

# VALIDATION AND VERIFICATION REPORT

*American Carbon Registry*

*Cold Hollow Carbon – Improved Forest Management Project*

**Reporting Period:**  
**20 June 2019 to 20 May 2020**

**Prepared for:**  
**Spatial Informatics Group**

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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 Cold Hollow Carbon – Improved Forest Management project (“the project”), located in northern Vermont, that was conducted by SCS Global Services. 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 20 June 2019 to 20 May 2020 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 30 findings were raised: 12 Non-Conformity Reports, 18 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 6.0
- 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")
- ACR Tool for Risk Analysis and Buffer Determination, Version 1.0

## 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 northern Vermont and is aimed at enhancing carbon sequestration, protecting water quality, and improving wildlife habitat integrity on 8,543 acres of forest land owned by several participating landowners. The project was developed by Vermont Forest Carbon, LLC, the project proponent, which is a subsidiary of the Vermont Land Trust, Inc.

## 2 Assessment Process

### 2.1 Method and Criteria

The validation and verification services 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 (titled ‘CHC\_ACR519\_GHGPlan\_20210405.pdf, dated 5 April 2021; “PP”) and monitoring report (CHC\_RP1\_MonitoringReport\_20210405\_signed.pdf, dated 5 April 2021 “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.
ERT Calculation workbook	CHC11_ERTs6_20210331.xlsx	1
ERT calculation workbook by vintage	ERTs-ColdHollow_by Vintagev6.xlsx	2
Deeds	CH1_Backus_Westfield.pdf;	3

	CH2_Barred Woods_Belvidere_Mann (1).pdf; CH3_Barred Woods_Belvidere_TriLot.pdf; CH4_Boone.pdf; CH5_Cold Hollow Maples_Brannon.pdf; CH6_Caldwell_Martin.pdf; CH7_Haible.pdf; CH7_Haible Sugarbush lease.pdf CH8_Hazens Notch.pdf; CH9_Mattina.pdf; CH10_McGinley.pdf; CH10b_McGinley_Patrick Lot Deed.pdf CH11_True North Holdings_Belvidere.pdf; CH12_True North Holdings_Jay.pdf	
Conservation easements	CH1_Backus FLE.pdf CH3_Barred Woods Tri-Lot VLT CE.pdf CH10_McGinley FLE.pdf CH12_Atlas Jay North (True North Holdings) CE.pdf	4
Forest stand maps	Backus Forest Stand Map.pdf; Barred Woods_Rattling Brook_2020 map.pdf; Barred Woods_Tri Lot_Map_2017.pdf; Hi Vue Maples Map; Brannon 2016 FMP Map2.pdf; Caldwell_map.pdf; Haible 2017 Forest Stand Map.pdf; Hazens Notch_Enosburgh_Map 2018.pdf; Mattina_2018 Forest Stand Map.pdf; McGinley Forest Stand Map 2013_updated 2019_v2; TNH_Belvidere_map.pdf; True North Holdings_map_Jackson Valley.pdf	5
Forest management plans and amendments	Backus Forest Stewardship Plan.pdf Barred Woods_Rattling Brook_2020 Forest Management Plan.pdf; Barred Woods_Trilot_FMP_2017.pdf Hi Vue Maples FMP.pdf; Hi Vue Amendment 2017.pdf; Hi Vue Amendment 2019.docx; Brannon 2012 FMP and 2016 amendment.pdf; BrannonColdHollowMaplesLLCPlan.pdf; Caldwell_FMP.pdf; Haible Amendment 2017.pdf; Haible FMP.pdf; Haible Amendment 2017.pdf Hazens Notch_Enosburg_FMP 2018; Mattina_FMP.pdf; McGinley Amendment 2011.docx; McGinley Amendment 2012. Docx; McGinley Amendment 2019.docx;	6

	McGinley Amendment 2019.pdf; McGinley Forest Stewardship Plan_amended 2017.pdf; TNH_Belvidere_Amendment_2018.pdf; TNH_Belvidere_FMP.pdf; True North Holdings_FMP_Jackson Valley.pdf	
Participating landowner agreements	CH1_Backus Participation Agreement.pdf CH2_CH3_Barred Woods Participation Agreement.pdf CH4_Boone Participation Agreement.pdf CH5_Branon Participation Agreement.pdf CH6_Caldwell Martin Participation Agreement.pdf CH7_Haible Participation Agreement CH8_Hazen's Notch Participation Agreement.pdf CH9_Mattina Agreement.pdf CH11_CH12_True North Participation Agreement.pdf	7
Ownership boundary	VLT_Ownership_Boundary_20210125.shp	8
Project area boundary	VLT_Project_Area_20210125.shp	9
Plot locations	VLT_Plots_V4_20210125.shp	10
Harvest map	Brannon map_adjoining parcel harvest location.pdf	11
Mapping documentation	Cold Hollow Carbon_gis boundary overview_20200610.pdf	12
Inventory agreement	Green Timber_VLT_Signed_062019 copy.pdf	13
Inventory manual	SIG_VFC Carbon inventory manual_updated_20200612.pdf	14
Quantification workbooks	CHC01_Inventory-Raw-Data-20191005_current20210119.xlsx CHC02_SiteIndexforPlots_20210119.xlsx CHC03_Degrowth_to_start_20210119.xlsx CHC05_Rxs_20200616.xlsx CHC07_Inventory_Sound_20210119.xlsx CHC09_Baseline_LP_20210119.xlsx CHC10_Plot_Stat_Generator_20210119.xlsx CHC12_RP1TreeList_20210119.xlsx CHC14_Project_LP_20210119.xlsx CHC16_FIA_BFdefect_20200612.xlsx CHC17_SnagDecay_Crosswalk_20200630.xlsx CHC18_NoCut_LP_20210331.xlsx CHC19_Ratio_of_Merch2Tot_20200630.xlsx CHC20_Ratio_of_AG_to_BG.xlsx CHC21_RxNPV_Comp_20200909.xlsx CHC22_1stDecade_BFcut_20210402.xlsx	15
Stumpage report	CHC08_Stumpage_18Q2_RPT.pdf	16
FVS files	CHC06_FVS_key_files_2020818.zip	17

	CHC04_FVS_June20_2019_20210119.accdb FVS_Outs.zip NoCut_May202020.zip CHC15_FVS_SDI_MAX_20200610 CHC13_FVS_May20_2020_20200818.accdb	
Annual attestation	Cold_Hollow_annual-project-attestation_dualsigned_20200603.pdf	18
ATFS Certification documentation	CH1_Bakus_ATF Cert_VT-1747.pdf CH2_BarredWoodsMannRattling_ATF Certf_VT-1745.pdf CH3_BarredWoods_TriLot_ATF Cert_VT-1744.pdf CH4_HighVue_ATF Cert_VT-1746.pdf CH5_brannon_ATF Cert_VT-1750.pdf CH6_Caldwell_ATF Cert_VT-1748.pdf CH7_hiable_ATF Cert_VT-1753_updated.pdf CH7_hiable_ATF Cert_VT-1753_updated inspection report.pdf CH8_HazensNotch)ATF Cert_VT-1743.pdf CH9_Mattina_ATFCert_VT-1749.pdf CH10_McGinley_ATF Cert_VT-1742.pdf CH11_TrueNorth-Belvidere_ATF Cert_VT-1752.pdf CH12_True North-JacksonValley_ATF Cert_VT-1751.pdf email from ATF staff re inspections.pdf VT inspection report.xlsx	19
ACR AFOLU Risk Reversal Mitigation Agreement	ACR AFOLU Carbon Project Reversal Risk Mitigation Agreement V5-0_August 2020_ColdHollow_unsigned.doc	20
VT Current Use Program docs	CHC_entity owned land list_20192020.pdf VT_CurrentUseLetter_ChittendenCo_20192020.pdf VT_CurrentUseLetter_FranklinCO_20192020.pdf VT_CurrentUseLetter_LamoilleCO_20192020.pdf VT_CurrentUseLetter_OrleansCo_20192020.pdf	21
ACR approval of UVA program	ACR_emailchain_VTUVA program.pdf	22

## 2.3 Site Inspections

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

- Confirm the validity of the statements made in the PP and associated project documentation;
- Confirm the baseline conditions and project conditions.
- Interview project personnel to determine if the Plan correctly identifies project activity and assess project personnel competencies;
- Select samples of data from on-the-ground measurements for verification in order to meet a reasonable level of assurance and to meet the materiality requirements of the Project; and

- Perform a risk-based review of the project area to ensure that the Project is in conformance with the eligibility requirements of the validation/verification criteria.

In support of the above objectives, the audit team performed an on-site inspection of the project area on the dates 15 June 2019 through 18 June 2020. 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 stocks through carbon sequestration.

## 2.4 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, 12 NCRs, 18 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.

## **2.5 Techniques and Processes Used to Test the GHG Information and GHG Assertion**

The audit team applied various techniques and processes to test the GHG information and the GHG assertion over the course of the audit, listed below:

- Review of project documentation including the MR, ownership documentation (Refs. 3-5, 7), attestation (Ref. 18), spatial information (Refs. 8-12), modeling files (Ref. 17), certifications (Refs. 4, 19, 21), referenced management plans (Ref. 6), and calculation workbooks (Ref. 1, 15) to check for project-specific conformance to ACR standard and methodology, appropriateness of methodologies and tools applied, 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 scenarios.
- Review of the sources, sinks and reservoirs of GHG emissions within the project boundary (Refs. 1, 15).
- 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 SIG 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. 1, 15).
- Communicate with project personnel and project proponent via interviews, emails, and meetings to gain a better understanding of the project team's methodologies (see Section 2.3.1).
- Interview other individuals including local forest managers, county foresters, and state officials to evaluate the regulatory compliance of the project and the feasibility of baseline harvest treatments (see Section 2.3.2).
- 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

### 3.1 Interviews

#### 3.1.1 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
Ethel Wilkerson	SIG	Carbon Project Manager	Throughout audit
Tim Kramer	SIG	Forest Carbon Manager	Throughout audit
Justin Miller	Green Timber Consulting Foresters, Inc.	Inventory Forester	16 June 2020
Paul Cousar	SIG	Senior Forest Carbon Analyst	Throughout audit

#### 3.1.2 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
Charlie Hancock	North Woods Forestry	Forest Manager	16 June 2020
Ali Kosiba	VT Department of Forests, Parks and Recreation	Climate Forester	24 August 2020
Emily Potter	VT Department of Forests, Parks and Recreation	Lamoille County Forester	11 August 2020
Jared Nunery	VT Department of Forests, Parks and Recreation	Orleans County Forester	5 August 2020

Kate Sudhoff	VT Department of Forests, Parks and Recreation	Forest Legacy Program Coordinator	10 August 2020
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## 3.2 Project Boundary and Activities

### 3.2.1 Project Boundary and Procedures for Establishment

The PP contains a description of the physical boundary of the project, which is located on approximately 8,543 acres of mixed hardwood and conifer forests, dominated by sugar maple and spruce-fir in the counties of Franklin, Orleans and Lamoille, in northcentral Vermont. This is an aggregated project whereby the project area comprises 12 forested parcels from ten individual landowners. 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. 8-10) to confirm project boundaries are accurately represented as compared to boundaries mapped during the site visit, maps provided in the PP, and available satellite imagery.

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

The audit team reviewed the PP and relevant project documentation (Refs. 4-6, 11) which indicate potential infrastructure, activities, and technologies used within the project area. The project activity consists of sustainable forest management in line with the American Tree Farm System (ATFS) practices including significantly lower levels of timber harvesting to maintain a sustainable forest management regime. The audit team reviewed the forest management plans /6/ and concluded that project activities, infrastructure and technologies will be minimal within the project area due to the light commercial harvests proposed, emphasis on reducing residual stand damage, and the implementation of sustainable logging practices in line with ATFS practices.



### 3.2.3 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 above. This is the case for 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 product	Included	CO <sub>2</sub>	Major carbon pool subjected to the project activity.
Burning of biomass	Included	CH <sub>4</sub>	Non-CO <sub>2</sub> gas emitted from biomass burning.

### 3.2.4 Temporal Boundary

The ACR Standard indicates that the project must have a validated/verified Start Date of January 1, 2000 or after. Also, in accordance with Chapter 3 of the ACR Standard, the start date is defined as the date that the Project Proponent entered into a contractual relationship to implement a carbon project or the date that the Project Proponent initiated a forest carbon inventory. The PP indicates “Project start date is June 20, 2019. This date was selected because it corresponds with the date the Project Proponent (VFC) initiated a forest carbon inventory by entering into a contractual agreement between the project proponent (Vermont Land Trust representing VFC) and Green Timber Consulting Foresters.” SCS was able to review the PP, MR, and relevant contractual document (Ref. 13) for authenticity and to confirm that the document indicates that 20 June 2019 was the date the Project Proponent initiated the forest carbon inventory and therefore the project start date is eligible.

In ACR the minimum project term is 40 years and the eligible crediting period for this type of project is also listed as 20 years. SCS confirmed that the PP included a timeline with a first crediting period of 20

years (20 June 2019 – 19 June 2039) and a minimum project term of 40 years (20 June 2019 – 19 June 2059).

### 3.3 Description of and Justification for the Baseline Scenario

The methodology defines the baseline scenario as an estimation of the GHG emissions or removals that would have occurred if the Project Proponent did not implement the project. The PP indicates “The Baseline Scenario represents a harvest regime designed to maximize the 100-year Net Present Value (NPV) at a 5% discount rate, subject to “Heavy Cut” notifications in the state, and the capacity of regional sawmills. The Heavy Cut law requires pre-harvest notification to the state when harvesting below C-line stocking on a 40 acre or greater area.”

During the site visit, through interviews with local forest managers and a state climate forester (see section 2.3.2), and through a review of a Vermont timber harvesting assessment report (<https://fpr.vermont.gov/forest/working-landscape/assessment-timber-harvesting-and-forest-resource-management-2012>), the audit team verified that aggressive timber harvesting involving clearcut treatments as well as less intensive treatments (selective harvesting, thinning) is common practice on private non-industrial lands in the region. The audit team also conducted a financial feasibility assessment of the baseline scenario by obtaining regional stumpage rates to independently verify the NPV. SCS determined that the harvesting rate indicated in the baseline scenario would be feasible.

### 3.4 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 3 years after 20 June 2019, 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	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.

or Wetland Projects		
Start Date Definition, IFM Projects	<p>For IFM, the Start Date may be denoted by one of the following:</p> <ol style="list-style-type: none"> <li>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.</li> <li>2. The date that the Project Proponent initiated a forest carbon inventory.</li> <li>3. The date that the Project Proponent entered into a contractual relationship to implement a carbon project.</li> <li>4. The date the project was submitted to ACR for listing review.</li> </ol> <p>Other dates may be approved by ACR on a case by case basis.</p>	SCS was able to review the PP, MR, and relevant contractual document (Ref. 13) for authenticity and to confirm that the start date of 20 June 2019 was the date the Project Proponent initiated the forest carbon inventory and therefore the project start date is eligible.
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</p>	Review of the PP to confirm that the crediting period is 20 years, as required given the project type.

	<p>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>	
Real	<p>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.</p> <p>ACR will not credit a projected stream of offsets on an ex-ante basis.</p>	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.
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.	Reviewed the supporting documentation, as described in the PP, and the ownership documentation provided (Refs. 3, 7) to confirm that Project Proponent and the participating landowners have control over the GHG sources/sinks from which the emissions reductions or removals originate on their respective properties. Evidence of land title for each of the owners in the project area was provided and confirmed (Refs. 3, 7).
Emission or Removal Origin (Indirect Emissions)	<p>For projects reducing or removing non-energy indirect emissions, the following requirement applies:</p> <p>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).</p>	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.	Confirmed by reviewing documentation of undisputed title (Refs. 3, 7) and attestation that no offsets exist or were sold prior to registration of the project (Ref. 18)
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	Reviewed land title documents and ownership maps (Refs. 3, 8) along with an independent review of ownership using county assessor records to confirm clear, unique, and uncontested land title by the participating landowner as well as participation agreements (Ref. 7) granting

	<p>land title; ACR may require a legal review by an expert in local law.</p> <p>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.</p> <p>AFOLU projects that result only in the crediting of avoided emissions with no risk of reversal may not require demonstration of land title.</p>	uncontested offset title to the Project Proponent.
Additional	<p>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:</p> <ol style="list-style-type: none"> <li>1. Exceed regulatory/legal requirements;</li> <li>2. Go beyond common practice; and</li> <li>3. Overcome at least one of three implementation barriers: institutional, financial, or technical.</li> </ol>	Confirmation that the project meets all relevant additionality requirements (see Section 3.4 below for more details).
Regulatory Compliance	<p>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.</p>	<p>After performing extensive regulatory compliance checks for the Cold Hollow Carbon project during the reporting period, the audit team found no indication of any violations regarding regulatory compliance. EPA and ECHO were checked, no violations observed. OSHA records were also checked during the reporting period and no violations observed. There are few regulations that govern forest management in the state. Correspondence area foresters from the VT Department Forestry, Parks and Recreation indicates that no violations were observed during the reporting period within the project area. An interview with the property manager Charlie Hancock from North Woods Forestry, confirmed that the management practices were in accordance with state regulations. The audit team also confirmed regulatory compliance in reviewing monitoring report which contains the regulatory compliance attestation.</p>
Permanence (All AFOLU Projects)	<p>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</p>	Confirmed a total risk percentage of 18% using the ACR Tool for Risk Analysis and Buffer Determination as required by the ACR methodology.

	option selected and the requirements for reporting and compensating reversals.	
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 contribution of ERTs to the ACR Buffer Pool by using the estimated risk percentage of 18%.
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 there is no activity-shifting leakage as demonstrated by a combination of entity-wide management certification from the American Tree Farm System as well as entity-wide participation in the Vermont Current Use Value Appraisal (UVA) Program. ACR approved the UVA program as a long-term forest management program that may be applied to demonstrate a lack of activity shifting leakage. Audit team confirmed that all forest lands owned by landowners in the project are included in the UVA and/or ATFS (Refs. 5, 19, 21).
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	ACR requires that all projects develop and disclose an impact assessment to ensure compliance with environmental and community safeguards best practices. Environmental and	Confirmed by reviewing the PP, the MR, the annual attestation (Ref. 18), and forest management plans (Refs. 5, 6) that

	<p>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>	<p>the project has no anticipated negative community or environmental impacts.</p>
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### 3.5 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.

#### 3.5.1 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.

#### 3.5.2 Common Practice Test

A common practice review of the project was conducted by the audit team. The project proponent demonstrated that if the Cold Hollow Carbon Project was not conducted, management within the project area may resemble that of other private non-industrial forestlands in the region, which is often heavily cut and managed for maximizing NPV. During the site visit, through interviews with local forest managers and a state climate forester (see section 2.3.2), and through a review of a Vermont timber harvesting assessment report (<https://fpr.vermont.gov/forest/working-landscape/assessment-timber-harvesting-and-forest-resource-management-2012>), the audit team verified that the timber harvesting prescriptions and intensities set forth in the baseline scenario represent common practice across private forestlands in the in the region. The project scenario results in a significant reduction in harvested volume, including a shift in the prescriptions from less overstory removals to more selection harvest and shelterwood cuts. Thus, the audit team concluded that the project scenario goes well beyond the common practice in the region.

## 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 plus carbon revenues from the project). The audit team’s findings regarding this assessment are provided in the below.

Scenario	Revenue (crediting period)
Baseline scenario – NPV	\$12,182,262
Project scenario - NPV	\$1,797,792
Project scenario - Carbon Revenue	\$3,516,552
Difference between Baseline and Project	\$5,314,344

## 3.6 Processes for Emission Reductions/Removal Enhancements Quantification

### 3.6.1 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.

### 3.6.2 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 PP and inventory manual (Ref. 14) describe the process including sample size, determination of plot numbers, plot layout, data collected, and measurement techniques. Through site



visit and document review (Refs. 8-10, 14-15), the audit team verified the forest inventory methodologies and application.

The inventory data was then run within the Forest Vegetation Simulator with baseline prescriptions to project the baseline condition and a grow-only scenario to degrow the inventory to the start date (Ref. 17). The audit team confirmed that the baseline prescriptions were feasible and representative of common practice conditions in the region (see section 3.4.2).

### **3.6.3 Data Management Systems**

SCS verified the data management systems put in place by the project personnel as described in the PP and the inventory manual (Ref. 14). Section D2 of the PP states “VFC and SIG stores all relevant project data and documentation in both hard copy and electronic form (on a local hard drive). Once the project has advanced to the point of verification, a group meeting is held to review project-generated materials and migrate relevant items onto an online electronic data archiving Platform Service.”

### **3.6.4 QA/QC Procedures**

Section D of the PP identifies both field and desk QA/QC procedures. With regard to field procedures, it states “During inventory, at least 5% of the plots will be checked by a different forester than cruised the plot, preferably by someone senior to the field crew. This will involve full plot measurement to identify any problems with determining in/out trees, species calls, defect measurements, DBH measurements, and height measurements.” The audit team verified these QA/QC procedure during discussions with the inventory forester (see section 3.1.2).

Section D.2 of the PD also indicates the following desk-based QA/QC procedures “SIG follows several steps to review the quality of the cruise data, ranging from finding obvious errors to evaluating diameters and heights by species groups. Once the data is checked, several plot biometrics are computed, and it is imported into an FVS database. This database has a series of queries that compare raw data values to the same queries in the raw Excel cruise data.”

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 PP also provides in detail a monitoring and data management plan for each parameter throughout the reporting period.

### **3.6.5 Processes for Uncertainty Assessments**

The PP describes how baseline and project uncertainty were calculated. The PP indicates that the Overall uncertainty in the baseline is calculated using equation 10 of the methodology (Refs. 1, 18). The percentage uncertainty in the combined carbon stocks in the project during the reporting period is calculated using equation 18 of the methodology (Ref. 1). The total project uncertainty (percentage) during the reporting period is quantified using equation 19 of the methodology (Ref. 1). SCS confirmed

that the approaches for assessing uncertainty that are identified in the PP 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 personnel 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 reported total Project Uncertainty ( $UNC_t$ ) value was independently re-quantified by SCS using equation 19 in the methodology. No issues were found (see table below). The audit team found this difference reasonable and immaterial.

	SCS Values	Client Values	Difference
Year	$UNC_t$	$UNC_t$	
2019	5.11%	5.05%	0.06%

#### Materiality

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

$$\% \text{ Error} = \frac{(43,915 - 43,922)}{43,922} * 100 = \frac{-7.0}{43,922} * 100 = -0.016\%$$

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

The audit team re-quantified baseline and project emissions, emissions reductions, and baseline and project uncertainty from the raw inventory data provided by the client. This process entailed verifying

that the methods detailed in the PP, MR, and calculations workbooks (Refs. 1, 18) were applied as indicated. The team confirmed the emissions reduction by conducting the following analysis:

- Recalculate the live aboveground, live belowground, and standing dead carbon pools using Jenkins equations and decay class information using the inventory data provided by the client.
- Recalculate tree and plot-level live aboveground and standing dead tree defect.
- Recalculate site index for a random selection of plots using available soil survey data.
- Use the Forest Vegetation Simulator (FVS) to degrow the raw inventory to the project start date.
- 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 PP 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.
- 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 PP 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.
- 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.
- 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.
- Calculate the baseline uncertainty in the combined carbon stocks in the baseline using equation 10.
- Calculate the change in project carbon stock stored in live trees using equations 11 and 12.
- Calculate the change in the project carbon stock and GHG emissions during the reporting period using equation 14.
- Calculate the percentage uncertainty in the combined carbon stocks in the project during the reporting period using equation 18.
- Calculate the total project uncertainty (percentage) during the reporting period using equation 19.
- 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.

## Emission Reductions

The audit team verified that the project personnel used the appropriate emissions factors and GWP's to calculate total emission reductions, which is adherent to the ACR Methodology. The team recalculated the final emission reductions and confirmed that they are without material discrepancy.

The ERT's associated with the first reporting period are reported in the MR and ERT workbook (Ref. 1) and are verified by the verification team are as follows:

- 53,556 t CO<sub>2</sub>e (Emissions reductions at the end of the current reporting period without risk buffer deductions)
- 43,915 t CO<sub>2</sub>e (Emissions reductions at the end of the current reporting period including risk buffer deductions)
- 9,641 t CO<sub>2</sub>e Risk buffer contribution
- 35,704 t CO<sub>2</sub>e Leakage deduction

#### **Variances or Deviations**

For this reporting period, there were no variances or deviations.

#### **Uncertainty**

See section 3.1.1 above.

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

The following table indicates whether the data and information supporting the GHG assertion were based on assumptions and industry defaults, future projections, and/or actual historical records.

Assumptions and Industry Defaults	<input checked="" type="checkbox"/>
Future Projections	<input checked="" type="checkbox"/>
Actual Historical Records	<input checked="" type="checkbox"/>

### **4.4 Leakage Assessment**

Section E3 of the PP states: "No activity-shifting leakage is allowed by the methodology beyond de minimis levels." The lack of activity shifting leakage was demonstrated by entity-wide enrollment Vermont Current Use Value Appraisal (UVA) Program and/or the American Tree Farm System certification. It has also been demonstrated that ACR considers Vermont's UVA program to be long-term forest management program, prescribing the principals of sustained yield and natural forest management Ref. 21. The audit team verified that for 11 out of 12 of the properties owned by the project proponent and landowners both within the project and outside the project are in the Vermont UVA program (Refs. 5, 20, 21). For one ownership (Haible), we confirmed that they have achieved entity-wide certification of all forested lands under the American Tree Farm System (Ref. 19). Several of the landowners have entity-wide ATFS certification and UVA program enrollment.

## 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 document review and site inspections, that project is not located on public or tribal lands
B	4%	Confirmation, through document review and site inspections, that project is not located on public or tribal lands
C	2%	Confirmation, through document review and site inspections, that the project is not located outside the United States
D	0%	Confirmation, through independent review of documentation, that conservation easement does not cover entire project area
E	2%	Confirmation, through independent review of documentation, that project is located in a low-risk fire region
F	4%	Confirmation, through independent review of documentation, that epidemic disease or infestation is not present within project area, or within 30 mile radius of project area
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
	18%	TOTAL

## 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.


The following provides a summary of the ERT issuance for the current Reporting Period with the Leakage deduction included and the Buffer deductions excluded (Gross ERTs):

Annual Emission Reduction in Metric Tons (tCO <sub>2</sub> e)				
Reporting Period	Vintage	Start Date	End Date	Gross GHG Emission Reductions (tCO <sub>2</sub> e)
1	2019	20 June 2019	31 December 2019	31,082
1	2020	1 January 2020	20 May 2020	22,474
TOTAL				53,556

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	Net GHG Emission Reductions (tCO <sub>2</sub> e)	Quantity of Buffer Credits (tCO <sub>2</sub> e)
1	2019	20 June 2019	31 December 2019	25,486	5,595
1	2020	1 January 2020	20 May 2020	18,429	4,046
Total				43,915	9,641

*Note: final numbers are rounded for simplicity.*

Lead Auditor Approval	 Alexa Dugan, 13 April 2021
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<p>Internal Reviewer Approval</p>	 <p>Michael Hoe, 13 April 2021</p>
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## Appendix A: List of Findings

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 29 Jun 2020**

**Standard Reference:** ACR Standard v6.0

**Document Reference:** Cold\_Hollow\_ACR519\_GHGPlan\_20200601.pdf; Project Area - Forested.shp

**Finding:** The ACR Standard states that the GHG plan must contain information on "Project location, including geographic and physical information allowing for the unique identification and delineation of the specific extent of the project. Projects implementing a Programmatic Design Approach shall include location information for all sites known at the time of the GHG Project Plan validation."

It is unclear from the GHG plan in what counties the project is located within. Section A5. of the GHG plan states "The project protects mixed hardwood and conifer forested lands in Franklin and Lamoille counties Vermont - totaling 8,625 acres of forestland." Likewise, in section B2 of the GHG plan it states "VFC has aggregated twelve parcels from ten individual landowners in the Counties of Franklin and Lamoille, Vermont for the purpose of marketing GHG emission reductions." However Figure A4.1 of the GHG plan indicates that the project area parcels are located in Franklin, Lamoille, and Orleans counties. The project area shapefile also indicates that the project falls in those 3 counties. The audit team requests clarification on the location of the project area.

**Project Personnel Response:** Properties are located in Orleans, Franklin, and Lamoille Counties, Vermont. GHG plan has been updated Filename: Cold\_Hollow\_ACR519\_GHGPlanv2\_20200724.pdf Pathway: SIG\_SCS\_ColdHollowCarbon\_Shared Folder\GHG Plan\ Cold\_Hollow\_ACR519\_GHGPlanv2\_20200724.pdf

**Auditor Response:** Confirmed that the GHG plan (Cold\_Hollow\_ACR519\_GHGPlanv2\_20200724.pdf) was updated to indicate that the project is in the Franklin, Orleans, and Lamoille counties. This is consistent with the project area boundary file (Project Area - Forested.shp). This finding is closed.

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



**NIR 2 Dated 29 Jun 2020**

**Standard Reference:** ACR Standard v6.0

**Document Reference:** SIG\_VFC Carbon inventory manual\_ 20190719.pdf

**Finding:** The Inventory Methodology states "Valid species and associated codes for the project area are shown in an accompanying spreadsheet ("Albany\_C\_CFI\_Species\_List\_Export\_20171114.xlsx") incorporated by reference." The audit team requests that the correct spreadsheet be provided.

**Project Personnel Response:** Inventory document was updated with the following changes: 1. Correcting the file name of the tree list (Pages 10 and twice on Page 33) 2. In Figure 3, a typo in the figure was corrected 3. A clarification that FIA National Core Field Guide v8.0 was this inventory 4. Clarification that bole length was not measured or considered unless being used for tree defect %. The updated inventory manual was added to the shared drive. Filename: SIG\_VFC Carbon inventory manual\_updated\_20200612.pdf Pathway: SIG\_SCS\_ColdHollowCarbon\_Shared Folder\Inventory\SIG\_VFC Carbon inventory manual\_updated\_20200612.pdf

**Auditor Response:** The audit team confirmed that the species list name was corrected on page 10 and the top of page 33. However, page 33 continues to list the "Albany\_C\_CFI\_Species..." file in section 5.2.1. The species list "ColdHollow\_SpeciesList.xlsx" was provided.

This finding remains open.

**Project Personnel Response 2:** Corrected. New file is SIG\_VFC Carbon inventory manual\_updated\_202006911.pdf

**Auditor Response 2:** The audit team confirmed that the updated inventory manual (SIG\_VFC Carbon inventory manual\_updated\_20200911.pdf) contains the correct Species list file reference. This finding is closed.

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

**NIR 3 Dated 29 Jun 2020**

**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:** Cold\_Hollow\_ACR519\_GHGPlan\_20200601.pdf;

**Finding:** Section 3.1 of the IFM methodology states that "Modeling must be completed with a peer reviewed forestry model that has been calibrated for use in the project region. The GHG Plan must detail what model is being used and what variants have been selected. All model inputs and outputs must be available for inspection by the verifier.

The GHG plan indicates that "The FVS\_NE model was calibrated at the project area entering the FVS location code 919 (the Allegheny NF)." The audit team request justification for why the Allegheny NF location code in Pennsylvania was selected over the Green Mountain NF location code which is much closer in proximity to the project area.

**Project Personnel Response:** This has been corrected to 920 and all Rxs were rerun. Pathway: SIG\_SCS\_ColdHollowCarbon\_Shared Folder\Quant\

**Auditor Response:** Audit team confirmed that the location code 920 was utilized for all Rxs that were rerun. This finding is closed

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

**NIR 4 Dated 29 Jun 2020**

**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:** CHC04\_FVS\_June20\_2019\_20200609.accdb

**Finding:** Section 3.1.1. of the IFM methodology states that "Step 1: Determine the biomass of the merchantable component of each tree based on appropriate volume equations published by USDA Forest Service (if locally derived equations are not available use regional or national equations as appropriate) and green volume inside bark, oven-dry tree specific gravity for each species."

It was brought to the audit teams attention via an email from Paul Couser on 6/24/20 that the FVS treelist files only have yellow birch for a species, across all plots. Given that tree carbon stocks must be calculated using volume equations for each species, the carbon calculations are not in conformance with the methodology.

**Project Personnel Response:** This has been corrected and all Rxs were rerun. Filename: CHC12\_RP1TreeList\_20200630.xlsx Pathway: SIG\_SCS\_ColdHollowCarbon\_Shared Folder\Quant\CHC12\_RP1TreeList\_20200630.xlsx

**Auditor Response:** The filename CH12\_RP1TreeList\_20200630.xlsx, sheet Trees June-2019 still only contains the species code 'YB' in column D. This finding remains open.

**Project Personnel Response 2:** Corrected. New file is CHC12\_RP1TreeList\_20200818.xlsx

**Auditor Response 2:** The audit team confirmed that the updated file CH12\_TRP1TreeList\_20200818.xlsx contains the correct tree species that correspond to the inventory data (CHC01\_Inventory-Raw-Data-20191005\_current20200626.xlsx). This finding is closed.

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

**NCR 5 Dated 29 Jun 2020**

**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:** CHC12\_RP1TreeList\_20200607.xlsx

**Finding:** The IFM methodology states "Carbon Dioxide. All pools and emissions in this methodology are represented by either CO<sub>2</sub> or CO<sub>2</sub> equivalents. Biomass is converted to carbon by multiplying by 0.5 and then to CO<sub>2</sub> by multiplying by the molecular weight ratio of CO<sub>2</sub> to Carbon (3.664)."

A molecular weight ratio of CO<sub>2</sub> to carbon of 3.667 was applied in the calculations workbooks (ie., CHC12\_RP1TreeList\_20200607.xlsx, sheet Carbon May-2020, columns G, H, and I).

**Project Personnel Response:** This has been changed. New file is CHC12\_RP1TreeList\_20200630.xlsx Filename: CHC12\_RP1TreeList\_20200630.xlsx Pathway: SIG\_SCS\_ColdHollowCarbon\_Shared Folder\Quant\CHC12\_RP1TreeList\_20200630.xlsx

**Auditor Response:** The audit team confirmed that the correct molecular weight of 3.664 was applied in this workbook. This finding is closed.

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

**NCR 6 Dated 29 Jun 2020**

**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:** CHC02\_SiteIndexforPlots\_2020601.xlsx; Cold\_Hollow\_ACR519\_GHGPlan\_20200601.pdf; NoCut\_June202019.key, NoCut\_May202020.key, CHC\_Shelterwood.key, CHC\_Selection.key, CHC\_Clearcuts.key

**Finding:** The IFM methodology states "Project Proponents shall identify key parameters that would significantly influence the accuracy of estimates. Local values that are specific to the project circumstances must then be obtained for these key parameters, whenever possible."

Section E0 of the GHG plan indicates that "All plots had site trees, which were transformed to site index for the projections." It further states "Site tree info was also collected and converted to a 50-year site index using the US Forest Service Northeastern Research Station Forest Inventory and Analysis site index equations." The calculations workbook CHC02\_SiteIndexforPlots\_2020601.xlsx shows how site index was calculated for each plot. However, in the FVS key files provided indicate that different site index values were applied in the growth simulations than those calculated in the aforementioned workbook.

**Project Personnel Response:** This has been corrected and all Rxs were rerun. Pathway: SIG\_SCS\_ColdHollowCarbon\_Shared Folder\Quant\

**Auditor Response:** Audit team confirmed that the site indexes have been applied to the FVS plotinit tables correctly. This finding is closed.

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

**NCR 7 Dated 29 Jun 2020**

**Standard Reference:** ACR Standard v6.0; 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

**Document Reference:** CHC11\_ERTs\_20200601.xlsx;  
ColdHollow\_RP1\_MonitoringReport\_submitted20200601.pdf

**Finding:** The ACR Standard states in section 2.B.3 that "The Project Proponent shall reduce, as far as is practical, uncertainties related to the quantification of GHG emission reductions or removal enhancements. Furthermore, section D3 of the methodology states that "At a minimum the following data parameters must be monitored:

- Project area
- Sample plot area
- Tree species
- Tree Biomass
- Wood products volume
- Dead wood pool, if selected"

Section E2 of the GHG plan indicates states that "The Project Scenario represents conservation harvest regime designed to maximize the 100-year Net Present Value (NPV) of harvest and offset revenues, at a 4% discount rate, subject to conservation goals. The conservation goals were modeled by limiting total harvest relative to expected growth. The Project Scenario modeled/simulated four different silvicultural systems: Selection, commercial thinning, shelterwood and overstory removals." Additionally, the monitoring report and ERTs calculations workbook also indicate that harvesting has taken place during the reporting period.

However, during the project kick-off call the audit team was notified that planned harvests during the reporting period did not take place, but the calculations workbooks provided were not updated to reflect the lack of harvesting.

**Project Personnel Response:** This has been corrected and the ERT schedule has been updated.

Filename: CHC11\_ERTs\_20200630.xlsx Pathway: SIG\_SCS\_ColdHollowCarbon\_Shared  
Folder\Quant\ CHC11\_ERTs\_20200630.xlsx

**Auditor Response:** The audit team verified that in sheet Tab E5.1,.2, cell D21 of the workbook CHC11\_ERTs\_20200630..xlsx, HWP emissions have been now set to zero, indicating that no harvests occurred during the reporting period. This finding is closed.

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

**NCR 8 Dated 29 Jun 2020****Standard Reference:** ACR Standard v6.0**Document Reference:** CH12\_RP1TreeList\_2020607.xlsx  
Cold\_Hollow\_ACR519\_GHGPlan\_20200601.pdf**Finding:** The ACR principle of conservativeness states "Use conservative assumptions, values, and procedures to ensure that GHG emission reductions or removal enhancements are not overestimated."

Section E.0 of the GHG plan states that "Percent unsound defect was also collected, (note it does not include missing volume due to a broken top – which is accounted for in the carbon estimate via the damage codes). This unsound defect was not included in the FVS modeling since it only affects volume and not carbon estimates. Instead, it is applied to the FVS-Jenkins CO2 estimates post FVS simulation."

However the calculations workbook CH12\_RP1TreeList\_2020607.xlsx does not include the application of the unsound carbon losses which would result in an overestimation of carbon.

**Project Personnel Response:** This has been changed. New file is CHC12\_RP1TreeList\_20200630.xlsx  
Filename: CHC12\_RP1TreeList\_20200630.xlsx Pathway: SIG\_SCS\_ColdHollowCarbon\_Shared  
Folder\Quant\CHC12\_RP1TreeList\_20200630.xlsx**Auditor Response:** The audit team confirmed that in the new file CHC12\_RP1TreeList\_20202630.xlsx, the live defect is now being applied correctly to the plot-level carbon calculations. This finding is closed.**Bearing on Material Misstatement or Conformance (M/C/NA):****NIR 9 Dated 29 Jun 2020****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:** Cold\_Hollow\_ACR519\_GHGPlan\_20200601.pdf**Finding:** Section E.0 of the GHG Plan states "Snags were also included in the inventory, with the average percent unsound defect (from the cruise), and a snag class of 1 to 5. The ACR protocol has 4 classes, thus SIG grouped class 5 with class 4. FVS history codes of 6 to 9 were used for ACR classes 1 to 4."

It is unclear how the history classes were used for ACR defect classes. The audit team requests additional information be provided in the GHG plan regarding exactly what defect values were applied to each of the history codes.

**Project Personnel Response:** See Table E0.1 in the GHG plan. Filename:  
Cold\_Hollow\_ACR519\_GHGPlanv2\_20200724.pdf Pathway: SIG\_SCS\_ColdHollowCarbon\_Shared  
Folder\GHG Plan\Cold\_Hollow\_ACR519\_GHGPlanv2\_20200724.pdf**Auditor Response:** The audit team reviewed Table E0.1 in the updated GHG Plan. It provides the requested information regarding the crosswalk between the ACR decay classes and the FVS decay classes. This finding is closed.**Bearing on Material Misstatement or Conformance (M/C/NA):**

**NIR 10 Dated 29 Jun 2020**

**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:** ColdHollow\_RP1\_MonitoringReport\_submitted20200601.pdf

**Finding:** Section D3 of the methodology states that "At a minimum the following data parameters must be monitored:

- Project area
- Sample plot area
- Tree species
- Tree Biomass
- Wood products volume
- Dead wood pool, if selected"

During the project kick-off call, the audit team was notified that planned harvests during the reporting period did not take place. Likewise, spatial data on harvesting in the project area was not provided. However, during the site visit the audit team observed harvest operations on the Mattina parcel and the Brannon parcel. The audit team requests additional information regarding the dates these harvest activities began as well as any harvest records or plans if the harvests occurred during the reporting period.

**Project Personnel Response:** No harvest occurred in RP1. Mattina parcel: The harvesting observed on the Mattina parcel started May 21, 2020 which is in RP2. Brannon parcel: The harvesting activities observed on the Brannon parcel was an operation on an adjoining landlocked parcel that was utilizing the landing and haul roads on the Brannon parcel. See map called "Brannon map\_adjoining parcel harvest location.pdf" that shows the location of the Brannon parcel and the "additional parcel" where the harvesting occurred. File name: Brannon map\_adjoining parcel harvest location.pdf File pathway: SIG\_SCS\_ColdHollowCarbon\_Shared Folder\Cold\_Hollow\_GIS\ Brannon map\_adjoining parcel harvest location.pdf

**Auditor Response:** The audit team reviewed the Brannon map\_adjoining parcel harvest location.pdf. We will make a note that for RP2 there was a harvest on the Mattina parcel. This finding is closed.

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

**NIR 11 Dated 29 Jun 2020****Standard Reference:** ACR Standard v6.0**Document Reference:** Cold\_Hollow\_ACR519\_GHGPlan\_20200601.pdf**Finding:** Section 2.B.6 of the ACR Standard states "The Project Proponent shall establish and apply quality assurance and quality control (QA/QC) procedures to manage data and information, including the assessment of uncertainty in the project and baseline scenarios. QA/QC procedures shall be outlined in the GHG Project Plan."

The GHG Plan outlines procedures for field inventory data quality and control. However, it does not specify desk procedures for QA/QC to ensure that GHG and carbon stock calculations and modeling using the field sampled data. After the project commencement, the audit team received several iterations of the modeling and quantification files as errors had been found. The audit team requests additional information regarding whether QA/QC procedures of quantitative components (FVS model runs, Excel workbooks, Access databases) are in place and if so what these procedures entail.

**Project Personnel Response:** SIG relies on a team approach to analyze and review project data and analyses. The idea is the more personnel reviewing the document and files, the more likely an error will be found. SIG also relies on using copies of verified analyses as templates, such as the ERT worksheet.

**Auditor Response:** The standard states that "QA/QC procedures shall be outlined in the GHG Project Plan." The GHG plan was not updated with a description of these desk based QA/QC procedures as outlined in the finding response. This finding remains open.

**Project Personnel Response 2:** QAQC language added to the GHG report. Filename: Cold\_Hollow\_ACR519\_GHGPlanv4.pdf

**Auditor Response 2:** Note that the audit team confirmed via email with the client on 15 September 2020 that there is no version 4 of the GHG plan and the filename listed in their response should be "Cold\_Hollow\_ACR519\_GHGPlanv3.pdf."

The audit team reviewed the updated version of the GHG plan "Cold\_Hollow\_ACR519\_GHGPlanv3.pdf" and confirmed that section D2 now contains language regarding the desk-based QAQC procedures. This finding is closed.

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

**NIR 12 Dated 29 Jun 2020****Standard Reference:** ACR Standard v6.0**Document Reference:** Ownership Boundary.shp

**Finding:** Section A.3.2 of the ACR standard states "ACR accepts projects on all land ownership types—private, public (municipal, county, state, federal, or other), and tribal—provided the Project Proponent demonstrates that the land is eligible, documents clear land title and offsets title, the offsets contract is enforceable, and the Project Activity is additional and meets all other requirements of the ACR Standard."

During the site visit, the audit team observed that the actual landowner boundary of the southeastern edge of the Barred Woods Mann Rattling parcel is at the corner of the road to the east, which is about 435 feet outside of the ownership boundary provided by the client (Ownership Boundary.shp). This excluded area was also excluded from the project area. The audit team requests additional information regarding why this portion of the parcel was excluded from the project area.

**Project Personnel Response:** The ownership boundary found for the southeastern edge of the Barred Woods Mann Rattling parcel in the field is accurate, we have updated the ownership boundary file. Filename: ownership boundary\_20200907.shp Pathway: SIG\_SCS\_ColdHollowCarbon\_Shared Folder\Cold\_Hollow\_GIS\Ownership Boundary\_20200709.shp Approximately 9.5 acres at the southeastern corner of the parcel (portion closest to VT Rt 109) was excluded from the project area because the landowners are developing this area for maple syrup production (processing, storage, bottling, transportation, etc.).

**Auditor Response:** Audit team confirmed that the ownership boundary\_20200907.shp has been updated to reflect the ownership boundary that the audit team observed on the site visit. However the Figure A4.2 in the GHG Plan still shows the outdated boundary map. This finding remains open.

**Project Personnel Response 2:** Figure has been updated. Filename: Cold\_Hollow\_ACR519\_GHGPlanv4.pdf

**Auditor Response 2:** The audit team reviewed the latest version of the GHG plan "Cold\_Hollow\_ACR519\_GHGPlanv3.pdf" and verified that figure A4.2 contains the updated boundary. This finding is closed.

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



**NCR 13 Dated 5 Aug 2020**

**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:** Cold\_Hollow\_ACR519\_GHGPlanv2\_20200724.pdf

**Finding:** Section A4 of the methodology states "The discount rate assumptions for calculating NPV vary by ownership class (see Table 1, Section C1) and include the 6% rate for private industrial timberlands from the earlier IFM methodology. Actual landowner discount rate assumptions are typically not publicized in the scientific literature and companies, individuals, and organizations by and large do not share the values they use. However, approximate discount rates can be indirectly estimated by using forest economic theory and the ageclass structure distribution of different U.S. forest ownership classes." Furthermore, section C1 of the methodology indicates that "Project Proponents shall use the baseline discount rate values in Table 1 for the appropriate ownership class to identify a project-specific NPV-maximizing baseline scenario". In Table 1, an annual discount rate of 6% is required for "Private Industrial", an annual discount rate of 5% is required for "Private Non-Industrial" and an annual discount rate of 4% applied to "non-governmental organization."

Section E1 of the GHG Plan states "The Baseline Scenario represents an industrial harvest regime designed to maximize the 100-year Net Present Value (NPV) at a 5% discount rate, subject to "Heavy Cut" notifications in the state, and the capacity of regional sawmills" and later that "The discount rate for private parties is 5% per year as this is a private, non-industrial forest." The previous version of the GHG plan dated 2020-06-01 had indicated a 4% discount rate was applied.

The audit team sought ACR guidance on this issue and it was determined that "project proponents shall use the baseline discount rate values in Table 1 for the ownership class that is most appropriate to themselves to identify a project-specific NPV-maximizing baseline scenario. In other words, the "ownership class" that is appropriate to the project proponent is to be used to select the discount rate from Table 1." The registry also indicated that "The Non-governmental organization has non-profit tax status with a conservation/natural resources-related mission." The Vermont Land Trust is a non-governmental organization which has a non-profit tax status with a conservation/natural resources related mission, thus the 5% discount rate for private non-industrial that was utilized in the baseline modeling would not apply to VLT according to the requirements of the methodology.

**Project Personnel Response:**

**Auditor Response:** This finding was closed outside the cover of this workbook. The audit team sought guidance from ACR on this matter. ACR confirmed that "In regards to assigning discount rates, aggregated projects should assign discount rates across the associated acres in each forest ownership class controlling said timber rights." The audit team confirmed that all parcels in the project are privately owned and thus a 5% discount rate is appropriate.

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

**NIR 14 Dated 5 Aug 2020**

**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:** Cold\_Hollow\_ACR519\_GHGPlanv2\_20200724.pdf

**Finding:** Section C1 of the IFM methodology states "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."

Section E1 of the GHG Plan indicates that a mix of clearcut and selection prescriptions are applied in the baseline scenario. The audit team requests additional evidence that the identified silvicultural prescriptions including clearcutting, selection cuts are "recommended by published state or federal agencies to perpetuate existing onsite timber producing species while fully utilizing available growing space."

**Project Personnel Response:** The USFS Technical document "Silvicultural Guide for Northern Hardwoods in the Northeast" (gtr\_nrs132.pdf) discusses the many situations that clearcutting is implemented under in northern hardwoods. A baseline industrial operator would define "fully utilizing growing space" as the prescription that maximizes the net present value per acre. In most cases, this will be a clearcut prescription. Excel file CHC21\_RxNPV\_Comp\_20200909.xlsx looks at the NPV of each plot's clearcut NPVs, summarized by the year the clearcut took place. In every year, the clearcut prescriptions yield a higher NPV (averaged across plots). Note that there is no selection or shelterwood silviculture modeled in the baseline.

**Auditor Response:** The audit team reviewed the USFS technical document found here [https://www.fs.fed.us/nrs/pubs/gtr/gtr\\_nrs132.pdf](https://www.fs.fed.us/nrs/pubs/gtr/gtr_nrs132.pdf) and confirmed that clearcutting is implemented and recommended under many situations, such as when there is an optimal seed source available for regeneration. During the site visit the audit team verified the presence of seedlings and seed sources, thus confirm that clearcutting as indicated in the baseline scenario would be feasible and recommended in this region. The audit team also reviewed the NPV document to confirm that the clearcuts do yield an optimal NPV.

This finding has been closed.

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

**NCR 15 Dated 5 Aug 2020**

**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; Improved Forest Management V1.3- Errata & Clarification 7.27.2020

**Document Reference:** Cold\_Hollow\_ACR519\_GHGPlanv2\_20200724.pdf

**Finding:** The recent Errata & Clarification to the IFM v1.3 methodology states that section D6 of the methodology was updated to "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 "Quantification of leakage is limited to market leakage, as no activity-shifting leakage is allowed by the methodology beyond de minimis levels. Nearly all forestland owned and managed by fourteen individual landowners aggregated under the Cold Hollow Carbon IFM Project are included in the carbon project, therefore there is no activity-shifting leakage."

The GHG Plan does not state that ALL forestland owned by the landowners are included in the carbon project, thus a demonstration that there is no leakage within their operations, through one or more of the above options, is required by the methodology.

**Project Personnel Response:** Language has been updated to "All parcels within the project are certified by American Tree Farm System, therefore there is no activity-shifting leakage. Proof of certification for each parcel have been provided to the verifiers." American Tree Farm Certificates can be found in folder called "ATF certifications" along with an excel file (VT inspection report.xlsx) from ATF showing details for each parcel. Email text from ATF staff is also included "Email from ATF staff re inspections.pdf" for context.

**Auditor Response:** The audit team reviewed the American Tree Farm System certifications provided and compared these to the forested area of each parcel within the project area to determine whether management certification "cover all entity owned lands with active timber management programs" within the project area. We found that for 6 of the properties at least all of (or more than) the area owned by the entity was certified by ATFS. However, for the other 6 properties, not all of the forest area in the project area was certified. Thus, this is not in conformance with the methodology. Furthermore, by selecting this method of demonstration of a lack of activity shifting leakage, it must be demonstrated that "all entity owned lands with activity timber management programs" possess this management certification, which includes even lands outside of the project area, if they have active timber management programs. Thus, the statement in the GHG plan that "All parcels within the project are certified by American Tree Farm System, therefore there is no activity-shifting leakage" does not fully reflect the requirements of the methodology.

This finding remains open.

**Project Personnel Response 2:** -->Activity shifting leakage <---- Language in GHG plan has been updated to "No activity-shifting leakage is allowed by the methodology beyond de minimis levels. All entity owned lands participate in Vermont Current Use Value Appraisal (UVA) Program. ACR considers Vermont's UVA program to be long-term forest management program, prescribing the principals of sustained yield and natural forest management. Vermont's UVA Program does not specifically address pesticide use or prescribed fire as these management strategies not commonly used in the New England. In the event that chemical application is necessary to meet a landowner's forest management goals, state laws require chemical application must be conducted by state certified applicator (Title 6 Vermont Statutes Annotated, Chapter 87). Prescribed burns are very uncommon in the forest types in this region, but any prescribed fire treatments will be conducted with input from county and state officials." Folder: GHG Plan Filename: Cold\_Hollow\_ACR519\_GHGPlanv5\_20201215.pdf \*Email chain from ACR approving UVA program as a long-term management plan can be found in VT\_CurrentUseProgram folder. Filename: ACR\_emailchain\_VTUVA program.pdf \*Documentation of entity wide participation in UVA includes 1) List of entity wide ownerships Folder: VT\_CurrentUseProgram Filename: CHC\_entity owned land list\_20192020 2) Letters from Foresters showing entity-wide participation in the UVA program. Oversight of the UVA project is done at the county level, so there are four letters. Folder name: VT\_CurrentUseProgram File names: a) VT\_CurrentUseLetter\_ChittendenCo\_20192020.pdf b) VT\_CurrentUseLetter\_FranklinCO\_20192020.pdf, c) VT\_CurrentUseLetter\_LamoilleCO\_20192020.pdf, d) VT\_CurrentUseLetter\_OrleansCo\_20192020.pdf -----> Certified Acres<----- The differences observed between the parcel acreage and the acreage of certified land for six properties is due to: 1) CH5\_Brannon parcel had a typo in the ATF database. This error has been corrected changing 1121 acres to 2080 acres. \*Updated ATF record shows database was updated Folder: ATF Certification Filename: CH5\_brannon\_ATF Cert\_VT-1750\_corrected acres.pdf 2) How the certified acres are calculated: In Vermont, the "grand list acreage" from the that are based on deeds and parcel maps that predated remote sensing and GIS maps. Acreages for the carbon project was determine by GIS using digitized parcel boundaries. For the parcels participating in the Cold Hollow Carbon IFM the difference between "grand acreage" used in town records (<https://maps.vcgi.vermont.gov/ParcelViewer/>) and GIS-calculated parcel size (gross) ranges from -146 acres to +187 acres. ATF certified acres are based on forest management plans for each parcel created for enrollment in Vermont's UVA program. The UVA program uses "grand list acreage" from town/tax records as a starting place and then makes adjustments for presence of wetlands and waterbodies, land surrounding houses and structures, transportation infrastructure, maple sugar production facilities, etc. The discrepancy between the "grand list acreage" and GIS calculated acreage accounts for the discrepancy the auditors observed between the certified acres and parcel size as measured with GIS.

**Auditor Response 2:** The audit team confirmed the email indicating ACR's approval of the UVA program as a long-term forest management program (ACR\_emailchain\_VTUVA program). The audit team confirmed that all entities are in UVA program by reviewing the confirmation letters from the county foresters (e.g., VT\_CurrentUseLetter\_LamoilleCO\_20192020.pdf) along with the records of VT parcel owners (<https://maps.vcgi.vermont.gov/ParcelViewer/>). However the forested area of one of the parcels (Haible) is larger than the area that was certified under the UVA program and the ATFS certification. The methodology requires that the owner "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" therefore the certification " must cover all entity owned lands with active timber management programs," which has not been demonstrated for the Haible property. This finding remains open.

**Project Personnel Response 3:** [This finding was addressed outside of this workbook]

**Auditor Response 3:** The client provided updated ATFS certification documents showing that the 729 acres of the Haible property have been ATFS certified. The total forested area that Haible owns (both within and outside of the project) is approximately 709 acres, thus the ATFS certification more than covers all the Haible forest land. This finding has been closed.

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

#### **NIR 16 Dated 31 Aug 2020**

**Standard Reference:** ACR Standard v6.0; 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; Improved Forest Management V1.3- Errata & Clarification 7.27.2020

**Document Reference:** CHC11\_ERTs\_20200630.xlsx; Cold\_Hollow\_ACR519\_GHGPlanv2\_20200724.pdf

**Finding:** The ACR Standard states in section 2.B.3 that "The Project Proponent shall reduce, as far as is practical, uncertainties related to the quantification of GHG emission reductions or removal enhancements."

Section E5 of the GHG Plan States "Methodology calculations and estimates of net reductions and removals enhancements are detailed in the tables below. Note that (2019) refers to starting stocks at the June 20, 2019 project start date; the first Reporting Period is June 20, 2019 to May 20, 2020, the second reporting period will be May 21, 2020 to June 19, 2021, and all subsequent stock values represent stocks on June 19th of the corresponding year. All change values apply to the annual interval ending June 19th of the corresponding year (i.e. project year 2022 accounts for the change taking place between June 20, 2021, and June 19, 2022)."

The first reporting period is from 6/20/2019 to 5/20/2020 thus it is less than a year. For the baseline scenario, the percentage of the days that Reporting period 1 and reporting period 2 cover were applied to the baseline live tree and dead tree carbon stocks (workbook CHC11\_ERTs\_20200630.xlsx, sheet Tab E5.1,.2, cells D8:D9, E8:E9). However, the percentage of reporting period days were not applied to the project scenario live tree and dead tree carbon stocks (cells D19:D20, E19:E20). The audit team requests additional information regarding why the project scenario carbon stocks was not adjusted according to the duration of each reporting period.

**Project Personnel Response:** The project scenario has been updated to reflect partial year reporting periods. See CHC11\_ERTs\_20200903.xlsx

**Auditor Response:** The audit team reviewed the updated ERT workbook (CH11\_ERTs\_20200930.xlsx) and confirmed that the project scenario was updated to reflect the less than 1 year of reporting. This finding is closed.

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

**NCR 17 Dated 31 Aug 2020**

**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:** CHC11\_ERTs\_20200630.xlsx; Cold\_Hollow\_ACR519\_GHGPlanv2\_20200724.pdf

**Finding:** Section F3 of the methodology indicates that equation 19 must be applied to calculate the "total project uncertainty in year t, in %." This section then indicates that "If calculated UNC in equation (19) is <10%, then UNC shall be considered 0% in equation (20)." In the ERT workbook, sheet "Tab E5.1, .2" row 26, total project uncertainty (equation 19) is shown as 0.0% for all years. Likewise, section E4. of the GHG Plan indicates that the Overall Total Uncertainty is 0.0%. This is not in conformance with the methodology.

**Project Personnel Response:** Total uncertainty is 0% because that is the value equation 19 returns.

This is the formula from Excel file CHC11\_ERTs\_20200630.xlsx: =IF(ABS(SQRT((D17\*\$C\$37)^2 + (D25\*D38)^2)/(D17+D25))<0.1,0,ABS(SQRT((D17\*\$C\$37)^2 + (D25\*D38)^2)/(D17+D25)))

**Auditor Response:** The audit team reviewed the updated ERT workbook (CH11\_ERTs\_20200930.xlsx). However, equation 19 is still not in conformance with the methodology. In section F3 of the methodology it states "If calculated UNC in equation (19) is <10%, then UNC shall be considered 0% in equation (20)." [underlined for emphasis]. The audit team agrees that the value of UNCt is <10%, however, this does not indicate that the value of UNCt as calculated in equation 19 is equal to 0.0%. As the methodology states, this rather means that the value of UNCt in equation 20 shall be considered 0%. Thus, while the value of 0% for UNCt is applied correctly in equation 20, the total project uncertainty reported as 0% (in the ERT workbook and GHG plan) is not in conformance with equation 19 of the methodology. This finding remains open.

**Project Personnel Response 2:** ERT spreadsheet was updated to report total uncertainty in CHC11\_ERTs\_20201202.xlsx

**Auditor Response 2:** The audit team confirmed that the total uncertainty has been updated accordingly in both the ERT workbook and in section E.4 of the GHG Plan. This finding has been closed.

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

**NIR 18 Dated 31 Aug 2020**

**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:** CHC11\_ERTs\_20200630.xlsx; Cold\_Hollow\_ACR519\_GHGPlanv2\_20200724.pdf

**Finding:** Section C5 of the methodology states "The uncertainty in the baseline scenario should be defined as the square root of the summed errors in each of the measurement pools. For modeled results use the confidence interval of the input inventory data. For wood products and logging slash burning emissions use the confidence interval of the inventory data. The errors in each pool shall be weighted by the size of the pool so that projects may reasonably target a lower precision level in pools that only form a small proportion of the total stock." This section then indicates that equation 10 is used to calculate the "Percentage uncertainty in the combined carbon stocks in the baseline." In the ERT workbook, sheet "Tab E5.1, .2", cell C37, the baseline uncertainty is calculated correctly using equation 10. However, in section E4 of the GHG Plan, it indicates "Overall Baseline uncertainty = 0.0%." The audit team requests additional information regarding why different Baseline uncertainties are reported in the ERT workbook and the GHG plan.

**Project Personnel Response:** The language in the GHG plan has been updated. Filename: Cold\_Hollow\_ACR519\_GHGPlanv4.pdf

**Auditor Response:** The audit team confirmed that the baseline uncertainty reported in section E4 of the GHG plan (Cold\_Hollow\_ACR519\_GHGPlanv3.pdf) matches the baseline and uncertainty as calculated in the ERT workbook. This finding is closed.

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

**NIR 19 Dated 31 Aug 2020**

**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:** CHC11\_ERTs\_20200630.xlsx; Cold\_Hollow\_ACR519\_GHGPlanv2\_20200724.pdf

**Finding:** Section D8 of the methodology states "The uncertainty in the project scenario should be defined as the square root of the summed errors in each of the measurement pools. For modeled results use the confidence interval of the input inventory data. For wood products with measured and documented harvest volume removals use zero as the confidence interval. For estimated wood product removal use the confidence interval of the inventory data. The errors in each pool can be weighted by the size of the pool so that projects may reasonably target a lower precision level in pools that only form a small proportion of the total stock." This section then indicates that equation 18 must be used to calculate the "Percentage uncertainty in the combined carbon stocks in the project in year t." In the ERT workbook, sheet "Tab E5.1, .2" row 38, the annual project uncertainty is calculated correctly using equation 18. However, in section E4 of the GHG Plan, it indicates "Overall Project uncertainty = 0.0%." The audit team requests additional information regarding why different project uncertainties are reported in the ERT workbook and the GHG plan.

**Project Personnel Response:** The language in the GHG plan has been updated. Filename: Cold\_Hollow\_ACR519\_GHGPlanv4.pdf

**Auditor Response:** The audit team confirmed that the project uncertainty reported in section E4 of the GHG plan (Cold\_Hollow\_ACR519\_GHGPlanv3.pdf) matches the project and uncertainty as calculated in the ERT workbook. This finding is closed.

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



**NCR 20 Dated 31 Aug 2020**

**Standard Reference:** ACR Standard v6.0; American Carbon Registry Monitoring Report, version 2

**Document Reference:** CHC\_RP1\_MonitoringReportv2\_20200724.pdf

**Finding:** The ACR Project Monitoring Report template instructions states "The American Carbon Registry (ACR) requires that a Project Monitoring Report be provided to the verification body at each Project verification. To facilitate this requirement, use of this monitoring report template is required. Please follow all instructions found within each section and provide all requested information. If a field is not applicable, mark it as "N/A"." Section II.10 of the Monitoring Report Template is to list the "ACR-Approved Methodology Title and Version." In section II.10 of the Monitoring Report, "Cold Hollow Carbon – Improved Forest Management Project" is listed as the ACR methodology. This is not in conformance with the standard.

**Project Personnel Response:** Corrected. Filename: CHC\_RP1\_MonitoringReportv3.pdf

**Auditor Response:** The audit team reviewed the updated monitoring report (v3) and confirmed that the methodology is listed correctly. This finding is closed.

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

**NCR 21 Dated 31 Aug 2020**

**Standard Reference:** ACR Standard v6.0; American Carbon Registry Monitoring Report, version 2

**Document Reference:** CHC\_RP1\_MonitoringReportv2\_20200724.pdf

**Finding:** The ACR Project Monitoring Report template instructions states "The American Carbon Registry (ACR) requires that a Project Monitoring Report be provided to the verification body at each Project verification. To facilitate this requirement, use of this monitoring report template is required. Please follow all instructions found within each section and provide all requested information. If a field is not applicable, mark it as "N/A"." Section II.9 of the Monitoring Report Template is to list the "Relevant ACR Sector Standard(s) and Versions(s)." In section II.9 of the submitted Monitoring Report, "Improved Forest Management Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal U.S. Forestlands v.1.3" is listed as the ACR Sector Standard. This is not in conformance with the standard.

**Project Personnel Response:** Corrected. Filename: CHC\_RP1\_MonitoringReportv3.pdf

**Auditor Response:** The audit team reviewed the updated monitoring report (v3). However, the ACR Forest Carbon Project Standard V2.1 is listed in section II.9. However, Appendix A of the ACR Standard v6 states "The ACR Requirements for AFOLU-Based Carbon Projects supersedes the ACR Forest Carbon Project Standard version 2.1 and includes updates, clarifications for consistency, and removal of redundancies with the ACR Standard and approved methodologies." Thus listing of the Forest Carbon Project Standard in section II.9 in the monitoring report is not in conformance with the standard. This finding remains open.

**Project Personnel Response 2:** 11.9 of the monitoring report was update to ACR Standard V6.0. Filename: CHC\_RP1\_MonitoringReportv4\_20201214.pdf

**Auditor Response 2:** The audit team confirmed that section II.9 was updated accordingly and in conformance. This finding has been closed.

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

**NCR 22 Dated 31 Aug 2020**

**Standard Reference:** ACR Standard v6.0; acr-standard-summary-of-changes-v6.pdf

**Document Reference:** Cold\_Hollow\_ACR519\_GHGPlanv2\_20200724.pdf

**Finding:** The project is under the ACR Standard version 6.0. There is a summary of changes from version 5.1 to 6.0 at <https://americancarbonregistry.org/carbon-accounting/standards-methodologies/american-carbon-registry-standard/acr-standard-summary-of-changes-v6.pdf>. One change is the following: "Rewording of chapter header to read "Environmental and Community Impacts" and addition of requirement to document in the GHG Project Plan positive impacts toward Sustainable Development Goals (SDG)." On page 48 and in the table of contents of the GHG Plan section F is labeled as "Community & Environmental Impacts."

**Project Personnel Response:** Corrected. Filename: Cold\_Hollow\_ACR519\_GHGPlanv4.pdf

**Auditor Response:** Confirmed that the header for section F of the GHG plan (Cold\_Hollow\_ACR519\_GHGPlanv3.pdf) was updated to read "Environmental and Community Impacts". This finding is closed.

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

**NCR 23 Dated 31 Aug 2020**

**Standard Reference:** ACR Standard v6.0;

**Document Reference:** Cold\_Hollow\_ACR519\_GHGPlanv2\_20200724.pdf

**Finding:** Section 8.A of the ACR Standard states "In the GHG Project Plan Project Proponents shall also identify and describe the Sustainable Development Goals to which those impacts are aligned and positively contribute." The audit team has confirmed that these Sustainable Development Goals are listed and described accordingly in the Monitoring Report. However, these are not detailed in the GHG Plan as required by the standard.

**Project Personnel Response:** Corrected. Filename: CHC\_RP1\_MonitoringReportv3.pdf

**Auditor Response:** Confirmed that section F of the GHG plan (Cold\_Hollow\_ACR519\_GHGPlanv3.pdf) now contains the sustainable development goals in Table F1.2. This finding is closed.

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

**NIR 24 Dated 28 Aug 2020**

**Standard Reference:** ACR Standard v6.0; American Carbon Registry Monitoring Report, version 2

**Document Reference:** CHC\_RP1\_MonitoringReportv2\_20200724.pdf; CHC11\_ERTs\_20200630.xlsx;

**Finding:** Section 6.2 of the Monitoring Report requires the following: "Provide a summary calculation of the buffer pool calculation; attach as an appendix, a spreadsheet documenting buffer pool quantification." A value of 8,924 is listed as the reporting period 1 buffer pool contribution in the monitoring report. However, later in section 6.5 of the monitoring report as well as in the ERT workbook (sheet Tab E5.1,.2, cell D35) a value of 10,742 is listed as the buffer deduction. It is unclear which value is the correct or intended buffer pool contribution. The audit team requests additional information.

**Project Personnel Response:** Corrected. Filename: CHC\_RP1\_MonitoringReportv3.pdf

**Auditor Response:** The audit team confirmed that section 6 of the Monitoring Report (v3) has been updated so that the buffer pool reported throughout the report matches the buffer pool calculations in the ERT workbook. This finding is closed.

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

**NIR 25 Dated 31 Aug 2020**

**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:** Cold\_Hollow\_ACR519\_GHGPlanv2\_20200724.pdf

**Finding:** Section C1 indicates "Required inputs for the project NPV calculation include the results of a recent timber inventory of the project lands, prices for wood products of grades that the project would produce, costs of logging, reforestation and related costs, silvicultural treatment costs, and carrying costs." It later states that "Consideration shall be given to a reasonable range of feasible baseline assumptions and the selected assumptions should be plausible for the duration of the baseline application."

Section E1 of the GHG Plan states that "The NPVs were based on published stumpage data, by the Vermont Dept. of Forests

[[https://fpr.vermont.gov/sites/fpr/files/Forest\\_and\\_Forestry/Forest\\_Based\\_Business/Library/stmpg\\_18Q2\\_RPT.pdf](https://fpr.vermont.gov/sites/fpr/files/Forest_and_Forestry/Forest_Based_Business/Library/stmpg_18Q2_RPT.pdf)]. This data is provided by species, and by three regions. The Northern region was used." Table E1.2 then shows the stumpage by species. It indicates a value of \$10 for species including aspen, American Hornbeam, American Basswood, beech, American elm, apple species, American Mtn-Ash, tamarak, and striped maple. Furthermore balsam fir is listed as \$80.

The audit team independently reviewed the 2nd quarter 2018 stumpage report using the link provided and did not see any species in the North region with a stumpage value of \$10. Likewise, the spruce/fir species has a stumpage of \$105. The audit team requests additional information regarding how stumpage values were applied from the VT 2nd Quarter 2018 stumpage report and how they adhere to the principle of conservativeness.

**Project Personnel Response:** (1) The GHG plan was edited to read "The NPVs were based on \*\*conservative estimates\*\* of published stumpage data by VT dept of forests." Filename: Cold\_Hollow\_ACR519\_GHGPlanv4.pdf (2) The ten species at \$10 per thousand board feet equates to \$0.85 per ton, which is a very conservative estimate to the values in the stumpage pdf for pulp. These are very minor species in the forest, and their minor value has no impact on the timing of a plots baseline harvest. See <http://extension.msstate.edu/publications/hardwood-timber-volume-weight-conversions> for conversion of board feet to tons. (3) The assignment of \$80/mbf to balsam fir was a mistake. However, it is also a minor species that makes up less than 0.14% of the first decades harvest, and its minor value has no impact on the timing of a plots baseline harvest.

**Auditor Response:** The audit team confirmed that the GHG plan (V3) was updated accordingly. Likewise, we confirmed that the stumpage values for the pulpwood species listed at \$10/mbf is conservative when considering the price per ton. As for the Balsam fir, the stumpage price reported by the project team is lower than the actual price in the harvest reports, thus results in a conservative estimate of NPV. The audit team confirmed that the inventory contains 41 live balsam fir trees representing 2.7% of all trees in the inventory, and only 1.4% of all harvests in the first decade as demonstrated in the workbook CHC22\_1stDecade\_BFcut\_20210402.xlsx. The audit team agrees with the assessment that the mistaken price of balsam fir has a negligible effect on the NPV and the harvest rates in the baseline. This finding has been closed.

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

**NIR 26 Dated 31 Aug 2020**

**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:** CHC09\_Baseline\_LP\_20200630.xlsx

**Finding:** Section A1 of the methodology defines NPV as "The difference between the present value of cash inflows and the present value of cash outflows over the life of the project." Later section C1 indicates "Required inputs for the project NPV calculation include the results of a recent timber inventory of the project lands, prices for wood products of grades that the project would produce, costs of logging, reforestation and related costs, silvicultural treatment costs, and carrying costs. Project Proponents shall include roading and harvesting costs as appropriate to the terrain and unit size."

The NPV for the baseline scenario is calculated in the Cut\_STMPG sheet in the CHC09\_Baseline\_LP\_20200630.xlsx workbook. In row 4, present value for the revenue of timber is calculated. However, it is unclear if and how the costs of timber harvesting (silvicultural treatments, carrying costs, logging, reforestation, etc) were included in the calculation of NPV. The audit team requests additional information.

**Project Personnel Response:** The stumpage values by definition are net of logging costs and taxes. The "Silvicultural Guide for Northern Hardwoods in the Northeast" discusses relying on natural regeneration, at zero cost. No net cost activities are modeled, such as sapling thinning or pest control. The project area is comprised of multiple small blocks meaning a developed road is almost always within skidding or forwarding distance, negating the need to model the building of logging roads. Carrying costs have been subtracted from the NPVs in Table C3.1. in the form of annual property taxes, using 1.83% on a standard value of \$151/acre (<https://www.vermontwoodlands.org/guide-to-current-use/>)

**Auditor Response:** The audit team confirmed that table C3.1 has been updated and shows a lower NPV, presumably as a result of carrying cost deductions. However, in the workbook CH09\_Baseline\_LP\_20200630.xlsx, sheet NPVs, Tab E1.2, the calculations have not been updated. In order to confirm that the carrying cost deductions were applied correctly, the audit team requests additional demonstration of the final NPV calculations. This finding remains open.

**Project Personnel Response 2:** Carrying costs were added to NPV calc. Filename: CHC09\_Baseline\_LP\_20201202.xlxb

**Auditor Response 2:** The audit team reviewed the workbook CHC09\_Baseline\_LP...xlsx and confirmed that carrying costs are in fact being subtracted from the NPV of the baseline scenario. This finding has been closed.

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

**NIR 27 Dated 27 Jan 2021**

**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:** CHC18\_NoCut\_LP\_20210119.xlsx  
CHC11\_ERTs6\_20210119.xlsx

**Finding:** In the workbook CHC18, sheet FVS\_C\_AG\_DEAD, you calculate the annual percent change of 10.9% in cell F3. However, this calculation appears to be referencing the CutMBF sheet from a different, previous workbook. Given that the cutMBF was zero (no cut scenario), it seems unlikely that this percent change is so high. The audit team requests clarification regarding how this calculation was carried out and whether it is referencing the correct CutMBF sheet.

**Project Personnel Response:** [Finding addressed outside of this workbook]

**Auditor Response:** The workbook CHC18, sheet FVS\_C\_AG\_DEAD was updated (CHC18\_NoCut\_LP\_20210127.xlsx) to calculate the annual percent change by referencing the CutMBF in that workbook. This resulted in a much lower annual percent change in deadwood (roughly 3%) given a no-cut scenario. We confirmed this calculation is correct and that the updates have been carried through to the ERT workbook (CHC11\_ERTs6\_20210127.xlsx) and the monitoring report. This finding has been closed.

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

**NCR 28 Dated 11 Jan 2021**

**Standard Reference:** ACR Standard v6.0

**Document Reference:** CHC\_RP1\_MonitoringReportv4\_20201214

**Finding:** Chapter 6.E of the ACR Standard states "Project monitoring reports shall be completed for each verified reporting period using the template for Project Monitoring Report available at [www.americancarbonregistry.org](http://www.americancarbonregistry.org)." The monitoring report submitted uses Version 2 of the ACR Monitoring Report Template. In April 2020, ACR updated the template to Version 3. Thus the project has not employed the most up to date version of the template.

**Project Personnel Response:** [Finding addressed outside of this workbook]

**Auditor Response:** Confirmed that an updated monitoring report using Version 3.0 of the template has been submitted. This finding is closed.

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

**NIR 29 Dated 11 Jan 2021****Standard Reference:** ACR Standard v6.0**Document Reference:** ownership boundary\_20200709.shp; CH9\_Mattina, Mattina\_2018 Forest Stand Map

**Finding:** Table 2 in Chapter 3 of the ACR standard states "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)." In reviewing the VT Parcel Viewer to check the UVA acreage, it shows that the small southeastern corner is not included under the Mattina ownership, but rather is under the Lagasse ownership (which is not included in the project). We also found a discrepancy between the mapping of the southwestern portion of the Mattina parcel as compared to the VT Parcel viewer. The audit team requests more information and evidence that the mapping of the Mattina parcel in the project is accurate.

**Project Personnel Response:** [Finding addressed outside of this workbook]

**Auditor Response:** In an email on 11 January 2021, the project proponent indicated that "The property viewer for Vermont is correct! That 0.25 acre corner is owned by the adjacent parcel. We are updating the project area maps now and will send you updates soon. " The audit team confirmed that the project area maps, shapefile, and corresponding calculations have been updated such that this parcel has been removed. This finding has been closed.

With regard to the western portion of the parcel in question, in an email on 13 January 2021, the project proponent indicated that The audit team reviewed the deed in greater detail and confirm that these 25 acre parcel is under project ownership. This is one of several discrepancies with the VT Parcel Viewer. In further review of the application, the audit team found strange overlapping boundaries and other missing or incorrect mapping, suggesting that this VT Parcel Viewer is not a high quality source of landowner mapping in the state. This finding has been closed.

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

**NIR 30 Dated 27 Jan 2021**

**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:** CHC07\_Inventory\_Sound\_20210119

**Finding:** The project area was stratified by ownership and all the other carbon calculations have been subsequently stratified by ownership, however the calculation of live and dead tree defect was not stratified. The audit team requests a justification regarding why this parameter was not stratified.

**Project Personnel Response:** [Finding addressed outside of this workbook]

**Auditor Response:** In an email on 27 January 2021, the project proponent indicated that "I did not stratify by owner b/c the defect is very low and mostly random across owners. If strata had been biologically based, such as species, age or site class, then looking at defect by strata would make sense." The audit team confirmed that the defect is low across owners, and that the difference in defect between stratifying or not stratifying by ownership is negligible and not material. This finding has been closed.

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