

PURUS PROJECT – A TROPICAL FOREST CONSERVATION PROJECT IN ACRE, BRAZIL VCS VERIFICATION REPORT



Document Prepared By: Environmental Services, Inc.

Project Title	Purus Project – A Tropical Forest Conservation Project in Acre, Brazil
Version	Report Version 02
Report ID	VO13022.01ver

Report Title	Purus Project – A Tropical Forest Conservation Project in Acre, Brazil, VCS Verification Report
Client	CarbonCo, LLC 3 Bethesda Metro Center, Suite 700, Bethesda, Maryland 20814 Contact- Brian McFarland, bmcfarland@CarbonCoLLC.com , 240-247-0630
Pages	61
Date of Issue	20 October 2014
Prepared By	Environmental Services, Inc. – Forestry, Carbon, and GHG Services Division
Contact	Corporate Office at: 7220 Financial Way, Suite 100, Jacksonville Florida 32256-USA; Phone: 904-470-2200 Fax: 904-470-2112; www.esicarbon.com
Approved By	Shawn McMahon – Lead Verifier and Janice McMahon – Regional Technical Manager
Work Carried Out By	Lead Verifier – Shawn McMahon; Verification Team Members – Richard Scharf, Caitlin Sellers, Jonathan Pomp, Guy Pinjuv, Matthew Perkowski, and Eric Jaeschke; QA/QC – Janice McMahon

Summary:

Environmental Services, Inc., (ESI) was contracted by CarbonCo, LLC., on 16 April 2014 to conduct the second verification (01 January 2013 to 31 December 2013) of *The Purus Project: A Tropical Forest Conservation Project in Acre, Brazil* (Validated Project Description (PD) dated 28 December 2012). The Purus Project follows the framework of Reducing Emissions from Deforestation and Degradation (REDD) and is achieving Greenhouse Gas (GHG) emission reductions as well as tropical forest protection and conservation through payments for ecosystem services.

Project activities include meeting with the local communities surrounding the project area, engaging Acre state officials working on similar strategies at a regional/state level, developing a plan which will result in lowering the pressure on land and forest resources in consultation with the local community, putting into operation the REDD project implementation plan with the help of local partners and Purus Project staff, undertaking a forest carbon inventory, and modelling regional deforestation. Activities implemented as part of the project to reduce deforestation include:

- Community outreach and education;
- Employment of local community members as project forest guards or other project staff (to replace other sources of income associated with deforestation and land use);
- Agricultural extension training which will help baseline agents to increase productivity on current lands (thus reducing the pressure to expand their farms in the adjacent forest);
- Reforestation of select non-forest areas and planting woodlots (to provide alternative sources of fuelwood); and
- Sharing a portion of carbon related revenue for communities living on the Moura & Rosa property (replacing other sources of income associated with deforestation and land use).

The verification assessed the Project's compliance with the Verified Carbon Standard (VCS) Version 3 (and all associated updates), the selected methodology, and the validated PD. The method employed by ESI in the verification process was derived from all items in ESI's internal verification process, which included utilizing VCS documents and ISO 14064-3 to develop and implement a Verification & Sampling Plan. This verification assessed the GHG emission removals through Agriculture, Forestry and Other Land Use (AFOLU) criteria, specifically, REDD – Avoided Unplanned Deforestation (REDD-AUD) activities.

The scope of the verification included the GHG project implementation; physical infrastructure, activities, technologies and processes of the GHG project; GHG sources, sinks and/or reservoirs; types of GHG's; and time periods covered. The geographic verification scope was defined by the project boundary, the carbon reservoir types, management activities, growth and yield models, inventory program, and contract periods.

The verification criteria followed the guidance documents provided by VCS and included the following: VCS Program Guide (08 October 2013, v3.5), Program Definitions (08 October 2013, v3.5), AFOLU Requirements (08 October 2013, v3.4), AFOLU Non-Permanence Risk Tool (4 October 2012, v3.2), and the VCS Methodology VM0007: "REDD Methodology Modules (REDD-MF)" v1.3 (03 May 2013) and its associated modules and tools.

A summary of all findings is included in Appendix B. There are no restrictions of uncertainty.

ESI confirms all verification activities including objectives, scope and criteria, level of assurance, monitoring and project documentation adherence to VCS Version 3 and all associated updates as documented in this report are complete. ESI concludes without any qualifications or limiting conditions that the *2013 Purus Project Monitoring Report* dated 8 October 2014 (v1.2) meets the requirements of VCS Version 3 and all associated updates.

The GHG assertion provided by CarbonCo and verified by ESI has resulted in the GHG emissions reduction or removal of 60,563 tCO₂ equivalents by the project during the verification period/reporting period (1 January 2013 to 31 December 2013). This value is gross of the 10% (8,699 tCO₂ equivalents) buffer withholding based on the non-permanence risk assessment tool.

TABLE OF CONTENTS

1	Introduction	5
1.1	Objective	5
1.2	Scope and Criteria	5
1.3	Level of Assurance.....	6
1.4	Summary Description of the Project.....	6
2	Verification Process	6
2.1	Method and Criteria.....	6
2.2	Document Review	7
2.3	Interviews	8
2.4	Site Inspections	10
2.5	Resolution of Findings.....	11
2.5.1	Forward Action Requests	12
2.6	Eligibility for Validation Activities	12
3	Validation Findings.....	12
3.1	Participation under Other GHG Programs	12
3.2	Methodology Deviations	12
3.3	Project Description Deviations	17
3.4	Grouped Project	17
4	Verification Findings.....	17
4.1	Project Implementation Status	17
4.2	Accuracy of GHG Emission Reduction and Removal Calculations	18
4.3	Quality of Evidence to Determine GHG Emission Reductions and Removals	22
4.4	Non-Permanence Risk Analysis.....	23
5	Verification conclusion	28
	Appendix A – Documents Received/Reviewed.....	30
	Appendix B – NCRs/CL/OFIs.....	41

1 INTRODUCTION

1.1 Objective

The verification objective included an assessment of compliance with VCS Version 3 and all associated updates, the selected methodology (VM0007, v1.3), and the validated Project Description (PD) *The Purus Project: A Tropical Forest Conservation Project in Acre, Brazil* dated 28 December 2012. ESI assessed the Greenhouse Gas (GHG) emission removals for the verification period 01 January 2013 to 31 December 2013 through Agriculture, Forestry and Other Land Use (AFOLU) criteria, specifically, Reduced Emissions from Deforestation and Degradation – Avoided Unplanned Deforestation (REDD-AUD). ESI assessed whether the project proponent adequately addressed project emissions, unplanned reductions in carbon stocks, and any possible leakage outside of the project boundary.

1.2 Scope and Criteria

The scope of the verification included the GHG project implementation and baseline scenario; physical infrastructure, activities, technologies and processes of the GHG project; GHG sources, sinks and/or reservoirs; types of GHGs; and time periods covered. *The Purus Project: A Tropical Forest Conservation Project in Acre, Brazil* follows the REDD-AUD framework. The geographic verification scope was defined by the project boundary, the carbon reservoir types, management activities, growth and yield models, inventory program, and contract periods. The scope of the project was outlined by the Project Proponent prior to the verification and is re-defined as follows for the GHG project:

Baseline Scenario	Continued unplanned frontier deforestation - forest clearing for subsistence agriculture and cattle ranching.
Activities/Technologies/Processes	VM0007, v1.3 Avoided Unplanned Deforestation Monitoring and modelling forest resources, providing alternative sustainable economic activities for local communities, agricultural training classes.
Sources/Sinks/Reservoirs	Above-ground live tree biomass Below-ground live tree biomass Dead wood Biomass Burning - Source
GHG Type	CO ₂ – Sinks; CH ₄ and N ₂ O - Source
Time Period (state date, crediting period, verification period)	01 January 2013 – 31 December 2013
Project Boundary	The Purus Project is located in the state of Acre, Brazil, alongside the Purus River (south of Manoel Urbano, Acre) - 34,702 hectares (85,714 acres).
GHG reduction and/or removal	60,563 tCO ₂ e

1.3 Level of Assurance

The level of assurance was used to determine the depth of detail that the Verifier placed in the Verification and Sampling Plan to determine if there are any errors, omissions, or misrepresentations (ISO 14064-3:2006). ESI assessed the project's implementation of general principles, data collection and processing, sampling descriptions, documentation, *ex post* calculations, etc., to provide *reasonable assurance* to meet the Project Level requirements of the VCS Program. Based on the verification findings, a final evaluation statement reasonably assures that the project GHG representations are materially accurate. The evidence used to achieve a reasonable level of assurance is specified in the following sections.

1.4 Summary Description of the Project

The Purus Project is a REDD-AUD project that is achieving Greenhouse Gas (GHG) emission reductions as well as tropical forest protection and conservation through payments for ecosystem services. The project was developed by three main Project Proponents: CarbonCo, LLC, Freitas International Group, LLC ("Freitas International Group" or "Carbon Securities"), and Moura e Rosa Empreendimentos Imobiliários, LTDA ("Moura & Rosa" or "M&R"). CarbonCo, a wholly-owned subsidiary of Carbonfund.org, is responsible for managing the verification process and for financing in the early stages of project implementation.

A forest carbon inventory, modeling of regional deforestation and land-use patterns, and mitigation of deforestation pressures have been undertaken as part of the project activities. Activities to mitigate deforestation pressures range from engaging EMBRAPA (i.e., the Brazilian Agricultural Research Corporation) and SENAR (Serviço Nacional de Aprendizagem Rural) for agricultural extension training, to the patrolling of potential deforestation sites. In addition, the project aims to eventually build better houses for the local communities to improve their livelihoods.

The Purus Project is located alongside the curves of the Purus River, approximately 60 kilometers (approximately 37 miles) from the nearest city of Manoel Urbano - this distance is about 20 kilometers (or 12 miles) "as the crow flies." The forested area of the Purus property (and thus the project boundary) encompasses 34,702 hectares (i.e., approximately 85,714 acres); it is divided amongst two contiguous parcels named Seringal Itatinga and Seringal Porto Central. The two main types of vegetation strata identified within the project boundary are open forest with palm/bamboo and open alluvial forest with palm, both of which are intact, primary forest.

2 VERIFICATION PROCESS

2.1 Method and Criteria

The verification assessed the Project's compliance with the VCS Version 3 and all associated updates, the selected methodology (VM0007, v1.3), and the validated PD. The verification assessed the GHG emission removals through AFOLU criteria, specifically, REDD-APD. According to the ISO14064-3, the verification criteria are the "policy, procedure or requirement used as a reference against which evidence is compared." For this project, the verification criteria followed the guidance documents provided by VCS and included the following: VCS

Program Guide (08 October 2013, v3.5), Program Definitions (08 October 2013, v3.5), AFOLU Requirements (08 October 2013, v3.4), AFOLU Non-Permanence Risk Tool (4 October 2012, v3.2), and the VCS Methodology VM0007: "REDD Methodology Modules (REDD-MF)" v1.3 (03 May 2013) and its associated modules and tools.

A project specific Verification and Sampling Plan was developed to guide the verification auditing process to ensure efficiency and effectiveness. The purpose of the Verification and Sampling Plan was to present a risk assessment for determining the nature and extent of verification procedures necessary to ensure the risk of auditing error was reduced to a reasonable level. The Verification & Sampling Plan methodology was derived from all items in our verification process stated above. Specifically, the sampling plan utilized the VCS guidance documents and ISO 14064-3. Any modifications applied to the Verification and Sampling plan were made based upon the conditions observed for monitoring in order to detect the processes with highest risk of material discrepancy.

Field sampling and techniques were based on the project parameters/scope and best professional judgment of the verification team in order to meet a reasonable level of assurance as directed by the professional judgment of the Lead Verifier. Because the biomass inventory was validated and has not changed, inventory plots were not selected for detailed review/re-measurement. Rather, extensive review of all remote sensing data was undertaken of the project area and leakage belt to aid the Verification Team in establishing a reasonable level of assurance regarding confirming the reported areas of ex-post disturbance (from the remote sensing analysis) for the quantification of project emissions and leakage emissions.

In addition, a risk-based approach was used for the on-the-ground field sampling effort in order to select key areas for direct observation of forest losses, leakage issues, and stated project activities. The most likely access points for anthropogenic deforestation (Purus River and the ramals) within the Project Area and leakage belt were toured in order to allow the Verification Team to establish a reasonable level of assurance regarding the implementation of project activities, and to further confirm the reported areas of ex-post disturbance.

The desktop verification component included a full review of all project documentation and calculations received from the Project Proponent as described below.

2.2 Document Review

A detailed review of all project documentation was conducted to ensure consistency with, and identify any deviation from, VCS Program requirements, the methodology (VM0007, v1.3), and the validated PD. Initial review focused on the validated PD and Monitoring Report (MR) relative to the field conditions observed and interviews with project management staff. Project details, implementation status, data and parameters, and quantification of GHG emission reductions and removals were thoroughly examined. Key supporting documents were also reviewed. These included monitoring data (i.e. remote sensing/Geographic Information System (GIS) data), land ownership documentation, carbon rights contracts, financial analyses, property boundaries, maps and aerial images, fire-specific monitoring data, biomass and carbon calculation spread sheets, and responses to Non-conformance Requests (NCRs) and Clarification Requests (CLs).

The AFOLU Non-Permanence Risk Tool (04 October 2012, v3.2) was used by the Project Proponent to assess overall project risk. The Verification Team reviewed the Non-Permanence Risk Report provided with the verification supporting documentation and confirmed that the Project adheres to the requirements set out in the VCS AFOLU Non-Permanence Risk Tool (04 October 2012, v3.2). Each risk factor was thoroughly assessed for conformance. Any identified NCR and/or CL findings related to the AFOLU Non-Permanence Risk Tool/Report are presented in Appendix B. The final score was calculated to be 10%.

For a listing of all documents received from the client for this verification, please see Appendix A.

2.3 Interviews

The verification site visit occurred between 12 August 2014 and 25 August 2014, it was performed in conjunction with the VCS verifications for the Russas and Valparaíso projects. Onsite interviews and informal discussions were conducted with project staff, members and leaders of the local communities, a not-for-profit organization, and Brazilian government representatives. During interviews with the local community some commented that they didn't fully understand the project and wanted clearer information. In most instances further discussion from ESI with the persons and/or the project proponent revealed that they had chosen not to attend the trainings or visit the headquarters for meetings. A few other individuals indicated that they understood the project, but just didn't care about the project one way or the other because they didn't need the benefits.

Additionally, during the site visit one family in particular (the Guitas, represented by the son, Antonio Sales Nunes Cardeal) stated they do not plan to change their activities and the extent of their right to ownership was somewhat in question. It is clear they have indeed continued to clear land for their cattle operations. The project proponent confirmed that community members that have been living on land adjacent to the project area and who made the land productive (e.g., by growing crops or raising animals) for ten years, have the right to be titled. To resolve ongoing disputes over land, Moura & Rosa will voluntarily recognize whatever area is currently deforested and under productive use by each family living on the Seringal Porto Central and Seringal Itatinga parcels. However these land tenure "disputes" concern deforested areas, rather than the forest Project Area of the Purus Project. The project proponent believes that once the details of ownership are worked through with the Guita family and title is received the clearing of the project lands will cease. This is something that will be confirmed in future verifications. The majority of locals indicated that the land titling aspect of the project is a desired benefit.

In addition, we met with individuals with various roles in the project. This included an interview with SOS Amazonas who supports the PD's information regarding sustainable agriculture and conducts the agricultural training. In addition we met with the biologist who installed and monitored the camera traps for biodiversity assessment, and we also met with the nurse who hands out mosquito nets and provides training and materials for dental health.

The following is a list of the main interviewees:

Name*	Title
Brian McFarland	Director-Carbon Projects and Origination, Carbonfund.org – CarbonCo/Project Developer
James Eaton	Senior Manager-Forestry & Technical Services, TerraCarbon, LLC./Independent Consultant
Wanderley Cesario Rosa	Managing Director, Moura & Rosa /Landowner-Project Manager
Normando Rodrigues Sales	Representative, Moura & Rosa /Landowner-Project Manager
Pedro Freitas	President, Freitas International Group, LLC. (Carbon Securities)/Project Facilitator
Kidney Da Cunha Aires	On-Site Project Staff
Jose Rogerio Olivero Saboia	On-Site Project Staff
Adair Duarte	Coordinator, SOS Amazonas
Sebastiao De Melo Carvalho	Project Area Nurse
Cecelia	Local Resident
Andre Botelho	Project Biologist
Jose Maria Mariano	Local Residents
Antonio Sales Nunes Cardeal	Local Resident
Interviewee (no name given)	Local Resident
Francimar Pereira de Melo	Local Resident
Hernando	Local Resident
Jose Artenisio da Silva	Local Resident
Jose Marios da Silva	Local Resident
Raymundo Nascimento	Local Resident (leakage area)
Sonja	Local Residents (leakage area)
Ramal Interviewee 1 (no name given)	Local Resident, Adjacent Ramal

Ramal Interviewee 2 (no name given)	Local Resident, Adjacent Ramal
Ramal Interview 3 (Mariana)	Local Resident, Adjacent Ramal

*Regarding members of the local communities, a fair number of interviewees did not give their names or only gave partial names. Due to the nature of their settlement, it was decided to simply ask for "names, then it was recorded. This was intended to not intimidate them and hope for a more complete answer

The interviews confirmed with reasonable assurance that no community members will be negatively affected by the project and that most community members are participating in project activities and feel that they are a benefit.

2.4 Site Inspections

The verification site inspection followed our prepared Verification and Sampling Plan process and was conducted on 12-24 August 2014. The site visit aided the verification team to both understand application of the methodology on-site and to identify possible sources of error to focus desktop verification efforts.

Ground inspection of the Project Area, leakage belt and adjacent ramal were conducted during the site visit in order to allow the Verification Team to confirm the implementation of project activities. To further confirm the reported areas of ex-post disturbance extensive review of remote sensing data was undertaken.

During the field review of the project, the following aspects of the project were considered:

1. Boundaries - reviewed boundaries using a Global Positioning System (GPS) and checked boundary signage
2. Stratification - checked vegetative cover classifications by taking waypoints and notes through direct observation with handheld GPS and maps.
3. Forest Protection - viewed areas of high likelihood of incursions
4. Reviewed and observed high risk areas and items:
 - Hot-spot areas of recent deforestation and degradation in project boundary, leakage area and carbon accounting area with confirmation of data collection methods in conformance with the stated Standard Operating Procedures (SOPs) for monitoring
 - This included assessments of:
 - Evidence of logging (degradation and deforestation)
 - Evidence of any Fire Hot Spots
 - Evidence of Land Clearing
 - Leakage
 - Considered leakage monitoring as described in the validated PD and Monitoring Report.
 - Review possibility of illegal expansion of other concessions
 - Visited communities along adjacent ramal to assess the potential for current and future impacts to the project area.

- Implementation of monitoring
- Reported elements of the Risk Assessment

Field observations sufficiently satisfied the professional discretion of the Verification Team that the findings in the monitoring report were accurate.

2.5 Resolution of Findings

During the verification process, there was a risk that potential errors, omissions, and misrepresentations would be found. The actions taken when errors, omissions, and misrepresentations were found included: notifying the client of the issue(s) identified, and expanding our review to the extent that satisfied the Lead Verifier's professional judgment.

The process of resolution of findings involved one formal round of assessment by the Verification Team. Findings were resolved during the verification by the Project Proponent implementing corrective actions such as amending the Monitoring Report and calculations, as well as and providing written responses. This resulted in project documentation that was in conformance with the requirements of the VCS Standard (v3.4) for GHG projects.

Findings were characterized in the following manner:

Non-Conformity Reports (NCRs) were issued as a response to material discrepancies in a part of the project and generally fell into one category:

- Non-conformity to a VCS guiding document listed in Section 2.1 above
- Consistency among project documentation or calculations was lacking
- Mathematical formulae were incorrect
- Additional information was required by the verification team in order to confirm reasonable assurance for compliance

Clarifications (CL) were issued when language within a project document needed extra clarification to avoid ambiguity.

Opportunities for Improvement (OFI) were issued to the project proponents when an opportunity for improvement was identified.

During the course of the verification, twenty-one (21) essential findings were identified; a count by type is presented in the table below. Detailed summaries of each finding, including the issue raised, responses, and final conclusions, are provided in Appendix B. All NCRs/CLs were satisfactorily addressed.

Finding Type	Amount
NCR	1
CL	20
OFI	0
Total	21

2.5.1 Forward Action Requests

One forward action request was identified during the verification.

One family (the Guita, represented by the son, Antonio Sales Nunes Cardeal) in the project area did not want to be involved in the project and was considered to be opposed to it. Additionally though they are outside (adjacent to) the project area, it was a concern that they may potentially continue to deforest in the project area. The project proponent indicated that between this verification and the next they are planning to coordinate with the Guita family to come to a reasonable resolution on the lands to be titled to them, which would resolve the potential for additional deforestation in the project area. This issue should be reviewed again in the next verification to confirm it was addressed and that the Guita family is not deforesting in the project area.

2.6 Eligibility for Validation Activities

Validation activities were not undertaken as part of the verification.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

The PD entitled “*The Purus Project: A Tropical Forest Conservation Project in Acre, Brazil*” dated 28 December 2012 was previously validated by another Validation and Verification Body (VVB). The validation process is described in the Validation Report, available on the VCS website. The Project Proponent has attested that none of the project area has been or will be registered under another carbon trading scheme during the VCS project lifetime, other than CCBA.

3.2 Methodology Deviations

The following methodology deviations were applied to the project and assessed during the verification.

Methodology Deviation	Verification Findings
Trees in the Cecropia genus were not	Verification team confirmed that Cecropia

measured as part of the forest inventory. This has been proposed as a deviation as it stands in conflict with the CP-AB requirement that "all the trees above some minimum DBH in the sample plots" be measured.	genus was conservatively omitted from analysis and this is permitted per VCS Standard Section 3.5.1 which states that deviations are permitted where they relate to data and parameters available at validation, data and parameters monitored, or the monitoring plan. Cecropia sp. generally does not grow in a consistent tree form to allow conventional volume estimates using allometric methods. Most species, within the genus, contain hollow portions within the stems making volume measurement difficult. Further, there are relatively few Cecropia sp. across the project area. The omission of Cecropia is conservative and does not negatively impact the conservativeness of the quantification of GHG emission reductions or removals.
While sampling lying dead wood using the line intersect method: Two 92-meter transect lines were used rather than two 50-meter transect lines; The sampling lines did not bisect each sample plot, but rather ran from one plot center to the next; and The sampling lines were oriented to the north and east, and no randomization in the bearing of the first line was employed	Verification team confirmed that project proponents measured lying deadwood using two 92-meter transects and all dead wood greater than or equal to 10cm diameter was measured at the point of intersection. This measurement method differs from the requirements on module CP-D where Step 1 of Part 2: Lying Dead Wood states "Two 50-meter lines (164 ft) are established bisecting each sample plot and the diameters of the lying dead wood (≥ 10 cm diameter ≥ 3.9 inches+) intersecting the lines are measured. The first line is oriented along a random bearing, the second line is oriented perpendicular to the first." The PP established two 92-meter transect lines, greater in length, to capture a larger and more representative sample of lying dead wood. These sample lines were permitted not to intersect a given sample plot center, but instead run from one plot to another. This method still ensures a random, but systematic sample of lying dead wood along a transect. The Project Proponent followed the same minimum diameter rule as the requirement, where lying dead wood greater than or equal to 10cm which fell on the transect line was sampled. The first sample line was not at a randomized bearing but rather the two sample

	lines were oriented at the north and east. The verification team believes that consistent line bearings among sample lines is still in line with good forest sampling practice as no sampling bias is introduced. Field going personnel of varying forest measurement experience are better able to replicate sample line measurements which are consistent in bearing. Further, the bearing of sample lines follows the perpendicular rule stated in CP-D. These deviations from the criteria and procedures related to measurement are appropriate given the good forest measurement practices employed, consistency in sampling practices, and conservativeness in larger sample sizes of lying dead wood. Further, the deviations are permissible per VCS Standard Section 3.5.1 given that the issue is a monitoring/measurement deviation and its application does not negatively impact the conservativeness of the quantification of GHG emission reductions or removals.
For validation of the allometric equation, commercial heights were estimated from total height measured in the field by applying a factor of 62.9%. This commercial height to total height ratio is Amazon specific and was developed by Higuchi et al. 1998 (n = 315 trees).	This deviation is permissible as it does not negatively affect the conservativeness of quantification of tree volumes. The Higuchi et al. 1998 is an acceptable reference for commercial height to total higher ratio. The permissibility of this methodology deviation was evaluated at the previous initial validation and verification.
Rather than using a root to shoot ratio to estimate belowground biomass as per the CP-AB module, belowground biomass was estimated using an allometric equation developed by Cairns et al.	The verification team has agreed to allow this deviation as it has been demonstrated by project proponents that using the Cairns ¹ approach is a conservative allometric method to estimate belowground biomass. The Cairns et al. 1997 equation predicts root biomass density as a function of the aboveground biomass density and it was chosen to replace

¹ Cairns, M. A., S. Brown, E. H. Helmer, and G. A. Baumgardner. 1997. Root biomass allocation in the world's upland forests. *Oecologia* 111, 1-11.

	the root to shoot parameter R. The Cairns et al. 1997 equation was confirmed by the validation team to be a widely referenced method during a related literature search. The project proponent (PP) demonstrated the conservativeness of the root to shoot parameter (R) substitution in a separate analysis where the default root to shoot ratios were compared to the Cairns root to shoot ratio. The Cairns et al. method employs an average root to shoot ratio of 0.2286 versus the value of 0.24 (Table 4.4 IPCC GL AFOLU Tropical Forest >125 t.ha⁻¹). This alternative method for determining below ground biomass is acceptable as it is more conservative and accurate. Further, this method for determining below-ground biomass is a parameter available at validation and therefore a justifiable deviation.
The forest inventory has deviated from the criteria for selection (i.e., the equation is based on a datasets comprising at least 30 trees, with an r2 that is ≥ 0.8) and validation of the allometric equation related to palm biomass, however the equation used is likely to result in a conservative estimate of palm biomass for the following reasons: Volume is calculated as the volume a parabaloid rather than the volume of a cylinder; Only stem biomass is estimated, thus conservatively excluding other aboveground biomass; and A conservative measure of basal diameter (i.e., dbh) was used.	The verification team has agreed to allow this deviation as it has been demonstrated by project proponents that using a paraboloid is a conservative alternative to applying a traditional allometric to represent palm trees. Further, this method for determining above-ground biomass is a parameter available at validation and therefore a justifiable deviation.
A calibration factor of 0.985 was applied to the Brown (1997) equation to ensure use of this equation results in conservative estimates of live aboveground biomass.	This deviation is permissible as it does not negatively affect the conservativeness of quantification of live aboveground biomass. The calibration factor applied to Brown 1997 is an acceptable approach. The permissibility of this methodology deviation was evaluated at

	the previous initial validation and verification.
In the with-project case, C(post) can conservatively be assumed to be zero, not only for natural disturbance (CP,Dist,q,i , as stated in Section 5.2.3 of the M-MON module) but also for deforestation (CP,post,u,i). This deviation is conservative because subtracting zero from the baseline stocks, leads to the conclusion that $\Delta C_{pools,Def,u,i,t}$ is equal to C(BSL,i), which leads to the maximum emission in the with-project case, which is conservative.	This methodology deviation is permissible as it does not negatively affect the conservativeness of project emissions. Setting parameter Cpost to zero ensures that the most conservative estimate of emissions is achieved. This deviation was reviewed at the previous verification and found to be permissible.
AVFOR will be stratified using information and data derived from official (government) publications, peer-reviewed published sources, or other verifiable sources. Stratification is not limited to the delineation of different strata where contiguous areas of at least 100 ha differ in stocks by $\geq 20\%$. ²	The verification team found that AVFOR was stratified by Amazon biomes, source: FAO publication Global Forest Resources Assessment 2010, Brazil Country Report. The requirement in LK-ASU states (Step 4, Definition of the Leakage Belt Boundary), "AVFOR shall be separated into different strata where contiguous areas of at least 100 ha differ in stocks by $\geq 20\%$." The project was stratified into contiguous natural forest biomes according to the FAO data that are larger than 100 ha and differ in in stocks by $\geq 20\%$, thus it meets the above quoted mandatory requirement. No divergences from the FAO document were identified during validation. Since the AVFOR parameter is directly related to the TOTFOR parameter which contains a permissible methodology deviation, the validation team agreed with the PP it be mentioned along with the TOTFOR as a methodology deviation. However, the verification team concludes that the actual measurement method for AVFOR does not constitute a methodology deviation because this measurement was performed correctly.

² *The Purus Project: A Tropical Forest Conservation Project in Acre, Brazil* – Project Description, v02, dated 28 December 2012.

The verification process confirmed that the above methodology deviations are reasonable and in compliance with the VCS Standard, Section 3.5 and have been appropriately justified. The listed deviations represent a deviation from the criteria and procedures relating to monitoring and/or measurement of GHG emission reductions or removals set out in the selected methodologies. Moreover, the deviations do not negatively impact the conservativeness of the quantification of GHG emissions reductions or removals (where degradation is deemed significant following the steps in T-SIG, it will be accounted for).

3.3 Project Description Deviations

A Project Description Deviation related to using temporary sample plots covering 1% of the potential degradation area (ADegW,i) was listed at this verification (see also Section 3.2 above). ESI confirms that the deviation from assessing the significance of degradation using temporary sample plots to the use of quantitative survey data and conservative assumptions is justified. This represents an acceptable approach for assessing if emissions due to degradation should be included in the quantification of net GHG emission reductions and if plot level monitoring of degradation is warranted.

The project remains in compliance with the VCS Standard, Section 3.6.1 where Project Description Deviations are permissible at verification as long as the deviation does not impact the applicability of the methodology, additionality or the appropriateness of the baseline scenario, and the project remains in compliance with the applied methodology.

The project remains in compliance with VM0007 V1.3 (where degradation is determined to be significant per the T-SIG tool, it will be accounted for) and the PD deviation is described and appropriately justified in Section 2.2.2 of the Monitoring Report.

CarbonCo's assessment of degradation ("2013_PurusDegradation 2014.09.29.xlsx") was thoroughly reviewed and found to contain the appropriate data and conservative calculations. Emissions due to degradation were justified as insignificant following the proper steps of the T-SIG tool and plot level monitoring of degradation is not warranted at this time. This item should be re-assessed at future verifications.

3.4 Grouped Project

Not applicable, as this is not a grouped project.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

The Project Activities and Monitoring Plan, as described in the validated PD, have been initiated. There are no remaining issues from the validation. At this 2nd verification, many activities are still being implemented, but the verification team observed considerable progress during the Verification Site Inspection.

The verification team requested to visit examples of all activities during the various Site Inspections and subsequently confirmed the initial implementation of all items, as discussed in Section 2.1 of the Purus Project's MR.

4.2 Accuracy of GHG Emission Reduction and Removal Calculations

ESI conducted an intensive review of all input data, parameters, formulas, calculations, conversions, statistics and resulting uncertainties and output data to ensure consistency with the VCS standard, the project PD and the methodologies. Further, ESI reproduced calculations for selected samples to ensure accuracy of the results. Conversion factors, formulas, and calculations were provided by the Project Proponent in spreadsheet format to ensure all formulas were accessible for review. The verification team recalculated subsets of the analysis to confirm correctness. The Project Proponent also provided a step-by-step overview of calculations to ensure ESI understood the approach and could confirm its consistency with the methodologies and PD.

An overview of the data and parameters monitored, along with verification team findings, are included in the table below:

Data Parameter	Verification Team Findings
$\Delta C_{P,Def,i,t}$	This data/parameter was appropriately chosen because it pertains to net carbon stock change as a result of deforestation in the project case in the project area in stratum i at time t . This value was found to be calculated accurately in a spreadsheet ("2013_PurusMonitoring 2014.09.29.xls") according to the correct formula for the monitoring period.
$\Delta C_{P,DefLB,i,t}$	This data/parameter was appropriately chosen because it pertains to net carbon stock change as a result of deforestation in the project case in the leakage belt in stratum i at time t . This value was found to be calculated accurately in a spreadsheet ("2013_PurusMonitoring 2014.09.29.xls") according to the correct formula for the monitoring period.
$\Delta C_{P,DistPA,i,t}$	This data/parameter was appropriately chosen because it pertains to net carbon stock change as a result of natural disturbance in the project case in the project area in stratum i at time t . The value applied was 0. This was appropriate as there were no areas of natural disturbance reported in by on-the ground forest monitors/local land managers and none was distinguished (from anthropogenic deforestation) with remote sensing analyses.
$A_{DefPA,u,i,t}$	This data/parameter was appropriately chosen because it pertains to the area of recorded deforestation in the project area stratum i converted to land use u at time t . This value was found to be calculated accurately from remote sensing/GIS data and was

	implemented appropriately in the monitoring spreadsheet ("2013_PurusMonitoring 2014.09.29.xls") according to the correct formula for the two year monitoring period.
$A_{DefLB,u,i,t}$	This data/parameter was appropriately chosen because it pertains to the area of recorded deforestation in the leakage belt stratum i converted to land use u at time t . This value was found to be calculated accurately from remote sensing/GIS data and was implemented appropriately in the monitoring spreadsheet ("2013_PurusMonitoring 2014.09.29.xls") according to the correct formula for the two year monitoring period.
$A_{DistPA,q,i,t}$	This data/parameter was appropriately chosen because it pertains to area impacted by natural disturbance in post-natural disturbance stratum q in stratum i , at time t . The value applied was 0. This was appropriate as there were no areas of natural disturbance reported by on-the ground forest monitors/local land managers and none was distinguished (from anthropogenic deforestation) with remote sensing analyses.
$C_{BSL,i}$	This data/parameter was appropriately chosen because it pertains to the carbon stock in all pools in the baseline case in stratum i . This value was calculated and assessed ex ante (at validation). The appropriate ex ante estimates were found to be implemented appropriately in the quantification of net GHG emission reductions.
$\Delta C_{pools,Def,u,i,t}$	This data/parameter was appropriately chosen because it pertains to the carbon stock in all pools in post-deforestation land use u in stratum i . This value was found to be calculated accurately by strata in a spreadsheet ("2013_PurusMonitoring 2014.09.29.xls") according to the correct formula for the two year monitoring period.
$A_{DegW,i,t}$	This data/parameter was appropriately chosen because it pertains to the area potentially impacted by degradation processes in stratum i . The value applied was 0. This was appropriate as CarbonCo's assessment of degradation ("2012_PurusDegradation 2013.11.27.xls") indicated that emissions due to degradation (for this monitoring period) are insignificant as per T-SIG.
$C_{DegW,i,t}$	This data/parameter was appropriately chosen because it pertains to the biomass carbon of trees cut and removed through degradation process from plots measured in stratum i at time t . The value applied was 0. This was appropriate as CarbonCo's assessment of degradation ("2012_PurusDegradation 2013.11.27.xls") indicated that emissions due to degradation (for this monitoring period) are insignificant as per T-SIG.

AP_i	This data/parameter was appropriately chosen because it pertains to the total area of degradation sample plots in stratum i . This parameter was not used during this monitoring period. This was appropriate as CarbonCo's assessment of degradation ("2012_PurusDegradation 2013.11.27.xls") indicated that emissions due to degradation (for this monitoring period) are insignificant as per T-SIG and plot level monitoring of degradation is not warranted at this time.
$\Delta C_{P,DegW,i,t}$	This data/parameter was appropriately chosen because it pertains to the net carbon stock changes as a result of degradation in stratum i in the project area at time t . This parameter was not used during this monitoring period. This was appropriate as CarbonCo's assessment of degradation ("2012_PurusDegradation 2013.11.27.xls") indicated that emissions due to degradation (for this monitoring period) are insignificant as per T-SIG.
$PROP_{IMM}$	This data/parameter was appropriately chosen because it estimates proportion of baseline deforestation caused by immigrating population. This value was found to be obtained accurately from survey data and was implemented appropriately for the monitoring period.
$PROP_{RES}$	This data/parameter was appropriately chosen because it estimates the proportion of baseline deforestation caused by population that has been resident for ≥ 5 years. This value was found to be obtained accurately from survey data and was implemented appropriately for the monitoring period.
TOTFOR	This data/parameter was appropriately chosen because it gives the total available national forest area. This value was found to be obtained accurately from verifiable sources and implemented appropriately.
PROTFOR	This data/parameter was appropriately chosen because it gives the total area of fully protected forests nationally. The value applied was 0. This value was found to be obtained accurately from verifiable sources and implemented appropriately.
MANFOR	This data/parameter was appropriately chosen because it gives the total area of forests under active management nationally. The value applied was 0. This value was found to be obtained accurately from verifiable sources and implemented appropriately.
$ARRL_{forest,t}$	This data/parameter was appropriately chosen because it gives the remaining area of forest in RRL at time t . This value was found to be calculated accurately using the correct formula for the

	monitoring period.
Aburn,q,i,t.	This data/parameter was appropriately chosen because it pertains to the area burnt in post-natural disturbance stratum q in stratum i , at time t . It was conservatively assumed that the total area burnt during the deforestation process is equal to the area deforested, ADefPA,u,i,t.
dbh	This data/parameter was appropriately chosen because it gives the tree diameter at breast height. DBH values were measured and assessed ex ante (at validation). The appropriate ex ante estimates were found to be implemented appropriately in the quantification of net GHG emission reductions.
dbasal	This data/parameter was appropriately chosen because it gives the basal diameter. Basal diameter values were measured and assessed ex ante (at validation). The appropriate ex ante estimates were found to be implemented appropriately in the quantification of net GHG emission reductions.
H	This data/parameter was appropriately chosen because it gives the height of a tree. Tree heights were measured and assessed ex ante (at validation). The appropriate ex ante estimates were found to be implemented appropriately in the quantification of net GHG emission reductions.
Dn	This data/parameter was appropriately chosen because it gives diameter of piece n of dead wood along a transect. Lying Dead Wood diameters were measured and assessed ex ante (at validation). The appropriate ex ante estimates were found to be implemented appropriately in the quantification of net GHG emission reductions.
N	This data/parameter was appropriately chosen because it gives the total number of wood pieces intersecting a transect. The numbers of Lying Dead Wood pieces were tallied and assessed ex ante (at validation). The appropriate ex ante estimates were found to be implemented appropriately in the quantification of net GHG emission reductions.
L	This data/parameter was appropriately chosen because it gives the length of a transect. Transects were installed, measured, and assessed ex ante (at validation). The appropriate ex ante estimates were found to be implemented appropriately in the quantification of net GHG emission reductions.

Cpost	This data/parameter was appropriately chosen because it pertains to the average carbon stocks remaining after deforestation. This value was found to be calculated accurately using the correct formula for the monitoring period.
Bi,t	This data/parameter was appropriately chosen because it pertains to the average aboveground biomass stock before burning stratum <i>i</i> , time <i>t</i> . This value was found to be calculated accurately using forest inventory data and implemented appropriately in the quantification of net GHG emission reductions.
<i>EBSL SS,i, pool#</i>	This data/parameter was appropriately chosen because it pertains to the carbon stock or GHG sources (e.g. trees, dead wood, soil organic carbon, emission from fertilizer addition, emission from biomass burning etc.) in the baseline case. This value was calculated and assessed ex ante (at validation). The appropriate ex ante estimates were found to be implemented appropriately in the quantification of net GHG emission reductions.
<i>UBSL,SS,i,pool#</i>	This data/parameter was appropriately chosen because it pertains to the percentage uncertainty (expressed as 95% confidence interval as a percentage of the mean where appropriate) for carbon stocks and greenhouse gas sources in the baseline case (1,2...n represent different carbon pools and/or GHG sources). This value was found to be calculated accurately by strata in a spreadsheet ("2013_PurusMonitoring 2014.09.29.xls") according to the correct formulae for the two year monitoring period.

The verification team also reviewed data collection and storage procedures to ensure all opportunities for error in transposition of data between data were minimized.

Uncertainty was assessed as required. The verification team recalculated the statistics independently to confirm the accuracy of the reported precision and confirmed no confidence deduction was required.

Field data collection utilized appropriate principles of forestry data collection, including appropriate tools and methods. Collected data was handled appropriately, including a structured process for QA/QC. Analysis of collected data used appropriate formulas, conversions, and parameters, supported by scientific literature. Where ranges of parameters exist, or other types of formulaic uncertainty, appropriately conservative values were used in data analysis.

4.3 Quality of Evidence to Determine GHG Emission Reductions and Removals

During ESI's verification, the evidence provided by the Project Proponent was more than sufficient in both quantity and quality to support the determination of GHG emission removals reported by the project. Throughout the verification, the Project Proponent demonstrated a

commitment toward conservativeness and took all measures appropriate to ensure the reliability of evidence provided.

The evidence provided to determine emission reductions reported in the monitoring report included values, notations, units and sources. This evidence has been cross checked with supplied emission reduction calculation spreadsheets and a comprehensive GIS dataset. The procedure for data recording, transfer and final transposition was also verified and found to be in compliance with the monitoring plan outlined in the PD. The verification team was able to confirm through cross checks that adequate monitoring mechanisms are in place where the required parameters need to be monitored.

Interviews conducted (oral evidence) are outlined in Section 2.3 above, and the final documents received from the Project Proponent supporting the determination of GHG removals can be viewed in Appendix A.

4.4 Non-Permanence Risk Analysis

The AFOLU Non-Permanence Risk Tool (04 October 2012, v3.2) was used by the Project Proponent to assess overall project risk. The Verification Team reviewed the Non-Permanence Risk Report provided with the verification supporting documentation and confirmed that the Project adheres to the requirements set out in the VCS AFOLU Non-Permanence Risk Tool (04 October 2012, v3.2). Each risk factor was thoroughly assessed for conformance. Any identified NCR and/or CL findings related to the AFOLU Non-Permanence Risk Tool/Report are presented in Appendix B. The final score was calculated to be 10%. A brief review of each factor is found in the table below:

Factor	Rationale & Quality	Conclusion
Internal Risks		
Project Management	Ongoing enforcement is required to prevent encroachment by outside actors. The Purus Project employs forest patrols to prevent encroachment by outside actors into the project area = 2. Management team does not include individuals with significant experience in all skills necessary to successfully undertake all project activities = 2. Local management partners are based in Rio Branco less than a day's travel from the project activity. There is a project manager living on the property and a project headquarters is being established on the property. Site visit confirmed this situation. Issue is scored appropriately = 0. Project Proponents have developed other forest carbon projects and have been working in the forest carbon arena for over 5 years. Brian McFarland of CarbonCo has developed the "Tensas River	A risk rating of 2 is appropriate given the rationale provided.

	National Wildlife Refuge Afforestation Project" under the VCS and the CCBS including managing the project design, implementation, and financing. The project proponents work alongside and have access to experts in carbon accounting and reporting (i.e., TerraCarbon) who have significant experience in all aspects of AFOLU project design and implementation, carbon accounting and reporting under the VCS Program. TerraCarbon has successfully validated and verified numerous projects under the VCS, including validation and verification of the VCS ARR project "Reforestation Across the Lower Mississippi Valley" The explanation is acceptable given that verifiers have worked with several members of the management team and are familiar with their experience enough to agree with this mitigation credit = -2	
Financial Viability	The verifier has reviewed the support documentation provided by the Project Proponent. Confirmation of funds from the CFO, a bank statement of the company and a emission reduction purchase agreement between CarbonCo and a buyer, all provide evidence to provide reasonable assurance that the break-even point is less than 4 years = 0. Project has secured 100% of funding needed to cover the total cash out before the project reaches breakeven. Details are provided in a cash flow analysis which can be found in the project database = 0. The verifier has reviewed the support documentation provided by the PP. The letter from the CFO provides confirmation that the funds are non-restricted and that there is accessibility to funds. Based on that documentation, and the reviewed bank statement, the verifier has obtained reasonable assurance that the project has the ability to access funding as needed = -2.	A risk rating of 0 is appropriate given the rationale provided.
Opportunity Cost	As the majority of baseline activities over the length of the project crediting period are subsistence-driven and that the project proponent has selected the highest risk score, an NPV analysis is not required. This risk category will be revised downward, once net	A risk rating of 6 is appropriate given community benefits not demonstrated yet.

	positive community impacts can be clearly demonstrated, such as through certification against the Climate, Community & Biodiversity Standards or results of a participatory assessment of the project activities on the local communities which demonstrates net positive community benefits. Verifiers agree that the majority of the baseline activities are subsistence driven as evidenced by verifier's observations and discussions with community members in the project area. = 8. There is a legal contractual agreement to maintain the project area as forest for at least a 60 year period (i.e. greater than the length of the crediting period) from the project start date = -2.	
Project Longevity	There is a legal contractual agreement to maintain the project activities and maintain the project area as forest for at least a 60 year period from the project start date (30-(60/2)) = 0.	A risk rating of 0 is appropriate given the rationale provided.
Total Internal Risks		8
External Risks		
Land Tenure and Resource Access Impacts	The provided documents were translated to the best of the verifier's ability and reviewed. These provided reasonable assurance that Moura and Rosa have full ownership and right of use for the properties at the time of verification. Itatinga - Contrato de Compra e Venda do Seringal.pdf is a purchase and sales document that shows transfer of the Seringal Itatinga property to Moura & ROSA HOLDINGS LTD in 2009. M&R - Certid_o Itatinga - MemorialDescritivo - Manoel urbano - 13.03.12.pdf is a certification of rights to the property. It indicates the property was acquired by the previous landowners in February 2009. The rights were relinquished to Mora & Rosa in December 2009. M&R - Certid_oNegativaAç_es - Matricula-nº 1920 - PortoCentral - 14.03.12.pdf and M&R - Cetid_o Matricula-nº1920-PortoCentral - 14.03.12.pdf indicate that Normando Sales Rodrigues has full ownership rights to the Seringal Porto Central Property. The	A risk rating of 0 is appropriate given the rationale provided.

	certification documents are dated March 2012. = 0. It is understood that no communities live within the project area, rather they live within the boundaries of the land ownership, but they are excluded from project area. Thus, the land is owned by the project proponents. There are no disputes with the land tenureship area. The disputes have been addressed are outside of the scope of the project area = 0. There is a legal contractual agreement to maintain the project area as forest for at least a 60 year period (i.e. greater than the length of the crediting period) from the project start date = -2.	
Community Engagement	Given that 100% of the local communities have been consulted and are involved in the project neither A nor B is applicable, and thus the default risk value of zero is applicable.	A risk rating of 0 is appropriate given the rationale provided.
Political Risk	Independent calculation of the governance score for Brazil is .057, which includes 2012 and is eligible for a score of 2. Acre, Brazil is participating in the Governors' Climate and Forest Taskforce. Further, Brazil has an established Designated National Authority under the CDM and has at least one registered CDM Afforestation/Reforestation project. "The jurisdiction in which the project is located is participating in the Governors' Climate and Forest Taskforce (GCF)." Independent web search reveals that the statement made by the Project Proponent is true = -2	A risk rating of 0 is appropriate given the rating for governance and participation in beneficial projects.
Total External Risks		0
Natural Risks		
Fire, pests and disease, extreme weather, geologic risk,	Fire - justification for the 10-25 year return interval is sound. Given that the area of Acre has historically exhibited low fire incidence as described in (Aragao and Shimbukuro, 2010), a low amount of forest edge, and a fire suppression program in the region that inherently would inhibit the positive feedback loop associated with fire incidence, the verifier believes that the associated risk for fire is	A risk rating of 2 is appropriate given the rationale provided for the greatest natural risk of fire.

	reasonable = 2. Pest and Disease - The forests of the project area have a high diversity of tree species, with over 150 tree species >10 cm dbh, and like other diverse tropical forests, are not known to be subject to catastrophic disturbance by insect pests or forest diseases. Forest pests and diseases as a source of risk are more relevant in temperate forests or plantations, with low species diversity and consequently susceptible to extensive damage due to pest and disease outbreaks, which tend to be concentrated on single host species. Further, there is no history of catastrophic forest disturbance due to forest pests or diseases in the region. Verifiers independently searched the internet for any relevant forest pest or disease issues and could not locate any information that would lead verifiers to think that this item was scored incorrectly. Several references indicate that there are numerous endemic diseases and pests in the Amazon Forest, however none appear to be of epidemic proportions, nor is there much history of such occurrences. The diversity of the forested landscape appears to help to mitigate any widespread issues. Observations on the site visit and in flyovers in the region during previous travels have not ever revealed any widespread disease or pest outbreaks. Clearly climate change could play a greater role in this area in the future, however at this time, this element appears to be scored correctly = 0. Extreme Weather - While extreme weather events in the region include drought, flooding, and disturbance by wind, this analysis is limited to disturbance by wind as this is the only disturbance which has a direct effect on carbon stocks. As flooding within the project region is common, high water levels in the forest do not lead to a reduction in the forest carbon stocks. Drought does not have a direct effect on existing forest carbon stocks, but	
--	---	--

	instead can increase the severity of forest fires and hence is covered above in the section on fire risk. In relation to disturbance by wind, the recurrence intervals for large blow down disturbances in the western Amazon have been estimated at 27,000 years. Verifiers independently searched the internet for any relevant weather related issues and could not locate any information that would lead verifiers to think that this item was scored incorrectly. Observations on the site visit and in flyovers in the region during previous travels have not ever revealed any widespread disease or pest outbreaks. Clearly climate change could play a greater role in this area in the future, however at this time; this element appears to be scored correctly = 0. Geologic Risk - Neither volcanoes nor active tectonic fault lines are present within the project area. Landslides are not likely to occur within the project area because the project area is relatively level (less than 5% slope) terrain. Verifiers agree with this evaluation. This item is scored appropriately = 0	
Total Natural Risks		2
Overall Risk Rating = 10		

5 VERIFICATION CONCLUSION

After review of all project information, procedures, calculations, supporting documentation and site visits, ESI confirms that the monitoring conducted by the Project Proponent, along with the supporting Monitoring Report, are accurate and consistent with all aforementioned VCS criteria, the validated PD, and the selected methodology (VM0007, v1.3). ESI confirms that the *2013 Purus Project Monitoring Report* (v1.2 dated 08 October 2014) has been implemented in accordance with the validated PD.

ESI confirms all verification activities, including objectives, scope and criteria, level of assurance, monitoring and project documentation adherence to VCS Version 3 (and all associated updates), as documented in this report are complete. ESI concludes without any qualifications or limiting conditions that *The Purus Project: A Tropical Forest Conservation Project in Acre, Brazil*, meets the requirements of VCS Version 3 and all associated updates for the first monitoring period.

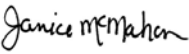
The GHG assertion provided by the Project Proponent and verified by ESI has resulted in the GHG emission reduction or removal of 60,563 tCO₂e equivalents by the project during the second monitoring/verification period (01 January 2013 – 31 December 2013). This value is gross of the 10% (8,699 tCO₂e equivalents) buffer withholding based on the non-permanence risk assessment tool.

Verified GHG emission reductions and removals in the above verification period (01 January 2013 – 31 December 2013):

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
2013	137,409	50,416	17,731	60,563

*Gross of buffer deduction

Submittal Information:

Report Submitted to:	Verified Carbon Standard Association 1730 Rhode Island Ave. NW, Suite 803, Washington, D.C. 20036 CarbonCo, LLC 3 Bethesda Metro Center, Suite 700 Bethesda, Maryland 20814 USA 001-240-247-0630
Report Submitted by:	Environmental Services, Inc. -Corporate Office 7220 Financial Way, Suite 100 Jacksonville, Florida 32257
ESI Lead Validator Name and Signature	 Shawn McMahon Lead Validator
ESI Division Regional Technical Manager Name and Signature	 Janice McMahon Vice President and Forestry, Carbon and GHG Division Regional Technical Manager
Date:	20 October 2014

APPENDIX A – DOCUMENTS RECEIVED/REVIEWED

Documents received 03 March 2014

- Purus Project Implementation Report, Portuguese (12-30-13).pdf

Documents received 02 July 2014

- Purus Project Implementation Report, Final (6-24-14).pdf

Documents received 03 July 2014

- 2013_PurusMonitoring 2014.07.03.xls
- 2013_PurusMonitoring 2014 07 03.pdf

Documents received 10 July 2014

- Purus Project Summary Document (Final Version, Portuguese) 7-10-14.pdf
- Purus Project Summary Document (Final Version, English) 7-10-14.pdf

Documents received 11 July 2014

- GIS
 - o Strata
 - PurusStrata.shx
 - LBStrata.dbf
 - LBStrata.prj
 - LBStrata.sbn
 - LBStrata.sbx
 - LBStrata.shp
 - LBStrata.shp.xml
 - LBStrata.shx
 - PurusStrata.dbf
 - PurusStrata.prj
 - PurusStrata.sbn
 - PurusStrata.sbx
 - PurusStrata.shp
 - PurusStrata.shp.xml
 - o 2013 monitoring
 - Deforestation2013_PurusPA_strata.shp.xml
 - Deforestation2013_PurusPA_strata.shx
 - 2013 deforestation tc
 - Desmate_TC_1988_2013.shx
 - Desmate_TC_1988_2013.dbf
 - Desmate_TC_1988_2013.prj
 - Desmate_TC_1988_2013.sbn
 - Desmate_TC_1988_2013.sbx
 - Desmate_TC_1988_2013.shp
 - Desmate_TC_1988_2013.shp.xml
 - Deforestation1988_2013_PurusRRL.dbf
 - Deforestation1988_2013_PurusRRL.prj
 - Deforestation1988_2013_PurusRRL.sbn
 - Deforestation1988_2013_PurusRRL.sbx
 - Deforestation1988_2013_PurusRRL.shp
 - Deforestation1988_2013_PurusRRL.shp.xml
 - Deforestation1988_2013_PurusRRL.shx
 - Deforestation2013_PurusLB_strata.dbf
 - Deforestation2013_PurusLB_strata.prj

- Deforestation2013_PurusLB_strata.sbn
- Deforestation2013_PurusLB_strata.sbx
- Deforestation2013_PurusLB_strata.shp
- Deforestation2013_PurusLB_strata.shp.xml
- Deforestation2013_PurusLB_strata.shx
- Deforestation2013_PurusPA_strata.dbf
- Deforestation2013_PurusPA_strata.prj
- Deforestation2013_PurusPA_strata.sbn
- Deforestation2013_PurusPA_strata.sbx
- Deforestation2013_PurusPA_strata.shp
- o Purus Geographical Boundaries
 - RRL_Boundary.shx
 - PurusLB2012.09.24.kmz
 - PurusLeakageBelt2012.09.19.dbf
 - PurusLeakageBelt2012.09.19.prj
 - PurusLeakageBelt2012.09.19.sbn
 - PurusLeakageBelt2012.09.19.sbx
 - PurusLeakageBelt2012.09.19.shp
 - PurusLeakageBelt2012.09.19.shp.xml
 - PurusLeakageBelt2012.09.19.shx
 - PurusPA2012.9.24.kmz
 - PurusProjectArea2012.09.19.dbf
 - PurusProjectArea2012.09.19.prj
 - PurusProjectArea2012.09.19.sbn
 - PurusProjectArea2012.09.19.sbx
 - PurusProjectArea2012.09.19.shp
 - PurusProjectArea2012.09.19.shp.xml
 - PurusProjectArea2012.09.19.shx
 - RRD_Boundary.dbf
 - RRD_Boundary.prj
 - RRD_Boundary.sbn
 - RRD_Boundary.sbx
 - RRD_Boundary.shp
 - RRD_Boundary.shp.xml
 - RRD_Boundary.shx
 - RRL_Boundary.dbf
 - RRL_Boundary.prj
 - RRL_Boundary.sbn
 - RRL_Boundary.sbx
 - RRL_Boundary.shp
 - RRL_Boundary.shp.xml
- 2013 purus monitoring
 - o 2013_PurusMonitoring 2014.07.03.xls
 - o additional support
 - Purus Project VCS Degradation Surveys April 2013.pdf
 - 2013 accuracy assessment
 - AccuracyAssessment2013_2014.06.30.docx
 - AApoints2013
 - o AApoints2013_utm.shx
 - o AApoints2013_final.kmz
 - o AApoints2013_final.lyr
 - o AApoints2013_utm.dbf
 - o AApoints2013_utm.prj
 - o AApoints2013_utm.sbn
 - o AApoints2013_utm.sbx

- o AApoints2013_utm.shp
 - o AApoints2013_utm.shp.xml
- AApoints_2013_2014.06.30.xlsx
 - 2013_PurusDegradation 2014.07.03.xls
 - Aggregated Purus Project Degradation Survey Results April 2013.xls
- o 2013_PurusMonitoring 2014 07 03.docx
- o 2013_PurusMonitoring 2014 07 03.pdf

Documents received 28 July 2014

- Purus Project CCBS PIR, Portuguese, 7-28-14.pdf

Documents received 19 August 2014

- PurusPA2012.9.24.kmz
- Purus_RRL.kmz
- PurusLB2012.09.24.kmz

Documents received 27 August 2014

- Cursos Projeto Purus
 - o Project photos and videos
 - o Apresentações
 - 1 FRUTICULTURA Generozo
 - FERTIRRIGAÇÃO.mht
 - Ministério da Agricultura, Pecuária e Abastecimento SISLEGIS.mht
 - Hortaliças
 - o A Cultura da Batata Doce.pdf
 - o 1 Cultivo de Hortaliças.pdf
 - Jabuticaba
 - o 21Mirtaceas UFAC.ppt
 - Jaca
 - o Valor Nutricional do Abacate, banana, goiaba, jaca, azeitona e pitanga.pdf
 - Jambo
 - o 21Mirtaceas UFAC.ppt
 - Jenipapo
 - o Jenipapo f01.pdf
 - o Jenipapo cot99.pdf
 - Mamão
 - o Produção de mudas circotec15.pdf
 - o Produção de Mudam Mamão e outras.pdf
 - o Custo de Produção do Mamão
 - Custo de Produção do Mamão\MAMÃO.xls
 - custo produção mamão I I I ano.pdf
 - o Mamão e Derivados
 - comunicado_116 Doces e Passas de Mamão.pdf
 - circular_100 Geléia de Araçá-boi com Mamão.pdf
 - o 1 circular_86.pdf
 - o 1 documentos_179.pdf
 - o 1 Mamoeiro_UFAC.ppt
 - o 026__Afranio_Eugenio_ok.pdf
 - o abc_aplicador_agrotoxico.pdf
 - o boletim_pesquisa_39.pdf
 - o Caderno_Campo_Mamão.pdf
 - o circular_69 Nutrição Calagem e Adubação.pdf
 - o circular_85 Fertirrigação.pdf
 - o comunicado_99 Meleira.pdf

- o comunicado_111 Fertirrigação.pdf
- o comunicado_121 Mosca Branca.pdf
- o comunicado_124 manejo de Solo.pdf
- o comunicado_125 Pinta Preta do Mamoeiro.pdf
- o comunicado_127.pdf
- o comunicado_139 Calagem e Adubação.pdf
- o documentos_162.pdf
- o documentos_169 Fertirrigação.pdf
- o documentos_188.pdf
- o documentos_196.pdf
- o Grade_Agroquimicos_Mamão.pdf
- o Instrucao_Normativa_Mamão.pdf
- o Mamão bd18.pdf
- o Mamão cot133.pdf
- o Mamão documentos169.pdf
- o Mamão documentos179.pdf
- o Mamão IT1398.pdf
- o mamao_20 Mosca das Frutas e Meleira.pdf
- o mamao_21 Podridão Interna dos Frutos.pdf
- o mamao_22 Podridão Peduncular.pdf
- o mamao_23 Mancha no Fruto e Folhas.pdf
- o mamao_24 Mancha Chocolate do fruto.pdf
- o mamao_25 Mancha ou Sarda do Fruto.pdf
- o mamao_26 Podridão do Fruto.pdf
- o mamao_27 Ácaro Rajado.pdf
- Mandioca
 - o mandioca de mesa.pdf
 - o MANDIOCA .xls
- Manga
 - o Produção de Mudas Manga e outras.pdf
 - o Custo de Produção da Manga
 - Manga e Melão Desidratados.pdf
 - custo produção manga.pdf
 - o Manga e Derivados
 - Manga Desidratada.pdf
 - o 1 A Cultura da Manga.pdf
 - o 1 Irrigação da Mangueira.pdf
 - o 1 Produção de Mudas de Manga.pdf
 - o 050_Mauricio_Eugenio_ok.pdf
 - o Acre comunicado68 Manga.pdf
 - o Apostila_Manga_(Irrigação_e_Fertirrigação).pdf
 - o circular_87 Irrigação.pdf
 - o circular_94 Produção de Mudas Enxertada.pdf
 - o comunicado_140 Calagem e Adubação.pdf
 - o Grade_Agroquimicos_Manga.pdf
 - o Instrucao_Normativa_Manga.pdf
 - o Manga bolpd217.pdf
 - o Manga INT65 Antracnose.pdf
 - o Manga OPB136 Manejo Integrado de Pragas.pdf
 - o Manga SDC186 Perdas Pós-Colheita.pdf
 - o manga.pdf
 - o manga_5 Poda de Formação.pdf
 - o manga_06 Aplicação de Farinha de Rocha.pdf
 - o manga_07 Produção de Mudas.pdf
 - o online08 Cultivo de Mangueira.pdf
 - o Portaria 37 Anexo X MAPA Manga.pdf

- Maracujá
 - o Custo de Produção do Maracujá
 - Custo de Produção do Maracujá\MARACUJÁ.xls
 - Custo de Produção do Maracujá\1 custo produção maracujá.pdf
 - custo produção maracujá I I ano.pdf
 - custo produção maracujá I I I ano.pdf
 - o 1 A Cultura do Maracujá.pdf
 - o 1 Cultivo do Maracujá.pdf
 - o 1 Cultivo do Maracujazeiro.odt
 - o 1 Ficha Pedag Maracujá.pdf
 - o 1 Maracujá doc242.pdf
 - o 1 Maracujá Perguntas e Respostas.odt
 - o 1 Maracujá Polinizadores SDC217.pdf
 - o 1 Maracujá Pragas e Controle Doc245.pdf
 - o 1 MARACUJÁ.docx
 - o 1 Maracujacultura_UFAC.ppt
 - o 1 Maracujazeiro Doenças e Controle 00001663.pdf
 - o 1 Maracujazeiro Manejo de Pragas 00002630.pdf
 - o 1 Pragas_do_maracujazeiro.pdf
 - o Acre tese.mestrado.jacson Maracujá.pdf
 - o Adubação_do_Maracujazeiro.pdf
 - o Aplicação de boro no maracujazeiro.pdf
 - o Auditoria_Empacotadora_Maracujá.pdf
 - o Caderneta_Campo_Maracujá.pdf
 - o Caderneta_Colheita_Maracujá.pdf
 - o circular_70 Manejo de plantas daninhas em maracujá.pdf
 - o comunicado_107 Adubação para Maracujá.pdf
 - o comunicado_132 Doenças do maracujá.pdf
 - o comunicado_141 Calagem e adubação para maracujá.pdf
 - o Controle Biológico do Percevejo no Maracujá v39n2a25.pdf
 - o Cultivar BRS Gigante amarelo.pdf
 - o Cultivar BRS Ouro Vermelho.pdf
 - o Cultivar BRS Sol do Cerrado.pdf
 - o Geléia de Maracujá Bp017.pdf
 - o Grade_Maracujá.pdf
 - o Instrução_Normativa_Maracujá.pdf
 - o Maracujá art021.pdf
 - o Maracujá BPD65.pdf
 - o Maracujá comtec147.pdf
 - o Maracujá comunicado132.pdf
 - o Maracujá Controle da Lagarta 1731.pdf
 - o Maracujá Ct105.pdf
 - o Maracujá ct912005.pdf
 - o Maracujá doc_site_serevicoesprodutos_livraria_Fruticultura_A cultura do Maracujá.pdf
 - o Maracujá doc30.pdf
 - o Maracujá doc223.pdf
 - o Maracujá doc233.pdf
 - o Maracujá Doc357.pdf
 - o Maracujá Doce bolpd05.pdf
 - o Maracujá Doenças e Controle Ct086.pdf
 - o Maracujá Novos Híbridos ALAV683_maracujz.pdf
 - o Maracujá Pragas e controle comtec47.pdf
 - o Maracujá Produção de mudas rectec42.pdf
 - o Maracujá rectec45.pdf

- o Maracujá.mht
 - o maracuja_28 Diagnose foliar Maracujazeiro.pdf
 - o maracuja_29 Comercialização do Maracujá.pdf
 - o maracuja_30 Endurecimento dos frutos de maracujá.pdf
 - o Produção de mudas circotec15.pdf
- Melancia
 - o A Cultura da Melancia 1.pdf
 - o Cultura da Melancia 2.pdf
 - o Custo de Produção da Melancia
 - custo produção melancia.pdf
- Melão
 - o Melão ci028.pdf
 - o A Cultura do Melão.pdf
 - o Malão ct54.pdf
 - o Manga e Melão Desidratados.pdf
- Milho
 - o online11 milhoverde.pdf
 - o Custo de Produção do Milho Verde
 - custo produção milho verde.pdf
 - o 1 A Cultura do Milho Verde.pdf
 - o 1 A Cultura do Mini Milho.pdf
 - o Milho Verde _Informacoes_Basicas.pdf
- Morango
 - o Morango boletim53.pdf
 - o Custo de Produção do Morango
 - custo produção morango.pdf
 - o A Cultura do Morango.pdf
- Patoá ou Patauá
 - o Acre doc88 Patauá.pdf
- Pimenta do Reino
 - o Portaria 37 Anexo XII MAPA Pimenta-do-reino.pdf
 - o A Cultura da Pimenta-do-Reino.pdf
- Pinha Fruta do Conde ou Ata
 - o Pinha _Informacoes_Basicas.pdf
 - o Adubação Orgânica da Pinha cot077.pdf
 - o Ateira It001.pdf
 - o Cultivo da Ateira It001.pdf
 - o Pinha fruta do conde ou ata.pdf
- Pitanga
 - o Valor Nutricional do Abacate, banana, goiaba, jaca, azeitona e pitanga.pdf
 - o 21Mirtaceas UFAC.ppt
 - o Frutas Nativas Araçá pitanga buriti UFAC.ppt
 - o Pitanga 10574.pdf
 - o Pitanga 29675.pdf
 - o Pitanga 169916223011.pdf
 - o Pitanga Art814.pdf
 - o Pitanga artigo18.pdf
 - o pitanga.pdf
- Plantas Medicinais
 - o plantas_medicinais_web.pdf
 - o 1 A Cultura do Gergelim.pdf
- Processamento de Frutas e outros
 - o Tofu.pdf
 - o Cachaca_de_Alambique.pdf

- o Conserva Caseira de Frutas.pdf
 - o Doce de Frutas em calda.pdf
 - o Frutas Cristalizados.pdf
 - o Geléia 1998DOC0029.pdf
 - o Geléia Processamento documento138.pdf
 - o Guia Alimentar.pdf
 - o Massa Fresca Tipo Capelete Congelada.pdf
 - o Peixe Defumado.pdf
- Pupunha
 - o Pupunha012004.pdf
 - o Custo de Produção da Pupunha
 - PUPUNHA-FRUTO.xls
 - PUPUNHA_PALMITO.xls
 - o 0Pupunheira UFAC.ppt
 - o A Cultura da Pupunha.pdf
 - o Acre cirtec31 pupunha.pdf
 - o Acre comunicado80 pupunha.pdf
 - o Acre comunicado141 pupunha.pdf
 - o Acre comunicado144 pupunha.pdf"Acre comunicado150 pupunha.pdf
 - o Acre comunicado163 Pupunha.pdf
 - o Acre cultivo_da_pupunha.pdf
 - o Acre it19 Pupunha.pdf
 - o Acre pesquisa92 Pupunha.pdf
 - o Acre pesquisa101 Pupunha.pdf
 - o Acre pesquisa133 Pupunha.pdf
 - o Portaria 37 Anexo III MAPA Pupunha.pdf
 - o Pupunha doc105.pdf
- Rambutan
 - o Rambutan2.pdf
 - o Rambutan.pdf
 - o Rambutan_Cultivo em Rondônia.pdf
 - o Rambutan_Queima das folhas e frutos.pdf
- Romã
 - o
 - o Romã.pdf
- SAFs
 - o SAFs Seringueira doc63.pdf
 - o 1 apostilasolos.pdf
 - o Acre doc20 Fruticultura.pdf
 - o Acre Fruteiras Nativas pesquisa104.pdf
 - o Adubação Verde Ct025.pdf
 - o apostilacomercializacao.pdf
 - o apostilacompostagem.pdf
 - o apostilaintegracaosistemas.pdf
 - o apostilamudas.pdf
 - o apostilasafs.pdf
 - o Demandas Tecnológicas para Fruticultura doc56.pdf
 - o Fruticultura.pdf
 - o Mudas Frutíferas Ct042.pdf
 - o SAFs Acre comunicado87.pdf
 - o SAFs Doc17.pdf
- Seringueira
 - o Seringueira.pdf
 - o online16 Seringueira.pdf
 - o online17 Seringueira.pdf

- o SAFs Seringueira doc63.pdf
- Solos
 - o unidade-9.1-recomendacao-adubos-corretivo.pdf
 - o unidade-9.2-adubacao-organica-quimica.pdf
 - o 1 apostilasolos.pdf
 - o folderbokashi.pdf
 - o plantas_melhoradoras de solo.pdf
 - o Recuperação de Solos cursorad2008.pdf
 - o Solos doc90.pdf
 - o Solos Doc266.pdf
 - o unidade-1-introducao-ao-estudo-de-fertilidade-do-solo.pdf
 - o unidade-2-unidades-usuais-em-solos.pdf
 - o unidade-3-elementos-essenciais.pdf
 - o unidade-4-disponibilidade-de-nutrientes.pdf
 - o unidade-5-materia-organica.pdf
 - o unidade-6-1-nitrogenio.pdf
 - o unidade-6-2-fosforo.pdf
 - o unidade-6-3-potassio.pdf
 - o unidade-6-4-enxofre.pdf
 - o unidade-7-amostragem-de-solos.pdf
 - o unidade-8a-acidez-e-calagem.pdf
 - o unidade-8b-metodos-de-determinacao-da-necessidade-de-calagem.pdf
- Tucumã
 - o Tucumã Visaoestrategica.pdf
 - o Tucumã Buriti doc229.pdf
 - o Tucumã Comtec223.pdf
- Urucum
 - o Urucum ORIENTALBP3.pdf
 - o 1 Urucum RecBas13.pdf
 - o FOL101.pdf
 - o Portaria 37 Anexo V MAPA Urucum.pdf
 - o Urucum CPATUBP131.pdf
 - o Urucum CPATUCirTec59.pdf
 - o Urucum CPATUCirTec66.pdf
 - o Urucum CPATUCirTec67.pdf
 - o Urucum CPATUCirTec552.pdf
- 1Importância da fruticultura UFAC.ppt
- 2FruticulturaAcre UFAC.ppt
- 3Sistemas de produção UFAC.ppt
- 4Propagação de plantas frutíferas UFAC.ppt
- 5Matrizes copa e portaenxertos UFAC.ppt
- 6Viveiros UFAC.ppt
- 7Planejamento e implantação de pomar UFAC.ppt
- 8Poda de plantas frutíferas UFAC.ppt
- 9Florescimento e frutificação UFAC.ppt
- 10Colheita e Pós-colheita de frutos UFAC.ppt
- Adubação de Frutíferas e Hortaliças.mht
- Apostila_Fruteiras_Nutrição_e_Fertirrigação[2].pdf
- Cerca_Eletrica.pdf
- Coordenadoria de Defesa Agropecuária do Estado de São Paulo.mht
- Cubiu.mht
- Decreto nº 5.153, de 23 de agosto de 2004.pdf
- Embalagens para Frutas e Hortaliças.pdf
- Espécies Florestais do Acre.pdf

- Fotos atividades Xapuri - photos
- Manejo de Pastagem
 - sistenas_sustentaveis_pecuaria..pdf
 - Amendoim Forageiro - Leguminosa para divesificação da Pastagens e conservação do solo.pdf
 - Brucelose, Diagnóstico e Controle.pdf
 - capim_mombaça.pdf
 - Cercas Vivas com espécies arbóreas.pdf
 - Controle de Moscas Sinantropicas.pdf
 - folder_degradacao_pastagens_m...pdf
 - Manejo Rebanho Leiteiro.pdf
 - Sistemas Sustentaveis de Pecuária de Corte.pdf
- Apresentacao BPT Grupo PESACRE.ppt
- Artigo Cientifico - TCC.doc
- Artigo Proambiente.doc
- BIP Práticas Agroecológicas.doc
- Doação Simultanea - PAA.ppt
- manualpesa.pdf
- Apresentações\Memória oficina monitoramento.doc
- PESAMAURO.ppt
- Proambiente PAA 17-18.03.2009.ppt
- PV Ativo_Certificação_CINARA.ppt
- Resultados Pólo Alto Acre.ppt
- Roteiro Passo a Passo para as I Oficinas Locais.doc
- Transição Agroecológica_Marlene_setembro_2009.ppt
- Transição Agroecológica_setembro_2010.ppt
- o Criação de Galinha caipira
 - Sistema Alternativo de Criação de Galinha Caipira.docx
 - Documentos
 - texto.docx
 - 3 passos.docx
 - Como Iniciar a criação de Galinhas Caipiras.docx
 - Instalação e fases da criação.docx
 - Manejo Alimentar.docx
 - Manejo reprodutivo.docx
 - Manejo Sanitário.docx
 - Reprodução.docx
 - Apresentação.pptx
 - Manual para criação de galinhas caipiras.pdf
- o Manejo de Pastagem
 - Pastoreio Voisin.flv
 - Documentos
 - Controle de Moscas Sinantropicas.pdf
 - Amendoim Forageiro - Leguminosa para divesificação da Pastagens e conservação do solo.pdf
 - Brucelose, Diagnóstico e Controle.pdf
 - capim_mombaça.pdf
 - Cercas Vivas com espécies arbóreas.pdf
 - controle da cigarrinha.pdf
 - folder_degradacao_pastagens_m...pdf
 - sistenas_sustentaveis_pecuaria..pdf
 - Manejo Rebanho Leiteiro.pdf
 - Sistemas Sustentaveis de Pecuária de Corte.pdf
 - Formação de pastagem

- Problemas.docx
- Vacinação
 - Vermifugos.docx
 - Controle de parasitas.docx
 - Tabela Vacinação.docx
 - Vacinas.docx
- Apresentação.pptx
- Como construir uma cerca elétrica agropecuária.flv
- Doenças em bezerros.docx
- Pastagem.docx
- o Roçado Sustentável
 - Apresentação BPT Grupo PESACRE.ppt
 - Transição Agroecológica - Roçados Sustentáveis.ppt
- o SAFs
 - Sistemas-Integrados-Amazonia-Gladys-Beatriz8.pdf
 - apostila_do_educador_agroflorestal-arboreto.pdf
 - Cartilha sobre sistema agroflorestal 01 pdf.pdf
 - CARTILHA.pdf
 - Sistemas Agroflorestais.pptx
- o Relatório do curso - Manejo de Pastagem.doc
- o Relatório do curso - Criação de Galinhas Caipiras.doc
- o Relatório do curso - Gestão da Propriedade.doc

Documents received 19 September 2014

- Updated Pro Forma for Purus Project Verification (9-17-14).xls
- 022_01- CCBA NCR Round1_Purus, Brian's Responses (9-19-14).docx
- 2013 Monitoring Reports and Kidney Visits.pdf
- CarbonCoCarbonNeutralSignedVERPADecember 302012.pdf
- CCBA Announcement of Verification on IISD List.pdf
- CF Announcement of Russas, Valparaíso and Purus Projects' Public Comment Period.pdf
- Project Purus.pdf
- Purus Project Implementation Report, Final Version (9-19-14).pdf
- Purus Project Implementation Report, Tracked Changes (9-19-14).pdf
- Purus Project, Verpa, CarbonCo LLC- Carbon Neutral Company, Signed, July 20, 2014.pdf

Documents received 29 September 2014

- Purus 2013 - Round 1 NCRs_2014.09.29.xlsx
- 2013_PurusMonitoring 2014.09.29 track changes.docx
- 2013_PurusMonitoring 2014.09.29.docx
- 2013_PurusMonitoring 2014.09.29.xls
- Purus Additional
 - o Updated Pro Forma for Purus Project Verification (9-17-14).xls
 - o 2013 Monitoring Reports and Kidney Visits.pdf
 - o 2013_PurusDegradation 2014.09.29.xlsx
 - o AccuracyAssessment2013_2014.09.23.docx
 - o Aggregated Purus Project Degradation Survey Results April 2013.xls
 - o August 2014 CC Checking Statement.pdf
 - o CarbonCoCarbonNeutralSignedVERPADecember 302012.pdf
 - o CC Vanguard June 2014 statement.pdf
 - o Chave et al 2006 Variation of wood density of neotropical species.pdf
 - o Lehmann et al., 2002, WCSS Bangkok, paper no.0449.pdf
 - o Purus Project, Verpa, CarbonCo LLC- Carbon Neutral Company, Signed, July 20, 2014.pdf
 - o Purus_RRL.kmz
 - o PurusLB2012.09.24.kmz

o PurusPA2012.9.24.kmz

Documents received 06 October 2014

- Purus Project Implementation Report, Final Version (10-6-14).pdf
- 2013-CLI.PDF

Documents received 08 October 2014

- 2013_PurusMonitoring 2014.10.08.docx
- 2013_PurusMonitoring 2014.10.08.pdf
- 2013_PurusMonitoring 2014.10.08.xls
- Purus 2013 - Round 2 NCRs 2014.10.08.xlsx
- Purus 2013 - Round 2 NCRs 2014.10.08.xlsx
- 2013_PurusMonitoring 2014.10.08.docx
- 2013_PurusMonitoring 2014.10.08.pdf
- 2013_PurusMonitoring 2014.10.08.xls
- 2013_PurusMonitoringRiskReport 2014.10.08.pdf
- Final Purus Project CCBS PIR, Portuguese (10-8-14).pdf

APPENDIX B – NCRS/CL/OFIS

Item Number	1
VCS Standard VCS Version 3 Requirements Document 08 October 2013, v3.4	2) Where the deviation does not impact the applicability of the methodology, additionality or the appropriateness of the baseline scenario, and the project remains in compliance with the applied methodology, the deviation shall be described and justified in the monitoring report. This shall include a description of when the changes occurred and the reasons for the changes. The deviation shall also be described in all subsequent monitoring reports. Examples of such deviations include changes in the procedures for measurement and monitoring, or project design changes that do not have an impact on the applicability of the methodology, additionality or the appropriateness of the baseline scenario.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR, section 2.2.2
Validation or Verification or Both	Verification
ESI Findings - Round 1 (9 September 2014)	Section 2.2.2 of the MR states "Rather than initially assessing the significance of illegal logging using temporary sample plots covering 1% of the potential degradation area (ADegW,i) as proposed in the project document and monitoring module of the VM0007 methodology; information gathered during the course of the participatory appraisals including amounts of fuelwood, charcoal, and timber collected by communities members will be used along with conservative assumptions to assess whether emissions due to degradation are significant using the T-SIG tool, and plot level monitoring of degradation is warranted. This deviation will be used for the first and each subsequent monitoring period during this monitoring period." A description of when the changes occurred and the reasons for the changes was not included.
Round 1 NCR/CL/OFI (9 September 2014)	CL: Please address the findings and describe when the changes occurred and the reasons for the changes.
Round 1 Response from Project Proponent (29 September 2014)	The follow text was added to Section 2.2.2 of the MR "This deviation was added during the course of the first verification event. This deviation was included as it was our understanding that we could use T-SIG to determine the significance of any with project emission."
ESI Findings - Round 2 (8 October 2014)	The added description mentions when the changes occurred and that T-SIG was employed. T-SIG is required to evaluate significance of any with-project emission source. No explanation was included as to why a PRA was chosen to monitor degradation instead of the required temporary sample plots. This must be provided at every verification.
Round 2 NCR/CL/OFI (8 October 2014)	CL: Please include relevant information in section 2.2.2 of the MR as to why the deviation was warranted.
Round 2 Response from Project Proponent (8 October 2014)	The following text was added to Section 2.2.2 of the MR: "Further, this deviation was warranted due to the significant amount of work necessary to monitoring degradation using temporary plots and the likely insignificant amount of emission resulting from degradation."

Final ESI Findings	The additional text added to Section 2.2.2 of the MR is sufficient to address the Round 2 finding where an explanation was requested for the Project Description Deviation. Finding closed.
---------------------------	---

Item Number	2
VCS Standard VCS Version 3 Requirements Document 08 October 2013, v3.4	3.16.6 The monitoring report describes all the data and information related to the monitoring of GHG emission reductions or removals. The project proponent shall use the VCS Monitoring Report Template and adhere to all instructional text within the template.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR General
Validation or Verification or Both	Verification
ESI Findings - Round 1 (9 September 2014)	The most up-to-date MR report template was employed (VCS Monitoring Report Template, v3.3-Oct 8 2013.doc). Section 1.1 "1.1 Summary Description of the Implementation Status of the Project" is specified to be no longer than 1 page according to the VCS MR template and currently this section is 3 pages, however this is permissible because information presented is relevant. Not all headings are displayed in the Table of Contents, for example MR and PD deviations sections.
Round 1 NCR/CL/OFI (9 September 2014)	CL: Please address the findings and update the MR to be in line with the newest VCS template.
Round 1 Response from Project Proponent (29 September 2014)	There is no VCS guidance as to what is necessary to include in the Table of Contents. As such, only major headings (i.e., 1, 1.1, 1.2, 2, 2.1, etc.) have been included. All subheading have been left out to improve readability.
ESI Findings - Round 2 (8 October 2014)	Given the lack of VCS guidance and exclusion of sub-headings from the Table of Contents the finding response is reasonable. Finding closed.

Item Number	3
Approved VCS Methodology VM0007 Version 1.3, 3 May 2013 REDD Methodology Modules REDD Methodology Framework (REDD-MF) Sectoral Scope 14	Geographic coordinates of each polygon vertex along with the documentation of their accuracy (from a geo-referenced digital map – data must be provided in the format specified / required by the VCS).
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR Section 1.7
Validation or Verification or Both	Verification
ESI Findings - Round 1 (9 September 2014)	Shapefiles have been provided that support the maps, but not .kmz (required format per VCS Standard 3.10.1)

Round 1 NCR/CL/OFI (9 September 2014)	CL: Per this requirement, please provide spatial files in .kmz format.
Round 1 Response from Project Proponent (29 September 2014)	The boundaries of the RRL, PA, and LB in kmz format have been provided in response to this finding.
ESI Findings - Round 2 (8 October 2014)	The boundaries of the RRL, PA, and LB in kmz format were supplied by the PP and suffice to meet this requirement. Finding closed.

Item Number	4
Approved VCS Module VMD0015, Version 2.1 (20 November 2012), REDD Methodological Module: Methods for monitoring of greenhouse gas emissions and removals (M-MON), Sectoral Scope 14	If remotely sensed data have become available from new and higher resolution sources (e.g. from a different sensor system) during this period then it is possible to change the source of the remotely sensed data.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR, Section 3.3
Validation or Verification or Both	Verification
ESI Findings - Round 1 (9 September 2014)	The MR states "In the case, where this dataset ceases to be available, ex-post deforestation will be determined by classification of remotely sensed imagery and land use change detection procedures." This statement does not indicate whether the project can adopt remotely sensed data from new and better sources.
Round 1 NCR/CL/OFI (9 September 2014)	CL: Please address the findings and clarify in the MR whether new and better remotely sensed data (if becomes available) can be incorporated into the project during the period the baseline is fixed.
Round 1 Response from Project Proponent (29 September 2014)	The MR has been updated to reflect this. The new section reads: "In the case where this dataset ceases to be available, or if newer and/or higher quality data becomes available, ex-post deforestation will be determined by classification of remotely sensed imagery and land use change detection procedures"
ESI Findings - Round 2 (8 October 2014)	The revised statement in the MR is sufficient to address this finding request. Finding closed.

Item Number	5
Approved VCS Module VMD0015,Version 2.1 (20 November 2012), REDD Methodological Module: Methods for monitoring of greenhouse gas emissions and removals (M-MON), Sectoral Scope 14	· Update the Forest Cover Benchmark Maps for the project area and leakage belt.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR, section 5
Validation or Verification or Both	Verification
ESI Findings - Round 1 (9 September 2014)	Figure 5.2 in the MR illustrates the regional forest cover benchmark map for the 2013 monitoring period. This forest/nonforest map was produced using the same UCEGEO dataset and the accuracy assessment was evaluated in step 3 above. The PA is illustrated but not the LB. However, the map does not have the proper heading per this required parameter.
Round 1 NCR/CL/OFI (9 September 2014)	CL: Please add the LB boundaries and title Figure 5.2 appropriately per this requirement.
Round 1 Response from Project Proponent (29 September 2014)	Figure 5.2 has been updated to include the LB boundaries. Further, Figure 5.2 has been retitled "Figure 5.2. 2013 forest benchmark map for the project area and leakage belt."
ESI Findings - Round 2 (8 October 2014)	Figure 5.2 now appropriately displays the leakage belt and is titled per this requirement for readability. Finding closed.

Item Number	6
Approved VCS Module VMD0015,Version 2.1 (20 November 2012), REDD Methodological Module: Methods for monitoring of greenhouse gas emissions and removals (M-MON), Sectoral Scope 14	Carbon stocks in the selected pools (must be the same as those used in the baseline modules) must be measured and estimated using the methods given in modules CP-AB, CP-D, CP-L, CP-S.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	2013_PurusMonitoring 2014 07 03.docx; MR Section 4.2; PD Sections 2.6 and 3.1.4.3; Salimon et al 2011.pdf
Validation or Verification or Both	Verification

ESI Findings - Round 1 (9 September 2014)	Cpost value of 46.9 mTCO₂e/ha is sourced from Salimon et al. Values were converted to the total aboveground and belowground biomass stock using root to shoot ratios developed by Jackson et al. and using a carbon fraction of 0.47, as per the VM007 module. A value of zero is conservatively used for dead wood. This is also justified as nonforested areas are periodically burnt. However, it is unclear how using the values used for the quantification of baseline missions, sourced from Salimon et al, meets this requirement of M-MON. The highest carbon stock of the post-deforestation land uses (pasture) was used. These have not been measured and estimated using the methods given in modules CP-AB, CP-D and are not the same pools that are included in the baseline carbon stocks (i.e. Live Tree AGB and BGB and standing lying and dead wood). Although Module BL-PL states "Post-deforestation carbon stocks can be measured in proxy areas or values can be taken from credible and representative literature sources (e.g. the peer-reviewed literature or data published by the IPCC or the FAO)," the use of the values used in the baseline do not result in a conservative quantification of project emissions (i.e. higher Cpost = lower project emissions). MR Section 2.2.1 States "In the with-project case, C(post) can conservatively be assumed to be zero, not only for natural disturbance (CP,Dist,q,i , as stated in Section 5.2.3 of the M-MON module) but also for deforestation (CP,post,u,i). This deviation is conservative because subtracting zero from the baseline stocks, leads to the conclusion that $\Delta C_{pools,Def,u,i,t}$ is equal to $C(BSL,i)$, which leads to the maximum emission in the with-project case, which is conservative."
Round 1 NCR/CL/OFI (9 September 2014)	NCR: C post value of 46.9 mTCO₂e/ha is sourced from Salimon et al. Please justify how this value is a result of measurement and estimation using the methods given in modules CP-AB and CP-D, as required by M-MON. Else, measure and estimate Cpost using the methods given in modules CP-AB, CP-D or conservatively assume Cpost = 0 as allowed by the methodology deviation.
Round 1 Response from Project Proponent (29 September 2014)	Cpost has been updated to conservatively assume Cpost = 0 and project calculations have been updated.
ESI Findings - Round 2 (8 October 2014)	The Cpost value was confirmed to have been set to 0 for this monitoring period. All resulting computations traced to the "GHG credits eligible for issuance as VCUs (tCO₂e)" were confirmed correct. Finding closed.

Item Number	7
Approved VCS Module VMD0015, Version 2.1 (20 November 2012), REDD Methodological Module: Methods for monitoring of greenhouse gas emissions and removals (M-MON), Sectoral Scope 14	b. Data classification: Definition of the classes and categories; classification approach and classification algorithms; coordinates and description of the ground-truth data collected for training purposes; ancillary data used in the classification, if any; software and software version used to perform the classification; additional spatial data and analysis used for post-classification analysis, including class subdivisions using non-spectral criteria, if any; etc.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR, Section 3.3 and 5, METODOLOGIA DO ACRE 2011 (English).docx
Validation or Verification or Both	Verification
ESI Findings - Round 1 (9 September 2014)	a) Forest and nonforest classes are mentioned in the MR, but no precise definitions of the land cover classes are described. For instance there are many definitions of "forest" in land cover classification. b) Land cover classification in a general sense is described in the MR, "This dataset is based on classification of a series of Landsat imagery," but specific details about a classification algorithm are absent. c) Ground reference data used specifically for the accuracy assessment is well-described in the MR, "Samples used to assess classification accuracy were well-distributed throughout the project area (as far as is possible considering availability of high resolution imagery and/or logistics of acquiring ground truth data). Figure 5.1 below shows the distribution of these points. All verification samples gathered from high-resolution imagery are from images as close as possible to classification date." Whether or not ground reference points were used to train the classification algorithm is not mentioned. Good remote sensing practice employs independent ground/high resolution reference points for a) classification and b) accuracy assessments. d) The MR states "Deforestation and natural disturbance will be distinguished using ancillary data which may include but is not limited to high resolution imagery, digital elevation models (to identify steep areas prone to landslides), information from local land managers, etc." However it is unclear whether ancillary data was used in this reporting period to detect deforestation/disturbance in addition to the UCEGEO deforestation dataset. e) Section 3.3 of the MR refers to spectral bands used in final classification maintained in the archive and section 5 notes that "ENVI + IDL, version 4.6 were used to group multispectral bands". It is unclear which bands were grouped as part of classification.

Round 1 NCR/CL/OFI (9 September 2014)	CL: a) Please include precise definitions of landcover classes per this requirement in the MR. b) Please describe in additional detail in the MR how the actual land cover classification was performed, (i.e. supervised, unsupervised etc.). c) Please confirm and describe in the MR any ground reference data which may have been used to train the classification algorithm. In doing so, please differentiate between ground reference points for training classification and those employed in the accuracy assessment. d) Please address the findings and state in the MR whether ancillary data (as stated in the Monitoring Plan) was used to detect deforestation/disturbance during this reporting period. e) Please address the findings and define the spectral bands used in final classification in the MR.
Round 1 Response from Project Proponent (29 September 2014)	A) The definition of a forest has been added to the MR in Section 3.3. B) A section was added to the Section 3.3 of the MR detailing the classification approach used by UCGEO. C) In the description of the classification approach added to Section 3.3 of the MR the training data is described, and are collected through image examination of statistically homogenous areas of target classes and expert knowledge. Further, there is no overlap between the accuracy assessment points and the data used for classification. D) No ancillary data was required for detection of deforestation or natural disturbance in this monitoring period. The following text was added to Section 3.3 "For this monitoring period no ancillary data was required and all information on deforestation was acquired from the UCGEO classification". E) The spectral bands used in the classification, (Landsat 3,4 & 5), were identified and added to Section 3.3 and 5 of the MR section which details the classification approach.
ESI Findings - Round 2 (8 October 2014)	A) The CDM definition of forest now included in the MR is sufficient to address this request. Nonforest was assumed other land cover types not classified as forest. B) A summary of the UCGEO classification approach was appropriately included in the MR, it describes in adequate detail procedures undertaken to derive the deforestation dataset. C) Differentiation between ground reference data and classification is now sufficiently described. D) The text added to Section 3.3 "For this monitoring period no ancillary data was required and all information on deforestation was acquired from the UCGEO classification" adequately addresses whether or not ancillary data was used in deforestation detection. E) Spectral bands are now described per this requirement. All finding requests listed here have been addressed. Finding closed.

Item Number	8
Approved VCS Module VMD0015, Version 2.1 (20 November 2012), REDD Methodological Module: Methods for monitoring of greenhouse gas emissions and removals (M-MON), Sectoral Scope 14	c. Classification accuracy assessment: Accuracy assessment technique used; coordinates and description of the ground-truth data collected for classification accuracy assessment; and final classification accuracy assessment.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR, Section 3.3 and 5, AApoints_2013_2014.06.30.xlsx, AccuracyAssessment2013_2014.06.30.docx, METODOLOGIA DO ACRE 2011 (English).docx
Validation or Verification or Both	Verification
ESI Findings - Round 1 (9 September 2014)	An accuracy assessment was included in section 5 of the MR which describes the comparison between the landcover classification and ground reference points. This section defines the results of the assessment including; short description of ground reference points taken, a confusion matrix, and a statement of overall accuracy of the classification performed. However, no mention was made of whether the accuracy assessment was performed exclusively for this monitoring period. Likewise, image acquisition dates used for the ground reference points are not specified. Ground reference points assessed were supplied and reviewed by verifiers. The points were independently evaluated using best available imagery and verifiers agree with landcover calls. Points outside the classified boundary were omitted. The date of the higher resolution imagery used for the verifier ground reference points varied between 2011 and 2013. The accuracy assessment document illustrates an error matrix with 100 points for each class, including additional points taken due to points falling outside the classified boundary and factored into the assessment. Computations for user's accuracy was performed correctly but not for producer's accuracy with AccuracyAssessment2013_2014.06.30.docx, the MR reports the correct values. Overall accuracy was computed correctly at 98%.
Round 1 NCR/CL/OFI (9 September 2014)	CL: Please clarify the time period for which the accuracy assessment performed is relevant as well as the dates of imagery acquisition for the high resolution images used for ground reference points. Please fix the computation for producers accuracy in the error matrix (AccuracyAssessment2013_2014.06.30.docx) and keep consistent the decimal places in the error matrix contained in the MR.

Round 1 Response from Project Proponent (29 September 2014)	The accuracy assessment was conducted for the most recent time period which is relevant to this monitoring period. Details were added to the Section 5.0 of the monitoring report explaining this procedure. All ground reference points were collected from imagery acquired between 2011-2013. The computations were fixed in the error matrix. The following text was added to Section 5.0 of the MR: "All samples were collected from imagery acquired between 2011-2013, and hence the accuracy assessment is relevant through 2013. This range was necessary to collect sufficient data points with good distribution. "
ESI Findings - Round 2 (8 October 2014)	The following text was amended to the MR, section 5 "All samples were collected from imagery acquired between 2011-2013 and hence the accuracy assessment is relevant through 2013. This range was necessary to collect sufficient data points with good distribution." This additional text is sufficient to confirm imagery acquisition date and the current monitoring period for which the accuracy assessment was intended for. Finding closed.

Item Number	9
Approved VCS Module VMD0015, Version 2.1 (20 November 2012), REDD Methodological Module: Methods for monitoring of greenhouse gas emissions and removals (M-MON), Sectoral Scope 14	If within the Project Area some forest land is cleared, the benchmark map must show the deforested areas at each monitoring event
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR, Section 5
Validation or Verification or Both	Verification
ESI Findings - Round 1 (9 September 2014)	Figure 5.1 in the MR illustrates deforestation in the project area and leakage belt during this 2012-2013 monitoring period. The map was generated from UCEGEO deforestation dataset and was subject to the accuracy assessment in Step 3 above. Figure 5.1 does not completely display the project area/leakage belt. The UCEGEO dataset provided by the PP was ocularly checked to the newest available Landsat imagery (http://landsatlook.usgs.gov/) and deforestation patterns were in agreement. However, the map is not stratified per this requirement.
Round 1 NCR/CL/OFI (9 September 2014)	CL: Please revise Figure 5.1 to illustrate stratification per this finding.
Round 1 Response from Project Proponent (29 September 2014)	The map in Figure 5.1 has been stratified to meet this requirement.

ESI Findings - Round 2 (8 October 2014)	Figure 5.1 is now appropriately stratified to meet this requirement. Finding closed.
--	--

Item Number	10
Approved VCS Module VMD0015, Version 2.1 (20 November 2012), REDD Methodological Module: Methods for monitoring of greenhouse gas emissions and removals (M-MON), Sectoral Scope 14	Harvesting of Wood for Charcoal Production
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Aggregated Purus Project Degradation Survey Results April 2013.xls
Validation or Verification or Both	Verification
ESI Findings - Round 1 (9 September 2014)	Detailed questions were asked specific to charcoal including; whether they collect charcoal, how much collected per month, land cover type fuelwood is collected from, how far they travel, whether they sell and other related questions. One potential area for error is due to the fact that the respondents are asked how much charcoal in m3 is used monthly. From our interviews it appeared clear that they respondents would potentially not be familiar with this metric. The other questions are sufficient to indicate whether an individual is consuming charcoal and to what extent their activities affect the project area.
Round 1 NCR/CL/OFI (9 September 2014)	CL: From our interviews it appeared clear that they respondents would potentially not be familiar with "meters cubed". Please explain why this metric was chosen and how it does not bias the PRA.
Round 1 Response from Project Proponent (29 September 2014)	In Brazil, there is a "caixa de aqua" (i.e., translates into "box of water") that is exactly 1,000 liters or 1 cubic meter. Local communities are very familiar with the "caixa de aqua" and Pedro Freitas of Carbon Securities would ask the local communities how much of a "caixa de aqua" would be filled up with the fuelwood they collect.
ESI Findings - Round 2 (8 October 2014)	Explanation from the PP is sufficient to demonstrate that the metric used (m3) is a familiar one. NCR addressed.

Item Number	11
Approved VCS Module VMD0015, Version 2.1 (20 November 2012), REDD Methodological Module: Methods for monitoring of greenhouse gas emissions and removals (M-MON), Sectoral Scope 14	<u>Result of Limited Degradation Survey</u>
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	2013_PurusDegradation 2014.07.03
Validation or Verification or Both	Verification
ESI Findings - Round 1 (9 September 2014)	This survey pertains to a PD deviation being invoked for this monitoring period. The total degradation emissions as computed by the project developer was evaluated. Computed value represented 0.63% of the total GHG benefits generated this monitoring period and the degradation survey is from 2013 (same respondents reported for 2014). When this value is less than 5%, degradation emissions can be considered to be de minimis. The provided degradation emissions analysis was performed assuming that all live tree wood was used, large diameters only of trees harvested. The proper steps per T-SIG were not followed in the de minimis analysis where the cumulative sums of the relative contributions of sources are ranked. It appears as though not all survey respondents charcoal consumption has been accounted for in emissions estimates. In determination of "Surveyed Emissions from Charcoal t CO₂" a default factor of 0.757 was used and this factor does not appear to be supported anywhere. References are also needed to support charcoal recovery as a percent of woody biomass (Lehmann et al. 2002) and the wood density value for logging emissions (Chave et al. 2006).
Round 1 NCR/CL/OFI (9 September 2014)	CL: Please revise the degradation de minimis analysis to follow the proper steps per the T-SIG module. Please also revise the charcoal emissions estimates to account for all survey respondents. Please explain where the default factor of 0.757 was obtained for determination of "Surveyed Emissions from Charcoal t CO ₂ ". Please also provide the Lehmann et al. 2002 and Chave et al. 2006 references.

Round 1 Response from Project Proponent (29 September 2014)	1. The de minimis evaluation of the degradation emissions has been updated and attached. 2. Estimates of degradation due to charcoal use do not include charcoal collected from grassland as this is outside the project area. Hence, while all respondents except 4 and 7 use charcoal, only survey respondents 1, 2, 3, 5, and 9 potentially degrade the project area as they collect fuelwood for charcoal from the forest. 3. The default factor of 0.757 is the average carbon content of charcoal from Table 1 in "Lehmann et al. 2002. Slash-and-char - a feasible alternative for soil fertility management in the central Amazon?" 4. Lehmann et al. 2002 and Chave et al. 2006 have been provided in response to these findings.
ESI Findings - Round 2 (8 October 2014)	1. The de minimis analysis following T-SIG where the emissions sources are ranked has been appropriately updated. Degradation emissions were found to be de minimis following this method. 2. The PP clarification that charcoal is only accounted for in forest collections is correct as confirmed in the computations. Respondents which note charcoal is collected from grasslands are appropriately omitted. 3. The average charcoal carbon content was confirmed to be from Lehmann et al. 2002 and is a reasonable source to obtain this default value. The average is based upon mixed tropical hardwoods. The computation is performed correctly. 4. Chave et al. 2006 was reviewed and the mean wood density for the eastern Amazon is within an acceptable range. Overall, the procedures for determination of degradation emissions and de minimis analysis are adequate to meet the requirements of the Limited Degradation Survey. Finding closed.

Item Number	12
Approved VCS Module VMD0010 Version 1.0 REDD Methodological Module: Estimation of emissions from activity shifting for avoided unplanned deforestation (LK-ASU) Sectoral Scope 14	PROPRES (proportion)
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Monitoring Report Section 3.2

Validation or Verification or Both	Verification
ESI Findings - Round 1 (9 September 2014)	Included in Section 3.2.. PROPRES value of 0.813 - assessed at validation. The PRA was performed in 2012, it is valid for a period of 5 years, thus it does not need to be modified until 2017 or the 6th annual verification. Parameter Table reports a value of 0.797.
Round 1 NCR/CL/OFI (9 September 2014)	CL: Please explain why a value of 0.797 is reported for PROPRES as it does not correlate to the validated value as presented in the PD or the value for PROPIMM.
Round 1 Response from Project Proponent (29 September 2014)	PROPRES is a function of PROPIMM. As PROPIMM has been updated, PROPRES has been recalculated as (1 - PROPIMM). Regardless the parameter PROPRES is not used in any calculations in the project case.
ESI Findings - Round 2 (8 October 2014)	Although this value is not used as part of any computations it is reported in the MR and needs to be correct. The PP assertion that PROPRES is a function of PROPIMM is correct, therefore the values should correlate.
Round 2 NCR/CL/OFI (8 October 2014)	CL: Please revise the value for PROPRES as reported in the MR to ensure that it correlates as a proportion of PROPIMM.
Round 2 Response from Project Proponent (8 October 2014)	Personal communication resulted in a change to the PROPRES value and subsequent re-submission of a confirmed correct MR.
Final ESI Findings	The value for PROPRES was appropriately changed in the latest version in the MR. Finding closed.

Item Number	13
Approved VCS Module VMD0010 Version 1.0 REDD Methodological Module: Estimation of emissions from activity shifting for avoided unplanned deforestation (LK-ASU) Sectoral Scope 14	EBiomassBurn,i,t (t CO2-e)
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	NA in MR
Validation or Verification or Both	Verification
ESI Findings - Round 1 (9 September 2014)	This parameter is not included in the MR.
Round 1 NCR/CL/OFI (9 September 2014)	CL: Please include the parameter "EBiomassBurn,i,t (t CO2-e)" in MR Section 3.2.

Round 1 Response from Project Proponent (29 September 2014)	EBB has been added to Section 3.2 of the MR.
ESI Findings - Round 2 (8 October 2014)	The parameter E BiomassBurn,t was confirmed to have been appropriately added to Section 3.2 of the MR. Values reported for the PA and LB are correct. Finding closed.

Item Number	14
Approved VCS Module VMD0013, Version 1.0 (3 December 2010), REDD Methodological Module: Estimation of greenhouse gas emissions from biomass burning (E-BB), Sectoral Scope 14	Where fires occur ex-post the module shall be used to account greenhouse gas emissions.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Monitoring Report Section 4.2
Validation or Verification or Both	Verification
ESI Findings - Round 1 (9 September 2014)	Monitoring Report States "As forest monitors reported evidence of fire on recently cleared land, N₂O and CH₄ emissions from biomass burning have been accounted for. Using parameters found in Section 3.1 and 3.2 and Table 3.3, emissions from biomass burning (EBB) were calculated as the product of the area burned, the aboveground carbon stocks, a combustion factor, a GHG emission factor, and the global warming potential. It was conservatively assumed that $A_{burn,i,t} = A_{DefPA,u,i,t}$ (i.e., all areas deforested in the project area were burnt)." However, Emissions associated with Biomass Burning in the leakage belt and outside the leakage belt were not quantified.
Round 1 NCR/CL/OFI (9 September 2014)	CL: Please justify the non-quantification of emissions associated with Biomass Burning in and outside of the leakage belt. Else, conservatively quantify and update the MR accordingly. Please also indicate in MR Section 3.3 how $A_{burn,i,t}$ relates to $A_{DefLB,i,t}$ and $ALK-OLB,t$, as well as how Monitoring accounts for Biomass Burning in and outside of the leakage Belt.
Round 1 Response from Project Proponent (29 September 2014)	Emissions associated with biomass burning in the leakage belts have been incorporated in project calculations and into the monitoring report, as per ESI's suggestion. There is no requirement to incorporate emissions from biomass burning outside the leakage belt. The following sentence has been added to Section 3.3. "$A_{burn,i,t}$ is assumed to be equal to $A_{DefLB,i,t}$ unless monitoring and on the ground observations demonstrate otherwise."

ESI Findings - Round 2 (8 October 2014)	The emissions associated with biomass burning in the leakage belt was quantified correctly in "2013_PurusMonitoring 2014.09.29.xls" but was not incorporated into carbon accounting.
Round 2 NCR/CL/OFI (8 October 2014)	CL: Please address the findings and revise computations to incorporate emissions from biomass burning in the LB.
Round 2 Response from Project Proponent (8 October 2014)	I think this is a misunderstanding. The calculation is clearly incorporated into carbon accounting in cell K5 of the "4.3 Leakage" sheet of the workbook "2013_PurusMonitoring 2014.09.29.xls." I do note, this does not represent a change to the net VCU's as the leakage baseline is still greater than the with-project leakage emissions.
Final ESI Findings	The assertion by the project proponent is correct in that biomass burning in the leakage belt is not factored into net GHG reduction computations. Leakage in the baseline still exceeds project-case leakage emissions. Finding closed.

Item Number	15
VCS AFOLU Non-Permanence Risk Tool, Version 3.2 04 Oct 2012	Project cash flow breakeven point between 4 and up to 7 years from the current risk assessment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR, Appendix A. VCS NON-PERMANENCE RISK REPORT
Validation or Verification or Both	Verification
ESI Findings - Round 1 (9 September 2014)	Project cash flow breakeven point is between 4 and 7 years from the current risk assessment. Risk report states "Details are provided in a cash flow analysis which can be found in the project database." The cash flow analysis has not been provided, but should show the point in time when cumulative cash flow is positive and stays. It is not clear if any interest expenses, repayment of loans or forward purchase agreements, and any required equity distributions are considered, as stated as a minimum demonstration requirement in the tool.
Round 1 NCR/CL/OFI (9 September 2014)	CL: Please provide project current cash flow analysis used to establish the breakeven point (i.e. number of years until this point is reached), taking into account the Risk Tool requirements in Section 2.2.2.
Round 1 Response from Project Proponent (29 September 2014)	CarbonCo has provided a revised pro forma, "Updated Pro Forma for Purus Project Verification (9-17-14)", to demonstrate a breakeven point of less than 4 years. CarbonCo's cash flow was been generated through VER sales as demonstrated by the two VERPAs submitted to ESI. Other than CarbonCo's relationship with Carbonfund.org, there are no other loan repayments or interest expenses or equity distributions.
ESI Findings - Round 2 (8 October 2014)	The updated Pro Forma worksheet was reviewed by verifiers and the breakeven point is close to year 4. Some smaller costs, for instance imagery acquisition were not accounted for but do not significantly effect the timing of the breakeven point. The crediting purchase agreement was also reviewed and indicates a stable source of revenue as evidenced by purchase prices and delivery dates. Finding closed.

Item Number	16
VCS AFOLU Non-Permanence Risk Tool, Version 3.2 04 Oct 2012	Project has secured 80% or more of funding needed to cover the total cash out before the project reaches breakeven
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR, Appendix A. VCS NON-PERMANENCE RISK REPORT
Validation or Verification or Both	Verification
ESI Findings - Round 1 (9 September 2014)	Project has secured 100% of funding needed to cover the total cash out before the project reaches breakeven. Risk report states "Details are provided in a cash flow analysis which can be found in the project database." A demonstration that 80% or more funding has been procured needs to be provided to support the assertion. Projects may demonstrate that funding has been secured through, for example, financial statements, bank records, executed commodity purchase agreements, executed emission reduction purchase agreements, or other signed contractual agreements. Evidence shall be provided that agreement counterparties are in good financial standing, to demonstrate the ability to meet the financial obligations.
Round 1 NCR/CL/OFI (9 September 2014)	CL: Please supply a demonstration that sufficient funding has been procured to meet 80% or more of the funding needed to cover costs prior to the breakeven point.
Round 1 Response from Project Proponent (29 September 2014)	CarbonCo has provided a revised pro forma, "Updated Pro Forma for Purus Project Verification (9-17-14)", along with CarbonCo's current bank statement and two multi-year VERPAs to demonstrate 80% or more of the funding has been procured.
ESI Findings - Round 2 (8 October 2014)	Verifiers reviewed the cash checking account and investment account information for CarbonCo. The evidence supplied notes amounts that are sufficient to cover the 80% funding procurement requirement. Finding closed.

Item Number	17
VCS AFOLU Non-Permanence Risk Tool, Version 3.2 04 Oct 2012	Mitigation: Project has available as callable financial resources at least 50% of total cash out before project reaches breakeven
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR, Appendix A. VCS NON-PERMANENCE RISK REPORT
Validation or Verification or Both	Verification

ESI Findings - Round 1 (9 September 2014)	Risk report states "Project has available at least 50% of the total cash out before project reaches breakeven. Project proponents are utilizing internal, non-restricted funds as evidenced in the project database." Evidence of callable financial resources is needed to support this assertion. Callable financial resources are those not included in secured funding, but that are readily available to the project. The availability of such resources may be indicated through letters of credit, revolving credit lines or other financial backing, as evidenced by signed agreements and which demonstrate the project's ability to access funding as needed. It does not appear that the project has provided evidence that they have callable resources available.
Round 1 NCR/CL/OFI (9 September 2014)	CL: Please provide evidence, per Risk Tool section 2.2.2, that callable financial resources at least 50% of total cash out are available before project breakeven point.
Round 1 Response from Project Proponent (29 September 2014)	CarbonCo has provided a revised pro forma, "Updated Pro Forma for Purus Project Verification (9-17-14)", along with CarbonCo's current bank statement and two multi-year VERPAs to demonstrate that there are sufficient callable financial resources to cover at least 50% of total cash out before the Project's breakeven point.
ESI Findings - Round 2 (8 October 2014)	Verifiers reviewed the cash checking account and investment account information for CarbonCo and it indicated that there is sufficient callable resources prior to 50% cash out. Finding closed.

Item Number	18
VCS AFOLU Non-Permanence Risk Tool, Version 3.2 04 Oct 2012	NPV from the most profitable alternative land use activity is expected to be at least 100% more than that associated with project activities; or where baseline activities are subsistence-driven, net positive community impacts are not demonstrated
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR, Appendix A. VCS NON-PERMANENCE RISK REPORT and site visit observations and interviews
Validation or Verification or Both	Verification

ESI Findings - Round 1 (9 September 2014)	As the majority of baseline activities over the length of the project crediting period are subsistence-driven and that the project proponent has selected the highest risk score, an NPV analysis is not required. This risk category will be revised downward, once net positive community impacts can be clearly demonstrated, such as through certification against the Climate, Community & Biodiversity Standards or results of a participatory assessment of the project activities on the local communities which demonstrates net positive community benefits. Verifiers agree that the majority of the baseline activities are subsistence driven and this is demonstrated by verifier observations and discussions with community members in the project area during the site visit. However, "an assessment of the net impacts of the project on the social and economic well-being of the communities who derive livelihoods from the project area" could have been undertaken based on the results of the CCBS implementation as well as the 2nd PRA performed prior to this 2nd monitoring period and an opportunity cost score applied.
Round 1 NCR/CL/OFI (9 September 2014)	CL: Per this requirement, please provide an assessment of the net impacts of the project on the social and economic well-being of the communities who derive livelihoods from the project area.
Round 1 Response from Project Proponent (29 September 2014)	The Purus Project has a net positive impact on the social and economic well-being of the local communities. This includes receiving five agricultural extension training courses in 2013, being granted official land title in the near future along with a local health clinic to soon be built, local social assistance throughout 2013 (i.e., stairs built, food donated, boat secured to transport products, etc.), and a few local employment opportunities generated (e.g., local project manager, assistance with wildlife cameras, etc.). These net positive impacts on social and economic well-being of the local communities were also assessed via the Project's verification to the Climate, Community and Biodiversity Standard.
ESI Findings - Round 2 (8 October 2014)	A discussion of the net impacts of the project on the social and economic well-being of the communities who derive livelihoods from the project area has been provided. Ideally this would be added to the risk report, however it is supported in various places within the monitoring report document. Finding closed.

Item Number	19
VCS AFOLU Non-Permanence Risk Tool, Version 3.2 04 Oct 2012	In more than 5% of the project area, there exist disputes over land tenure or ownership
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR, Appendix A. VCS NON-PERMANENCE RISK REPORT
Validation or Verification or Both	Verification

ESI Findings - Round 1 (9 September 2014)	Site visit observations and discussions with community members from the site visit are anticipated to be the same as the last verification for this criteria. The communities who live within the project area do not own the land they are living on. While this was not presented as a dispute, it is important to note the ownership pattern and any issues that may arise due to the granting of ownership as a consequence of the project. The individuals living on the property appeared to know that they were not the owners and that their deforestation activities were not welcome. Verifiers will be made aware of land ownership related disputes while conducting the site visit. During the site visit one family in particular (represented by the son, Antonio Sales Nunes Cardeal) stated they do not plan to change their activities and the extent of their right to ownership was somewhat in question. Jose Maria Mariano was similarly not sure how much land he planned to claim and their seemed to be some conflict regarding this issue. Though it is not clear if these represent a dispute greater than 5%, these interviews represent a sample of the population and they do show that issues related to land tenure exist.
Round 1 NCR/CL/OFI (9 September 2014)	CL: Please see and address the finding with regard to the land tenure issues and adjust the score accordingly.
Round 1 Response from Project Proponent (29 September 2014)	The land tenure "dispute" concerns deforested areas, rather than forest areas which include the project area. The following text has been added to Section A1.2 of the MR: "Community members that have been living on land adjacent to the project area and who made the land productive (e.g., by growing crops or raising animals) for ten years, have the right to be titled. To resolve ongoing disputes over land, Moura & Rosa will voluntarily recognize whatever area is currently deforested and under productive use by each family living on the Seringal Porto Central and Seringal Itatinga parcels. However these land tenure "disputes" concern deforested areas, rather than the forest Project Area of the Purus Project."
ESI Findings - Round 2 (8 October 2014)	The narrative added sufficiently describes the circumstances and how they will be addressed. Given the Guitas continue to clear land for cattle it is not clear that their tenure concerns are only for deforested areas, however it is clear that, due to the size of the project, the area in question would be well under 5% of the project area. Finding closed.

Item Number	20
VCS AFOLU Non-Permanence Risk Tool, Version 3.2 04 Oct 2012	There exist disputes over access/use rights (or overlapping rights)
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR, Appendix A. VCS NON-PERMANENCE RISK REPORT
Validation or Verification or Both	Verification

ESI Findings - Round 1 (9 September 2014)	Site visit observations and discussions with community members from the site visit are anticipated to be the same as the last verification for this criteria, the last verification indicated that the communities who live within the project area do not own the land they are living on. While this was not presented as a dispute, it is important to note the ownership pattern and any issues that may arise due to the granting of ownership as a consequence of the project. The Guita family was one notable group onsite who clearly does not agree with the project and stated they have not changed their deforestation activities. Other project members interviewed were somewhat hostile about the project and did not want involvement.
Round 1 NCR/CL/OFI (9 September 2014)	CL: Given there are individuals living within the project area that do not want to be involved in the project and have stated they do not intend to reduce their deforestation activities, please discuss how this element is scored as 0.
Round 1 Response from Project Proponent (29 September 2014)	There are no individuals living within the project area, as the project area was 100% forest at the time of the project start. The land tenure "dispute" concerns deforested areas, rather than forest areas which include the project area.
ESI Findings - Round 2 (8 October 2014)	The NCR was worded poorly as the project proponent is correct - the project area consists of forested areas and no persons have been found which currently live within these forested areas, only cleared areas. Again it is not clear that the Guita family expansion will not extend to the project areas as they continue to deforest, however it is not so much a dispute with land tenure as the land is clearly owned by the project. Rather it is a question of how much land the law will allow them to claim which the project proponent is working to facilitate. Finding closed.

Item Number	21
VCS AFOLU Non-Permanence Risk Tool, Version 3.2 04 Oct 2012	Less than 20 percent of households living within 20 km of the project boundary outside the project area, and who are reliant on the project area, have been consulted
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR, Appendix A. VCS NON-PERMANENCE RISK REPORT
Validation or Verification or Both	Verification
ESI Findings - Round 1 (9 September 2014)	As per the mon report; All households living on the Purus property directly adjacent to the project area have been consulted and to their knowledge, all families reliant on the project area have been contacted. Interviews in the leakage area and the area near the ramal to the north adjacent to the project resulted in 5 of 6 people stating they had heard of the project, however only one stated they had been consulted by the project.

Round 1 NCR/CL/OFI (9 September 2014)	CL: Please provide documentation regarding who contacted the adjacent communities (particularly those along the ramals to the north), when they were contacted and what the content of the discussion was.
Round 1 Response from Project Proponent (29 September 2014)	Although the majority of the ramal is outside the Project Zone, the Project Proponents have met several families along the ramal to the Northeast of the Purus Project. In 2011, Willian Flores along with Normado Sales and Paulo Rosa visited the ramal and talked informally with a few families. In November 2013, Kidney visited families along the ramal. In 2015, Moura & Rosa will purchase a motorcycle to allow better access to the end of the ramal to more regularly discuss the Purus Project with the families. Documentation of visits by Kidney, the local project manager, in 2013 to meet with families throughout the Project Zone have been provided to ESI in response to this finding.
ESI Findings - Round 2 (8 October 2014)	Discussion provided addresses concerns and notes were provided to show when communities were visited. Finding closed.