

# VALIDATION AND VERIFICATION REPORT

## *American Carbon Registry*

### *ACR 681:Anew – Sylvania Forestry Project*

**Reporting Period:**

**23 July 2021 to 22 July 2022**

**Prepared for:**

**Anew Carbon Development, LLC.**

**19 October 2023**



AMERICAN CARBON REGISTRY

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## Executive Summary

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This report describes the validation and initial verification services provided for the Anew – Sylvania Forestry project (“the project”), an Improved Forest Management project located in the states of Pennsylvania and New York, USA, that was conducted by SCS Global Services. Verification services began on 11 August 2022 with a kickoff call. The overall goal of the validation engagement was to review impartially and objectively the GHG project plan against the requirements laid out in the ACR Standard and relevant methodology. The overall goal of the verification engagement was to review impartially and objectively the claimed GHG emission reductions/removal enhancements for the reporting period from 23 July 2021 to 22 July 2022 against relevant ACR standards and the approved methodology. The validation and verification engagements were carried out through a combination of document review, interviews with relevant personnel and on-site inspections. As part of the validation and verification engagements 10 findings were raised: 0 Non-Conformity Reports, 10 New Information Requests and 0 Observations. These findings are described in Appendix A of this report. The project complies with the validation and verification criteria, and SCS holds no restrictions or uncertainties with respect to the compliance of the project with the validation and verification criteria.

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# 1 Introduction

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## 1.1 About SCS Global Services

SCS Global Services (SCS) is a global leader in third-party certification, auditing, testing services, and standards. Established as an independent third-party certification firm in 1984, our goal is to recognize the highest levels of performance in environmental protection and social responsibility in the private and public sectors, and to stimulate continuous improvement in sustainable development. In 2012, Scientific Certification Systems, Inc. began doing business as SCS Global Services, communicating its global position with offices and representatives in over 20 countries.

SCS' Greenhouse Gas (GHG) Verification Program has been verifying carbon offsets since 2008 and to date has verified over 250 million tonnes of CO<sub>2</sub>e, providing GHG verification services to a wide array of industries including manufacturing, transportation, municipalities, and non-profit organizations. The GHG Verification Program draws upon SCS's established expertise to serve the global carbon market.

## 1.2 Objectives

### 1.2.1 Validation Objectives

The overall goal of third-party validation was to review impartially and objectively the GHG project plan against the requirements laid out in the ACR Standard and relevant methodology. SCS independently evaluated the project design and planning information, based on supporting documentation and GHG validation best practices.

The objectives of validation were to evaluate

- Conformance to the ACR Standard.
- GHG emissions reduction project planning information and documentation in accordance with the applicable ACR-approved methodology, including the project description, baseline, eligibility criteria, monitoring and reporting procedures, and quality assurance/quality control (QA/QC) procedures.
- Reported GHG baseline, ex ante estimated project emissions and emission reductions/removal enhancements, leakage assessment, and impermanence risk assessment and mitigation (if applicable).

SCS reviewed any relevant additional documentation provided by the project proponent to confirm the project's eligibility for registration on ACR.

### 1.2.2 Verification Objectives

The overall goal of third-party verification was to review impartially and objectively the claimed GHG emission reductions/removal enhancements against relevant ACR standards and the approved

methodology. SCS independently evaluated the GHG assertion, based on supporting evidence and GHG verification best practice. The objectives of verification were to evaluate

- Reported GHG baseline, project emissions and emission reductions/removal enhancements, leakage assessment, and impermanence risk assessment and mitigation (if applicable).
- Any significant changes to the project procedures or criteria since the last verification.
- Any significant changes in the GHG project's baseline emissions and emission reductions/removal enhancements since the last verification.

SCS reviewed the GHG project plan, GHG assertion, and any additional relevant documentation provided by the client to determine

- That the reported emissions reductions and/or removal enhancements are real.
- Degree of confidence in and completeness of the GHG assertion.
- That project implementation was consistent with the GHG project plan.
- Eligibility for registration on ACR.
- Sources and magnitude of potential errors, omissions, and misrepresentations, including the
  - Inherent risk of material misstatement.
  - Risk that the existing controls of the GHG project would not have prevented or detected a material misstatement.

## 1.3 Scope

### 1.3.1 Scope of Validation

The validation included examination of all of the following elements of the GHG project plan:

- Project boundary and procedures for establishing the project boundary
- Physical infrastructure, activities, technologies, and processes of the project
- GHGs, sources, and sinks within the project boundary
- Temporal boundary
- Description of and justification for the baseline scenario
- Methodologies, algorithms, and calculations that will be used to generate estimates of emissions and emission reductions/removal enhancements
- Process information, source identification/counts, and operational details
- Data management systems
- QA/QC procedures
- Processes for uncertainty assessments
- Project-specific conformance to ACR eligibility criteria

### 1.3.2 Scope of Verification

Verification included examination of some or all of the following elements of the GHG project plan:

- Physical infrastructure, activities, technologies, and processes of the GHG project
- GHG SSRs within the project boundary
- Temporal boundary
- Baseline scenarios
- Methods and calculations used to generate estimates of emissions and emission reductions/removal enhancements
- Original underlying data and documentation as relevant and required to evaluate the GHG assertion
- Process information, source identification/counts, and operational details
- Data management systems
- Roles and responsibilities of project participants or client staff
- QA/QC procedures and results
- Processes for and results from uncertainty assessments
- Project-specific conformance to ACR eligibility criteria

SCS examined the reported data, quantification methodologies, calculation spread-sheets or databases, source data, project data management systems, data quality controls in place, measurement and monitoring systems, and records pertaining to emissions quantification. Calculation and error checks, site inspections, interviews with project participants, an iterative risk assessment, sampling plan, and audit checklist were performed to the extent necessary for SCS to develop an understanding of how data are collected, handled, and stored for a specific project.

Finally, as a full verification, the verification services included a field visit to the project site and

- Such carbon stock measurements as SCS required to provide a reasonable level of assurance that the GHG assertion is without material discrepancy (per ACR's materiality threshold of  $\pm 5\%$ ).
- Updated assessment of the risk of reversal and an updated buffer contribution.

## 1.4 Validation and Verification Criteria

The validation and verification criteria were comprised of the following:

- ACR Standard, Version 7.0
- Improved Forest Management Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal U.S. Forestlands, Version 1.3 ("the methodology")
- Errata & Clarifications for ACR IFM Version 1.3
- ACR Tool for Risk Analysis and Buffer Determination, Version 1.0

- ACR Validation and Verification Standard v1.1
- Principles of ISO 14064-3:2019: Greenhouse Gas – Specification with guidance for the validation and verification of greenhouse gas assertions

## 1.5 Level of Assurance

The level of assurance was reasonable.

## 1.6 Treatment of Materiality

For validation purposes, a material misstatement was declared if any of the following circumstances were detected:

- The physical or geographic boundary of the GHG project plan was not reasonably accurate.
- In respect of the project baseline,
  - The procedures for determining baseline emissions were not technically sound.
  - Data representative of the operations and activities had not been used, either from a single year or a multi-year average.
  - The baseline scenario chosen was not one for which verifiable data are available.
- In respect of the quantification methodology,
  - The quantification method for each data type was not clearly defined, and/or the degree of supporting documentation provided was inadequate to support a reasonable level of assurance.
  - Methods were not appropriate for accurately quantifying each data type:
    - Activity data had not been correctly applied from the original documentation.
    - The most accurate activity data readily available had not been used.
    - The quantification methodology did not account for all variations in activity data over the relevant crediting period.
    - Any emission factors used did not meet the requirements of the approved methodology and/or are not appropriate to the activity.
    - Any emission factors used had not been correctly applied from the original documentation to the relevant activity data.
    - The most appropriate factors readily available had not been selected.
    - Where there was a choice among equally defensible emission factors, the principle of conservativeness had not informed the choice of emission factors.
  - Methods were not applied consistently to develop estimates of emission reductions and removal enhancements.
  - The ISO principle of conservativeness was not applied; i.e., the choice of assumptions, calculation methods, parameters, data sources, and emission factors was not more



likely to lead to an underestimation than overestimation of net GHG emission reductions and removal enhancements.

For verification purposes, it was required that discrepancies between the emission reductions/removal enhancements claimed by the project proponent and estimated by SCS be immaterial, i.e. be less than ACR's materiality threshold of  $\pm 5\%$ , as calculated according to the equation in the ACR Standard.

## 1.7 Summary Description of the Project

The project is located in northwest Pennsylvania and southwest New York, USA and is aimed at improved forest management. The owner and project proponent, 703 Texas Timberlands II, LTD, forest management practices represent a significant improvement in the carbon storage and conservation value compared to higher return, more aggressive management regimes of industrial private lands in the region. Revenue from the project is intended to incentivize a management regime shift from traditional commercial pulpwood timber production to less intensive, maintenance harvests that would result in more old, large, and high-quality trees on the landscape. By focusing on sustainable harvest and natural forest growth, the project aims to only selectively harvest older high quality sawtimber.

## 2 Assessment Process

### 2.1 Method and Criteria

The validation and verification services, which began on 11 August 2022 with a kickoff call, were provided through a combination of document review, interviews with relevant personnel and on-site inspections, as discussed in Sections 2.2 through 2.4 of this report. At all times, an assessment was made for conformance to the criteria described in Section 1.2 of this report. As discussed in Section 2.5 of this report, findings were issued to ensure conformance to all requirements.

The audit team created a sampling plan following a proprietary sampling plan template developed by SCS. The audit team identified areas of “residual risk”—those areas where there existed risk of a material misstatement (see Section 1.6 above) that was not prevented or detected by the controls of the project. Sampling and data testing activities were planned to address areas of residual risk. The audit team then created a validation and verification plan that took the sampling plan into account.

### 2.2 Document Review

The GHG project plan (dated 04 October 2023; “PP”) and monitoring report (dated 09 October 2023; “MR”) were carefully reviewed for conformance to the validation and verification criteria. The following provides a list of additional documentation, provided by project personnel in support of the aforementioned documents, that was reviewed by the audit team.

**Documentation Reviewed During the Course of Validation and Verification Activities**

Document	File Name	Ref.
Greenhouse Gas Plan	Sylvania_GHGPlan_10_4_23.pdf	1
Monitoring Report	Sylvania_RP1_MonitoringReport_10_09_23_Signed.pdf	2
Programmatic Development Approach; Project Design Document	Sylvania_PDA_PDD_10_04_23.pdf	3
Calculation Workbook	Sylvania_RP_ERT_HWP_06_16_2023.xlsx	4
Calculation Workbook	Sylvania_100Yr_calcs_03_27_2023.xlsx	5
Calculation Workbook	Sylvania_Regeneration_Calcs.xlsx	6
Calculation Workbook	Sylvania_SiteVisit_CO2_08_26_2022.xlsx	7
Calculation Workbook	Sylvania_Start_RP_CO2_03_27_2023.xlsx	8
Calculation Workbook	Sylvania_SiteIndex_Calcs_07_14_2022.xlsx	9
Spatial files for Site Index	[multiple files in 'wss_aoi_2023-03-06_11-51-15' folder]	10
Spatial boundary layer	Sylvania_Boundary_07_05_22.shp	11
Spatial plot layer	Sylvania_Plots_04_12_22.shp	12
Spatial RMZ layer	Sylvania_RMZ_7_13_22.shp	13
Spatial strata layer	Sylvania_Strata_07_05_22.shp	14
Spatial harvest layer	Latrobe_HUAs_20211_22_Projected.shp Latrobe_HUAs_20211_22_Projected_Potter_.shp	15
FVS output database	Sylvania_IndTreeGrowne.db	16
FVS keyword file	Sylvania_IndTreeGrowne.key	17
FVS output file	Sylvania_IndTreeGrowne.out	18
FVS input database	Sylvania_INVENTORYne.db	19
FVS plots per prescription	Sylvania_FVS_Plots_08_03_22.xlsx	20
FVS individual treatment output	[117 items in folder 'FVS_Output']	21
Inventory Methodology	Sylvania_CarbonPlot_Methodology_04_22_22.pdf	22
Management Plan	Latrobe_2021_Management_Plan.pdf	23
Certification	Certificate US014672.pdf	24
Certification	Sylvania_SFI_Certificate_2021.pdf	25
County Deed	Cattaraugus County Deed.pdf	26
County Deed	Chautaugua County Deed.pdf	27
County Deed	Crawford County Deed.pdf	28
County Deed	Erie County Deed.pdf	29
Title Insurance Policy	PA Title Policy.pdf	30
Title Insurance Policy	NY Title Policy.pdf	31

Stumpage Calculations	Sylvania_TimberPrices_10_24_22.xlsx	32
State Stumpage	NY_stumpagewinter22.pdf	33
State Stumpage	Pennsylvania Timber Market Report, First Quarter, 2022.pdf	34
CDMA	CDMA_GreenwoodResources-Bluesource_Final Terms2_Fully Executed_Redacted.pdf	35
Leakage statement	Sylvania_ActivityShiftingLeakage_Statement_10_10_22.pdf	36
Harvest Data	Anew_HarvestData_Request_8_18_22.xlsx	37

## 2.3 Interviews

### 2.3.1 Interviews of Project Personnel

The process used in interviewing project personnel was a process wherein the audit team elicited information from project personnel regarding (1) the work products provided to the audit team in support of the PD and MR; (2) actions undertaken to ensure conformance with various requirements and (3) implementation status of the project activities. The following provides a list of personnel associated with the project proponent who were interviewed.

Interview Log: Individuals Associated with Project Proponent			
Individual	Affiliation	Role	Date(s) Interviewed
Jason Heffner	Anew	Project lead	Throughout audit
Anil Koirala	Anew	Quantification lead	Throughout audit
Chad Westfall	Landmark Forestry	Lead inventory contractor	Throughout site visit

### 2.3.2 Interviews of Other Individuals

The process used in interviewing individuals other than project personnel was a process wherein the audit team made inquiries to confirm the validity of the information provided to the audit team. The following personnel not associated with the project proponent. The following provides a list of individuals not associated with the project proponent who were interviewed.

Interview Log: Individuals Not Associated with Project Proponent			
Individual	Affiliation	Role	Date(s) Interviewed
Marc Popchak	Pennsylvania DCNR	Forester	01 March 2023
Pat Maren	New York DEC	Forester	28 February 2023

## 2.4 Site Inspections

The objectives of the on-site inspections were as follows:

- Ensure that data collection for sequential sampling purposes was carried out to the highest possible quality standards and that our client was comfortable with the work being performed
- Perform field reconnaissance to independently confirm
  - That the project area has more than 10% canopy cover
  - Absence of any unreported disturbance or timber harvest
- Ground-truth stratification of project area
- Independently check the accuracy of spatial information on ownership, as used in delineation of the project area, by visiting a sample of corners or other ownership monuments and comparing actual locations to mapped locations

In support of the above objectives, the audit team performed an on-site inspection of the project area on the dates 21 August 2022 through 2 September 2022. The main activities undertaken by the audit team were as follows:

- Interviewed project personnel (see Section 2.3.1 of this report) to gather information regarding the monitoring procedures and project implementation
- Carried out on-site inspections of the project's measurement and/or monitoring methodologies through the following activities:
  - Toured the project areas, visually observing and taking coordinates at posted boundary signs, old fence lines, and other boundary references.
  - Selected samples of inventory data using simple random selection methods.
  - At each selected sample location, took on the ground measurements
  - Verified the sample by running a paired sample t-test on the independently calculated Mt CO<sub>2</sub>e/acre on each plot
- Review of management's commitment to the carbon project.
- Assessment of project during the reporting period to confirm that the project scenario consists of maintaining above baseline carbon stock through carbon sequestration.

## 2.5 Resolution of Findings

Any potential or actual discrepancies identified during the audit process were resolved through the issuance of findings. The types of findings typically issued by SCS during this type of validation and verification engagement are characterized as follows:

- Non-Conformity Report (NCR): An NCR signified a discrepancy with respect to a specific requirement. This type of finding could only be closed upon receipt by SCS of evidence indicating that the identified discrepancy had been corrected. Resolution of all open NCRs was a prerequisite for issuance of a validation and/or verification statement.
- New Information Request (NIR): An NIR signified a need for supplementary information in order to determine whether a material discrepancy existed with respect to a specific requirement. Receipt of an NIR did not necessarily indicate that the project was not in compliance with a

specific requirement. However, resolution of all open NIRs was a prerequisite for issuance of a validation and/or verification statement.

- Observation (OBS): An OBS indicates an area where immaterial discrepancies exist between the observations, data testing results or professional judgment of the audit team and the information reported or utilized (or the methods used to acquire such information) within the GHG assertion. A root cause analysis and corrective action plan are not required, but highly recommended. Observations are considered by the audit team to be closed upon issuance, and a response to this type of finding is not necessary.

As part of the audit process, 0 NCRs, 10 NIRs and 0 OBS were issued. All findings issued by the audit team during the audit process have been closed. All findings issued during the audit process, and the impetus for the closure of each such finding, are described in Appendix A of this report.

## 2.6 Techniques and Processes Used to Test the GHG Information and GHG Assertion

- Review of project documentation including the GHG Plan (Ref. 1), MR (Ref. 2), calculation workbooks (Refs. 3-9), spatial information (Refs. 10-15), modeling files (Refs. 16-21), inventory methodology (Ref. 22), management plan (Ref. 23), certifications (Refs. 24-25), ownership titles and deeds (Refs. 26-31), state stumpage (Refs. 32-34), supporting documentation (Refs. 35-37) and to check for project-specific conformance to ACR standard and methodology, appropriateness of methodologies and tools applied, and accuracy of GHG information and assertion.
- Assessment of any disturbances or forest management activities that took place in the project area during the reporting period.
- Review of project scenario.
- Review of the sources, sinks, and reservoirs of GHG emissions within the project boundary (Refs. 3; 11).
- Assessment of eligibility, additionality, GHG emission reduction assertion and underlying monitoring data to determine if either contained material or immaterial misstatements.
- Assessment of the emission reduction calculation inputs and procedures was performed to review the quantitative analyses undertaken by Anew to convert the raw inventory data into emission reduction estimates during the reporting period. This included a re-calculation of project emissions, ERTs, and uncertainty using inventory data as described below in section 3.1 and 3.2 (Refs. 4; 8).
- Communicate with project personnel and project proponent via interviews, emails, and meetings to gain a better understanding of the project team's methodologies.
- Examine the data management and quality control processes and its controls for sources of potential errors and omissions.
- Review of project documentation including risk assessment and regulatory compliance.

## 3 Validation Findings

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### 3.1 Project Boundary and Activities

#### 3.1.1 Project Boundary and Procedures for Establishment

The GHG Plan contains a description of the physical boundary of the project, which is located on approximately 13,517 acres of forested hardwood land. The project area comprises >20 forested parcels spread across two states (PA, NY) all owned and managed by 730 Texas Timberlands II, LTD. This is the physical and geographic site where project activities occur. The audit team confirmed that the boundaries were well documented throughout both the document review and site visit activities. During the site visit the audit team independently checked the accuracy of spatial information on ownership, as used in delineation of the project area, by visiting a sample of corners or other ownership monuments and comparing actual locations to mapped locations. Likewise, during document review the audit team inspected project shapefiles (Refs. 11-15) to confirm project boundaries and project strata are accurately represented as compared to areas mapped during the site visit, maps provided in the GHG Plan, and available satellite imagery.

#### 3.1.2 Physical Infrastructure, Activities, Technologies and Processes

The audit team reviewed the GHG Plan (Ref. 1) and project documentation (Refs. 4-10; 16-23; 37) which indicate potential infrastructure, activities, and technologies used within the project area. The project activity consists of allowing the forest to progress naturally with less intensive commercial harvesting than would otherwise be expected on similar properties in the region. The monetization of carbon storage represents a revenue-diversification opportunity for the project proponent to perform less intensive, environmentally responsible management while still maximizing revenue for investors. The audit team concluded that project activities, infrastructure and technologies will be minimal within the project area due to limited harvesting activity.

#### 3.1.3 GHGs, Sources, and Sinks within the Project Boundary

The GHG sources, sinks and/or reservoirs that are applicable to the Project were confirmed. The sources, sinks, and reservoirs of GHG emissions within the project boundary are listed in the table below. This applies to both the baseline and project scenarios.

Description	Included / Excluded	Gas	Justification
Above-ground biomass carbon	Included	CO <sub>2</sub>	Major carbon pool subjected to the project activity.
Below-ground biomass carbon	Included	CO <sub>2</sub>	Major carbon pool subjected to the project activity.
Standing dead wood	Included	CO <sub>2</sub>	Major carbon pool in unmanaged stands subjected to the project activity.
Harvested wood products	Included	CO <sub>2</sub>	Major carbon pool subjected to the project activity.
Burning of biomass	Included	CH <sub>4</sub>	Non-tCO <sub>2</sub> gas emitted from biomass burning.

### 3.1.4 Temporal Boundary

The ACR Standard in Chapter 3 states that “ACR defines the Start Date for all projects other than AFOLU as the date on which the project began to reduce GHG emissions against its baseline.” SCS reviewed the GHG Plan, MR, and relevant contractual documents (Ref. 1, 2, 30-31) for authenticity and concluded that the documents provided indicate the project start date is eligible, as it is the date that the project proponent entered into a contractual relationship to implement the carbon project.

For ACR the minimum project term is 40 years and the eligible crediting period for this type of project is 20 years. SCS confirmed that the GHG Plan included a timeline with a first crediting period of 20 years and a minimum project term of 40 years.

## 3.2 Description of and Justification for the Baseline Scenario

The methodology defines an IFM baseline scenario as “the legally permissible harvest scenario that would maximize NPV of perpetual wood products harvests.” The GHG Plan describes the the baseline scenario as, “currently merchantable timber is harvested in the manner typical of industrial timber managers in the vicinity of the project, with stands being cut as they reach viable diameter thresholds. Management similar to that modeled in the baseline scenario has proven consistently lucrative for landowners across the region and is likely to persist amongst for-profit managers if carbon revenues do

not present a viable alternative. The project is targeted at maximizing net present value at a 6% discount rate, as prescribed by the methodology.” (Ref. 1)

During the site visit and through interviews with the landowner and local foresters the audit team verified that aggressive industrial timber harvesting is common practice in the region. The audit team confirmed that the project proponent is a private industrial timber owner and thus the 6% discount rate is applicable. The audit team also conducted a financial feasibility assessment of the baseline scenario using regional stumpage rates to independently verify NPV. SCS determined that the harvesting rate indicated in the baseline scenario would be feasible.

### 3.3 Project-Specific Conformance to ACR Eligibility Criteria

The audit team reviewed the demonstration of conformance, as set out in the PP, to each of the relevant eligibility criteria listed in the ACR Standard. The audit team confirmed the full conformance of the project with the relevant eligibility criteria. A more detailed assessment of the audit team’s findings is provided below.

Actions Undertaken to Confirm Conformance to Eligibility Criteria		
Criterion	ACR Requirement	Validation Activities
Start Date, All Projects	Non-AFOLU Projects must be validated within 2 years of the project Start Date. AFOLU Projects must be validated within 3 years of the project Start Date.	Confirmation that this report was issued less than 2 years after 23 July 2021, the start date of the project according to the PP.
Start Date Definition, Non-AFOLU Projects	ACR defines the Start Date for all projects other than AFOLU as the date on which the project began to reduce GHG emissions against its baseline.	Not applicable; this project is an AFOLU project.
Start Date Definition, AR or Wetland Projects	For AR or Wetland restoration/revegetation projects, the Start Date is when the Project Proponent began planting or site preparation.	Not applicable; the project is not an AR or wetland project.
Start Date Definition, IFM Projects	For IFM, the Start Date may be denoted by one of the following: 1. The date that the Project Proponent began to apply the land management regime to increase carbon stocks and/or reduce emissions relative to the baseline. 2. The date that the Project Proponent initiated a forest carbon inventory. 3. The date that the Project Proponent entered into a contractual relationship to implement a carbon project. 4. The date the project was submitted to ACR for listing review.	SCS reviewed the project’s GHG Plan to find the following statement, “The Anew – Sylvania Forestry Project has a project start date of July 23, 2021, the date by which of the contractual signing agreement between the Project Proponents (730 Texas Timberlands II, LTD) and the Offset Developer (Anew Carbon Development, LLC) was completed.” This confirms adherence to option 3, on the left.



	Other dates may be approved by ACR on a case by case basis.	
Start Date Definition, Avoided Conversion Projects	For Avoided Conversion of non-forest, the Start Date is when the Project Proponent implemented the project action physically and/or legally, such as securing a concession or placing a land conservation agreement on the project land.	Not applicable; the project is not an avoided conversion project.
Start Date Definition, Other Agricultural Land-based Projects	For other Agricultural Land-based projects, the Start Date is the date by which the Project Proponent began the Project Activity on project lands, or the start of the cultivation year during which the Project Activity began.	Not applicable; the project is not an other agriculture land-based project.
Minimum Project Term (AFOLU Projects Only)	Project Proponents of AFOLU projects with a risk of reversal shall commit to a Minimum Project Term of 40 years. The minimum term begins on the Start Date, not the first or last year of crediting. This requirement applies only to AFOLU projects that have had ERTs issued that are associated with GHG removals (sequestration). AFOLU projects that have claimed only avoided emissions are not subject to this requirement.	Review of the PP to confirm that the minimum term is 40 years, as required.
Crediting Period	<p>The Crediting Period for non-AFOLU projects shall be 10 years.</p> <p>All AR projects shall have a Crediting Period of 40 years.</p> <p>All IFM projects shall have a Crediting Period of 20 years.</p> <p>Avoided Conversion projects on both forest and non-forest land with land conservation agreements in place shall have a Crediting Period of 40 years, unless otherwise specified in chosen methodologies.</p> <p>Wetland Restoration/Revegetation projects shall have a Crediting Period of 40 years.</p> <p>The Crediting Periods for agriculture projects that avoid emissions by changing to lower GHG practices and those that include a soil sequestration component will be specified in the applicable methodology.</p>	Review of the PP to confirm that the crediting period is 20 years, as required given the project type.
Real	GHG reductions and/or removals shall result from an emission mitigation activity that has been conducted in accordance with an approved ACR Methodology and is verifiable.	Review of the emission mitigation activity, as described in the PP, to confirm that it conforms to the requirements of the methodology and will be verifiable if implemented as described.

	ACR will not credit a projected stream of offsets on an ex-ante basis.	
Emission or Removal Origin (Direct Emissions)	The Project Proponent shall own, have control over, or document effective control over the GHG sources/sinks from which the emissions reductions or removals originate. If the Project Proponent does not own or control the GHG sources or sinks, it shall document that effective control exists over the GHG sources and/or sinks from which the reductions/ removals originate.	Review of the PP (Ref. 1), and the ownership documentation provided (Refs. 26-31) to confirm that Project Proponent has control over the GHG sources/sinks from which the emissions reductions or removals originate on the properties.
Emission or Removal Origin (Indirect Emissions)	For projects reducing or removing non-energy indirect emissions, the following requirement applies:  The Project Proponent shall document that no other entity may claim GHG emission reductions or removals from the Project Activity (i.e., that no other entity may make an ownership claim to the emission reductions or removals for which credits are sought).	Not applicable; the project is not reducing or removing non-energy indirect emissions.
Offset Title (All Projects)	The Project Proponent shall provide documentation and attestation of undisputed title to all offsets prior to registration. Title to offsets shall be clear, unique, and uncontested.	Review of the PP, and the ownership documentation provided (Refs. 1; 26-31) to confirm no offsets prior to registration of the Project and that the Project Proponent has ownership of the properties included in the Project.
Land Title (AFOLU Projects Only)	For U.S. projects with GHG emissions reductions resulting from terrestrial sequestration, Project Proponents shall provide documentation of clear, unique, and uncontested land title. For international projects, Project Proponents shall provide documentation and/or attestation of land title; ACR may require a legal review by an expert in local law.  Land title may be held by a person or entity other than the Project Proponent, provided the Project Proponent can show clear, unique, and uncontested offsets title.  AFOLU projects that result only in the crediting of avoided emissions with no risk of reversal may not require demonstration of land title.	
Additional	Every project shall use either an ACR-approved performance standard and pass a regulatory surplus test, or pass a three-pronged test of additionality in which the project must:  1. Exceed regulatory/legal requirements; 2. Go beyond common practice; and 3. Overcome at least one of three implementation barriers: institutional, financial, or technical.	Confirmation that the project meets all relevant additionality requirements (see Section 3.4 below for more details).

Regulatory Compliance	Projects must maintain material regulatory compliance. To do this, a regulatory body/bodies must deem that a project is not out of compliance at any point during a reporting period. Projects deemed to be out of compliance with regulatory requirements are not eligible to earn ERTs during the period of non-compliance. Regulatory compliance violations related to administrative processes (e.g., missed application or reporting deadlines) or for issues unrelated to integrity of the GHG emissions reductions shall be treated on a case-by-case basis and may not disqualify a project from ERT issuance. Project Proponents are required to provide a regulatory compliance attestation to a verification body at each verification. This attestation must disclose all violations or other instances of non-compliance with laws, regulations, or other legally binding mandates directly related to Project Activities.	After performing extensive regulatory compliance checks for the Anew - Sylvania Forestry Project during the reporting period (RP1), the audit team found no indication of any violations regarding regulatory compliance. EPA, ECHO and OSHA were checked, and no violations were observed. There are many regulations that govern forest management in these states (NY and PA). We confirmed with local foresters from NY and PA that there have been no violations pertaining to timber harvesting or other environmental policies on the properties over the last year. Given these lands have had very few management activities over the RP, the audit team does not consider this a high area of risk. We have achieved a reasonable level of assurance on this regulatory check.
Permanence (All AFOLU Projects)	AFOLU Project Proponents shall assess reversal risk using ACR's Tool for Risk Analysis and Buffer Determination, and shall enter into a legally binding Reversal Risk Mitigation Agreement with ACR/Winrock that details the risk mitigation option selected and the requirements for reporting and compensating reversals.	Confirmed a total risk percentage of 18% using the ACR Tool for Risk Analysis and Buffer Determination as required by the ACR methodology.
Permanence (Terrestrial Sequestration, Avoided Conversion Projects)	Proponents of terrestrial sequestration or avoided conversion projects shall mitigate reversal risk by contributing ERTs to the ACR Buffer Pool or using another ACR-approved insurance or risk mitigation mechanism.	Confirmed a total risk percentage of 18% using the ACR Tool for Risk Analysis and Buffer Determination as required by the ACR methodology.
Permanence (Geologic Sequestration Projects)	Proponents of geologic sequestration projects shall mitigate reversal risk during the project term by contributing ERTs to the ACR Reserve Account and post-project term by filing a Risk Mitigation Covenant, which prohibits any intentional reversal unless there is advance compensation to ACR, or by using another ACR-approved insurance or risk mitigation mechanism.	Not applicable; the project is not a geologic sequestration project.
Permanence (All Projects)	All projects must adhere to ongoing monitoring, reversal reporting, and compensation requirements as detailed in relevant methodologies and legally binding agreements (e.g., the ACR Reversal Risk Mitigation Agreement).	Confirmed that section D of the PP includes a detailed Monitoring Plan relevant to the methodology.

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 leakage that reduces the GHG emissions reduction and/or removal benefit of a project in excess of any applicable threshold specified in the methodology.	Confirmed that a 40% leakage deduction was applied which is consistent with market-leakage per the methodology. No activity shifting leakage was also confirmed through the review of the proponent's participation in the Sustainable Forestry Initiative (Refs. 24-25) which demonstrates that all the project proponent's lands are enrolled in this certification program and therefore must meet the sustainability requirements of that certification body. This certification gives reasonable assurance that no market-shifting leakage is occurring due to the project activity.
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.	The PP has been independently validated by SCS, an accredited, ACR-approved validation/verification body.
Independently Verified	Verification must be conducted by an accredited, ACR-approved VVB prior to any issuance of ERTs and at minimum specified intervals.	The PP has been independently verified by SCS, an accredited, ACR-approved validation/verification body.
Environmental And Community Assessments	<p>ACR requires that all projects develop and disclose an impact assessment to ensure compliance with environmental and community safeguards best practices. Environmental and community impacts should be net positive, and projects must "do no harm" in terms of violating local, national, or international laws or regulations.</p> <p>Project Proponents must identify in the GHG Project Plan community and environmental impacts of their project(s). Projects shall also disclose and describe positive contributions as aligned with applicable sustainable development goals. Projects 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 enforced.</p> <p>Project Proponents shall disclose in their Annual Attestations any negative environmental or community impacts or claims thereof and the appropriate mitigation measure.</p>	Confirmed by reviewing the PP and MR (Refs. 1-2) which indicate that the project has no anticipated negative community or environmental impacts.

### 3.4 Demonstration of Additionality

The audit team reviewed the demonstration of additionality, as set out in the PP, and confirmed that the additionality requirements set out in the ACR Standard have been met. A more detailed assessment of the audit team's findings is provided below.

#### 3.4.1 Regulatory Surplus Test

A regulatory review of the Project was conducted by the audit team. There are no laws, statutes, regulations, court orders, environmental mitigation agreements, permitting conditions, or other legally binding mandates requiring the project activities.

#### 3.4.2 Performance Standard Test

Not applicable

#### 3.4.3 Common Practice Test

The Project demonstrated that the predominant forest industry technologies and practices that exist within the project's geographic region are similar in comparison to forest type, ecological condition, and species or forest product type.

Through interviews with local foresters and a detailed review of published data for the region, the audit team verified the timber harvesting practices involving the silvicultural prescriptions claimed in the baseline scenario are common practice in the region. Additionally, the audit team verified the feasibility of the local mill capacity to accept the different wood products created in the baseline scenario and found them to be feasible.

#### 3.4.4 Implementation Barriers Test

The "financial barrier" option was chosen by the project proponent as an implementation barrier. SCS Global Services received guidance from ACR personnel, in an email dated 6 June 2019, stating the following:

*The intent of the financial implementation barrier test encompasses the interpretation and wording in Table 2, in which "carbon funding is reasonably expected to incentivize the implementation of the project scenario", yielding increased carbon stocks compared to the baseline. A quantitative assessment demonstrating forgone profit as a result of employing the project scenario suffices for passing this test.*

Given this guidance, a financial barrier was demonstrated through a quantitative assessment demonstrating foregone profit as a result of employing the project scenario (i.e., demonstrating that the net present value of the baseline scenario was higher than the project net present value of the project scenario). The audit team's findings regarding this assessment are provided below.

### **3.5 Processes for Emission Reductions/Removal Enhancements Quantification**

#### **3.5.1 Methods, Algorithms, and Calculations To Be Used to Generate Estimates of Emissions and Emission Reductions/Removal Enhancements**

The audit team validated the methodologies applied to quantify GHG emissions and emission reductions in the baseline and project scenarios. The objective was to determine whether the methods are clearly defined with supporting documentation, appropriate for accurately quantifying each data parameter, applied consistently, and result in a conservative estimate of GHG emissions reductions and removal enhancements.

Section 4.2 provides further detail on the methods, algorithms, and calculations used to generate and validate emissions reductions estimates.

#### **3.5.2 Process Information, Source Identification/Counts, and Operational Details**

The forest inventory serves as the primary source of data and information used to quantify emissions reductions. The GHG Plan and inventory methodology describe the process including sample size, determination of plot numbers, plot layout, data collected, and measurement techniques. Through site visit, data, and document review, the audit team verified the forest inventory methodologies and application.

The inventory data was run within the Forest Vegetation Simulator Northeast (FVS-NE) variant in a 10-year grow-only scenario to determine annual diameter and height growth intervals at the tree level. These annual growth increments were used to degrow the inventory data to the project start date. The degrown inventory data was then run within FVS-NE with baseline prescriptions to project the baseline condition, as well as a grow-only scenario to estimate carbon stocks in the project scenario. Modeled change in project carbon stocks includes carbon remaining stored in wood products 100 years after harvest. The audit team confirmed that the baseline prescriptions were feasible and representative of common practice conditions in the region (see section 3.4.2).

#### **3.5.3 Data Management Systems**

SCS verified through review of the GHG Plan and the datasets submitted that the data management systems are in place as described.

#### **3.5.4 QA/QC Procedures**

Section D of the GHG Plan identifies field and desk QA/QC procedures. The field QA/QC procedures include senior forester review of field collected data and remeasurement of any plots that cannot be reconciled. Further the GHG Plan states that “At least 10% of the plots are checked by a different forester than cruised the plot, specifically by someone senior to the field crew. This involves full plot measurement to identify any problems with determining in/out trees, species calls, defect

measurements, DBH measurements, and height measurements... The purpose of the check cruise is to identify any consistent errors by either a specific cruiser, or the whole crew, and to verify that all plots are being measured with a high level of diligence.” These field QA/QC procedures were confirmed on-site and during interviews.

The GHG Plan identifies four stages of desk QA/QC procedures including an implementation forester review, a technical forester review, a technical review, and a senior management review. These include independent checks on the inventory data, model runs, carbon calculations, and document text and formatting.

The QA/QC procedures and the quantification approach employed by the project team conform to the parameters and quantification methods required by the Methodology. SCS determined that the Project Proponent sufficiently documented and quantified each parameter. Section D of the GHG Plan also provides in detail a monitoring and data management plan for each parameter throughout the reporting period.

### 3.5.5 Processes for Uncertainty Assessments

The GHG Plan describes how baseline and project uncertainty were calculated. The GHG Plan states that uncertainty in the combined carbon stocks in the baseline is quantified using equation 10 of the methodology. The percentage uncertainty in the combined carbon stocks in the project during the reporting period is calculated using equation 18 of the methodology. The total project uncertainty (percentage) during the reporting period is quantified using equation 19 of the methodology. SCS confirmed that the approaches for assessing uncertainty that are identified in the GHG Plan are in conformance with the quantification methods required by the Methodology. Further detail on uncertainty quantification is in sections 4.1.

## 4 Verification Findings

### 4.1 Results of Quantitative Uncertainty Assessment

SCS devoted a portion of the verification assessment to the review of the manner and propriety by which the project proponent quantified uncertainty associated with the individual GHGs in the project, in addition to the uncertainty of the calculation of GHG emission reductions and removals. The audit team also calculated the total materiality of the GHG reduction and removal assertion.

#### 4.1.1 Project Uncertainty

The reported total Project Uncertainty (UNC<sub>t</sub>) value of 7.06% reported by the client for 2022 was independently re-quantified by SCS using equation 19 in the methodology. The audit team found no difference.

Year	UNC <sub>t</sub>	UNC <sub>t</sub>	Difference
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	Client Values	SCS Values	
2022	7.06%	7.06%	0.00%

### 4.1.2 Materiality

The total materiality of the GHG reduction and removal assertion was also calculated for the reporting period.

$$\% \text{ Error} = \frac{(\text{Project Emission Reduction Assertion} - \text{Verifier Emission Reduction Recalculation})}{\text{Verifier Emission Reduction Recalculation}} * 100$$

$$\% \text{ Error} = \frac{(59,479 - 60,007)}{60,007} * 100 = \frac{-528}{60,007} * 100 = -0.8799\%$$

## 4.2 Analysis of the Quantification Methodologies and Applicable Data Sets and Sources

- Recalculate the live aboveground, live belowground, and standing dead carbon pools using Jenkins et al. (2003) equations and decay class information using the inventory data provided by the client (Ref. 8)
- Recalculate tree and plot-level live aboveground and standing dead tree defect (Ref. 8)
- Recalculate site index for a random selection of plots using available soil survey data (Ref. 9)
- Use the Forest Vegetation Simulator (FVS) to degrow the raw inventory to the project start date (Ref. 8)
- Randomly select a sample of plot(s) and prescription(s) from the baseline scenario. Run the selected sample in FVS and follow methodologies specified in the GHG Plan to calculate carbon stocks. Compare to the client's calculations for the selected plot to derive a correction factor to apply the population baseline for the reporting period and ex-ante (Refs. 4, 16-21)
- Randomly select a sample of plot(s) and the grow prescription from the project scenario. Run the selected sample in FVS and follow methodologies specified in the GHG Plan to calculate carbon stocks. Compare to the client's calculations for the selected plot to derive a correction factor to apply the population project for the reporting period and ex-ante (Refs. 4-5)
- Calculate the change in the baseline carbon stock stored in live trees and standing dead trees using equations 1 and 2 of the methodology. Calculate the 20-year average value of carbon remaining stored in wood products 100 years after harvest using equation 3 (Refs. 4-5)
- With the outputs from equations 1, 2 and 3, calculate the long-term average baseline stocking level for the crediting period using equation 5 of the methodology. Use equation 6 to calculate the annual change in the baseline carbon stock (Refs. 4-5)
- Calculate the baseline uncertainty in the combined carbon stocks in the baseline using equation 10 (Refs. 4-5)



- Calculate the change in project carbon stock stored in live trees using equations 11 and 12 (Refs. 4-5)
- Calculate the change in the project carbon stock and GHG emissions during the reporting period using equation 14 (Refs. 4-5)
- Calculate the percentage uncertainty in the combined carbon stocks in the project during the reporting period using equation 18 (Refs. 4-5)
- Calculate the total project uncertainty (percentage) during the reporting period using equation 19 (Refs. 4-5)
- Calculate the net greenhouse gas emission reductions (in metric tons CO<sub>2</sub>e) during the reporting period and during each annual vintage using equation 20 in the methodology (Refs. 4-5)

### 4.3 Basis of Data and Information Supporting the GHG Assertion

The data and information supporting the GHG assertion were based on industry defaults, future projections, and actual historical records. The future projections are a result of a combination of tree inventory data, site index data, and other data modelled over time. Industry defaults are used in the harvested wood products as well as growth rates for the region. Actual historical records are used to assess stumpage prices, common practice, and boundary assessment.

### 4.4 Leakage Assessment

The audit team confirmed that all the project proponent's land is certified under the Sustainable Forestry Initiative (SFI) (Refs. 24-25). In addition to the certifications provided by the project proponent, the audit team referenced SFI databases directly for confirmation. These documents and correspondence resulted in a reasonable level of assurance that the IFM requirements for the demonstration of no activity shifting leakage from project activity are met.

The audit team confirmed that the market leakage value of 0.4 is appropriate when considering the decrease in wood production relative to the baseline.

### 4.5 Risk Assessment

The reported value of the total risk score, as determined based on the risk analysis documented in the PP and MR, was 18%. The audit team performed a complete review of the risk assessment against the requirements of the ACR Tool for Risk Analysis and Buffer Determination. The audit team concludes that the assignment of risk scores is appropriate and in conformance to the ACR Tool for Risk Analysis and Buffer Determination. A more detailed review of the audit team's conclusions may be found below.

Actions Undertaken to Evaluate Whether the Risk Assessment Has Been Conducted Correctly		
Risk Category	Value Selected	Verification Activities
A	4%	Confirmation, through site inspections, that project is not located on public or tribal lands
B	4%	Confirmation, through site inspections, that project is not located on public or tribal lands
C	2%	Confirmation, through site inspections, that the project is not located outside the United States
D	0%	Confirmation through project documentation review that there are no conservation easements on the property
E	2%	Confirmation, through spatial analysis, that the project is located in a low fire risk region
F	4%	Confirmation, through site inspections and interviews, that the project area is not experiencing a disease of infestation of epidemic proportions.
G	0%	Confirmation, through site inspections, that project is not a wetland project or a forest project where more than 60% of the project area is not a forested wetland
H	2%	Confirmation that default value has been applied in the risk assessment calculation

## 5 Conclusion

The audit team asserts, with no qualifications or limitations, that

- The PP conforms, in full, to the validation criteria.
- The quantification of GHG emission reductions and/or removal enhancements, as reported in the MR, conforms to the verification criteria and is without material discrepancy.

Based upon the information made available to SCS and the analyses completed during the verification, SCS was able to reach a positive opinion, with a reasonable level of assurance, that the emission reductions represented by the Project Proponent during the monitoring period of 23 July 2021 to 22 July 2022 are free from material misstatement and in conformance with the assessment criteria.

The following provides a summary of the Net Removals and Reductions separately for the current Reporting Period:

Annual Emission Reductions and Removals in Metric Tons (tCO <sub>2</sub> e) during Reporting Period 1				
Vintage	Start Date	End Date	Total Emission Removals (tCO <sub>2</sub> e)	Total Emission Reductions (tCO <sub>2</sub> e)
2021	23 July 2021	31 December 2021	4,702	27,492
2022	1 January 2022	22 July 2022	5,891	34,451

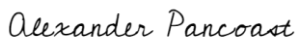

Total for Reporting Period	10,593	61,943
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*Note: final numbers are rounded for simplicity.*

The following provides a summary of the ERT issuance for the current Reporting Period with the Leakage and the Buffer deduction included (Buffer credits shown separately):

Annual Emission Reduction in Metric Tons (tCO <sub>2</sub> e)						
Reporting Period	Vintage	Start Date	End Date	Total Emission Removals and Reductions (tCO <sub>2</sub> e)	Buffer Credits (tCO <sub>2</sub> e)	Net Emission Removals and Reductions (tCO <sub>2</sub> e)
1	2021	23 July 2021	31 December 2021	32,194	5,795	26,399
1	2022	1 January 2022	22 July 2022	40,342	7,262	33,080
Total for Reporting Period				72,536	13,057	59,479

*Note: final numbers are rounded for simplicity.*

Lead Auditor Approval	 Alexander Pancoast AI Pancoast, 19 October 2023
Internal Reviewer Approval	 Michael Hoe, 19 October 2023

## Appendix A: List of Findings

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Please see Section 2.5 above for a description of the findings issuance process and the categories of findings issued. It should be noted that all language under “Project Personnel Response” is a verbatim transcription of responses provided to the findings by project personnel.

**NIR 1 Dated 15 Mar 2023**

**Standard Reference:** IFM methodology, Errata and Clarifications for ACR IFM Methodology v1.3

**Document Reference:** DRAFT\_Sylvania\_GHGPlan\_12\_20\_22.pdf

**Finding:** The Errata and Clarifications for ACR IFM Methodology v1.3 specifies:

"There may be no leakage beyond de minimis levels through activity shifting to other lands owned, or under management control, by the timber rights owner. If the project decreases wood product production by >5% relative to the baseline then the Project Proponent and all associated land owners must demonstrate that there is no leakage within their operations – i.e., on other lands they manage/operate outside the bounds of the ACR carbon project. This demonstration is not applicable if Project Proponent and associated landowners enroll all of their forested landholdings, owned and under management control, within the ACR carbon project.

Such a demonstration must include one or more of the following:

- Entity-wide management certification that requires sustainable practices (programs can include FSC, SFI, or ATFS). Management certification must cover all entity owned lands with active timber management programs;

- Adherence to an ACR approved long-term forest management plan or program as specified in section A.2;

- Forest management plans prepared ≥24 months prior to the start of the project showing harvest plans on all owned/managed lands paired with records from the with-project time period showing no deviation from management plans; or

- Historical records covering all Project Proponent ownership trends in harvest volumes paired with records from the with-project time period showing no deviation from historical trends over most recent 10-year average."

The GHG plan states "Market leakage was determined by quantifying the merchantable carbon removed in both the baseline and with-project cases. Carbon in long-term storage in in-use wood products and landfills, calculated above, was used to assess relative amounts of "total wood products produced" in the two scenarios. The decrease in wood production relative to the baseline was then calculated and the applicable market leakage discount factor was determined."

This does not speak to lands owned outside of the project by the project proponent as the above language requires. Please provide additional information for the audit team to assess whether the project is properly accounting for leakage.

**Project Personnel Response:** 100% of the forested lands owned by the project proponent are enrolled in the carbon project and these are all certified under SFI. The property manager has provided an updated SFI certificate (Sylvania\_SFI\_Certificate\_2021.pdf) and the GHG Plan language has been updated to clarify this.

**Auditor Response:** The audit team has reviewed the clients response and the appropriate documentation. It is found that the updated GHG plan and the SFI Certificate provided by the client satisfies the audit teams new information request.

**Bearing on Material Misstatement or Conformance (M/C/NA):** C

**NIR 2 Dated 15 Mar 2023**

**Standard Reference:** Improved Forest Management Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal U.S. Forestlands Version 1.3

**Document Reference:** DRAFT\_Sylvania\_GHGPlan\_12\_20\_22.pdf

**Finding:** The methodology states "The common practice test requires Project Proponents to evaluate the predominant forest industry technologies and practices in the project's geographic region. The Project Proponent shall demonstrate that the proposed project activity exceeds the common practice of similar landowners managing similar forests in the region."

The GHG plan states "The forest type for this project is most similar to industrial forestland ownership due to the size of the property and its status as private landholding. Throughout the geographic region, the industrial forestland is heavily cut, often through clear-cutting and high-grading, and is managed to maximize NPV of the forestland investment. According to the Penn State Extension reports, wood products demand from this region have been in strong and there is steady demand for most hardwood species (oak, cherry, maple, and poplar). If the Bluesource - Latrobe Sustainable Forestry Project was not implemented, the forest management could feasibly resemble that of an industrial forestland ownership in the region. Instead, the project will exceed the common practice as described in Section A6. Project Action."

Please provide the above referenced Penn State Extension reports pertaining to wood products demand in the region.

**Project Personnel Response:** The report referenced, which was the latest available as of the project start date, has been provided (PennState\_TimberMarketReporte\_Q42021.pdf)

**Auditor Response:** The audit team has reviewed the clients response and the appropriate documentation. It is found that the PennState\_TimberMarketReport\_Q42021 provided by the client satisfies the audit teams new information request.

**Bearing on Material Misstatement or Conformance (M/C/NA):** C

**NIR 3 Dated 15 Mar 2023**

**Standard Reference:** Improved Forest Management Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal U.S. Forestlands Version 1.3

**Document Reference:** DRAFT\_Sylvania\_GHGPlan\_12\_20\_22.pdf

**Finding:** The methodology states "The IFM baseline is the legally permissible harvest scenario that would maximize NPV of perpetual wood products harvests. The baseline management scenario shall be based on silvicultural prescriptions recommended by published state or federal agencies to perpetuate existing onsite timber producing species while fully utilizing available growing space. Where the baseline management scenario involves replacement of existing onsite timber producing species (e.g. where forest is converted to plantations, replacing existing onsite timber-producing species), the management regime should similarly be based on silvicultural prescriptions recommended by published state or federal agencies, and must adhere to all applicable laws and regulations."

Please provide the relevant publications pertaining to recommended state or federal silvicultural prescriptions within the project region.

**Project Personnel Response:** The baseline scenario was informed by state and federal guidance through consulting with a NY Licensed Foresters, Jack Santamour and Paul Kowalczyk. In addition, all silvicultural prescriptions prescribed in the baseline scenario were considered common practice for NPV-maximizing management in the region as of 'Silvicultural Guide for Northern Hardwoods in the Northeast' ([https://www.fs.usda.gov/nrs/pubs/gtr/gtr\\_nrs132.pdf](https://www.fs.usda.gov/nrs/pubs/gtr/gtr_nrs132.pdf)).

**Auditor Response:** The audit team has determined that silvicultural prescriptions prescribed in the baseline align with the 'Silvicultural Guide for Northern Hardwoods in the Northeast'. Finding closed.

**Bearing on Material Misstatement or Conformance (M/C/NA):** C

**NIR 4 Dated 15 Mar 2023**

**Standard Reference:** Improved Forest Management Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal U.S. Forestlands Version 1.3

**Document Reference:** Sylvania\_Start\_RP\_CO2\_08\_26\_22.xls  
 Latrobe\_HUAs\_2021\_22\_Projected\_Clipped.shp  
 Sylvania\_Plots\_04\_12\_22.shp

**Finding:** The methodology states "Information shall be provided and recorded in the GHG Plan to establish that: ...Standard operating procedures (SOPs) and quality control/ quality assurance (QA/QC) procedures for forest inventory including field data collection and data management shall be applied. Use or adaptation of SOPs already applied in national forest monitoring, or available from published handbooks, or from the IPCC GPG LULUCF 2003, is recommended. Where commercial timber harvesting occurs in the project area in the with-project scenario, the forest management plan, together with a record of the plan as actually implemented during the project shall be available for validation and verification, as appropriate"

There are 6 plots (PlotID 17, 52, 152, 165, 200, 202, and 206) identified that fall within the bounds of the provided harvest unit areas. Within the workbook Sylvania\_Start\_RP\_CO2\_08\_26\_22 however, trees from these plots are not included in the HarvestedTrees tab. Please provide an explanation as to whether these plots have been affected by harvest activities, and what, if any, changes to the inventory data have been made.

Additionally, the HarvestedTrees tab contains 14 tree values that are reported as harvested. The respective plots for these trees fall outside the spatial bounds of the provided harvest unit areas. Please provide an explanation as to why these trees were included in the HarvestedTrees tab. And if in fact harvested please provide an explanation as to why these trees still persist in the RP\_TreeList tab.

**Project Personnel Response:** The 6 plots you identified were within the Reporting Period harvest boundaries provided by the land manager. There was no active cutting on these areas after plot establishment, so no trees were harvested and no adjustments were needed to their inventory data. The 14 trees reported as "harvested" were in plots 39, 155, 174, and 176, all within the "Potter" harvest shapefile provided by the land manager. This shapefile has been provided in case it was inadvertently excluded from the original harvest shapefile. The landowner confirmed that harvest took place on these plots after their establishment. The landowner checked these plots and recorded the harvested trees, which were added to the "HarvestedTrees" tab of the CO2 workbook. This populates Column Q of the "RP\_Tree\_CO2" tab for these trees, which zeros out Column K (TPA Grown), effectively removing these trees from the CO2 calculations.



**Auditor Response:** Claims that harvest within Plot IDs 17, 52, 152, 165, 200, 202, and 206 occurred prior to the inventory. This provides satisfactory assurance for the exclusion of these plots in the HarvestedTrees tab of the CO2 workbook.

The 14 trees reported harvested from Plot IDs 39, 155, 174, and 176 were within the spatial bounds the Potter harvest shapefile. This shapefile was excluded from the original client submission. Confirmed these TreeIDs were removed from CO2 calculations in the RP\_Tree\_CO2 tab according to the method described in the project response.

This leaves two plots (PlotIDs 33 and 162) within the Potter harvest shapefile that are unaddressed. The provided Timber Sale Contract (LT21003.00 LS P27 Southwoods RAM Forest Products executed.pdf) indicates Plot 33 could have been affected by a Shelterwood harvest treatment. While being spatially near a harvest exclusion zone, this plot shows basal area greater than 100 which is within the silvicultural prescription for a Shelterwood treatment. Another Timber Sale Contract (LT21001.00 LS no dep LT0908 Raven RAM Forest Prod executed.pdf) indicates Plot 162 could have been affected by an Overstory Removal harvest treatment. This plot shows basal areas greater than 100, as well as relatively large average diameter (mean ~13.5" DBH) of inventoried trees.

Please provide additional information as to the inventory status of PlotIDs 33 and 162. Please include justification for the reason these plots were excluded from harvest activities. Finding remains open.

**Project Personnel Response 2:** The audit team followed up with an email communication of this finding. The following is the client response from 6/5/22: "Hi Bryan,

Plots 33 and 162 were in the landowner's checks. They confirmed there was no harvest in these areas after plot establishment, so there were no harvested trees to report.

Thank you for the update, looking forward to moving this along! Let me know if you need anything further.

Thanks,  
Jason"

**Auditor Response 2:** Client response is sufficient to ensure all plots have been accounted for with regards to harvest disturbance in the RP. Finding closed.

**Bearing on Material Misstatement or Conformance (M/C/NA):** M/C

**NIR 5 Dated 15 Mar 2023**

**Standard Reference:** SFI 2022 Forest Management Standard

**Document Reference:** 2022\_SFI\_StandardsandRules\_section2.pdf

Latrobe\_HUAs\_2021\_22\_Projected\_Clipped.shp

Sylvania\_RMZ\_7\_13\_22.shp

**Finding:** The SFI Forest Management Standard states the following relevant principles:

1. Sustainable Forestry: "To practice sustainable forestry means meeting the needs of the present while promoting the ability of future generations to meet their own needs by practicing a land stewardship ethic that integrates reforestation and the managing, growing, nurturing and harvesting of trees for useful products, and for the provision of ecosystem services such as the conservation of soil, air and water quality and quantity, climate change adaptation and mitigation, biological diversity, wildlife and aquatic habitats, recreation and aesthetics."
3. Protection of Water Resources: "To protect and maintain the water quality and quantity of water bodies and riparian areas, and to conform with forestry best management practices to protect water quality, to meet the needs of both human communities and ecological systems."

The SFI Standard also states the following relevant Forest Land Management Requirements:

"Objective 3. Protection and Maintenance of Water Resources

To protect the water quality and water quantity of rivers, streams, lakes, wetlands, and other water bodies.

Performance Measure 3.1. Certified Organizations shall meet or exceed all applicable federal, provincial, state and local water quality laws and meet or exceed best management practices.

Indicators:

1. Program to implement federal, state, or provincial water quality best management practices during all phases of management activities.
2. Contract provisions that specify conformance to best management practices.
3. Monitoring of overall best management practices implementation.

Performance Measure 3.2. Certified Organizations shall implement water, wetland, and riparian protection programs based on climate, soil type, terrain, vegetation, ecological function, harvesting system, state best management practices (BMPs), provincial guidelines and other applicable factors.

Indicators:

1. Program addressing management and protection of water quality of rivers, streams, lakes, wetlands, other water bodies and riparian areas during all phases of management.
2. Program to protect water quantity during all phases of management.
3. Programs that address wet-weather events in order to maintain water quality such as: forest inventory systems, identification of wet-weather tracts and definitions of acceptable operating conditions"

During the analysis of the provided harvest shapefiles, it was noted that an overlap occurred with the Riparian Management Zones (RMZs). A total of 18 acres within the Barden Brook, Hemlock Valley, and Robins Nest harvest units were within the RMZs. The audit team is concerned that this is in direct conflict with the SFI principles stated above, as well as potential recommendations from the Pennsylvania Best Management Practices (BMPs). To best determine if the project is within conformance, please provide more information on the extent of the harvest activities within the RMZs and language that speaks to how these practices are within conformance to your SFI certification.

**Project Personnel Response:** The RMZ file provided was created by Anew for modeling purposes. It was created using the national hydrology dataset and may not reflect the actual boundaries of these water features on the ground. However, total constrained acreage intends to meet or exceed the requirements of the State BMPs and SFI for modeling purposes. It may extend further than is required for on-the-ground conditions, and it may buffer water features that don't require buffering under the BMPs or SFI. Reduced harvesting in the RMZ is recommended by both State BMPs, therefore our baseline model was constrained to only allow single-tree selection in those zones. As evidenced by their continued certification (updated certificate provided), the landowner conforms to all SFI requirements.

**Auditor Response:** Project response reasonably satisfies concerns for compliance with SFI Management Standards and State BMPs. Finding closed.

**Bearing on Material Misstatement or Conformance (M/C/NA):** C

#### **NIR 6 Dated 15 Mar 2023**

**Standard Reference:** IFM methodology, Errata and Clarifications for ACR IFM Methodology v1.3

**Document Reference:** DRAFT\_Sylvania\_GHGPlan\_12\_20\_22.pdf

Sylvania\_RP\_ERT\_HWP\_11\_15\_2022.xlsx

DRAFT\_Sylvania\_RP1\_MonitoringReport\_12\_16\_22.docx

**Finding:** The Errata and Clarifications for ACR IFM Methodology v1.3 specifies for the use of Equation 22:

" $BUF_{VIN,t} = ERT_{VIN,t} * BUF$

where:

$BUF_{VIN,t}$  = Buffer tons deduced in vintage year t

$ERT_{VIN,t}$  = Emission Reduction Tons issued in vintage year t

$BUF$  = The non-permanence buffer deduction percentage as calculated in Section B5.  $BUF$  will be set to zero if an ACR approved insurance product is used"

The IFM methodology states "Project Proponents must conduct their risk assessment using the ACR Tool for Risk Analysis and Buffer Determination. The output of either tool is an overall risk category, expressed as a fraction, for the project translating into the buffer deduction that must be applied in the calculation of net ERTs (section G1). This deduction must be applied unless the Project Proponent uses another ACR-approved risk mitigation product."

It was verified that the PP correctly applied the ACR Tool in determining the overall risk fraction for the project (18%). This value is stated in the GHG Plan Section B8. Within sheet ACR\_IFM\_ERT\_Calcs of Sylvania\_RP\_ERT\_HWP\_11\_15\_2022, cell D5 contains a value of 16%, which is subsequently referenced to calculate with Buffer ERTs and ERT Vintage Calculations. The Monitoring Report also states a Buffer Pool Contribution using a 16% buffer. Please provide an explanation describing the discrepancy in these values and their effect on calculated ERTs and buffer contributions.

**Project Personnel Response:** Thank you for identifying this inconsistency. The risk value has been updated to 18% in the new ERT file (03\_15\_2023) and is reported as such in the updated reporting forms and calculation sheets.

**Auditor Response:** Confirmed that Sylvania\_RP\_ERT\_HWP\_03\_27\_2023.xlsx applies the 18% risk value in ERT calculations and is updated in the MR. Finding closed.

**Bearing on Material Misstatement or Conformance (M/C/NA):** M/C

**NIR 7 Dated 15 Mar 2023****Standard Reference:** ACR Validation and Verification Standard v1.1**Document Reference:** Sylvania\_RP\_ERT\_HWP\_11\_15\_2022.xlsx

DRAFT\_Sylvania\_GHGPlan\_12\_20\_22.pdf

**Finding:** The ACR Validation and Verification Standard states:

“Verification of source-level data and records shall include the following activities:

- Determine whether the data used are appropriate and sufficient to allow for the accurate calculation or estimation of GHG emission reductions and/or removals;
- Confirm that appropriate calculation methodology was used for data that were estimated as indicated in the GHG Project Plan;
- Confirm that the units of measure used are correct, appropriate, internally consistent, and consistent with the ACR Standard, including raw data recorded in the data collection process and data stored in the project spreadsheet or database/management system and used in calculations;
- Confirm that any unit conversions have been made correctly; and
- Confirm that there are no missing data unaccounted for and that all data have been entered properly.”

Harvested biomass is calculated in columns J, K, L, and M within the Actual\_RP1\_HWP\_Step\_1 sheet in the workbook Sylvania\_RP\_ERT\_HWP\_11\_15\_22.xlsx. A constant is applied within each equation, however it does not reference a cell and is hard coded into the equation. The constant is 62.43. Please indicate the source and purpose of this constant.

**Project Personnel Response:** The 62.43 constant is the specific gravity of water at 39°F (62.43 lb ft<sup>3</sup>) as described in the Wood Handbook (Technical Report FPL-GTR-190. USDA, 2010). It is used to calculate the density of wood biomass.

**Auditor Response:** Thank you for explanation of the source and purpose of this constant. Finding closed.

**Bearing on Material Misstatement or Conformance (M/C/NA):** NA

**NIR 8 Dated 15 Mar 2023**

**Standard Reference:** ACR Validation and Verification Standard v1.1 and ACR IFM Methodology v1.3

**Document Reference:** DRAFT\_Sylvania\_GHGPlan\_12\_20\_22.pdf, FVS\_Output files

**Finding:** Section 9.G of the ACR Validation and Verification Standard states:

"- Ensure the appropriateness of the estimation methods applied to the GHG project-specific situation, based on size of the sources, data availability, and associated levels of uncertainties;

- Review calculations and quantification methods used in the GHG Project Plan and/or GHG assertion to determine if results reported reflect emission estimation approach and supporting data;
- Examine quantification method documentation at the facility/source level, reviewing key facility-specific results, calculations, emission factors, and assumptions to determine validity of the quantification method;
- Review methods, underlying data/assumptions, reference citations, and data management systems, from project roll-up to individual source root data, with field audits and use of external data and third-party records to confirm reported GHG emissions and reductions results;
- Review spreadsheets and aggregated data used to create estimates of GHG emission reductions and removal enhancements.
- Review raw or source data and emission factors to evaluate whether the data used are appropriate for the associated activities and sufficient to provide a reasonable estimate of the emissions from the source category."

Section C 3.1 of the ACR IFM Methodology v1.3 states:

"All model inputs and outputs must be available for inspection by the verifier."

While reviewing section E1 of the DRAFT\_Sylvania\_GHGPlan\_12\_20\_22.pdf and the accompanying files (FVS key and out files), it became apparent that the language that describes the silvicultural prescriptions in table E1-7 doesn't match what the FVS out file summary table shows. The plot where this originally came up was plot 163, while recreating the STS50 prescription. It seems that the first harvest should take place in the year 2036 given the basal area trigger and the total merchantable timber trigger points are met (100 basal area and 400 cubic feet/acre). This also appears to be happening while recreating the SHW60 prescriptions. The outfiles provided by the client don't match what is expected given the descriptions of the prescriptions and the keyword files provided. Also, there is no explanation of what the years indicate at the end of the keyword and out files (ie. Sylvania\_SHW60\_2021, Sylvania\_SHW60\_2026 etc.).

Given the discrepancies found when comparing the language in the GHG plan to the FVS keyword and out files, it appears that all model inputs and outputs have not been made available for inspection by the verifier. The discrepancies are as follows:

- Missed trigger points identified within the FVS outfile for single tree selection and shelterwood scenarios
- Inconsistencies within keyword files that cause a deviation from expected outputs

This finding raises concern when reviewing the calculations and quantification outputs due to this being one of the first steps to arrive at an input tree list to calculate the baseline carbon stocks.

Please provide updated FVS keyword and outfiles, along with updated language describing the silvicultural prescriptions in the GHG Plan used to model the baseline scenario.

**Project Personnel Response:** The FVS key and outfiles are accurate and performing as expected. Language and tables in Section E of the GHG Plan have been updated and corrected, thank you for pointing out this discrepancy.

For clarity, as an example, in the SHW60\_2031 prescription, the year 2031 indicates the year when the prescription is initiated. In other words, the year indicates the first possible chance of occurrence of SHW60 prescription in the optimization for a particular plot. We initiate Rx's at 5 year intervals and then use linear optimization to determine the Rx initiation year that maximizes NPV for each plot. If the trigger conditions for an initiation year are not met in the first year for the SHW60 Rx, the Rx will not occur until the next rotation - so at a minimum, in 50 years.

The verifier pointed out in their 2/27/2023 email that the STS50 Rx should be harvesting Plot 163 in 2036 instead of 2051 because all the triggers are met in that year. However, from our analysis we found that STS50 is working correctly for Plot 163. The screenshot of the .out file summary table for Plot 163 does not truly represent the FVS compute summary as it represents BA of all trees. We agree that the screenshot shows the BA of the plot reaches 100 in year 2036. However, the BA of 5 inch dbh trees does not reach 100 until year 2051. In order to meet the all triggers, the BA of 5 inch or above trees should reach 100 sqft/acre. We suggest to check FVS\_Compute table of STS50.db file and search for Plot 163. After that scroll all the way to the right to find column BA5DBH. In that column, we can see that the BA5DBH of plot 163 reaches 100 in year 2051.

Note: In the new FVS run, we have expanded both STS50 and STS75 into four different Rxs such as STS50\_2021, STS50\_2026, ..., STS50\_2036, etc to spread these operations out in the baseline model.

**Auditor Response:** The audit team confirmed that the model is using the BA5DBH for the basal area trigger as the client describes. The client has also updated the language in Section E1 of the GHG plan regarding the baseline harvest prescriptions. Given these updates and additional information from the client, the audit team can close this finding. Note: This finding has been changed from an NCR to an NIR

**Bearing on Material Misstatement or Conformance (M/C/NA):** M



**NIR 9 Dated 16 Jun 2023****Standard Reference:** ACR Validation and Verification Standard v1.1**Document Reference:** Anew\_HarvestData\_Request\_8\_18\_22.xlsx

Sylvania\_RP\_ERT\_HWP\_03\_27\_2023.xlsx

**Finding:** The ACR Validation and Verification Standard states:

"Verification of source-level data and records shall include the following activities:

- Determine whether the data used are appropriate and sufficient to allow for the accurate calculation or estimation of GHG emission reductions and/or removals;
- Confirm that appropriate calculation methodology was used for data that were estimated as indicated in the GHG Project Plan;
- Confirm that the units of measure used are correct, appropriate, internally consistent, and consistent with the ACR Standard, including raw data recorded in the data collection process and data stored in the project spreadsheet or database/management system and used in calculations;
- Confirm that any unit conversions have been made correctly; and
- Confirm that there are no missing data unaccounted for and that all data have been entered properly."

In reviewing the harvest volumes reported for RP1 the audit team noticed that the reported quantity of harvested pulpwood (~1,080,300 lbs) in Anew\_HarvestData\_Request\_8\_18\_22.xlsx is reported in Actual\_RP1\_HWP\_Step 1 as being Sawtimber. Given that the units for these are listed in green tons in the ERT\_HWP workbook, the audit team made an email request for information as to if this is data entry error where these quantities were assigned a Product of "Sawtimber" rather than "Pulp". This product designation is skewing the calculated Harvested Hardwood Sawtimber/Pulp tCO<sub>2</sub>.

**Project Personnel Response:** Client was informed of finding via email and replied the same day:

"Hi Bryan,

You are correct. It looks like the filter in the product type (Sawtimber vs pulp) column got affected somehow in excel.

I just updated and corrected the values in the ERT sheet. You can now find the new ERT sheet in the verification folder as "Sylvania\_RP\_ERT\_HWP\_06\_16\_2023.xlsx".

I also updated ghgplan and reporting documents to reflect this minor change in the Actual Rp1 HWP. The 100 year and other calc files remain unchanged.

Please let me know if you don't see the updated files in the verification folder.

Thanks much.

Anil "

**Auditor Response:** Audit team confirmed that product values were updated and subsequent calculations were reflected in the ERP\_HWP workbook, GHG Plan, and MR. Finding closed.

**Bearing on Material Misstatement or Conformance (M/C/NA):** C

**NIR 10 Dated 29 Jun 2023****Standard Reference:** ACR Validation and Verification Standard v1.1**Document Reference:** Sylvania\_100Yr\_calcs\_03\_27\_2023.xlsx

DRAFT\_Sylvania\_GHGPlan\_12\_20\_22.pdf

**Finding:** The ACR Validation and Verification Standard states:

“Verification of source-level data and records shall include the following activities:

- Determine whether the data used are appropriate and sufficient to allow for the accurate calculation or estimation of GHG emission reductions and/or removals;
- Confirm that appropriate calculation methodology was used for data that were estimated as indicated in the GHG Project Plan;
- Confirm that the units of measure used are correct, appropriate, internally consistent, and consistent with the ACR Standard, including raw data recorded in the data collection process and data stored in the project spreadsheet or database/management system and used in calculations;
- Confirm that any unit conversions have been made correctly; and
- Confirm that there are no missing data unaccounted for and that all data have been entered properly.”

The audit team reached out via email on 6/29 "hoping to gain a better understanding of how Anew approached the calculation of species stumpage between two timber market reports (NY & PA). The GHG plan says “stumpage by species was used by taking an average from the Pennsylvania Timber Market Report, First Quarter, 2022 / NY Stumpage, Winter, 2022 report.” The PTMR is much more explicit in its stated average values than is the NY Stumpage report, which provides Average Price Range along with a median value.

Given that a large percentage of harvest is close to the NY/PA state line, it wouldn’t be unreasonable to assume that wood cut in PA could be taken to a NY mill or vice versa. Was this a factor in determining species stumpage?

In reviewing some of the species values from the 100Yr\_calcs, Eastern Hemlock stumpage is much lower than listed in either the PA or NY report, while taking the median average price for white oak in NY and averaging with the average PA stumpage price gives a more conservative stumpage price than Anew’s.

In an effort to gain a more comprehensive understanding of this process, please provide any additional details on the variables, formulas, or methodologies involved in the calculation of stumpage values.”

**Project Personnel Response:** Client replied by email on July 10:

"Hi Bryan,

Find attached the spreadsheet used to calculate stumpage for PA and NY. Note that we converted the NY-reported MBF (Doyle) to MBF (International 1/4") to match the PA report and FVS output.

While it is possible that harvested volumes could cross State borders, an exact breakdown is difficult to calculate with certainty so we maintained our usual approach of weighing our calculation by the area within each State. In the case of both White Oak and Hemlock, this led to more conservative pricing as a majority of the project is in PA which has lower pricing than NY.

once you have reviewed, let me know if it would be beneficial to set up a call to discuss it further.

Thank you,  
Jason "

**Auditor Response:** The document provided (Sylvania\_TimberPrices\_10\_24\_22.xlsx) contains sufficient information to allow for the weighting and recalculation of stumpage values across the project area. Finding closed.

**Bearing on Material Misstatement or Conformance (M/C/NA):** C