Assessed by:

65 Millet St. Suite 201
Richmond, VT 05477 USA
Tel: 802-434-5491
Fax: 802-434-3116
www.rainforest-alliance.org

Carbon Forestry Project Audit
Managed by:
RA-Cert Carbon Services Unit

Richmond Vermont
Tel: 202 903 0720

Contact Person: Campbell Moore
Email: cmoore@ra.org

Initial Certification
Report for:

HAWAIIAN LEGACY HARDWOODS AFFORESTATION ON THE BIG ISLAND OF HAWAI'I PROJECT in Hawai'i USA

Report Finalized:	6 April 2015
Audit Dates:	13-16 January 2015
Lead Auditor:	Campbell Moore
Audit Team Member(s):	Campbell Moore
Audit Standard:	*GS Version 0.9 (Road Test)*
Validation Code(s):	RA- Pending
Project Latitude/Longitude:	N. 20.137, E. 155.282
Project Proponent Contact:	Jeff Dunster, CEO Hawaiian Legacy Hardwoods; jdunster@hlh.co
Project Proponent Address:	Hawaiian Legacy Hardwoods 91 Coelho Way, Honolulu HI 96817 USA

Table of Contents

1 Introduction

1.1 Objective

The purpose of this report is to document the conformance of the Afforestation on the Big Island of Hawaii: Restoring native hardwood forests and enhancing multiple ecosystem services with the requirements of the GS V0.9 AR Requirements. The project was developed by Hawaiian Legacy Hardwoods (HLH LLC), hereafter referred to as "Project Proponent". The report presents the findings of qualified Rainforest Alliance auditors who have evaluated the Project Proponent's systems and performance against the applicable standard(s).

1.2 Scope and Criteria

Scope: The scope of the audit is to assess the conformance of Hawaiian Legacy Hardwood's Afforestation project in Hawaii against the GS V0.9 AR Requirements. The objectives of this audit included an assessment of the project's conformance with the standard criteria. The project covers an area of 220.2 ha. The eligible planting area of the project is 336.7 ha which will be planted and evaluated in future monitoring certifications. The total project area including eligible and ineligible planting areas is 485.8 ha. The land is privately owned. The project has a lifetime of 50 years, and has calculated a GHG reduction and/or removal of tCO_2e 71,769tCO2e over the over the course of the project lifetime. Of this total, 174tCO2e has been calculated as *ex post* verified CO2Certificates representing carbon already sequestered and verified during the field audit. The remaining 71595tCO2e has been calculated as *ex ante* validated CO2Certificates representing expected future sequestration of areas that were planted at the Initial Certification field audit. The developer holds the responsibility of allocating 20% of the validated and verified credits to the Gold Standard buffer, which can be allocated from this project or purchased from pre-existing projects. This requirement is verified by the Gold Standard Foundation and is outside the scope of this audit.

Standard criteria: Criteria from the following documents were used to assess this project:

- GS V0.9 AR Requirements and associated guidance

Materiality: All GHG sinks, sources and/or reservoirs (SSRs) and GHG emissions equal to or greater than 5% of the total GHG assertion.

1.3 Project Description

The project will restore a biodiverse native forest on land that was part of a cattle ranch on the northern slopes of Mauna Kea, Hawai'i. It focuses on the keystone species of the natural forest ecosystem, *Acacia koa*, koa. Koa will be planted in a biodiverse native species mixture for conservation purposes on approximately 75% of the project area and as a timber production monoculture in 25% of the project area. On this latter project area, after the first rotation this area will convert to a conservation forestry model. The project will include and protect remnant native trees and the new forest will feature a mosaic of understory and biodiverse tree species distributed so as to promote habitat connectivity across the site. The only species used for carbon accounting is the *Acacia koa*. The project lifetime is 50 years.

1.4 Level of assurance

The assessment was conducted to provide a reasonable level of assurance of conformance against the defined audit criteria and materiality thresholds within the audit scope. Based on the audit findings, a positive evaluation statement reasonably assures that the project GHG assertion is materially correct and is a fair representation of the GHG data and information.

2 Audit Overview

Based on Project's conformance with audit criteria, the auditor makes the following recommendation:		
Final Report Conclusions		
☒	Initial Certification approved: *NCR(s) closed*	
☐	Initial Certification not approved: *Conformance with NCR(s) required*	
Draft Final Report Conclusions		
☒	Initial Certification approved: *NCR(s) closed*	The Project Proponent has 7 days from the date of this report to submit any comments related to the factual accuracy of the report or the correctness of decisions reached. The auditors will not review any new material submitted at this time.
☐	Initial Certification not approved: *Conformance with NCR(s) required*	
Draft Report Conclusions		
☐	Initial Certification approved: *No NCRs issued*	The Project Proponent has 30 days from the date of this report to revise documentation and provide any additional evidence necessary to close the open Corrective Action Requests (CARs). If new material is submitted the auditor will review the material and add updated findings to this report and close CARs appropriately. If no new material is received before the 30 day deadline, or the new material was insufficient to close all open CARs the report will be finalised with the CARs open, and validation and/or verification will not be achieved. If all CARs are successfully addressed, the report will be finalised and proceed towards issuance of a assessment statement.
☒	Initial Certification not approved: *Conformance with NCR(s) required*	

2.1 Audit Conclusions

The developer has demonstrated conformance to a reasonable degree of assurance with the GS A/R requirements sufficient for successful Initial Certification. Twelve CARs were identified and the developer submitted sufficient evidence to close all CARs. Two FARs remain open and shall be closed prior to the performance certification audit, at which point they will be re-evaluated. This Initial Certification has confirmed the following carbon sequestration:

Verified CO2 Certificates	Validated CO2 Certificates	Total CO2 Certificates
174tCO2e	71,595tCO2e	71,769tCO2e

Timber model *ex ante* long-term CO2 sequestration: 239tCO2e/ha
Legacy (Conservation) model *ex ante* long-term CO2 sequestration: 398.4tCO2e/ha

The developer holds the responsibility of allocating 20% of the validated and verified credits to the Gold Standard buffer, which can be allocated from this project or purchased from pre-existing projects. This requirement is verified by the Gold Standard Foundation and is outside the scope of this audit.

2.2 Nonconformance evaluation

The Gold Standard A/R Requirements describe actual and potential non-conformances to the standard requirements as either Corrective Action Requests (CARs), Forward Action Requests (FARs), Non-Compliances (NCs), and Observations (OBSs).

CARs are used to identify areas where conformance with a standard requirement has not been demonstrated and the developer shall take corrective actions to demonstrate conformance.
FARs are used to identify issues which are not material in the current certification, are non-systematic, and are correctable within 5 years. FARs shall be corrected by the next certification.
OBSs are warnings and do not need to be formally corrected. They are non-material errors.
NCs are definite non-conformances where the developer has been unable to demonstrate corrective actions to close a CAR in the current certification, or where the developer is unable to close a FAR in a future certification audit.

CARs and NCs identified in the Draft Report must be closed through submission of additional evidence by the Project Proponents before Rainforest Alliance can submit an unqualified statement of conformance to the GHG program.

CAR#:	01/15
Standard & Requirement:	GS A/R v0.9; Chapter 3.3 Input & Grievance Mechanism
Report Section:	Input & Grievance Mechanism
Description of Non-conformance and Related Evidence:	
The auditor has confirmed that the website link (www.legacycarbon.com/stakeholder_feedback.html) for submitting stakeholder comments and grievances is not fully functional. Visiting the link does not provide an opportunity for a stakeholder to review the policy nor to actually submit a comment.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to initial certification
Evidence Provided by Organization:	GS3260_Post-audit_Findings Response Form.docx
Findings for Evaluation of Evidence:	The auditor has confirmed that the stakeholder feedback website link is now functional. A user-friendly comment submission form exists at the website. The CAR is closed.
CAR Status:	CLOSED
Comments (optional):	N/A

CAR#:	02/15
Standard & Requirement:	GS A/R v0.9; Chapter 3.5 Legal Rights 2(a)
Report Section:	Legal Rights
Description of Non-conformance and Related Evidence:	
The GS requirements require the project owner (HLH LLC) to own the carbon rights for the duration of the crediting period or to demonstrate that the owner of the rights endorses the project through an agreement aligning with the duration of the crediting period. HLH LLC has agreements in place with several investors who are investing in individual trees in the Timber Units. These agreements cede ownership of the timber as well as the carbon stored in this marketable timber to these investors. HLH currently does not have any agreement in place with each of these investors clearly demonstrating that they endorse the project and its expected implementation methods through the duration of the crediting period.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for	Prior to initial certification

Conformance:	
Evidence Provided by Organization:	GS3260_5.7.2_Growth model and CO2-Fixation workbook_Revised Feb15.xlsx GS3260_5.7.7_Foregone lumber carbon.xlsx GS3260_3.5.4_Tree Owner Consent for HLH to manage carbon.docx GS3260_3.5.5_2016 investor agreement.pdf
Findings for Evaluation of Evidence:	The developer has taken multiple corrective actions to address this CAR. 1. The developer has created a legal agreement which formally transfers the management of the carbon sequestered in the timber units which has been previously accorded to the timber unit owners, back to HLH (Tree Owner Consent for HLH to manage carbon.docx). Review of the document indicates that it is sufficient to demonstrate conformance with the note in Section 2 of *Secured Titles* of the AR Requirements, specifically the agreement provides a formal endorsement of the project throughout the crediting period. The *ex ante* carbon stored in the lumber of investors who declined or did not return the consent form has been deducted from the *ex ante* carbon model. The agreement for future investors has also been revised such that all future investors will have to agree to this management by HLH from the inception of their investment, throughout the crediting period. 2. The developer has revised the *ex ante* carbon model and estimates to reflect the proportion of carbon stocks stored in lumber that are not accorded to HLH. 53 investors have chosen for HLH to not manage their share of the carbon sequestration in the timber they have invested in. This area sums to 5.4 ha of the timber units. HLH has transparently presented their names and the # of timber units impacted in the "Foregone lumber carbon " calculation spreadsheet. Using this information, HLH calculated and deducted this quantity of *ex ante* CO2 from the Growth Model and CO2 Fixation workbook. The calculation is transparent and is based upon assumptions from peer reviewed studies looking at lumber recovery proportions from *Acacia mangium,* a comparable species. The auditor notes that due to Koa's relatively poor growth form compared to *Acacia mangium*, usage of this species as a proxy is likely conservative. Based on the corrective actions taken, the developer has both taken necessary steps to establish endorsement from the timber owners for the carbon project management for the duration of the crediting period, and where this has proven impossible the developer has removed this carbon from the *ex ante* CO2 Fixation. The CAR is closed.
NCR Status:	CLOSED
Comments (optional):	N/A

CAR#:	03/15
Standard & Requirement:	GS A/R v0.9; Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities (Version 01), Step 3, Sub-step 3b investment comparison analysis.
Report Section:	Additionality
Description of Non-conformance and Related Evidence:	

The developer has selected the investment comparison analysis as the means of demonstrating conformance. The investment analysis for the project activity in the absence of carbon finance does not include a source of funding which the project currently has and for which it could reasonably be assumed the project would have had access at the project start date. This is the funding subsidy provided through the USDA Conservation Reserve Enhancement Program (CREP). Additionally, the investment analysis assumes that the proportion of the Legacy (conservation) planting type and the Timber planting type are in a proportion of 75% to 25% of the planting area. However, the actual proportion is closer to 65% to 35%. This assumption impacts the estimated future revenue.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to initial certification
Evidence Provided by Organization:	GS3260_4.1_Additionality_Revised Feb15.pdf GS3260_4.1.15_Investment Analysis_koa afforestation_Revised Feb15.xlsx GS3260_4.1.1_HLH Additionality using AR CDM Tool_Revised Feb15.docx
Findings for Evaluation of Evidence:	The developer has made several corrections and updates to the investment comparison analysis in response to this CAR. This includes: 1. An increase in the assumed stumpage price for Koa of 1% per year, as compared to the 0% annual increase originally submitted in the first version of the analysis. This is a more conservative approach. 2. A dynamic deduction in koa wood price based upon the age of the assumed harvested lumber and the fact that plantation grown koa is likely to be lower value in general than old-growth koa. Due to the different density and other characteristics that plantation grown tropical hardwoods tend to exhibit compared to old growth tropical hardwoods this assumption can be considered to be more accurate than the original assumption that the wood values would be the same. A sliding scale of discounting has been developed with the earliest thinnings discounted very heavily and the 25 year harvests discounted 20%. The auditor foundthis approach to be more accurate and is acceptable. 3. The assumed proportion of sawlogs in the final harvests has been revised downward. This approach, though less conservative, is also more accurate as it is based on actual observations of tree form in 12 inventory plots at the planting site and projections made on the actual future density of 4m sawlogs. The auditor observed during the field audit that the original assumption of sawlog density was likely overestimated based on the somewhat frequent occurrence of poorly formed koa. Crop-tree proportions was removed from the sensitivity analysis as it is now directly measured from the forest inventory. This approach is appropriate as it is more accurate since it is based on actual data collected in the project area. 4. Revenues from the thinnings in the Legacy areas were included in the model which is both more accurate and more conservative than the original approach, but had neglected to include them. 5. Operation expenses were revised to take into account CREP funding which directly addresses the original CAR. 6. Lease costs were updated to reflect the actual rates in the HLH lease which changes at year 28 and year 43. The original spreadsheet incorrectly assumed the continuation of the original annual lease payment for the entire 50 years. 7. The CREP subsidy was applied for the first 15 years which is the only time period for which the subsidy is expected.

	8. Fencing costs were updated to take into account the CREP subsidy provided originally. 9. Costs of worker accommodation and road maintenance costs were included which is more accurate. 10. The proportion of timber vs. legacy planting areas was revised to 50/50, rather than the 25/75 originally claimed. The 25/75 proportion was an aspirational proportion but the auditor observed that the actual planting proportion today is closer to 50/50. This is an *ex ante* estimate so it does not need to be precise but needs to be credible. 50/50 is more accurate and conservative. The changes made by the proponent all serve to either make the analysis more conservative or more accurate. The investment comparison analysis still demonstrates that under the most plausible scenario that the NPV of the project activity is $53, whereas the NPV of the baseline cattle ranching is $2,310,030 assuming current prices and optimal carrying capacity. The sensitivity analysis is conducted which demonstrates that using the mean calf price of the past 10 years, even with a decreased carrying capacity (assuming drought conditions) that cattle ranching would still be more attractive than the most plausible financial scenario for the project activity. However, the project activity financial scenario is highly sensitive to stumpage prices for koa. The project takes a highly conservative approach by using a 1% annual increase in koa stumpage as the most plausible scenario despite the fact that stumpage prices for koa have decreased in real terms from the 1995 to 2010 period. It is noted however that koa stumpage prices increased dramatically prior to that period from 1990-1995. The sensitivity analysis demonstrates that if the annual koa stumpage price increase increases to 3% per year, then the project activity would be more profitable than the most plausible financial scenario of the baseline cattle ranching. However, the developer argues, and the auditor agrees, that a consistent increase of 3%/year in koa stumpage prices is extremely unlikely, particularly given the substitutability of other precious tropical woods which are undergoing significant plantation establishment such as teak and mahogany. Koa prices for the previous 15 years have been stagnant or decreasing slightly, as demonstrated by published sources provided by the developer, which provides further evidence that the 3% per year scenario cannot be considered probable or realistic at this time. The sensitivity analysis demonstrates that in the most likely scenario that cattle ranching will continue to be a more economically attractive activity than the project activity in the absence of carbon finance. This assumption is backed up by the fact that the auditor could find no evidence of comparable koa plantations in the entirety of Hawaii, while cattle ranching remains one of the major land uses in the state. The auditor finds the updated analysis to be more detailed, conservative, and accurate and to continue to support the additionality argument of the project. The CAR is closed.
NCR Status:	CLOSED
Comments (optional):	N/A

CAR#:	04/15
Standard & Requirement:	GS A/R v0.9; Chapter 3 Sustainability, 31
Report Section:	Chemical Pesticides
Description of Non-conformance and Related Evidence:	

The developer has demonstrated to the auditor that policies and provisions for safe pesticide use do exist. However, these provisions and policies are distributed across multiple documents, and no single Chemical Pesticides Policy exists that can demonstrate conformance with Chapter 3, requirement 31 and that can be expected to be reliably used by workers.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to initial certification
Evidence Provided by Organization:	GS3260_3.1.12_HLH_SOP_Chemical pesticide use.docx
Findings for Evaluation of Evidence:	The developer has created a safe pesticide use policy in a single document which is user-friendly, and includes provisions for safe pesticide usage and application. The CAR is closed.
NCR Status:	CLOSED
Comments (optional):	N/A

CAR#:	05/15
Standard & Requirement:	GS A/R v0.9; Chapter 3 Sustainability, 6
Report Section:	Working Conditions
Description of Non-conformance and Related Evidence:	
Per conversations with HLH employees, employees were under the impression that they did not have the ability in their employment contracts with Altres, to join or establish labour unions. The GS requirements state that workers shall be able to "establish and join labour organizations". The auditor has received clarification from the Gold Standard that the intent of this requirement is that workers shall have the right to join or establish labour unions in the United States. The developer has provided evidence that employment contracts with workers do provide them with the opportunity to join unions, however, the CAR stands as it appears that workers are unaware of this.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to initial certification
Evidence Provided by Organization:	GS3260_3.1.14_ALTRES PEO Relationship.pdf GS3260_3.1.15_Employees acknowledge receipt of Altres letter.pdf
Findings for Evaluation of Evidence:	The developer has coordinated with Altres, the Professional Employer Organization for HLH, to create a letter formally notifying HLH employees of their rights to join and organize labor organizations and the legal protections for such rights. The letter has been presented to employees who have formally acknowledged this by signature. This approach resolves any remaining reasonable doubt among employees. The CAR is closed.

NCR Status:	CLOSED
Comments (optional):	N/A

CAR#:	06/15
Standard & Requirement:	GS A/R v0.9; Chapter 3 Sustainability, 17
Report Section:	Occupational Health and Safety
Description of Non-conformance and Related Evidence:	
The Gold Standard requires that workers have sufficient job training to safely implement the project. Workers regularly use chainsaws for tree removal and other maintenance work involved in project implementation. Interviews with workers confirmed that formal safety trainings for chainsaw use have not occurred, for this high risk activity.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to initial certification
Evidence Provided by Organization:	GS3260_3.1.16_Overview of training delivered FEB15.docx
Findings for Evaluation of Evidence:	Workers have now received a two--day training program including first aid, safe lifting, chemical handling and usage, and chainsaw usage. The training occurred in February 2015. The trainer, Ben Kinney from KilaKila Employer Services, is well-qualified as confirmed by his qualifications which were submitted to the auditor. The auditor has independently confirmed his qualifications also via internet search. The training has covered all key workplace risks identified by the auditor including first aid, medical emergencies, CPR, best practices for hazardous chemical usage, chainsaw usage, and safe lifting. The CAR is closed.
NCR Status:	CLOSED
Comments (optional):	N/A

CAR#:	07/15
Standard & Requirement:	GS A/R Guidelines on Validated CO2 Certificates, Requirement 2
Report Section:	Calculation of CO2 Certificates
Description of Non-conformance and Related Evidence:	
The current planting area, which is used to define the validated CO2 Certificates is not accurately defined in the project documentation. The field visit indicated that although the majority of the planting area is successfully planted with trees with good survival and growth that there are multiple small patches (0.5 hectares per patch) that in sum represent a significant unplanted area. These unplanted areas are concentrated in the 2012 planting year in areas on steep slopes. Additionally, the current calculation of validated CO2 Certificates also includes areas that are expected to be planted in 2015 and 2016, but are not yet planted. Areas that are unplanted at the field audit cannot be included in the calculation of validated CO2 Certificates.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above.

	Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to initial certification
Evidence Provided by Organization:	GS3260_5.7.2_Growth model and CO2-Fixation workbook_Revised Feb15.xlsx GS3260_14MUs with Cams points.jpg GS3260_Project Map_Revised Feb15.pdf GS3260_2.1_Key Project Information_Revised Feb15.pdf
Findings for Evaluation of Evidence:	The developer has used a clear and detailed process to remove the unplanted areas from the claimed planted areas and presented all necessary evidence to the auditor. The developer has mapped these areas and provided a visual overview of these areas complete with identifying GPS points taken during the field audit to provide a transparent mapping approach. The same approach has been taken for complete mapping of areas that were just recently planted but not yet mapped during the field audit. Review of the updated imagery and mapping with the points taken at the time indicates that they are accurate. The official project map was revised to remove these areas, and updated shapefiles were also submitted. Additionally, the modelling unit calculations and CO2Fixation was also updated to clearly demonstrate the revised CO2 fixation and impacts on verified and validated credits. The unplanted areas removed sum to 4.37 acres, all of which were contained within the 2012 Legacy plantings and have been removed from the calculations and placed in future plantings. The developer has also removed the area from the CO2Fixation excel spreadsheet that was represented by areas intended to be planted in 2015 and 2016. The validated CO2 Certificates at the initial certification audit shall be based only on planted areas, and the project is now in conformance with this requirement. The project has implemented corrective actions sufficient to close the CAR.
NCR Status:	CLOSED
Comments (optional):	N/A

CAR#:	08/15
Standard & Requirement:	GS A/R Requirements 5.2, 4
Report Section:	Conversion Factors
Description of Non-conformance and Related Evidence:	
The quantification of verified CO2 Certificates in the GS3260_5.7.1 HLH Inventory for Timber MUs 2010-2012.xlsx document is based on an assumed Biomass Expansion Factor of 1.33 and wood density for koa of 560 kg/m3. No source has been provided to justify these values. The GS A/R requirements clarify that all such factors shall be based on the best available scientific sources or the default factors under Chapter 5 “Methodology”,Section 4 shall be used.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above.

	Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to initial certification
Evidence Provided by Organization:	GS3260_5.7.1_HLH Inventory for Timber MUs 2010-12_Revised Feb15.xlsx GS3260_5.7.5_Elevitch et al 2006_Koa species profile for Pacific Island Agroforestry.pdf GS3260_5.7.6_Teobaldelli etal 2009_Generalised functions for BEFs.pdf
Findings for Evaluation of Evidence:	The developer has selected a new wood density value of 0.609t/m^3 which is derived from a scientific publication (Koa species profile for Pacific Island Agroforestry, Elevitch et al 2006). The BEF value has been updated to be revised to 1.41 based on an appropriate parameterization of published data from Teobaldetti et al 2009. These changes to wood density and BEF used only impacted the *ex post* calculation of verified CO2 Certificates for trees less than 60 inches tall as all trees greater than 60 inches tall were evaluated through a separate (already approved) allometric model. Given the minimal contribution that these very small trees contribute to the carbon stocks and the very minor changes to these values the change in *ex post* carbon stocks was insignificant. The CAR is closed.
NCR Status:	CLOSED
Comments (optional):	N/A

CAR#:	09/15
Standard & Requirement:	GS A/R Requirements 5.4, 1
Report Section:	Other Emissions
Description of Non-conformance and Related Evidence:	
The excel spreadsheet, GS3260_5.7.1 HLH Inventory for Timber MUs 2010-2012.xlsx, which is used to calculate verified CO2 Certificates, does not include “other emissions” such as those associated with emissions from usage of nitrogen fertilizer, which the auditor has confirmed is in use by the project.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to initial certification
Evidence Provided by Organization:	GS3260_5.4_Other Emissions_Revised Feb15.pdf GS3260_5.4_Other Emissions_Revised Feb15_Changes saved.pdf

	GS3260_5.4.1_Nitrogen emissions workbook_Revised Feb15.xlsx
Findings for Evaluation of Evidence:	The developer has updated both the *ex ante* estimation of validated CO2 Certificates and the *ex* post estimation of verified CO2 Certificates, correctly deducting emissions from nitrogen fertilizer application. The calculation now correctly represents emissions form the fertilization schedule described by the workers on site, including four years of fertilizer treatment after a single establishment treatment. The deductions in CO2 Certificates are quite minimal as expected, with a deduction of only 5.6 tCO2e for the verified areas. The auditor has reviewed the final CO2 Certificate calculation and confirmed that the corrective actions are sufficient to close the CAR.
NCR Status:	CLOSED
Comments (optional):	N/A

CAR#:	10/15
Standard & Requirement:	GS A/R LSC Guidelines
Report Section:	Input and Grievance Mechanism
Description of Non-conformance and Related Evidence:	
The project has developed an official grievance policy and procedure (GS 3260_3.2.7_HLH Input and Grievance Policy and Procedure) and has provided this policy to the auditor. However, interviews with stakeholders confirmed that they were unaware of the existence of an official grievance policy and procedure, demonstrating insufficient implementation of the grievance mechanism.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to initial certification
Evidence Provided by Organization:	GS3260_3.2.10_Workers acknowledge receipt of Input and Grievance Policy.pdf GS3260_3.2.10_Workers acknowledge receipt of Input and Grievance Procedure.pdf GS3260_3.2.11_Minutes of meeting with Jason Cordoza re Input and Grievance proceedure.docx
Findings for Evaluation of Evidence:	The developer has provided sufficient confirmation that key stakeholders including workers and the Kukaiau Ranch manager have been informed of the process. The evidence submitted includes official acknowledgement by workers as well as meeting minutes for the meeting with the ranch manager describing the grievance process. The comment/grievance form on the website is sufficiently accessible so that external stakeholders can easily find the appropriate way to submit comments/grievances as well. The CAR is closed.
NCR Status:	CLOSED
Comments (optional):	N/A

CAR#:	11/15
Standard & Requirement:	GS A/R v0.9; Chapter 3 Sustainability, 15

Report Section:	Occupational Health and Safety
Description of Non-conformance and Related Evidence:	
Although there is an extensive health and safety policy, review of the policy indicates that it is insufficient. The policy does not provide any specific information regarding pesticide and chemical usage and safety or chainsaw usage and safety. Only generic guidance is provided which is inadequate given that the risk of accidents related to chainsaw and power tool usage as well as chemical usage is significant.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to initial certification
Evidence Provided by Organization:	GS3260_3.1.12_HLH_SOP_Chemical pesticide use.docx GS3260_3.1.13_HLH_SOP_Chainsaw use.docx GS3260_3.1.16_Overview of training delivered FEB15.docx
Findings for Evaluation of Evidence:	Specific policies have been developed for both chainsaw and chemical usage and safety. Workers have been trained in these policies by an external health and safety consultant. Workers have provided acknowledgement of receipt of the training. The CAR is closed.
NCR Status:	CLOSED
Comments (optional):	N/A

CAR#:	12/15
Standard & Requirement:	GS A/R v0.9; Chapter 2.1, Key Project Information
Report Section:	Key Project Information
Description of Non-conformance and Related Evidence:	
Two contradictions were identified in the key project information: Chapter 2.1 key project information does not identify Treehouse Consulting as a project participant although Chapter 3.5 identifies Treehouse Consulting as a participant. Furthermore, Chapter 3.5 in box (e) identifies both Treehouse Consulting and Streamline Consulting Group as participants with authority to receive information from the Gold Standard Secretariat. The auditor understood from the field audit that Streamline Consulting Group is no longer involved with the project. The project area is identified as 420.5 ha of designated planting area. This value however contradicts the area reported in the growth model and CO2 Fixation workbook as 351.4 ha.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to initial certification
Evidence Provided by	GS3260_2.1_Key Project Information_Revised Feb15_Changes saved.pdf

Organization:	
Findings for Evaluation of Evidence:	The developer has corrected these contradictions in the key project information. Streamline Consulting Group has been removed as a project partner and has been replaced by Treehouse Consulting, which is acting as a technical support partner for the project. Additionally the question of the correct designated planting area has been resolved after inclusion of the originally unmapped 2014 area discovered during the field audit and exclusion of unplanted areas. The currently planted area submitted for initial certification is 220.2 ha, whereas the eligible planting area is 336.7 ha. The auditor has confirmed that these values are replicated in the key project information and in the CO2 Fixation model. The corrective actions are sufficient to close the CAR.
CAR Status:	CLOSED
Comments (optional):	N/A

2.3 Forward Action Requests (FARs)

26. **Forward Action Request (FAR)** | With a FAR, the auditor or The Gold Standard Secretariat requests appropriate action be taken to become fully compliant with a requirement.

A FAR will be issued where the impact of the infraction is:
(a) not material within the current certification, AND
(b) unusual or non-systematic, AND
(c) correctable in a specific timeframe less than 5 years.

FARs can be closed by The Gold Standard Secretariat or an auditor.

FAR#:	01/15
Standard & Requirement:	Gold Standard A/R Requirements V0.9 Workers Conditions
Report Section:	Workers Conditions
Description of Forward Action Request and Related Evidence:	
The auditor observed that the workers of HLH provide essential technical and practical knowledge, without which the project would suffer greatly. Given the dissatisfaction expressed by some workers this forward action request is issued such that future auditors should confirm whether workers feel their compensation and worker agreements have improved. Due to the specialized nature of some of the jobs fulfilled by workers, loss of some workers could threaten project success.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to performance certification

Evidence Provided by Organization:	PENDING
Findings for Evaluation of Evidence:	PENDING
FAR Status:	OPEN
Comments (optional):	N/A

FAR#:	02/15
Standard & Requirement:	Gold Standard A/R Requirements V0.9 Sustainability Monitoring Plan
Report Section:	Sustainability Monitoring Plan
Description of Forward Action Request and Related Evidence:	
Some of the parameters selected for monitoring are notoriously difficult to measure. Meaningful monitoring implies having clearly identified parameters for measurement such that future monitoring events can make quantitative comparisons between parameter values at the monitoring event and at the inception of monitoring (which is not defined). This includes "Biodiversity Improvement". The developer justifies the assertion that the baseline represents "very poor biodiversity" based on the endangered species survey conducted in 2012. While the auditor agrees on this general observation there is no monitoring plan provided at this point that could meaningfully detect an improvement from "very poor biodiversity" to some improved biodiversity state. It is asserted that "surveys of plant and animal species will be conducted, including attempts to record rare, threatened and endangered species". This generic description does not identify the fundamental components of biodiversity monitoring including, what shall be used as a proxy for improvement in biodiversity, how shall this be monitored, and when represents time 0 of monitoring? It may be that the developer intends to compare species prevalence data in future monitoring to the 2012 survey, but this is not made clear. Additionally, with no pre-identified proxies to represent biodiversity improvement monitoring will likely be inconstant and unsuccessful and provide muddled results.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to performance certification
Evidence Provided by Organization:	PENDING
Findings for Evaluation of Evidence:	PENDING
FAR Status:	OPEN
Comments (optional):	N/A

2.4 Observations

Note: Observations are issued for areas that the auditor sees the potential for improvement in implementing standard requirements or in the quality system; observations may lead to direct non-conformances if not addressed. Unlike NCRs, observations are not formally closed. Findings from the field audit related to observations are discussed in Appendix A below.

OBS	01/15	Reference Standard & Requirement:	Gold Standard V0.9 Baseline
Description of findings leading to observation:	The equation used to estimate koa biomass in the baseline likely is generating unreasonably high baseline tree carbon stocks as this equation was developed on much smaller koa trees. This approach is conservative as the developer can not claim credit for these trees in the project scenario, even though they will remain. As such this reduces the delta between the project and baseline scenario, generating fewer CO2 certificates. The developer may wish to consider other allometric equations which may be more accurate.		
Observation:	The proponent should re-evaluate the allometric equation used to estimate koa biomass of large koa trees that predate the project activity.		

2.4 Actions taken by the Project Proponent address NCRs (including any resolution of material discrepancy)

Action Taken by Project Proponent following the issuance of the Draft Report		Date
Additional documents submitted to audit team (additional documents listed below)	☒ Yes ☐ No ☐ N/A	2/24/2015
Additional stakeholder consultation conducted (evidence described below)	☒ Yes ☐ No ☐ N/A	2/24/2015
Additional clarification provided	☒ Yes ☐ No ☐ N/A	2/24/2015
Documents revised (document revision description noted below)	☒ Yes ☐ No ☐ N/A	2/24/2015
GHG calculation revised (evidence described below)	☒ Yes ☐ No ☐ N/A	2/24/2015

Included in the actions taken by the Project Proponent to address NCRs was the submission of the following revised files:

Ref	Electronic Filename
1	GS3260_2.1_Key Project Information_Revised Feb15.pdf
2	GS3260_14MUs with Cams points.jpg
3	GS3260_Project Map_Revised Feb15.pdf
4	GS3260_3.1.12_HLH_SOP_Chemical pesticide use.docx
5	GS3260_3.1.13_HLH_SOP_Chainsaw use.docx
6	GS3260_3.1.15_Employees acknowledge receipt of Altres letter.pdf
7	GS3260_3.1_Do-No-Harm Assessment_Revised Feb15.pdf
8	GS3260_3.1.16_Overview of training delivered FEB15.docx
9	GS3260_3.2.10_Workers acknowledge receipt of Input and Grievance Policy.pdf
10	GS3260_3.2.11_Minutes of meeting with Jason Cordoza re Input and Grievance proceedure.docx
11	GS3260_3.5.5_2016 investor agreement.pdf
12	3.5_Project Participants & Secured Titles_Revised Feb15.pdf
13	GS3260_3.5.4_Tree Owner Consent for HLH to manage carbon.docx
14	GS3260_4.1.1_HLH Additionality using AR CDM Tool_Revised Feb15.docx
15	GS3260_4.1_Additionality_Revised Feb15.pdf
16	GS3260_4.1.15_Investment Analysis_koa afforestation_Revised Feb15.xlsx
17	GS3260_4.1.18_Goldstein etal 2006_Koa case study for conservation on private lands.pdf
18	GS3260_5.4.1_Nitrogen emissions workbook_Revised Feb15.xlsx
19	GS3260_5.4_Other Emissions_Revised Feb15.pdf
20	GS3260_5.5.1_Baseline carbon report_Treehouse Consulting_Revised Feb15.docx
21	GS3260_5.5_Baseline_Revised Feb15.pdf
22	GS3260_5.7.1_HLH Inventory for Timber MUs 2010-12_Revised Feb15.xlsx
23	GS3260_5.7.2_Growth model and CO2-Fixation workbook_Revised Feb15.xlsx
24	GS3260_5.7.4_Inventory process_Revised Feb15.docx
25	GS3260_5.7.5_Elevitch et al 2006_Koa species profile for Pacific Island Agroforestry.pdf
26	GS3260_5.7.6_Teobaldelli etal 2009_Generalised functions for BEFs.pdf
27	GS3260_5.7.7_Foregone lumber carbon.xlsx
28	GS3260_5.7_CO2-Fixation_Revised Feb15.pdf

29	GS3260_Post-audit_Findings Response Form.docx

3 Audit Methodology

3.1 Audit Team

Overview of roles and responsibilities:

Auditor(s)	Responsibilities							
	Lead	Desk Review	On-site visit	Climate Specialist	Biodiversity Specialist	Social Specialist	Report	Senior Internal Review
Campbell Moore	☒	☒	☒	☒	☒	☒	☒	☐
Ian Starr	☐	☐	☐	☐	☐	☐	☐	☒

Auditor qualifications:

Auditor(s)	Qualifications
Campbell Moore Associate Manager RA-Cert Carbon Services Unit Lead Auditor	Campbell is a forester and carbon expert with professional experience in Africa and Southeast Asia. In his role as Carbon Technical Specialist with Rainforest Alliance he conducts audits against six forest carbon standards, supervises methodology assessments, manages RA accreditation, and acts as technical expert on carbon for RA-Cert globally. Campbell has participated in more than 25 AFOLU carbon audits. Previous professional experience includes consulting work for GIZ Philippines performing carbon stock assessments of different forest types including agroforestry and plantation systems, as well as work centered on reforestation in Sri Lanka for the Environmental Leadership and Training Initiative, and working with Climate Focus on LULUCF policy issues. Campbell received his Master of Forestry from the Yale University School of Forestry and Environmental Studies. Prior to his time at Yale, Campbell worked in The Gambia for over two years as a Peace Corps Volunteer designing and implementing a wide variety of forestry, agroforestry, and agricultural projects. In addition to his Master of Forestry degree, he holds a B.A. in Environmental Studies from St. Mary's College. Campbell is fluent in Pulaar and Wolof and has experience with Spanish
Ian Starr Internal Reviewer	Ian is a forester and resource manager with personal and professional experience in North America, Central and South America, and Africa. His principal interest lies in improving conservation and forest management practices of forests, particularly in the tropics. He currently serves as the Technical Specialist for the Rainforest Alliance's Climate Program. To date he has participated in auditing or advising over 20 forest carbon offset projects in Africa and Latin America. Ian also conducts trainings on the voluntary carbon standards and GHG accounting for project and national level emissions reductions programs. In addition, he has collaborated on a variety of forestry and natural resource management projects from Central America, to Amazonia, to the temperate hardwood forests of the Northeastern United States. These projects have included jurisdictional REDD projects, modeling carbon sequestration in a variety of forestry systems as well as designing and participating in several forest inventories and timber sales. Ian received his Masters degree in Forestry from the Yale School of Forestry and Environmental Studies with a focus on tropical forest and resource management, and received his B.A. from Colgate University where he concentrated in Native American Studies with a focus on the Amazon Basin. He is fluent in Spanish and Portuguese.

3.2 Description of the Audit Process

The audit included both a desk based and field based assessment of the project's documentation and physical evidence. Upon receiving the project documents in December 2014, the lead auditor conducted a desk review to identify draft areas of conformance and potential non-conformances. A risk based sampling and audit plan was developed based on this review and submitted to the developer on January 1. The lead auditor spent three days at the project site as described below. This period included all stakeholder consultation meetings as described below. Resampling of forest inventory plots was used as a means of verifying the *ex post* sequestration represented by verified CO2Certificates. The auditor resampled eight plots and simultaneously assessed the sampling standard operating procedures used. The lead auditor spent the remainder of the field audit verifying project boundaries with a handheld GPS, mapping unplanted areas, and in document review with the developer, employees, and the technical support developer.

Location/Facility	Date(s)	Length of Audit	Auditor(s)
Washington DC, Desk Review	December 2014		Campbell Moore
Umikoa Village, Hawai'i	13-16 January 2015	3 days	Campbell Moore
Kukaiau Ranch, Hawai'i	13-16 January 2015	3 days	Campbell Moore

3.3 Review of Documents

The following documents were viewed as a part of the field audit:

Ref	Title, Author(s), Version, Date	Electronic Filename
1	Key Project Information, HLH, no date	GS3260_2.1_Key Project Information.pdf
2	Do No Harm Assessment, HLH, no date	GS3260_3.1_Do No Harm Assessment.pdf
3	Local Stakeholder Consultation, HLH, no date	GS3260_3.2_Local Stakeholder Consultation.pdf
4	Project Participants & Secured Titles	GS3260_3.5_Project Participants and Secured Titles.pdf
5	Sustainability Monitoring Plan, HLH, no date	GS3260_3.5_Sustainability Monitoring Plan.pdf
6	Risk Register, HLH, no date	GS3260_3.6_Risk Register.pdf
7	Additionality, HLH, no date	GS3260_4.1_Additionality.pdf
8	Applicability, HLH, no date	GS3260_5.1_Applicability.pdf
9	Other Emissions, HLH, no date	GS3260_5.4_Other Emissions.pdf
10	Baseline, HLH, no date	GS3260_5.5_Baseline.pdf
11	Leakage, HLH, no date	GS3260_5.6_Leakage.pdf
12	CO2 Fixation, HLH, no date	GS3260_5.7_CO2-Fixation.pdf
13	CAR List from Pre-Feasibility Assessment, Version 4, Gold Standard Technical Advisory Panel	GS3260_CAR_List_PFA_4th-FINAL.docx
14	Shapefiles for Project Area, Planting Area, Eligible Planting Area, Infrastructure, tour Plantings, etc.	Multiple file names
15	Project map	GS3260_Project Map.pdf
16	B Corporation Certificate	GS3260_3.1.1_B_Corporation_Certificate.pdf
17	B Lab Assessment for HLH June 2013	GS3260_3.1.2_B Lab Assessment_HLH_June 2013.docx
18	HLH Employee Handbook	GS3260_3.1.3_HLH Employee Handbook.pdf
19	HLH Safety Manual	GS3260_3.1.4_HLH Safety Manual.doc
20	Map of regional conservation reserves	GS3260_3.1.5_Map of regional conservation reserves.doc
21	Map of conservation areas planted 2010-2013	GS3260_3.1.6_Map of conservation areas planted 2010-13.pdf
22	Endangered Species Survey	GS3260_3.1.7_Endangered Species Survey.pdf
23	Handbook acknowledgement from workers	GS3260_3.1.8_Handbook acknowledgment.pdf
24	Overview of HLH workers compensation provisions	GS3260_3.1.9_Overview of HI workers compensation provisions.pdf
25	Worksite hazard training document	GS3260_3.1.10_Worksite hazard training document.doc

26	Invitees to Local Stakeholder Consultation	GS3260_3.2.1_Invitees to LSC.xlsx
27	Employees Benefits Brochure	GS3260_3.2.2_Employee Benefits Brochure.pdf
28	Effect of conversion of sugarcane plantation to forest and pasture on soil carbon in Hawaii, Yiqing Li and Matthews, Bruce, *Plant Soil* 2010	GS3260_3.2.3_2010 paper on soil carbon under Hawaiian secondary forest and pasture.pdf
29	Soil Bacterial Community Shift Correlated with Change from Forest to Pasture Vegetiation in a Tropical Soil, Klaus Nusselein and Tiedje, James, *Applied and Environmental Microbiology* 1999	GS3260_3.2.4_Nuslein & Tiedje 1999 paper on soil bacteria in Hawaii.pdf
30	Stable Carbon Isotope Ratio and Composition of Microbial Fatty Acids in Tropical Soils, Burke, et al, *Journal of Environmental Quality*, Jan/Feb 2003	GS3260_3.2.5_Burke 2003 paper on soil microbiology in Hawaii.pdf
31	LSC Evaluation Forms	GS3260_3.2.6_Evaluation forms.pdf
32	HLH Input and Grievance Policy and Procedure	GS3260_3.2.7_HLH Input and Grievance Policy and Procedure.docx
33	Stakeholder feedback round invitation 1	GS3260_3.2.8_Stakeholder feedback round invitation_1.docx
34	Stakeholder feedback round invitation 2	GS3260_3.2.9_Stakeholder feedback round invitation_2.docx
35	LSC Meeting participation list and minutes	HLH_LCS_Meeting_Participant_List,_Minutes,_SD_Matrix_Forms-2.pdf
36	Sustainable Development Indicator Questions used at LSC Meetings	Sustainable Development Indicator Questions that were used at the meeting.pdf
37	HLH LLC Document of Good Standing May 16 2014	3.5.1_Document of Good Standing.docx
38	Kukaiau Ranch Business Registration	3.5.2_KUKAIAU RANCH LLC_Business Registration.pdf
39	Kukaiau Ranch Certificate of Good Standing, May 29, 2014	3.5.3_KUKAIAU RANCH LLC_Certificate of Good_Standing.pdf
40	Monitoring Slope Movements document	Monitoring slope movements.pdf
41	Hurricane Risk Assessment, HLH	GS3260_3.6.2_Hurricane risk assessment by HLH.docx
42	Farm and Forestry Production and Marketing Profile for Koa (*Acacia koa)*, James B. Friday	GS3260_3.6.1_Koa agroforestry paper.pdf
43	Macadamia production reference documentation	GS3260_4.1.2_CTAHR macadamia publication.pdf
44	Tea production reference documentation	GS3260_4.1.3_CTAHR_Small scale tea growing and processing in Hawaii.pdf
45	Coffee production documentation	GS3260_4.1.4_Growing Coffee in Hawaii.pdf
46	HLH spring 2009 Newsletter	GS3260_4.1.6_HLH Spring 2009 newsletter.doc
47	Evidence to support intent to generate carbon credits—emails, multiple dates.	GS3260_4.1.7_Email thread between LR and TP.docx, GS3260_4.1.9_Email correspondence between AC and TP_2012.docx, GS3260_4.1.10_Email correspondence between AC and TP_2013.docx, GS3260_4.1.11_Email from DF to LR on carbon_Jan2009.docx,
48	Historical cattle prices	GS3260_4.1.12_historical cattle prices.png
49	Interview with Jason Cardoza	GS3260_4.1.13_Interview with J Cardoza.docx
50	Investment Analysis for Ranching	GS3260_4.1.14_Investment_Analysis_Ranching.xlsx
51	Investment Analysis for Koa Reforestation	GS3260_4.1.15_Investment Analysis_koa afforestation.xlsx
52	Koa survey results 2012	GS3260_4.1.16_Koa_survey results 2012.pdf
53	Poor Stem Form as a Potential Limitation to Private Investment in Koa Plantation Forestry in Hawaii, Scowcroft et al, *Small-scale Forestry* 2010	GS3260_4.1.17_Scowcroft etal 2010.pdf
54	Baseline scenario excel file	GS3260_5.1.1_Baseline scenario carbon_project level.xlsx
55	Nitrogen emissions workbook	GS3260_5.4.1_Nitrogen emissions workbook.xlsx
56	Baseline carbon report, Treehouse Consulting, November 2014	GS3260_5.5.1_Baseline carbon report_Treehouse Consulting.docx
57	Forest cover change in Hawaii	GS3260_5.6.1_Forest cover change on Hawai`i.png

58	Expert opinion on risk of forest clearing for activity shifting leakage from ranching	GS3260_5.6.2_Expert opinion on forest clearing for ranching.docx
59	HLH Inventory for Timber MUs 2010-2012	GS3260_5.7.1_HLH Inventory for Timber MUs 2010-12.xlsx
60	HLH Growth model and CO2 Fixation workbook V2	GS3260_5.7.2_Growth model and CO2-Fixation workbook_V2.xlsx
61	Description of forest inventory methods	GS3260_5.7.4_Inventory process.docx
62	Excerpts from "Assessment of a koa forest carbon project in Hawaii" feasibility study, 2011, as related to Kent Growth Curve	GS3260_5.7.3_Excerpts from Kent 2012_Growth prediction.docx
63	HLH Legal Opinion Letter, Steven Rinesmith, 30 January 2015	HLH opinion ltr.pdf

3.4 Interviews

The following is a list of the people interviewed as part of the audit. The interviewees included those people directly, and in some cases indirectly, involved and/or affected by the project activities.

Audit Date	Name	Affiliation
13-16 January 2015	Jeff Dunster,	HLH LLC management
13-16 January 2015	Lew Rothstein	HLH LLC management
13-16 January 2015	Darrel Fox	HLH LLC management
13-16 January 2015	Andrew Callister	Treehouse Consulting
13-16 January 2015	Patrick Williams	HLH LLC employee
13-16 January 2015	Jason Cardoza	Kukaiau Ranch
13-16 January 2015	Kori Hisashima	Natural Resources Conservation Service (NRCS), District Conservationist

APPENDIX A: Field Audit Findings

Note: Findings presented in this section are specific to the findings resulting from the field audit as presented in the Draft Audit Report. Any non-conformances or observations identified during the field audit are noted in this section, and specific NCR and OBS tables are included in section 3.2 of this report for each identified non-conformance and observations. All findings related to audit team review of additional evidence submitted by the Project Proponent following the issuance of the Draft Audit Report by Rainforest Alliance, is included within section 3.2 of this report.

2. Key Project Information

2.1 Key Project Information

1. A general description shall be provided which includes all of the following items:
   - (a) Project activities
   - (b) Organisations that are involved in the project (project participants)
   - (c) Communities involved in the project
   - (d) Location of the project area and the planting area
   - (e) Size of the project area and the planting area
   - (f) Risk of the project area to change (during the crediting period)
   - (g) Risk of the project activities to change (during the crediting period)
   - (h) Timeframe for the project activities
   - (i) Number of predicted CO_2-certificates
   - (j) Land-use history and current situation of the project area
   - (k) Socio-economic history and current situation
   - (l) Forest management applied (past and future)
   - (m) Forest characteristics (including main tree species planted)
   - (n) Main social impacts (risks and benefits)
   - (o) Main environmental impacts (risks and benefits)
   - (p) Financial structure

Findings from Field Audit
The developer has provided Chapter 2.1 to demonstrate conformance with this requirement. a) Project activities are clearly identified and are consistent with what was observed by the auditor during the field audit, as well as the information the audit collected from interviews with the project owner, project management, local stakeholders, and workers. b) The organizations involved in the project area clearly identified and include Hawaiian Legacy hardwoods (HLH), Legacy Carbon (LC), the Four Seasons Hotel and Resorts, NRCS, and local landowners. **CAR 12/15**-Chapter 2.1 key project information does not identify Treehouse Consulting as a project participant although Chapter 3.5 identifies Treehouse Consulting as a participant. Furthermore, Chapter 3.5 in box (e) identifies both Treehouse Consulting and Streamline Consulting Group as participants with authority to receive information from the Gold Standard Secretariat. The auditor understood from the field audit that Streamline Consulting Group is no longer involved with the project. c) Umikoa is correctly identified as the community d) The project location is correctly identified e) **CAR 12/15-**The project area is identified as 420.5 ha of designated planting area. This value however contradicts the area reported in the growth model and CO2 Fixation workbook as 351.4 ha. f) The developer asserts there is little risk of change to the project area during the crediting period based on the lease running 10 years longer than the crediting period. The auditor agrees. g) The risk of change to the project activities is low and is mitigated by investments made in the early stage of the project including the CREP program, as well as investors in the Timber Units of the project h) The project is clearly identified as a 50 year timeline and crediting period, however it is noted that the trees, which are well adapted to the site, are intended to persist as a natural forest beyond the 50 year timeline. i) The developer clearly identifies the quantity of CO2 Certificates j) The land use history and current situation of the project area is accurately described as having been native koa forest that was converted to cattle pasture with invasive grasses. k) The socioeconomic history is adequately described and accurate based on the auditor observations

l) The forest management scenario of the project being a mix of legacy (conservation) and timber (rotation forestry) MUs managed with a 25 year rotation for the timber units, is accurately described. m) The project relies primarily on *Acacia koa* (koa) trees. Carbon credits are only generated based on the koa trees planted although other native species are intermixed. This approach is conservative. n) The project is asserted to have beneficial social impacts in the form of increased employment in the tourism, hospitality, and forestry sectors. The auditor considers this assertion to be credible o) The main environmental impacts are presented in detail and include multiple observed and expected positive impacts including restoration of habitat for native tree species such as koa, sandalwood and mamane. In addition it is expected that restoration of this habitat will directly benefit multiple threatened faunal species including the Hawaiian hawk, the palila, and the hoary bat. The audit team observed the Hawaiian hawk in the planting area during the audit, confirming this benefit. The audit team has also directly observed and confirmed via stakeholder interviews with knowledgeable parties from NRCS, that comparable other native forest restoration projects in Hawaii either do not exist or are significantly smaller than the project. Other assertions of environmental benefits such as removal of invasive species (Kikuyu grass for example), and watershed improvement and protection, are logical and evident. Environmental risks identified are credible and include the risk of soil erosion, pesticide usage, and damage to remnant native vegetation during the planting process. These risks are justified as minimal and/or appropriately mitigated. p) The financial structure is elaborated in the project documents and was discussed in detail during the field audit. The developer has an innovative financing structure leveraging funding raised by associated non-profit groups, subsidy provided through the CREP program, and funding that comes from investors in individual trees in the timber (rotation forestry) units. The funding structure generates additional social benefits throughout Hawaii as a portion of donated funds goes to a charity selected by the donor.		
Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**CAR 12/15; CAR 12/15**		

2. The following information shall be clearly defined by the use of *shapefiles*:
   (a) Project area
   (b) Planting areas
   (c) Eligible planting area
   (d) Modelling Units
   (e) Infrastructure (roads, houses, etc.)
   (f) Water bodies
   (g) Sites with special significance for *indigenous people and local communities* - resulting from the Local Stakeholder Consultation (LSC)
   (h) Where *indigenous people and local communities* are situated
   (i) Where *indigenous people and local communities* have legal rights, customary rights or sites with special cultural, ecological, economic, religious or spiritual significance.

Findings from Field Audit			
The developer has provided all shapefile types required by the Gold Standard to the audit team, noting that there is no infrastructure, water bodies, or areas with significance to local communities or indigenous people as confirmed by the auditor. The shapefiles are clearly labelled and organized and demonstrate conformance.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

3. Boundaries of the project area and the planting area shall be clearly distinguishable in the field.

Findings from Field Audit
The boundaries of the project area and the planting areas were clearly distinguishable in the field for the auditor. The developer provided the auditor with detailed maps and photos of the boundary fences prior to the field audit to enable sufficient preparation for the auditor to confirm this. The auditor used a hand held GPS, maps, and aerial imagery to confirm the accuracy of the boundaries of the planting areas and the MUs. No errors were observed. The auditor interviewed the personnel involved in mapping and monitoring during the field audit and found the personnel to be highly competent and capable of generating and maintaining accurate information regarding project area and planting area throughout the project implementation.

In addition the project uses and innovative and accurate system of RFID tags to monitor and collect data on individual trees planted as part of the project. Based on auditor observations this system is rigorous and accurate.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

3. Sustainability Requirements

Social Requirements

Indigenous Peoples and Local Communities

1. Sites with legal rights and customary rights of *indigenous people and local communities* shall be identified, known and respected by the workers.
2. Sites for special cultural, ecological, economic, religious or spiritual significance to the *indigenous people and local communities* shall be identified, known and respected by the workers.
3. The transfer of control of any activities from *indigenous people and local communities* to the project owner shall be documented.
4. The project shall not involve and shall not be complicit in the involuntary relocation of people.
5. On sites with significant disputes, all operations should be stopped until the disputes are resolved.

Findings from Field Audit			
1. The project claims that there are no overlapping rights in the project area and there are no legal or customary rights held by indigenous people and local communities. This assertion is credible given US property laws. The auditor confirmed this as well through interviews with the Kukaiua Ranch manager and other stakeholders 2. The project claims there are no sites of special cultural or other significance to local communities. Sites of this nature are not uncommon in Hawaii. However, based on interviews with workers and the ranch manager, who are the most knowledgeable individuals, there are no such areas in the project area. The historic Umikoa trail runs nearby but thus far no evidence has been uncovered that it lead through the project area. 3. No indigenous communities and/or communities have claimed ownership or right over the project area other than the Kukaiau Ranch, from which the developer has leased the land. 4. No individuals have been relocated and there is no risk of this in a cattle pasture in Hawaii. 5. Based on interviews with the workers (who are also the local community members) and the manager of Kukaiau Ranch who also lives in the local community of Umikoa village, there are no significant disputes. There may be a risk of minor future disputes regarding conflicts between cattle and the trees if fences are damaged but these are future risks and shall be resolved in light of the grievance mechanism.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

Working Conditions

6. Workers shall be able to establish and join labour organizations.
7. Workers and labour organizations shall be generally satisfied with their working agreements.
8. Working agreements with all individual workers shall be documented and implemented.
9. There shall not be forced labour, as defined by the *ILO Forced Labour Convention*[1].
10. There shall not be child labour, as defined by the *ILO Minimum Age Convention*[2].
11. If the host country did not ratify one or more of the 8 *ILO Fundamental Conventions*[3], the project owner shall provide a written affirmation to uphold them.
12. Copies of the 8 *ILO Fundamental Conventions* shall be available for workers.

Findings from Field Audit
6. **CAR 05/15**-Based on interviews with some workers they are under the impression that they are unable to join labor organizations or labor unions. 7. HLH is a B certified corporation and underwent a B Lab assessment in 2013 which awarded HLH a score of 25 for worker conditions which is greater than the average score of 22. The auditor has taken this report into account. Based on interviews with eight HLH workers (the majority of workers), workers are generally satisfied with their working agreements. The workers expressed a preference for higher pay as well as better worker training. This led to CAR 06/14 regarding chainsaw safety

training. However, the auditor notes that the region is generally economically depressed and this in turn depresses wages. **FAR 01/15** The auditor observed that the workers of HLH provide essential technical and practical knowledge, without which the project would suffer greatly. Given the dissatisfaction expressed by some workers this forward action request is issued such that future auditors should confirm whether workers feel their compensation and worker agreements have improved. Due to the specialized nature of some of the jobs fulfilled by workers, loss of some workers could threaten project success. 8. Worker agreements have been clearly documented as workers have signed an acknowledgement that they have received the HLH Employee Handbook (reviewed by the auditor). HLH employees are hired through ALTRES, a human relations company. Under this arrangement, HLH LLC is the workplace employer and ALTRES is the administrative employer. The auditor has reviewed the employee handbook and found it to be comprehensive. 9. There is no risk of forced labor as verified by the auditor in the field. 10. There is no risk of child labor as verified by the auditor in the field. 11. The United States has ratified the conventions so no risk is presented here. 12. Auditors are able to access the 8 ILO Fundamental Conventions.			
Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**CAR 05/15; FAR 01/15**		

No Discrimination

13. The project owner shall not be involved, and shall not be complicit, in any form of:
    (a) sexual harassment, AND
    (b) discrimination based on gender, race, religion, sexual orientation or any other basis.

Findings from Field Audit			
13. Based on the field audit, the HLH worker team is diverse and provides no evidence to suspect discrimination. The project also has a written statement committing to a harassment and intimidation free workplace which his in the Employee Handbook which employees receive. No evidence exists that sexual harassment or discrimination have occurred or are likely to occur.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

Anti-Corruption

14. The project owner shall not be involved and shall not be complicit in corruption. The project owner shall publicize a commitment not to offer or receive bribes in money or any other form of corruption. The project owner shall comply with anti-corruption legislation where this exists.

Findings from Field Audit			
The project owners have publicized their commitment to ethical work practices. HLH LLC is a B Lab certified corporation with high ranking marks further bolstering their claim of non-participation in corruption. The auditor interviewed participating parties and stakeholders including local community members, workers, the NRCS, and representative of Kukaiau Ranch, the land owner. No interviewees expressed concerns about corruption.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

Occupational Health & Safety

15. There shall be a 'Health & Safety Policy' that is documented, implemented and regularly updated. This policy shall include at a minimum:
    (a) provisions for first aid, AND
    (b) provisions for the safe transport of workers, AND
    (c) provisions for timely evacuation of workers to an adequately equipped medical facility in case of serious accident, AND
    (d) a health insurance scheme for workers who are impacted by workplace accidents AND
    (e) if workers stay in camps for a longer period of time, measures shall be provided to ensure that conditions for accommodation and nutrition comply at least with those specified in the *ILO Code of Practice on Safety & Health in Forestry*[4].
16. An individual shall be appointed to have overall responsibility for 'Health & Safety' at the worksite.
17. Workers shall have job-specific training and supervision to safely implement the project.
18. Workers shall have safe protective equipment, tools and machinery appropriate for their work.

Findings from Field Audit			
15. The Health and Safety Policy has been provided to the auditor. The policy does include provisions for first aid as well as provisions for evacuation and transport. There are no worker camps and there is no need of this. **CAR 11/15** Although there is an extensive health and safety policy, review of the policy indicates that it is insufficient. The policy does not provide any specific information regarding pesticide and chemical usage and safety or chainsaw usage and safety. Only generic guidance is provided which is inadequate given that the risk of accidents related to chainsaw and power tool usage as well as chemical usage is significant. 16. Shannon Greathouse was identified in the employee handbook, health and safety policy, and by the workers themselves as the responsible individual for health and safety. 17. **CAR 06/15** The Gold Standard requires that workers have sufficient job training to safely implement the project. Workers regularly use chainsaws for tree removal and other maintenance work involved in project implementation. Interviews with workers confirmed that formal safety trainings for chainsaw use have not occurred, for this very high risk activity. 18. Workers confirmed that they had appropriate protective equipment, tools, and machinery for their work and the auditor visually confirmed this in the field.			
Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**CAR 06/15; CAR 11/15**		

Environmental:

Tree species

19. The genotypes of the tree species planted shall be well-adapted to the site.
20. *Exotic tree species*[1] shall not be used, unless direct experience, or scientific research, demonstrate that there is, or can be, no invasiveness and no adverse impacts.

Findings from Field Audit			
19. The species used for the generation of CO2 Certificates, *Acacia koa* is a widely distributed native tree in Hawaii and is prexisting on the site as relict individuals. These relic individuals were used as the seed source for the reforestation project. 20. No non-native species are used, neither for generation of CO2 Certificates or for the biodiversity interplantings that generate much of the positive ecological benefits of the project.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

Habitat connectivity

21. Through a smart mosaic of the planting areas, buffer zones and infrastructure habitat connectivity for flora and fauna should be enhanced.

Findings from Field Audit

21. The planting area provides connectivity between remnant native trees and small patches of remnant forest that exist in gulches.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

GMOs

22. *Genetically Modified Organisms (GMOs)*[2] as defined by FSC shall not be used.

Findings from Field Audit			
22. Native tree species sourced from the project area are used as the only planting material. There is no risk of GMO usage or contamination.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

Biodiversity

23. Minimum 10% of the project area shall be *identified* and *managed* to protect or enhance the *biological diversity*[3] of *native ecosystems*[4]. For this, the *HCV*[5] approach should be followed.

24. (a) Existing patches of trees or single solitary stems of *native tree species*[6], AND
    (b) habitats of *endangered species*[7]
    shall always be *identified* and *managed* to protect or enhance the *biological diversity*[3].

Findings from Field Audit			
23. The project replaces a non-native low biodiversity invasive grassland with native forest to be managed for conservation and timber values, but primarily conservation. 100% of the project4 area meets this requirement. 24. The auditor confirmed based on review of aerial imagery and field observations that remnant native tree species have been retained in all cases in the project area. Based on direct observation of an avian endangered species in this habitat this criteria is fulfilled.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS			

Erosion

25. To ensure healthy soils the following aspects shall be identified and appropriate measures shall be put in place to protect them:
    (a) soil types, AND
    (b) biota, AND
    (c) erosion, AND
    (d) compaction.
26. Ploughing on slopes with a gradient greater than 10% (5°) shall follow the land contour.

Findings from Field Audit			
25. The developer has provided the auditor with an adequate biological survey of the planting area describing in detail the soil type, biota, erosion risks, and compaction. The auditor concludes that the project activities will help to replenish and revitalize the soil resource rather than further degrade it. 26. No plowing was observed in the current or historic planting areas so this requirement is not relevant.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

Fertilizers

27. Fertilizers shall be avoided, or their use shall be minimised and justified.
28. If the aerial application of fertilizer is used, then measures shall be put in place to prevent drift.

Findings from Field Audit			
27. Fertilizer is applied directly do the base of the trees annually during the first four years of tree establishment. This approach is reasonable and justified given the relatively degraded nature of the soils in the project area. 28. Fertilizer application is only directly at the base of the tree.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

Chemical pesticides

29. Chemical pesticides shall be avoided, or their use shall be minimised and justified.
30. Chemical pesticides shall be used in accordance with the *FSC Pesticides Policy*[1].
31. There shall be a 'Chemical Pesticides Policy' that is documented, implemented and regularly updated. This policy shall include at a minimum:
    (a) provisions for safe transport, storage, handling and application, AND
    (b) provisions for emergency situations.
32. In the case that chemical pesticides are used and two or more different chemical pesticides are equally effective, the least hazardous chemical pesticide shall be used.

Findings from Field Audit			
29-32) Glyphosate (Ranger Pro) is used as the primary means of removal of the Kikuyu grass, which is essential for planting the trees and ensuring their survival. Kikuyu grass is a well-known persistent invasive grass with a moderate level of shade tolerance. Usage of glyphosate to reduce competitiveness of Kikuyu grass is justified. The developer has provided specific justification of the projects conformance to the FSC Pesticide Policy including Criterion 6.6 (1), 6.6 (3), 10.7 (1), 10.7 (2). **CAR 04/15**- The developer has demonstrated to the auditor that policies and provisions for safe pesticide use do exist. However, these provisions and policies are distributed across multiple documents, and no single Chemical Pesticides Policy exists that can demonstrate conformance with Chapter 3, requirement 31 and that can be expected to be reliably used by workers.			
Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**CAR 04/15**		

Biological control agents

33. *Biological control agents*[2] shall be avoided, or their use shall be minimised and justified.

Findings from Field Audit			
The developer asserts that biological control agents are not used and there is no evidence to contradict this.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

Water resources

34. On both sides of permanent or temporary *water bodies* (lakes, streams, rivers, wetlands, etc.) riparian buffer zones of 15 meters shall be implemented on each site. In these riparian buffer zones:
    (a) only *native tree species*[3] may be planted, AND
    (b) *invasive species*[4] shall be removed, AND
    (c) all existing vegetation shall be kept, AND
    (d) no timber harvesting activities shall take place, AND
    (e) no use of fertilizer or chemical pesticides.
35. The flows of *water bodies* shall not be blocked.
36. The groundwater in and around the planting area shall not be negatively affected by the project.

Findings from Field Audit			
There are no water bodies in the project area or planting area as confirmed by the auditor visually during the field audit. The entire planting area was observed.			
Conformance	Yes ☒	No ☐	N/A ☐

NCR/OBS	None

Waste

37. All sources of waste and *waste products* shall be identified and classified. *Waste products* include amongst others:
    (a) chemical wastes, AND
    (b) containers, AND
    (c) fuels and oils, AND
    (d) human waste, AND
    (e) rubbish (including metals, plastics, organic and paper products), AND
    (f) abandoned buildings, machinery or equipment.
38. Measures for waste products and their spillage shall be in place for safe and environmentally appropriate:
    (a) collection, AND
    (b) transport, AND
    (c) storage, AND
    (d) handling, AND
    (e) disposal.

Findings from Field Audit			
37. a) The developer asserts that no chemical wastes are generated as chemicals are used completely prior to being discarded. The auditor found no evidence to contradict this and the issue will be further verified in future audits. b) Containers are returned to the purchasing site. c) Waste oil and hydraulic fluids are collected in sealed containers and taken to local recycling centers. This is common practice in the United States. d) Disposal of human waste is not relevant to the project as Umikoa village is equipped with septic systems. e) Trash is disposed of at the local transfer station as is common practice across the United States. f) Abandoned material has not been produced by the project but will be evaluated in future audits. 38 a)-e). Per the above details the project has put into place measures for appropriate collection, transport, storage, handling, and disposal of the minimal amount of wastes that are generated.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

3.2 Local Stakeholder Consultation:

1. The Local Stakeholder Consultation (LSC) shall be conducted in accordance with 'A/R Guidelines - LSC'.

Invitation of Stakeholders

2. The project owner shall proactively invite The Gold Standard Secretariat and the stakeholders, including all *Gold Standard NGO Supporters*[1] active in the host country of the project, to provide comments on the proposed project in accordance with the guidelines provided in 'A/R Guidelines - LSC'.

Notice to Designated National Authority and National Focal Point

3. The *Designated National Authority (DNA)*[2] or *National Focal Point*[3] shall be notified about the existence of the project.

Findings from Field Audit

12. **Stakeholders** | The stakeholders are persons, groups or entities that may be affected by the project and that show interest in the project.

The following are categories of stakeholders:

(a) Local people impacted by the project or their representatives
(b) Local policy makers and representatives of local authorities
(c) *Designated National Authority (DNA)*[1] and *National Focal Point*[2]
(d) Local NGOs working on topics relevant to the project
(e) The *Gold Standard Regional Manager*[3] located closest to the project
(f) *International Gold Standard NGO Supporters*[4] and *Gold Standard NGO Supporters*[5] located in the host country of the project.

The Local Stakeholder Consultation was documented and implemented in accordance with the appropriate "A/R Guidelines LSC".
The consultation process was widely publicized, and the list of invitees and attendees was provided to the auditor and independently confirmed to be accurate via outreach by the auditor to invitees. Invitees included all stakeholder types listed in the GS stakeholder definition and feedback was provided from many of these stakeholder groups.
The auditor was able to confirm the validity of feedback provided in the project documents through review of original feedback reports from stakeholders that attended the LSC as well as interviews conducted with the majority of stakeholders who were present at the LSC meeting. The auditor confirmed that stakeholders felt that the process had been comprehensive and inclusive and that no stakeholder groups had been left out of the process. Given that the project area is somewhat isolated, other than the Umikoa village, which participated heavily in the LSC, the auditor could find no logic or evidence to contradict this assertion. Other than some feedback from workers regarding workers training, which is described in other locations in this report, no negative feedback was provided to the auditor from stakeholders.

Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

Timeline

4. The LSC should be conducted prior to the planting start date. If the LSC is conducted after the planting start date, the project owner shall provide further explanation of how comments received during the LSC are taken into account in the project.

Findings from Field Audit			
The LSC was conducted after the first planting start date. However, the main stakeholders in the project are intimately involved in the project and provide ongoing input as confirmed during the field audit. HLH LLC has also instituted a grievance policy and mechanism which includes an online comment feature thus enabling ongoing consultation. **CAR 01/15:** However, review of that online comment feature indicates that it is currently not functioning.			
Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**CAR 01/15**		

Public consultation meeting

5. The LSC shall include at least one public in-person meeting, which shall be open to anyone willing to attend and which shall be conducted in accordance with the guidelines provided in this document.

Findings from Field Audit			
An open public in-person meeting was implemented on April 10, 2014 in the city closest to the planting area. The meeting was widely publicized as evidenced by wide distribution of an invitation letter.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

Input & Grievance Mechanism

6. Projects applying The Gold Standard 'A/R Requirements' shall have a formal input and grievance mechanism in place in accordance with the chapter 'Input & Grievance Mechanism'. This mechanism shall be described during the LSC.

Findings from Field Audit			
CAR 10/15-The project has developed an official grievance policy and procedure (GS 3260_3.2.7_HLH Input and Grievance Policy and Procedure) and has provided this policy to the auditor. However, interviews with stakeholders confirmed that they were unaware of the existence of an official grievance policy and procedure, demonstrating insufficient implementation of the grievance mechanism.			
Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**CAR 10/15**		

Documentation

7. The LSC documentation shall be prepared using the 'LSC' template and in accordance with the guidelines provided in this document. The documentation shall include the outcome from the physical meeting(s) and feedback received via other means, and it shall be submitted for the Pre-Feasibility Assessment.

Findings from Field Audit			
The LSC documentation was provided using the appropriate template and in conformance with the GS A/R Requirements v0.9. It was additionally submitted for the Pre-Feasibility Assessment. The auditor was provided with the original written feedback from stakeholders at the meeting and was able to confirm that this feedback matched the feedback reported in the LSC form. Feedback was nearly universally positive with the exception of one stakeholder who was displeased to lose land for cattle grazing. Follow up interviews with this stakeholder during the field audit confirmed that although they felt that the cultural importance of cattle grazing was highly important that they saw many positive impacts from the project, and that they were supportive of the project overall.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

Confidentiality

8. The LSC documentation shall be made publicly available on The Gold Standard Registry once the project is 'listed'. Prior to being 'listed', only The Gold Standard Secretariat and Technical Advisory Committee shall be able to access the documentation.

Findings from Field Audit			
This requirement shall be fulfilled once the audit is concluded.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

Sustainable Development Assessment

9. Part of the LSC is the *Sustainable Development Assessment*, which makes use of the table below. This table, also called the 'SD Matrix', provides a general overview and a rating of the sustainability impacts of a project, together with a list of *mitigation measures* that relate to these impacts.

   The *Sustainable Development Assessment* shall show that the project, at a minimum, contributes positively to two of the three indicator categories (Environmental, Social Development, Economic & Technical Development) and is neutral in the third category. All individual indicators are given the same weight.

10. For each indicator describe briefly what the without project scenario (baseline scenario) would be and what the situation you aim for in the project is. Based on this description of the baseline and targeted values of your parameters, score each indicator 'negative (-1)', 'positive (+1)' or 'neutral (0)' in comparison with the baseline situation.

11. Negative (-1) indicators can potentially be 'neutralised' with *mitigation measures*. These *mitigation measures* shall then be monitored under the chapter '3.5 Sustainability Monitoring Plan'. All indicators that score positive (+1) or negative (-1) shall also be monitored.

Indicator	Description and Score	Mitigation measure
	• Negative impact: o score negative (-1) if the negative impact on the indicator is not fully mitigated o score neutral (0) if the impact on the indicator is or is planned to be fully mitigated • No change in impact: score neutral (0) • Positive impact: score positive (+1)	Where relevant, describe *mitigation measures* used to neutralise a negative (-1) score
Environment		
1. Air quality		
2. Water quality and quantity		
3. Soil condition		
4. Other pollutants		
5. Biodiversity		
Social Development		
6. Quality of employment		
7. Livelihood of the poor		
8. Access to affordable and clean energy services		
9. Human and institutional capacity		
Economic & Technical Development		
10. Quantitative employment and income generation		
11. Access to investment		
12. Technology transfer and technological self-reliance		

Findings from Field Audit
Sustainable development matrix assessment: **Environmental Indicators**: The developer indicates that impacts on air quality, water quality, and other pollutants is neutral (0) with reasonable justification. The auditor agrees based on document review and the field audit. The reforestation project will have neutral impacts on these indicators and may even have positive impacts on water quality due to a reasonably expected reduction in sedimentation of water bodies as annual grasses are replaced by intact native forest canopy. The developer justified that selection of positive indicator values (1) for both soil condition and biodiversity impacts. These impacts are justified based on in the information presented in the field,document review and widely documented and accepted effects of added tree cover. Replacing a non-native invasive grassland with a native forest and plantation area has clear positive impacts on biodiversity and soil condition. The overall positive score is justified.

Social Development:
The developer selects neutral (0) scores for livelihood of the poor, access to clean energy, and human and institutional capacity. Appropriate evidence and justification is presented for these scores. The auditor concurs based on evidence collected that the project will cause no negative impacts for these indicators and may produce minor positive impacts due to an expected increase in local employment generated by the project as compared to the baseline scenario of continued cattle ranching in the planting area. The developer selected and justified the selection of positive impacts for quality of employment. Although some employees expressed a desire for higher future compensation, this assertion is justified given that the region offers few employment opportunities. The project has created significant opportunities for skill development as confirmed in interviews with the workers and as verified by the management of highly innovative technologies (drone use for forest monitoring, RFID tags for forest monitoring, geospatial analyses) by staff that did not have these skills prior to working with HLH. The overall positive score is justified.

Economic & Technical Development:
The proponent selects a neutral score (0) for technology transfer. There is no risk based on auditor review of evidence that the project would negatively impact technology transfer in the region, and the auditor believes based on interview with NRCS staff that the outreach activities of HLH may eventually result in transfer of reforestation strategies to the broader Hawaiian context. The score is justified. The developer selects a positive score (1) for quantity of employment and access to investment. Both selections are justified by information presented by the developer. The company has created 18 full time positions and 10 part time positions whereas continued cattle ranching would have created a single position. Furthermore the project has demonstrated aninnovative investment model resulting in investment in Umikoa village which was mostly unoccupied prior to the project and is now a thriving rural village with a bed and breakfast generating additional local employment. The overall positive score is justified.

Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

3.3 Inputs and Grievances:

1. The project owner shall establish an 'Input & Grievance Mechanism' in accordance with the 'A/R Guidelines - Input & Grievance Mechanism'.

Findings from Field Audit			
The developer has established an Input and Grievance Policy (GS3260_3.2.7_HLH Input and Grievance Policy and Procedure) in accordance with the Gold Standard requirements. The policy clearly states its purpose and intent as well as the procedure for submitting a grievance. Three grievance mechanisms are provided including i) a grievance log notebook at the project headquarters in Umikoa village at the project site. This site is regularly visited by stakeholders including workers, investors, sponsors of Legacy Trees (donors), and local village members. The auditor verified that the notebook existed and that the notebook included provisions for recording the information required by the GS grievance mechanism guidelines. ii) a telephone number is available for stakeholders to use to express concerns and grievances iii) a website link has been created (www.legacycarbon.com/stakeholder_feedback.html) where stakeholders can submit comments. **CAR 01/15:** The auditor has confirmed that the website link (www.legacycarbon.com/stakeholder_feedback.html) for submitting stakeholder comments and grievances is not fully functional. Visiting the link does not provide an opportunity for a stakeholder to review the policy nor to actually submit a comment. As no grievances have yet been submitted, the process of resolving grievances will be assessed at future performance certification audits.			
Conformance	Yes ☐	No ☒	N/A ☐

NCR/OBS	**CAR 01/15**

3.4 Sustainability Monitoring Plan

1. The project owner shall use the table below to define the monitoring for the *mitigation measures* identified in the chapters '3.1 Do-No-Harm Assessment' and '3.2 Local Stakeholder Consultation'.

Findings from Field Audit			
The Sustainability Monitoring Plan appropriately has selected for monitoring each mitigation measure that: i) has been identified in the Do No Harm Assessment with a medium or high risk rating including, worker satisfaction with working agreements, chemical pesticide usage consistent with the FSC Pesticides Policy. ii) has been identified in the Local Stakeholder Consultation as positive (+1) or negative (-1), including soil condition, biodiversity condition, quality of employment, quantity of employment, and access to investment. For each of the indicators identified above the monitoring plan has appropriately identified a mitigation measure, parameter for monitoring, current situation, baseline estimate, target for the parameter and general monitoring roles and responsibilities. **FAR 02/15:** Some of the parameters selected for monitoring are notoriously difficult to measure. Meaningful monitoring implies having clearly identified parameters for measurement such that future monitoring events can make quantitative comparisons between parameter values at the monitoring event and at the inception of monitoring (which is not defined). This includes "Biodiversity Improvement". The developer justifies the assertion that the baseline represents "very poor biodiversity" based on the endangered species survey conducted in 2012. While the auditor agrees on this general observation there is no monitoring plan provided at this point that could meaningfully detect an improvement from "very poor biodiversity" to some improved biodiversity state. It is asserted that "surveys of plant and animal species will be conducted, including attempts to record rare, threatened and endangered species". This generic description does not identify the fundamental components of biodiversity monitoring including, what shall be used as a proxy for improvement in biodiversity, how shall this be monitored, and when represents time 0 of monitoring? It may be that the developer intends to compare species prevalence data in future monitoring to the 2012 survey, but this is not made clear. Additionally, with no pre-identified proxies to represent biodiversity improvement monitoring will likely be inconstant and unsuccessful and provide muddled results. The implementation of the Sustainability Monitoring Plan will be reviewed in detail during the Performance Certification.			
Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**FAR 02/15**		

2. The selected parameters shall be practical to measure and be relevant to the *mitigation measure*.

The table format for the 'Sustainability Monitoring Plan' is provided below. A separate table should be prepared for each of the parameters to be monitored.

Sustainability Monitoring ID		
Indicator for		
Mitigation measure		
Chosen parameter		
Current situation of parameter		
Estimation of baseline situation of parameter		
Target for parameter		
Monitoring	How will it be monitored and documented?	
	Who is responsible for monitoring and documentation?	
	When will it be monitored (duration and frequency)?	

Findings from Field Audit			
All selected monitoring parameters are practical to measure with the exception of the parameters identified for Biodiversity Improvement.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	See FAR 02/14 above		

3.5 Legal Rights and Representation:

Secured Titles

1. For all project participants, the following information shall be provided:
   (a) Name and contact details
   (b) Each entity's legal registration number and documentation by the governing jurisdiction that proves that the entity is in good standing.

2. For the duration of the crediting period the project owner shall:
   (a) own the CO_2 user rights or carbon sequestration rights for the project area, AND
   (b) hold an uncontested legal land title for the project area, AND
   (c) own the rights for timber and non-timber forest products for the project area, AND
   (d) hold all necessary permits to implement the project (planting permits, infrastructure permits, harvesting permits, etc.), AND
   (e) participate in the financing of the project.

   If the project owner does not meet all of the above requirements, the persons or legal entities that do meet those respective requirements shall endorse the expected project being undertaken by the project owner through an agreement that aligns with the duration of the crediting period.

Findings from Field Audit			
1) The developer has provided relevant contact names for each entity involved in the project in the appropriate template, Chapter 3.5. Documentation has been provided by the relevant governing jurisdiction (State of Hawaii) that HLH LLC (the project owner) and Kukaiau Ranch (the land owner) are in good standing. These certificates of good standing are dated from within 6 months of the field audit and thus considered sufficient for the audit purposes. Hard copies and electronic versions were provided to the auditor. 2) a) The lease that HLH LLC has in place with the land owner does not mention or specify ownership of carbon user rights or carbon sequestration rights. The lease, however does discuss the anticipated forestry activities in detail. In response to queries by the auditor during the field audit with regard to the lease not specifically addressing carbon credits or rights, the developer sought and received a clarifying legal opinion from Steven L Rinesmith of Rinesmith & Sekiguchi LLLC of Honolulu Hawaii, dated January 30, 2015. The auditor received this legal opinion and has incorporated it as evidence of conformance with this requirement. Per the legal opinion, under United States general contract law a lessee (HLH LLC) holds all rights of use except that which is specifically forbidden by the lease. The lease itself does not mention carbon rights or use rights and therefore the rights lie with HLH LLC for the carbon user rights. In addition, the legal opinion notes that a specific provision of the lease (Section 5, Quiet Enjoyment), provides that the lessee shall peacefully hold and enjoy the premises for agricultural purposes and all activities permitted by agricultural zoning, within hindrance or interruption by the lessor. The generation of CO2 certificates falls under this category and therefore this provides further assurance that the rights lie with HLH LLC and not with Kukaiau Ranch. **CAR 02/15:** HLH LLC has agreements in place with several investors who are investing in individual trees in the Timber Units. These agreements cede ownership of the timber as well as the carbon stored in this marketable timber to these investors. HLH currently does not have any agreement in place with each of these investors clearly demonstrating that they endorse the project and its expected implementation methods through the duration of the crediting period b) HLH LLC, the project owner does not own the land in the project area but rather has a 60 year lease on the project area land from Kukaiau Ranch, the land owner. The crediting period is 50 years. This meets the requirement that if the project owner does not own the land they shall have an agreement with the entity owning that land for the duration of the crediting period. The lease officially recognizes the proposed implementation of the project. The auditor additionally confirmed the 60 year lease period with representative of Kukaiau Ranch. c) Timber rights are assigned to the project owner through the lease with Kukaiau Ranch, other than those which the project owner has given to timber investors which results in the issuance of CAR 02/15. For reasons cited in a) above, the non-timber forest product use rights lie with HLH LLC and that aspect of conformance is met. d) The project has demonstrated that it holds all necessary permits to implement the project e) The project owner is the primary financier of the project.			
Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**CAR 02/15**		

Project Representatives

3. The project owner shall define the authorities of all project participants with respect of:
   (a) instructing The Gold Standard secretariat, AND
   (b) requesting or communicating the addition or edits of project participants, AND
   (c) receiving all information from The Gold Standard Secretariat on matters related to the project.

Findings from Field Audit			
The project owner has clearly identified the authorities of each project participant by marking the relevant checkboxes in the template provided by the Gold Standard in Chapter 3.5 of the project documents.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

Terms & Conditions and Cover Letter

4. The project owner shall sign The 'Gold Standard Terms & Conditions' and the declarations of the 'Cover Letter'.

Findings from Field Audit			
This was evaluated during the Pre-feasibility assessment and is not the responsibility of the auditor to confirm.			
Conformance	Yes ☐	No ☐	N/A ☒
NCR/OBS	None		

1.6 Risk Register:

Process for Initial Certification

- For the Initial Certification each of the following risks shall be assessed on their relevance to the project.
- If not relevant; the project owner shall provide a description of the non-relevance.
- If relevant; the project owner shall score the risk with regard to the viability of the project during the crediting period into the category ***low***, ***medium***, or ***high***. The scoring shall be based on the likelihood of the risk occurring and the impact of that occurrence on the project during the crediting period.
- If the rating is ***medium*** or ***high*** the mitigation measure shall be described and implemented.

For the documentation, the project owner shall use the template 'Risk Register'.

The table format for the 'Risk Register' is provided below with risk topics.

Risk Topics	Risk score, based on likelihood and impact on the project	Mitigation measure
	high (+) medium (0) low (-) not relevant (/)	
Management qualifications in forestry, operations, finance, legal		
Workers qualifications in the technical implementation		
Technical equipment		
Financial means: complete and realistic income streams (investment, funding, co-funding, sales, etc.) and expenditure (administration, infrastructure, machines, labour, audits, unexpected expenditures, etc.)		
Water: drought, flood, hail, snow, heavy rains		
Wind: heavy wind, storms		
Animals: domestic, wild		
Fire: natural fires, fire management		
Diseases: insects, bacteria, viruses		
Temperatures: frost, heat		
Irregular resettlement or **illicit crop production**		
Exploitation of underground resources: mining, water, etc.		

Findings from Field Audit

Management qualifications: The developer has selected low risk and justified this with information demonstrating that management personnel cumulatively have decades of experience in project implementation and management, as described in the risk register. The auditor independently researched management personnel and was able to confirm the biographies and qualifications that were summarized in the risk register..

Workers qualifications: The developer has selected low risk and justified this with information demonstrating that workers have sufficient qualifications for technical implementation, as described in the risk register. The auditor interviewed the majority of HLH workers and found them well trained and knowledgeable. The developer has contracted Treehouse Consulting to develop the Gold Standard documentation and carbon estimated. Treehouse Consulting is managed by Dr. Andrew Callister, a capable individual with relevant academic and professional expertise in forestry project implementation on multiple continents.

Technical equipment: The developer has selected low risk. The auditor confirmed via direct observation during the field audit that all technical equipment is present (nursery technology, tractor for planting, GIS, GPS, etc) and that the project is developed using an innovative technical approach (usage of RFID tags for individual tree monitoring). This equipment was used repeatedly during the audit to facilitate audit activities.

Financial means: The developer has selected a moderate risk. The project has developed a range of innovative financing mechanisms including individual tree sponsorship, investment in the timber units, participation in conservation reserve

programs, etc.

Water: The developer has selected moderate risk as moderate drought and flooding both occur at the site. The project exclusively uses native vegetation which is adapted to the site. The auditor was able to observe disturbance from an extreme flooding event in 2013 which resulted in significant erosion in some areas. Additionally, one week before the field audit, Hawaii experienced an extreme wind event. Despite these disturbances the trees experienced no mortality as confirmed by the auditor.

Wind: The developer has selected a low risk. Hawaii did experience hurricanes in the past year, which was unusual. Documentation provided by the developer (GS3260_3.6.2_Hurricane risk assessment by HLH) derived from the Federal Emergency Management Agency (FEMA), placed Hawaii in a very low risk category for hurricanes with between 1 and 28 events between 1851 and 2012. Given the low frequency of hurricanes in Hawaii as well as the fact that trees were undamaged by the severe wind event prior to the field audit, the assertion of low risk is appropriate.

Animals: The developer appropriately selected moderate risk as the reforestation project occurs in a cattle ranch. High quality and durable fencing, as verified by the auditor, protects the planting areas. Interviews with the cattle ranch and the workers confirmed that damage to the fences is rare.

Fire: The developer appropriately selected moderate risk. The project area receives relatively high rainfall yet fire may occur. Aerial fire fighting response is available.

Diseases: The developer appropriately selected moderate risk. Koa wilt, psyllids, and rust are concerns for the reforestation project. The developer provides appropriate published literature to support the assertion that these diseases tend to cause multiple leaders more frequently than tree death. The auditor saw very little damage to the trees from pests while on site. Some marginal sites had experienced high mortality from poor soil and competition from grass but there was no evidence that pest outbreaks were involved in this mortality.

Temperature: The developer selects low risk. The project area is at a medium elevation (approximately 4000 feet) in a tropical climate and is not subject to extreme heat or frost. Furthermore the species replanted naturally exists at the planting site and is therefore adapted to the site conditions.

Irregular resettlement: The developer selects low risk. The US has strong private property rules and no history of this type of activity.

Exploitation of underground resources: The developer selects low risk. The project area is on the slopes of Mauna Kea, a large inactive volcano on Hawaii. Valuable minerals are not associated with this type of geology.

Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

4.0 Additionality:

Option 1 - A/R CDM Tools

1. The project shall meet the additionality requirements of the latest version of the A/R CDM '*Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities*'.
   Link: http://cdm.unfccc.int/methodologies/ARmethodologies/tools/

   The CDM specific terms of the A/R CDM additionality tool (tCERs, A/R CDM project, etc.) shall be interpreted within The Gold Standard context.

   The '*Guideline on the assessment of investment analysis*' and the '*Guidelines for objective demonstration and assessment of barriers*' can be used.
   Link: http://cdm.unfccc.int/Reference/Guidclarif/index.html

Findings from Field Audit
The developer has selected option 1 to use the CDM A/R tool to demonstrate additionality and has submitted an in depth additionality report as well as relevant exhibits, scientific literature, and documentation. Step 1: Generation of credible scenarios 1a) Six credible alternative land use scenarios are developed including: -Cattle ranching—the pre-project activity -Reforestation using the project scenario model in the absence of carbon finance -Reforestation with a eucalyptus monoculture -Establishment of a macadamia nut orchard -Establishment of a tea plantation -Establishment of a coffee plantation Appropriate information is provided for each scenario to demonstrate they are credible. These scenarios were all observed by the auditor while on the island of Hawaii. 1b) All land use scenarios are consistent with applicable laws and regulations. All scenarios were observed by the auditor while on the island of Hawaii. Step 2 Barrier Analysis 2a) The primary barriers which prevent land use scenarios are identified and are parsimonious and credible. These include elevation, soil conditions, and market access. 2b) All land use scenarios experience some barrier other than cattle ranching and reforestation in the style of the project scenario in the absence of carbon finance. The barriers presented are credible. Macadamia production and coffee production are prevented by the high altitude and cool temperatures. Tea production is prevented by soil conditions. Appropriate academic or government documentation are presented for each justification. The auditor did not witness macadamia, tea, or coffee production in the region of the project area and did witness these uses in other regions of Hawaii island. Eucalyptus plantations are prevented by market access as is demonstrated by a thorough summary of the history of eucalyptus production in the region. Despite significant investment in eucalyptus plantations in the 1980s after the collapse of the sugar industry, these plantations have been primarily un-harvested for fiber or logs. News reports chronicling this failure are cited appropriately. The auditor witnessed extensive, un-managed, un-thinned eucalyptus plantations in this region of the island, supporting the assertion of the developer. 2c) Both cattle ranching and reforestation in the absence of carbon finance are not prevented by any barrier. 3a-c) As a result the developer appropriately conducts an Investment Analysis. The Investment Analysis is thorough and based on credible and appropriate data sources. A discount rate of 8% was applied, based on guidance from relevant publications and common practice for effective interest rates on new loans in the region of the project.

The NPV of the cattle ranching scenario is $2,310,030.

The NPV of the Native restoration/timber production forestry scenario is --$1,113,331. This unprofitable result is reasonable given that the majority of the planting area is dedicated to conservation forestry that generates no meaningful income.

CAR 03/15: The developer has selected the investment comparison analysis as the means of demonstrating conformance. The investment analysis for the project activity in the absence of carbon finance does not include a source of funding which the project currently has and for which it could reasonably be assumed the project would have had access at the project start date. This the funding subsidy provided through the USDA Conservation Reserve Enhancement Program (CREP). Additionally, the investment analysis assumes that the proportion of the Legacy (conservation) planting type and the Timber planting type are in a proportion of 75% to 25% of the planting area. However, the actual proportion is closer to 65% to 35%. This assumption impacts the project's estimated revenue.

3d) Sensitivity Analysis.
The assumptions in each investment analysis are clearly and transparently recorded along with relevant sources legitimate assumptions.
The NPV of the cattle ranch financial model was adjusted based on three different assumptions of calf price as well as two different assumptions of carrying capacity of the grazing area. All assumptions were adjusted downward from the selected financial model, which is conservative.

The NPV of the reforestation in the absence of carbon finance model was adjusted based on different assumptions on the increase of the stumpage price for koa timber. The assumed increases are based on recent price fluctuations which have been complex. Koa stumpage was flat for some time in the 1980s, then increased dramatically from 1985 to 1995, and has been approximately flat or slightly negative from 1995 to the present day. The selected financial model assumes a 0% real increase in the stumpage value of koa under the assumption of increasing competition from tropical hardwoods currently being exploited throughout the rest of the world. This value was increased as high as 3% per annum in the sensitivity analysis. Assumptions on the number of marketable crop trees were also varied. Koa has moderate to poor form with a limited number of eventual crop trees.

The sensitivity analysis is conclusive as determined by the auditor. The assumptions and variations of assumptions that feed into both economic models are appropriate and based on published sources from scientific literature, trade or business news and/or government sources. The cattle ranching, which is the selected baseline, generates positive NPV in 4 of 6 scenarios, whereas the reforestation scenario generates positive NPV in only 3 of 6 scenarios and these scenarios are on average much less profitable than cattle ranching. In addition, for the reforestation scenario to generate positive NPV, it relies heavily upon usage of a 3% real increase in stumpage price which is very high and not consistent with the recent trend of no meaningful increase or decrease in koa stumpage.

4) Common Practice Analysis
The auditor verified through direct observation and through interviews with HLH workers and government representatives that it is not common practice to conduct large scale reforestation with native species, particularly in which the majority of the planting area is voluntarily reserved for conservation purposes. There is no evidence to suggest that the activity is common practice in the absence of carbon finance or with carbon finance.

In conclusion the auditor agrees with the assertion that the project is additional and that continuation of the pre-project cattle ranching is the appropriate baseline.

Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	CAR 03/15		

Option 2 - Positive List

Findings from Field Audit			
Not applicable			
Conformance	Yes ☐	No ☐	N/A ☒
NCR/OBS	N/A		

Retroactive submission

3. If the submission to the Pre-Feasibility Assessment was after the planting start, the project owner shall demonstrate that
   (a) the revenues from CO_2-certificates were seriously considered in the decision to implement the project, AND
   (b) there was continuous interest in CO_2-certificates for the project in parallel with its implementation.

   Evidence to support this can include: contracts, draft versions of project information, correspondence with financial institutions or other stakeholders, minutes and notes of meetings, agreements or negotiations with auditors, publications in newspapers.

   For Option 1, this replaces requirement 7 of the '*Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities*'.

Findings from Field Audit			
Not applicable, as this is evaluated during the Pre-Feasibility Assessment conducted by the Gold Standard.			
Conformance	Yes ☐	No ☐	N/A ☒
NCR/OBS	N/A		

No Deforestation

4. The planting area shall not have been *forest*[3] for at least 10 years prior to the planting start, OR

   If the planting area was deforested during the 10 years prior to the planting start, the eligibility of the project shall be determined by The Gold Standard Secretariat. This will be done as part of the Pre-Feasibility Assessment.

Findings from Field Audit			
The project area has been deforested for several decades as confirmed by the auditor in stakeholder interviews with the land lesser, Kukaiau Ranch. No evidence of stumps were found in the project area. Most of Hawaii island has been deforested over the past 150 years.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	**None**		

5. Methodology

5.1 Applicability

The project area shall meet all of the requirements below for this methodology to be applicable for the calculation of CO_2-certificates from the project.

1. Areas shall not be on *wetlands*[1].
2. Areas with *organic soils* shall not be drained or irrigated (except for irrigation for planting).
3. Soil disturbance (through ploughing, digging of pits, stump removals, infrastructure, etc.) on *organic soils*[2] shall be in less than 10% of the area that is submitted to certification (not 10% of the entire project area).
4. The most likely scenario without the project (baseline scenario) shall be defined for the project area. This scenario shall not show any *significant*[3] increase of the Baseline biomass ('tree' and 'non-tree').

Findings from Field Audit			
1. The developer has provided shapefiles demonstrating there are no wetlands. The auditor has travelled the entire project area and saw no evidence of wetlands. 2. The developer has asserted that there are no organic soils and the auditor accepts this assertion based on the observed lack of wetlands, water bodies. The auditor traversed the entire project area during the field audit and saw no evidence of water bodies or wetlands. 3. The soil disturbance involved is minimal as there is no ploughing involved and there are no organic soils in the project area. 4. The baseline scenario is continued cattle ranching in the project area. This baseline has been accepted through the additionality analysis. This baseline would not result in an increase of biomass other than continued growth of rare pre project trees, which would not rise to a level of significance as demonstrated by the developer in the carbon calculations. The increase of baseline biomass is expected to be less than 1% of the increase in project scenario biomass.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

5.2 Conversion Factors:

1. *Conversion factors* shall be determined at the level of a Modelling Unit:
   (a) Wood Density
   (b) Biomass Expansion Factor
   (c) Root-to-Shoot ratio

   All factors shall be based on the best available scientific sources.

Findings from Field Audit			
The factors used by the developer have not been justified. **CAR 08/15:** The quantification of verified CO2 Certificates in the GS3260_5.7.1 HLH Inventory for Timber MUs 2010-2012.xlsx document is based on an assumed Biomass Expansion Factor of 1.33 and wood density for koa of 560 kg/m3. No source has been provided to justify these values. The GS A/R requirements clarify that all such factors shall be based on the best available scientific sources or the default factors under Chapter 5 Methodology, 4 shall be used.			
Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**CAR 08/15**		

Conservative Approach

2. When aggregated together, the factors shall lead to a conservative calculation approach. This means that in the consideration and calculation of uncertainties:
   (a) the CO_2-Fixation shall not be overestimated, AND
   (b) the Baseline and Leakage shall not be underestimated.

Findings from Field Audit			
The auditor has confirmed that overall the carbon calculations have used a conservative approach for reasons described throughout this document. In addition, the developer has chosen to not quantify carbon or issue CO2 Certificates for the native species inter-plantings that occur throughout the Legacy timber units. In this approach, the developer is conservatively omitting a significant source of carbon sequestration.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

Default Factors

3. The following *default factors* shall be used for all conversions:
   (a) 0.5 [tC/tdm] as the 'Carbon fraction' for 'tree biomass'
   (b) 0.4 [tC/tdm] as the 'Carbon fraction' for 'non-tree biomass'
   (c) $^{44}/_{12}$ [tCO_2/tC] is used to convert 'C to CO_2'

Findings from Field Audit			
The auditor has reviewed the *ex ante* and *ex post* calculation of baseline, project scenario, and leakage emissions and removals (GS3260_5.7.2_Growth model and CO2 Fixation workbook V2; HLH Inventory for timber MUs 2010-2012; GS3260_5.5.1_Baseline carbon report_Treehouse Consulting) and confirmed that the appropriate default factors are used throughout.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS			

4. The following *default factors* shall be used when no rigorous scientific information is available:

   For the parameters of CO_2-Fixation:
   (a) 0.3 [tdm/m^3] Wood density
   (b) 1.1 [ ] BEF
   (c) 0.2 [ ] Root-to-Shoot ratio for 'tree biomass'

   For the parameters of Baseline or Leakage:
   (d) 0.7 [tdm/m^3] Wood density
   (e) 3.5 [ ] BEF
   (f) 0.8 [ ] Root-to-Shoot ratio for 'tree biomass'
   (g) 4.0 [ ] Root-to-Shoot ratio for 'non-tree biomass'

Findings from Field Audit
CAR 08/14: The quantification of verified CO2 Certificates in the GS3260_5.7.1 HLH Inventory for Timber MUs 2010-2012.xlsx document is based on an assumed Biomass Expansion Factor of 1.33 and wood density for koa of 560 kg/m3. No source has been provided to justify these values. The GS A/R requirements clarify that all such factors shall be based on

the best available scientific sources or the default factors under Chapter 5 Methodology, Section 4 shall be used.			
Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**CAR 08/14**		

5.3 Calculation of C02 Certificates

1. The number of CO_2-certificates is determined for every year (t) of the crediting period using the following formula.

$$\text{CO}_2\text{-certificates} = (\text{CO}_2\text{-Fixation} - \text{Baseline} - \text{Leakage} - \text{Other Emissions}) * \text{Eligible planting area}$$

[tCO_2] of every MU [tCO_2/ha] [ha]

Findings from Field Audit			
The developer intends to issue both verified and validated CO2 Certificates at this Initial Certification audit. The verified CO2 Certificates are intended to be based only on the older timber units (2010-T, 2011-T, and 2012-T). During the field audit it was clarified by the Gold Standard that the calculation of validated CO2 certificates shall be based only on the eligible planted area that is planted at the time of the field audit. Validated CO2 Certificates Based on the CAR identified below the planting area for validated CO2 Certificates remains unknown and this section shall be updated and evaluated in full once that value is known and the calculations are revised. **CAR 07/15:** The current planting area, which is used to define the validated CO2 Certificates is not accurately defined in the project documentation. The field visit indicated that although the majority of the planting area is successfully planted with trees with good survival and growth that there are multiple small patches (0.5 hectares per patch) that in sum represent a significant unplanted area. These unplanted areas are concentrated in the 2012 planting year in areas on steep slopes. Additionally, the current calculation of validated CO2 Certificates also includes areas that are expected to be planted in 2015 and 2016, but are not yet planted. Areas that are unplanted at the field audit cannot be included in the calculation of validated CO2 Certificates. Verified CO2 Certificates The developer intends to issue verified CO2 Certificates at this Initial Certification audit for the older timer units (2010-T, 2011-T, and 2012-T) with a total area of 56.1 ha which is consistent in the timber inventory spreadsheet and the “Present CO2 Fixation” portion of Chapter 5.7.			
Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**CAR 07/15**		

Carbon Pools:

For the calculation of the parameters CO_2-Fixation, Baseline and Leakage, the following carbon pools shall be assessed:

Carbon Pools		Includes	CO_2-Fixation	Baseline	Leakage
Tree biomass	Aboveground	Stem, branches, bark	Yes	Yes	Yes
	Belowground	Tree roots	Yes	Yes	Yes
Non-tree biomass	Aboveground	Grass, herbs, etc.	No	Yes	No
	Belowground	Roots of grass, herbs, etc.	No	Yes	No
Soil		Organic material	No	No	No
Harvested wood (timber & energy wood)		Furniture, construction material, etc.	No	No	No
Litter & Lying dead-wood		Leaves, small fallen branches, lying dead wood	No	No	No

Standing dead-wood is part of the carbon pool 'tree biomass'.

Positive leakage as well as *market* leakage shall not be accounted for under this methodology.

Findings from Field Audit			
The developer has selected and quantified the appropriate carbon pools and resulting changes.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

5.4 Other Emissions

Site preparation

1. Where existing 'tree' and 'non-tree' biomass of the Baseline is burned for the purpose of land preparation, an additional 10% of the Baseline shall be deducted. This is to account for the non-CO_2 green-house-gas emissions (N_2O and CH_4) that are released during the burning process.

Fertilizer

0.005 tCO_2 per kg of nitrogen (N) fertilizer shall be deducted. No differentiation is made between synthetic and organic fertilizer.

Combustion of fossil fuel

2. Non-CO_2 green-house-gas emissions caused by the use of fossil fuel from project activities (flights, management operations, etc.) are insignificant and may therefore be neglected.

N-fixing trees

3. Non-CO_2 green-house-gas emissions caused by the use of N-fixing species may be conservatively assumed to be zero.

Findings from Field Audit			
The project does not burn biomass in site preparation. The auditor confirmed this through interviews with workers and visual observation of recently planted areas. The project does use fertilizer for the first four years of the planting. The developer has submitted an excel spreadsheet calculating the nitrogen emissions per MU, as well as Chapter 5.4 Other Emissions. **CAR 09/15:** The developer has incorrectly quantified the nitrogen emissions for the validated CO2 Certificates. The excel spreadsheet submitted only correctly calculates the nitrogen emissions for verified CO2 Certificates. This spreadsheet does not calculate nitrogen emissions, for example from areas planted in 2012 past the year 2014. However, these areas planted in 2012 will continue to emit GHGs as they are fertilized in 2015 and 2016 as well. This correction necessitates correction as well to the CO2 Fixation spreadsheet.			
Conformance	Yes ☐	No ☒	N/A ☒
NCR/OBS	**CAR 09/15**		

5.5 Baseline

1. The Baseline shall be determined by estimating the 'tree' and 'non-tree' biomass that is present in the eligible planting area just prior to the planting start.

Findings from Field Audit			
The baseline has correctly estimated the tree and nontree biomass at the project start date using aerial photos from approximately that time to identify the few remnant trees in the cattle pasture.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

2. To determine the Baseline of the eligible planting area the land shall be
   (a) stratified according to its vegetation types (grassland, bushland, etc.), AND
   (b) for each of these strata scientifically based *project-specific*[1], regional or national *default values* shall be found which state 'tree' and 'non-tree' biomass of these vegetation types.

   International default values[2] from the IPCC shall only be used if no other values are available.

Findings from Field Audit
There is only a single baseline scenario (continued cattle ranching). The baseline is quantified at the level of the modelling unit, based on the density of prexisting trees in each MU. The non-tree biomass is assumed to be consistent across all MUs which is a defendable assumption given the small size of the area and field observations by the auditor. The non-tree baseline carbon stocks are derived from a published academic paper investigating biomass stocks of the same invasive grassland type (Kikuyu grass) in a nearby ranch, which is appropriate. The tree baseline carbon stocks are derived from quantifying the carbon stocks of remnant koa trees. Old growth, open grown koa have extremely variable and complex growth form often with multiple trunks and several dead limbs. The developer used aerial imagery to classify all remaining koa trees in the planting areas as either "large" or "small" canopies. Based on auditor observation it is often difficult to determine if a single canopy is one tree or multiple trees. A random sample of the large and small canopies were sampled using an appropriate allometric equation to calculate their biomass and resultant carbon stocks. To determine the actual baseline for each MU the developer simply counted the number of large and small canopies per MU

and then multiplied this number by the corresponding carbon stock value per canopy. The baseline scenario assumes that all large canopies have constant carbon stocks during the crediting period. This is a valid assumption given that these trees are extremely old and many are dying. The baseline scenario also assumes that each small canopy, over the crediting period will grow into a large canopy which is a conservative assumption given the very large size of the large canopies. The auditor concludes that the approach for determining the baseline is conservative and accurate and in conformance. **OBS 01/15:** The equation used to estimate koa biomass in the baseline likely is generating unreasonably high baseline tree carbon stocks as this equation was developed on much smaller koa trees. This approach is conservative as the developer cannot claim credit for these trees in the project scenario, even though they will remain. As such this reduces the delta between the project and baseline scenario, generating less CO2 certificates. The developer may wish to consider other allometric equations which may be more accurate			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	**OBS 01/15:**		

3. The Baseline shall be determined on a Modelling Unit (MU) level using the following formula:

Baseline MU,t [tCO2/ha]
= Baseline Eligible planting area [tCO2] / Eligible planting area [ha]

The Baseline is deducted in the first year (t=1).

Findings from Field Audit			
The baseline values have been determined appropriately for every MU.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

4. The Baseline is not subject to monitoring.

Findings from Field Audit			
Not applicable			
Conformance	Yes ☐	No ☐	N/A ☒
NCR/OBS	NA		

5.6 Leakage

Leakage are emissions that occur due to a *shift of activities* from the inside of a project area to the outside of a project area.

These *shifts of activities* can cause four different categories of Leakage by:
(a) collection of wood (for firewood, charcoal, etc.)
(b) timber harvesting
(c) agriculture (crop cultivation, shrimp cultivation, etc.)
(d) livestock.

These four categories are used in the formulas below.

Note that only the 'tree biomass' affected by these activity shifts shall be considered.

2. Leakage shall be determined on a Modelling Unit (MU) level using the following formula:

Leakage $_{MU,t}$ [tCO_2/ha]
= Leakage $_{Project\ area}$ [tCO_2] / Eligible planting area [ha]

Leakage is deducted in the first year (t=1).

Findings from Field Audit			
The developer claims that no leakage can be expected from activity shifting due to implementation of the project. The project area in the baseline is used for cattle ranching, thus indicating that leakage could potentially be expected from shifting cattle ranching to alternative areas. The developer claims that due to the abundance of understocked ranching land on the island of Hawaii that it is reasonable to expect no deforestation to occur. The auditor accepts this assertion due to the general lack of forested land that could conceivably be cleared on the island of Hawaii. Hawaii was greatly deforested over the last 150 years resulting in very little remaining native forest. Traveling around the island demonstrates that there are substantial areas of unstocked or minimally stocked grazing lands that were created in the past when Hawaii was a major beef producer. The developer supports this assertion with: i) input from the Kukaiau Ranch Manager stating that the cost of deforesting new land is simply too high to be viable. The auditor confirmed this opinion. The auditor also confirmed that the Kukaiau Ranch as a whole is below maximum stocking density due to preferences of its owner. ii) a letter of support for this idea from a professor of animal sciences at the University of Hawaii who concurs that he is unaware of any individual or corporation clearing forest for grazing land, and iii) a deforestation analysis using the Global Forest Change data set (Hansen et al 2013) demonstrating very minimal forest loss during the 2000-2012 time period and nearly no forest loss in eastern Hawaii where the project is and where cattle ranching prevails. Based on the above evidence and auditor observation the auditor accepts the assertion that risk of deforestation from activity shifting is not present.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

5.7 CO_2 Fixation

1. The yearly (t) CO_2-Fixation is determined at the level of Modelling Unit (MU) during the crediting period.

Findings from Field Audit			
The developer has presented yearly CO2 Fixation estimated for each MU during the crediting period.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

2. For every MU a growth-model and *conversion factors* (see chapter '5.2 Conversion Procedure') shall be determined.

Findings from Field Audit			
The developer has developed and provided the auditor with a growth model for each MU as well as the specific conversion factors for each MU. Due to CARs identified in other areas of this report the full conformance of these requirements will be evaluated once evidence for these CARs is received.			
Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	See other CARs		

3. The *conversion factors* allow the conversion of the 'Stem volume', which is normally measured in cubic meters [m^3] during the *forest inventories*, to 'tree biomass' with the unit tCO_2. For the conversion the chapter '5.2 Conversion Procedure' shall be followed.

   The *conversion factors* are not subject to monitoring.

Findings from Field Audit			
Chapter 5.2, "Conversion Procedure" was used as required. The auditor confirmed that the required conversion factors were applied appropriately in the growth model and CO2 fixation excel spreadsheet provided.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

4. Existing 'tree biomass' from the carbon stock of the Baseline that is not removed shall be reflected in the growth-model.

Findings from Field Audit
The existing tree biomass is reflected in the growth model in a way that is conservative and accurate. The tree baseline carbon stocks are derived from quantifying the carbon stocks of remnant koa trees which are assumed to remain in the project scenario growth model. Old growth, open grown koa have extremely variable and complex growth form often with multiple trunks and several dead limbs. The developer used aerial imagery to classify all remaining koa trees in the planting areas as either "large" or "small" canopies. Based on auditor observation it is often difficult to determine if a single canopy is one tree or multiple trees. A random sample of the large and small canopies were sampled using an appropriate allometric equation to calculate their biomass and resultant carbon stocks. To determine the actual baseline for each MU the developer simply counted the number of large and small canopies per MU and then multiplied this number by the corresponding

carbon stock value per canopy. The baseline scenario assumes that all large canopies have constant carbon stocks during the crediting period. This is a valid assumption given that these trees are extremely old and many are dying. The baseline scenario also assumes that each small canopy, over the crediting period will grow into a large canopy which is a conservative assumption given the very large size of the large canopies.

Existing tree biomass is assumed to be preserved in both the baseline and project scenarios and related carbon accounting appropriately.

Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

5. A realistic survival-rate shall be reflected in the growth-model.

Findings from Field Audit			
The developer does not directly include assumptions of tree mortality in the growth model and CO2 Fixation. However, tree mortality is indirectly included through assumptions of thinnings that will occur at regular intervals for both the Timber and Legacy planting models. The assumptions for thinning are more than adequate to compensate for even significant mortality. In both the Timber and Legacy planting models the initial planting density is 400 trees per acre and the final density is 65 trees per acre. Based on observation of the already planted areas the survival rate is very high. Additionally the project intends to, and reliably does, replant trees that die in the first years of establishment.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

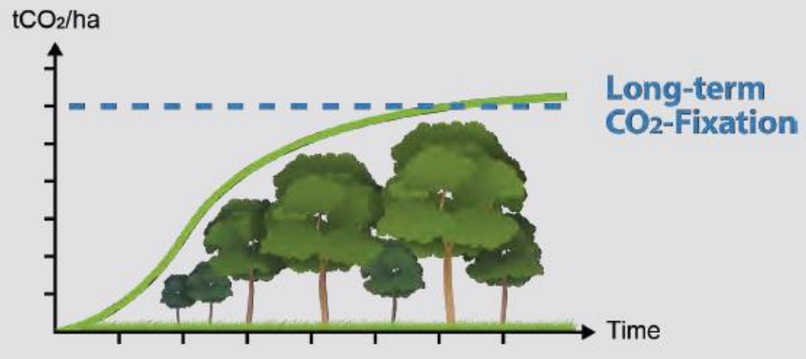
6. The *long-term CO2-Fixation* shall be determined depending on the *silvicultural method* applied / envisioned (see options below).

Findings from Field Audit

Option 1 - Selective harvesting or Conservation forest

If the silvicultural method applied/envisioned is *selective harvesting*[1] or *conservation forest*[2], the *long-term CO2-fixation* is determined by the 'tree biomass' when a MU reaches its equilibrium.

If the 'tree biomass' is still increasing at the end of the crediting period, the *long-term CO2-Fixation* is determined by the 'tree biomass' of a MU in the year the crediting period ends.



The long term CO2 Fixation has been appropriately calculated using the required methods. The auditor has confirmed this through independent analysis of Chapter 5.7 and associated supporting documentation including Chapter 5.7.1, and Chapter 5.7.2.

The Timber planting areas use the rotation forestry approach during the first rotation and then switch to the conservation forest model at year 25. This is because there is no second harvest envisioned for the timber areas which will be converted to conservation forest after the first harvest at year 25. The Legacy plantings follow a conservation CO2 Fixation model the entire time as they will be thinned to promote forest health (which has been factored into CO2 Fixation), but they will not be harvested ever and are intended to remain as natural forest. Conformance has been demonstrated.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	None		

6. Carbon Performance

1. At any time during a crediting period, the project owner shall ensure that the quantity of the *validated* and *verified* CO_2-certificates with respect to the project is less than or equal to the project's expected carbon stocks (*validated* CO_2-certificates) and actual carbon stocks (*verified* CO_2-certificates).

2. Incidents, or events, that effect compliance with requirement 1 shall be reported to The Gold Standard Secretariat. If they occur outside a certification process, the incidents or events shall be reported to The Gold Standard Secretariat no more than 30 days after their discovery. The template 'Carbon Performance' shall be used for this reporting.

3. If compliance with requirement 1 is not maintained, the project owner shall demonstrate to The Gold Standard Secretariat how the project will realistically recover appropriate levels of carbon stocks to comply with requirement 1.
   The project owner shall use one or more of the following approaches:
   (a) retiring/locking of CO_2-certificates from the project which are not yet transferred or retired/locked
   (b) purchasing of CO_2-certificates from any other Gold Standard certified projects (these can also be from other project types such as renewable energy)
   (c) replanting of an appropriate planting area and recovery of the project carbon stocks over time
   (d) planting of new areas to generate further CO_2-certificates

   During the period where the project owner is not in compliance with requirement 1, an equal number of CO_2-certificates from The *Gold Standard Compliance Buffer* will be put 'on-hold'.

4. Further CO_2-certificates shall only be issued for the project after the project owner has complied with requirement 1.

If the project owner after 5 years cannot demonstrate that compliance with requirement 1 will occur, the project owner shall follow the Non-Compliance (NC) process as outlined in section '8. Non-Compliance'.

Findings from Field Audit			
This requirement is not assessed until the Performance Certification audit in the future.			
Conformance	Yes ☐	No ☐	N/A ☒
NCR/OBS	None		

APPENDIX B: Organization Details

Contacts

Primary Contact for Coordination with Rainforest Alliance

Primary Contact, Position:	Campbell Moore, Associate Manager, RA-Cert Carbon Services Unit
Address:	2101 L Street NW Washington DC 20037
Tel/Fax/Email:	cmoore@ra.org