C and closer to the ambient temperature determined during the measurement days, calculations must be updated to use a more accurate methane density. Note that the pressure under which the flow was taken by the flow meter may also vary from atmospheric (1atm/bar) and may impact the actual methane density, and final calculated emissions reductions to a similar extent.	The methane density value is specifically addressed in our Measurement Technique packet (0.708 kg/m3) and the temperature and pressure of that value is 0C and 1 bar, respectively. We included this conservative assumption based on IUPAC STP conditions in our technique packet because the flow meter and the methane detector are in two different locations by design, and therefore our readings are taken under two different temperature and pressure conditions. These values were approved by ACR under the Measurement Technique packet and assumed to allow for an accurate and conservative calculation for emissions reductions.	Closed
4	Please provide evidence from the jurisdiction of confirmation of the well plugging date (ACR Protocol Section 1.2.1).	In Indiana, the confirmation of plugging by the state occurs when a Well Plugging Report (State Form 54874) is uploaded to the IN DNR Well Records and the status has changed to "Plugd & Abandnd." Please view the link provided below to show that the Well Plugging Report for 35105 is contained within the DNR system (https://dogimages.dnr.in.gov/pdfs/og-118667_035105_PAR_02162024.pdf)	Closed
5	GHG Project Plan references an Appendix D with respect to Project Aggregation and PDA. Please clarify.	The GHG Plan has been updated to remove this reference, as it is not applicable.	Closed
6	Please provide evidence from the manufacturer specifications or related document that the QED Landtec SEM5000 has a detection limit of 1ppm or less (ACR Protocol Section 4).	Please refer to the document titled "Landtec SEM5000 Data Sheet."	Closed

Issues Log

Exported Copy

Revision 8 - closed
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Facility Name	Tradewater OOG 2
Regulation / Program	ACR
Reporting Year	2024-01-22 to 2024-01-22

Issue No.	Issues / Questions	Explanation/Response	Status
7	Please confirm that the direct sampling approach yields a value with at least 95% confidence. Please confirm the accuracy of flow meter and analyzer used for measurements (ACR Protocol Section 4.1).	The flow meter, the Silversmith, has an accuracy of +/- 0.05% Rdg + 0.15 psi. The SEM5000 has an accuracy of +/-0.7ppm for [1;10ppm] and +/-10% relative up to 10000 (page 39 of SEM5000 operating manual). These accuracies are within the 95% confidence as required by the Methodology, Section 4.1.	Closed
8	Please confirm that in using the measurement technique, there can be confirmation of proper operation in accordance with manufacturer's specifications— ensuring data is accurately aggregated over the correct amount of time (ACR Protocol Section 4.1).	Manufacturer's instructions are followed exactly when operating the devices. The manual for the Landtec+C21 was included in the folder under the following document name: Analyzer_Landtec_SEM5000L_iss01. Please note that the Silversmith is a custom instrument and does not come with a manual. The Silversmith is operated by a Methane Emissions Measurement specialist and operation is confirmed on an as needed-basis by a technician from Silversmith.	Closed
9	Methane-specific detection must demonstrate that concentrations detected are within the factory specified range of detection equipment. Please confirm (ACR Protocol Section 4.1). **GHD Response:** The device operating manual indicates that the measurement range is 1-10000ppm methane in the table on page 39. Please confirm the correct detection limit.	Methane detection on the SEM5000 is between 0.5ppm and 100% methane saturation. Please see the document "Landtec SEM5000 Data Sheet" for this information. **Additional Clarification:** You are correct that there is a discrepancy between the two Landtec documents. We can	Closed
10	Please confirm whether a field calibration was done on the date of the post-plugging confirmation sample 1/22/2024. Field calibrations currently provided are for the pre-plugging measurements (ACR Protocol Section 6).	A field calibration was done on 1/22/2024 and the document has been added to the folder under Field Checks.	Closed

Issues Log

Exported Copy

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Regulation / Program	ACR
Reporting Year	2024-01-22 to 2024-01-22

Issue No.	Issues / Questions	Explanation/Response	Status
11	Please provide evidence that the meters used (SN18919, SN41056) were calibrated in accordance with manufacturer requirements every 2 years. Please confirm if any other methane analyzers were used in the project and provide serial numbers (ACR Protocol Section 6). **GHD Response:** The most recent calibration provided for methane analyzer SN. SN18919 is July 2023 which is after the date of the first ambient measurement and measurement 1 for the project conducted in June 2023. Please confirm whether this analyzer was used for these activities. If so, please provide the earlier calibration certificate from 2021 or 2022.	Calibration certificates for SN18919 and SN41056 have been added to the folder under the following file names: SEM5000 Calibration Documentation Unit 18919; Calibration Documentation u107119x 41056. They are calibrated every 2 years, or more frequently, based on the calibration schedule shown on the second page of each report. An additional analyzer was used, SN19338, for the post-plugging measurement. The calibration certificate has also been added to the folder with the file name: CalibrationCert_Landtec_SN19338_2023-01-24. **Additional Clarification:** This unit 18919 was not used for the first ambient measurement or Measurement 1.	Closed
12	Please provide any corrective measures taken if equipment does not meet performance specifications (ACR Protocol Section 4.1.1).	No corrective measures were necessary and therefore not taken.	Closed
13	Please explain why for Measurement 1, there is a significant drop in flow rate at around 12500 seconds of elapsed time. **GHD response**: Please clarify what is meant by adjustment of equipment for stability. Is collected data modified in any way?	The equipment needed to be adjusted for stability. The two hour measurement began after this adjustment, so the data prior to the measurement is immaterial to the project. **Additional Clarification:** None of the data for Measurement 1 was modified in any way, nor was the equipment operated any differently than designed. The adjustment made was to our connection to the wellhead, which caused the flow to drop ahead of reaching stability.	Closed
14	Please explain the reason for methane monitoring starting at around 2pm, where flow monitoring started earlier in the morning.	In order to conserve battery life of the methane detector while in the field, we left it off until the flow stabilized and then it was switched on to begin recording.	Closed

Issues Log

Exported Copy

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Regulation / Program	ACR
Reporting Year	2024-01-22 to 2024-01-22

Issue No.	Issues / Questions	Explanation/Response	Status
15	Please explain whether the 'Single Well Snapshot' data for the flow meter for baseline measurements are raw data or processed data.	This is raw data.	Closed
16	Please confirm whether the 'Single Well Snapshot' data for the flow meter are for Well 35105, as the files are not labelled.	Confirmed this is for well 35105.	Closed
17	Please confirm that the gas flow and methane concentration are in units of MCF/day and ppm respectively, as units are not in the raw data files.	Gas flow is in MCF/day and methane concentration is in ppm in the raw data files.	Closed
18	Please clarify how the amount of 4182 gallons of diesel was determined, as used for project emission calculations. **GHD response:** GHD understands that plugging activities occurred between 9/27/2023 - 1/8/2024. Please clarify why invoice for fuel usage includes dates from 11/24/2023 which is after M1 and M2 measurement activities and up till 1/24/2024 which is after plugging. Additionally, the associated email relating to the project fuel consumption mentions 3 wells. Please confirm that the value used in quantification is just for the one well.	The gallons of diesel consumed in the project was calculated based upon invoices from all contractors who used diesel-powered vehicles to plug 35105. The manufacturer's listed gallons per hour for each such vehicle was multiplied by the number of hours such vehicle was used (as noted on the invoice) in plugging for 35105. These totals were then summed together. For further reference, please refer to document name: ACR915_FuelConsumptionInvoice_v1.0. **Additional Clarification**: The plugger will visit multiple sites in a day and cannot isolate how much fuel was used at each site. In this case, three wells were plugged under the services described in the invoice. Please note that the additional 2 wells are not included for crediting. As it is more conservative to account for the fuel used in an entire plugging day, and very difficult to determine the fuel used at the specific well, Tradewater opted to use the entire fuel reported in the invoice for the project emissions calculations. Regarding the dates, the plugging activity for the included project well began on 9/27/2023 as defined by Tradewater (initial discussions on	Closed

Issues Log

Exported Copy

Revision 8 - closed
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Client	Tradewater, LLC
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Regulation / Program	ACR
Reporting Year	2024-01-22 to 2024-01-22

Issue No.	Issues / Questions	Explanation/Response	Status
19	Please provide evidence of ownership of credits (ACR Protocol Section 6.1). **GHD response:** Landowner Access Agreement form indicates that Tradewater Well Services, LLC has rights to the credits. Note that project documentation e.g. GHG Project Plan and Monitoring Report only mention Tradewater, LLC. Please clarify. Show that Tradewater LLC owns the credits.	The landowner agreement has been added to the folder under a new folder titled "Credit Ownership. **"Additional clarification:** Tradewater LLC is the manager of Tradewater Well Services, LLC. Please see the included document called "Business Entity Search - Tradewater Well Services".	Closed
20	Please provide clarify whether a Methane Measurement Method approval form was submitted to ACR and approved.	The Measurement Technique packet was approved by ACR via email prior to the form's creation by ACR. Please see document titled: 20230621 Measurement Technique Approval Email	Closed
21	Please provide the source backup for the methane density used in the calculations. **GHD Response:** See issue 3. Calculations and project documentation, e.g. GHG Project Plan and Monitoring Report may need to be updated to account for an update in the STP of the methane density used in calculations.	The sheet has been unlocked to better illustrate the calculations. The Measurement Technique description references 0.708 kg/m3 at STP (25C and 1 atm) but unfortunately the temperature is listed wrong; 0.708 kg/m3 is the density at 0c and 1atm Please refer to : https://www.engineeringtoolbox.com/methane-density-specific-weight-temperature-pressure-d_2020.html?vA=0&degree=C&pressure=1bar#).	Closed

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Reporting Year	2024-01-22 to 2024-01-22

Issue No.	Issues / Questions	Explanation/Response	Status
22	Emission rates must show no decline over the sampling period which can be demonstrated by graphing the results, fitting a line to the data to show a resulting slope of less than 1%. Please explain the analyses provided in the Consolidation files regarding this (ACR Protocol Section 4.1.2).	does not decline over the sampling period. To show this, we first fit a trendline to the 10-minute interval data. We then utilize it to predict y1 (at time = 600 seconds) and yfinal (at time = 7200 seconds). The percent change equation is then applied to calculate a value (((yfinal-y1)/y1)*100), and any value greater than -1% passes temporal stability. This calculation is presented in Table 4.1.2 Stabilization in the Measurement 1 and Measurement 2 tabs. A regression analysis was run on the data to check against the slope and y-intercept as shown on the fitted trendline displayed on the data plot. **Additional Clarification**: Section 4.1.2 says that emissions rates must show "no decline" over the sampling period which "can be" demonstrated by graphing the results and showing a resulting "slope of less than 1%." We have demonstrated stability - i.e. no decline - by showing percent change over the two hour period. By focusing on percent change instead of slope, we eliminate the significance of units of measurement. (Percent change shows the relative change or difference between two quantities regardless	Closed
23	The second sampling period must stabilize within 10% of the first measurement. Please explain the analyses provided in the Consolidation files regarding this (ACR Protocol Section 4.1.4). **GHD response:** The last page of the MTM states 'If Qpre-plugging,2 is within a factor of 10 of Qpre-plugging,1, the measurement is considered stable,' therefore we understand that this requirement is to be verified. We understand that this is demonstrated in cell K14/15 of the Measurement 2 tab and found no discrepancy in re-calculation. If this is not where the requirement is demonstrated, please direct us to the correct calculation.	The Consolidation files indicate that the point-to-point measurements within each two-hour measurement period vary by a factor of less than 10x, and that Measurement 2 is within a factor of 10 (or within 10x) of Measurement 1. Our measurement technique memo, which was approved by ACR, does not require us to demonstrate that the second sampling period stabilizes within 10% of the first measurement.	Closed

Issues Log

Exported Copy

Revision 8 - closed
Date September 26, 2024

Project Number	12636696
Program-Specific Project ID	ACR915
Client	Tradewater, LLC
Facility Name	Tradewater OOG 2
Regulation / Program	ACR
Reporting Year	2024-01-22 to 2024-01-22

Issue No.	Issues / Questions	Explanation/Response	Status
24	Leakage assessment raw data file indicates that methane leakage assessment data was taken from 10:40 to 10:43, however field notes indicates that leakage assessment started around 12pm. Photos at site show methane concentration of approximately 7ppm where raw data shows large fluctuation. Please clarify why there is a discrepancy in times and measurements between these sources of data.	According to the field notes, the leak test was started around 7 minutes after the calibration. The calibration began at 11:23am eastern (or 10:23am in the data as the instrument is set in Central time). Calibration takes 10 minutes, plus the additional 7 minutes brings us to 10:40am central/11:40am eastern start time for the leak test. The 12pm referenced in the Field Notes is for the background reading, not the leak test. The time clock on the LCD screen of the SEM is not correct and cannot be adjusted to the relevant time zone. In the raw data, the measurements labeled GPS Point indicate a measurement is being taken. The other actions in column M represent activities such as Field Checks, etc. The discrepancies in time result from the instruments' internal clocks not aligning and ppm fluctuation occurred during calibration activities, not during the leak test.	Closed
25	Post-plugging confirmation sample indicates 0.2 ppm higher than ambient post-plugging methane concentration, which is below the 2ppm threshold for project eligibility. Please provide any reasons for the minor increase post-plugging.	Ambient concentration of methane will naturally fluctuate due to season, time of day, environmental conditions, etc. As this is within the thresholds for project eligibility, the difference is immaterial to the project.	Closed
26	**The following deficiencies were identified in the GHG Project Plan:**		
a	Title page has project ID: 894 which GHD understands is project TW OOG1.	This has been corrected to ACR 915.	Closed
	Section C3 mentions state regulations do exist requiring owners to plug a well, however continues to explain that it does not apply to wells with solvent operators, the case for OOG2. Similar language is not however included in the table in Section A5 for Regulatory Surplus test and Emission Status sections, and section A7 regulatory compliance. Please clarify or correct.	Please note that the well included in OOG 2 does *not* have a solvent operator, and as such, requirements for plugging do not apply. This language has been added to the table in A5 for both sections requested, as well as section A7.	Closed

Issues Log

Exported Copy

Revision 8 - closed
Date September 26, 2024

Project Number	12636696
Program-Specific Project ID	ACR915
Client	Tradewater, LLC
Facility Name	Tradewater OOG 2
Regulation / Program	ACR
Reporting Year	2024-01-22 to 2024-01-22

Issue No.	Issues / Questions	Explanation/Response	Status
b	Section F1 mentions that no regulations require plugging of orphan wells however does not include language similar to Section C3.	The key term is "orphaned" as there is no regulation requiring the plugging of wells determined to be orphaned (though there are regulations that exist for wells not considered orphaned that are no long permitted or in production). This distinction has been clarified in this section as requested.	Closed
	Section A7 regulatory compliance does not mention details that the initiation and plugging procedure was conducted in accordance with state laws or details of plugging plan/report. Please clarify or correct.	Section A7 has been updated.	Closed
c	Headers of GHG Project Plan are not updated to the current PP and Project title.	This has been updated.	Closed
d	*Section A8*		
	Please confirm whether Tip is remaining as a contact.	Contact information has been updated.	Closed
	Note that all phone numbers for all contacts are the same.	Tradewater's contact number will send you to a phone tree. For direct contact, please refer to the email addresses listed in Table 4.	Closed
	Refers to multiple orphan wells rather than one.	Section A8 does not refer to any wells. Section A7 was adjusted to clarify when referring to the single project well.	Closed
	Describes confirmation sampling on both the plugging date and the post-plugging confirmation sample date.	This has been corrected in the GHG Plan. No confirmation sampling occurred on the first date (1/8/2024) but did occur on the second date (1/22/2024). Please note that the post-plugging confirmation date has been updated.	Closed
e	Section B3, end of crediting period contains typo, '2043' instead of '2044'.	This has been corrected.	Closed
f	Section B8 attests that no atmospheric leakage was detected. However atmospheric leakage was detected, below the 2ppm. Please clarify that no leakage was detected beyond the allowable threshold.	No leakage was detected beyond the allowable threshold. The GHG plan has been updated to clarify this.	Closed
g	Minor white space gap in between section C2 and 3.	The space was deleted.	Closed

Issues Log

Exported Copy

Revision 8 - closed
Date September 26, 2024

Project Number	12636696
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Regulation / Program	ACR
Reporting Year	2024-01-22 to 2024-01-22

Issue No.	Issues / Questions	Explanation/Response	Status
h	Section E7 GHG emissions reduction and removals calculation methodology and formulas does not exactly match the equations followed in the Emissions Reductions tab of the emissions reductions calculation file. **GHD Response:** We assume that the 'PP' in Equation 2 of the methodology was a typo and should have been 'PE', as in the legend under the equation mentions that 'PP' is calculated using equation 3 which is for PE. In Section E7 of the Project Plan, the 'ER=(BE-PP) *20' is slightly inaccurate since in the actual calculations, there was no subtraction of post-plugging emissions from baseline emissions. We believe the methodology meant to say ER=(BE*20)-PE. This is a qualitative discrepancy in the GHG Project Plan depending on Protocol interpretations and correcting is optional.	While the formulas in our spreadsheet do not exactly match the equations in GHG Plan, any differences are for ease of calculation in Excel. The equations used in our Excel document result in the same quantification as the Methodology. The only exception to this is for variable PP in Equation 2, which is not defined in the Methodology. We assume it means post-plugging emissions, which are understood to be zero (a fact that can be checked at the pending site visit). While we have accurately replicated the formulas in our GHG Plan, PP is not included in our Excel equations because it is zero. **Additional clarification:** We would prefer to reflect the methodology as written in the GHG Plan, whether this is a typo or not, as our calculations are accurate.	Closed
i	*Section E1*		
	Note that Section E1 indicates that per technique memo Q pre-plugging is converted to LPM during the quantification process, however minor inconsistency with calculations which go directly to calculating Q pre-plugging in Kg methane/year.	The emissions rate extracted from previous parts of the analysis was in MCF/day. Within the unit conversion inside cell F10 of the Calculations sheet, we convert to LPD instead of LPM. Eventually converting from days to year for the final kg per year value. This is equivalent to first converting MCF/day to LPM and then converting from minutes to years. This can be verified by following the Constants tab in the workbook and the formula in F10 of the calculations page.	Closed
	Note that calculations use constant of 365.25 days per year, while Section E1 indicates use of 365 days per year.	The calculations have been updated to reflect 365.	Closed
	Section H2		

Issues Log

Exported Copy

Revision 8 - closed
Date September 26, 2024

Project Number	12636696
Program-Specific Project ID	ACR915
Client	Tradewater, LLC
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Regulation / Program	ACR
Reporting Year	2024-01-22 to 2024-01-22

Issue No.	Issues / Questions	Explanation/Response	Status
j	Project Timeline indicates Plugging Operations as defined by IN DNR Well Plugging Reports from 9/27/2023 - 1/22/2024, however well was plugged 1/8/2024. **GHD Response:** GHD understands that plugging operations ended on 1/8/2024, the date of the plugging of the well. Section H2 indicates plugging operations ended on 1/22/2024.	The GHG Plan has been corrected to indicate that the plugging activity (initial discussion on plugging actions) which began on 9/27/2023 is defined by Tradewater, not IN DNR. **Additional clarification:** The well was plugged on 1/8/2024 and post-plugging monitoring was completed on 1/22/2024, which is lumped in with "plugging activities." However, we acknowledge this may be confusing and have edited section H2.	Closed
	Project Timeline indicates Post-plugging Confirmation Sampling on 1/23/2024, however GHD understands Post-plugging Confirmation Sampling on 1/22/2024 with Tradewater confirmation of results on 1/23/2024. **GHD Response:** The issue described above is resolved, however note that per strict definition of Protocol, reporting period ends when project proponents confirm that there are no post-plugging emissions in the last well plugged in the same project. GHD notes that Tradewater analysis of post-plugging confirmation sampling on 1/22/2024, occurred on 1/23/2024. Results in minor qualitative inaccuracy regarding reporting period end date. If correcting, please ensure consistency throughout documentation.	The correct date for post plugging confirmation sampling is 1/22/2024. The GHG plan has been updated to reflect this. **Additional clarification:** As the data processing and analysis occurred 1/23/2024 and the actual measurements occurred 1/22/2024, we would prefer to leave the project plan as is as it reflects the date of measurement which confirms the success of the plugging.	Closed
	Section D1		
	PE parameter table includes details for the FFq,j (fossil fuel consumed) parameter, not PE. Please update the parameter and corresponding units (gallons). Measurement Methodology corresponds with Section 4.4 of the Protocol, however 4.1 is listed.	The parameter for FFq,j has been updated.	Closed
	Flow rate of methane at equilibrium parameter table indicates LPM unit of measurement. However raw data indicates measurements are taken in MCF/day. Also raw data indicates that this is the flow rate of total gas and not specifically methane. Please update parameter table to reflect actual monitoring details.	The parameter table has been updated.	Closed
	Concentration of methane parameter table indicates % volume unit of measurement, however raw data indicates measurements are taken in ppm.	The raw data in ppm is converted to percent volume in the calculations. The GHG Plan parameter table has been updated to reflect this.	Closed
	$Q_{pre\text{-}plugging}$ parameter table indicates 'summing' technique. Please clarify where this occurs in quantification or whether this is referring to averaging of emissions rates.	This is meant to account for multiple wells. As this project includes only one well, we have removed the language around summing.	Closed

Issues Log

Exported Copy

Revision 8 - closed
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Project Number	12636696
Program-Specific Project ID	ACR915
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Regulation / Program	ACR
Reporting Year	2024-01-22 to 2024-01-22

Issue No.	Issues / Questions	Explanation/Response	Status
k	Note that Qpre-plugging is the only calculated parameter included in the monitoring parameter tables, may consider adding tables for other calculated parameters included BE and PE.	Tables for BE and PE have been added.	Closed
	Qpre-plugging parameter table monitoring frequency per Protocol is once/well rather than once/project.	As this project contains only one well, they are the same frequency. However the table has been updated to reflect "once per well."	Closed
	Qpre-plugging parameter calibration requirements are not applicable for calculated parameter.	The GHG plan has been updated.	Closed
	w parameter table Measurement Methodology is also guided by Section 5.2 of the Protocol, where only Section 4.1 is currently listed.	The table has been updated.	Closed
	Environmental conditions parameter table Measurement Methodology is also guided by Section 5.2 of the Protocol, where only Section 4.1 is currently listed.	The table has been updated.	Closed
	Not specified by Protocol however may add Legal Requirements Test parameter table clarifying procedure for confirming additionality for well.	This has been added.	Closed
	Please align all changes on the GHG Project Plan with the Monitoring Report for all corresponding sections, particularly the Monitoring parameter tables.	The monitoring report has been updated.	Closed
l	Section F2, please include the exact SDG goal item numbers as included in the SDG Contribution Report and indicate whether they are direct or indirect positive impacts. Note that SDG 3 is a direct positive impact to the project. See issue 27 for clarification.	This has been updated.	Closed
	The following deficiencies were identified in the Monitoring Report:		
	Please confirm whether Tip is remaining on the Monitoring Report.	His contact information has been removed.	Closed
	Typo Section 2, 'Description fo data management system', instead of 'of'	Corrected.	Closed
	Monitoring Plan section, per text instructions in the template, for the calibration details must include frequency of calibrations for Alicat flow meter and Landtec methane analyzer as understood to be used in the project, per manufacturer recommendations. **GHD Response:** Please include calibration frequency details for SilverSmith flow meter.	Please note that the Alicat was not used in this project and was mistakenly included. This information for the Landtec SEM 5000 has been added to the Monitoring Report. **Additional Clarification:** Silversmith does not mandate nor recommend a calibration schedule, and calibrations occur on an as-needed basis.	Closed
	Monitoring Plan section, per text instructions, briefly 'describe the sampling methods performed and utilized during the reporting period.'	Sampling methods have been added to the MR.	Closed

Issues Log

Exported Copy

Revision 8 - closed
Date September 26, 2024

Project Number	12636696
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Facility Name	Tradewater OOG 2
Regulation / Program	ACR
Reporting Year	2024-01-22 to 2024-01-22

Issue No.	Issues / Questions	Explanation/Response	Status
26	Section VI please refer to exact file name of appendices to be attached to Monitoring Report e.g. the ER calc file. **GHD Response:** ER file appendices are not the OOG2 ones. Please ensure most recent OOG2 ones are referenced.	This has been updated. **Additional Clarification:** The appendices and reference have been updated.	Closed
	Section VI part 3 Deductions, please include the 5% leakage/uncertainty value deducted from total emissions reductions and indicate value is relating to methodology uncertainty deduction requirement.	This has been added.	Closed
	Section VII Previous Reporting, please clarify whether the information provided in this section is referring to a resubmission of the Project listing form, or describing changes to the Project since the Project was originally listed. If so, listing form has several other updates to be mentioned in Section VII including number of wells, PDA approach applicability etc.	As required by the Monitoring Report guidance, the listed changes are to the original Listing Form, which was created prior to the project activity. As such, it needs to be revised to align with actual events and volumes. Additional information has been added to this section of the Monitoring Report.	Closed
	Section VIII Verification section to be updated. Full verification with site visit, reporting period dates not required(only dates of any previously verified periods), clarify that Project only requires one verification that is conducted by GHD.	This has been updated.	Closed
	Section III Part 4 Environmental and Social Impacts section, instructional text indicates to provide confirmations to the SDG's identified in the project. For each SDG, please indicate and explain whether the goal is being met for the project. This may be described in the section, or included in an appendix added to the end of the Monitoring Report as needed.	The monitoring report has been updated.	Closed
	The following deficiencies were identified in the SDG Contributions Report:		
	Per ACR-SDG-Contributions-Reporting-Tool-v1.0, SDG 11.4 has a direct positive impact (conditional) to an orphan well plugging project. The SDG is currently in the indirect positive impact section of the project's SDG Contribution Report.	This is a limitation of ACR's tool as they do not have a category for Direct Positive (Conditional) SDGs. We included SDG 11.4 where it could fit, but we have removed it from the version 2 of the report to avoid confusion.	Closed

Issues Log

Exported Copy

Revision 8 - closed
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Program-Specific Project ID	ACR915
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Facility Name	Tradewater OOG 2
Regulation / Program	ACR
Reporting Year	2024-01-22 to 2024-01-22

Issue No.	Issues / Questions	Explanation/Response	Status
27	Per ACR-SDG-Contributions-Reporting-Tool-v1.0, SDG 3.9 has an indirect positive impact, conditional to the Project Developer showing a map of the well and proximity to affected population regarding concerns detailed by the tool for SDG 3.9. Please provide the info in the GHG Project Plan. **GHD Response**: The Monitoring Plan mentions that this SDG is being met for the current project however is not listed in the Contributions Reporting Tool. We believe that Tradewater has met the conditions of the 'conditional' requirement as described in the ACR Tool, by providing the map in the GHG Plan. The SDG is eligible to be added into the indirect positive section of the SDG Contributions form.	A map has been added to the GHG Plan. **Additional Clarification**: SDG 3.9 has been added to ACR's SDG Contributions form.	Closed
28	**The following deficiencies were identified in the Environmental and Social Impact Report:**		
	Section I Part 3, 'wells' should be singular, consider adding 'release of' before 'methane emissions'	This has been corrected.	Closed
	Section I Part 5 must detail any relevant stakeholders including landowners/residents of the land.	The document has been updated.	Closed
	Section II Part 5C must detail consideration to stakeholders such as landowner access agreements and relevant cooperation between landowner and/or other stakeholders.	The form has been updated.	Closed
29	In the Consolidation file, please note that the slope of 0.0062 as identified on the equation on the graph is based on data including methane emission rate in units of MCF/day, and elapsed time in units of seconds, which are inconsistent units considering the calculation of slope.	See our answer to Issue 22. Because we are using percent change instead of slope, the units of measurement are not material.	Closed
30	In the Consolidation file, note that both the slope of 0.0062 and the stability analysis change of 0.1994 are based on an elapsed time of less than two hours (600s -7200s).	Our calculations are based on a full two hours. Since Section 4.1.4 asks that measured emissions rates be averaged over 10-minute intervals, our first reading (at 600s) reflects the average measurements from 0s-600s). And by presenting 12 x 10-minute intervals, we have used measurements from an elapsed time of two full hours.	Closed
31	GHG Project Plan Section E8 and E9 attest that emissions reductions are not generated on an ex-ante basis. Please clarify.	This has been updated.	Closed
32	Please provide final signed GHG Plan and Monitoring Report	These have been signed and final versions provided in the project folder.	Closed
33	GHD identified a 1.12% discrepancy (4710 tCO2e underreported) in the updated emissions reductions from using a rounded Litres/cubic foot conversion factor (28) from that listed in the Measurement Technique Memo (28.3168).	This has been corrected.	Closed

Issues Log

Exported Copy

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Issue No.	Issues / Questions	Explanation/Response	Status
34	GHD identified a 0.03% discrepancy (152 tCO2e overreported) in the reported deductions in MR Section VI (3). GHD re-calculated the discrepancy by calculating the difference between the emissions reductions as reported in the MR and the BE minus PE (values per the MR).	This has been corrected.	Closed
35	GHD identified a <0.1% discrepancy in total emissions reductions due to 1 tCO2e underreported the reported Project emissions in the MR compared to the ER calculations file (42 vs 43) tCO2e.	The calculations yield 42.61458, but the project emission has been rounded up in the MR to be more conservative (43 tCO2e) as requested.	Closed
36	GHD notes that the reporting period, project start date and crediting period as originally validated/verified were incorrect. Per Section 1.2.1 of the ACR Methodology, the project start date is the date of 'completion of plugging activities of the first plugged well included in a project, after demonstration that there are no emissions from the plugged well' which is understood to be the date of post-plugging confirmation sampling on 1/22/2024 and not the date the well was plugged on 1/8/2024. Per the ACR Methodology, the reporting period begins on the date of 'confirmation of the absence of emissions from the first well in a project and ends when project proponent confirm that there are no post-plugging emissions in the last well plugged in the same project.' As there is only one well in the project, the reporting period would therefore be one day (1/22/2024) and the crediting period ending 20 years from then (1/21/2044). The above requires updates to Section II/VII of the MR.	This has been corrected.	Closed
37	The GHG Plan needs to be updated to be consistent with the revised MR.	ACR requested that the GHG Plan remain unchanged, as it is a "pre-project estimate." Included is an email that indicates ACR did not need a revised GHG Plan, which was also confirmed verbally.	Closed
38	Per Equation A of the Methodology E&C (2024-09-09), parameters 'GasTemp' and 'GasPressure' are the measured absolute temperature and pressures of the well gas flow. Please clarify whether the 60F and 14.65 psi as used in the calculations (tab M1 and M2) of file 'OOG2_ Stability and CH4 Emission Rate - V3' are measured values or known values to which the flow meter corrects the data. **GHD Response:** Please provide evidence (per manual or correspondence) that the flow meter corrects to 60F and 14.65 psi.	The flow meter corrects to 60F and 14.65psi. The displayed flow rate in the raw data reflects these corrected values. Tradewater makes an additional correction in the calculations for pressure: the Silversmith measures at 14.65psi (0.9968739 atm) and we correct it to 1 atm.	Closed

Issues Log

Exported Copy

Revision 8 - closed
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39	Per E&C section 12. Errata: Emissions Stabilization Requirements (2024-09-09) (third bullet point under b.) pressure is to be analyzed for stability. Please confirm the location of the stability analysis for pressure.	Pressure stability is assessed in the document OOG2_ Stability and CH4 Emission Rate - V4, tab "Stability (Pressure)"	Closed
40	Please provide the excel versions of the pressure data files e.g. 20230627_35105 Vaetrix data_RAW and 20230825_35105_Vaetrix data_RAW ?	Provided by Tradewater.	Closed
41	Please provide the ACR approval of the Measurement Technique Memo submission sequence deviation.	This has been added to the folder under file name "ACR Project Deviation Request-MMMAF Sequence - Approved"	Closed
42	Please clarify the location of the 35105 M1 photo 5.jpg showing the gas separator, relating to the moisture correction requirement.	The separator is the large beige cylinder.	Closed
43	GHD identified a 900% discrepancy (407,001 tCO2e overreported) in the reported deductions in MR Section VI (3) due to a transcription error in the reported deductions. GHD re-calculated the discrepancy by calculating the difference between the emissions reductions as reported in the MR and the BE minus PE (values per the MR).	This has been corrected under version 6.0.	Closed
44	Per E&C requirement 8 c., 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." Please confirm.	Confirmed, the background levels were assessed at a distance of 10 to 15 feet upwind of the well according to the E&C requirement.	Closed
45	Please contact Indiana DNR and provide their response in terms of the status of the eligibility issue. We understand that ACR would like to confirm whether the well has a solvent operator that is responsible for plugging the well, despite the well's operating permit being revoked.	Attestation letter from Indiana DNR provided by Tradewater.	Closed
46	Please confirm how the following comment as identified by ACR on the GHG Plan was addressed: -Landowner Access Agreement that DNR agrees not to interfere with Tradewater's right to seek carbon credits. Is there a similar agreement in place with the contracted plugging company. Acknowledging that it occurred, based on approved plugging plan, where Tradewater is listed as operator, we have not identified a document demonstrating when Tradewater assumed responsibility for the well. Please provide.	Discussed with ACR over call. There is no such similar agreement. ACR indicated that would be fine but on a go forward basis it would be a good idea to have one in place (we plan on doing so). As for the "when did TW assume responsibility," this is addressed in the attestation from earlier today.	Closed

Appendix C

Reviewed List

APPENDIX C - DOCUMENT REVIEW REFERENCE LIST
Tradewater, LLC
Tradewater OOG 2 Project Validation and Verification

No.	Document Title	Description
1	ACR915_GHGPlan_v5.1.pdf	GHG Project Plan (Final version)
2	ACR915_MonitoringReport_V7.0.pdf	Monitoring Report (Final version)
3	ACR915_Social Impact Form_V.5.pdf	Social Impact Form
4	ACR915_SDGContributionsReport_v5.0.pdf	SDG Contributions Report
5	20230627_DAY_35105_Raw Data.csv	Leakage Evidence
	ACR915_35105_CH4LeakEvaluation_v1.0.xlsx	
	ACR915_35105_FieldNotes_2023-06-27.jpg	
	Leakage Photos	
6	IndianaDNR_OrphanList_2023-04-11.pdf	Eligibility
	IndianaDNR_WellClassifications_Email_2021-10-19.pdf	
7	ACR915_35105_PluggingPlan_2023-08-31.pdf	Regulatory Compliance
	ACR915_35105_PluggingPlan_2024-01-04.pdf	
	ACR915_35105_PluggingReport_2024-02-13.pdf	
	35105 Form 54874 signed.pdf	
	IN DNR Attestation of Process - signed.pdf	
8	Video Demonstrations	Operating Procedures
	2023 June 9 Tradewater Measurement Technique Memo.pdf	
	20230609 Measurement Technique Email.pdf	
	20230621 Measurement Technique Approval Email.pdf	
9	Goose Pond_20240122_000000_calibration	Calibration Procedures
	CalibrationCert_Landtec_SN19338_2023-01-24.pdf	
	CalibrationCert_Landtec_SN18919_2023-07-18.pdf	
	CalibrationCert_Landtec_SN19338_2022-10-10.pdf	
	CalibrationCert_Landtec_SN41506_2022-10-11.pdf	
	CalibrationCert_Silversmith_SN2564-34183_2023-02-27.pdf	
	CalibrationCert_Silversmith_SN2564-34183_2023-05-17.pdf	
	MC Cassandra Whitford-05162023085138-allcerts	
	MC Cassandra Whitford-05162023085138-allstickers	
10	FieldCheck_Landtec_SN18919_2022-08-23.pdf	Field Checks
	FieldCheck_Landtec_SN18919_2023-08-25.pdf	
	FieldCheck_Landtec_SN41056_2023-06-27.pdf	
	FieldCheck_Landtec_SN41056_2023-07-11.pdf	
11	Analyzer_Landtec_SEM5000L_iss01.pdf	Equipment manuals
	2398-sem5000-new-template	
12	20230627_DAY_35105_Raw Data.csv	Background CH4
	ACR915_35105_Pre-Plug_CH4BackgroundAnalysis_v1.0.xlsx.	
	ACR915_35105_FieldNotes_2023-06-27.jpg	
13	ACR915_35105_M1_CH4ConcentrationAnalysis_v1.0.xlsx	Baseline Measurement 1
	ACR915_35105_M1_CH4FlowAnalysis_v1.0.xlsx	
	ACR915_35105_FieldNotes_2023-06-27.jpg	
	Photos	
14	ACR915_35105_M2_CH4FlowAnalysis_v1.0.xlsx	Baseline Measurement 2
	ACR915_35105_M2_CH4ConcentrationAnalysis_v1.0.xlsx	
	ACR915_35105_FieldNotes_2023-08-25.jpg	
	20230825_DAY_35105_Raw Data.csv	
	20230825_SingleWellSnapshot_2023_09_28_18_42_18.xlsx	
	Photos	
15	ACR915_35105_Consolidated_v1.0	Consolidated
16	Fuel Usage - Plugging - Well Group. No. 2 - Tradewater Well Service.pdf	Project Emissions
	Fuel Usage Email_20240126.pdf	
	ACR915_FuelConsumptionInvoice_v1.0.pdf	
17	20240122_DAY_Goose Pond_PPM.csv	Post-plugging confirmation sampling
	ACR915_35105_Post-Plug_CH4AmbientAnalysis_v1.0.xlsx	
	ACR915_35105_FieldNotes_2024-01-22.jpg	
	Photos	
18	IndianaDNR_OrphanList_2024-01-09.pdf	Permanence
	IndianaDNR_35105_Post-PluggingStatus.png	
19	ACR915_ERs_v1.0	Emissions Reductions Quantification File
20	ACR915_ListingForm_V1.0.pdf	Project Listing Form
21	Tradewater Access Agreement 2023[4][3]_Redacted.pdf	Ownership and Title
	Transfer of Rights Agreement OOG2.pdf	
22	20230627_35105 Vaetrix data_RAW	Pressure data
	20230627_35105 Vaetrix Data Excel	
	20230825_35105_Vaetrix Data Excel	
	20230825_35105_Vaetrix data_RAW	
23	ACR Project Deviation Request-MMMAF Sequence - Approved	Deviation
24	ACR915_35105_M1_CH4ConcentrationAnalysis_V3	E&C Updated calculation files
	ACR915_35105_M1_CH4FlowAnalysis_V3	
	OOG2_ Stability and CH4 Emission Rate - V5	
	ACR915_ ERs_V4	
25	ACR915_35105_Setup_2023-06-27_P3	Gas separator photo
26	MEASUREMENT METHOD APPROVAL FORM ACR915 - V2	MMMAF
27	ACR Edits Required from E&C (email)	Correspondence from ACR

Appendix D

Verification and Validation Opinion

ACR Validation and Verification Opinion

VERSION 1.1

2023-10-20

SECTION I: VALIDATION/VERIFICATION BODY (VVB) DETAILS		
1	**VVB**	GHD Limited
2	**VVB Physical Address** Street Name and Number, City, State, Zip	100A – 455 Phillip Street Waterloo, Ontario N2L 3X2, Canada
3	**VVB Mailing Address (if different)**	Same as above
4	**VVB Email Address**	Gord.Reusing@ghd.com
5	**VVB Phone Number**	5193404231
SECTION II: PROJECT DETAILS		
1	**Project Title**	Tradewater OOG 2
2	**ACR Project ID**	ACR915
3	**Project Proponent**	Tradewater, LLC
SECTION III: CRITERIA USED TO FORM THE OPINION		
1	**ISO 14064–2 (Version Publication Date)**	April 2019
2	**ISO 14064–3 (Version Publication Date)**	April 2019
3	**ACR Standard (Version Number and Publication Date)**	Version 8.0, July 2023

4	**ACR Validation and Verification Standard (Version Number and Publication Date)**	Version 1.1, May 2018
5	**ACR-Approved Methodology (Name and Version Number)**	Methodology for the Quantification, Monitoring, Reporting and Verification of Greenhouse Gas Emissions Reductions and Removals from Plugging Orphaned Oil and Gas Wells in the U.S. and Canada, Version 1.0
6	**Other Criteria (e.g., Errata & Clarifications)**	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, dated 2024-09-13

SECTION IV: VALIDATION OPINION DETAILS (IF APPLICABLE)

1	**Is a validation opinion being provided?**[1] **☒ Yes ☐ No** *If Yes, complete remaining question in this section.*
2	**Crediting Period Dates** **Start Date:** 1/22/2024 **End Date:** 1/21/2044
3	**Validated GHG Project Plan** (provide exact filename, including any appendices) ACR915_GHGPlan_v5.1.pdf, ACR915_Social Impact Form_V.5.pdf, ACR915_SDGContributionsReport_v5.0.pdf, ACR915_ERs_V4.0.pdf

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

4	**Validated GHG Project Plan Date** 9/26/2024
5	**Responsibility** (provide the Project Proponent name) The GHG Project Plan and its contents are the responsibility of: Tradewater, LLC
6	**Does the VVB attest that the GHG Project Plan has been validated in accordance with the criteria identified in Section III?** ☒ **Yes** ☐ **No**
7	**As a result of validation, what type of opinion is the VVB providing?** ☒ **Positive** ☐ **Negative**
8	**If Negative, describe the reasons the VVB is providing this validation opinion.**
9	The actual GHG emission reductions and removals achieved may differ from the validated forecast of future GHG emission reductions and removals, as the forecast is based on assumptions that may change in the future.

SECTION V: VERIFICATION OPINION DETAILS (IF APPLICABLE)

1	**Is a verification opinion being provided?** ☒ **Yes** ☐ **No** *If Yes, complete remaining question in this section.*
2	**Reporting Period Dates** **Start Date**: 1/22/2024 **End Date:** 1/22/2024
3	**Level of Assurance** Reasonable
4	**Verified Monitoring Report** (provide exact filename, including any appendices) ACR915_MonitoringReport_V7.0.pdf, ACR915_ ERs_V4.pdf, OOG2_ Stability and CH4 Emission Rate - V5.pdf)

5	**Verified Monitoring Report Date** 9/23/2024
6	**Responsibility** (provide the Project Proponent name) The Monitoring Report and its contents are the responsibility of: Tradewater, LLC
7	**Does the VVB attest that the Monitoring Report has been verified to the specified Level of Assurance in accordance with the criteria identified in Section III?** **☒ Yes ☐ No**
8	**Does the VVB attest that the GHG statement, as detailed by the Monitoring Report and provided in Section VI below, is without material misstatement (as defined by the ACR Standard)?** **☒ Yes ☐ No**
9	**As a result of verification, what type of opinion is the VVB providing?** **☒ Positive ☐ Negative**
10	**If Negative, describe the reasons the VVB is providing this verification opinion.**

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

Omit or provide additional rows for Vintages as needed

ALL GHG PROJECTS		AFOLU & GEOLOGIC SEQUESTRATION PROJECTS ONLY[3]			
VINTAGE	TOTAL EMISSION REDUCTIONS / REMOVALS	BUFFER POOL / RESERVE ACCOUNT CONTRIBUTION	NET EMISSION REDUCTIONS / REMOVALS	REMOVALS SUBSET (IF APPLICABLE)	EMISSION REDUCTIONS SUBSET (IF APPLICABLE)
2024	813,632				
TOTALS*	813,632				

*Totals may not sum due to rounding

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

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

SECTION VII: ATTESTATION	
LEAD VALIDATOR/VERIFIER SIGNATURE	9/26/2024 X Gordon Reusing Signed by: Gordon Reusing
LEAD VALIDATOR/VERIFIER NAME	Gordon Reusing
LEAD VALIDATOR/VERIFIER TITLE	GGAS Principal
LEAD VALIDATOR/VERIFIER ORGANIZATION	GHD Limited
LEAD VALIDATOR/VERIFIER DATE	9/26/2024
INDEPENDENT REVIEWER SIGNATURE	9/26/2024 X Sean Williams Signed by: Sean Williams
INDEPENDENT REVIEWER NAME	Sean Williams
INDEPENDENT REVIEWER TITLE	GGAS Manager
INDEPENDENT REVIEWER ORGANIZATION	GHD Limited
INDEPENDENT REVIEWER DATE	9/26/2024