ACR 1043

Tradewater OOG 3

August 18, 2025

Tradewater, LLC

Tradewater

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A.

PROJECT OVERVIEW

A1. PROJECT TITLE

Tradewater OOG 3 (hereinafter referred to as “Project”).

A2. PROJECT TYPE

Plugging Orphaned Oil and Gas Wells

A3. NON-TECHNICAL EXECUTIVE SUMMARY OF PROJECT

Description of Project Activity

The project activity is the plugging three orphaned gas wells in the state of Illinois that have been determined to be emitting methane.

Background Information

There are over 100,000 orphaned oil and gas wells sitting unplugged throughout the United States, putting the air, soil, water, and communities around them at risk of contamination by methane and other harmful gases and fluids. Illinois is home to over 4,000 orphaned wells, and OOG 3 tackled three particularly high emitters. The wells in this project address a unique and urgent problem. Each well was left to languish on private landowner property while actively leaking methane. Each of these wells present elevated shut-in pressure, which indicates that there are large quantities of methane that would be emitted into the atmosphere over time if not plugged. Further, these wells are typically expensive and labor-intensive to plug; because of this, they have sat on state orphaned well lists for long periods of time—some for decades. Permanently plugging the wells in OOG3 mitigated the emissions that would have been released if they remained unplugged.

Project Purpose and Objectives

The purpose of this Project is to mitigate the emissions that would have been released by the orphaned wells in absence of the plugging activity.

A4. PROJECT ACTION

Description of Prior Physical Conditions

In the business-as-usual scenario, methane from the orphaned gas wells in the Project is emitted into the atmosphere as the wells remain unplugged and without any mitigating actions. Without a solvent operator (known as “permittee” in Illinois, but henceforth referred to as “operator” or “owner” to align with the Methodology), the wells are a State responsibility and will not be remediated in the near term. In the absence of the Project, they would therefore continue to release methane unabated.

Upon first access, the wells were found to be in the following states of disrepair:

Well “Lincoln Cameron #1” (reference number 113306) was less than 500-feet from a house, and contained a rusted wellhead sticking about 7 feet tall from the surface. The well had multiple rusted valves. One of the areas where the leak was detected was around these rusted valves. If left unattended, leak will only get worse over time.

Well “Blackburn University #2” (reference number 129109) was in the middle of the bean field with a large 8 foot tall separator and a 5-6 feet long gas storage tank. All the surface equipment that was visible were heavily rusted. Because of the presence of the surface equipment a large area of land was left unfarmed. The well was leaking right at the casing head. This well is in an area where it is at risk of getting hit by a farmer-operated tractor.

Well “Haley #1” (reference number 129114) was tucked behind a long patch of bean field and located about 20 feet from a flowing body of water that is frequented by wildlife. The casing head was attached to a gas storage tank which then seemed to be connected to a gas flow line, which was shut in when we first encountered the well. The well was leaking at the casing head.

Description of how the Project will Achieve GHG Reductions

The Project achieved emissions reductions through the mitigation of methane emissions produced by the leaking orphaned wells. Mitigation is achieved by plugging the wells in accordance with state regulations, engineering recommendations, and State-approved plugging plans. The Project measures the quantity of emissions avoided by measuring emissions from the wells in accordance with an ACR-approved Methane Measurement Method Approval Form (MMMAF) before plugging the wells and confirming successful emissions mitigation through post-plugging emissions testing. The post-plugging emissions testing includes screening the well to confirm there are no more leaks.

Description of Project Technologies, Products, Services, and Expected Level of Activity

Plugging activities follow state regulations and are included in each individual well’s Tradewater Plugging Plan. Tradewater contracted a third-party company comprised of oil and gas experts to perform plugging activities. In Illinois, specific licenses for pipe pulling and well plugging companies do not exist. For all the wells in the project, a cast iron bridge plug was set as a bottom plug with 10 feet of cement placed above it, as approved by the Illinois Department of Natural Resources. Cement plugs were placed a minimum of 50 feet above and below every produced interval and the freshwater interval, and the wells were cut off at least 4 feet below grade. Post-plugging emissions confirmation samples were recorded for each well to confirm that the well locations have no remaining emissions.

Post-plugging emissions confirmation samples were taken with an SEM5000 Portable Methane Detector. This measurement was performed or supervised by a Tradewater Qualified Emissions Measurement Specialist (QEMS).

Equipment Description

All equipment was administered correctly and utilized per the procedures and situations described in their respective manuals. Equipment units were factory calibrated prior to use on the required or recommended schedule of the manufacturer, and field calibrated as needed and required by the manufacturer use guidance. All equipment was used only within known specified ranges, as referenced in the manuals, as well as the requirements of the Methodology. The resulting data from the equipment was found to meet the known equipment-specified ranges. This is proven via a comparison of the limits set in manuals and the ranges recorded when sampling occurred, and measurements were taken.

As mentioned, field calibrations occur when necessary to ensure data captured in the field accurately represents the parameter to be measured.

Because of the resolution of the instruments used and strict adherence to both the manufacturer limits and constraints of the Methodology, the sampling events yield a confidence level of greater than or equal to 95% as stated by the Methodology.

Measurements of methane concentration, gas flow rate, and flowing pressure (as required when a wellhead is present) are all recorded simultaneously. As each instrument must be turned on manually, the initiation of the readings begins at different points in time. However, all the reported 10-minute measurement intervals contain data that were recorded simultaneously in all three instruments. The chosen two-hour interval used for stability analysis is the same two-hour measurement interval of methane concentration, flow, and pressure data. The raw data files include date, time, and location data to easily enable tracing the data to the correct measurement event.

All measurements are taken by a Qualified Emissions Measurement Specialist (QEMS), who has a minimum of 20 hours of training and experience on the instruments described in ACR's MMMAF. The specialists are listed in section A.8.

A5. PROOF OF PROJECT ELIGIBILITY

The project is eligible under the *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. Additional eligibility requirements as noted in the ACR Standard, Version 8.0, and Errata and Clarifications (2025-06-23) are included below.

Table 1: Eligibility Requirements from the Methodology

Criteria	**Requirement**	**Evidence of Eligibility**
Location (Section 1.1)	The well is located in the U.S. or Canada.	The wells included in the Project are located in Illinois, United States.
Emission Status (Section 1.1)	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 QEMS.	The wells included in the Project were emitting methane when they were first accessed by Tradewater, as confirmed in the Leaking Well Status Attestation.

Well Classification (Section 1.1)	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, or 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 wells included in the project have no designated operator (known as “permittees” in Illinois, but henceforth referred to as operator or owner for consistency with the Methodology). They were registered on the Illinois Office of Oil and Gas Management List of Wells in Plugging Fund as of May 2024 and before the state of Illinois approved the plugging of each well to Tradewater (2/24/25). All wells were listed with a Plugging and Restoration Fund status (“PRF status”) of “PFO” (Plugging Fund - Orphaned) indicating that the wells were added to the Plugging and Restoration Fund (“Plugging Fund”) because they were deemed orphaned by the state. Under Ill. Admin. Code tit. 62, Ch. I, 240.10, an owner is defined as a person who has the right to drill and produce oil and gas while a permittee is defined as an owner holding or required to hold the permit. The owners for these wells are no longer solvent nor able to be held responsible for plugging wells.
Reporting Period (Section 1.2)	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.	The reporting period begins on 04/07/2025, the date the first well underwent the post-plugging monitoring assessment, and ends on 04/08/2025, the date the last post-plugging monitoring occurred for the third well.

Start Date (Section 1.2.1)	The project start date is the date the first well is confirmed to have no post-plugging emissions.	The Project start date is the date of first confirmed no post-plugging emissions, as demonstrated by the recorded date of post-plugging monitoring for the well first monitored in the Project. The start date is 04/07/2025.
Crediting Period (Section 1.3, E&C Clarification 4)	The crediting period is limited to a single, twenty-year period from the project start date. 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. 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. All wells in a project must be plugged and demonstrated through post-plugging measurements that there are no emissions within 24 months of the project start date. The maximum possible Crediting Period duration is therefore 22 years.	The crediting period for the Project is within the maximum duration across all wells of 22 years, beginning on the project start date. The Crediting Period for this project is 04/07/2025 – 04/07/2045.
Regulatory Surplus Test (Section 3.2.1 and E&C 2b)	The Regulatory Surplus test requires that OOG well plugging projects are surplus to regulations, i.e., the emission reductions achieved by plugging these wells are not required by applicable regulation. There is no regulatory or other legal requirement to prevent the release of methane.	No federal, state, or local laws require the plugging of the orphaned wells in the Project, as plugging requirements apply only to wells with a known solvent operator. The wells included in this project do not have a solvent operator. A review of the Illinois Administrative Code found no regulations on fugitive emissions from orphaned wells. Orphaned wells do not have a solvent operator, and therefore other existing regulatory requirements for plugging do not apply (See section C3). There are no regulatory requirements to prevent the release of methane from these orphaned wells. No federal, state, or local laws required the prevention of methane emissions from the orphaned wells in the Project.
Performance Standard (Section 3.2.2)	As regulations are not uniform in the different states and provinces, orphan wells that comply with all eligibility	The plugging of orphaned wells in the U.S. and Canada is determined to be additional by the performance standard set in the

	requirements in the Methodology are considered additional.	Methodology, provided the Project meets all eligibility criteria. The Project meets the eligibility criteria as described in this section.

Table 2: Eligibility Requirements from the ACR Standard, Version 8.0, Chapter 3

Criterion	Requirement	Evidence of Project Eligibility
Minimum Project Term	The duration of the Minimum Project Term for specific project types is defined in the relevant ACR sector requirements and/or methodology. Project types with no risk of reversal after crediting have no required Minimum Project Term.	The risk is minimal and considered to be none by the ACR Standard. The minimum project term is therefore not applicable.
Validation Deadline	Validation must be completed within 12 months of the plugging of the last well in the project.	The plugging of the last well of the project occurred on 04/02/2025, and Validation officially completed with the submission of the Validation Report on 05/26/2025, within 12 months of the plugging date.
Real	ERTs shall only be issued for a GHG emission reduction or removal that has been verified against an approved ACR Methodology to have already occurred. ACR will not credit a projected stream of credits on an ex-ante basis.	The GHG reductions occurred after the methane emission was permanently abated by plugging the wells. The carbon credits will be issued by the ACR after the project is successfully verified against the approved ACR Methodology.
Title	The Project Proponent shall provide documentation and attestation of undisputed title to all carbon credits prior to registration. Title to credits shall be clear, unique, and uncontested.	Tradewater LLC has provided documentation including orphan status of wells in the Project, and State approvals to assume responsibility and plug. Tradewater also provides agreements referencing undisputed title to carbon credits. Title to carbon credits is clear, unique, and uncontested.
Additional	Every GHG project shall demonstrate they either: Meet an ACR-approved performance standard and pass a regulatory surplus test, as detailed in the applicable methodology, or pass a three-pronged text of additionality in which the GHG Project: 1. Exceeds regulatory/legal	This project passes the regulatory surplus test as demonstrated in Section C of this GHG Plan. Succinctly, the business-as-usual scenario is the absence of plugging, allowing leaking wells to continue to leak methane and other gases into the atmosphere. Therefore, the emissions reductions are additional as they exceed those that would have occurred under the business-as-usual scenario.

	requirements; 2. Goes beyond common practice; and 3. Overcomes at least one of three implementation barriers: institutional, financial, or technical.	
Regulatory Compliance	GHG projects must maintain regulatory compliance. To do this, a regulatory body/bodies must deem that a GHG project is not out of compliance at any point during a Reporting Period. GHG projects deemed to be out of regulatory compliance are only eligible to earn ERTs during the period of non-compliance in specific circumstances.	This project meets all national and local laws and other legally binding mandates. In the state of Illinois, orphaned wells may be plugged by a project developer through the submission of a plugging plan, which is subsequently approved by the Illinois Department of Natural Resources (IL DNR) before proceeding. Illinois DNR inspectors observe and sign off on the plugging process, either by being present on site or by reviewing photographic evidence of plugging activities. This is done to confirm that plugging is done in conformance with the steps set out in the Plugging Plan and Illinois rules and regulations. Plugging activities follow state regulations as specified by the Illinois Administrative Code Title 62, Chapter I, Part 240, Subpart K "Plugging of Wells".
Permanent	For GHG projects with a risk of reversal of GHG emission reductions or removals, Project Proponents shall analyze and mitigate risk, and monitor, report, and compensate for reversals.	The risk of reversal is minimal for projects under this methodology and wells are confirmed plugged by the jurisdiction. Illinois Department of Natural Resources confirms the wells as plugged upon the completion of the Well Plugging Report (form OG-6) for each individual well.
Net of Leakage	ACR requires Project Proponents to address, account for and mitigate certain types of leakage, according to the relevant sector requirements and methodology conditions. Project Proponents must deduct for leakage that reduces the GHG emission reduction and/or removal benefit of a GHG project in excess of any applicable threshold specified in the methodology.	Section 4.5 of the Methodology describes how leakage can occur for this project type. Emissions from the orphaned gas wells in this Project come from unmitigated release of gas. Once a well is plugged and confirmed to be no longer emitting, there is no action from the O&G industry that may be done on that well to result in additional emissions. Plugging of orphaned wells does not increase the number of orphaned wells, and consequently should not result in the

		increase of fugitive methane emitting to the atmosphere. "Leakage" for this Methodology, and therefore this project, is considered zero.
Independently Validated	ACR requires third-party validation of the GHG Project Plan by an accredited, ACR-approved VVB once during each Crediting Period and prior to issuance of ERTs.	This project is validated by the VVB GHD Limited, an accredited, ACR-approved VVB for this project type.
Independently Verified	Verification must be conducted by an accredited, ACR-approved VVB prior to any issuance of ERTs for a given Reporting Period and must be conducted at minimum specified intervals.	This project is verified by the VVB GHD Limited, an accredited, ACR-approved VVB for this project type.
Environmental and Social Impact Assessments	ACR requires that all GHG projects develop and disclose an impact assessment to ensure compliance with environmental and social safeguards best practices. GHG projects must "do no harm" in terms of violating local, national, or international laws or regulations. Project proponents must identify in the GHG Project Plan environmental and social impacts of their project(s). Project Proponents shall also disclose and describe positive contributions as aligned with applicable Sustainable Development Goals. Project Proponents must describe the safeguard measures in place to avoid, mitigate, or compensate for potential negative impacts, and how such measures will be monitored, managed, and	The impact assessment for this project is attached as Appendix A to this document. The United States has committed to the SDGs laid out by the 2030 Agenda for Sustainable Development, with a net-zero target by 2050. The target is based on emissions reductions and carbon removals. The project supports this net zero goal through participation in emissions reductions. The SDG contributions for this project are attached as Appendix B to this document.

	enforced. (From Chapter 8 of the Standard) ACR requires reporting on the project activity's positive contributions to the U.N. Sustainable Development Goals (SDGs) using the most recently published ACR SDG Contributions Report template, provided within or as an appendix to the GHG Project Plan. This includes providing information on how the project activity is consistent with the SDG objectives33 of the host country, where the SDG objectives are relevant, and such is feasible.	

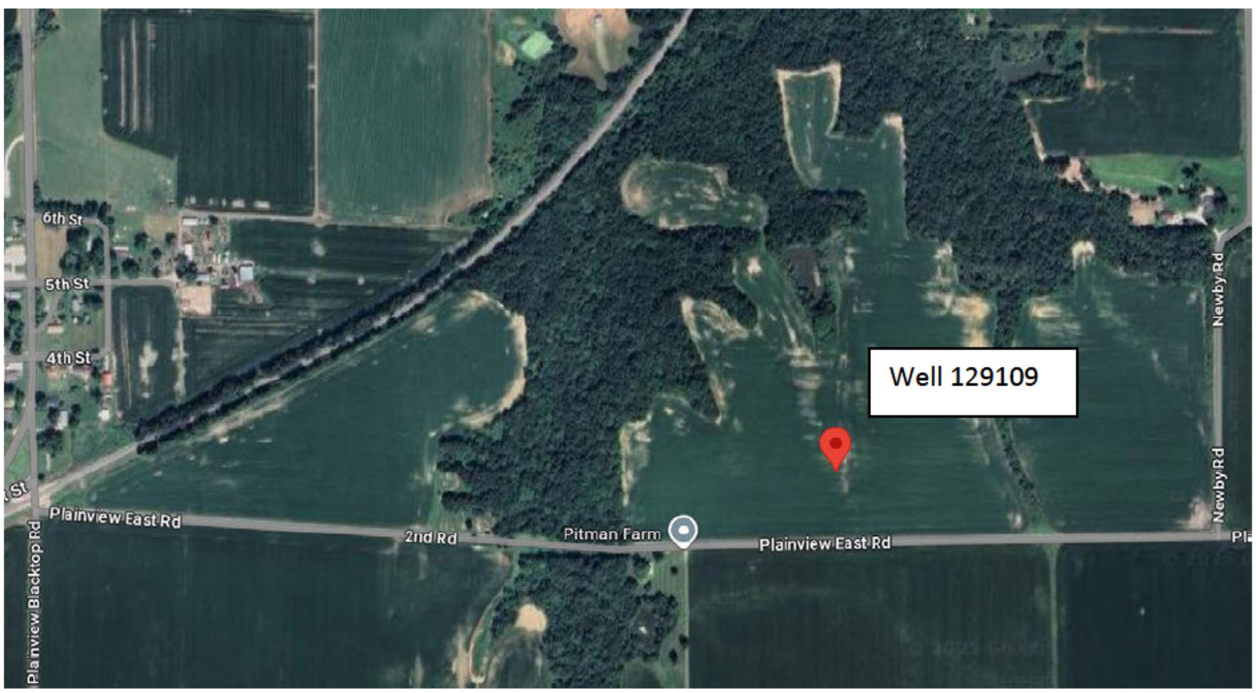
A6. PROJECT LOCATION

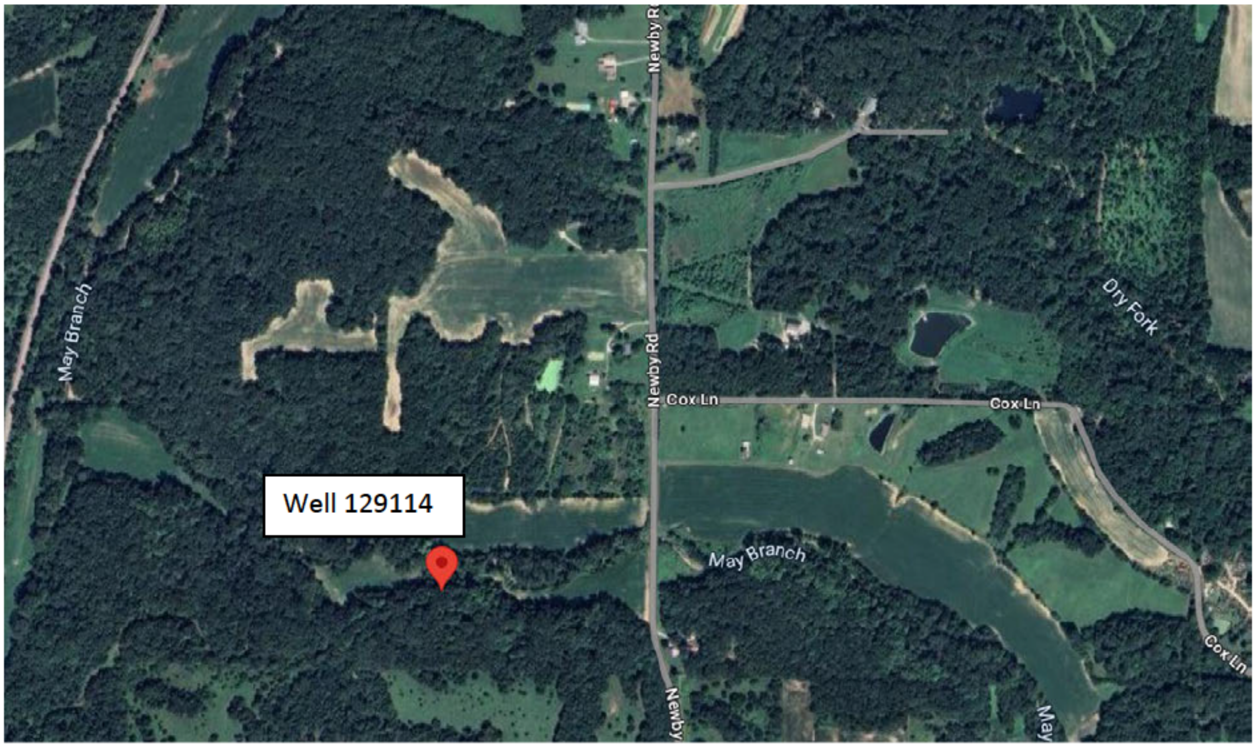
The Project includes three wells in Macoupin County, Illinois, United States. The Well Reference ID, API Number, permit number, "common name" and geographic coordinates for well access are listed in Table 3.

Table 3: Project Wells

Reference Number	API Number	Permit Number	Well Name	GPS Coordinates
113306	1211722790	37344	LINCOLN CAMERON #1	39.146393, -90.031594
129109	1211722766	36311	BLACKBURN UNIVERSITY #2	39.15975, -89.97626
129114	1211722712	33810	HALEY #1	39.17393, -89.96527


Well 113306
Coop Branch
Mills Bottom Rd
Mills Bottom Rd
Mills Bottom Rd
N Prairie Rd


Well 129109
6th St
5th St
4th St
Plainview East Rd
2nd Rd
Pitman Farm
Plainview East Rd
Plainview Blacktop Rd
Newby Rd
Newby Rd



A7. REGULATORY COMPLIANCE

Ill. Admin. Code tit., 240.1115 "Plugging Responsibility" requires the plugging of oil and gas wells at the end of their productive life by the designated operator for that well. Ill.Adm. Code tit. 62, 240.10 "Definitions" defines the designated operator (referred to as "permittee" in the Code's literature) as a well owner holding or required to hold the permit for the well. The owners or permittees for the wells included in the Project are no longer solvent nor able to be held responsible for plugging or otherwise managing the wells.

As a result, the wells included in the Project were registered on the Illinois Office of Oil and Gas Management List of Wells in Plugging Fund ("PRF List") with a status of "PFO," designating the wells as orphaned by the State. The IL DNR may elect to plug, replug or repair these orphaned wells, provided there is sufficient funding in the program to do so. The wells included in the Project defaulted to the State through this process, but there is no mandate for them to plug wells in the rules of the Plugging and Restoration Fund or the Administrative Code. A lack of funding for plugging these challenging orphaned wells in practice resigns these wells to remain on the PRF List indefinitely.

Orphaned wells may be plugged by another entity, in this case a project developer, through the submission of a plugging plan, which is subsequently approved by the Illinois Department of Natural Resources (IL DNR). Illinois DNR inspectors observe and sign off on the plugging process, either by being present on site or by reviewing photographic evidence of plugging activities. This is done to confirm that plugging is done in conformance with the steps set out in the Plugging Plan and Illinois rules and regulations. Plugging activities follow state regulations as specified by the Ill. Adm. Code tit. 62, 240 Subpart K, "Plugging of Wells". After plugging, IL DNR completes the OG-6 form for the well, confirming it is plugged.

A8. PARTIES

Table 4: Involved Parties

Entity	Responsibility	Name	Title, Project Role	Contact
Tradewater, LLC 1550 W. Carroll Ave., STE 213, Chicago, IL 60607 United States	Project Proponent, Carbon Credit Title	Timothy H. Brown	Chief Executive Officer, Signatory	(312) 273-5122 tbrown@tradewater.us
		Cassandra Whitford	Methane Project Development Manager, Project Expert, QEMS	(312) 273-5122 cwhitford@tradewater.us
		Kapilan Tamilselvan	Environmental Project Manager, Project Expert, QEMS	(312) 273-5122 ktamilselvan@tradewater.us
		Gina Sabatini Mattei	Manager of Verification & Logistics, Project Manager	(312) 273-5122 gsabatini@tradewater.us
Tradewater Well Services, LLC	Service Provider	Gabe Plotkin	Founding Partner Strategic Advisor	(312) 273-5122 gplotkin@tradewater.us
Illinois Department of Natural Resources	Regulator	Dan Brennan	Regulatory Contact, Director, DNR, Office of Oil and Gas Resource Management	dan.brennan@illinois.gov
[redacted]	Landowner (Well 113306)	[redacted]	Landowner	[redacted]
[redacted]	Landowner (Well 129109)	[redacted]	Landowner	[redacted]
[redacted]	Landowner (Well 129114)	[redacted]	Contact person for landowner	[redacted]
[redacted]	Plugging Contractor	[redacted]	Plugging Manager, Consulting Geologist	[redacted]
[redacted]	Operational Consultant	[redacted]	Consultant and QEMS	[redacted]
	Operational Consultant	[redacted]	Consultant and QEMS	[redacted]

QEMS by Well and Equipment

Well	Instrument	Cassandra Whitford	[redacted]	Kapilan Tamilselvan	[redacted]
Lincoln Cameron #1 (113306)	SEM5000	X		X	
	Silversmith		X	X	
	Vaetrix		X	X	
Blackburn University #2 (129109)	SEM5000	X		X	
	Silversmith		X	X	
	Vaetrix		X	X	
Haley #1 (129114)	SEM5000	X	X	X	X
	Alicat		X	X	X
	Vaetrix		X	X	X

A9. AGGREGATION AND PROGRAMMATIC DEVELOPMENT APPROACH

This is an Aggregated Project. See Appendix D for more information.

The three wells included in this project are under the management of a single project proponent, Tradewater, and each well is on the property of a different landowner. Tradewater is the Project Developer Account holder, and a Reversal Risk Mitigation Agreement is not applicable (non-AFOLU project). Additionally, there is no required inventory statistical precision requirement for this project type.

A single Methodology is applied as identified in section B1. There is a single overarching Start Date of 04/07/2025. This is the earliest implementation date among the sites, as it is in reference to the first well plugged and confirmed to no longer be leaking through post-plugging emissions measurement.

There are no additional or different risk factors associated with this project type when presented as an Aggregated Project as compared to the wells assessed on an individual basis. All sites are included within this GHG Plan and emissions reductions are reported in adherence to the Methodology as described in sections A5, B3, and H2.

Further, each site meets the requirements for Aggregation:

- Meets all eligibility criteria of well location in the US or Canada; wells are found to be emitting methane when first accessed by the parties involved in the project; the wells meet one of the listed categories, specifically “wells with no designated operator”; and there are no regulatory or legal requirement to prevent the release of methane from these wells.

- Each well is included in the project by Tradewater prior to the completion of Validation, and no additional wells are added once Validation is complete.

- Each well site is available for a site visit during Validation.

- The sites intend to be validated within 12 months of the plugging of the last well in the project

- The well sites are presented in a Site Information Table within the Multi-Site Design Document (Appendix D), including a unique identification number for each site; activities on each site; name and contact information for each landowner; site-specific implementation date; and description of evidence confirming the implementation date. Geographic size of each site and geographic boundaries are not applicable for non-AFOLU project types.

- All information required in the Monitoring Report is consolidated into one report. No additional sites will be added after Validation.

B.
METHODOLOGY

B1. APPROVED METHODOLOGY

The Project used the 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 (May 2023), hereinafter referred to as 'the Methodology'.

B2. METHODOLOGY JUSTIFICATION

The Project involves the mitigation of eligible orphan oil and gas wells by plugging those that emit methane as uncontrolled emissions. The Methodology is best suited to quantify, monitor, report, and verify this Project as it is specific to the sectoral scope and project activities implemented by the Project.

B3. PROJECT BOUNDARIES

The geographic boundary of the Project is contained to the locations of the orphaned wells, which are located in Illinois, United States as specifically identified in Section A6 of this plan. The reporting period for this project is 04/07/2025 – 04/08/2025. The start of the crediting period coincides with the beginning of the reporting period and ends on 04/07/2045.

B4. IDENTIFICATION OF GHG SOURCES AND SINKS

Table 5: SSRs

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

B5. BASELINE SCENARIO

The baseline scenario selected is the business-as-usual case, which is the unmitigated release of methane from the unplugged OOG wells the Project Proponent plugged in the Project.

At the end of a well's productive life, it is required to be plugged by Ill. Admin. Code tit. 62, 240.1115 "Plugging Responsibility." Instead of being properly plugged, the wells in this project were orphaned by the designated operators and subsequently added to the Illinois Department of Natural Resources List of Wells in Plugging Fund. According to Ill. Admin. Code tit. 62, 240.1620 "Plugging Orphaned Wells", wells that are deemed orphaned by the Illinois Department of Natural Resources are added to the Plugging and Restoration Fund program. Then, the Department may elect to plug, replug or repair orphaned wells. The wells defaulted to the State to plug, but there is no mandate for them to plug wells in the Plugging and Restoration Fund and further there is a lack of funding for plugging these challenging orphaned wells. The business-as-usual case means that this well would continue to sit unplugged and continue emitting methane to the atmosphere unmitigated.

B6. WITH-PROJECT SCENARIO

The project scenario is the plugging of three orphaned gas wells in Macoupin County, Illinois that would otherwise remain unplugged and emitting methane to the atmosphere. Pre- and post-plugging measurements were taken to monitor the emissions of the well prior to and after plugging to demonstrate the project activity's success.

All the wells in this project were plugged according to Ill. Admin. Code tit. 62., 240 Subpart K "Plugging of Wells" by a contracted plugging company with license to operate in the state of Illinois. For all the wells in this project, a cast iron bridge plug was set as a bottom plug with 10 feet of cement placed above it, as approved by the Illinois Department of Natural Resources. Cement plugs were placed a minimum of 50 feet above and below every produced interval and the freshwater interval, and the wells were cut off at least 4 feet below grade. Post-plugging emissions confirmation samples were recorded for each well to confirm that the well locations have no remaining emissions.

B7. GHG EMISSIONS REDUCTIONS AND REMOVALS

The Project reduces GHG emissions by preventing the release of methane from uncontrolled orphaned gas wells to the atmosphere. In the baseline scenario, methane is released through continual leaks or from degrading surface equipment, degrading casing, or other physical changes in the well. The GHG emissions reductions were calculated per well by subtracting project emissions from the baseline emissions, which are the calculated emissions that are mitigated over the 20 year crediting period.

B8. PERMANENCE

The risk of reversal is minimal for projects under this Methodology, and permanence requires the demonstration of project integrity and emissions prevention. In order to demonstrate that plugging the orphaned gas wells in this Project resulted in avoided methane emissions, post-plugging emissions confirmation samples were taken and compared to an ambient methane concentration sample taken at each well as required by the Methodology. No atmospheric leakage was detected exceeding the allowable threshold as indicated by the Methodology.

After an oil or gas well is plugged, the Project Proponent must confirm that the well has been marked "plugged", or equivalent, by the appropriate jurisdiction. The Illinois DNR data system affirmed that the orphaned gas wells included in the Project were plugged through completion of the OG-6 form by the State.

The Project followed all requirements for plugging in Illinois as directed by the Illinois DNR and described in Section A7. The Methodology incorporates the American Petroleum Institute (API) Recommended Practice (RP) 65-3 – Wellbore Plugging and Abandonment Standard with regards to plugging. While each jurisdiction may make its own guidance and rules, the IL DNR's requirements mirror that of the API's guidelines. The table below describes how this was achieved for each well:

Plugging Plan Component	API RP 65-3 Guideline/Recommendation	Blackburn University #2 Analysis (Ref #129109)	Haley #1 Analysis (Ref #129114)	Lincoln Cameron #1 Analysis (Ref #113306)
Barrier Strategy	Barriers should be placed to isolate potential flow zones, protect usable water sources, and seal the surface. A multi-plug system or a continuous plug on a mechanical base is a common approach.	A Cast Iron Bridge Plug (CIBP) was set at 365 ft. A continuous cement plug was placed from this depth to 4 ft below the surface. This establishes a permanent barrier from the producing zone to the surface, which is consistent with API principles.	A Cast Iron Bridge Plug (CIBP) was set at 318 ft. A continuous cement plug was placed from this depth to 4 ft below the surface. This establishes a permanent barrier from the producing zone to the surface, which is consistent with API principles.	A Cast Iron Bridge Plug (CIBP) was set at 302 ft. A continuous cement plug was placed from this depth to 4 ft below the surface. This establishes a permanent barrier from the producing zone to the surface, which is consistent with API principles.
Plug Materials	Portland cement is the most common sealant for permanent barriers. Mechanical plugs (like a CIBP) are typically used as a reliable base for cement.	The well was plugged using a CIBP as a base and was filled with cement. The use of a mechanical base for a long cement column is a sound method under API guidelines.	The well was plugged using a CIBP as a base and was filled with cement. The use of a mechanical base for a long cement column is a sound method under API guidelines.	The well was plugged using a CIBP as a base and was filled with cement. The use of a mechanical base for a long cement column is a sound method under API guidelines.
Plug Installation Methods	Squeeze cementing, by perforating a casing and circulating cement, is a recognized method to establish a continuous well barrier isolating both the annulus and the wellbore.	The casing was perforated at 200 ft, and cement was circulated inside and outside the pipe to the surface. This perforation and squeeze method is a standard technique to ensure a complete annular seal across critical zones.	The casing was perforated at 200 ft and 48 ft, and cement was circulated inside and outside the pipe to the surface. This perforation and squeeze method is a standard technique to ensure a complete annular seal across critical zones.	The casing was perforated at 200 ft, and cement was circulated inside and outside the pipe to the surface. This perforation and squeeze method is a standard technique to ensure a complete annular seal across critical zones.
Verification of Barriers	The final report and inspector's sign-off serve as verification that the plug was installed according to the approved plan, with any modifications noted.	The successful plugging was confirmed by Inspector Carl Ladson and signed off by the manager on April 23, 2025. The final report details the CIBP set at 365 ft and the cement plug to the surface.	The successful plugging was confirmed by Inspector Carl Ladson and signed off by the manager on April 23, 2025. The final report details the CIBP set at 318 ft and the cement plug to the surface.	The successful plugging was confirmed by Inspector Carl Ladson and signed off by the manager on April 23, 2025. The final report details the CIBP set at 302 ft and the cement plug to the surface.
Isolation of Potential Flow Zones	All potential flow zones, such as hydrocarbon zones, shall be isolated.	The producing interval was from 380.0 to 388.0 ft. The CIBP was set at 365 ft, placing a permanent barrier well above this zone and isolating it as required.	The producing interval was from 352.0 to 377.0 ft. The CIBP was set at 318 ft, placing a permanent barrier well above this zone and isolating it as required.	The producing interval was from 378.0 ft. The CIBP was set at 302 ft, placing a permanent barrier well above this zone and isolating it as required.
Protection of Usable Water Sources	Usable water sources shall be protected from contamination by fluid migration.	The base of the freshwater was at 171.0 ft. By perforating at 200 ft and circulating cement to the surface, a complete seal was created inside and outside the pipe, protecting this zone from contamination.	The base of the freshwater was at 104.0 ft. By perforating at 200 ft and 48 ft and circulating cement to the surface, a complete seal was created inside and outside the pipe, protecting this zone from contamination.	The base of the freshwater was at 180.0 ft. By perforating at 200 ft and circulating cement to the surface, a complete seal was created inside and outside the pipe, protecting this zone from contamination.

C.
ADDITIONALITY

C1. BASELINE

The baseline case for orphaned wells is unmitigated release of methane. According to some reports, up to 6.6 million metric tons of carbon dioxide equivalent are released yearly from orphaned and abandoned wells in the United States[1]. Orphaned wells contain no solvent operator, so under the baseline scenario there is no active engagement for plugging wells or managing the methane release. Orphaned wells often default to the State, which lacks the funding to plug the wells. Additionally, there are no mandates for plugging these wells, and common practice does not include plugging of the wells in the absence of a legal requirement.

As a result of these conditions, plugging orphaned wells is considered additional as it goes well above and beyond the baseline scenario.

C2. PERFORMANCE STANDARD

The wells included in the Project meet the orphaned well description and eligibility section in the Methodology, and are therefore considered to pass the Performance Standard Test. See section A5 above for Project eligibility details.

C3. REGULATORY SURPLUS TEST

In order to pass the regulatory surplus test, a project must not be mandated by existing laws, regulations, statutes, legal rulings, or other regulatory frameworks in effect as of the start date that directly or indirectly affect the carbon credits.

Ill. Admin. Code tit. 62, Ch. I, Section 240.1115 holds the permittee responsible for plugging wells. However, orphaned wells do not have a solvent operator or permittee, so requirements to plug do not apply to the orphaned wells included in the Project.

Neither the Ill. Admin. Code tit. 62, Ch. I, part 240 nor any other existing laws, regulations, statutes, legal rulings, or other regulatory frameworks in effect as of the Project start date require the project activity and its associated GHG reductions/removal enhancements. Therefore, the Project passes the Regulatory Surplus Test.

C4. COMMON PRACTICE TEST

Not applicable.

C5. IMPLEMENTATION BARRIERS TEST

Not applicable.

D.
MONITORING PLAN

D1. MONITORED DATA AND PARAMETERS

Data or Parameter Monitored	$Q_{measured, i}$
Unit of Measurement	Scf/hr (after being converted from MCF/day or LPM)
Project Implementation	Field measurement taken during two 2-hour minimum sampling events of volume flow of methane
Technical Description of Monitoring Task	Silversmith HIP6000 flow meter or Alicat mass flow meter is connected via a direct flow set up. For the Silversmith setup, the gas [redacted] For the Alicat setup, the gas [redacted] The meters report data in MCF/day or LPM, which must be converted to Scf/hr to align with the Methodology. The Silversmith produced contains a data point approximately once every 5 minutes. The Alicat produced a data point approximately once every 10 seconds.
Data Source	Silversmith or Alicat, as approved in the submitted MMMAF.
Data Collection Procedures	Data is stored on the instrument software and downloaded into a readable format (Excel) and then transferred to SharePoint.
Methodology Reference	Equation A (E&C)
Data Uncertainty	Low
Monitoring Frequency	Approximately every 5 minutes over the course of two 2-hour-minimum sampling events.
Reporting Procedure	Excel download
QA/QC Procedure	Raw files are saved and untouched, whereas data is processed in a separate file. During measurement, at least two team members are responsible for instrument observation and data output monitoring. All processed data is checked by an internal reviewer.

Data Archiving	All measurements, regardless of inclusion in a project or not, are saved to the Tradewater SharePoint indefinitely.
Parties Involved	Project Developer: Environmental Project Manager
Responsibilities of Parties Involved	Set up sampling equipment, take measurements, save data, process data
Notes	Measured simultaneously with methane concentration, where applicable, and pressure.

Data or Parameter Monitored	$Conc_{measured,\ i}$
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 [redacted]. An average methane concentration is then determined.
Data Source	SEM5000, as approved in the submitted MMMAF.
Data Collection Procedures	Data is stored on the instrument, downloaded to instrument software, and then downloaded from instrument software into a readable format (Excel) and then transferred to SharePoint.
Methodology Reference	Equation B, 1 (E&C)
Data Uncertainty	Low
Monitoring Frequency	Once every second over the course of two 2-hour-minimum sampling events
Reporting Procedure	Excel download
QA/QC Procedure	Raw files are saved and untouched, whereas data is processed in a separate file. During measurement, at least two team members are responsible for instrument observation and data output monitoring. All processed data is checked by an internal reviewer.
Data Archiving	All measurements, regardless of inclusion in a project or not, are saved to the Tradewater SharePoint indefinitely.

Parties Involved	Project Developer: Methane Project Development Manager, Environmental Project manager
Responsibilities of Parties Involved	Set up sampling equipment, take measurements, save data, process data
Notes	Measured simultaneously with methane flow and pressure.

Data or Parameter Monitored	Flowing Pressure
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 MMMAF.
Data Collection Procedures	Data is stored on the instrument, downloaded to software, then downloaded to a computer in PDF form which is then uploaded to SharePoint.
Methodology Reference	Erratum 11 and 16, Equation A (E&C)
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: Environmental Project Manager.
Responsibilities of Parties Involved	Set up sampling equipment, take measurements, save data, process data
Notes	Measured simultaneously with methane concentration and flow.

Data or Parameter Monitored	n
Unit of Measurement	Number of 10-minute intervals from pre-plugging sampling events
Project Implementation	Averaged from 10 minutes' worth of data to create interval for assessing stability.
Technical Description of Monitoring Task	Simultaneous measurements of methane concentration, methane emission rate, and flowing pressure are taken using the respective instruments previously described and data is processed to identify 10-minute windows of data which are averaged to create a single interval. There are 24 intervals.
Data Source	SEM5000, Silversmith or Alicat, Vaetrix
Data Collection Procedures	Data is downloaded from the three instruments and raw versions saved and untouched. Copies of the raw data are processed to assess and define the intervals.
Methodology Reference	4.1.4; Equation 1 (E&C)
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, Environmental Project Manager, and additional Tradewater team members
Responsibilities of Parties Involved	Process measured data and assess for conformity to the Methodology.
Notes	

Data or Parameter Monitored	w
Unit of Measurement	Wells
Project Implementation	Number of wells included in the project
Technical Description of Monitoring Task	Many wells are assessed prior to being added to a project, but the wells included must meet the

	criteria laid out in the Methodology to be eligible, stable, and leaking under the baseline scenario.
Data Source	Documentation may include time-stamped georeferenced data, reports, and/or pictures including pictures of the deployed measurement system, as well as handwritten field notes
Data Collection Procedures	An initial trip precedes official inclusion of a well in a project to determine whether an orphaned well with granted approval to access is first in fact leaking, and second is safe to proceed with measurement and plugging activities. Wells that meet all Methodology criteria and are successfully plugged will be counted as a well in the project.
Methodology Reference	Equation 2 (E&C)
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 Developer: Methane Project Manager, Environmental Project Manager, and additional Tradewater team members.
Responsibilities of Parties Involved	Assess eligibility of wells for inclusion in the project.
Notes	

Data or Parameter Monitored	FF_j
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 field activities performed to plug the wells in the project. Fuel used is calculated or estimated using the known fuel burn for each piece of equipment. Fuel usage is then aggregated. The project proponent then converts the fuel usage into project emissions by using the working hours of the fossil fuel consuming equipment to calculate the fossil fuel usage based on the fuel consumption rate of each equipment.
Data Source	Plugging company invoice
Data Collection Procedures	The plugging contractor supplies Tradewater with the fuel invoice.
Methodology Reference	Equation 3 (E&C)
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	

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

Data or Parameter Monitored	Pre-plugging: $Conc_{measured, ambient}$ Post-plugging: ambient methane emissions
Unit of Measurement	ppm
Project Implementation	Field ambient measurement taken before and after plugging the well
Technical Description of Monitoring Task	The QED Landtec SEM5000 Portable Methane Detector is used to measure ambient methane

	concentration. Measurements are taken at ambient pressure and temperature.
Data Source	SEM5000, as approved in the submitted MMMAF.
Data Collection Procedures	Data is stored on the instrument software and downloaded into a readable format (Excel) and then transferred to SharePoint.
Methodology Reference	Errata 16, Clarification 8 and Equation B (E&C)
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, Operations Manager, and QEMS
Responsibilities of Parties Involved	Set up sampling equipment, take measurements, save data, process data
Notes	$Conc_{measured, ambient}$ = 0 due to direct flow measurements, "*Ambient emissions measurements are not required during pre-plugging sampling events if measurement equipment is directly connected to the leaking well, and therefore not impacted by the ambient methane.*"

Table 6: Device References

Device Name	Make	Model	Serial Number(s)
SEM5000	QED Landtec	SEM5000	41286 50331
Silversmith	Silversmith	HIP6000	0001
Alicat	Alicat	MB-500SLPM-D/GAS	485553
Vaetrix	Vaetrix	DCR-1K-I-05-BT-2RTD	228824-1-1

Table 7: Project Wells and Environmental Conditions

Well Ref ID	129109	113306	129114
	Measurement 1		
Precipitation	0 in	0 in	0 in
Temperature	40 degrees F	68 degrees F	48 degrees F
Humidity	87%	46%	68%
Wind Speed	11 mph	7 mph	7 mph
Barometric Pressure	30.35 in	29.7 in	29.98 in
	Measurement 2		
Precipitation	0 in	0 in	0 in
Temperature	16 degrees F	26 degrees F	35 degrees F
Humidity	87 %	81 %	92%
Wind Speed	15 mph	13 mph	11 mph
Barometric Pressure	30.35 in	30.32 in	30.4 in

E.

GHG QUANTIFICATION

E1. BASELINE SCENARIO

Section 4.2.1 Equation 2: Baseline Emissions (Pre-Plugging) Calculation from the Methodology and associated E&C will be used to calculate annual baseline emissions (BE):

$$BE = ((\sum_{p=1}^{w} Q_{pre-plugging,p}) \times (GWP_{100}(CH_4))/1000 \times 20$$

Where

BE	Baseline emissions over the Crediting Period for the well in the project (MT CO_2e per year)
$Q_{pre\text{-}plugging,p}$	Methane emission rate for well, p [kg CH_4/year]
w	Total number of wells to be plugged in a project (3 wells)
Kg to MT	1000
$GWP_{100}(CH_4)$	100-year global warming potential for methane (CH_4)
20	Years in Crediting Period

In order to get the methane emission rate for the well, Equation 1 from the Errata & Clarifications is used based on the use of continuous methane monitoring.

$$Q_{pre-plugging,p} = \frac{\sum_{i=1}^{n}(Q_{measured,i} \times Conc_{measured,i} \times MCF)}{n} \times \rho \times 0.454 \times 8{,}760$$

Where

$Q_{pre\text{-}plugging,p}$	Methane emission rate for well, p [kg CH_4/year]
$Q_{measured,i}$	Well gas flow rate for 10-minute interval, I, from minimum 2-hour stability period of both pre-pugging sampling events for well p (scf/hr)
$Conc_{measured,i}$	Concentration of methane in the well gas stream continuously for 10-minute interval, i, from minimum 2-hour stability period of both pre-plugging sampling events for well p (%)
MCF	Moisture correction factor taken as 1 because $Q_{measured,i}$ and $Conc_{measured,i}$ are measured on a dry basis
n	Number of 10-minute intervals, i, from stability periods of both pre-plugging sampling events (minimum 2-hours each for a minimum quantity of 24 interval readings)
ρ	Standard density of methane (lb CH_4/scf CH_4), 0.0423 lb CH_4/scf CH_4 at 1 atm and 60 °F
0.454	Conversion of lb to Kg
8,760	Hours per year

The well gas flow rate ($Q_{measured,I}$) was corrected for standard temperature and pressure, as the gas flow measurement equipment does not internally correct flow rate to standard conditions. Therefore, Equation A from the Errata & Clarifications is applied to correct the gas flow rate to a standard pressure and temperature of 1 atm and 60°F respectively.

$$Corrected\ Q_{measured,i} = Q_{measured,i} \times \frac{519.67}{Gas\ Temp_{measured,i}} \times \frac{Gas\ Pressure_{measured,i}}{1}$$

Where

Corrected $Q_{measured,i}$	Well gas flow rate for 10-minute interval, i, from minimum 2-hour stability period of both pre-plugging sampling events for well p, corrected for temperature and pressure (scf/hr). This value is used as $Q_{measured,I}$ in the preceding equation.
$Q_{measured,i}$	Well gas flow rate for 10-minute interval, I, from minimum 2-hour stability period of both pre-pugging sampling events for well p (scf/hr), using a method approved in the submitted MMMAF.
519.67	519.67 degrees Rankine (°R)
Gas $Temp_{measured,i}$	Measured absolute temperature of well gas flow for 10-minute interval, i (°R, where °R = °F + 459.67)
Gas $Pressure_{measured, i}$	Measured absolute pressure of flowing pressure for 10-minute interval, i (atm), using a method approved in the MMMAF.

Deductions for ambient methane concentrations are done to reduce the impact of ambient methane concentration levels on the well gas flow rate calculations. However, this does not apply in a direct-connection set-up. Therefore, Equation B does not apply but is included here for reference.

$$Corrected\ Conc_{measured,i} = Conc_{measured,i} - Conc_{measured,ambient}$$

Where

Corrected $Conc_{measured,i}$	Concentration of methane in the well gas stream for each 10-minute interval, i, from minimum 2-hour stability period of both pre-plugging sampling events for well p (%). This value is used as $Conc_{measured,I}$ in the preceding equation.
$Conc_{measured,i}$	Concentration of methane in the well gas stream for each 10-minute interval, i, from minimum 2-hour stability period of both pre-plugging sampling events for well p (%).
$Conc_{measured,ambient}$	Concentration of methane in ambient measurement (%),using a method approved in the submitted MMMAF.

The well gas flow rate ($Q_{measured,I}$) was corrected for standard temperature and pressure, as the gas flow measurement equipment does not internally correct flow rate to standard conditions. Therefore, Equation A from the Errata & Clarifications is applied to correct the gas flow rate to a standard pressure and temperature of 1 atm and 60°F respectively for all wells included in the Project.

To comply with the ACR's E&C Section 12.b requirements for demonstrating methane emission rate stability, the following methodology was applied:

1. Data Collection and Averaging

Raw data were collected at high frequency and averaged into 10-minute intervals, as required by the E&C. The parameters averaged include:
- Well gas flow rate
- Methane concentration
- Flowing pressure

2. Data Correction

Methane concentration and gas flow rate values were corrected according to the procedures outlined in the E&C guidance. This included:
- Adjustments for moisture content, although not applicable due to measuring on a dry basis.
- Corrections for ambient methane concentration, if applicable, using Equation B.
- Corrections for Standard Temperature and Pressure using Equation A

These corrections ensured that all values were expressed in standard cubic feet per hour (scf/hr) and reflected actual methane emissions.

3. Methane Emission Rate Calculation

For each 10-minute interval, the methane emission rate was calculated using the formula:
Methane Emission Rate (scf/hr) = Corrected Methane Concentration × Corrected Gas Flow Rate

4. Stability Period Selection

A continuous 2-hour period (minimum) was selected for each sampling event, yielding 12 or more consecutive 10-minute data points. This period was evaluated for stability based on the following criteria:

Stability Criteria and Compliance Verification

Criterion 1: No Factor >10 Between Data Points

The maximum and minimum methane emission rates within the 2-hour period were compared.
Requirement: No two 10-minute interval values may differ by a factor greater than 10.
Verification:
Maximum Emission Rate / Minimum Emission Rate ≤ 10

Criterion 2: ±10% of the Average

The average of the 12 (or more) 10-minute interval methane emission rates was computed, followed by the calculation of the percentage deviation of each individual value from this average.

Requirement: At least 11 out of 12 (or 13) data points must fall within ±10% of this average.
Verification:
Emission Rate_i ∈ (belongs to) [Average × 0.9, Average × 1.1], in other words the absolute percentage deviation is below 10%

Criterion 3: Pressure Stability

The average of the 12 (or more) 10-minute interval pressure readings was computed, followed by the calculation of the percentage deviation of each individual value from this average.
Requirement: At least 11 out of 12 (or 13) pressure values must fall within ±10% of the average pressure.
Verification:
Pressure_i ∈ (belongs to) [Average Pressure × 0.9, Average Pressure × 1.1], in other words the absolute percentage deviation is below 10%

Criterion 4: Long-term stability

If all three criteria are met, the data set is considered stable as per E&C Section 12.b. The average methane emission rate over this period is then used as the representative value for the sampling event. A second sampling event, conducted at least 30 days later, yielded an average emission rate within ±10% of the first to confirm long-term stability in all wells. The second measurement was also assessed for stability following the same procedure.

E2. AFOLU PROJECT INVENTORY

Not applicable.

E3. WITH-PROJECT SCENARIO

Section 4.4 Equation 3: CO_2 Emissions from Fossil Fuel Combustion for Equipment Used at Plugging Project will be used to quantify Project Emissions (PE):

$$PE = \sum_{j=1}^{y} \left(\frac{FF_j * FF_{EF,j}}{1000}\right)$$

Where

PE	CO_2e emissions from fossil fuel used in equipment at plugging project (t CO_2e)
$FF_{,j}$	Total quantity of fossil fuel j consumed (gallons) in all plugging activities required for project completion

$FF_{,EF,j}$	Fuel specific emission factor for fuel j 10.49 kg CO_2e per gallon diesel, and 8.81 kg CO_2e per gallon of gasoline
y	Total number of fossil fuels used at plugging project
Kg to MT	1000

Additionally, post plugging activities include measurements of ambient emissions which are taken via the SEM5000 with a detection accuracy of +/- 0.7ppm, therefore meeting the requirement of 1ppm or better as found in the Methodology. The measurements are taken upwind of the well between 10 and 15 feet away to record the ambient (aka background) methane measurement. The SEM5000 is the same device used for pre-plugging sampling methane concentration. As all the wells maintained a portion of the well casing above ground at the time of post-plugging monitoring, the exposed casing above grade after plugging was screened at a maximum of 5cm away from the casing. Each well casing was screened for a minimum of 5 minutes. As no reading exceeded 2ppm above background, the wells are confirmed successfully plugged.

E4. LEAKAGE

According to ACR Standard 8.0, leakage is defined as a decrease in the sequestration or increase in emissions outside project boundaries resulting from project implementation. It refers to secondary effects where the GHG emission reductions of a project may be negated by shifts in market activity or shifts in materials, infrastructure, or physical assets associated with the project.

Emissions from the orphaned gas well in this Project are likely to come from failed equipment and unmitigated release of gas. Once a well is plugged and confirmed to be no longer emitting, there is no action from the O&G industry that may be done on that well to result in additional emissions. Plugging of orphaned wells does not increase the number of orphaned wells, and consequently should not result in the increase of fugitive methane emitting to the atmosphere. “Leakage” for this Methodology is considered zero.

E5. UNCERTAINTY

The Methodology requires this Project to apply a 5% uncertainty deduction from quantified emissions reductions. This is a conservative requirement to account for ongoing research and data collection regarding both the migration of reservoir methane to neighboring wells and the long-term integrity of well plugs.

E6. QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC)

QA/QC for managing data and information is outlined in Section D1.

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.

E7. GHG EMISSION REDUCTIONS AND REMOVALS

Net reductions and removals are quantified using the equation from the Methodology below,

$$Total\ ER = (BE - PE) \times (1 - UNC)$$

Where, in addition to the above variables,

Total ER	Total emissions reductions from project (MT CO_2e)
BE	Baseline emissions over Crediting Period for all wells in project (MT CO2e) from Equation 2
PE	Project CO2 emissions from fossil fuel combustion for equipment used at plugging project (MT CO2e) from Equation 3
UNC	5% uncertainty deduction

E8. *EX ANTE* CARBON CREDIT PROJECTION

Current baseline estimate is 14,280 mtCO2e per year. The baseline emissions for a 20-year period are 285,607 mtCO2e with project emissions at 8.5 mtCO2e. The emissions reduction number of 285,599 is subject to a 5% uncertainty deduction. This project therefore is expected to net a credit total of: 271,319 mtCO2e.

E9. EX-ANTE ESTIMATION METHODS

Please see Appendix C for more information.

F.

ENVIRONMENTAL AND SOCIAL IMPACTS

F1. ENVIRONMENTAL AND SOCIAL IMPACT SUMMARY

Tradewater is unaware of any negative environmental or socio-economic impacts from this project. Since there is currently no regulation that requires the plugging of wells specifically classified as "orphaned," the Project creates a solution to this problem. Although regulations do exist for wells not classified as "orphaned" or those not on the orphan list, those regulations do not apply to the wells in this project (see Section C3 for more information).

Orphaned wells pose a variety of community and environmental issues on top of the risk of the emission of methane to the atmosphere.

Orphaned wells may be located anywhere, including near or in fragile ecosystems, and are thus at risk of leaking fluids or gases into these locations. Because of their wide range of locations, they are also at risk of contaminating waterways like rivers and streams. Further, since oil and gas wells penetrate the underground source of drinking water, they risk contaminating water for the communities they are drilled in. Majority of the wells in this project are located in the middle of farmlands and among homes. The presence of the wells poses as risk to inhabitants of the houses, the farmers and the crops they grow. There is a thriving population of local wildlife in this area. Leaking wells pose an immediate danger to the wildlife as well. In general, leaking wells can also contaminate soil, a problem for farmers attempting to grow crops in the vicinity of these wells, and nearby forests which may be affected by chemical runoff.

Plugging the orphaned gas wells in this Project prevented the negative environmental impacts outlined above and are an overall net positive for the community of nearby landowners, farmers, and nearby residents in Macoupin County, IL.

F2. SUSTAINABLE DEVELOPMENT GOALS

Sustainable Development Goals Statement

The Project supports United Nations Sustainable Development Goals (SDG) as follows:

<u>Direct Positive Impact to SDG Targets:</u>

SDG 9.4 – Industry, Innovation, and Infrastructure: The current technology for plugging leaking wells improves the existing state of the well by eliminating emissions entirely, thereby creating the most resource-efficient scenario. Across the world and the US, enforcement and implementation of plugging is inconsistent, but the adoption of incentive-creating methodologies is one answer to this problem facing the energy sector.

SDG 12.4 – Responsible Consumption and Production: Orphaned wells can be expected to emit harmful methane and other toxic gases into the atmosphere, as well as leak other contaminants into water systems and soil. Additionally, unplugged wells impede the ability to safely utilize the surrounding area and in some cases are a mar on the landscape. Responsible consumption includes environmentally sound management throughout the entire lifecycle of a chemical or system and plugging the wells yields the most responsible and safe outcome.

SDG 13.2 – Climate Action: Methane is a short-lived climate pollutant, meaning that it does the most damage in the first years following its release into the atmosphere. For these reasons, the IPCC recognizes the reduction of methane emissions as the most effective immediate strategy for slowing down warming. The oil and gas industry represents a significant source of methane emissions, and the plugging of orphaned oil and gas wells accelerates global strategies to mitigate near-term climate change and enabling long-term planning and impacts to develop.

<u>Indirect Positive Impact to SDG Targets:</u>

SDG 3.9 – Good Health and Wellbeing: Orphaned oil and gas wells pose a risk to the surrounding environment as much as they emit harmful greenhouse gases. After wells are orphaned, the hydrocarbons and extraction chemicals left behind impact underground aquifers, surface waters, and surrounding lands. Plugging orphaned wells properly closes in the borehole and prevents the vertical and lateral transmission or migration of fluids and/or pollutants to the surrounding formation, rock, soil, and air. This further ensures that health and wellbeing is maintained by limiting and reversing air, water, and soil pollution in the vicinity of the wells. Please see the maps below to orient the proximity of the well to nearby homes, property, farmland, and water sources. The photo below demonstrates the proximity of one of the Project wells to a residence.

F3. STAKEHOLDER COMMENTS AND CONSULTATION

Stakeholders include Illinois DNR, and communication with them is documented in our plugging plan. IL DNR monitored the plugging activities and was in close communication with Tradewater throughout the plugging approval process through to the confirmed plugging of the well. Stakeholders also include landowners. For this project, the landowners are listed in section A8. Direct communication was held with the landowners and any issues regarding access and remediation are handled in direct oral communication and were documented in a letter and access agreement, signed by TW and the landowner. This document covers prior and informed consent as well as the confidential agreement on benefit sharing between Tradewater and landowner. No comments were received during the public comment period for this project.

G.

OWNERSHIP AND TITLE

G1. PROOF OF TITLE

Tradewater LLC is the Project Proponent. Tradewater LLC led all plugging activities and possesses the right to all carbon credits derived from plugging the orphaned gas wells in this Project. Access to the landowner's property is obtained through a Landowner Access Acknowledgement that provides Tradewater the right to access the property and plug the wells and explicit proof of title to the carbon credits. Tradewater Well Services is a contractor for Tradewater, LLC, and transferred the rights to the carbon credits to Tradewater, LLC.

As orphan wells exist without a solvent or designated owner, the responsibility of the well is conveyed to the State and no specific entity is legally responsible for (by title) or held liable for the fugitive emissions from any leaking well. Transfer of ownership is not required in order to plug an orphaned well in Illinois. Instead, when the State approves plugging plans, they are approving the applicant's eligibility to execute the plugging of that well according to state regulations.

In the state of Illinois, Ill. Adm. Code tit. 62, part 240 "The Illinois Oil and Gas Act" sets out the rules and regulations regarding orphaned wells. IL DNR completes "signing off" Tradewater's right to plug the wells is evidenced by the plugging plans (signed 2/24/2025). No other parties can claim or produce proof of title. Tradewater would not be financially incentivized to carry out the plugging activities without exclusive ownership of credits.

G2. CHAIN OF CUSTODY

Chain of Custody conditions are not applicable to this project, as the credits have not been bought or sold previously and the Project does not have a forward option contract.

G3. PRIOR APPLICATION

The project proponent has not applied for GHG emission reductions or removal credits for the project through any other GHG emissions trading system or program.

H.
PROJECT TIMELINE

H1. START DATE

This Project started on 04/07/2025, which corresponds to the completion of plugging activities of the first plugged well included in the Project after demonstration that there were no emissions from the plugged well. The project start date is consistent with the ACR Standard requirement that the start date is the date on which the Project begins reducing GHG emissions against its baseline.

H2. PROJECT TIMELINE

Relevant Project Activities	Timeline
Project Term	Not applicable
Crediting Period	04/07/2025 – 04/07/2045
Reporting Period	04/07/2025 – 04/08/2025
Frequency of Monitoring, Reporting, and Verification	Once per reporting period
Relevant Activities: Measurement 1	Well 113306: 11/19/2024 Well 129109: 12/18/2024 Well 129114: 11/20/2024
Relevant Activities: Measurement 2	Well 113306: 01/23/2025 Well 129109: 01/22/2025 Well 129114: 02/04/2025
Plugging Date	Well 113306: 04/02/2025 Well 129109: 04/01/2025 Well 129114: 04/02/2025
Post-Plugging Monitoring Confirmation	Well 113306: 04/07/2025 Well 129109: 04/07/2025 Well 129114: 04/08/2025

Appendices

Appendix	Document Title	Provided under separate cover? (Yes/No)	Filename *if provided under separate cover*
A	Environmental and Social Impact Assessment	No	N/A
B	SDG Contributions Report	No	N/A
C	Ex-Ante Estimates	No	N/A
D	Multi-Site Design Document	No	N/A
E	Proof of Title	No	N/A

Bibliography

1. U.S. EPA. (2019). Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2018 (Reports and Assessments EPA 430-R-20-002). United States Environmental Protection Agency. https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2017

Attestations

The Project Proponent hereby represents and warrants to the American Carbon Registry, its affiliates and supporting organizations, and any assignee of substantially all of the assets comprising the ACR, that all information contained herein and in all appendices is true, correct, and complete to the best of their knowledge, information, and belief and they further agree to notify ACR promptly in the event that the Project Proponent becomes aware that any representation or warranty set forth above or in any appendix submitted under separate cover was not true when made.

Project Proponent Signature:	
Project Proponent Representative Signature:	X [signature]
Name:	Timothy H. Brown
Title:	Chief Executive Officer
Organization:	Tradewater, LLC
Date:	August 18, 2025

Environmental and Social Impact Assessment

INSTRUCTIONS ACR requires all Project Proponents to prepare and disclose an environmental and social impact assessment per the *ACR Standard*, Chapter 8. To facilitate this requirement, use of this Environmental and Social Impact Assessment template is required. Follow all instructions found within each section and respond as completely and accurately as possible based on project details. If a field is not applicable, respond with "N/A." The Environmental and Social Impact Assessment may be presented within, or as an appendix to, the GHG Project Plan. If providing as a standalone appendix, the Environmental and Social Impact Assessment must be saved as a PDF prior to uploading to the ACR Registry. Terminology as defined in the *ACR Standard* applies to this document.

THIS VERSION 1.1 OF THE ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT TEMPLATE IS REQUIRED IF VALIDATION ACTIVITIES COMMENCED AFTER OCTOBER 31, 2024.

SECTION I: GHG PROJECT INFORMATION		
1	Document date	July 8, 2025
2	Project title	Tradewater OOG 3
3	ACR project ID	ACR1043
4	Provide an overview of the project activity. Tradewater has plugged 3 orphaned gas wells across Macoupin County, Illinois, USA to prevent release of methane emissions.	
5	Project location(s) City or county, state, country, and any other relevant identifiers	Macoupin County, Illinois, United States
6	Provide an overview of the GHG Project's relevant stakeholders (i.e., individuals or groups that can potentially affect or be affected by the project activities and who may live within or outside the Project area). Stakeholders include Illinois DNR, who monitored the plugging activities and were in close communication with Tradewater throughout the plugging approval process through to the confirmed plugging of the wells. Stakeholders also include landowners, all of whom are private citizens.	

SECTION II: ENVIRONMENTAL & SOCIAL RISKS AND IMPACTS

Taking into account the scope and scale of the project activity, provide an assessment of the GHG Project's environmental and social risks and impacts for the project duration for each of the areas below. Categorize each risk/impact as positive, negative, or neutral and substantiate the selected category, noting all defined and defensible assumptions. Responses to 3A-3C and 6C below may be based on company-wide policies, however all other answers must be direct impacts of project activities.

When the GHG Project has a positive impact, describe reasoning in 1.

When the GHG Project poses risks of negative impacts, describe reasoning in 1, how impacts will be avoided, reduced, mitigated or compensated, commensurate with the risk in 2, and detail how risks and negative impacts will be monitored, how often, and by whom in 3.

When the GHG Project has a neutral impact, describe reasoning in 1 or, at minimum, enter "N/A."

1 BIODIVERSITY CONSERVATION AND SUSTAINABLE MANAGEMENT OF LIVING NATURAL RESOURCES

1A Terrestrial and Marine Biodiversity and Ecosystems

☒ Positive ☐ Negative ☐ Neutral

1. Describe the reasoning for selection:
   Through plugging, water ecosystems are improved due to the sealing off of the well which could otherwise leak contaminants such as oil and other residues into water systems, as well as leach toxic compounds. Soil is also kept free from these harmful substances, affecting subsurface soil organisms and further affecting animals and plants that live on the surface. In this case, nearby ponds are positively affected in that the environmental issues described above are avoided.
2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk:
   N/A
3. If negative, detail how risks and impacts will be monitored, how often, and by whom:
   N/A

1B Habitat of Rare, Threatened, and Endangered Species, Including Areas Needed for Habitat Connectivity

☐ Positive ☐ Negative ☒ Neutral

1. Describe the reasoning for selection:
   We have not identified any threatened species or endangered habitats in the vincinity of, or affected by, the project sites.

2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk:
   N/A
3. If negative, detail how risks and impacts will be monitored, how often, and by whom:
   N/A

1C **Natural Forests, Grasslands, Wetlands, or High Conservation Value Habitats**

☐ Positive ☐ Negative ☒ Neutral

1. Describe the reasoning for selection:
   We have not identified an effect on forests, grasslands, wetlands, or high conservation value habitats.
2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk:
   N/A
3. If negative, detail how risks and impacts will be monitored, how often, and by whom:
   N/A

1D **Soil Degradation and Soil Erosion**

☒ Positive ☐ Negative ☐ Neutral

1. Describe the reasoning for selection:
   Continual leaking of the oil and gas wells will eventually corrode and degrade soil. By properly plugging the well and eliminating the above-ground features, new opportunities for utilizing the land including the soil in this area arise and improve the overall soil condition, especially when returned to a natural state. In this case, the wells are located on and near farmland, and improved soil conditions support crop growth.
2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk:
   N/A
3. If negative, detail how risks and impacts will be monitored, how often, and by whom:
   N/A

1E **Water Consumption and Stress**

☐ Positive ☐ Negative ☒ Neutral

1. Describe the reasoning for selection:
   Water consumption and stress is not related to the project activity.
2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk:
   N/A

3. If negative, detail how risks and impacts will be monitored, how often, and by whom:
   N/A

2 RESOURCE EFFICIENCY AND POLLUTION PREVENTION

2A Pollutant Emissions to Air

☒ Positive ☐ Negative ☐ Neutral

1. Describe the reasoning for selection:
   Oil and gas wells will continue to emit methane gas and other toxic gases into the air and atmosphere, many of which are classifed as carcinogens. By capping the wells, the negative impact to the air is eliminated.
2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk:
   N/A
3. If negative, detail how risks and impacts will be monitored, how often, and by whom:
   N/A

2B Pollutant Discharges to Water, Noise, and Vibration

☒ Positive ☐ Negative ☐ Neutral

1. Describe the reasoning for selection:
   Similar to the positive impact to air, the wells will leach various pollutants and chemicals into water systems unless plugged. Plugging will help keep water systems and ground water cleaner than the business-as-usual scenario.
2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk:
   N/A
3. If negative, detail how risks and impacts will be monitored, how often, and by whom:
   N/A

2C Generation of Waste and Release of Hazardous Materials, Chemical Pesticides, and Fertilizers

☐ Positive ☐ Negative ☒ Neutral

1. Describe the reasoning for selection:
   This project neither removes nor creates hazardous materials, chemical pesticides, or fertilizers.
2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk:
   N/A

3. If negative, detail how risks and impacts will be monitored, how often, and by whom:
   N/A

3 LABOR RIGHTS AND WORKING CONDITIONS

3A Safe And Healthy Working Conditions for Employees

☐ Positive ☐ Negative ☒ Neutral

1. Describe the reasoning for selection:
   The project activity does not contribute to nor work against safe and healthy working conditions for employees.
2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk:
   N/A
3. If negative, detail how risks and impacts will be monitored, how often, and by whom:
   N/A

3B Fair Treatment of All Employees, Avoiding Discrimination, and Ensuring Equal Opportunities

☐ Positive ☐ Negative ☒ Neutral

1. Describe the reasoning for selection:
   The project activity does not contribute to nor work against fair treatment of employees.
2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk:
   N/A
3. If negative, detail how risks and impacts will be monitored, how often, and by whom:
   N/A

3C Forced Labor, Child Labor, or Trafficked Persons, and Protections for Contracted Workers Employed by Third Parties

☐ Positive ☐ Negative ☒ Neutral

1. Describe the reasoning for selection:
   The project activity does not contribute to nor work against forced labor, child labor, trafficked persons, or protections for contracted workers employed by third parties.
2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk:
   N/A

	3. If negative, detail how risks and impacts will be monitored, how often, and by whom: N/A
4	**LAND ACQUISITION AND INVOLUNTARY RESETTLEMENT**
4A	**Forced Physical and/or Economic Displacement** ☐ Positive ☐ Negative ☒ Neutral 1. Describe the reasoning for selection: The project activity does not contribute to nor work against forced physical or economic displacement of persons. 2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk: N/A 3. If negative, detail how risks and impacts will be monitored, how often, and by whom: N/A
5	**RESPECT FOR HUMAN RIGHTS, STAKEHOLDER ENGAGEMENT**
5A	**Human Rights and Discrimination** ☐ Positive ☐ Negative ☒ Neutral 1. Describe the reasoning for selection: The project activity does not contribute to nor work against discrimination. 2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk: N/A 3. If negative, detail how risks and impacts will be monitored, how often, and by whom: N/A
5B	**Abidance by the International Bill of Human Rights[1] and Universal Instruments Ratified by the Host Country** ☐ Positive ☐ Negative ☒ Neutral 1. Describe the reasoning for selection: Abidance by the International Bill of Human Rights and Universal Instruments is not applicable to the project activity.

[1] https://www.ohchr.org/en/what-are-human-rights/international-bill-human-rights

2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk:
   N/A
3. If negative, detail how risks and impacts will be monitored, how often, and by whom:
   N/A

5C **Consideration and Response to Local Stakeholders' Views**

☒ Positive ☐ Negative ☐ Neutral

1. Describe the reasoning for selection:
   Tradewater coordinates with landowners through formal landowner access agreements and maintains communication with them throughout the plugging process.
2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk:
   N/A
3. If negative, detail how risks and impacts will be monitored, how often, and by whom:
   N/A

6 **GENDER EQUALITY**

6A **Equal Opportunities in the Context of Gender**

☐ Positive ☐ Negative ☒ Neutral

1. Describe the reasoning for selection:
   The project activity does not contribute to nor work against equal opportunities in the context of gender.
2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk:
   N/A
3. If negative, detail how risks and impacts will be monitored, how often, and by whom:
   N/A

6B **Violence Against Women and Girls**

☐ Positive ☐ Negative ☒ Neutral

1. Describe the reasoning for selection:
   The project activity does not contribute to nor work against violence against women and girls.
2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk:
   N/A

	3. If negative, detail how risks and impacts will be monitored, how often, and by whom: N/A
6C	**Equal Pay for Equal Work** ☐ Positive ☐ Negative ☒ Neutral 1. Describe the reasoning for selection: The project activity does not contribute to nor work against equal pay for equal work. 2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk: N/A 3. If negative, detail how risks and impacts will be monitored, how often, and by whom: N/A

SECTION III: COMMUNITY-BASED PROJECTS

1	Community-based projects are those in which project activities engage or otherwise impact one or more communities. A community includes groups of people who live within or adjacent to the project area, including Indigenous peoples and other local communities, as well as any groups that derive income, livelihood, or cultural values from the area. **Is the Project a community-based Project?** ☐ Yes ☒ No
2	If the project **IS** a community-based project, include a description of the community(ies), stakeholder engagement, and benefit sharing arrangements below.
2A	**Community and Stakeholder Identification and Consultation** 1. Describe the process to identify community(ies) affected by the GHG Project: N/A 2. Provide detailed information regarding the community stakeholder consultation process undertaken as part of the project design and implementation, including demonstration that the consultations with Indigenous Peoples and local communities were conducted in a manner that is inclusive, culturally appropriate, and respectful of local knowledge: N/A 3. Provide documentation of meetings held, attendees, and meeting minutes, as well as stakeholder comments and concerns and how those were addressed. These documents can be provided as attachments with file references stated below: N/A

2B **Indigenous Peoples, Local Communities, Cultural Heritage, and Free Prior and Informed Consent**

Where the project directly or indirectly impacts Indigenous Peoples and local communities, including livelihoods, ancestral knowledge, and cultural heritage, describe the steps taken to:

1. Recognize, respect, and promote the protection of the rights of Indigenous Peoples and local communities in line with applicable human rights law, and the United Nations Declaration on the Rights of Indigenous Peoples and ILO Convention 169 on Indigenous and Tribal Peoples[2]:
   N/A
2. Identify the rights-holders possibly affected (including customary rights of local rights holders):
   N/A
3. Avoid eviction or any physical or economic displacement, including through access restrictions to lands, territories, or resources:
   N/A
4. Preserve and protect cultural heritage consistent with Indigenous Peoples and local community(ies) protocols/rules/plans on the management of cultural heritage and/or UNESCO Cultural Heritage Conventions:
   N/A
5. As applicable, provide evidence of Free, Prior and Informed Consent by describing the process that was conducted to ensure that: consent was sought sufficiently in advance of any project, plan, or action taking place; consent was independently decided upon collectively by the rights-holders without coercion, intimidation, or manipulation; and consent was based on accessible, accurate, timely, and sufficient information provided in a culturally appropriate way:
   N/A

2C **Relocation or Resettlement**

1. Was there/will there be any relocation or resettlement resulting from project design or implementation?
   N/A
   a. If yes, describe the circumstances:
      N/A
   b. If yes, was the relocation or resettlement a result of voluntary land transaction(s) between the buyer and seller?
      N/A
   c. If yes, did the relocation or resettlement change the land use of the affected

[2] https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/11/UNDRIP_E_web.pdf

groups or communities?
N/A

d. If yes, was relocation or resettlement involuntary (e.g., through eminent domain)?
N/A

2D **Robust Benefit Sharing**

1. Describe how a benefit sharing plan (that includes arrangements that are appropriate to the context and consistent with applicable national rules and regulations) was or will be designed and implemented:
   N/A
2. Has a draft or final benefit sharing plan been shared with affected communities in a form, manner, and language understandable to them?
   N/A
3. Has/will the benefit-sharing outcomes be made public (subject to legal restrictions)?
   N/A

2E **Negative Impacts and Mitigation Measures**

Identify any risks or claims of negative environmental and/or social impacts other than those listed in Part II:

1. Describe the negative impact, risk, or claim:
   N/A
2. Describe how any negative impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk:
   N/A
3. Detail how negative risks and impacts will be monitored, how often, and by whom:
   N/A

Sustainable Development Goals (SDGs) Contribution Report

INDUSTRIAL PROJECTS

This report, as required in the *ACR Standard v8.0* , provides a qualitative assessment of the positive impacts the project is delivering to the United Nations Sustainable Development Goals (SDGs). The identified contributions are based on the standardized *ACR SDG Contributions Reporting Tool* .

ACR Project #:	ACR1043
Project Name:	Tradewater OOG 3

1. Select the applicable ACR project type from the drop-down menu below. This will auto populate the UN SDG targets to which project implementation is likely to positively contribute, directly or indirectly, as conservatively identified in the ACR SDG Contributions Reporting Tool.
2. If your project positively contributes to any additional SDG targets (i.e., the "conditional" direct and indirect targets identified in the ACR SDG Contributions Reporting Tool), please include those in the extra rows provided for Direct and Indirect impacts.
3. Provide a description of how the project contributes to each of the SDG targets identified.
4. Where the SDG objectives of the host country are relevant and such is feasible, provide information on how the project activity is consistent with the SDG objectives of the host country.

5. Hide any unused rows, save the completed template as a PDF, and upload it to the ACR Registry with the GHG Project Plan.

Project Type:	Plugging Orphaned Oil and Gas Wells in the U.S. and Canada

DIRECT POSITIVE IMPACT TO SDG TARGETS	DESCRIPTION OF PROJECT'S CONTRIBUTION(S) TO SDG TARGET
SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation 9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	The current technology for plugging leaking wells improves the existing state of the well by eliminating emissions entirely, thereby creating the most resource-efficient scenario. Across the world and the US, enforcement and implementation of plugging is inconsistent, but the adoption of incentive-creating methodologies is one answer to this problem facing the energy sector.
SDG 12: Ensure sustainable consumption and production patterns 12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment	Orphaned wells can be expected to emit harmful methane and other toxic gases into the atmosphere, as well as leak other contaminants into water systems and soil. Additionally, unplugged wells impede the ability to safely utilize the surrounding area and in some cases are a mar on the landscape. Responsible consumption includes environmentally sound management throughout the entire lifecycle of a chemical or system and plugging the wells yields the most responsible and safe outcome.

SDG 13: Take urgent action to combat climate change and its impacts 13.2 Integrate climate change measures into national policies, strategies and planning	Methane is a short-lived climate pollutant, meaning that it does the most damage in the first years following its release into the atmosphere For these reasons, the IPCC recognizes the reduction of methane emissions as the most effective immediate strategy for slowing down warming. The oil and gas industry represents a significant source of methane emissions, and the plugging of orphaned oil and gas wells accelerates global strategies to mitigating near-term climate change and enabling long-term planning and impacts to develop.

INDIRECT POSITIVE IMPACT TO SDG TARGETS	DESCRIPTION OF PROJECT'S CONTRIBUTION(S) TO SDG TARGET
SDG 3: Ensure healthy lives and promote well-being for all at all ages 3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.	Orphaned oil and gas wells pose a risk to the surrounding environment as much as they emit harmful greenhouse gases. For example, increases in global methane may create higher levels of ground-level ozone which is tied to increases in respiratory issues and death. After wells are orphaned, the hydrocarbons and extraction chemicals left behind impact underground aquifers, surface waters, and surrounding lands. Plugging orphaned wells properly closes in the borehole and prevents the vertical and lateral transmission or migration of fluids and/or pollutants to the surrounding formation, rock, soil, and air. This further ensures that health and wellbeing is maintained by limiting and reversing air,water, and soil pollution in the vicinity of the wells.

INFORMATION ON HOW THE PROJECT ACTIVITY IS CONSISTENT WITH THE SDG OBJECTIVES OF THE HOST COUNTRY, WHERE THE SDG OBJECTIVES ARE RELEVANT, AND SUCH IS FEASIBLE.

The United States has already committed to the SDGs laid out by the 2030 Agenda for Sustainable Development, as such the project activity is aligned with the effort and spirirt for working toward those goals.

Appendix C

ACR1043_Calculations

Equation 1: Annual Emission Rate for a Well

$$Q_{pre-plugging,p} = \frac{\sum_{i=1}^{n}(Q_{measured,i} \times Conc_{measured,i} \times MCF)}{n} \times \rho \times 0.454 \times 8{,}760$$

Density	0.0423	lb CH4/scf CH4 (at 1 atm and 60º F)
MCF (dry basis	1	
n	24	
Qpre-plugging	407,220.5	Kg CH4/year

Equation 1: Annual Emission Rate for a Well

$$Q_{pre-plugging,p} = \frac{\sum_{i=1}^{n}(Q_{measured,i} \times Conc_{measured,i} \times MCF)}{n} \times \rho \times 0.454 \times 8{,}760$$

Density	0.0423	lb CH4/scf CH4 (at 1 atm and 60º F)
MCF (dry basis	1	
n	25	
Qpre-plugging	29,177.7	Kg CH4/year

Equation 1: Annual Emission Rate for a Well

$$Q_{pre-plugging,p} = \frac{\sum_{i=1}^{n}(Q_{measured,i} \times Conc_{measured,i} \times MCF)}{n} \times \rho \times 0.454 \times 8{,}760$$

Density	0.0423	lb CH4/scf CH4 (at 1 atm and 60º F)
MCF (dry basis	1	
n	24	
Qpre-plugging	73,615.6	Kg CH4/year

ACR1043_Calculations

Annual Emission Rate for a Well		
Well	Year	Qpre-plugging,p (kg CH4/Year)
Blackburn University#2	2025	407,220.5
Cameron Lincoln	2025	73,615.6
Haley	2025	29,177.7

Equation 2: Baseline Emissions (Pre-Plugging)

$$BE = \frac{\sum_{p=1}^{w}(Q_{pre-plugging,p})}{1{,}000} \times GWP_{100CH4} \times 20$$

GWP100CH4	28	MT CO2e/MTCH4
	MT CO2e	Year
BE	285,607.7	2025
	0.0	
BE total	285,607.7	

Equation 3: Project CO2 Emissions from Fossil Fuel Combustion for Equipment Used at Plugging Project

$$PE = \sum_{j=1}^{y} \frac{FF_j \times EF_j}{1{,}000}$$

	MT CO2e	Year
PE	8.5	2025
PE total	8.5	

Equation 5: Total GHG Emission Reductions

$$\mathbf{TotalER = (BE - PE) \times (1 - UNC)}$$

UNC	5%	
	MT CO2e	Year
ER	271,319.2	2025
Total ER	271,319.2	

Deductions		
	MT CO2e	Year
ER	14,280.0	2025
Total ER	14,280.0	

Total Gallons Diesel Consumed: 813 (see invoice)

3:12 PM

04/25/25

Accrual Basis

[redacted]

Sales by Item Detail

March 1 through May 1, 2025

Type	Date	Num	Memo	Name	Qty	Sales Price	
Service							
Miscellaneous							
Per diem (Per diem (daily))							
Invoice	04/23/2025	14066	Per diem (dail...	Tradewater	6	[redacted]	
Invoice	04/23/2025	14066	Per diem (dail...	Tradewater	3		
Invoice	04/23/2025	14066	Per diem (dail...	Tradewater	3		
Invoice	04/23/2025	14066	Per diem (dail...	Tradewater	6		
Invoice	04/23/2025	14066	Per diem (daily)	Tradewater	4		
Total Per diem (Per diem (daily))					22		
Pick-up truck (Pick-up truck)							
Invoice	04/23/2025	14066	Pick-up truck ...	Tradewater	5	[redacted]	Fuel cons. - 4 g.p.h.
Invoice	04/23/2025	14066	Pick-up truck ...	Tradewater	5		
Total Pick-up truck (Pick-up truck)					10		Total: 12 gal.
Plug string rental (Plug string rental (daily, M - F))							
Invoice	04/23/2025	14066	Plug string re...	Tradewater	5	[redacted]	
Total Plug string rental (Plug string rental (daily, M - F))					5		
Service rig (hourly) (Service rig (hourly))							
Invoice	04/23/2025	14066	Service rig (h...	Tradewater	10	[redacted]	
Invoice	04/23/2025	14066	Service rig (h...	Tradewater	14		
Invoice	04/23/2025	14066	Service rig (h...	Tradewater	11		Fuel cons. - 2 g.p.h.
Total Service rig (hourly) (Service rig (hourly))					35		Total: 56 gal.
Supervision (Supervision (daily))							
Invoice	04/23/2025	14066	Supervision (...	Tradewater	1	[redacted]	
Invoice	04/23/2025	14066	Supervision (...	Tradewater	1		
Invoice	04/23/2025	14066	Supervision (...	Tradewater	1		
Invoice	04/23/2025	14066	Supervision (...	Tradewater	1		
Invoice	04/23/2025	14066	Supervision (...	Tradewater	1		
Invoice	04/23/2025	14066	Supervision (...	Tradewater	1		
Total Supervision (Supervision (daily))					6		
Transportation (Transportation (daily))							
Invoice	04/23/2025	14066	Transportatio...	Tradewater	1	[redacted]	
Invoice	04/23/2025	14066	Transportatio...	Tradewater	1		
Invoice	04/23/2025	14066	Transportatio...	Tradewater	2		
Invoice	04/23/2025	14066	Transportatio...	Tradewater	1		
Invoice	04/23/2025	14066	Transportatio...	Tradewater	2		
Invoice	04/23/2025	14066	Transportatio...	Tradewater	1		
Total Transportation (Transportation (daily))					8		
Water truck (Water truck (hourly))							
Invoice	04/23/2025	14066	Water truck (h...	Tradewater	17	[redacted]	
Invoice	04/23/2025	14066	Water truck (h...	Tradewater	11		
Invoice	04/23/2025	14066	Water truck (h...	Tradewater	17		
Invoice	04/23/2025	14066	Water truck (h...	Tradewater	18		
Invoice	04/23/2025	14066	Water truck (h...	Tradewater	10		Fuel cons. - 5 g.p.h.
Total Water truck (Water truck (hourly))					73		Total: 245 gal.
Winch dozer (Winch dozer)							
Invoice	04/23/2025	14066	Winch dozer (...	Tradewater	17	[redacted]	
Invoice	04/23/2025	14066	Winch dozer (...	Tradewater	14		
Invoice	04/23/2025	14066	Winch dozer (...	Tradewater	5		
Invoice	04/23/2025	14066	Winch dozer (...	Tradewater	16		
Invoice	04/23/2025	14066	Winch dozer (...	Tradewater	10		Fuel cons. - 8 g.p.h.
Total Winch dozer (Winch dozer)					62		Total: 312 gal.

[redacted]

Sales by Item Detail

March 1 through May 1, 2025

Type	Date	Num	Memo	Name	Qty	Sales Price
Winch dozer (stand-by) (Winch dozer (daily))						
Invoice	04/23/2025	14066	Winch dozer (...	Tradewater	10	200.00
Invoice	04/23/2025	14066	Backhoe (dail...	Tradewater	19	200.00
Total Winch dozer (stand-by) (Winch dozer (daily))					29	
Miscellaneous - Other						
Invoice	04/23/2025	14066	4-1/2" Larkin "...	Tradewater	5	95.00
Total Miscellaneous - Other					5	
Total Miscellaneous					255	
Total Service					255	
Other Charges						
Reimbursed Expenses						
Invoice	04/23/2025	14066	Fittings, gaug...	Tradewater	1	[redacted]
Invoice	04/23/2025	14066	Cement bond ...	Tradewater	1	[redacted]
Invoice	04/23/2025	14066	Cement bond ...	Tradewater	1	[redacted]
Invoice	04/23/2025	14066	Top cement pl...	Tradewater	1	[redacted]
Invoice	04/23/2025	14066	4 - 1/2" orbit v...	Tradewater	1	[redacted]
Invoice	04/23/2025	14066	High pressure...	Tradewater	1	[redacted]
Invoice	04/23/2025	14066	Top cement pl...	Tradewater	1	[redacted]
Invoice	04/23/2025	14066	4 - 1/2" full op...	Tradewater	1	[redacted]
Invoice	04/23/2025	14066	Miscellaneous...	Tradewater	1	[redacted]
Invoice	04/23/2025	14066	Thread seala...	Tradewater	1	[redacted]
Total Reimbursed Expenses					10	
Total Other Charges					10	
TOTAL					**265**	

Geolog - 2 visits, ~26 hours on-site, semis (26) fuel cons. 2 g.p.h. - 52 gal.

Franklin - 1 visit, ~17 hours on-site, semis (17) & pick-up (17) fuel cons. 7 & 1 g.p.h. resp. - 136 gal.

Total: 188 gal.

Total fuel used:

813 gal.

Blackburn University #2 Measurement 1

Flow: Silversmith					
10-Minute Time Windows					
Period	Timestamp Start	Timestamp end	Gas Flow (MCF/day)	Gas Flow (cf/h)	Corrected Gas Flow (scf/h) (Equation A)
1	12:29:54 PM 18/12/2024	12:39:53 PM 18/12/2024	61.70	2,570.83	2,562.80
2	12:39:54 PM 18/12/2024	12:49:53 PM 18/12/2024	61.50	2,562.50	2,554.49
3	12:49:54 PM 18/12/2024	12:59:53 PM 18/12/2024	61.40	2,558.33	2,550.34
4	12:59:54 PM 18/12/2024	1:09:53 PM 18/12/2024	60.37	2,515.28	2,507.41
5	1:09:54 PM 18/12/2024	1:19:53 PM 18/12/2024	60.90	2,537.50	2,529.57
6	1:19:54 PM 18/12/2024	1:29:53 PM 18/12/2024	60.65	2,527.08	2,519.18
7	1:29:54 PM 18/12/2024	1:39:53 PM 18/12/2024	61.13	2,547.22	2,539.26
8	1:39:54 PM 18/12/2024	1:49:53 PM 18/12/2024	60.75	2,531.25	2,523.34
9	1:49:54 PM 18/12/2024	1:59:53 PM 18/12/2024	60.45	2,518.75	2,510.88
10	1:59:54 PM 18/12/2024	2:09:53 PM 18/12/2024	60.45	2,518.75	2,510.88
11	2:09:54 PM 18/12/2024	2:19:53 PM 18/12/2024	60.60	2,525.00	2,517.11
12	2:19:54 PM 18/12/2024	2:29:53 PM 18/12/2024	60.95	2,539.58	2,531.64

Pressure			
10-Minute Time Windows			
Period	Timestamp Start	Timestamp end	Pressure (PSI)
1	11:29:54 AM 18/12/2024	11:39:53 AM 18/12/2024	44.74
2	11:39:54 AM 18/12/2024	11:49:53 AM 18/12/2024	44.31
3	11:49:54 AM 18/12/2024	11:59:53 AM 18/12/2024	44.07
4	11:59:54 AM 18/12/2024	12:09:53 PM 18/12/2024	43.93
5	12:09:54 PM 18/12/2024	12:19:53 PM 18/12/2024	43.80
6	12:19:54 PM 18/12/2024	12:29:53 PM 18/12/2024	43.69
7	12:29:54 PM 18/12/2024	12:39:53 PM 18/12/2024	43.58
8	12:39:54 PM 18/12/2024	12:49:53 PM 18/12/2024	43.46
9	12:49:54 PM 18/12/2024	12:59:53 PM 18/12/2024	43.37
10	12:59:54 PM 18/12/2024	1:09:53 PM 18/12/2024	43.25
11	1:09:54 PM 18/12/2024	1:19:53 PM 18/12/2024	43.18
12	1:19:54 PM 18/12/2024	1:29:53 PM 18/12/2024	43.11

CH4 Ambient Conc	Moisture correction Factor (MCF) (Dry basis)
0	1

Temperature (F)	Temperature (Rankine)	Pressure (PSIa)	Pressure (atm)
60	519.67	14.65	0.9968739

ACR1043_Calculations

Concentration: SEM 5000				
10-Minute Time Windows				
Period	Timestamp Start	Timestamp end	Gas value (%)	Corrected CH4 Conc (%) (Equation B)
1	11:29:54 AM 18/12/2024	11:39:53 AM 18/12/2024	94.25	94.25%
2	11:39:54 AM 18/12/2024	11:49:53 AM 18/12/2024	94.17	94.17%
3	11:49:54 AM 18/12/2024	11:59:53 AM 18/12/2024	94.27	94.27%
4	11:59:54 AM 18/12/2024	12:09:53 PM 18/12/2024	94.47	94.47%
5	12:09:54 PM 18/12/2024	12:19:53 PM 18/12/2024	94.52	94.52%
6	12:19:54 PM 18/12/2024	12:29:53 PM 18/12/2024	94.72	94.72%
7	12:29:54 PM 18/12/2024	12:39:53 PM 18/12/2024	94.80	94.80%
8	12:39:54 PM 18/12/2024	12:49:53 PM 18/12/2024	94.80	94.80%
9	12:49:54 PM 18/12/2024	12:59:53 PM 18/12/2024	94.80	94.80%
10	12:59:54 PM 18/12/2024	1:09:53 PM 18/12/2024	94.54	94.54%
11	1:09:54 PM 18/12/2024	1:19:53 PM 18/12/2024	94.62	94.62%
12	1:19:54 PM 18/12/2024	1:29:53 PM 18/12/2024	94.24	94.24%

Blackburn University Measurement 1 Constants and Emissions Rate

Constants		
Row	Value	ValueDefined
1	24	Hours per day
1	1,000	Cubic feet per MCF
2	28.3168	Liters per cubic foot, ideal gases
3	0.000001	1 part per million
4	0.068046	PSIA to atm

Emissions Rate				
10-Minute Time Windows				
Period	Time start (s)	Time end (s)	Emissions Rate (scf/h)	Stability Check
1	0	600	2,415.40	Max
2	601	1200	2,405.49	2,415.40
3	1201	1800	2,404.32	Min
4	1801	2400	2,368.79	2,368.79
5	2401	3000	2,391.04	Factor
6	3001	3600	2,386.28	1.02
7	3601	4200	2,407.15	
8	4201	4800	2,392.16	
9	4801	5400	2,380.38	
10	5401	6000	2,373.82	
11	6001	6600	2,381.65	
12	6601	7200	2,385.77	

ACR1043_Calculations

Blackburn University #2 Measurement 2

	Temperature (Rankine)	Pressure (PSIa)	Pressure (atm)
60	519.67	14.65	0.9968739

Flow: Silversmith					
10-Minute Time Windows					
Period	Timestamp Start	Timestamp end	Gas Flow (MCF/day)	Gas Flow (cf/h)	Corrected Gas Flow (scf/h) (Equation A)
1	1:49:56 PM 22/01/2025	1:59:55 PM 22/01/2025	62.80	2,616.67	2,608.49
2	1:59:56 PM 22/01/2025	2:09:55 PM 22/01/2025	63.00	2,625.00	2,616.79
3	2:09:56 PM 22/01/2025	2:19:55 PM 22/01/2025	62.90	2,620.83	2,612.64
4	2:19:56 PM 22/01/2025	2:29:55 PM 22/01/2025	62.00	2,583.33	2,575.26
5	2:29:56 PM 22/01/2025	2:39:55 PM 22/01/2025	62.00	2,583.33	2,575.26
6	2:39:56 PM 22/01/2025	2:49:55 PM 22/01/2025	62.00	2,583.33	2,575.26
7	2:49:56 PM 22/01/2025	2:59:55 PM 22/01/2025	62.20	2,591.67	2,583.56
8	2:59:56 PM 22/01/2025	3:09:55 PM 22/01/2025	62.33	2,597.22	2,589.10
9	3:09:56 PM 22/01/2025	3:19:55 PM 22/01/2025	61.50	2,562.50	2,554.49
10	3:19:56 PM 22/01/2025	3:29:55 PM 22/01/2025	61.45	2,560.42	2,552.41
11	3:29:56 PM 22/01/2025	3:39:55 PM 22/01/2025	61.80	2,575.00	2,566.95
12	3:39:56 PM 22/01/2025	3:49:55 PM 22/01/2025	62.10	2,587.50	2,579.41

Pressure			
10-Minute Time Windows			
Period	Timestamp Start	Timestamp end	Pressure (PSI)
1	12:49:56 PM 22/01/2025	12:59:55 PM 22/01/2025	41.91
2	12:59:56 PM 22/01/2025	1:09:55 PM 22/01/2025	41.90
3	1:09:56 PM 22/01/2025	1:19:55 PM 22/01/2025	41.83
4	1:19:56 PM 22/01/2025	1:29:55 PM 22/01/2025	41.74
5	1:29:56 PM 22/01/2025	1:39:55 PM 22/01/2025	41.70
6	1:39:56 PM 22/01/2025	1:49:55 PM 22/01/2025	41.62
7	1:49:56 PM 22/01/2025	1:59:55 PM 22/01/2025	41.57
8	1:59:56 PM 22/01/2025	2:09:55 PM 22/01/2025	41.50
9	2:09:56 PM 22/01/2025	2:19:55 PM 22/01/2025	41.41
10	2:19:56 PM 22/01/2025	2:29:55 PM 22/01/2025	41.37
11	2:29:56 PM 22/01/2025	2:39:55 PM 22/01/2025	41.31
12	2:39:56 PM 22/01/2025	2:49:55 PM 22/01/2025	41.24

ACR1043_Calculations

CH4 Ambient Conc	Moisture correction Factor (MCF) (Dry basis)
0	1

Concentration: SEM 500				
10-Minute Time Windows				
Period	Timestamp Start	Timestamp end	Gas value (%)	Corrected CH4 Conc (%) (Equation B)
1	12:49:56 PM 22/01/2025	12:59:55 PM 22/01/2025	95.52	95.52%
2	12:59:56 PM 22/01/2025	1:09:55 PM 22/01/2025	95.57	95.57%
3	1:09:56 PM 22/01/2025	1:19:55 PM 22/01/2025	95.45	95.45%
4	1:19:56 PM 22/01/2025	1:29:55 PM 22/01/2025	95.06	95.06%
5	1:29:56 PM 22/01/2025	1:39:55 PM 22/01/2025	95.04	95.04%
6	1:39:56 PM 22/01/2025	1:49:55 PM 22/01/2025	94.83	94.83%
7	1:49:56 PM 22/01/2025	1:59:55 PM 22/01/2025	94.71	94.71%
8	1:59:56 PM 22/01/2025	2:09:55 PM 22/01/2025	94.51	94.51%
9	2:09:56 PM 22/01/2025	2:19:55 PM 22/01/2025	94.39	94.39%
10	2:19:56 PM 22/01/2025	2:29:55 PM 22/01/2025	94.57	94.57%
11	2:29:56 PM 22/01/2025	2:39:55 PM 22/01/2025	94.55	94.55%
12	2:39:56 PM 22/01/2025	2:49:55 PM 22/01/2025	94.32	94.32%

Blackburn University #2 Measurment 2 Constants and Emissions Rate

Constants		
Row	Value	ValueDefined
1	24	Hours per day
1	1,000	Cubic feet per MCF
2	28.3168	Liters per cubic foot, ideal gases
3	0.000001	1 part per million
4	0.068046	PSIA to atm

Emissions Rate				
10-Minute Time Windows				
Period	Time start (s)	Time end (s)	Emissions Rate (scf/h)	Stability Check
1	0	600	2,491.56	Max
2	601	1200	2,500.89	2,500.89
3	1201	1800	2,493.85	Min
4	1801	2400	2,448.12	2,411.25
5	2401	3000	2,447.56	Factor
6	3001	3600	2,442.01	1.04
7	3601	4200	2,446.83	
8	4201	4800	2,447.07	
9	4801	5400	2,411.25	
10	5401	6000	2,413.80	
11	6001	6600	2,427.14	
12	6601	7200	2,432.88	

ACR1043_Calculations

Blackburn University #2 Methane Stability

Summary			
Measurement	Methane emissions Rate (scf/h)	90% of M1 average (scf/h)	110% of M1 average (scf/h)
M1 average	2391.021293	2151.919164	2630.123422
M2 average	2450.248411		
Difference (%)	-2.48%		

Stability Analysis						
10-Minute Time Windows			M1		M2	
Period	Time start (s)	Time end (s)	Emissions Rate (scf/h)	Difference with the Average (%)	Emissions Rate (scf/h)	Difference with the Average (%)
1	0	600	2415.4	1.02%	2491.6	1.69%
2	601	1200	2405.5	0.61%	2500.9	2.07%
3	1201	1800	2404.3	0.56%	2493.8	1.78%
4	1801	2400	2368.8	-0.93%	2448.1	-0.09%
5	2401	3000	2391.0	0.00%	2447.6	-0.11%
6	3001	3600	2386.3	-0.20%	2442.0	-0.34%
7	3601	4200	2407.2	0.67%	2446.8	-0.14%
8	4201	4800	2392.2	0.05%	2447.1	-0.13%
9	4801	5400	2380.4	-0.45%	2411.2	-1.59%
10	5401	6000	2373.8	-0.72%	2413.8	-1.49%
11	6001	6600	2381.6	-0.39%	2427.1	-0.94%
12	6601	7200	2385.8	-0.22%	2432.9	-0.71%

Blackburn University #2 Pressure Stability

Summary	
Measurement	Pressure (PSI)
M1	43.70
M2	41.59

Stability Analysis						
10-Minute Time Windows			M1		M2	
Period	Time start (s)	Time end (s)	Pressure (PSI)	Difference with the Average (%)	Pressure (PSI)	Difference with the Average (%)
1	0	600	44.74	2.36%	41.91	0.77%
2	601	1200	44.31	1.38%	41.90	0.73%
3	1201	1800	44.07	0.82%	41.83	0.57%
4	1801	2400	43.93	0.52%	41.74	0.35%
5	2401	3000	43.80	0.21%	41.70	0.25%
6	3001	3600	43.69	-0.05%	41.62	0.07%
7	3601	4200	43.58	-0.30%	41.57	-0.06%
8	4201	4800	43.46	-0.57%	41.50	-0.22%
9	4801	5400	43.37	-0.77%	41.41	-0.44%
10	5401	6000	43.25	-1.05%	41.37	-0.52%
11	6001	6600	43.18	-1.19%	41.31	-0.68%
12	6601	7200	43.11	-1.37%	41.24	-0.84%

ACR1043_Calculations

Haley #1 Measurement 1

Flow: ALICAT									
10-Minute Time Windows									
Period	Timestamp Start	Timestamp end	Gas Flow (L/min)	Instrument Temperature (C°)	Instrument Pressure (PSIa)	Temperature (Rankine)	Pressure (atm)	Gas Flow (cf/h)	Corrected Gas Flow (scf/h) (Equation A)
1	10:41:58 AM 20/11/2024	10:51:57 AM 20/11/2024	92.95	10.16	14.43	509.95	0.98	196.95	197.07
2	10:51:58 AM 20/11/2024	11:01:57 AM 20/11/2024	90.47	10.26	14.42	510.14	0.98	191.70	191.66
3	11:01:58 AM 20/11/2024	11:11:57 AM 20/11/2024	88.28	10.46	14.42	510.50	0.98	187.06	186.85
4	11:11:58 AM 20/11/2024	11:21:57 AM 20/11/2024	86.28	10.70	14.42	510.93	0.98	182.82	182.45
5	11:21:58 AM 20/11/2024	11:31:57 AM 20/11/2024	84.47	10.76	14.41	511.04	0.98	178.98	178.50
6	11:31:58 AM 20/11/2024	11:41:57 AM 20/11/2024	83.04	11.21	14.41	511.84	0.98	175.96	175.17
7	11:41:58 AM 20/11/2024	11:51:57 AM 20/11/2024	81.75	12.20	14.41	513.63	0.98	173.21	171.84
8	11:51:58 AM 20/11/2024	12:01:57 PM 20/11/2024	80.04	11.49	14.41	512.36	0.98	169.59	168.65
9	12:01:58 PM 20/11/2024	12:11:57 PM 20/11/2024	78.83	11.85	14.40	512.99	0.98	167.04	165.81
10	12:11:58 PM 20/11/2024	12:21:57 PM 20/11/2024	77.53	11.90	14.40	513.09	0.98	164.27	163.02
11	12:21:58 PM 20/11/2024	12:31:57 PM 20/11/2024	76.42	12.16	14.40	513.56	0.98	161.92	160.55
12	12:31:58 PM 20/11/2024	12:41:57 PM 20/11/2024	75.17	11.67	14.40	512.67	0.98	159.28	158.16

Atmosferic Pressure	29.98	In
	14.72479692	PSI

Pressure				
10-Minute Time Windows				
Period	Timestamp Start	Timestamp end	Pressure (PSIg)	Absolute Pressure (PSIa)
1	10:41:58 AM 20/11/2024	10:51:57 AM 20/11/2024	0.57	15.29479692
2	10:51:58 AM 20/11/2024	11:01:57 AM 20/11/2024	0.47	15.19479692
3	11:01:58 AM 20/11/2024	11:11:57 AM 20/11/2024	0.41	15.13646359
4	11:11:58 AM 20/11/2024	11:21:57 AM 20/11/2024	0.34	15.06313025
5	11:21:58 AM 20/11/2024	11:31:57 AM 20/11/2024	0.24	14.96646359
6	11:31:58 AM 20/11/2024	11:41:57 AM 20/11/2024	0.19	14.91646359
7	11:41:58 AM 20/11/2024	11:51:57 AM 20/11/2024	0.16	14.88479692
8	11:51:58 AM 20/11/2024	12:01:57 PM 20/11/2024	0.18	14.89979692
9	12:01:58 PM 20/11/2024	12:11:57 PM 20/11/2024	0.19	14.91479692
10	12:11:58 PM 20/11/2024	12:21:57 PM 20/11/2024	0.07	14.79479692
11	12:21:58 PM 20/11/2024	12:31:57 PM 20/11/2024	-0.01	14.71313025
12	12:31:58 PM 20/11/2024	12:41:57 PM 20/11/2024	-0.09	14.63479692

CH4 Ambient Conc	Moisture correction Factor (MCF) (Dry basis)
0	1

Concentration: SEM 5000				
10-Minute Time Windows				
Period	Timestamp Start	Timestamp end	Gas value (%)	Corrected CH4 Conc (%) (Equation B)
1	10:41:58 AM 20/11/2024	10:51:57 AM 20/11/2024	94.62	94.62%
2	10:51:58 AM 20/11/2024	11:01:57 AM 20/11/2024	94.60	94.60%
3	11:01:58 AM 20/11/2024	11:11:57 AM 20/11/2024	94.33	94.33%
4	11:11:58 AM 20/11/2024	11:21:57 AM 20/11/2024	94.19	94.19%
5	11:21:58 AM 20/11/2024	11:31:57 AM 20/11/2024	94.16	94.16%
6	11:31:58 AM 20/11/2024	11:41:57 AM 20/11/2024	94.12	94.12%
7	11:41:58 AM 20/11/2024	11:51:57 AM 20/11/2024	94.30	94.30%
8	11:51:58 AM 20/11/2024	12:01:57 PM 20/11/2024	94.17	94.17%
9	12:01:58 PM 20/11/2024	12:11:57 PM 20/11/2024	94.02	94.02%
10	12:11:58 PM 20/11/2024	12:21:57 PM 20/11/2024	93.97	93.97%
11	12:21:58 PM 20/11/2024	12:31:57 PM 20/11/2024	93.98	93.98%
12	12:31:58 PM 20/11/2024	12:41:57 PM 20/11/2024	94.06	94.06%

Haley #1 Measurement 1 Constants and Emissions Rate

Constants		
Row	Value	ValueDefined
1	24	Hours per day
1	1,000	Cubic feet per MCF
2	28.3168	Liters per cubic foot, ideal gases
3	0.000001	1 part per million
4	0.068046	PSIA to atm
5	60	minutes per hour
6	0.491154	IN to PSI

Emissions Rate				
10-Minute Time Windows				
Period	Time start (s)	Time end (s)	Emissions Rate (scf/h)	Stability Check
1	0	600	186.46	Max
2	601	1200	181.32	186.46
3	1201	1800	176.25	Min
4	1801	2400	171.86	148.76
5	2401	3000	168.07	Factor
6	3001	3600	164.87	1.25
7	3601	4200	162.05	
8	4201	4800	158.81	
9	4801	5400	155.89	
10	5401	6000	153.19	
11	6001	6600	150.88	
12	6601	7200	148.76	

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Haley #1 Measurement 2

Flow: ALICAT										
10-Minute Time Windows										
Period	Timestamp Start	Timestamp end	Gas Flow (L/min)	Instrument Temperature (C°)	Instrument Pressure (PSIa)	Temperature (Rankine)	Pressure (atm)	Gas Flow (cf/h)	Corrected Gas Flow (scf/h) (Equation A)
1	5:08:24 PM 04/02/2025	5:18:23 PM 04/02/2025	97.72	4.63	14.57	500.00	0.99	207.06	213.36
2	5:18:24 PM 04/02/2025	5:28:23 PM 04/02/2025	104.37	4.50	14.57	499.76	0.99	221.14	227.98
3	5:28:24 PM 04/02/2025	5:38:23 PM 04/02/2025	103.36	4.38	14.57	499.56	0.99	219.00	225.87
4	5:38:24 PM 04/02/2025	5:48:23 PM 04/02/2025	102.48	4.31	14.57	499.43	0.99	217.14	223.98
5	5:48:24 PM 04/02/2025	5:58:23 PM 04/02/2025	101.68	4.24	14.56	499.31	0.99	215.45	222.18
6	5:58:24 PM 04/02/2025	6:08:23 PM 04/02/2025	100.80	4.17	14.56	499.17	0.99	213.59	220.30
7	6:08:24 PM 04/02/2025	6:18:23 PM 04/02/2025	99.90	4.10	14.56	499.04	0.99	211.68	218.40
8	6:18:24 PM 04/02/2025	6:28:23 PM 04/02/2025	98.80	4.02	14.56	498.91	0.99	209.35	216.11
9	6:28:24 PM 04/02/2025	6:38:23 PM 04/02/2025	98.04	3.94	14.57	498.76	0.99	207.73	214.58
10	6:38:24 PM 04/02/2025	6:48:23 PM 04/02/2025	97.05	3.93	14.57	498.74	0.99	205.64	212.43
11	6:48:24 PM 04/02/2025	6:58:23 PM 04/02/2025	96.34	3.95	14.57	498.78	0.99	204.14	210.86
12	6:58:24 PM 04/02/2025	7:08:23 PM 04/02/2025	95.39	3.92	14.57	498.73	0.99	202.13	208.81
13	7:08:24 PM 04/02/2025	7:18:23 PM 04/02/2025	94.73	3.92	14.57	498.73	0.99	200.72	207.35

Atmosferic Pressure	29.98	In
	14.72479692	PSI

Pressure				
10-Minute Time Windows				
Period	Timestamp Start	Timestamp end	Pressure (PSIg)	Absolute Pressure (PSIa)
1	5:08:24 PM 04/02/2025	5:18:23 PM 04/02/2025	0.61	15.34
2	5:18:24 PM 04/02/2025	5:28:23 PM 04/02/2025	0.62	15.35
3	5:28:24 PM 04/02/2025	5:38:23 PM 04/02/2025	0.61	15.33
4	5:38:24 PM 04/02/2025	5:48:23 PM 04/02/2025	0.61	15.33
5	5:48:24 PM 04/02/2025	5:58:23 PM 04/02/2025	0.60	15.32
6	5:58:24 PM 04/02/2025	6:08:23 PM 04/02/2025	0.59	15.31
7	6:08:24 PM 04/02/2025	6:18:23 PM 04/02/2025	0.58	15.31
8	6:18:24 PM 04/02/2025	6:28:23 PM 04/02/2025	0.58	15.30
9	6:28:24 PM 04/02/2025	6:38:23 PM 04/02/2025	0.57	15.29
10	6:38:24 PM 04/02/2025	6:48:23 PM 04/02/2025	0.56	15.28
11	6:48:24 PM 04/02/2025	6:58:23 PM 04/02/2025	0.55	15.27
12	6:58:24 PM 04/02/2025	7:08:23 PM 04/02/2025	0.53	15.25
13	7:08:24 PM 04/02/2025	7:18:23 PM 04/02/2025	0.53	15.26

CH4 Ambient Conc	Moisture correction Factor (MCF) (Dry basis)
0	1

Concentration: SEM 500				
10-Minute Time Windows				
Period	Timestamp Start	Timestamp end	Gas value (%)	Corrected CH4 Conc (ppm) (Equation B)
1	5:08:24 PM 04/02/2025	5:18:23 PM 04/02/2025	84.09	84.09%
2	5:18:24 PM 04/02/2025	5:28:23 PM 04/02/2025	83.97	83.97%
3	5:28:24 PM 04/02/2025	5:38:23 PM 04/02/2025	83.75	83.75%
4	5:38:24 PM 04/02/2025	5:48:23 PM 04/02/2025	83.54	83.54%
5	5:48:24 PM 04/02/2025	5:58:23 PM 04/02/2025	83.50	83.50%
6	5:58:24 PM 04/02/2025	6:08:23 PM 04/02/2025	83.48	83.48%
7	6:08:24 PM 04/02/2025	6:18:23 PM 04/02/2025	83.44	83.44%
8	6:18:24 PM 04/02/2025	6:28:23 PM 04/02/2025	83.40	83.40%
9	6:28:24 PM 04/02/2025	6:38:23 PM 04/02/2025	83.38	83.38%
10	6:38:24 PM 04/02/2025	6:48:23 PM 04/02/2025	83.35	83.35%
11	6:48:24 PM 04/02/2025	6:58:23 PM 04/02/2025	83.34	83.34%
12	6:58:24 PM 04/02/2025	7:08:23 PM 04/02/2025	83.35	83.35%
13	7:08:24 PM 04/02/2025	7:18:23 PM 04/02/2025	83.35	83.35%

Haley #1 Measurement 2 Constants and Emissions Rate

Constants		
Row	Value	ValueDefined
1	24	Hours per day
1	1,000	Cubic feet per MCF
2	28.3168	Liters per cubic foot, ideal gases
3	0.000001	1 part per million
4	0.068046	PSIA to atm
5	60	minutes per hour
6	0.491154	IN to PSI

Emissions Rate				
10-Minute Time Windows				
Period	Time start (s)	Time end (s)	Emissions Rate (scf/h)	Stability Check
1	0	600	179.41	Max
2	601	1200	191.43	191.43
3	1201	1800	189.16	Min
4	1801	2400	187.11	172.83
5	2401	3000	185.52	Factor
6	3001	3600	183.90	1.11
7	3601	4200	182.22	
8	4201	4800	180.25	
9	4801	5400	178.92	
10	5401	6000	177.07	
11	6001	6600	175.73	
12	6601	7200	174.04	
13	7201	7800	172.83	

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Haley #1 Methane Stability

Summary			
Measurement	Methane emissions Rate (scf/h)	90% of M1 average (scf/h)	110% of M1 average (scf/h)
M1 average	164.869	148.382	181.356
M2 average	181.353		
Difference (%)	-9.998%		

Stability Analysis						
10-Minute Time Windows			M1		M2	
Period	Time start (s)	Time end (s)	Emissions Rate (scf/h)	Difference with the Average (%)	Emissions Rate (scf/h)	Difference with the Average (%)
1	0	600	186.462	13.097%	179.406	-1.073%
2	601	1200	181.323	9.980%	191.434	5.559%
3	1201	1800	176.254	6.905%	189.161	4.305%
4	1801	2400	171.857	4.239%	187.113	3.176%
5	2401	3000	168.068	1.940%	185.525	2.300%
6	3001	3600	164.872	0.001%	183.902	1.406%
7	3601	4200	162.051	-1.709%	182.224	0.480%
8	4201	4800	158.814	-3.672%	180.247	-0.610%
9	4801	5400	155.895	-5.443%	178.916	-1.344%
10	5401	6000	153.188	-7.085%	177.067	-2.363%
11	6001	6600	150.883	-8.483%	175.731	-3.100%
12	6601	7200	148.761	-9.770%	174.035	-4.035%
13	7201	7800			172.826	-4.702%

Haley #1 Pressure Stability

set	
Measurement	Pressure (PSI)
M1	14.951
M2	15.304

Stability Analysis						
10-Minute Time Windows			M1		M2	
Period	Time start (s)	Time end (s)	Pressure (PSI)	Difference with the Average (%)	Pressure (PSI)	Difference with the Average (%)
1	0	600	15.295	2.298%	15.336	0.214%
2	601	1200	15.195	1.629%	15.348	0.290%
3	1201	1800	15.136	1.239%	15.335	0.203%
4	1801	2400	15.063	0.749%	15.330	0.170%
5	2401	3000	14.966	0.102%	15.320	0.105%
6	3001	3600	14.916	-0.232%	15.311	0.050%
7	3601	4200	14.885	-0.444%	15.306	0.018%
8	4201	4800	14.900	-0.344%	15.305	0.007%
9	4801	5400	14.915	-0.243%	15.291	-0.080%
10	5401	6000	14.795	-1.046%	15.280	-0.157%
11	6001	6600	14.713	-1.592%	15.275	-0.189%
12	6601	7200	14.635	-2.116%	15.255	-0.320%
13	7201	7800			15.256	-0.309%

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Lincoln Cameron #1 Measurement 1

Flow: ALICAT										
10-Minute Time Windows										
Period	Timestamp Start	Timestamp end	Gas Flow (L/min)	Instrument Temperature (C°)	Instrument Pressure (PSIa)	Temperature (Rankine)	Pressure (atm)	Gas Flow (cf/h)	Corrected Gas Flow (scf/h) (Equation A)
1	2:05:01 PM 19/11/2024	2:15:00 PM 19/11/2024	233.59	22.47	14.62	532.12	1.00	494.95	480.98
2	2:15:01 PM 19/11/2024	2:25:00 PM 19/11/2024	228.32	22.38	14.61	531.95	0.99	483.78	469.69
3	2:25:01 PM 19/11/2024	2:35:00 PM 19/11/2024	225.23	22.69	14.60	532.51	0.99	477.23	462.55
4	2:35:01 PM 19/11/2024	2:45:00 PM 19/11/2024	222.70	22.50	14.59	532.16	0.99	471.88	457.47
5	2:45:01 PM 19/11/2024	2:55:00 PM 19/11/2024	220.84	22.34	14.58	531.87	0.99	467.93	453.64
6	2:55:01 PM 19/11/2024	3:05:00 PM 19/11/2024	219.29	22.14	14.58	531.52	0.99	464.65	450.70
7	3:05:01 PM 19/11/2024	3:15:00 PM 19/11/2024	217.92	22.03	14.58	531.32	0.99	461.75	447.91
8	3:15:01 PM 19/11/2024	3:25:00 PM 19/11/2024	216.71	21.84	14.57	530.98	0.99	459.19	445.56
9	3:25:01 PM 19/11/2024	3:35:00 PM 19/11/2024	215.75	21.46	14.57	530.30	0.99	457.14	444.14
10	3:35:01 PM 19/11/2024	3:45:00 PM 19/11/2024	214.74	20.95	14.57	529.37	0.99	455.00	442.83
11	3:45:01 PM 19/11/2024	3:55:00 PM 19/11/2024	213.85	20.36	14.56	528.32	0.99	453.13	441.70
12	3:55:01 PM 19/11/2024	4:05:00 PM 19/11/2024	213.11	19.09	14.55	526.04	0.99	451.55	441.77

Pressure			
10-Minute Time Windows			
Period	Timestamp Start	Timestamp end	Pressure (PSI)
1	2:05:01 PM 19/11/2024	2:15:00 PM 19/11/2024	4.94
2	2:15:01 PM 19/11/2024	2:25:00 PM 19/11/2024	4.61
3	2:25:01 PM 19/11/2024	2:35:00 PM 19/11/2024	4.45
4	2:35:01 PM 19/11/2024	2:45:00 PM 19/11/2024	4.37
5	2:45:01 PM 19/11/2024	2:55:00 PM 19/11/2024	4.30
6	2:55:01 PM 19/11/2024	3:05:00 PM 19/11/2024	4.20
7	3:05:01 PM 19/11/2024	3:15:00 PM 19/11/2024	4.18
8	3:15:01 PM 19/11/2024	3:25:00 PM 19/11/2024	4.13
9	3:25:01 PM 19/11/2024	3:35:00 PM 19/11/2024	4.08
10	3:35:01 PM 19/11/2024	3:45:00 PM 19/11/2024	4.02
11	3:45:01 PM 19/11/2024	3:55:00 PM 19/11/2024	3.98
12	3:55:01 PM 19/11/2024	4:05:00 PM 19/11/2024	3.90

CH4 Ambient Conc	Moisture correction Factor (MCF) (Dry basis)
0	1

Concentration: SEM 5000				
10-Minute Time Windows				
Period	Timestamp Start	Timestamp end	Gas value (%)	Corrected CH4 Conc (%) (Equation B)
1	2:05:01 PM 19/11/2024	2:15:00 PM 19/11/2024	100.00	100.00%
2	2:15:01 PM 19/11/2024	2:25:00 PM 19/11/2024	100.00	100.00%
3	2:25:01 PM 19/11/2024	2:35:00 PM 19/11/2024	100.00	100.00%
4	2:35:01 PM 19/11/2024	2:45:00 PM 19/11/2024	100.00	100.00%
5	2:45:01 PM 19/11/2024	2:55:00 PM 19/11/2024	100.00	100.00%
6	2:55:01 PM 19/11/2024	3:05:00 PM 19/11/2024	100.00	100.00%
7	3:05:01 PM 19/11/2024	3:15:00 PM 19/11/2024	100.00	100.00%
8	3:15:01 PM 19/11/2024	3:25:00 PM 19/11/2024	100.00	100.00%
9	3:25:01 PM 19/11/2024	3:35:00 PM 19/11/2024	100.00	100.00%
10	3:35:01 PM 19/11/2024	3:45:00 PM 19/11/2024	100.00	100.00%
11	3:45:01 PM 19/11/2024	3:55:00 PM 19/11/2024	100.00	100.00%
12	3:55:01 PM 19/11/2024	4:05:00 PM 19/11/2024	100.00	100.00%

Lincoln Cameron #1 Measurement 1 Constants and Emissions Rate

Constants		
Row	Value	ValueDefined
1	24	Hours per day
1	1,000	Cubic feet per MCF
2	28.3168	Liters per cubic foot, ideal gases
3	0.000001	1 part per million
4	0.068046	PSIA to atm
5	60	minutes per hour

Emissions Rate				
10-Minute Time Windows				
Period	Time start (s)	Time end (s)	Emissions Rate (scf/h)	Stability Check
1	0	600	480.98	Max
2	601	1200	469.69	480.98
3	1201	1800	462.55	Min
4	1801	2400	457.47	441.70
5	2401	3000	453.64	Factor
6	3001	3600	450.70	1.09
7	3601	4200	447.91	
8	4201	4800	445.56	
9	4801	5400	444.14	
10	5401	6000	442.83	
11	6001	6600	441.70	
12	6601	7200	441.77	

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Lincoln Cameron #1 Measurement 2

Flow: ALICAT										
10-Minute Time Windows										
Period	Timestamp Start	Timestamp end	Gas Flow (L/min)	Instrument Temperature (C°)	Instrument Pressure (PSIa)	Temperature (Rankine)	Pressure (atm)	Gas Flow (cf/h)	Corrected Gas Flow (scf/h) (Equation A)
1	9:26:01 AM 23/01/2025	9:36:00 AM 23/01/2025	210.69	1.08	14.91	493.61	1.01	446.42	476.85
2	9:36:01 AM 23/01/2025	9:46:00 AM 23/01/2025	203.80	1.77	15.01	494.86	1.02	431.83	463.05
3	9:46:01 AM 23/01/2025	9:56:00 AM 23/01/2025	204.51	1.95	15.02	495.19	1.02	433.33	464.81
4	9:56:01 AM 23/01/2025	10:06:00 AM 23/01/2025	213.57	1.84	15.03	494.98	1.02	452.52	485.99
5	10:06:01 AM 23/01/2025	10:16:00 AM 23/01/2025	217.15	1.81	15.04	494.93	1.02	460.12	494.53
6	10:16:01 AM 23/01/2025	10:26:00 AM 23/01/2025	220.06	2.11	15.05	495.46	1.02	466.28	500.85
7	10:26:01 AM 23/01/2025	10:36:00 AM 23/01/2025	219.23	1.87	15.06	495.04	1.02	464.52	499.64
8	10:36:01 AM 23/01/2025	10:46:00 AM 23/01/2025	217.52	1.74	15.08	494.80	1.03	460.89	496.69
9	10:46:01 AM 23/01/2025	10:56:00 AM 23/01/2025	213.99	2.29	15.09	495.80	1.03	453.42	488.02
10	10:56:01 AM 23/01/2025	11:06:00 AM 23/01/2025	212.34	2.08	15.08	495.41	1.03	449.92	484.28
11	11:06:01 AM 23/01/2025	11:16:00 AM 23/01/2025	209.85	1.71	15.08	494.74	1.03	444.66	479.19
12	11:16:01 AM 23/01/2025	11:26:00 AM 23/01/2025	207.37	2.25	15.09	495.71	1.03	439.40	473.13

Pressure			
10-Minute Time Windows			
Period	Timestamp Start	Timestamp end	Pressure (PSI)
1	9:26:01 AM 23/01/2025	9:36:00 AM 23/01/2025	5.40
2	9:36:01 AM 23/01/2025	9:46:00 AM 23/01/2025	5.30
3	9:46:01 AM 23/01/2025	9:56:00 AM 23/01/2025	5.24
4	9:56:01 AM 23/01/2025	10:06:00 AM 23/01/2025	5.19
5	10:06:01 AM 23/01/2025	10:16:00 AM 23/01/2025	5.13
6	10:16:01 AM 23/01/2025	10:26:00 AM 23/01/2025	5.11
7	10:26:01 AM 23/01/2025	10:36:00 AM 23/01/2025	5.10
8	10:36:01 AM 23/01/2025	10:46:00 AM 23/01/2025	5.05
9	10:46:01 AM 23/01/2025	10:56:00 AM 23/01/2025	5.02
10	10:56:01 AM 23/01/2025	11:06:00 AM 23/01/2025	5.00
11	11:06:01 AM 23/01/2025	11:16:00 AM 23/01/2025	4.93
12	11:16:01 AM 23/01/2025	11:26:00 AM 23/01/2025	4.90

CH4 Ambient Conc	Moisture correction Factor (MCF) (Dry basis)
0	1

Concentration: SEM 500				
10-Minute Time Windows				
Period	Timestamp Start	Timestamp end	Gas value (%)	Corrected CH4 Conc (ppm) (Equation B)
1	9:26:01 AM 23/01/2025	9:36:00 AM 23/01/2025	90.39	90.39%
2	9:36:01 AM 23/01/2025	9:46:00 AM 23/01/2025	89.57	89.57%
3	9:46:01 AM 23/01/2025	9:56:00 AM 23/01/2025	88.66	88.66%
4	9:56:01 AM 23/01/2025	10:06:00 AM 23/01/2025	87.62	87.62%
5	10:06:01 AM 23/01/2025	10:16:00 AM 23/01/2025	86.97	86.97%
6	10:16:01 AM 23/01/2025	10:26:00 AM 23/01/2025	86.70	86.70%
7	10:26:01 AM 23/01/2025	10:36:00 AM 23/01/2025	85.97	85.97%
8	10:36:01 AM 23/01/2025	10:46:00 AM 23/01/2025	85.86	85.86%
9	10:46:01 AM 23/01/2025	10:56:00 AM 23/01/2025	86.37	86.37%
10	10:56:01 AM 23/01/2025	11:06:00 AM 23/01/2025	86.27	86.27%
11	11:06:01 AM 23/01/2025	11:16:00 AM 23/01/2025	85.71	85.71%
12	11:16:01 AM 23/01/2025	11:26:00 AM 23/01/2025	86.51	86.51%

Lincoln Cameron #1 Measurement 2 Constants and Emissions Rate

Constants		
Row	Value	ValueDefined
1	24	Hours per day
1	1,000	Cubic feet per MCF
2	28.3168	Liters per cubic foot, ideal gases
3	0.000001	1 part per million
4	0.068046	PSIA to atm
5	60	minutes per hour

Emissions Rate				
10-Minute Time Windows				
Period	Time start (s)	Time end (s)	Emissions Rate (scf/h)	Stability Check
1	0	600	431.02	Max
2	601	1200	414.73	434.21
3	1201	1800	412.09	Min
4	1801	2400	425.84	409.28
5	2401	3000	430.12	Factor
6	3001	3600	434.21	1.06
7	3601	4200	429.56	
8	4201	4800	426.46	
9	4801	5400	421.48	
10	5401	6000	417.77	
11	6001	6600	410.70	
12	6601	7200	409.28	

ACR1043_Calculations

Lincoln Cameron #1 Methane Stability

Summary			
Measurement	Methane emissions Rate (scf/h)	90% of M1 average (scf/h)	110% of M1 average (scf/h)
M1 average	453.25	407.92	498.57
M2 average	421.94		
Difference (%)	6.91%		

Stability Analysis						
10-Minute Time Windows			M1		M2	
Period	Time start (s)	Time end (s)	Emissions Rate (scf/h)	Difference with the Average (%)	Emissions Rate (scf/h)	Difference with the Average (%)
1	0	600	480.98	6.12%	431.02	2.15%
2	601	1200	469.69	3.63%	414.73	-1.71%
3	1201	1800	462.55	2.05%	412.09	-2.33%
4	1801	2400	457.47	0.93%	425.84	0.92%
5	2401	3000	453.64	0.09%	430.12	1.94%
6	3001	3600	450.70	-0.56%	434.21	2.91%
7	3601	4200	447.91	-1.18%	429.56	1.81%
8	4201	4800	445.56	-1.69%	426.46	1.07%
9	4801	5400	444.14	-2.01%	421.48	-0.11%
10	5401	6000	442.83	-2.30%	417.77	-0.99%
11	6001	6600	441.70	-2.55%	410.70	-2.66%
12	6601	7200	441.77	-2.53%	409.28	-3.00%

Lincoln Cameron #1 Pressure Stability

set	
Measurement	Pressure (PSI)
M1	4.26
M2	5.11

Stability Analysis						
10-Minute Time Windows			M1		M2	
Period	Time start (s)	Time end (s)	Pressure (PSI)	Difference with the Average (%)	Pressure (PSI)	Difference with the Average (%)
1	0	600	4.94	15.92%	5.40	5.64%
2	601	1200	4.61	8.18%	5.30	3.65%
3	1201	1800	4.45	4.35%	5.24	2.45%
4	1801	2400	4.37	2.47%	5.19	1.40%
5	2401	3000	4.30	0.83%	5.13	0.33%
6	3001	3600	4.20	-1.40%	5.11	-0.10%
7	3601	4200	4.18	-1.95%	5.10	-0.36%
8	4201	4800	4.13	-3.24%	5.05	-1.17%
9	4801	5400	4.08	-4.25%	5.02	-1.86%
10	5401	6000	4.02	-5.82%	5.00	-2.25%
11	6001	6600	3.98	-6.56%	4.93	-3.55%
12	6601	7200	3.90	-8.55%	4.90	-4.20%

Multi-Site Design Document

VERSION 1.1

2023-12-01

BACKGROUND ACR has established procedures for GHG projects to include multiple facilities, fields, or parcels (hereafter referred to collectively as "Sites") as an Aggregated project or as a Programmatic Development Approach (PDA) project so that they may achieve efficiencies of scale and other potential project administrative benefits while preserving the accounting principles of the ACR Standard and its approved methodologies, and the integrity of the monitoring, reporting, and verification processes.

INSTRUCTIONS ACR requires that a Multi-Site Design Document be provided by Aggregated or PDA GHG Projects to describe how the Project conforms to ACR Standard requirements specifically governing multi-site projects. This template first addresses general Aggregation and PDA requirements. It then provides a Site Information Table, where details concerning individual Sites shall be recorded. This document is considered an appendix to the GHG Project Plan and must be uploaded to the ACR Registry, denoted as a GHG Project Plan document type. This appendix is subject to validation and will be public.

SECTION I: PROJECT INFORMATION		
1	**Project Title**	Tradewater OOG 3
2	**ACR Project ID#**	ACR1043
3	**Date Form Completed**	7/3/2025

SECTION II: GENERAL REQUIREMENTS		
1	**If the GHG Project includes multiple landowners/facility owners, is the Project Proponent also the ACR Project Developer Account Holder?**	☒ Yes ☐ No

2	**Is a single ACR-approved methodology version implemented on all Sites, or is a pair of ACR-approved methodologies implemented as specifically allowed by the methodologies?** **Identify the methodology name and version.**	☒ Yes ☐ No 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 (May 2023) and Errata and Clarifications (2025-06-23)
3	**What is the overarching project Start Date? (MM/DD/YYYY)** **Does it correspond to the earliest Implementation Date among the Sites?**	04/07/2025 ☒ Yes ☐ No
4	**For AFOLU projects including multiple landowners, has the Project Proponent entered into a legally binding Reversal Risk Mitigation Agreement with ACR?**	☐ Yes ☐ No ☒ N/A
5	**For AFOLU projects, is reversal risk analyzed and the Buffer Pool Contribution Percentage calculated for the overall GHG Project?**	☐ Yes ☐ No ☒ N/A
SECTION III: AGGREGATION REQUIREMENTS		
1	**Is the GHG Project utilizing Aggregation?**[1] *If Yes, complete remaining question in this section.*	☒ Yes ☐ No

[1] A GHG Project that contains multiple Sites with a single Start Date and Crediting Period. No new Sites can be added after the validation.

2	**If required by the chosen methodology, is the inventory statistical precision calculated at the Aggregated Project level?**	☐ Yes ☐ No ☒ N/A
SECTION IV: PROGRAMMATIC DEVELOPMENT APPROACH REQUIREMENTS		
1	**Is the GHG Project utilizing the Programmatic Development Approach?**[2] *If Yes, complete remaining questions in this section.*	☐ Yes ☒ No
2	**Project Boundaries** *Describe the anticipated project boundaries, including geographic, temporal, and GHG assessment boundaries.* *N/A*	
3	**Baseline Scenario** *Describe the baseline scenario of the GHG Project and the anticipated contribution of future Sites or Cohorts toward the GHG Project as a whole.* *N/A*	
4	**Monitoring, Reporting, and Verification** *Provide the anticipated schedule of monitoring, reporting, and validation/verification for Sites, Cohorts, and the GHG Project as a whole.* N/A	
5	**Management System** *Describe the management system that includes the following:* • The reason why all expected project participants and Sites cannot be included upon initial validation. • A clear definition of the roles and responsibilities of personnel involved in monitoring, reporting, validation/verification, and recruitment of new Sites. • The eligibility criteria for recruiting new Sites to the PDA. • Procedures to avoid double counting, that no Site or group of Sites has been or will be registered on ACR as part of another GHG project.	

[2] A GHG Project in which successive Cohorts of Sites are added incrementally to a Project over time.

	- A Site-level QA/QC process for record and documentation control (to be made available to the VVB at time of validation). N/A	
6	**All Sites must undergo validation prior to issuance of ERTs against its associated project activities. Have all Sites been validated?**	☐ Yes ☐ No

SECTION V: SITE INFORMATION TABLE

INSTRUCTIONS Complete the following table, outlining the attributes of the Sites enrolled in the GHG Project. PDA Projects must update this table and reupload it to the Registry at each validation as new Sites are enrolled. For AFOLU projects, clearly define the geographic boundary uniquely identifying each Site (including maps and/or spatial files as required by the chosen methodology) using additional sheets as necessary. Omit or provide additional rows for Sites as needed.

UNIQUE SITE ID	UNIQUE COHORT ID (PDA ONLY)	LANDOWNER/ OPERATOR NAME AND CONTACT DETAILS (EMAIL AND PHONE)[3]	SITE-SPECIFIC IMPLEMENTATION DATE (MM/DD/YYYY)	DESCRIPTION OF IMPLEMENTATION DATE AND SUPPORTING DOCUMENTATION	CREDITING PERIOD DATES (MM/DD/YYYY–MM/DD/YYYY)	SHORT NARRATIVE DESCRIPTION OF SITE'S PROJECT ACTIVITIES, INCLUDING ITS DEMONSTRATION OF ELIGIBILITY AND ADDITIONALITY.	GEOGRAPHIC SIZE (ACRES OR HECTARES; AFOLU ONLY)

[3] Contact details may be redacted in the publicly maintained version of this table.

1211722790 “Lincoln Cameron #1”	N/A	[redacted]	04/07/2025	Date of post-plugging monitoring confirming absence of post-plugging emissions is located in raw data files obtained from measurement equipment on the day that post-plugging monitoring occurred. The post plugging monitoring date for the well is the implementation date.	04/07/2025-04/06/2045	See attachment	N/A

1211722766 "Blackburn University #2"	N/A	[redacted]	04/07/2025	Date of post-plugging monitoring confirming absence of post-plugging emissions is located in raw data files obtained from measurement equipment on the day that post-plugging monitoring occurred. The post plugging monitoring date for the well is the implementation date.	04/07/2025 – 04/06/2045	See attachment	N/A

1211722712 "Haley #1"	N/A	[redacted]	04/08/2025	Date of post-plugging monitoring confirming absence of post-plugging emissions is located in raw data files obtained from measurement equipment on the day that post-plugging monitoring occurred. The post plugging monitoring date for the well is the implementation date.	04/08/2025 – 04/07/2045	See attachment	N/A
TOTAL							**N/A**

Appendix to the MSDD

Multi-Site Design Document for Aggregated Project ACR1043 (Tradewater OOG 3)

The three wells included in this project were determined as eligible through initial monitoring which confirmed the wells are in a leaking state. They were confirmed as orphaned through the Illinois Department of Natural Resources, Office of Oil and Gas Resource Management's PRF Program List. Access rights from the affiliated landowners enabled our project expert to take readings on site of each well. In Illinois, oil and gas wells are regulated under Title 62 part 240 of the Illinois Administrative Code which requires the owner or operator to plug and abandon a well. As these wells do not have solvent operators, they will remain unplugged as there is no one required to plug them. Therefore, the wells reach additionality status.

Generally, each well is approached with the following operations:

1. Land access is permitted by the landowner to Tradewater project manager.
2. Initial monitoring of well occurs to determine if it is leaking.
3. After well has been identified as an eligible well, pre-plugging monitoring occurs.
4. Within this time period, formal Landowner Access Agreements are signed.
5. Well is plugged by state-sanctioned pluggers.
6. Post-plugging monitoring occurs.

The implementation date of the well is the date in which Tradewater has confirmed there are no post-plugging emissions. It is evidenced by field data taken during post-plugging monitoring.

Appendix E

Tradewater

ACCESS ACKNOWLEDGMENT FORM

Well Property Address:
[redacted]

Well ID No.:
1211722766
Latitude: 39.15975
Longitude: -89.97626

The individual(s) signing below own(s) the property identified above ("Property"). The well identified above is located on the Property ("Well").

I/We am/are aware that Tradewater Well Services, LLC ("Tradewater") is plugging the well in order to generate carbon offset credits. By signing below, I/We acknowledge that, as of the date of signing this Access Acknowledgement Form, I/We am providing to Tradewater access to the Property for the purpose of plugging the Well.

I/We agree to receive compensation from Tradewater in consideration for Tradewater's right to access the Property and plug the Well and to seek carbon offset credits for its plugging activities. In exchange for this compensation, I/We agree to take reasonably necessary steps to assist Tradewater in accessing the Property for its well-plugging efforts. I/We further agree to refrain from taking any action that would interfere with, impair, invalidate, or reverse any rights to access my/our land for this specific purpose.

I/We also understand and agree that any carbon offset credits generated from plugging the Well are a result of Tradewater's plugging activities and, as a result, belong exclusively to Tradewater.

Landowner Name(s): [redacted]

Landowner Signature(s):

Date: 2-24-25
Landowner Address: [redacted]
City, State, Zip: [redacted]
Phone: [redacted]

Tradewater

ACCESS ACKNOWLEDGMENT FORM

Well Property Address:
[redacted]

Well ID No.:
1211722712 (Latitude: 39.17393, Longitude: -89.96527)
1211701298 (Latitude: 39.175539, Longitude: -89.965287)

The individual(s) signing below own(s) the property identified above ("Property"). The wells identified above are located on the Property ("Wells").

I/We am/are aware that Tradewater Well Services, LLC ("Tradewater") is plugging the wells in order to generate carbon offset credits. By signing below, I/We acknowledge that, as of the date of signing this Access Acknowledgement Form, I/We am providing to Tradewater access to the Property for the purpose of plugging the Wells.

I/We agree to receive compensation from Tradewater in consideration for Tradewater's right to access the Property and plug the Wells and to seek carbon offset credits for its plugging activities. In exchange for this compensation, I/We agree to take reasonably necessary steps to assist Tradewater in accessing the Property for its well-plugging efforts. I/We further agree to refrain from taking any action that would interfere with, impair, invalidate, or reverse any rights to access my/our land for this specific purpose.

I/We also understand and agree that any carbon offset credits generated from plugging the Wells are a result of Tradewater's plugging activities and, as a result, belong exclusively to Tradewater.

Landowner Name(s): [redacted]

Landowner Signature(s): [redacted]

Date: 2/24/25
Landowner Address: [redacted]
City, State, Zip: [redacted]
Phone: [redacted]

Tradewater

ACCESS ACKNOWLEDGMENT FORM

Well Property Address:
[redacted]

Well ID No.:
1211722790
Latitude: 39.146393
Longitude: -90.031594

The individual(s) signing below own(s) the property identified above ("Property"). The well identified above is located on the Property ("Well").

I/We am/are aware that Tradewater Well Services, LLC ("Tradewater") is plugging the well in order to generate carbon offset credits. By signing below, I/We acknowledge that, as of the date of signing this Access Acknowledgement Form, I/We am providing to Tradewater access to the Property for the purpose of plugging the Well.

I/We agree to receive compensation from Tradewater in consideration for Tradewater's right to access the Property and plug the Well and to seek carbon offset credits for its plugging activities. In exchange for this compensation, I/We agree to take reasonably necessary steps to assist Tradewater in accessing the Property for its well-plugging efforts. I/We further agree to refrain from taking any action that would interfere with, impair, invalidate, or reverse any rights to access my/our land for this specific purpose.

I/We also understand and agree that any carbon offset credits generated from plugging the Well are a result of Tradewater's plugging activities and, as a result, belong exclusively to Tradewater.

Landowner Name(s): [redacted]

Landowner Signature(s):

Date: 2/24/25

Landowner Address: [redacted]

City, State, Zip: [redacted]

Phone: [redacted]

WELL PLUGGING PLAN

Tradewater Well Services
1550 W. Carroll Ave, Suite 213
Chicago, IL 60607
312-940-7209

Tradewater

Approval Record	
Date Created *(month, day, year)*	Signature
Date Approved *(month, day, year)*	Signature
Date Denied *(month, day, year)*	Signature
Date Modified *(month, day, year)*	Signature

PART I — GENERAL INFORMATION

Operator or authorized agent: Tradewater Well Services	Phone: 312-940-7209	E-mail: wellservices@tradewater.us
Lease-Well Number: Blackburn University #2	Well Type: G	API Number: 1211722766 Ref Number: 129109
County: Macoupin County, IL	Planned plugging date: *(month, day, year)* Mar 2025	Latitude 39.15975 / Longitude -89.9763
	GL: 621' KB:	

Surface:

Size	Length	Hole	Cement
10"	150 ft		40 sk

Long String:

Size	Length	Hole	Cement
4 1/2"	377 ft	8 1/4"	60 sk

Liner / Intermediate Casing:

Size	Length	Hole	Cement

Estimate top of cement (TOC): surface, 0'

Well Orientation (circle one): Vertical / Horizontal

Existing Perforations:
From 380' To 388'
From To
From To

Proposed Perforations:
From 200' To
From To
From To

Proposed Casing to Pull - Amount: none

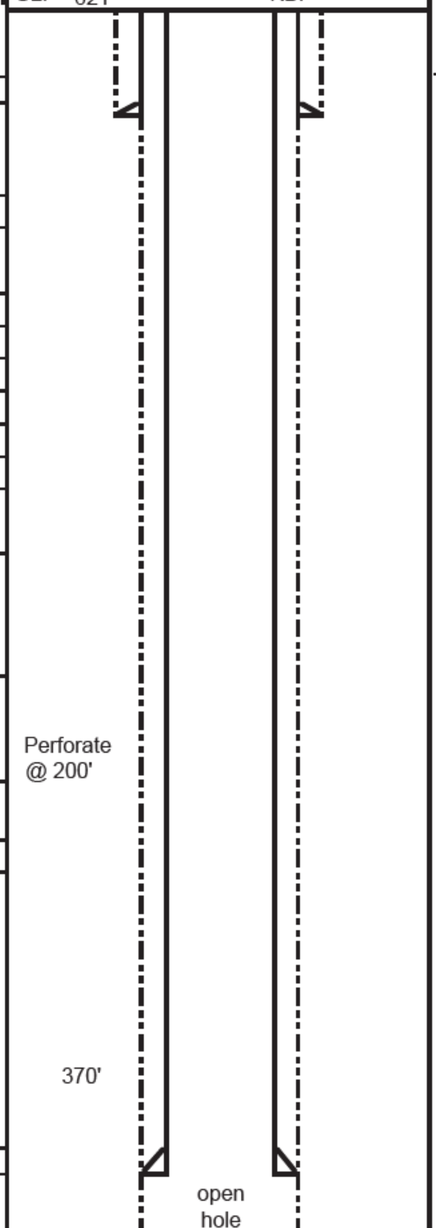
Proposed cement types and volumes

Plug #1 CIBP @ 370'
Cmt Type class A Volume 2 sk

Plug #2 Cement
Cmt Type class H Volume 60 sk

Plug #3
Cmt Type Volume

Plug #4
Cmt Type Volume



TD: 450 ft PBTD:

Freshwater zone depth: 175 ft
Well flowing fluid? (circle one): Yes No

Plugging Notes:

From completion documents:
- Flowing from Pennsylvanian
- Coal 134-135'
- Rotary tools used 0 to 386'
- Hole size is 8 1/4"
- Notes included: "T.D. 450, set 150 7", plugged hole 70 sacks"

Plugging Plan:
- Run cement bond log
- Verify cement on back side of production casing
- Set CIBP at 370'
- Perforate at 200'
- Dump bail 2 sacks cement (minimum 10 ft)
- Tag cement
- Set top plug: cement out 370' to surface, squeeze cement behind production casing

Key: Cement | CIBP | Packer | Spacer

Signature of operator or authorized agent	Date signed *(month, day, year)*
Signature of IL DNR representative Jared Rubsam	Date signed *(month, day, year)* 02/24/2025

WELL PLUGGING PLAN

Tradewater

Tradewater Well Services
1550 W. Carroll Ave, Suite 213
Chicago, IL 60607
312-940-7209

Approval Record	
Date Created *(month, day, year)*	Signature
Date Approved *(month, day, year)*	Signature
Date Denied *(month, day, year)*	Signature
Date Modified *(month, day, year)*	Signature

PART I — **GENERAL INFORMATION**

Operator or authorized agent: Tradewater Well Services	Phone: 312-940-7209	E-mail: wellservices@tradewater.us
Lease-Well Number: Haley #1	Well Type: G	API Number: 1211722712 — Ref Number: 129114
County: Macoupin County, IL	Planned plugging date *(month, day, year)*: March 2025	Latitude 39.173853 — Longitude -89.965166

GL: 554' KB:

Surface:

Size	Length	Hole	Cement
7"	150.5'	6.25"	40 sk

Long String:

Size	Length	Hole	Cement
4.5"	341.5'	8 5/8"	55 sk

Liner / Intermediate Casing:

Size	Length	Hole	Cement

Estimate top of cement (TOC): surface, 0'

Well Orientation (circle one): Vertical / Horizontal

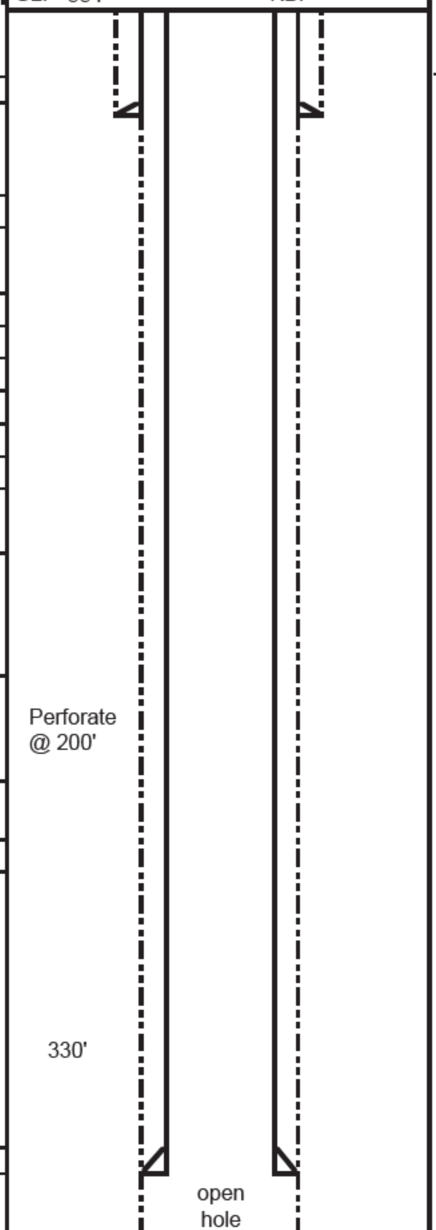
Existing Perforations:
From To none
From To
From To

Proposed Perforations:
From 200' To
From To
From To

Proposed Casing to Pull - Amount:

Proposed cement types and volumes

Plug #1 CIBP @ 330'
Cmt Type class A Volume 2 sk
Plug #2 Cement
Cmt Type class H Volume 45 sk
Plug #3
Cmt Type Volume
Plug #4
Cmt Type Volume



TD: 377' PBTD:

Freshwater zone depth: 108 ft
Well flowing fluid? (circle one): Yes No

Plugging Notes:

From completion document:
- Producing formation is Pennsylvanian sand
- Coal from 176' - 182'
- Gas blow started at 340' and doubled at 348'
- 4 1/2" casing packer shoe cemented at 341-342'

Plugging Plan:
- Run cement bond log
- Verify cement on backside of production casing
- Set CIBP at 330'
- Perforate at 200'
- Dump bail 2 sacks of cement (minimum 10 ft)
- Tag cement
- Set top plug: cement out 330' to surface, squeeze cement behind production casing

Key
Cement CIBP Packer Spacer

Signature of operator or authorized agent	Date signed *(month, day, year)*
Signature of IL DNR representative Jared Rubsam	Date signed *(month, day, year)* 02/24/2025

WELL PLUGGING PLAN

Tradewater

Tradewater Well Services
1550 W. Carroll Ave, Suite 213
Chicago, IL 60607
312-940-7209

Approval Record	
Date Created *(month, day, year)*	Signature
Date Approved *(month, day, year)*	Signature
Date Denied *(month, day, year)*	Signature
Date Modified *(month, day, year)*	Signature

PART I — GENERAL INFORMATION

Operator or authorized agent: Tradewater Well Services	Phone: 312-940-7209	E-mail: wellservices@tradewater.us
Lease-Well Number: Lincoln Cameron #1	Well Type: G	API Number: 1211722790 Ref Number: 113306
County: Macoupin County, IL	Planned plugging date *(month, day, year)*: March 2025	Latitude 39.146393 / Longitude -90.031593
	GL: 592' KB: 595'	Freshwater zone depth: 175 ft

Well flowing fluid? (circle one): Yes No

Surface:

Size	Length	Hole	Cement
7"	150'		32sk

Long String:

Size	Length	Hole	Cement
4"	402'		

Liner / Intermediate Casing:

Size	Length	Hole	Cement

Estimate top of cement (TOC): surface, 0'

Well Orientation (circle one): Vertical / Horizontal

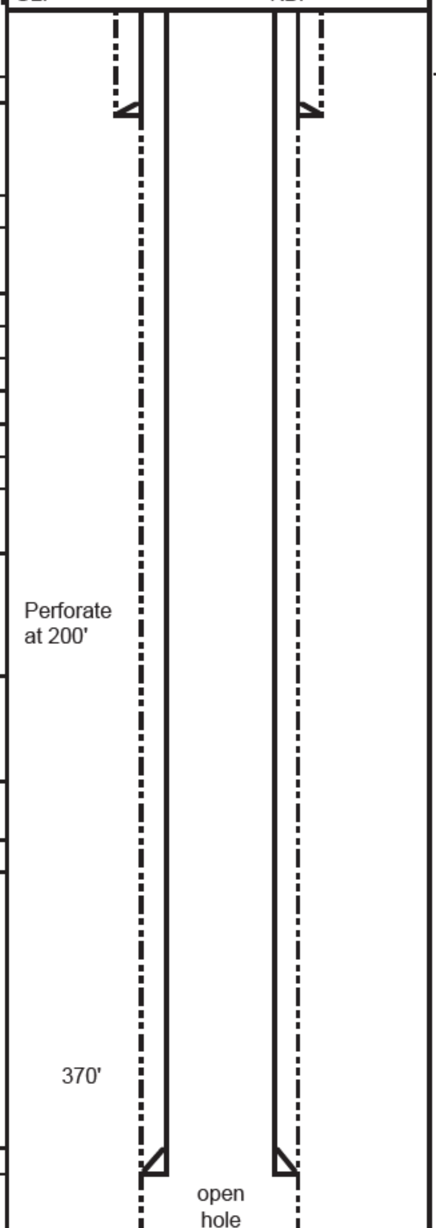
Existing Perforations:
From none listed To
From To
From To

Proposed Perforations:
From 200' To
From To
From To

Proposed Casing to Pull - Amount: none

Proposed cement types and volumes

Plug #1 CIBP @ 370'
Cmt Type class A Volume 2 sk
Plug #2 Cement
Cmt Type class H Volume 45 sk
Plug #3
Cmt Type Volume
Plug #4
Cmt Type Volume



TD: 402 ft PBTD:

Plugging Notes:

From ISGS documents:
- ISGS Summary states "completed as a shut-in gas well in the Pottsville" with Pottsville at 378'
- No completion documents, just permit and scout ticket
- Drilled 12/1/1985

Plugging notes:
- Run cement bond log
- Verify cement on back side of production casing and check for any perforations
- Assume completion in Pottsville at 378'; set CIBP at 370'
- Perforate at 200'
- Dump bail 2 sacks cement (minimum 10 ft)
- Tag cement
- Set top plug, cement out 365' to surface, squeeze cement behind production casing

Key: Cement | CIBP | Packer | Spacer

Signature of operator or authorized agent	Date signed *(month, day, year)*
Signature of IL DNR representative Jared Rubsam	Date signed *(month, day, year)* 02/24/2025