



VERIFICATION REPORT

HENAN NANZHAO

AFFORESTATION PROJECT

Document Prepared By CHINA QUALITY CERTIFICATION CENTER

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Prepared By	CHINA QUALITY CERTIFICATION CENTER
Contact	Section 9, No.188, Nansihuan(the South Fourth Ring Road)Xilu(West Road), Beijing, China;+8610-83886649
Approved By	MR.Song Xiangdong
Work Carried Out By	Mr. Hong Dajian, Ms. Nie Xi

Summary:

CHINA QUALITY CERTIFICATION CENTER (CQC) has conducted the verification of Henan Nanzhao Afforestation Project, proposed by Beijing Pingtougou Forestry Carbon Technology Development Co.,Ltd, which is located in Nanzhao County, Nanyang City, Henan Province, China., and applying the CDM methodology AR-ACM0003 (version 02.0), on the basis of Voluntary Carbon Standard (VCS) Version 4.0, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The verification scope is defined as an independent and objective review and ex-post determination of the monitored GHG emission reductions, and consisted of the following three phases: i) desk review of the project design, the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion. The overall verification, from Contract Review to Verification Report & Opinion, was conducted using CQC's internal procedures.

In summary, CQC confirms that the project is implemented as planned and described in the validated VCS project description. 21,725.13 ha forest (Magnolia and Oak) has been planted in Chengguan Town, Chengjiao Town, Liushan Town, Xiaodian Town, Yunyang Town, Huanghou Town, Taishanmiao Town, Shimen Town, Sikeshe Town, Nanhedian Town, Baitugang Town, Banshanping Town, Qiaoduan Town in Nanzhao County, Nanyang City. The monitoring system is in place and reduce the GHG emissions as anthropogenic GHG removals by sinks. The GHG emission removals by sinks verified totalize 418,299 tons of CO₂e for the monitoring period.

Our opinion relates to the project's actual net GHG removals by sinks and resulting net anthropogenic GHG removals by sinks is reported and related to the valid and registered project baseline, monitoring plan and its associated documents.

Reporting period	20/10/2014 to 30/06/2019
Baseline net GHG removals by sinks	0
Actual net GHG removals by sinks	464,780
GHG emissions due to leakage	0
Total number of credits withheld in VCS buffer account	46,481
Net anthropogenic GHG removals by sinks	418,299

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1 INTRODUCTION

1.1 Objective

Zhong Che (Beijing) Environment Energy Technology Development Co., Ltd. (hereafter referred to as "the PP") has commissioned CQC to verify the emission removals of the Henan Nanzhao Afforestation Project (hereafter referred to as "the Project") for the period from 20/10/2014 to 30/06/2019. CQC as the validation/verification body (VVB) of the Project has been accredited as a DOE by UNFCCC and also meets the competence requirements as set out in ISO 14065:2007.

The objective of verification is to verify the reported voluntary emission removals generated by the Project for the period from 20/10/2014 to 30/06/2019 and to confirm that actual monitoring systems and procedures are in compliance with that described in the monitoring plan and the additional requirements stated by Verra.

1.2 Scope and Criteria

The verification scope is defined as an independent and objective review of the VCS project description (VCS-PD), VCS monitoring report (VCS-MR) and other relevant documents list below. The information in these documents is reviewed against VCS version 4.0 requirements, UNFCCC rules and associated interpretations.

The verification is not meant to provide any consulting towards the client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project monitoring towards reductions in the GHG emissions.

The verification is carried out on the basis of the following requirements, applicable for this project activity:

- VCS Program Guide, version 4.0, dated 19/09/2019^{/12/}
- VCS Standard, version 4.0, dated 19/09/2019^{/13/}
- Registration & Issuance Process, version 4.0, dated 19/09/2019^{/14/}
- VCS Validation and Verification Manual, version 3.2, dated 19/10/2016^{/15/}
- AR-ACM0003 "Afforestation and reforestation of lands except wetlands " (version02.0) ,dated 4/10/2013^{/7/}
- AFOLU Non-Permanence Risk Tool (version 4.0)^{/11/}
- Other rules and requirements

1.3 Level of Assurance

CQC has undertaken a reasonable assurance engagement in accordance with VCS version 4.0. It

requires a reasonable level of assurance in verification that GHG assertions are free of material errors, omissions and misrepresentations. The verification conclusion is based on the VCS-PD^{/5/}, VCS-MR^{/1//2/}, supporting evidences made available to the verifier and information collected through performing interviews and on-site inspection.

1.4 Summary Description of the Project

The project is located in Nanzhao County, Nanyang City, Henan Province, China. The project is to establish 28,391.8 ha of Magnolia and Oak trees on barren hills to generate GHG emission removals. Applying the CDM methodology AR-ACM0003 (version02.0) "Afforestation and reforestation of lands except wetlands", the total removals over the 60 crediting period is expected to be 29,628,383 tCO₂e with average annual removals of 493,806 tCO₂e.

The project owned by village collectives in 15 towns in Nanzhao County is started on 20/10/2014^{/19/}, when the planting contract was signed. In the 1st monitoring period covered from 20/10/2014 to 30/06/2019, 21,725.13 ha Magnolia and Oak trees have been planted in Chengguan Town, Chengjiao Town, Liushan Town, Xiaodian Town, Yunyang Town, Huanghou Town, Taishanmiao Town, Shimen Town, Sikeshe Town, Nanhedian Town, Baitugang Town, Banshanping Town and Qiaoduan Town in Nanzhao County.

The planted Magnolia and Oak trees were classified into 14 strata based on planting year and species. The GHG emission removals by sinks verified totalize 418,299 tons of CO₂e for this monitoring period.

2 VERIFICATION PROCESS

2.1 Method and Criteria

The overall verification, from Contract Review to Verification Report & Opinion, was conducted using CQC's internal procedures, and were consisted of the following steps:

- Contract review
- Appointment of verification team and technical reviewers
- A desk review of the VCS-MR submitted by the client and additional supporting documents
- On-Site assessment
- Draft verification reporting
- Resolution of corrective actions and clarifications
- Final verification reporting
- Technical review
- Final approval of the verification report.

CQC verified the project against the CDM methodology AR-ACM0003 (version02.0) "Afforestation and reforestation of lands except wetlands", and requirements set in VCS version 4.0.

2.2 Document Review

The assessment of the project documentation provided by the project participant is based upon both quantitative and qualitative information on emission reductions. Quantitative information comprises the reported numbers in the VCS monitoring report (MR) version 01 dated 02/07/2019 and MR-ER spread sheet version 01 dated 02/07/2019^{/3/}. Qualitative information comprises information on internal management controls, calculation procedures, procedures for transfer of data.

In addition to the monitoring documentation provided by the project proponents, the CQC reviews:

- (a) The VCS-PD (version 03) and the monitoring plan^{/5/};
- (b) The validation report^{/6/};
- (c) The applied monitoring methodology;
- (d) The non-permanence risk report^{/16/};
- (d) Other information and references relevant to the project activity's resulting emission reductions (e.g. IPCC reports, 3rd party measurement reports or national regulations, evidence/statements from local authority).

2.3 Interviews

On Sep 4th 2019 and Sep 5th 2019, CQC performed a site visit and interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Local villagers, local officials and Representatives of Zhong Che (Beijing) Environment Energy Technology Development Co., Ltd. were interviewed . The main topics of the interviews are summarized as follows.

Date	Interviewee	Organization	Interview Topics
04/09/2019	Mr. Qiao mingtai	Beijing Pingtougou Forestry Carbon Technology Development Co.,Ltd (the PP)	-Technical details of the project realization, project feasibility, designing, operational life time -Project Boundary -Monitoring plan and arrangements -Project activity starting date -Ownership -local stakeholder consultation
04/09/2019	Mr.Li Decheng	Forestry Bureau of Nanzhao County	-National and Provincial legislation to forest -Local forestry development - Roles & responsibilities of the Government - Forest fire and forest pest
04/09/2019	Mr. Bian Jinsheng Mr. Zhu Yuzhao	Local villager	- Local stakeholder consultation
05/09/2019	Ms.Tao Yun Mr. Yu Kaiquan Mr.Li Wei	Zhong Che (Beijing) Environment Energy Technology Development Co., Ltd. (the Consultant)	-Financial aspects -Project activity starting date -project management and monitoring -information flow (data generation, recording, aggregation, calculation and reporting) -ER calculation

2.4 Site Inspections

On 04/09/2019-05/09/2019, the verification team performed the site inspection with the project proponent of the project activity. During this site inspection, interviews with the representatives of the project owner, the consultant and project stakeholders were carried out to confirm selected information and to resolve issues identified in the document review.

2.5 Resolution of Findings

The objective of this phase of the verification is to resolve issues related to the monitoring, implementation and operations of the registered project activity that could impair the capacity of the project activity to achieve emission removals or influence the monitoring and reporting of emission removals prior to CQC's positive conclusion on the GHG emission removals calculation.

Findings established during the verification can either be seen as a non-fulfilment of criteria ensuring the proper implementation of a project or where a risk to deliver high quality emission reductions is identified.

A Corrective Action Request (CAR) is raised, if one of the following situations occurs:

- (a) Non-compliance with the monitoring plan or methodology are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient;
- (b) Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants;
- (c) Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions;
- (d) Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants.

A Clarification Request (CL) is raised, if information is insufficient or not clear enough to determine whether the applicable VCS requirements have been met.

A Forward Action Request (FAR) is raised, for actions if the monitoring and reporting require attention and/or adjustment for the next verification period.

To guarantee the transparency of the verification process, the concerns raised are documented in more detail in Appendix A.

1 CAR and 7 CLs had been raised during the verification, presented in Appendix A. Taking into account this output, the Project participant took corrections and revised its Monitoring Report (VR). All CARs and CLs are successfully closed.

No FAR and no other findings raised during the validation.

2.5.1 Forward Action Requests

No Forward Action Request is raised during this monitoring period.

2.6 Eligibility for Validation Activities

N/A, CQC as the validation/verification body (VVB) of the Project has been accredited as a DOE by UNFCCC and also meets the competence requirements as set out in ISO 14065:2007.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

N/A, the project has not been registered, or is seeking registration under any other GHG programs.

3.2 Methodology Deviations

N/A, no deviation from methodology.

3.3 Project Description Deviations

N/A, no deviation from project description in the VCS PD version 03 dated 24/09/2019.

3.4 Grouped Project

N/A, the project is not a grouped project.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

CQC has performed a site visit and found that the Project activity has been implemented since 20/10/2014. The verification team checked the Tripartite Project Cooperation Development Agreements^{/18/} signed by local village committees, Beijing Pingtougou Forestry Carbon Technology Development Co.,Ltd, and Zhong Che (Beijing) Environment Energy Technology Development Co., Ltd According to these agreements, the forest ownership and legal right of the project belongs to local village committees, which commissioned Beijing Pingtougou Forestry Carbon Technology Development Co.,Ltd. to apply the emission reductions from afforestation activity using VCS standard. The project start date is 20/10/2014, which is indicated in the "Afforestation project contract" signed between local village committees and Hongyi Seedling Planting Professional Cooperative of Tanghe county.

The project activity planned to plant Magnolia and Oak trees with 28,391.8 ha. According to afforestation statistics^{/20//21/} provided by Nanzhao County Forestry Bureau, a total of 21,725.13ha of Magnolia and Oak had been planted in this monitoring period (the rest will be planted in the following years). Based on tree species and its planting year, the 21,725.13ha were divided into 14 strata for monitoring. The detailed afforestation and stratum information are provided in following table.

Table 4-1 Afforestation and Stratum Information in this Monitoring Period

Stratum	A_{i,p} (ha)	Tree species	Plant year	Number of sample plots
PROJ-1	566.40	Magnolia	2014	3
PROJ-2	2226.67	Oak	2014	3
PROJ-3	2094.87	Magnolia and Oak	2014	3

PROJ-4	495.93	Magnolia	2015	3
PROJ-5	3708.53	Oak	2015	4
PROJ-6	995.53	Magnolia and Oak	2015	3
PROJ-7	847.67	Magnolia	2016	3
PROJ-8	3000.00	Oak	2016	3
PROJ-9	1361.00	Magnolia and Oak	2016	3
PROJ-10	705.60	Magnolia	2017	3
PROJ-11	967.60	Magnolia and Oak	2017	3
PROJ-12	1229.33	Magnolia	2018	3
PROJ-13	1786.40	Oak	2018	3
PROJ-14	1739.60	Magnolia and Oak	2018	3
Sub total	21725.13	-	-	43

On the basis of site visit and the reviewed project description, CQC confirms project implementation is in compliance with project description, no changes to the project design have been identified during this verification.

On the basis of on site inspection and Monitoring Manual^{/27/} and Monitoring Records^{/22//23/} provided by Nanzhao County Forestry Bureau, CQC found that the different forest types, as well as the monitoring system and the monitoring procedure have been implemented and managed as described in the VCS PD (Version 03).

By means of on site visit and checking relevant websites, CQC confirms the project has not participated or been rejected under any other GHG programs since validation, and has not received or sought any other form of environmental credit, or has become eligible to do so since validation. The GHG emission reductions or removals generated by the project have not been included in an emissions trading program or any other mechanism.

The project activity can enhance biodiversity conservation, improve soil and water conservation, and generate income and job opportunities for local communities, hence contributes to sustainable development, which has been confirmed by local villagers and Nanzhao County Forest Bureau during

on site visit.

CQC raised CAR01 as the project location and ownership in MR (Version 01) was not clear enough, and the KML file had not been provided to verification team. CAR01 is closed (see Appendix B for details).

CQC raised CL02 as the Non-permanence Risk Report and supporting evidence had not been provided to verification team, and the information presented in section 2.1 "Implementation Status of the Project Activity " in MR (version 01) was not in compliance with VCS-MR template. CL02 is closed (see Appendix B for details).

4.2 Accuracy of GHG Emission Reduction and Removal Calculations

Monitoring has been carried out in accordance with the monitoring plan contained in the VCS PD (Version 03).

The parameters required by the monitoring plan and how CQC has verified the information flow (data generation, recording, aggregation, calculation and reporting) and appropriateness of the applied measurement / determination method, the correctness of the values applied for emission removals calculation, the accuracy, and applied QA/QC measures for all relevant monitoring parameters including the values in the monitoring report are described below:

Parameters monitored:

- Area of stratum i

The project activity planned to plant 28,391.8 ha Magnolia and Oak. As the project has not been completed, 21,725.13ha of Magnolia and Oak has been planted in this monitoring period, which were classified into 14 strata based on tree species and its planting year. The area of each stratum is presented in Table 4-1. CQC confirms the area of each stratum presented in table 4-1 is consistent with the afforestation statistics^{/20//21/} provided by Nanzhao County Forestry Bureau. By means of on site visit, CQC confirms the area of stratum is achieved by field measurement using Standard operating procedures (SOPs) prescribed under national forest inventory.

- Size of sample plot in stratum i

Based on Monitoring Records^{/22/} of sample plots, size of each sample plot is 0.04 ha, which has been confirmed during on-site visit.

- W_i : Relative weight of the area of stratum i; dimensionless;

This parameter is determined in accordance with the tool for the "Calculation of the number of sample plots for measurements within A/R CDM project activities" (version 02.1.0)^{/8/} approved by the CDM Executive Board.

- Diameter at breast height (DBH) of trees in sample plots

Based on on-site visit, CQC confirms the DBH of trees in sample plots were achieved by field measurement using standard operating procedures prescribed under national forest inventory. CQC

checked the Monitoring Records^{/22/} of sample plots and concludes the values in the records are reliable.

- Height (H) of trees in sample plots

Based on on-site visit, CQC confirms the Height of trees in sample plots was achieved by field measurement using standard operating procedures prescribed under national forest inventory. CQC checked the Monitoring Records^{/23/} of sample plots and concludes the values in the records are reliable.

- Area burnt in stratum i in year t ($A_{BURN,i,t}$)

According to statement^{/26/} provided by Nanzhao Forest Bureau, no forest fire was happened in this monitoring period. Therefore, $A_{BURN,i,t}=0$.

CQC raised CL05 as the information of sample plots were not clear enough in MR (Version 01). CL05 is closed (See Appendix B for details).

CQC raised CL06 as the information of "Area of each sample plot and area of each stratum" were not presented in MR (Version 01). CL06 is closed (See Appendix B for details).

Parameters determined ex-ante:

The data and parameters available in the validation are listed below:

- Biomass expansion factor for conversion of stem biomass to above-ground biomass (BEF_j)

The BEF for Magnolia is 1.765, which is sourced from Nanzhao Forest Bureau^{/25/}, and BEF for Oak is 1.355, which is sourced from "Land Use Change and Forestry GHG Inventory(2013)" of "Second National Information Notification on China Climate Change" issued by NDRC^{/32/}.

- Carbon fraction of tree biomass for species or group of species j (CF_j)

The CF for Magnolia and Oak are $0.5 \text{ tC(t.d.m)}^{-1}$, which are sourced from Nanzhao Forest Bureau and "Land Use Change and Forestry GHG Inventory(2013)" of "Second National Information Notification on China Climate Change" Issued by NDRC respectively.

- Basic wood density (D_j)

The D_j for Magnolia is $0.598 \text{ t.d.m.m}^{-3}$, which is sourced from Nanzhao Forest Bureau, and D_j for Oak is $0.676 \text{ t.d.m.m}^{-3}$, which is sourced from "Land Use Change and Forestry GHG Inventory(2013)" of "Second National Information Notification on China Climate Change" issued by NDRC.

- Root-shoot ratio (R_j)

The R_j for Magnolia is 0.398, which is sourced from Nanzhao Forest Bureau, and R_j for Oak is 0.292, which is sourced from "Land Use Change and Forestry GHG Inventory(2013)" of "Second National Information Notification on China Climate Change" issued by NDRC.

CQC raised CL03 as public available documents to support the values of BEF, CF, basic wood density, Root-shoot ratio of each tree species had not been provided to verification team. CL03 is closed (see Appendix B for details).

Calculation process and results

(1) Baseline Emissions

According to VCS-PD (Ver 03), the baseline scenario is the continuation of existing land use i.e. lands remain barren, the baseline net GHG emission reductions or removals by sinks is 0.

(2) Project Emissions

According to the applied methodology AR-ACM0003 (Version 02.0), the project net GHG emission reductions or removals by sinks shall be calculated as the sum of the changes in carbon stocks in the project minus the increase in non-CO₂ GHG emissions within the project boundary, which is shown as follows:

$$\Delta C_{PRJ,t} = \Delta C_{P,t} - GHG_{E,t} \quad (1)$$

Where:

$\Delta C_{PRJ,t}$ =Project net GHG removals by sinks, in year t; t CO₂e

$\Delta C_{P,t}$ =Change in the carbon stocks in project, occurring in the selected carbon pools, in year t; t CO₂e

$GHG_{E,t}$ =Increase in non-CO₂ GHG emissions within the project boundary as a result of the implementation of the A/R CDM project activity, in year t, as estimated in the tool "Estimation of non-CO₂ GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity"^{9/}; t CO₂e

Based on the document statement provided by Nanzhao Forest Bureau^{26/}, no forest fire happened in this monitoring period, thus the $GHG_{FF,t}=0$. As described in VCS-PD (Version 03), the project activity is implemented in barren fields, does not involve site preparation and clearing of harvest residue, thus $GHG_{FMF,t}=0$, and $GHG_{SPF,t}=0$.

According to the methodology AR-ACM0003 (Version 02.0), Change in the carbon stocks in project, occurring in the selected carbon pools in year t shall be calculated as follows:

$$\Delta C_{P,t} = \Delta C_{TREE-PROJ,t} + \Delta C_{SHRUB-PROJ,t} + \Delta C_{DW-PROJ,t} + \Delta C_{LI-PROJ,t} + \Delta C_{AL,t} \quad (2)$$

Based on the VCS-PD(Version 03), only above-ground biomass and below-ground biomass of trees were selected for accounting of carbon stock changes, therefore, the $\Delta C_{P,t}$ can be simplified as:

$$\Delta C_{P,t} = \Delta C_{TREE-PRJ,t} \quad (3)$$

Determination of $\Delta C_{TREE-PRJ,t}$

As per "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities" (Version 04.2)^{10/}, determination of $\Delta C_{TREE-PRJ,t}$ were consisted of following steps:

1st step: Calculation of $B_{TREE,I,j,p,i}$ (Biomass of tree I of species j in sample plot p of stratum i)

➤ For Magnolia, it is calculated by:

$B_{TREE,I,j,p,i} = V_{TREE,j} \times D_j \times BEF_j \times (1+R_j)$, among which, $V_{TREE,j}$ is volume equation of Magnolia,

$$V_{TREE,j} = 0.00004827 \times DBH^{1.70461591} \times H^{1.22521857}$$

Based on statement^{/24/} from Nanzhao Forest Bureau, this volume equation was used for national GHG Inventory. Therefore, as per "Demonstrating appropriateness of volume equations for estimation of aboveground tree biomass in A/R CDM project activities" (Version 01.0.1)^{/33/}, it can be used for ex post estimation of tree stem volume.

➤ For Oak, it is calculated by:

$$B_{TREE,i,j,p,i} = \sum_{i=1}^{i=5} C_i \quad (4)$$

$$\ln C_i = a_i + b_i \ln(DBH^2 \times H) \quad (5)$$

Table 4-2 Parameters used for calculation the biomass of Oak

		a_i	b_i
Under-bark volume	$i=1$	1.7271	0.0015
Bark	$i=2$	-5.0662	1.0506
Branches	$i=3$	-4.5282	0.8745
Leaves	$i=4$	-4.9172	0.9257
Root	$i=5$	-0.2775	0.4539

CQC confirms the equation (4) and (5) were sourced from CCER methodology^{/17/}, and were used for national GHG Inventory. Therefore, CQC concludes it can be used for ex post estimation of tree biomass.

2nd Step: Calculation of $B_{TREE,j,p,i}$ (Biomass of trees of species j in sample plot p of stratum i)

Based on "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities" (Version 04.2),

$$B_{TREE,j,p,i} = \sum_l B_{TREE,l,j,p,i} \quad (6)$$

3rd Step: Calculation of $B_{TREE,p,i}$ (Tree biomass in sample plot p of stratum i)

Based on "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities" (Version 04.2),

$$B_{TREE,p,i} = \sum_j B_{TREE,j,p,i} \quad (7)$$

4th Step: Calculation of $b_{TREE,p,i}$ (Tree biomass per hectare in sample plot p of stratum i)

Based on "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities" (Version 04.2),

$$b_{TREE,p,i} = \frac{B_{TREE,p,i}}{A_{PLOT,i}}, \quad (8)$$

among which, $A_{PLOT,i}$ is the Size of sample plot in stratum i

5th Step: Calculation of $b_{TREE,i}$ (Mean tree biomass per hectare in stratum i)

Based on "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities" (Version 04.2),

$$b_{TREE,i} = \frac{\sum_{p=1}^{n_i} b_{TREE,p,i}}{n_i}, \quad (9)$$

among which, n_i is the number of sample plots in stratum i

6th Step: Calculation of b_{TREE} (Mean tree biomass per hectare in the tree biomass estimation strata)

Based on "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities" (Version 04.2),

$$b_{TREE} = \sum_{i=1}^M w_i \times b_{TREE,i} \quad (10)$$

Among which, W_i is the ratio of the area of stratum i to the sum of areas of tree biomass estimation strata (i.e. $W_i = A_i/A$);

7th Step: Calculation of B_{TREE} (Tree biomass in the tree biomass estimation strata)

Based on "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities" (Version 04.2),

$$B_{TREE} = A \times b_{TREE} \quad (11)$$

Among which, A is the sum of areas of the tree biomass estimation strata

8th Step: Calculation of C_{TREE} (Carbon stock in trees in the tree biomass estimation strata)

Based on "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities" (Version 04.2),

$$C_{TREE} = \frac{44}{12} \times CF_{TREE} \times B_{TREE} \quad (12)$$

9th Step: Calculation of $\Delta C_{TREE,t}$ (Change in carbon stock in trees within the project boundary in year t)

$$\Delta C_{TREE,t} = \frac{C_{TREE,t_2} - C_{TREE,t_1}}{T} \times 1 \text{ year} \quad (13)$$

CQC checked the spread sheet and VCS-MR (version 03), and confirms the calculation of change in carbon stock is in compliance with AR-ACM0003 (Version 02.0). The project emission during this crediting period is listed in the following:

Table 4-3 Confirmed $\Delta C_{P,t}$ in this Monitoring Period

Period	$\Delta C_{SHRUB-PROJ,t}$ (tCO ₂ e)	$\Delta C_{DW-PROJ,t}$ (tCO ₂ e)	$\Delta C_{LI-PROJ,t}$ (tCO ₂ e)	$\Delta C_{AL,t}$ (tCO ₂ e)	$\Delta C_{TREE-PROJ,t}$ (tCO ₂ e)	$\Delta C_{P,t}$ (tCO ₂ e)
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20/10/2014-19/10/2015	0	0	0	0	28,898	28,898
20/10/2015-19/10/2016	0	0	0	0	68,605	68,605
20/10/2016-19/10/2017	0	0	0	0	108,978	108,978
20/10/2017-19/10/2018	0	0	0	0	115,863	115,863
20/10/2018-30/06/2019	0	0	0	0	142,436	142,436
Total	0	0	0	0	464,780	464,780
Average annual value	0	0	0	0	96,227	96,227

10th Step: Calculation of U_c (uncertainty in C_{TREE})

According to "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities" (Version 04.2), U_c is calculated as:

$$u_c = \frac{t_{VAL} \times \sqrt{\sum_{i=1}^M w_i^2 \times \frac{s_i^2}{n_i}}}{b_{TREE}} \quad (14)$$

of which,

- t_{VAL} is Two-sided Student's t -value for a confidence level of 90 per cent and degrees of freedom equal to $n - M$, where n is total number of sample plots within the tree biomass estimation strata and M is the total number of tree biomass estimation strata. For the project activity, n is 43 and M is 14. Therefore $n - M$ equals 29, and the t_{VAL} is 1.699.

- W_i is the ratio of the area of stratum i to the sum of areas of tree biomass estimation strata (i.e. $W_i = A_i/A$)

- S_i is Standard Deviation of tree biomass per hectare across all sample plots in stratum i

- n_i is Number of sample plots in stratum i

- b_{TREE} is Mean tree biomass per hectare in the tree biomass estimation strata

CQC checked the MR-ER spread sheet and VCS-MR, and confirms the calculation of u_c is in compliance with "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities" (Version 04.2). The calculation of u_c is listed as follows:

Table 4-4 Calculation of U_c

Strata	n_i	$A_{i,p}$ (ha)	Mean tonnes C/ha	S_i	W_i	b_{TREE} (t/ha)	U_c
PROJ-1	3	566.40	1.619	0.0510	0.026	0.042212	1.72%

PROJ-2	3	2226.67	22.216	0.9142	0.102	2.276983
PROJ-3	3	2094.87	11.283	0.3632	0.096	1.088009
PROJ-4	3	495.93	0.918	0.1117	0.023	0.020954
PROJ-5	4	3708.53	18.817	1.0113	0.171	3.212124
PROJ-6	3	995.53	9.853	0.2505	0.046	0.451503
PROJ-7	3	847.67	0.504	0.0238	0.039	0.01966
PROJ-8	3	3000.00	15.775	0.6351	0.138	2.178298
PROJ-9	3	1361.00	8.538	0.2216	0.063	0.534874
PROJ-10	3	705.60	0.238	0.0036	0.032	0.007715
PROJ-11	3	967.60	6.409	0.6158	0.045	0.285445
PROJ-12	3	1229.33	0.120	0.0099	0.057	0.006817
PROJ-13	3	1786.40	13.335	0.1240	0.082	1.096463
PROJ-14	3	1739.60	5.597	0.3025	0.080	0.448209

As the uncertainty is less than 10%, the discount is 0.

(3) Leakage

As per VCS-PD (Version 03), leakage is zero for the proposed project, which had been confirmed by CQC during on-site visit, as no displacement of agricultural activity was noticed during on site visit.

(4) Net GHG Emission Reductions and Removals

According to AR-ACM0003 (Version 02.0), as the leakage is zero for the proposed project, net GHG emission reductions and removals of the project activity is calculated as the difference between the actual net GHG removals by sinks in the project activity (Project emissions or removals) and the baseline net GHG removals by sinks (Baseline emissions or removals).

CQC has checked the MR-ER spread sheet and confirms the calculation is correct and in compliance with the methodology. The net emission reduction and removals during this crediting period is listed in the following:

Table 4-5 Net Emission Reduction and Removals in this Monitoring Period

Period	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
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20/10/2014-19/10/2015	0	28,898	0	28,898
20/10/2015-19/10/2016	0	68,605	0	68,605
20/10/2016-19/10/2017	0	108,978	0	108,978
20/10/2017-19/10/2018	0	115,863	0	115,863
20/10/2018-30/06/2019	0	142,436	0	142,436
Total	0	464,780	0	464,780
Average annual value	0	96,227	0	96,227

CQC raised CL01 as the Methodological tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities" employed in MR (Version 01) was not the latest approved version, and it was not clear why A/R Methodological Tool "Demonstrating appropriateness of volume equations for estimation of aboveground tree biomass in A/R CDM project activities"(Version 01.0.1), and "AFOLU Non-Permanence Risk Tool" were not included in Section 1.8 in MR (Version 01). CL 01 is closed (see Appendix B for details).

CQC raised CL04 as the measured value of Diameter at breast height of tree (D) and Height of trees (H) based on sample plots had not been presented in Section 3.2 of MR (Version 01) and the appropriateness of allometric equations and volume equations had not been demonstrated. CL04 is closed (see Appendix B for details).

CQC raised CL07 as it was not clear why emissions sourced from the use of fire for site preparation and/or to clear the land of harvest residue prior to replanting were excluded, and why monitored value of $A_{SPF,t}$, $A_{FMF,t}$ and $A_{BURN,i,t}$ were not included in VCS-MR (Version 01). CL07 is closed (see Appendix B for details).

4.3 Quality of Evidence to Determine GHG Emission Reductions and Removals

All necessary documentation is collected, referenced and is easily accessible in hard-copy or electronic format. The data pertaining to the monitored parameters are consistent with the values stated in the MR-ER spread sheet.

For the data and parameters available at validation, the related evidence has been validated at validation stage and the reliability of the evidence, and the source and nature of the evidence has been confirmed and correctly applied at verification stage.

For the data and parameters monitored, the data and parameters related to forest fire in the project scenario, such as $A_{SPF,t}$, $A_{FMF,t}$ and $A_{BURN,i,t}$ were verified through reviewing the statement issued by local forestry authority, the statement was sourced from local authority and the reliability is confirmed.

For the parameter DBH and H, as well as the area of each sample plot, the data were sourced from Sample plot monitoring records. Hence, the reliability is confirmed.

For the area of each stratum, the data was sourced from afforestation statistics provided by Nanzhao County Forestry Bureau. Hence, the reliability is confirmed

Information flow: the local forestry bureau is in charge of collecting, monitoring and recording the data and parameters, and Zhong Che (Beijing) Environment Energy Technology Development Co., Ltd. calculated the GHG emission reductions or removals based on the monitored data.

CQC concludes all evidences used to determine the GHG emission reductions or removals are transparent and reliable.

4.4 Non-Permanence Risk Analysis

The non-performance risk report (Version 01) is provided by PP, the risk assessment was conducted according to the VCS Procedural Document “AFOLU Non-Permanence Risk Tool” (version 4.0) . PP adopted the Risk Report Short template and combining with the Risk-Report Calculation-Tool excel sheet.

Each risk category was calculated based on the VCS guidance and the input provided by the PP. The information was verified and cross-checked through document and literature review, on site visits of the project area and interviews conducted. Details of the assessment are provided as follow.

Internal risks	
Risk factor	Verification findings
Project management	The management team includes individuals who have successfully managed projects through validation of GHG credits under the CDM, VCS Program^{30/} therefore this mitigation is scored as -2. There is a specific mitigation plan made by project proponent for potential risks to the project, which includes a process for monitoring progress and documenting lessons learned or corrections that may be needed, and incorporating them into project decision-making in future monitoring periods, which has been verified in the Monitoring Manual^{27/}, therefore this mitigation is scored as -2. Total score is -4.
Financial viability	Based on the on site interviewing the local village committee and the PP,CQC validation team confirms there is no harvest hence no gains in the project scenarios, and project cash flow is negative over the whole crediting period. So project cash flow break-even point is greater than 10 years from the current risk assessment. Therefore this is scored as 3. The cash out of the project is mainly for the purchase of trees and planting during the first seven years, and considering no revenues over the crediting period, therefore, the percentage of needed funding secured can not be calculated. Therefore this part is scored as 3. Total score is 6.
Opportunity cost	Based on VCS-PD (version 03), the baseline scenario of the project activity is continuation of pre-project use (i.e. lands remain barren). Through reviewing the contract^{18/} signed between Beijing Pingtoug Forestry Carbon Technology Development Co.,Ltd and local village committees, and interviewing local official of forestry bureau, CQC teams conclude that the credited carbon stocks will be protected over the length of the project crediting period. Therefore this mitigation is scored as -2.

Project longevity	Since the main tree species planted in the project are Magnolia and Oak which all have suitable for the growth of local climate, therefore the project longevity selected 60 years and the crediting period is selected to be 60 years. The contract between PP and local village committees demonstrates that project ownership can be maintained for the entire project longevity Therefore the project longevity is scored as 0.
Total Internal Risk (PM + FV + OC + PL)	0
External risks	
Risk factor	Verification findings
Land Tenure and Resource Access/Impacts	The Agreement of project development signed by Local village committee in project area and project owner dated 26/03/2014 and the certificates of forest tenure rights ^{/34/} are checked, it is verified that the land of the project is all collective-owned, and the project proponent holds a concession for operating and management of the forest on the land. Then the final score is 2. As said previous part, therefore this mitigation is scored as -2. Total score is 0.
Community Engagement	The project land are mostly barren land by checking Project Design for Afforestation Operation, Participatory Rural Appraisal (PRA) ^{/29/} report of the project and the project layout, no residents living within the project area. And for the households living within 20km of the project boundary outside the project area, nearly all of them have been consulted during the Participatory Rural Appraisal of the project. According to the PRA report, the project generates net positive impacts on the social and economic well-being of the local communities who derive livelihoods from the project area. Therefore this mitigation is scored as -5.
Political Risk	The six indicators of China are respectively -0.30, 0.30, -0.47, -0.25, -0.39 and -1.59 ^{/31/} , averaged over the most recent five years, so the mean score is -0.45. Governance Score is -0.45 then the final score is 4. China has an established Designated National Authority under the CDM and has at least one registered CDM Afforestation/Reforestation project, therefore this mitigation is scored as -2. Total Score is 2.
Total External Risk (LT + CE + PC)	0
Natural Risks	
Risk factor	Verification findings
Fire	Major. Fire risk is considered low in the early phase of the project because planting area is mostly barren land, after the trees grow to a certain age (over 60 years), the risk of fire may increase, and the project proponent will adopt the necessary measures for fire preventing.

	Thus, LS=1 Furthermore, local government sets the fireproofing period when using fire is forbidden in the open air and no fires occurred in the project areas as confirmed during the on-site visit. Also the fire will be strictly controlled by project proponent who experienced in local natural risk control to minimize the potential effect and established fire prevention procedure in Management and operation Manual for the proposed project . Therefore the mitigation is scored as 0.25.
Pest and Disease Outbreaks	Insignificant. According to historical records, the pest and disease risk are not common, and the mixed plantation will prevent the trees from pest and disease outbreaks in a certain way based on technical experience. Hence the risk is less than every 10 years. LS=2 The planted trees may be damaged by insects and disease, but the risk is considered low because it can be prevented by routine overseeing and the PP have in place a full Monitoring Manual and Management and operation Manual^{/28/} for the proposed project . The biological measures to control pests and diseases will be mainly adopted. The chemical pesticides are allowed to be used only if there is a serious pest problem erupted in the project area, while improper pesticide application would be harmful to natural environment, but the risk is considered low because pesticide will be strictly managed by well trained staff to minimize the potential effect. As the biological measures to control pests and diseases will be mainly adopted, the pesticide application will be limited. Therefore the mitigation is scored as 0.25.
Extreme Weather	Minor There is basically no extreme weather in the project area based on weather reports collected from historic records from local government; LS=1. Therefore the mitigation is scored as 0.25.
Geological Risk	Minor The geological risk such as earthquakes around the project area are mostly low intensity, so the damage will be minor. According to historical records from local government, there is no earthquakes or volcanoes occurred in recent 30 years around the project area as confirmed during the on-site interview with local officer. LS=1. Furthermore, local government will be responsible for the recovery of the forest if there is an earthquake occurred as confirmed during the on-site visit. Also the project proponent is experienced in local natural risk control to minimize the potential effect and established specific instruction in geological

	risk control in Monitoring Manual and Management and operation Manual for the proposed project . Therefore the mitigation is scored as 0.25.
Other natural risk	None is observed.
Total Natural Risk (as applicable, F + PD + W + G + ON)	1.25

Based on the above assessment, the overall risk rating according to the applied tool is 10%. The verification team concludes that this risk rating is purely based on the tool cited above, according to VCS requirements.

5. SAFEGUARDS

5.1 No Net Harm

There is no potential negative environmental or socio-economic impact due to the project.

5.2 Local Stakeholder Consultation

The survey was conducted by distributing 40 questionnaires^{/35/} and collected the stakeholders' comments on Sep, 2014. There were no adverse comments on the project activity. The summary of comments presented in the MR has been cross-checked with the questionnaires and found to be complete.

6. VERIFICATION CONCLUSION

CQC has conducted the verification of Henan Nanzhao Afforestation Project, proposed by Beijing Pingtougou Forestry Carbon Technology Development Co., Ltd, which is located in Nanzhao County, Nanyang City, Henan Province, China, and applying the CDM methodology AR-ACM0003 (version 02.0), on the basis of VCS Standard Version 4.0, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The verification scope is defined as an independent and objective review and ex-post determination of the monitored GHG emission reductions, and consisted of the following three phases: i) desk review of the project design, the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion. The overall verification, from Contract Review to Verification Report & Opinion, was conducted using CQC internal procedures.

In summary, CQC confirms that the project is implemented as planned and described in the validated VCS project description. 21,725.13 ha forest (Magnolia and Oak) has been planted in Chengguan Town, Chengjiao Town, Liushan Town, Xiaodian Town, Yunyang Town, Huanghou Town, Taishanmiao Town, Shimen Town, Sikeshu Town, Nanhedian Town, Baitugang Town, Banshanping Town, Qiaoduan

Town. The monitoring system is in place and reduce the GHG emissions as anthropogenic GHG removals by sinks. The GHG emission removals by sinks verified totalize 418,299 tons of CO₂e for the monitoring period.

Our opinion relates to the projects' actual net GHG removals by sinks and resulting net anthropogenic GHG removals by sinks is reported and related to the valid and registered project baseline, monitoring plan and its associated documents.

Verification period: From 20/10/2014 to 30/06/2019.

Verified GHG emission reductions and removals in the above verification period:

Year	Baseline emission s or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emission s (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)	Buffer pool allocation	VCUs eligible for issuance
2014.10.20- 2015.10.19	0	28,898	0	28,898	2,890	26,008
2015.10.20- 2016.10.19	0	68,605	0	68,605	6,860	61,744
2016.10.20- 2017.10.19	0	108,978	0	108,978	10,898	98,080
2017.10.20- 2018.10.19	0	115,863	0	115,863	11,586	104,276
2018.10.20- 2019.06.30	0	142,436	0	142,436	14,244	128,191
Total	0	464,780	0	464,780	46,478	418,299

APPENDIX A: DOCUMENTS REVIEWED OR REFERENCED

1. Monitoring Report of “Henan Nanzhao Afforestation Project” (Version 01), dated 02/07/2019;
2. Monitoring Report of “Henan Nanzhao Afforestation Project” (Version 03), dated 20/11/2019;
3. MR-ER Spread sheet, Version 01, dated 02/07/2019;
4. MR-ER Spread sheet, Version 03, dated 20/11/2019;
5. Project Description of “Henan Nanzhao Afforestation Project” (Version 03) , dated 24/09/2019;
6. Validation Report of “Henan Nanzhao Afforestation Project” (Version 03) , dated 12/10/2019;
7. AR-ACM0003 "Afforestation and reforestation of lands except wetlands " (version02.0) ,dated 4/10/2013;
8. “Calculation of the number of sample plots for measurements within A/R CDM project activities” (version 02.1.0);
9. Estimation of non-CO₂ GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity (Version 4.0.0);
10. "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities" (Version 04.2);
11. “AFOLU Non-Permanence Risk Tool” (version 4.0) ;
12. VCS Program Guide, version 4.0 dated 19/09/2019;
13. VCS Standard, version 4.0, dated 19/09/2019;
14. Registration & Issuance Process, version 4.0, dated 19/09/2019;
15. VCS Validation and Verification Manual, version 3.2, dated 19/10/2016;
16. The Non-permanence Risk Report, Version 02, dated 24/09/2019;
17. CCER Methodology "AR-CM-001" Version 01, dated Oct. 2013.
18. Tripartite project cooperation development agreements signed between local village committees, Beijing Pingtougou Forestry Carbon Technology Development Co.,Ltd, and Zhong Che (Beijing) Environment Energy Technology Development Co., Ltd. dated 15/02/2019;
19. "Afforestation project contract" signed between local village committees and Hongyi seedling planting professional cooperative of Tanghe county,dated 20/09/2014;
20. Planted areas statistics provided by Nanzhao County Forestry Bureau;
21. Annual statistics of planted area based on Afforestation sub class provided by Nanzhao County Forestry Bureau;

22. Monitoring records (DBH and size of each sample plot) of sample Plots;
23. Monitoring records (H) of sample Plots;
24. Statement of Stem Volume Equation of Magnolia provided by Nanzhao Forest Bureau, dated 01/07/2019;
25. Statement of CF, BEF, Dj and Rj of Magnolia provided by Nanzhao Forest Bureau, dated 01/07/2019;
26. No fire, Pests and diseases confirmation provided by Nanzhao Forest Bureau;
27. Monitoring Manual for the proposed project;
28. Management and operation Manual;
29. Participatory Rural Appraisal (PRA) report;
30. VCS website: https://www.vcsprojectdatabase.org/#/project_details/1715
31. <http://info.worldbank.org/governance/wgi/index.asp>
32. "Land Use Change and Forestry GHG Inventory(2013)" of "Second National Information Notification on China Climate Change" issued by NDRC;
33. "Demonstrating appropriateness of volume equations for estimation of aboveground tree biomass in A/R CDM project activities" (Version 01.0.1);
34. Certificates of Forest Tenure Rights;
35. Questionnaires collected, dated Sep. 2014.

APPENDIX B: RESOLUTION OF CORRECTIVE ACTION /CLARIFICATION / FORWARD ACTION REQUESTS

Clarifications and corrective action requests by verification team	Summary of project participants response	Verification team conclusion
CAR 01 The project location and ownership in MR (Version 01) is not clear enough. As per VCS Standard (Version 4.0), section 3.10.1, project location for AFOLU projects shall be specified using geodetic polygons to delineate the geographic area of each AFOLU project activity and provided in a KML file, and as per "AFOLU Requirements: VCS Version 3", section 3.4, the project location description shall include the following information: 1) Name of the project area (e.g., compartment number, allotment number and local name). 2) Maps of the project area. 3) Geodetic coordinates of the project area boundary, provided in the format specified in the <i>VCS Standard</i>. 4) Total size of the project area. 5) Details of ownership. In addition, the project proponent shall demonstrate control over the entire project	The project location is listed in Section 1.7. The evidence of ownership has been provided to DOE for validation.	CQC confirms the location and ownership information in MR (Version 03) is clear and in compliance with the VCS Standard (Version 4.0). CAR01 is closed.

Clarifications and corrective action requests by verification team	Summary of project participants response	Verification team conclusion
area with documentary evidence establishing project ownership as set out in the VCS Standard.		
CL01 The Methodological tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities" employed in MR (Version 01) was not the latest approved version. In addition, it was not clear why A/R Methodological Tool "Demonstrating appropriateness of volume equations for estimation of aboveground tree biomass in A/R CDM project activities" (Version 01.0.1) and "AFOLU Non-Permanence Risk Tool" were not included in Section 1.8 in MR (Version 01).	The latest approved version is updated. Two tools are listed in Section 1.8	CQC confirms the latest version of "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities" was applied in MR (Version 02), and "Demonstrating appropriateness of volume equations for estimation of aboveground tree biomass in A/R CDM project activities" (Version 01.0.1) and "AFOLU Non-Permanence Risk Tool" were not included in Section 1.8 in MR (Version 01) was employed in MR (Version 03). CL01 is closed.
CL02 According to MR (Version 01), the risk value in Non-permanence Risk Report is 8. Non-permanence Risk Report and supporting evidence should be provided to verification team. In addition, as per VCS-MR template, following information	During this monitoring period, the tree species, total area of the project have not changed and no events that may impact the GHG emission reduction happened. Fire can be alleviated through technical and awareness training to local farmers, strengthening patrolling and monitoring.	CQC checked the Non-permanence Risk Report and supporting evidences and confirms the values in VCS-MR (Version 03) is correctly calculated. CQC confirms the description of section 2.1 "Implementation Status of the Project Activity " in MR

Clarifications and corrective action requests by verification team	Summary of project participants response	Verification team conclusion
should be presented in section 2.1 "Implementation Status of the Project Activity " in MR: ● Is there any events happened that may impact the GHG emission reductions or removals and monitoring. ● Any other changes (eg, to project proponent or other entities) ● How non-permanence risk factors are being monitored and managed for AFOLU projects	In this monitoring period, forest rangers have been hired from local residents who were responsible for daily patrolling and monitoring. In case there is a potential forest fire, they shall report to local Forest Bureau. During this monitoring period, no fire disaster occurred. Upon routine overseeing, the diseases will be treated immediately by biological control once occurred. The chemical pesticides are allowed to be used only if there is a serious pest problem erupted in the project area, and the pesticides will be used in accordance with the National Pesticides Policy. Forest rangers were hired for daily patrolling and monitoring of diseases and insects. During this monitoring period, no significant diseases and insects disaster occurred. For more detailed analysis of project risk please refer to Non-permanence Risk Report. The Non-permanence Risk Report has been provided to DOE for validation	is in compliance with VCS-MR template. CL02 is closed.
CL03	The evidences have been	CQC confirms the BEF,

Clarifications and corrective action requests by verification team	Summary of project participants response	Verification team conclusion
Pls provide "Carbon Measurement and Monitoring Guide for Afforestation Project" and any other public available documents to support the value provided in section 3.1 in MR (version 01), especially the area of each tree species, and the BEF, CF, basic wood density, Root-shoot ratio of each tree species. In addition, the growth curve from Liu Qingcong should be provided to verification team, and clarify why A/R Methodological Tool "Demonstrating appropriateness of volume equations for estimation of aboveground tree biomass in A/R CDM project activities" was not applied to demonstrate the appropriateness of the growth curve equation.	provided.	CF, basic wood density, Root-shoot ratio of Magnolia and Oak in MR (Version 03) is consistent with the values in statement provided by Nanzhao Forest Bureau and "Land Use Change and Forestry GHG Inventory(2013)" of "Second National Information Notification on China Climate Change" Issued by NDRC. CQC confirms the volume equation and biomass equation in VCS-MR (version 03) were used for national GHG Inventory. Therefore, as per "Demonstrating appropriateness of volume equations for estimation of aboveground tree biomass in A/R CDM project activities" (Version 01.0.1), it can be used for ex post estimation of tree biomass. CL03 is closed.
CL04 The measured value of Diameter at breast height of tree (D) and Height of trees (H) based on sample plots should be presented in Section 3.2 of MR, and specify the	The project proponent , consultant and the local forestry bureau set up a team together to conduct the monitoring. The project proponent is the project manager, which is in charge of maintaining and	The monitored Diameter at breast height of tree (D) and Height of trees (H) based on sample plots are presented in ER calculation spreadsheet, CQC confirms the values in

Clarifications and corrective action requests by verification team	Summary of project participants response	Verification team conclusion
measurement methods and procedures, any standards or protocols to be followed, and the person/entity responsible for the measurement. In addition, pls clarify what is the meaning of "t" presented in equations $V=0.9741*(1-e-0.0314t)4.2366$ and $V=0.000252*t^{1.7803}$ in MR (Version 01).	managing, Zhongche is the consultant, who prepares the monitoring report, .and the local forestry bureau is in charge of collect, monitor and record the data..The team received professional training before. The findings should be reported to the project manager and work out a solution. The meaning of "t" presented in equations is decribed. The original monitoring records of the sample plots has been provided.	spreadsheet is consistent with monitoring records. And the measurement methods and procedures in MR is clear. CL04 is closed.
CL05 Original monitoring records based on each sample plot should be provided to verification team. Additionally, more information about sample plots should be presented in MR, including: ● The position of each sample plot; ● The implementation entity of the monitoring plan.	The project proponent , consultant and the local forestry bureau set up a team together to conduct the monitoring. The project proponent is the project manager, which is in charge of maintaining and managing, Zhongche is the consultant, who prepares the monitoring report, .and the local forestry bureau is in charge of collect, monitor and record the data..The team received professional training before. The findings should be reported to the project manager and work out a solution. The original monitoring	CQC checked Monitoring Records of sample plots provided by Nanzhao Forest Bureau, confirms the values is consistent with ER-spreadsheet. The information of sample plots clearly are presented in MR (Version 03). CL05 is closed.

Clarifications and corrective action requests by verification team	Summary of project participants response	Verification team conclusion
	records of the sample plots has been provided.	
CL06 As per the methodology, the "Area of each sample plot and area of each stratum" should be monitored. Pls clarify why the information of "Area of each sample plot and area of each stratum" were not presented in MR (Version 01).	Area of each sample plot and area of each stratum are listed in Section 3.3	CQC confirms that area of each sample plot and area of each stratum are listed in Section 3.3 in MR (Version 03) CL06 is closed.
CL07 It was not clear why emissions sourced from the use of fire for site preparation and/or to clear the land of harvest residue prior to replanting were excluded, and why monitored value of $A_{SPF,t}$, $A_{FMF,t}$ and $A_{BURN,i,t}$ were not included in VCS-MR (Version 01).	The project is implemented on barren hill and the fire did not be used for sites preparation and/or to clear the land of harvest residue prior to replanting. Further more, during this monitoring period, no fire disaster occurred. Therefore, the emission sourced of fire were excluded and $A_{SPF,t}$, $A_{FMF,t}$ were zero and $A_{BURN,i,t}$ were zero in this monitoring period. $A_{BURN,i,t}$ has been added in MR. The evidence of no fire has been provided.	According to VCS PD (Version 03), the project is implemented on barren hills, and fire was not needed for sites preparation and clearing the land. CQC confirms the $A_{BURN,i,t}$ has been added in MR (Version 03). CL07 is closed.