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Validation and Verification Report

ACR781 Nuveen Upper Piedmont Conservation Area

August 13, 2024

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1 INTRODUCTION

Nuveen Natural Capital, LLC (Nuveen) contracted with Ruby Canyon Environmental, Inc. (RCE) to perform the validation and verification of the ACR781 – Nuveen Upper Piedmont Conservation Area (Project) for the reporting period of January 19, 2022 – August 30, 2022 and a crediting period of January 19, 2022 – January 18, 2042 under the American Carbon Registry (ACR) program. RCE was acquired by TÜV SÜD America, Inc. (TÜV SÜD) in 2023. RCE will be used throughout this report. SIG Carbon and US Forest Capital (SIG/USFC) supported the project proponent, Nuveen, during the course of this validation and verification. This report is documentation of validation and verification activities that RCE performed for the Project. For the validation, RCE reviewed the project information as described in the Project Plan "Nuveen Upper Piedmont Conservation Area Greenhouse Gas Plan" dated August 9, 2024. For the verification, RCE ensured that the GHG assertion was materially correct, that the data provided to RCE was well documented, and that if SIG/USFC made any material errors, that these errors were corrected.

RCE worked with Forest Resource Solutions and Technologies (FRST) to complete this validation and verification.

1.1 OBJECTIVES

The objectives of the validation are to evaluate:

- Conformance to the ACR Standard and the approved ACR Methodology for Improved Forest Management (Methodology);
- Reported GHG baseline, ex ante estimated project emissions and emission reductions/removal enhancements, leakage assessment, and impermanence risk assessment and mitigation (if applicable).
- GHG emissions reduction project planning information and documentation in accordance with the applicable ACR-approved methodology, including the project description, physical infrastructure, activities, technologies, and processes of the Project, baseline, eligibility criteria, monitoring and reporting procedures, process information, source identification/counts, operational details, and quality assurance/quality control (QA/QC) procedures.

The objectives of the verification are to evaluate:

- The emission reductions and to ensure that the assertion is materially correct;
- The data provided to RCE can be documented and if errors or omissions are detected, they be corrected.

RCE retains all data and documents for seven years after the end of the project reporting period or for the duration required by ACR, whichever is longer.

1.2 PROJECT BACKGROUND

The Project is located on 51,326 acres of piedmont vegetative cover types in North and South Carolina. The Project is located in Fairfield, Darlington, Lee, Union, Chester, and York Counties in South Carolina,

and Anson, Richmond, Hoke, Montgomery, and Moore counties in North Carolina. Nearby population centers are Rock Hill, Columbia, and Spartanburg.

The primary forest types found on the property are Pine and Mixed Hardwoods. The Project area has been actively managed for timber. Management decisions of the forest focus on sustainable, natural forest growth and forest maintenance for forest health. The Project ensures long-term sustainable management of the forests, which could otherwise undergo significant commercial timber harvesting.

1.3 Responsible Party

Project Proponent
Nuveen Natural Capital, LLC
101 SW Main St, Suite 1500
Portland, OR 972014
David Miller, Managing Director

Technical Consultant
US Forest Capital, LLC
1130 SW Morrison St, Suite 300
Portland OR 97205
Tom Tuchmann, President
503-220-8103

Other Parties
SIG Carbon
2529 Yolanda Ct.
Pleasanton, CA 94566
Tim Kramer, Carbon Domain Director
802-999-6986

1.4 Validation and Verification Team

Lead Validator and Verifier: Zach Eyler
Professional Forester: Christian Eggleton, FRST
Forest Carbon Project Manager: Tim Facemire, FRST
Forestry Analysts: Katherine Benedict, FRST
Internal Reviewer: Bonny Crews

1.5 Validation and Verification Criteria

1.5.1 Validation and Verification Standards, Guidelines, and Tools

- ACR Standard, Version 8.0 (July 2023)
- ACR Validation and Verification Standard Version 1.1 (May 2018)

- 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, April 2018
- Errata and Clarifications - 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, January 1, 2024
- ACR Tool for Risk Analysis and Buffer Determination, v1.0
- ISO 14064-3:2006 "Greenhouse gases – Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions"

1.5.2 Level of Assurance

The verification was conducted to a reasonable level of assurance.

1.5.3 Materiality

The verification was conducted to ACR's required materiality threshold of +/-5% of the GHG project's emissions reductions or removal enhancements.

2 VALIDATION AND VERIFICATION PROCESS

As the first step in validation/verification activities, the Lead Validator/Verifier developed a Validation/Verification Plan to be followed throughout the validation and verification. The plan included the following activities:

- RCE completed a COI form on August 23, 2022 to identify any potential conflict of interest with the Project or Project Developer. The COI form was approved by ACR on August 25, 2022.
- RCE, SIG, and US Forest Capital held a validation/verification kick-off meeting on August 31, 2022. During the kick-off meeting RCE reviewed the validation/verification objectives and process, reviewed the schedule, and submitted an initial document request.
- RCE performed a strategic review and risk assessment of the received data and support documents to understand the scope and areas of potential risk in the GHG emissions reductions.
- RCE developed a risk-based sampling plan based upon the strategic review and risk assessment. The validation/verification plan and sampling plan were used throughout the process and were revised as needed based upon additional risk assessments.
- The validation/verification team conducted the site visit to the Project to verify the inventory quality and forest management practices from October 3 to October 6, 2022. During the site visit the Verification Team performed key personnel interviews, conducted a t-test of inventory plots, conducted reconnaissance of the Project area boundary, observed elements of natural forest management, and observed harvest locations (if applicable) during and preceding the reporting period.
    - The site visit was attended by the following verification team personnel:
        - FRST:
            - Tim Facemire
            - Katherine Benedict

    - During the site visit, the Verification team met with the following individuals:
        - SIG
            - Eric Jaeschke
            - Ethel Wilkerson
        - Green Timber Consulting
            - Justin Miller
- RCE performed a risk-based desktop review of the submitted validation/verification documents. The desktop review included an assessment of the GHG calculation methods and inputs, source data completeness, GHG management and monitoring systems and eligibility documentation.
- RCE conducted interviews and had conversations with Project personnel during the verification. Personnel interviewed include:
    - Eric Jaeschke – SIG
- RCE submitted requests for corrective actions, additional documentation, and clarifications as necessary to SIG throughout the validation/verification.
- RCE's internal reviewer conducted a review of the validation/verification sampling, report, and statement.
- RCE issued a final validation/verification report, verification statement, and List of Findings.
- RCE held an exit meeting with SIG/USFC.

3 VALIDATION AND VERIFICATION FINDINGS

3.1 PROJECT BOUNDARY AND ACTIVITIES

The Project is located on 51,326 acres in the piedmont of North and South Carolina. GHG emission reductions for the Project are quantified by comparing actual onsite carbon stocks against modeled baseline onsite carbon stocks and baseline carbon in harvested wood products. The difference in these Project and baseline carbon stocks year over year is the basis for calculating the Project's primary goal of maintaining and enhancing forest GHG pools.

The Project's temporal boundary is the crediting period from January 19, 2022 – January 18, 2042.

3.2 GHG SOURCES, SINKS, AND RESERVOIRS

Table 1 shows the GHG emission sources included in the project boundary based on the Methodology. RCE confirmed that the Project Plan appropriately identifies the offset project boundary and includes all relevant SSRs.

Table 1. GHG Emissions Sources

Source	GHG	Description
Above-ground biomass	CO_2	Major carbon pool for project activity
Below-ground biomass	CO_2	Major carbon pool for project activity
Standing dead wood	CO_2	Major carbon pool in unmanaged stands for the project activity
Harvest wood products	CO_2	Major carbon pool for project activity
Market Effects	CO_2	Reductions in project outputs due to project activity may be compensated by other entities in the marketplace. Those emissions must be included in the quantification of project benefits.

3.3 Eligibility

3.3.1 ACR Eligibility

RCE confirmed the following ACR eligibility criteria listed in the ACR Standard, Version 8.0 by reviewing the project proponent's Project Plan, Monitoring Report, and calculations as well as other supporting documentation described throughout this report (a full list of documents reviewed is in Appendix A).

- Start Date: The project start date is January 19, 2022.
- Minimum Project Term: The minimum project term is 40 years.
- Crediting Period: The crediting period is 20 years as specified by the Methodology, January 19, 2022 – January 18, 2042.
- Real: RCE confirmed that the GHG reductions follow the ACR methodology and are verifiable.
- Emission or Removal Origin: RCE confirmed that Nuveen owns and has control over, or documented effective control over the GHG sources/sinks from which the emissions reductions or removals originate.
- Offset Title: RCE confirmed that all Project lands are owned directly by the Project Proponent (Nuveen), which holds full legal title.
- Additional: RCE confirmed that the project is additional as described in Section 3.4.
- Regulatory Compliance: RCE confirmed that the Project was in compliance with all applicable regulations.
- Permanent: RCE confirmed that the Project correctly applied the ACR Tool for Risk Analysis and Buffer Determination to account for permanence. A total risk score of 18% was confirmed.
- Net of Leakage: RCE confirmed that the Project correctly accounted for leakage per the Methodology.
- Independently Validated and Verified: RCE is a third-party validation and verification body that the project proponent has contracted to validate and verify the Project.
- Environmental and Community Assessments: RCE reviewed project impacts as described in section 3.6 of this report.

3.3.2 Methodology Eligibility

RCE reviewed the Project against the ACR Methodology eligibility and applicability conditions and confirmed the following:

- The Project is located on private forestland.
- Nuveen controls the timber rights on the forestland and can legally harvest.
- The Project will have harvesting.
- The Project is not on tribal lands.
- The Project does not use non-native species where adequately stocked native stands were converted for forestry or other land uses after 1997.
- The Project has not drained or flooded wetlands on or after the project start date.
- Nuveen owns all lands and timber rights on the Project area.
- The Project's stocking levels will increase well above the baseline conditions for the duration of the Project and by the end of the Crediting Period.

3.4 ADDITIONALITY

The Project meets the requirements for the demonstration of additionality specified by the ACR Standard and the Methodology.

3.4.1 Regulatory Surplus Test

RCE confirmed that there are no existing laws, regulations, statutes, legal rulings, or other regulatory frameworks in effect as of the start date that requires the Project activity and the associated GHG emissions reductions; thus, the Project passes the regulatory surplus test.

3.4.2 Common Practice Test

The geographic region for the Project includes the piedmont Carolinas. Throughout the geographic region, industrial forestland is heavily cut, often through clear-cutting and high-grading, and is managed to maximize net present value (NPV) of the forestland investment. The Project is a private forestland ownership. Without the Project the property would have been likely managed for more intensive timber production and small tract sales that could lead to deforestation that would resemble typical industrial forestlands in the region. With Project implementation the forestland carbon stocks will exceed the common practice found in the region.

3.4.3 Implementation Barriers Test

The Project chose to assess the financial barriers test per the ACR Standard and Methodology. RCE confirmed that carbon funding is reasonably expected to incentivize the Project's implementation. Due to the Project being implemented, Nuveen loses the ability to maximize timber harvests and maximize conversion of acres to non-forest uses during the life of the Project. SIG provided a financial assessment comparison of NPV between the baseline scenario with harvesting and the project scenario with reduced harvesting and including revenue from carbon credits. The baseline scenario NPV was significantly greater demonstrating that carbon funding is integral to the project activity.

3.5 Permanence

RCE and FRST confirmed that the Project correctly applied the ACR Tool for Risk Analysis and Buffer Determination to account for permanence. A total risk score of 18.26196% was confirmed.

RCE and FRST also confirmed that the Project committed to a 40-year agreement with ACR by signing the AFOLU Carbon Project Reversal Risk Mitigation Agreement. Through this agreement and the ACR Tool the Project adequately addressed potential causes of unintentional reversals.

3.6 Programmatic Development Approach

RCE confirmed that the Project is not utilizing a Programmatic Development Approach (PDA).

3.7 Leakage

RCE and FRST confirmed that the Project correctly accounted for leakage. The Project demonstrated that that there is no activity-shifting leakage since there is an entity-wide management certification that covers all entity owned lands. The Project also correctly accounted for market leakage per the Methodology – since wood products decreased by less than than 25%, the market leakage is 10%.

3.8 Environmental and Community Impacts

The Project Plan includes a summary of the Project activity's net positive environmental and community impacts. The Project will provide habitat protection for wildlife, plant species, and trees, water quality protection and protection from soil erosion and degradation among other benefits. The Project is not expected to cause any negative environmental impacts.

3.9 Local Stakeholder Consultation

A stakeholder consultation did not occur since the Project is held on private lands.

3.10 Monitoring Plan

The Project Plan includes a Monitoring Plan that identifies all monitored data and parameters. RCE confirmed that the monitoring parameters and approaches conform to the methods required by the Methodology. The plan includes all relevant data parameters and appropriately identifies units of measurements, data sources, methodologies, uncertainty, monitoring frequency and procedures, and QA/QC procedures. After discussions with SIG and reviews of project documents, RCE determined that the Monitoring Plan accurately reflects how Project data is monitored and recorded and there are no deviations relevant to the Project activity against the requirements of the Methodology. SIG and Nuveen implemented the monitoring plan as stated in the Project Plan during Project activities.

3.11 Baseline Scenario

The Project's baseline scenario represents aggressive industrial harvests with stricter parameters than recommended state practices, targeted to maximize net present value at a 6% discount rate for private industrial ownerships. The baseline scenario applies harvesting across the Project area as allowed by the Methodology to maximize NPV.

The Project's baseline model simulates a range of harvest types and rotation lengths based on legal requirements and simulated growth within each stratum. The objective of modeling was to determine possible timber harvests in the project area over 100-years within the framework of legal and reasonable harvest constraints.

Stands were modeled for several different prescriptions, including no-harvest, commercial thinning, single tree selection, and clearcut.

SIG utilized the USDA's Forest Vegetation Simulator (FVS) Southern variant to model harvests and yields. Growth was calibrated using tree cores taken on or near plots, which were used to assign site index values calculated from site index curves and associated equations from Carmean et al 1989. Averaged species site index values supplemented tree core data where cores did not produce a valid sample. FRST reviewed all data and calculations related to site index and confirmed that a reasonable species and site index for the region was assigned on an individual plot basis to appropriately calibrate growth. The process was confirmed to be consistently and systematically applied to each plot.

RCE reviewed the resulting baseline outputs to ensure that they reflected the modeling objectives and the legal additionality requirements.

3.12 On-site Inventory Verification Check

In preparation for and during the site visits, the Verification Team reviewed evidence necessary to verify Project inventory estimates.

The Project inventory consists of one forested stratum. The Verification Team confirmed that stocking and vegetation comprising a particular stratum were consistent with descriptions in inventory data and the Project Plan. FRST randomized the plot order and measured during the site visit.

The current inventory contains 265 permanent, fixed-radius plots. At each plot location, trees were measured in three nested plots: a large 1/20th acre plot with radius of 26.3 feet, a medium size 1/50th acre plot with radius of 16.65 feet, and a smaller 1/100th acre plot with radius of 11.78 feet. The larger plot measured all trees greater than or equal to 5 inches DBH while the medium plot was trees between 3 and 5 inches, and the smaller, nested plot measured all living trees between 1-2.99 inches.

Given this sample design and Project size, the Verification Team was required to achieve a minimum of 14 plots within the project to successfully verify inventory stocking levels. The Project did indeed pass a paired t-test with the 14 minimum plots after a reordering of the initial plot sequence due to unknown harvests impacting sampled plots.

Project Area

During the site visit, the Verification Team conducted boundary-line reconnaissance by visiting Project boundary edge lines and points, plotting edge points with GPS receivers, and determining whether there were discrepancies with the digital Project boundary files provided by SIG and the physical boundary witnessed on-site. This was done to determine the risk that Project area inaccuracies could contribute to a material misstatement in Project emission reductions. To the extent feasible, the Verification Team

confirmed that the Project area boundary was appropriate and accurate.

3.13 Project Data and GHG Emissions Reductions and/or Removals Assertion

RCE reviewed the Project Plan and Project data and calculations to ensure that appropriate equations were used in calculating baseline emissions, project emissions, and net emissions reductions.

3.13.1 Baseline Emissions

RCE and FRST confirmed that the baseline emissions were correctly calculated. Baseline emissions were calculated by reviewing input and output files for every FVS baseline modeling prescription, including forest codes, diameter breaks, merchantability thresholds, rotation lengths, regen/spouting, FVS harvest triggers on individual plots, site indices, treelists, and plotlists modeled over 100 years. The output workbook (F14) was then independently recreated in the data checks confirming proper calculation of assigned plot level outputs allocated to prescription based independently confirmed SMZ constrained and unconstrained acres. These values were then compiled into yearly baseline values for live as reflected in the ERT monitoring calculation sheet. A secondary output of this process was the 100-years of modeled harvesting based off Best Management Practices (BMP) constrained acreages which was then run through the prescribed harvested wood product calculations customized for the project region(s). These calculations were made on 40-year time intervals as well as 100-year intervals and they were appropriately incorporated into the ERT monitoring calc sheet. See more detail in Section 3.11.

3.13.2 Project Emissions

RCE and FRST confirmed that the project emissions were correctly calculated. The methods to confirm project emissions follow what is described in section 3.13.1 above.

3.13.3 Emissions Reductions

RCE verified that SIG calculated emission reductions according to relevant Methodology equations and that the methods are included in the Project Plan.

RCE and FRST assessed quantitative uncertainty of the emission reduction calculations and the methodologies and applicable data sets and sources. RCE and FRST confirmed that the Project has appropriate measures in place to address uncertainty and that the sampling error associated with the mean of the estimated emission reductions/removals was less than +/-10%. RCE and FRST also confirmed that all defaults, projections, and other data used were correct and consistent with expectations.

RCE recalculated emission reductions for the first reporting period according to the equations defined in the Methodology and the Project Plan and found the Project assertion to be free of material misstatement.

3.14 Leakage Assessment

RCE and FRST recalculated and confirmed the leakage for the project in accordance with the ACR Validation and Verification Standard version 1.1 section 6.F and 9.H.

4 VALIDATION AND VERIFICATION RESULTS

RCE developed a combined List of Findings for both the validation and verification. The List of Findings noted all corrective action requests (CARs), non-material findings (NMs), additional documentation requests (ADRs), and clarification requests (CRs). SIG appropriately responded to all items in the List of Findings. The List of Findings is provided as Appendix B.

5 VALIDATION AND VERIFICATION CONCLUSION

RCE conducted a risk-based analysis of the Nuveen Upper Piedmont Conservation Area GHG assertion including a strategic review of the Project data and evidence. Based upon the processes and procedures and the evidence collected, RCE concludes that the Project emission reductions during the reporting period January 19, 2022 through August 30, 2022 can be considered:

- GHG-related activity: avoided conversion of forest land on the Project area
- GHG statement: 1/19/2022 – 8/30/2022
- Criteria
    - In conformance with ACR's 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, April 2018 and ISO 14064-3:2019 standards,
    - Without material discrepancy, and
    - Verified to a reasonable level of assurance.

The data and information supporting the GHG statement were historical in nature.

RCE has ensured Nuveen's effective use of controls related to the GHG statement. RCE concludes that there is sufficient and appropriate evidence to support Nuveen's GHG statement and is issuing an Unmodified Opinion.

RCE confirms that the GHG statement has been prepared:

- Without material discrepancy,
- In accordance with all applicable criteria, and
- Verified to a reasonable level of assurance.

The verified emission reductions are listed in Table 2. While RCE confirmed the emission reduction calculations and the total emission reductions to be correct and within the materiality threshold, the values in Table 2 are summary data only with significant figures rounded for summary purposes in this report.

Table 2. Total ERTs

ALL GHG PROJECTS		AFOLU & GEOLOGIC SEQUESTRATION PROJECTS ONLY[1]			
VINTAGE	TOTAL EMISSION REDUCTIONS / REMOVALS	BUFFER POOL / RESERVE ACCOUNT CONTRIBUTION	NET EMISSION REDUCTIONS / REMOVALS	REMOVALS SUBSET (IF APPLICABLE)	EMISSION REDUCTIONS SUBSET (IF APPLICABLE)
2022	387,266	72,108	315,158	116,292	198,866
TOTALS*	**387,266**	**72,108**	**315,158**	**116,292**	**198,866**
*Totals may not sum due to rounding					

Note: Totals might not sum due to rounding.

Lead Validator and Verifier Signature

Zach Eyler

Internal Reviewer Signature

Bonny Crews

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

APPENDIX A—DOCUMENTS REVIEWED

1. _PC449_TreeCommercialStatus_2022_06_27
2. ACR781_Nuveen_GHGPlan_series
3. ACR781_Nuveen_GHGPlan_20240809_SignedNNC
4. ACR781_Nuveen_RP1_MR_20240809_SignedDM
5. ACR781-SDG-Cont-Report-AFOLU-Project-v1.0-1_20240715
6. ACR781_Environmental and Social Impact Assessment Report_20240807
7. Nuveen Natural Capital Global Sustainability Policy_August 2024
8. TIAA_code_of_conduct_August 2024
9. PC449_F14_ERTs_20240607_External
10. ACR781_Nuveen_RP1_series
11. ACT_GHG_Missing_HUAs_SHP shapefile
12. ACT_Harv_Unit_SHP shapefile
13. Certificate US014672 # Item 1-6FGB4QO (002)
14. CNC Deeds
15. Copy of 2022-2023 Silv Cost Worksheet
16. CostDataConfidential
17. GreenWood Resources US3858849-SF69 acreage report-S1 (002)
18. GTCF-Greenwood_CarbonInventoryAgreement_redacted
19. GWR_Baseline_supportingFile_F17_series
20. GWR_Baseline_with_LPoutputs_550K_series
21. GWR_Carbon inventory manual_ 20220118
22. GWR_Development_seriesshapefile
23. GWR_DevelopmentPlots_series shapefile
24. GWR_DraftPlotGrid890_20220110_label shapefile
25. GWR_PAbndry_20220928 shapefile
26. GWR_Plots_20220928 shapefile
27. GWR_Proj_series
28. GWR_Proj_with_LPoutputs_series
29. PC449__Quant_Files_series
30. PC449_F00_CarbonInventory_series
31. PC449_F01_GIS_series
32. PC449_F02_SiteIndexforPlots_series
33. PC449_F03_FVSin_Cruise_series
34. PC449_F03_FVSout_Cruise_1yr_series
35. PC449_F03_FVSout_Cruise_5yr_series
36. PC449_F04_FVS_AvgDefect_series
37. PC449_F05_ProjStart_PlotAvgs_series
38. PC449_F06_1Yrto5Yr_BAImults_series
39. PC449_F07_FVSout_Cruise_Calib_1yr_series
40. PC449_F08_Upgrowth_series
41. PC449_F09_RP1_PlotAvgs_series
42. PC449_F09_RP2_PlotAvgs_series

43. PC449_F10_RxLists_series
44. PC449_F11_MillSlips_RP1&2_series
45. PC449_F12_HWPcalcs_RP1_series
46. PC449_F12_HWPcalcs_RP2_series
47. PC449_F13_HarvestPlots_RP1_2023_11_29
48. PC449_F13_HarvestPlots_RP2_2023_11_29
49. PC449_F13_LP_BL550k_series
50. PC449_F14_ERTs_BL550k_series
51. PC449_F15_Monitoring_Report_series
52. PC449_F16_NPV_Calcs_series
53. PricingDataConfidential
54. SWD York REIT

APPENDIX B—LIST OF FINDINGS

Includes Corrective Action Requests, Non-Material Findings, Additional Documentation Requests, and Clarification Requests, as necessary.

CAR#, NMF#, ADR#, CR#	Finding and Date	Section of Protocol/ Methodology/ Program Document	Project Developer Response and Date	RCE response and Date	Additional Project Developer Response and Date	Additional RCE Response and Date	Additional Project Developer Response	Additional RCE Response	Additional Project Developer Response	Additional RCE Response	Additional Project Developer Response	Additional RCE Response
CAR 1	In 'PC449_F03_FVSout_Cruise_Syr_2022_08_03' on the 'FVS_SnagDet' tab there is a 'Death DBH' field which is the averaged plot level species specific dead tree DBH value that is being used to calculate Jenkins gross volume. This is proven in the screenshots captured from the FVS 'DBS User Guide' and the 'FVS FFE guide' on the 'CAR1' tab. Jenkins equation is a non-linear function (use of a natural log) that must be calculated on a specific tree level. At this time, this error impacts 6 plots.	D.5	The tab and file referenced in this finding are not used in the project start stocks or RP1 ending stocks calculations. The dead stocks for those dates in files PC449_F05_ProjStart_PlotAvgs_2022_12_11.xlsx, PC449_F09_RP1_PlotAvgs_2022_12_11.xlsx and PC449_F09_RP2_PlotAvgs_2022_12_11.xlsx are by the tree, on tab [SnagCO2]. The snag CO2 in the LP model and ERT schedule in years 5, 10, 15 and 20 are from the FVS_SnagDet table as that is the only available output that includes snag breakage, decay and fall down.	Thank you for the clarification in relation to baseline modeling. As FVS is an approved growth and yield model, this CAR only relates to initial and RP treelist quantification. Thank you for correcting this issue in the RP1_PlotAvgs document, it has been confirmed. This issue still exists in the 'SnagCO2' tab of the 'PC449_F05_ProjStart_PlotAvgs_2022_12_01' document. Please correct.	Phase 1: We have corrected this issue by calculating CO2 for dead tree on a specific tree level (PC449_F05_ProjStart_PlotAvgs_BP_SI_Corr_2023_05_01.xlsx, tab: SnagCO2_manual). We have also applied this correction on PC449_F09_RP1_PlotAvgs_BP_SI_Corr_2023_05_04.xlsx and PC449_F09_RP2_PlotAvgs_BP_SI_Corr_2023_05_08.xlsx files.	Thank you for making this correction. It has been confirmed. This item may be closed.					
CAR 2	During the site visit, it was found that there were harvests that occurred on the project area that were unaccounted for during RP1. This occurred in both t-test samples, one full clearcut, and one reduction of carbon by 75%. Full inventory and harvest knowledge from within the first RP is needed for proper verification. All harvest scale slips, shapefiles, inventory data pre and post harvest, and QA/QC of this data is requested.	D.5	More information coming soon.	Still waiting as of 4/14.	Phase 1: Tracts observed as clearcut by the verification team during the site visit are a part of the inventory and are included in the end of RP1 onsite stock estimates. The 10 plots in question were inventoried as no-tallies. Harvest data in the form of mill tracking slips is being provided. GIS data of the harvest areas can be found in folder "RP1 Harvest Shapefiles"	Other items have been generated with specific details and will be settled individually. This item may be closed.						
CAR 3	Any data inventory gathered after the end of the RP must be degrown to the RP date for quantification.	D.5	Inventory plots visited by the development team after the end of RP1 did not result in any updates to the grown forward end of RP1 treelist.	This item will be closed when harvest information related to CAR 2 is provided and this may be confirmed.	Phase 1. 10 plots were clear cut, harvest data to support was requested elsewhere and will be addressed as part of Phase 2.	These items have been confirmed as null plots. This item may be closed.						
CAR 4	In 'PC449_F11_MillSlips_RP1&2_2023_01_23' on the Pivot tab there is a split between RP based off load date. At this time, RP1 is including load dates up to and including 8/31/2022. The RP1 end date is 8/30/2022 per 'ACR781_Nuveen_RP1_20230308' Monitoring Report. If load date is the determining metric for harvest RP, this needs to be corrected. The document 'PC449_F14_ERTs_BL550k_PRJ_Constinv_L10_final_2023_01_31' also includes the reporting date as 8/31/2022 on the 'ERTs' tab.	D.2	Confirming that 8/30 is the end of RP1. Mill slips file has been updated with the correct dates (and RP2 mill slips have been removed). File name: PC449_F11_MillSlips_RP1_20230509.xlsx	Thank you for making this correction. It has been confirmed, this item may be closed.							
CAR 5	In the 'ERTs' tab of 'PC449_F14_ERTs_2023_09_13' the dates captured in E11:F11 do not match the Monitoring Report or GHG Plan. RP1 End date is 8/30/2022 as confirmed in CAR 4, and the RP2 End date is 1/18/2023 per section E5. of the 'ACR781_ Nuveen_ GHGPlan_ 20230017. The following dates in G11:Y11 need to be updated as well to match the Current crediting period referenced in the 'ACR781_ Nuveen_ RP1_MR_ 20230913' in section II.7.	B.3	Thank you for the finding. The dates in row 11 have been fixed to reflect the correct RP dates.	Thank you for making this change, it has been confirmed. This item may be closed.								
CAR 6	Upon review of the 'ERTs' tab of 'PC449_F14_ERTs_20240112' there appear to be errors: Cells E15:F15 use a hard coded value of 164,517.08812 in the equations, which is the outdated value from the 'GWR_Baseline...1_03_2024' workbook. Cells E19:Y21 is currently capturing 20 years of stocks, but is being divided by 21 in the equation. To avoid the partial RP1/RP2 confusion, the cell equation start point should correlate to the stocks at 1/18/2023 (col. F) and run until the 1/18/2042 date (col. Y) to match the ACR example.	G	Thanks for the finding. These two discrepancies have been fixed in "PC449_F14_ERTs_20240118.xlsx."	Thank you for making this change, it has been confirmed. This item may be closed.								
CAR 7	Upon review of the 'ACR781_Nuveen_GHGPlan_20240119' there are some issues. Section A3 Background Information lists 51,549.61ac. This does not match the project area. Section A3, the Subsection numbering appears to suggest A5.1, A5.2, and A5.3? Section A8, since SIG is now GLC, does this need to be updated? Section B8 H) Buffer Pool Contribution does not match the current ERT workbook. Table E4.1 needs to be updated. Any other necessary edits for small changes in Project HWPs based off remaining CRs.	G	Thanks for the findings. Multiple revisions have been made to the GHG Plan in response to the finding. This project is being developed by SIG Carbon, Greenline Climate is a separate entity. Other edits in reporting were made in line with responses to CRs.	Thank you for making these changes, they have been confirmed. This item may be closed.								
CAR 8	Upon review of the 'ACR781_Nuveen_RP1_MR_20240119' there are some issues. Section I.3. Still SIG carbon or GLC? Section IV.3 total with-project onsite stocks at the end of RP1 doesn't match. Section V.2 has 282 fixed plots?	G	Thanks for the findings. This project is being developed by SIG Carbon. Section IV.3 of the MR was updated to include Cp,HWP,t. 285 plots is the correct number and the MR Section V.2 has been updated accordingly.	Thank you for making these changes, they have been confirmed. This item may be closed.								
CAR 9	Upon review of the 'ERT_Inputs' tabs of 'GWR_Baseline_with_LPoutputs_InvWithAcreage_550K_01_12_2024' and 'GWR_Project_with_LPoutputs_InvWithAcreage_05_12_2024' it has been found that for the mill efficiencies for PW, PST, HPW, and HST are inverted in relation to pulp and saw values. PW is Pine Pulp but is being given the Softwood Saw mill eff. PST is Pine Saw but is being given the Softwood Pulp mill eff. HPW is Hardwood Pulp but is being given the Saw mill eff. HST is Hardwood Saw but is being given the Pulp mill eff. Please correct these issues in both the Baseline and Project workbooks.	D	Thanks for the observation. We have fixed the mill efficiency by product class for the baseline and project scenarios and updated all downstream materials.	Thank you for making this change, it has been confirmed. This item may be closed.								
NMF 1												
ADR 1	Please provide the missing quantification files that demonstrate the baseline modeling, along with the access databases, GHG Plan, QA/QC procedures, deeds, forest management plans, sustainable forestry certification, monitoring report, and all other pertinent documentation, particularly after incorporating the updated plots and acreages.	C.	These files are provided in the shared folder.	There are still some documents missing: PC449_F13_LP_Project_2023_01_31	The development team has provided all materials, direct and supporting, as best able in order to ensure validation/verification review. Feel free to email specific material requests and responses will be swift.	This item may be closed.						
ADR 2	Please provide the name and certification of the individual signing off on this carbon project.	B.5	The monitoring report will be signed and attested in line with ACR requirements once all the findings have been closed.	This item will remain open until the individual is confirmed.	Awaiting feedback	This item may be closed.						
ADR 3	Please provide the name(s) of the forest harvest inspector(s) responsible for harvest violations/inspection.	D.5	Anthony Wood (Spartanburg Area Manager, American Forest Management, Inc., 864.594.1150) and Chris Manus Mid-Atlantic Region Manager, American Forest Management, Inc., 704.301.0255) are responsible for harvest violations/inspections. Please allow SIG to coordinate communications with AFM.	Please provide attestations from the appropriate individuals in relation to harvest violations of BMPs, or anything that might jeopardize the SFI certification.	Attestation located in shared folder. File named ACT_Attestation_ACR-5.2.23.pdf	Thank you for the attestation, the local state agency representatives have also been contacted and no known violations were reported. This item may be closed.						
ADR 4	Please provide evidence of the 5% check cruise as required by section D2.3 of the GHG Plan.	F1	Phase 1 File named Greenwood_Compiled_AuditFile_051922.xlsx is in shared folder	Thank you for providing this evidence, it has been confirmed. This item may be closed.								
ADR 5	Please provide documentation to support the values as captured in cells I21:J22 on the 'RP1 Hrv Vols, Wts' tab of 'PC449_F12_HWPcalcs_RP1_2023_01_21'.	3.2 Step 1	Thanks for the finding. Documentation to support the source of the green wood to dry conversion can be found in the file "PC449_F12_HWPcalcs_RP1_2023_07_31.xlsx".	Thank you for providing the math that supports these values (J21,J22). Upon their review it appears that the calculation in col. BN of the 'REF_SPECIES' tab intends to reflect equation 8 from the Miles and Smith paper [=((BA35*(1-BG35/100)+(BC35*BG35/100))/100)+1] with an additional +1. Please clarify the use of +1. In Col O rows 28-32 of RP1 Hrv Vols. Wts tab, it appears that the bark volume is removed via the calculation listed above and again with reference to values in rows 38:39. Please clarify. In Col O rows 28-32 of RP1 Hrv Vols. Wts tab, it also appears that Green Tons + Bark aren't being converted to Dry tons using only the listed Moisture Percent of Green Wood and equation. Please clarify.	Thanks for the finding. We have re-worked this calculation in a newly provided worksheet.	Thank you for reworking this spreadsheet, all that remains is the third item from the last LoF edition. It has been restated here with new documentation referenced: The values captured in 'Nuveen_RP1_Harvest' col. W, which is used in the pivot table of 'RP1 Hrv Vols. Wts' is recorded in Green Tons, therefore, the ACR conversion factors in Step 1 should not be used (i.e. col. E of the 'RP1 Hrv Vols. Wt' tab of 31.5). Per Step 1, number 3 of section 3.2, 'If a weight measurement is used subtract the water weight based on the moisture content of the wood. This results in pounds of biomass with zero moisture content'. It is also important to note that these 'MC_PCT_GREEN_WOOD' per species values need to be treated in the exact same way as the Bark Ratio, and Specific Gravity values as discussed in CR 17 for the Hardwood mixture volumes.	Thanks for the finding. We have incorporated the green weight to dry weight conversion factor from 'ref_species.csv' in line with the findings.	A phone call was initiated 12/4/23.	Document sent 12/5/23.	A phone call was initiated 12/8/23.	Version 2023_12_08 issued.	Thank you for making this change, this has been confirmed. This item may be closed.
ADR 6	Please provide verified reports for all the logs sold for each RP that indicate the product categories they generated from all of the mills used. If this document does not exist, please see CR 19.	3.2 Step 3, bullets.	A mill report is not available and therefore the CARB supersection wood product classes were applied.	Thank you for this confirmation, this change has been confirmed. This item may be closed.								
ADR 7	See the tab 'ADR 7' for a scale slip sample request.	3.2	See "ACT Scale Tickets.pdf" for scans for tickets listed in ADR 7.	Thank you for providing these scale tickets, they have been confirmed. This item may be closed.								
ADR 8	Please provide a list of the regional mills and their capacity by species and type, to assess the viability of the proposed baseline harvest regime.	D.5	See "Nuveen_MillCapacityAnalysis.xlsx"	Thank you for providing this information, after review mills within the region have the capacity to meet the modeled baseline prescription. This item may be closed.								
ADR 9	Upon review of Table E1.2 from the GHG Plan, there are 13 FVS prescriptions, but at this time, only 4 .out files have been provided.	D.5	Let grow, selection, and thin type .out files were provided as these were the relevant main output files for input into the Woodstock model. Woodstock is able to manipulate individual stands as grown forward or completely depleted (clearcut).	As the provided information is valid, and the prescription checks are acceptable. This item may be closed.								
ADR 10	Upon review of the 'costAndRevenue' tab of 'PC449_F10_NPV_Calculations_08_17_2023' please provide documentation to support the values used in all fields.	D.5	The sources that were used in the analysis are a combination of project proponent internal research and subscription-based market intelligence such as RISI, and FEA.	Thank you for the additional detail. To adequately close out this item, attestations, documented discussion or analysis, screen captures, or the documents themselves are needed to confirm the values referenced.	Screenshots from the landowner data are provided for pricing and costs from confidential worksheets. Note pricing data shows actual log stumpage prices received for contracted timber sales on the asset. This is YTD data and is irrespective of the carbon project reporting period dates and/or project area. This is confidential proprietary information used for reference purposes. Hardwood sawtimber product class uses TimberMart-South. Please note the cost assumptions provided for acres and amounts differ from the carbon project.	Thank you for this additional information, it has been confirmed. This item may be closed.						
ADR 11	In 'GWR_Baseline_with_Lpoutputs_550K_09_05_2023' and 'GWR_Proj_with_Lpoutputs_09_05_2023' all of the values provided are hard-coded, but there is clearly an intermediary document between model outputs and quantified values, specifically in the 'ERT_Inputs' tabs. Please provide this document.	D.5	The outputs within the baseline and project case worksheets are products from R script data manipulation and Woodstock modeling. The R scripting is used to move along the start date treelist to generate a long term harvest schedule and create a number of scenarios for selection by the LP model subject to constraints and objective functions. The analysis workflow is treelist -> growth and yield model results -> LP model -> project or baseline case desired outcome.	A clarifying phone call was made 11/30/2023. A document is pending.	Provided via Dropbox, 'PC449_F15_550k_Baseline_Activity_Inventory_data_2023_12_1'.	Confirmed, thank you. Please provide the corresponding Project Activity document so the verifier can independently calculate the Project model stocks.	The worksheet 'PC449_F16_NPV_calculations_12_21_2023.xlsx ' now contains activity data for baseline and project cases (green tons by product class) to assist in the verification team's review.	This data already existed in the previous version of the NPV calculations, no new information has been provided in the NPV document. As previously requested, please provide a comparable 'PC449_F15_Project...' document, where there is inventory and harvest outputs for the Project model 100 year projections. This includes replicable data sets where it is a stand, per year, per prescription, per acres allocated like found in the 'PC449_F15_550k_Baseline_Activity_Inventory_data_2023_12_1' document.	Please see provided worksheet 'GWR_Project_with_LPoutputs_InvWithAcreage_1_03_2024.xlsx."	Thank you for providing this document, this item may be closed.		
CR 1	In 'Greenwood_TreeList_PTs_07012022' on the 'PLOTS' tab Plot 122 has been provided both a 'Boundary Left Azimuth' and a 'Boundary Right Azimuth' but does not currently have a TPA correction. Is this intentional?	D.2	The cruisers did not assign this as a Boundary Plot (column AG). Plot 125 has the same comment and no Azimuths.	Thank you for the clarification. This item may be closed.								
CR 2	In 'Greenwood_TreeList_PTs_07012022' on the 'TREES' tab there are 5 decay classes listed and recorded in the field, but in section 5.1.4 of the 'GWR_Carbon Inventory manual_20220118' it is stated that there are only 4 decomposition classes. Which is correct, clarification could prove useful.	D.5	The ACR protocol has 4 classes. The class 5 recorded in the field is considered class 4 in the data.	Thank you for the clarification. This item may be closed.								

CR 3	In 'PC449_F03_FVSout_Cruise_5yr_2022_08_23' on the 'FVS_TreeList_East' tab the values for diameter/height from 2022 to 2027 do not match the same value set as seen in 'PC449_F03_FVSout_Cruise_1yr_2022_08_23' on the 'FVS_TreeList_east' also filtered on 2022 and 2027. Are these differences intended, consistency is requested.	D.5	The 2022 values are the same in each of those files. The 2027 values are different b/c FVS does not give the same growth to one 5-year cycle as five 1-year cycles. The 5-year cycles reflect the intended growth, so SIG calibrated the five 1-year cycles to equal one 5-year cycle, in file PC449_F06_FFtoSIV_BAMults_2022_09_01.xlsx. This file, on tab [GrEffmMults] has the basal area multipliers for each plot for 15 years. The values in column K are applied for the first five 1-year cycles, the column L values are applied to cycles 6 to 10 and the column N values are applied to cycles 11 to 15. Tab [PctOfLMSv2] in row 3 shows how close on average the basal area between growth cycle length is, by period. By year 15 using the fifteen 1-year cycles we get to within 99.58% of using three 5-year cycles. Tab [PctOfLNoMults] in F3 shows that without calibration, the year 15 stocking is only 92.8% of the three 5-year cycles. The range of differences is also much smaller post calibration.	Thank you for the clarification. This item may be closed.										
CR 4	There is a difference in the number of trees between 2 documents in the donwar. In the 'PC449_F03_FVS...' documents on the 'FVS_TreeInit' and 'FVS_TreeList_East' tabs there are 3993 trees, which matches the initial inventory. In 'PC449_F07_FVSout_Cruise_Calib_1yr_2022_08_31' on the 'FVS_TreeList_East' tab there are only 3985. At the time is unclear why these trees are excluded, and what the impact of such an exclusion means. An additional tab has been added to the LoT called 'CR4' that details which trees are missing from the F07 tab. Clarification could prove useful.	D.5	These plots are all planted pine plantations as noted in the cruiser comments. This means they have many small trees, all less than 1" DBH. These plots also had one or two random trees. The project start, RP1 and RP2 stocking estimates are based on what was cruised. But for the LP model SIG assigned these plots to the 'just clearcut' regeneration strata. This created a planted stand that increased in stocking over time in both the baseline and the project scenario. Therefore, those plots are not needed in file PC449_F07_FVSout_Cruise_Calib_1yr_2022_08_31.xlsx.	As this is outputs of FVS and not including within the field verified onsite stocking, this item may be closed.										
CR 5	In the calculation of individual tree carbon, there are trees that are given different Jenkins coefficients than prescribed by the Jenkins paper, between the text of the document and the table. As seen in 'PC449_F09_RP1_PlotAugs_2022_09_01' on the 'JenkinsCoefs' tab, the species 998 (unknown/mixed hardwood) has the values for 'Hard maple/oak/hickory/beech' ('mo' -2.0127 and 2.4342), instead of for 'Mixed hardwood' ('mh' -2.48 and 2.4835) as prescribed by Table 4. Clarification/confirmation could prove helpful. As seen in 'PC449_F09_RP1_PlotAugs_2022_09_01' on the 'JenkinsCoefs' tab, the species 57 (juniper species generic) has the values for Cedar/larch ('cl' -2.0336 and 2.2592), instead of juniper/oak/mesquite ('wo' - 7152 and 1.7029). Confirmation that FVS species 57 is explicitly only eastern redcedar species 68 could prove helpful.	D.5	SIG changed coefficients on those species to match the FVS output, which is used in the LP model. Yes, species 68 is eastern red cedar.	Thank you for the confirmation. This item may be closed.										
CR 6	In 'PC449_F04_FVS_AvgDefect_2022_08_30' the '2020 CubicVols' tab provides the breakdown in calculation of plot level defect. At this time, defect only impacts 'Merchantable' timber as output by FVS. This means that non-merchantable trees (hardwoods less than 9" DBH and softwoods less than 7" DBH) do not get a reduction for broken tops, decay class, or missing biomass of any kind. Is this intentional?	D.5	Yes, defect is only applied to merchantable trees.	Thank you for the confirmation, this item may be closed.										
CR 7	In comparing the 'GWR_ProjectBoundary' shapefile and the 'GWR_PlotLocationsDevelopmentData_20220620' shapefiles there appear to be 38 plot locations that are unaccounted for using the 'GWR_DraftPlotGrid890_20220110_label'. Grid locations 294 vs. Plot Locations 256. As well, there is approx. a 5,000 acre difference between the 'GWR_ProjectBoundary' shapefile and the 'PC449_F01_GIS_2022_07_22' total project acreage. Clarification could be useful.	D.2	Thank you for your comment. "GWR_ProjectBoundary.shp", "GWR_PlotLocationsDevelopmentData_20220620.shp" and "PC449_F01_GIS_2022_07_22.shp" were inadvertently provided and can be disregarded. The correct files to use (7_GIS): GWR_PAbndry_20220928.shp - final carbon accounting project area boundary GWR_DraftPlotGrid890_20220110_label.shp - original fishnet plot grid for sample plot locations GWR_Plots_20220928.shp - final plot locations shapefile	Thank you for providing the appropriate shapefiles and correcting the following data sets. This item may be closed.										
CR 8	In the application of the corrected project area for boundary-plot intersection, it does not make sense that the TPA correction for the remaining captured trees would have reduced TPA values. The trees in the project area excluded due to the boundary are already missing, why would the trees within the project be reduced? The paper describing this method is requested, and justification that this method is being implemented correctly is requested.	D.2	Thank you for your comments, we recognize the TPA adjustment approach for boundary-adjacent plots is unconventional. However, the approach is inherently conservative and can be demonstrated to be immaterial per ACR rules.	Tree expansion is inversely related to plot size, (less area sampled = larger expansion) so this methodology is biased in that it underrepresents edge plots. As this is biased - not conservative, immateriality is not applicable. Please correct this error.	Phase 1. Please see the updated file 'PC449_F00_CarbonInventory_BP_2023_04_18.xlsx" where TPA has been corrected for the affected plots. Subsequent worksheets were corrected where applicable and are provided.	Thank you for making this correction. It has been confirmed, this item may be closed.								
CR 9	During the site visit, there appeared to be a minor issue related to the GIS intersection with the property boundary. The southern boundary associated with plot 31 and the plot itself was found to be slightly farther south than the GIS indicates. The plot still fell within the actual plot boundary as confirmed in the field, but not necessarily within the GIS boundary. See the screenshot on the tab 'CR 9' for additional details.	D.2	This plot was examined in ArcMap as a GIS digital portrayal and found to be within the project area boundary sampling frame by approximately 5.5'.	As other inquiries into the GIS have not yielded significant issues, and total acreage is conservative with the current shapefile, this item may be closed.										
CR 10	In 'PC449_F02_SiteIndexforPlots_2022_08_19' on the SICoeffs_bySpecies tab, there are questions/discrepancies with the values: Loblolly Pine has Amateis and Burkhart, 1985 as the reference but it does not seem to align with the values used. Secondly, the coefficients used appear to be projecting a uniformly higher SI than the actual Amateis and Burkhart 1985 equation as calculated by the verifier. See the tab 'CR10'. Why not use the Sweetgum Mississippi Valley values that include South Carolina in Figure 20? What is the reference for the Max SI values in J2:J19?	D.5	The site indices for planted loblolly pine stands were calculated using the Amateis and Burkhart (1985) paper on site index. The detailed description is in the file site_index_planted_loblolly_pine.docx.	This document has not been provided as of 3/7. Second, Eq. 4 for Loblolly has been replicated independently by the verifier. Please justify the value of 50 being used for A_t some index age (years from planting)?	Phase 1: Santosh: Please see 'PC449_F02_SiteIndexforPlots_2022_BP_2023_04_18.xlsx". We used 50 because FVS SN variant requires base age 50 for loblolly pine site index computation.	Thank you for this explanation. This item may be closed.								
CR 11	In 'PC449_F00_CarbonInventory_2022_07_06', the column for Site Index Age in the PLOTS tab does not appear to show the species dependent correction needed for the proper calculation within the site index equations, nor is this correction made in later documents. Evidence of the correction or clarification would prove helpful.	D.5	For species other than planted loblolly pine, we used the Carmean site index system as pointed out on page 4 of Carmean et al. (1989)	Understood. Is the value for each site index age in the PLOTS tab already species specific corrected, not the field sampled core age?	Phase 1: We added species appropriate correction on field sampled core age in the revised excel file based on Carmean et al paper for species other than loblolly pine ("PC449_F02_PC449_F02_SiteIndexforPlots_2022_BP_2023_04_18.xlsx"). The documentation for site index calculation on loblolly pine is provided in the site_index_planted_loblolly_pine.docx file.	Thank you for the confirmation. This item may be closed.								
CR 12	In 'PC449_F03_FVSin_Cruise_2022_08_19' the Site Index values in FVSStandInit appear to be a truncated, or a rounded down value of the calculation in the F02 document, instead of rounded to the nearest whole value. Is this intentional?	D.5	Yes, to be conservative.	Thank you for the confirmation. This item may be closed.										
CR 13	In instances of extensive logging, please clarify how landings are treated in relation to GIS exclusion, and how road exclusion is determined. There are examples of both types of instances attached in the tab CR13.	D.2	Landings are included as part of the sampling frame and were not excluded. However, roads were excluded from sampling consideration in line with the management layer provided to determine the carbon project area. Sample plots had an opportunity to fall in areas within the project area sampling frame.	Thank you for the clarification in relation to landings, their exclusion has been confirmed consistently across the property. This part of the item may be closed. How did the management layer assess road inclusion/exclusion? Per imagery, there do not appear to be any distinguishing features that would dictate such a determination.	Phase 1: The inclusion/exclusion of roads was based on cover type classification received from the landowner. Cover classes included: cemetery, fallow, harvest, natural, non-forest, open water, plantation, plantation-thinned, roads, and wetland. Cemetery, non-forest, open water, roads, and wetland were excluded from the project area. See CNC Carborn.gdb (this is a confidential layer)	As these unidentified roads did not influence TPA corrections to onsite stocks, this item will be transferred to a RFI.								
CR 14	In comparing the 'GWR_PAbndry_20220928' shapefile and the PAD US 2.0 shapefiles there are a couple areas of question, screenshots are captured on the tab labeled 'CR 14'. Plot 281 has overlap with the Easement file with the LandTrust for Central North Carolina. Multiple sections are contained within the Sumter National Forest. Multiple sections are contained within the Uwharrie National Forest. Multiple sections are contained within the Carolina Sandhills National Wildlife Refuge. Clarification on these areas would prove helpful.	D.2	The area near plot 281 was examined using the North Carolina Natural Heritage Program Managed Areas GIS dataset and no overlap of the project area boundaries was observed on the adjacent NC DEQ easement. Reference layers used by the audit team for federal lands were noted to be the outermost geographic extent and are for administrative and informational/illustrative purposes.	Thank you for the clarification, this item may be closed.										
CR 15	In 'PC449_F16_NPV_Calcs_2023_02_03' on the 'FVPertCost_project' tab there are 10 plots prescriptions over two years (2040, 2041) worth of fertilizer costs, despite planting occurring in every year previous per the 'PV_plantSpReCost_project' tab, and regen_1 occurring in 2039, 2040, and 2041 per 'PVRev_Project' tab. Please clarify.	D.2	For loblolly pine plantations fertilization happens periodically and infrequently. The baseline model incurs costs for this input commensurate with regular management practices and the option is therefore provided to fertilize post thinning; it's up to the solver to decide whether to pick the fertilizer prescription or not at the optimization step in the process. This submission of the baseline harvest schedule does not include a fertilization treatment and therefore fertilization as a cost is excluded.	Thank you for the clarification, this item may be closed.										
CR 16	In 'PC449_F11_MillShips_RP1&2_2023_01_21 on the Pivot tab why is the product type SPW excluded from the RP1 total harvest quantification?	3.2 Step 1	Thanks for the finding, product type SPW (plywood veneer from pine sawtimber) has now been included in calculations.	Thank you for making this change. It has been confirmed, this item may be closed.										
CR 17	Please provide justification for using the species components of sweetgum for all harvested HW constants, as seen in 'PC449_F12_HWPcalcs_RP1_2023_01_21' on the 'RP1 Hrv Vols, Wts' tab. Accordingly, please provide a comparable justification for the use of Loblolly Pine constants for all SWs.	3.2 Step 1 3.2 Step 1	Sweetgum was applied because it is the most dominant hardwood species. Loblolly pine makes up approximately 99% of the softwood species stocking and it was therefore appropriate to use.	After completing a BA inventory analysis of species composition, 75% of the hardwood BA composition is a species other than sweetgum. Please provide evidence that sweetgum is a conservative choice for HWP quantification, or refine harvested wood species to be reflective of onsite species distribution or actual species harvested. In relation to softwood composition, loblolly makes up 97% by BA; since the remaining softwood species account for <5% of the project inventory, it would appear reasonable to use the loblolly value.	Thanks for the finding. Specific gravity and bark ratio constants are now based on loblolly for all softwood products and a weighted average of the other hardwood species inventoried because no species data was available.	Thank you for making these changes, they have been confirmed by the verifier. This item may be closed.								
CR 18	The bark ratio correction applied is not in agreement with equations 7, 8, and 9 of the Miles and Smith paper, as seen in 'PC449_F12_HWPcalcs_RP1_2023_01_21' on the 'RP1 Hrv Vols, Wts' tab. Please correct.	3.2 Step 1	Thanks for the finding. Equation 7 from the Miles paper is now being correctly applied.	The values in cells D38:D39 in tab 'RP1 Hrv Vols, Wts' of 'PC449_F12_HWPcalcs_RP1_2023_07_31' are not corrected and therefor not properly incorporated into the calculation in D28. Equation 9 is the applicable equation for incorporating bark volume when provided with green weight per the Miles and Smith paper. Please see the screenshot to the right of this item, and incorporate this calculation into D38:D39.	This discrepancy has been fixed in the current HWP worksheet.	No, it has not. The values captured in column H of the 'RP1 Hrv Vols, Wts' of 'PC449_F12_HWPcalcs_RP1_2023_08_31 'read as "=C6*E6*F6*(1-G6)" where the values for G trace back to the unaltered values in col. BG of the REF_SPECIES' tab. In the previously provided screengrab and red box, the values from col. BG shall be used in equation 9 before using them in the col. H equation of "=C6*E6*F6*(1-G6)."	Thanks for the finding, column G in tab "RP1 Hrv Vols, Wts" now incorporates eq. 9 from Miles and Smith.	Thank you for making this change, it now needs to be incorporated correctly per the Miles and Smith equations. A phone call was initiated 12/4/23.	Document sent 12/5/23.	A phone call was initiated 12/8/23.	Document sent 12/11/23	Confirmed, this item may be closed.
CR 19	The wood product class distribution used in the 'RP1 HWP of completed harvest' tab of 'PC449_F12_HWPcalcs_RP1_2023_01_21' does not meet the supersection regional requirement of the ACR IFM methodology. A comparable discrepancy is also occurring on the 'HWPs' tab of 'PC449_F14_ERTs_BLS50k_PRJ_Constinv_L10_Final_2023_01_31' for baseline HWP quantification. Please correct these errors.	3.2 Step 3, bullets	The development team notes that mill reports are not available and the CARB supersection product classes must be used. Therefore wood products generated are now allocated according to their weighted contribution by the two supersections which occur across the project area. These changes were made to both the project-case RP1 HWP calculations and the baseline.	Thank you for this confirmation, this change has been confirmed. This item may be closed.										
CR 20	Harvested wood products are broken into 4 classes for calculation through mill efficiencies and distributed to wood product classes: HW Pulp, HW Saw, SW Pulp, and SW Saw. Why isn't the quantity of 'Pine CNS CO2' as seen in 'RP1 Hrv Vols, Wts' following ACR guidance and being allocated accordingly?	3.2 Step 2	Chip n Saw is a distinct product class in the southeast and it is therefore appropriate to separate this class from the others. The product class was allocated accordingly.	Thank you for this description, please provide supporting evidence that a 50/50 distribution of weight between saw wood and chips is reasonable.	Chip-n-saw in the Southeast US markets is primarily made of softwood species and is almost exclusively used for plywood and OSB type products. The allocation those generated wood products are a result of the supersection breakdown.	Thank you for the additional information, the supersection work has been confirmed. This item may be closed.								
CR 21	Are there any encumbrances on property that would limit management, and if so how are they incorporated into baseline/project modeling?	D.5	There are no encumbrances. Please see attestation ACT_Attestation_ACR-5.2.23.pdf	Thank you for the attestation, it has been reviewed. This item may be closed.										
CR 22	What is the minimum mapping unit for tracking disturbances and other landscape scale changes and its impact on carbon? Where is this incorporated into the management documents?	D.5	Phase 1: The following language "Disturbance monitoring is expected to use remote sensing tools in order to seek to achieve a minimum mapping/classification unit of 1 acre to monitor disturbance not related to planned harvest activities." Please note that the GHG Plan will be submitted for review after quantitative findings are addressed.	Thank you for the confirmation of the minimum mapping unit, new findings will be generated and tracked in other items. This item may be closed.										
CR 23	Are there any threatened or endangered species on property that could impact proposed management scenarios?	D.5	There are no encumbrances. Please see attestation ACT_Attestation_ACR-5.2.23.pdf	Thank you for the attestation, it has been reviewed. This item may be closed.										

CR 24	Please justify how the proposed cut of 550k tons in the baseline model each year over the first four years is feasible with logging, transport, and mill capacity logistics.	D.5	The overall goal of the Nuveen Natural Capital Upper Piedmont Conservation Area carbon project is to create a project that incentivizes atmospheric CO2 sequestration and generates offsets that are real, verifiable, and accurately calculated. To achieve this goal, a project-specific baseline model was created under a 100-year theoretical maximum net present value (NPV) that would be obtained from harvesting all available timber products currently existing on the property pursuant to applicable operational and regulatory constraints. The baseline model is an approximation of regular harvest practices in the region from the last half century and appropriately reflects initial carbon stocks and regional trends in carbon stocks over the recent past. With the understanding that the baseline model represents what is legally, tactically, and operationally possible, a maximum harvest constraint of 550,000 short tons/year of harvest volume was set. Establishment of the baseline for this project required consideration of multiple factors to ensure its credibility and effectiveness in reducing greenhouse gas emissions. Some important strategic model boundaries were incorporated to ensure the baseline model was feasible legally and operationally, in conformance with ACR requirements. The baseline did not need to be responsive to forest product demand as mill capacity and wood product consumption in the region is generally inelastic. Sawmills of the region require a steady supply of softwood and hardwood logs in various sizes to create products in demand nationwide such as sawn building lumber and internationally as veneer sawlogs. There are 89 primary and almost 800 secondary forest product mills across South Carolina. Primary mills process logs into lumber and other commodity products, while secondary mills produce value-added forest products like furniture, doors and moldings. The makeup of the forest products industry has shifted over the years from small family-owned mills to large-capacity international operations. (https://www.scfc.gov/wp-content/uploads/2021/10/SCForests.pdf, see also "Forisk Forest Industry Capacity Database 2022 Q4 NC SC.xlsx"). NC also has a strong forest products industry with ample logging infrastructure and mill capacity (https://content.ces.ncsu.edu/north-carolinas-forest-and-forest-products-industry-by-the-numbers). The ability to conduct logging and maintain mill capacity in the baseline is further supported by timber product output survey results provided by the US Forest Service FIA program (https://www.fia.fs.usda.gov/program-features/tpo/). Trucking and transportation networks to deliver logs from the woods to mills can be considered robust due to centuries of settlement and a dense local road network. Haul distance is seldom more than 2 hours because of the multitude of mills available within the project area's woodshed.	Upon review of the 'mill data' included in the 'Nuveen_MillCapacityAnalysis, there is feasible mill capacity for this amount of harvested wood. This item may be closed.									
CR 25	Is this property/project enrolled in any other environmental asset programs for non-carbon benefits?	D.5	The property is not enrolled in any other environmental asset programs. Please see attestation ACT_Attestation_ACR-5.2.23.pdf	Thank you for the attestation, it has been reviewed. This item may be closed.										
CR 26	In the PDD document series there are plots that have a modified TPA due to boundary conditions. There is a plot that is in question, it is: Plot 14 - this plot is 78.2 meters from a boundary or cut out road. Which is 250 feet or 8 times the limiting distance, either the plot should not have a modified TPA, or the GIS and total acres should be modified. Please clarify. Screenshots have been included in the tab called CR 26.	D.2	We examined plot 14 in aerial imagery and noted that it fell adjacent to Little River, a larger sized stream. The cruiser inadvertently considered the stream to be outside of the sampling frame. Plot 14 was assigned normal TPAs and is no longer a boundary plot. The other 18 boundary plots were examined individually and all found to be appropriately assigned as such.	Thank you for the confirmation and making this change (plot 14) in the 'Start' calcs quantification (F05),this part of the item may be closed. This correction has not been made to the 'PC449_F09_RP1_PlotAvgs_BP_SI_Corr_2023_05_04' results. Upon review, it appears to trace back to a hard coded table in F08, 'Gross_CO2_by_Plot' that might not have been updated. Also, please confirm how this change in initial stocking impacts baseline/project model values.	Thanks for the observation. This change has been made and downstream elements have been updated as required in the latest material submission.	Thank you for making this change, it has been confirmed. This item may be closed.							
CR 27	Per the Monitoring Report, the Project Start Date and Reporting period for PR1 runs from 1/19/2022 to 8/30/2022. In the 'CNC_Timbersale_activity_through_08162022' shapefile there are included harvests that have start dates as early as 1/19/2020 and end dates as early as 1/8/2022, which are before the project start date. Please clarify how the listed harvests in the shapefile correlate to the volumes listed in 'PC449_F11_MillSlips_RP1_20230509'.	D.2	PC449_F11_MillSlips_RP1_20230718.xlsx' contains harvest records exclusively from RP1 and contains a field named "Source" or "TractName" which allow a crosswalk to two (2) newly provided GIS files "ACT_Harv_Unit_SHP.shp" and "ACT_GHG_Missing_HLAs_SHP.shp".	As all load dates used in HWP values are between the project start date and RP1 end date, this item may be closed.									
CR 28	During the GIS analysis there are 18 plots that have been intersected by the 'CNC_Timbersale_activity_through_08162022' shapefile with 'End_Date's ranging from 3/20/22 to 4/25/2023. Per the F08_Upgrowth document, Inventory Cruise Dates are between January and early February 2022. With the RP ending 8/30/2022, and harvests end dates after every inventory date, please clarify how the current quantified treelist is representative of onsite stocks at the end of RP1. The intersected plot list is provided in tab 'CR 28a'.	D.2	The development team has provided a newer and accurate geospatial file for harvest activities to-date in the project area "ACT_Harv_Unit_SHP.shp". The onsite stock estimates for the end of RP1, CP_TREE1, are based on a transformation of the harvested aboveground biomass pool (whole tree CO2) into the component ratios of biomass following Jenkins et al 2003 (e.g. Table 2). Component ratios are defined by the generalized product categories of wood product data delivered to the mill. This ensures more accurate and precise accounting of the project stocking levels with the presence of harvesting during actual reporting periods.	Thank you for clarifying how final carbon stocks are calculated through HWP depletion on a project level. Upon review, the values captured in B187 of the 'RP1 HWP of completed harvest' tab of 'PC449_F12_HWPcalcs_RP1_2023_08_31' are total CO2 after bark has been removed in a previous step as seen on the 'RP1 Hrv Vols_Wtv' tab cols G:H. If using the Jenkins component biomass ratios is the method intended for use moving forward, then along with Roots and Tops, a Bark component should also be incorporated. Please clarify/confirm. In the same vein, please clarify why a 'Foliage' component isn't included in this analysis as well.	Thanks for the finding. Adjustments have been made to account for the appropriate tree components of whole tree carbon estimates. Foliage wasn't included because it was not a measured component from the inventory and is de minimis.	The method by which total carbon stocks is calculated has changed, and now appears to be on a basis of total plot carbon reduced to zero (PC449_F13_HarvestPlots_RP1_2023_11_29). Please confirm that the Jenkins components no longer play a roll in HWP stock quantification, and update any project documentation detailing this new practice (GHG Plan, Monitoring Report).	The delivered mill data is no longer being used for the inventory update and only for the durable and sequestered HWP calculations. The total plot carbon is used for the inventory update for plots which experienced harvesting during the reporting period. Section 01 of the GHG Plan details monitoring methods available to the project proponent to perform inventory updates from harvesting. The monitoring report provides for reporting by pool of the end of reporting period estimates after inventory updates.	Thank you for including these details in the GHG Plan, it has been confirmed. This item may be closed.					
CR 29	Upon review of the previously harvested null plots that were added late (plots 101-110) none of them appear to intersect a harvest in the 'CNC_Timbersale_activity_through_08162022' shapefile. Please clarify.	D.2	As discussed previously, plots 100-109 were harvested prior to the project start date and inventory measurement. No inventory adjustment was performed as these plots are appropriately no-tally at the time of inventory. Please see "ACT_Harv_Unit_SHP.shp".	Thank you for the clarification, this item may be closed.										
CR 30	In cells B26:H30 of tab 'RP1 HWP of completed harvest' in the 'PC449_F12_HWPcalcs_RP1_2023_07_31', please provide evidence/justification to support the product distribution percentages of the timber types.	3.2	This has been resolved in the newest HWP calculation worksheet.	Thank you for this resolution. It has been confirmed, this item may be closed.										
CR 31	There are issues captured within the FVS outfiles used to run the baseline/project quantification: In 'NNC_thin_existing_annual_batMult_keyfile_07_08_2023' .out file there is a series of FVS01 ERROR, in relation to keywords. The same error is in 'NNC_selection_existing_annual_batMult_keyfile_07_09_2023'. Please clarify. A screenshot has been provided on the 'CR 31' tab.	D.5	We used the FVS Linux version to execute growth and yield simulations, utilizing specific keywords and the FVS input file to accomplish the following: 1. We employed both the 'treelist' keyword and the 'treelidb' DBS extension to generate the 'FVS_treelist' table. 2. Similarly, we utilized both the 'cutlist' keyword and the 'cutidb' DBS extension to create the 'FVS_cutlist' table. 3. To generate the 'FVS_Carbon' table, we relied on the 'CARBREPT' and 'CARBRDB' DBS extensions. In addition, we provided various options to perform thinnings at specified time intervals since some of the options were not recognized by FVS Linux. As seen in the provided FVS output database file, the 'FSV01 ERROR' appears to be benign, as it had no impact on the output tables or the timing of thinning.	Thank you for the clarification, this item may be closed.									
CR 32	In the 'GWR_Proj_08_10_2023' and 'GWR_Baseline_550K_08_10_2023' documents, what wood species are being reflected in the values captured in the HarvVolume tab, actual inventory/grown forward data, or representative species (sweetgum and loblolly pine)? Please provide an analogous workbook showing FVS outputs and their acre allocation as seen in the 'GWR_Baseline_supportingFile_F17_550K_04_10_2023' version	3.2	Softwood pulpwood (PW), softwood chip-n-saw (CNS), and softwood sawtimber (PST) are products exclusively from loblolly pine for this project, while hardwood pulpwood (HPW) and hardwood sawtimber (HST) are derived from hardwood species.	Thank you for the clarification. This item may be closed.										
CR 33	Upon review of the 'CNC Deeds' document, Pabndry shapefile, and publicly available parcel information, there is a parcel of property that is under review. Is this parcel owned by the property, if so please clarify the source of documentation to support this. Please see screenshots of the tab 'CR 33'.	D.2	This parcel is owned by the project proponent. Please see both "CNC Deeds.PDF" and "SWD York REIT.pdf."	Thank you for the additional information, the tax parcel number 2110000006 was confirmed. This item may be closed.										
CR 34	Upon review of the provided shapefiles, there are project tracts that appear to have been harvested recently per Sentinel 2 analysis compared to imagery analysis. Please clarify when these tracts were harvested in relation to the project start date and reporting period and as none of the harvest shapefiles account for them.	D.2	Thanks for the finding. The development team examined the parcels individually using recent imagery and concluded that all harvest activities took place prior to the project start date. Please see "NuveenCR34_StGResponse.docx."	Thank you for the analysis. In relation to plot 278, Sentinel 2 has the actual area of the plot as heavily forested at the project start date of 1/19/2022, and remaining forested throughout the end of RP1 (8/30/2022) which matches the RP1 inventory. After detailed review, this plot was harvested near the end of RP3, between July and August of 2023, please confirm that this harvest has been incorporated into RP3 quantification. The other three blocks have been confirmed. This section of the item may be closed.	RP2 is from 8/31/2022 - 1/18/2023 and RP3 is from 1/19/2023 - 1/18/2024. RP3 has not concluded yet and inventory updates will occur next year in line with the regular MRV effort. Clarification is requested on the audit team's request.	Confirmation that this harvest is tracked appropriately was the request. That has been met by the developer response, therefore this item may be closed.							
CR 35	In the 'ERTs' tab of 'PC449_F14_ERTs_2023_09_13' the distribution of HWP Baseline in cell F14 is in question. At this time, it is subtracting a full year value of Baseline HWPs from the amount allocated to the project start date and the EORP1 date interval. Unfortunately, there is not a full year of time between project start date (1/19/2022) to EORP2 date (12/31/2022). Please clarify/correct. **Note this item may no longer be valid pending the response of CAR 5.**"	B.5	Thank you for the finding, the formulaic error has been fixed to ensure the appropriate reporting period dates are included for the baseline HWP calculations.	Thank you for making this change, this has been confirmed. This item may be closed.										
CR 36	In the 'ERTs' tab of 'PC449_F14_ERTs_2023_09_13' the EORP1 dead wood value for the 'Project' in cell E25 does not match the calculated value on the 'CC2Stats' tab of 'PC449_F09_RP1_PlotAvgs_BP_SI_Corr_2023_09_01' that have been field verified and are unimpacted by harvest. Please clarify/correct.	A.3	The inventory-as-measured deadwood pool was included for RP1 as this application is inherently conservative.	Thank you for making this change, this has been confirmed. This item may be closed.										
CR 37	Upon review of the 'PC440_F12_HWPcalcs_RP1_2023_series' the values used for the bark percent appear to be from the CRM reference, instead of the Table 4 Miles and Smith 2009 paper. Please clarify/confirm.	3.2 Step 1	This calculation was fixed with other elements to ensure bark was appropriately removed.	Confirmation/clarification of the reference material used in calculation was requested, not necessarily an overhaul of calculation methods. Miles and Smith is the document to use as stated in the methods, but the CRM reference does not have a material difference in constants for comparison, therefore, both are acceptable. The verifier has written this description to inform both the developer and the registry of a variation from the source data for HWP calculation and if deemed inappropriate by the registry, a tracking mechanism for future correction. This item may be closed.										
CR 38	Upon review of the 'SS_note' and 'ERT_Inputs' tabs of 'GWR_Baseline_with_LProutputs_550K_09_05_2023' there is a discrepancy in model outputs and their manipulation into the ERT calculation inputs. FVS is outputting merchantable cubic feet in rows 6:10 of the 'ERT_Inputs' tab, and then is being converted into 'barkless' quantities. This step appears to be unnecessary. Per sections 2.6.1 and 2.6.2 of the 'Fire and Fuels Extension to the Forest Vegetation Simulator', "FFE live tree merchantable biomass estimates are based on FVS volume equations which vary by geographic variant, and do not include C from bark biomass" and "The FFE biomass/carbon algorithms do not include stem bark in the estimate of total merchantable biomass, therefore stem bark is also missing from the C accounting," respectively. Please clarify. If incorporating a bark correction is deemed appropriate and justified with additional information, please then correct the method by which the bark ratio is applied, as seen in the other LoF items.	C.3	Thanks for the finding. The "ERT_Inputs" values rows 6-10 are actual delivered to the mill quantities in green tons, which excludes bark. They are not used in the ERT calculation worksheet.	As the updated source data to replicate the calculation behind these values has not been provided, i.e. a new 'PC449_F15_550k_Baseline_Activity_Inventory_data_2023_12_1', this item can not be closed. It is expected that when a model update is made the full suite of documents that are impacted by this modeling change are updated accordingly and provided to the verifier. This is the nature of multiple items in this LoF, including 'CR 42' and 'AOR 11'. Please provide these documents.	Please see provided file "GWR_Baseline_with_LProutputs_InvWithAcreage_550K_1_03_2024.xlsx."	Thank you for making this change, it has been confirmed and replicated by the verifier. This item may be closed.							
CR 39	Upon review of row 15 (HWP Baseline) of the 'ERTs' tab in 'PC449_F14_ERTs_2023_11_29' it does not appear that the ACR IFM methodology v1.3, and its associated 'ACR-IFM-ERT-calculator-Methodology-v1.3' workbook is being applied appropriately. In the 2023_11_29 version of the ERTs tab, row 15 is a 20 year average of baseline HWPs instead of the year (5) specific calculated HWPs. Per the methodology and the provided ACR workbook, these values should be year specific, and the next row (row 16) should be the 20 Yr average. As the Woodstock model generates yearly outputs from optimized prescriptions (GWR_Baseline_with_LProutputs_550K_09_05_2023, ERT_Inputs tab), it does not appear that two 20 year averages stacked on top of each other meet the methodology. Please see tab 'CR 39' for additional information and clarity.	C.3 Eq. 3	Thanks for the finding. We have ensured that the 20-year average baseline HWPs reflect the actual 20 year average.	Apologies, there is a misunderstanding. The issue is not the 20 year average value. As previously stated, the issue is in the HWP baseline on a year level (the row directly above the 20-year average baseline row). Right now, these values are not the distinct baseline HWP outputs as calculated in the baseline model per year. In contrast, the ACR workbook example shows large values in the first two years of the HWPs, and then zeroes for the next couple of years as their baseline model did not have harvesting those years. Why is the GLC generated 'ERTs' tab deviating from the ACR prescribed methods of calculating discrete yearly baseline HWPs in their appropriate row? Please look at the tab 'CR 39' as this is detailed extensively there.	This discrepancy has been fixed in the current ERT worksheet "PC449_F14_ERTs_2024_01_03.xlsx."	This has not been provided as of 1/10/2024.	Apologies, the most recent version of the ERT calc worksheet has now been provided.	Thanks for making this update and providing this document, it has been confirmed. This item may be closed.					
CR 40	Upon review of the 'ERTs' tab of 'PC449_F14_ERTs_2023_11_29' the values captured for the stocking of both the project and baseline starting values (D13 and D24) need to match the degrown treelist totals, which are captured in 'PC449_F05_ProjStart_PlotAvgs_BP_SI_Corr_2023_06_21', just like the referenced baseline dead sum. Please clarify.	C.3	Thanks for the finding. We agree the value for Live Tree CO2 Baseline and Project is discrepant and it has been updated to reflect "PC449_F05_ProjStart_PlotAvgs_BP_SI_Corr_2023_06_21.xlsx."	Thank you for making these changes, they have been confirmed. This item may be closed.										

CR 41	Upon review of the 'BL_550K_activity' tab of 'PC449_F15_550k_Baseline_Activity_Inventory_data_2023_12_1' and an intersect between the plot and development shapefiles there are plots that have SMZ restrictions that are receiving the equivalent of clearcuts ('final harvest', and 'final harvest hwd') without any apparent consideration for the buffers required by the state BMPs and the GHG Plan as their acre allocation is consistent with non-SMZ plots. Plot 32 is receiving the 'final harvest hwd' prescription and plots 269 and 124 are receiving the 'final harvest' prescription. Please clarify.	A.4	The 3 plots located in SMZs, 32, 24, and 269 now appropriately receive a selection treatment as seen in the "HarvVolume" tab of "GWR_Baseline_with_LPoutputs_550K_12_20_2023.xlsx."	Thank you for making this change in the 'HarvVolume' tab of 'GWR_Baseline_with_LPoutputs_550K_12_20_2023', it has been confirmed. Please provide an updated version of 'PC449_F15_550k_Baseline_Activity_Inventory_data_2023_12_1' so the verifier can independently recreate the entire baseline model from modeling outputs and confirm that these changes in prescription are properly reflected in baseline carbon stocking, not just harvest volume. The verifier is applying the same process and mentality to the Project model as reflected in 'ADR 11', so please provide the comparable updated document with the Project specific model.	Please see provided file "GWR_Baseline_with_LPoutputs_InvWithAcreage_550K_1_03_2024.xlsx."	Thank you for making this change, it has been confirmed and replicated by the verifier. This item may be closed.						
CR 42	Upon review of 'PC449_F16_NPV_calculations_11_03_2023' the values captured in the 'costAndRevenue' tab have changed from previous iterations, do not match the recorded values in the GHG Plan, and do not correlate to the hardcoded outputs on the 'Baseline_NPV_calc' tab when the appropriate multiplication has been made. What is the purpose of these new values if they are not used in the calculations? Please clarify.	B.4	The cost and pricing data was updated to reflect the data provided by the landowner. Please also see response to ADR 10.	Thank you for providing documentation to support these values. This item may be closed.								
CR 43	Upon review of 'PC449_F13_HarvestPlots_RP1_2023_11_29' and the 'Inputs' tab of 'PC449_F14_ERTs_2023_11_29' it appears that the harvested plots are being entirely xeroed out (which the verifier has replicated independently via zeroing out the harvested plots treelist). In this instance there are 204,001 tons of carbon removed, made up of both live and dead quantities, but on the 'Inputs' tab the entire quantity is being subtracted exclusively from the live stocks which is being carried forward onto the 'ERTs' tab. This method does not appear to reflect actual onsite conditions, please clarify.	D.5	This method ensures that the end of RP1 live and dead tree CO2 estimates reflect harvesting which occurred during RP1. In line with the finding, live and dead were broken out separately.	Thank you for making this change, it has been confirmed. This item may be closed.								
CR 44	Upon review of the 'ERTs' tab of 'PC449_F14_ERTs_2023_11_29' the values captured for RP2 project stocks should reflect the modeled Project projections as this is the validation/verification period and those values are under review. EORP2 stocks do not match the Project model and therefore should not be substituted in, until that reporting period is under review and applied for crediting.	D.5	The development team agrees that predicted values for RP2 are appropriate to use for this validation/initial verification and have updated the ERT calculation worksheet accordingly.	Thank you for making this change, it has been confirmed. This item may be closed.								
CR 45	Upon review of the .out files, 'FVS_NNC_LGr_P3Multis_ThY2', 'NNC_letGrow_annual_baMult_keyFile_06_29_2023', 'NNC_selection_existing_annual_baMult_keyFile_07_09_2023', and 'NNC_thin_existing_annual_baMult_keyFile_07_08_2023', there are FVS14 WARNINGs, where a plots ecoregion is defaulting to 231DD. This default does not fit the project area. Tab 'CR 45' has been added for clarity. If this issue also exists in the clearcut outfiles per woodstock which have not been provided, these should also be corrected/clarified.	D.5	The ecoregion has been updated to represent the project area in line with the finding.	Thank you for making this change (232BQ Fort Bragg Military Reservation), it has been confirmed. This item may be closed.								
CR 46	Upon review of the 'ERTs' tab of 'PC449_ERTs_2023_11_29' the values captured in the ACR Parameters section appears to be the degrown inventory data, instead of the raw inventory data statistics. Please clarify.	C.5	The sampling error computed in "PC449_F05_ProjStart_PlotAvgs_BP_SI_Corr_2023_06_21.xlsx" is essentially for the measured treelist since the inventory coincided closely with project start date. The Winget type growth interpolation was applied. These values aren't reported in reporting documentation.	Thank you for the confirmation/clarification. These values are not reported, but they do directly impact crediting calculations on the 'ERTs' sheet. This item may be closed.								
CR 47	Upon review of the 'RP1 HWP of completed harvest' tab of 'PC449_F12_HWPcalcs_RP1_2023_12_08' the values captured in cells C3:C7 for mill efficiency are misaligned for their respective wood products. Please clarify.	3.2	Thanks for this observation. The regional mill efficiency factors have been updated accordingly.	Upon review of 'PC449_F12_HWPcalcs_RP1_2024_01_02' the mill efficiencies in C3:C7 are now correct. Unfortunately, the calculation in D3:D7 is now misaligned. Please correct these errors in D3:D7. A tab 'CR 47' has been added for clarity.	Thanks for the finding. This discrepancy has been fixed in "PC449_F12_HWPcalcs_RP1_2024_01_03.xlsx."	Thank you for making this change, it has been confirmed. This item may be closed.						
CR 48	Upon review of 'PC449_F12_HWPcalcs_RP1_2023_12_21' on the 'RP1 Hrv Vols, Wts' tab, the values for all Softwood products in cells E10:E14, are being multiplied by the value in cell 'SpecificGravitySESS' instead of the appropriate fobilolly cell on the same tab. Please correct/clarify.	3.2	Self identified and corrected via email 1/2/24.	Confirmed, this item may be closed.								
CR 49	Upon review of the 'ERT_Inputs' tab of 'GWR_Baseline_with_LPoutputs_InvWithAcreage_550K_1_03_2024' there is an inappropriate and inconsistent use of rounding/truncation in the Harvested Wood Products calculations in rows 19, and 24:30. This is also occurring in the same rows of the 'ERT_Inputs' tab of 'GWR_Project_with_LPoutputs_InvWithAcreage_1_03_2024'. At this time, the actual harvested wood products calculated in 'PC449_F12_HWPcalcs_RP1_2024_01_03' perfectly matches verifier calculations without any rounding/truncation, whereas the harvested wood products in the baseline/project models differ. Please see tab 'CR 49' for an explanation. Consistency in calculation methods is needed, please clarify.	3.2	Thanks for this observation. Significant digits for wood product classes by weighted supersection and mill efficiency values have been updated accordingly.	Thank you for making this change, it has been confirmed. This item may be closed.								
CR 50	Upon review of the 'ERT_Inputs' tab of 'GWR_Project_with_LPoutputs_InvWithAcreage_1_03_2024', the 'totalLive_CO2' values for 2024 through 2052 are unchanged despite the project model having limited harvest and additional project growth. A tab with screenshots have been provided titled 'CR 50'. Please clarify.	D.5	The values are unchanged for the period starting in 2024 because the project scenario is constrained to maintain live CO2 inventory at that level. This constraint ensures consistent future stocking, in line with expected levels of harvesting (see merchantable harvest amounts).	Thank you for the clarification, this has been deemed acceptable, and executed accordingly. This item may be closed.								
CR 51	Upon review and comparison of 'HarvVolume' of 'GWR_Baseline_with_LPoutputs_InvWithAcreage_550K_1_03_2024' and the values captured in the 'Baseline_NPV_calc' of 'PC449_F16_NPV_calculations_12_21_2023' the GWR document is using outdated 'costandRevenue' values for calculating 'timberRevenue'. Screencaptures have been provided in tab 'CR 51'. Please clarify.	D.5	Thanks for the finding. the 'timberRevenue' values in the LP outputs worksheet have been updated to align across worksheets.	Thank you for making this change, it has been confirmed. This item may be closed.								
CR 52	Upon review of the allocation of Baseline HWPs in the 'ERTs' tab of 'PC449_F14_ERTs_20240112' clarification is needed. The project start date is 1/10/2022 and EORP2 is 1/18/2023. This correlates to one year of modeling outputs. At this time, the Baseline HWPs at the end of the first year are not being incorporated into the ERT sheet, which is 164,977 CO2 in 100yr storage, per cell B45 of the 'ERT_Inputs' tab of 'GWR_Baseline_with_LPoutputs_InvWithAcreage_550K_1_12_2024'. Standing stocks are distributed correctly in cells E13:E14 as these are points in time within that year. Baseline HWP outputs should be allocated accordingly, but based off of the first years harvest total, the "2022" Baseline HWPs. Please clarify.	G	Thank you for the finding. We have allocated the baseline HWP for the first year, spanning two reporting periods. The allocation is proportionate to the number of days in each period, resulting in 100,795 tons in the first reporting period and 64,183 tons in the second reporting period.	Thank you for making this change, it has been confirmed. This item may be closed.								
CR 53	Upon review of the allocation of Project RP2 HWPs in the 'ERTs' tab of 'PC449_F14_ERTs_20240112' clarification is needed. At this time, the value in cell F26 is the 2023 total Project HWP value being multiplied by the 2022 portion of year, instead of the 2022 modeled portion of the Project HWPs. Please clarify.	G	Thanks for the finding. We have updated the value in F26 of ERTs tab based on the modeled portion of the HWPs.	Thank you for making this change, it has been confirmed. Unfortunately now the 2023 value is being excluded from G26. To clarify, this change impacts all cells from G26:Y26. As the '2023' value is correlated to the 1/18/2024 EORP date, and so on for the 2024 value correlating to the 1/18/2025 EORP date, etc.	Thanks for this observation. Updates have been made to ensure the ex ante predicted project HWPs are allocated appropriately in the ERT calculation worksheet.	Thank you for making this change, the only remaining issue is cells O26:Y26 of ERTs. The equation is pulling from K:T, which is 10 values, over ten years, but the equation is dividing by 11. Please clarify.	Thanks for the finding. The equation is now pulling from K:U and dividing the sum by 11.	Thank you for making this change, it has been confirmed. This item may be closed.				
CR 54	In section G of the 'ACR781_Nuveen_GHGPlan_20240111' the ownership of the property is by 'Atlantic Coast Timberlands, LLC ' please clarify the extent of other non-project lands owned by the same entity.	D6	The extent of other non-project lands owned by the same entity is 57,783 acres.	Per section D6 bullet 3 of the 1.3 Methodology, please provide evidence that the SFI certification 'must cover all entity owned lands with active timber management programs' specifically including non-project lands.	Please see provided screenshot "CR54_NuveenSFIcert.png." The SFI certificate number is BVC-SFIFM-017877, found at: https://sfidatabase.org/certificates/bv-sfis-su008620-1-15874.	Thank you for this additional information, it has been confirmed. This item may be closed.						