



ENVIRONMENTAL SERVICES, INC.

Climate Action Reserve Forest Project Protocol Version 3.2 Verification Report

18 October 2013

**Finite Carbon – Berry Summit (CAR1004) Project Design Document
(Dated: 03 October 2013)**

Project Developer/Forest Owner:
Berry Summit, LLC

Verification Conducted by:
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ANSI ACCREDITED PROGRAM
GREENHOUSE GAS
VALIDATION AND VERIFICATION
0800

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1 EXECUTIVE SUMMARY

Environmental Services, Inc., (ESI) was contracted by Berry Summit, LLC (Project Developer) to perform the Climate Action Reserve (Reserve) project verification of the *Finite Carbon – Berry Summit (CAR1004)* project. Our verification process closely followed the Reserve’s Forest Project Protocol Version 3.2 (31 August 2010), ISO14064-3:2006, and ISO 14065:2007.

Specifically, the project verification included the review of the requirements outlined in the Reserve’s Forest Project Protocol Version 3.2 (31 August 2010). The assessment included the following items: Greenhouse Gas (GHG) project and baseline scenarios; physical infrastructure, activities, technologies and processes of the GHG project; GHG assessment boundary (sources, sinks and/or reservoirs); types of GHG’s; and time periods covered. The geographic verification scope was defined by the project boundary, the carbon reservoir types, management activities, growth and yield models, inventory program, and contract periods.

After review of all project information, procedures, calculations, and supporting documentation, and after conducting the site visit, ESI confirms that *Finite Carbon – Berry Summit (CAR1004)* is accurate and consistent with all aforementioned Reserve criteria and requirements. ESI confirms all verification activities, including objectives, scope and criteria, level of assurance, and project documentation adherence to the Reserve’s Forest Project Protocol v3.2, as documented in this report are complete. ESI concludes without any qualifications or limiting conditions that *Finite Carbon – Berry Summit (CAR1004)* dated 03 October 2013 meets the requirements of the Reserve.

The GHG assertion provided by Berry Summit, LLC and verified by ESI has resulted in the GHG emission reduction or removal of 239,205 gross CRTs before the 19.2% buffer withholding. Total net CRTs for the reporting period 10 May 2013 to 01 September 2013 are 193,277, and 45,928 CRTs will be contributed to the buffer pool.

2 INTRODUCTION

This verification report is prepared in accordance with the outlined requirements of the Climate Action Reserve (Reserve) Forest Project Protocol (FPP) Version 3.2 (31 August 2010). Environmental Services, Inc., (ESI) presents project verification findings of *Finite Carbon – Berry Summit (CAR1004)*. The Forest Owner is Berry Summit, LLC. Finite Carbon was contracted by Berry Summit, LLC to serve as technical consultant for the forest carbon offset project.

The project verification was conducted as part of the Reserve’s program requirements for Greenhouse Gas (GHG) offset projects. ESI is accredited by the American National Standards Institute under ISO14065:2007 for greenhouse gas validation and verification bodies, including ISO 14064-3:2006, ISO 14065:2007, and validation/verification of assertions at the project level for Land Use and Forestry (Group 3). ESI is approved to verify for the Reserve.

2.1 Project Developer

Forest Owner: Berry Summit, LLC
Project Developer Consultant: Finite Carbon

2.2 Verification Team Contact Information, Including Roles and Responsibilities

Accredited Verification Entity: Environmental Services, Inc.	Shawn McMahon – Lead Verifier (smcmahon@esinc.cc / 330-833-9941)
	Stewart McMorrow – Verification Team Member (smcmorrow@esinc.cc / 530-412-1221)
	Richard Scharf – Verification Team Member (rscharf@esinc.cc / 252-402-7354)
	Jonathan Pomp – Verification Trainee (jpomp@esinc.cc / 304-642-1277)
	Matthew Perkowski – Verification Trainee (mperkowski@esinc.cc / 301-332-0771)
	Caitlin Sellers – Senior Internal Reviewer (csellers@esinc.cc / 904-361-8227)
	Janice McMahon – QA/QC (jmcmahon@esinc.cc / 330-833-9941)

2.3 Project Description

Environmental Services, Inc., (ESI) was contracted by Berry Summit, LLC (Project Developer) to perform the Climate Action Reserve (Reserve) project verification of the Finite Carbon – Berry Summit (CAR1004) project. The project was developed under the Climate Action Reserve’s Forest Project Protocol Version 3.2 (31 August 2010) - Improved Forest Management.

As described in the Project Design Document (PDD), “the primary goal of the project is to generate carbon offset credits by maintaining and increasing additional forest carbon stocks in a manner consistent with the objectives of the forest owner, Berry Summit, LLC (“BSLLC” or “forest owner”). The project was initiated on May 10, 2013 when the forest owner acquired the property in fee. The forest owner has retained Finite Carbon as the project developer consultant.”¹

¹ Finite Carbon – Berry Summit (CAR1004), Project Design Document, 23 September 2013

As per the FPP, submitting a project to the Reserve represents an initiation of a commitment to employ practices that will maintain or grow net carbon stocks for the duration of the required commitment period [100 years following the issuance of any Climate Reserve Tonnes (CRTs)].

The project area consists of 2,112.86 acres located Humboldt County in the state of California, which is part of the Klamath Mountains. “From a regional perspective, the project area is considered part of the Western Forests of the United States and is classified primarily in the Douglas-fir major forest type group. The predominant forest cover type that exists in the project area is Douglas-fir-Tanoak-Pacific Madrone.”²

The project area as a whole is situated in the Southern Cascades CAR Supersection. Based on site characteristics confirmed in inventory data, the Mixed Conifer Assessment Area was used for the project calculations.

ESI confirmed the project was located in the above-referenced Supersection and Assessment Area by reviewing project maps, satellite imagery, spot-checking locations while on the site visit, and reviewing and confirming inventory data.

3 VERIFICATION DETAILS

3.1 Verification Objective

The verification objective was to ensure the project was in compliance with Reserve’s criteria (Forest Project Protocol, Version 3.2; August 31, 2010). ESI assessed the GHG emissions removal assertions for this Improved Forest Management project.

3.2 Verification Scope

The scope of the *Finite Carbon – Berry Summit (CAR1004)* verification included the GHG project and baseline scenarios; physical infrastructure, activities, technologies and processes of the GHG project; GHG assessment boundary (sources, sinks and/or reservoirs); types of GHGs; and time periods covered. The geographic verification scope is defined by the project boundary, the carbon reservoir types, management activities, growth and yield models, inventory program, and contract periods. The scope also defined the primary and secondary effects of the GHG assessment boundary by indicating the forest carbon stock and emission categories as being required or optional. The scope of *Finite Carbon – Berry Summit (CAR1004)* was defined as follows:

Baseline Scenario	“The baseline scenario models timber harvesting over 100 years, as a function of what it is legally allowable, financially feasible and physically possible, while at the same time adhering to the minimum baseline level (MBL). In the baseline model, forest stand development was projected using a combination of even-aged and uneven-aged systems, oftentimes creating two-aged or multi-aged conditions depending on the arrangement of treatment types over space and time. Forest stands were subject to
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² ibid

	treatment types based primarily on their forest structure and site attributes as it relates to the California Forest Practice Rules, e.g. Timber Site II vs. Timber Site V or designated northern spotted owl (NSO) habitat vs. non-designated NSO habitat.” ³
Activities/Technologies/Processes	Improved Forest Management under the Reserve Forest Project Protocol
GHG Assessment Boundary (Sources/Sinks/Reservoirs)	The following is an outline of the GHG Assessment Boundary for the project: Primary Effect: IFM-1 Standing live carbon IFM-3 Standing dead carbon IFM-7 Carbon in in-use forest product IFM-8 Forest product carbon in landfills Secondary Effect: IFM-9 Biological emissions from site preparation activities IFM-14 – Biological emissions/removals from changes in harvesting on forestland outside the Project Area IFM-17 – Biological emission from decomposition of forest products
GHG Type	CO ₂
Time Period	Project start date: 10 May 2013 Initial Monitoring/Verification Period: 10 May 2013 – 01 September 2013
Project Boundary	Humboldt County, CA 2,112.86 acres The approximate geometric center of the project area is 40.9050° latitude, -123.7580° longitude.

3.3 Verification Criteria:

The criteria followed the verification guidance documents provided by the Reserve located at <http://www.climateactionreserve.org/how/program/program-manual/> and

<http://www.climateactionreserve.org/how/protocols/forest/>. These documents include:

- Climate Action Reserve Forest Project Protocol, Version 3.2, 31 August 2010*
- Protocol Resources, such as Biomass Equations, Assessment Area Data, Forest Project Forms, and Forest Project Baseline Determination, as updated on the Reserve website*
- Climate Action Reserve Verification Program Manual, Version 2.0, 20 December 2010*
- Climate Action Reserve Program Manual, 26 October, 2011*
- Policy Memos, as updated on the Reserve website*
- Policy Memo on Optional Pools, 04 March 2011*
- Climate Action Reserve Software*
- ISO 14064-3:2006 Principles and Requirements for Verifying GHG Inventories and Projects*
- Supplemental Verification Methodology, 03 July 2012*

³ ibid

3.4 Verification Level of Assurance:

The level of assurance was used to determine the depth of detail that the verifier placed in the verification plan to determine if there were any errors, omissions, or misrepresentations (ISO 14064-3:2006). ESI selected samples of data and information to be verified to provide *reasonable assurance* (not *absolute assurance*) to meet the materiality requirements of the specific project (*Climate Action Reserve Verification Program Manual, Version 2.0, 20 December 2010*). Sample size was determined based upon the guidance provided in the *Reserve Forest Project Protocol Version 3.2* (August 31, 2010) and project parameters.

3.5 Verification Materiality Threshold:

Materiality is a concept that errors, omissions and misrepresentations could affect the GHG emissions reduction assertion and influence the intended users (ISO 14064-3:2006). Based on the Reserve's Verification Program Manual, verification bodies must form a view on the materiality of all identified issues, errors, or uncertainties. ESI classified each issue as material (significant) or immaterial (insignificant). Throughout the verification process, Finite Carbon addressed all non-conformance reports and clarifications that were requested by ESI to the satisfaction of the ESI verification team.

- The Reserve's Verification Program Manual establishes a quantitative materiality threshold, which sets a numeric cap on the magnitude of cumulative error in stated reductions permissible under the Reserve, as a percent of the verifier's recalculated emission reductions. In determining whether a material misstatement has occurred, the verification body must compare the aggregate total of misstatements against the materiality threshold for the total CRTs reported to the Reserve. CRTs contributed to the buffer pool are included in the quantitative materiality assessment.
- Quantitative materiality threshold for this project, as defined by the Reserve is as follows:
Projects registering more than 100,000 CRTs (expressed in terms of CO₂e) annually shall achieve greater than +99% accuracy level (less than 1% error) relative to the verification body's calculated emission reductions.

In the case of the Berry Summit project, the annual emissions reductions are over 100,000 in years reported, so the materiality threshold is 1%.

Additionally, there can also be qualitative issues identified by the verification body as non-conformances with the project protocols that relate to the requirements laid out in the protocols (e.g., the metering, monitoring, management systems, record-keeping, etc.). Any non-conformance related to a prescriptive requirement outlined in the protocol would be considered material and must be corrected in order for the project to receive a positive Verification Statement. A prescriptive requirement relates to any specific guidance or requirement mandated by the protocol itself that does not allow for deviation, or for verifier professional judgment. All potential non-conformances identified were sufficiently addressed by the Project Developer.

4 VERIFICATION PROCESS

The verification process closely followed the guidance provided by the Climate Action Reserve, Forest Project Protocol (v3.2), Verification Program Manual, ISO14064-3 and ISO 14065, and the ESI Management System and Management System Manual.

As defined by ISO 14064-3:2006 (E), "verification is the systematic, independent and documented process for the evaluation of a greenhouse gas assertion in a GHG project plan against agreed

verification criteria.” Specifically, the project verification included the review of the requirements outlined in the Climate Action Reserve, Forest Project Protocol Version 3.2 (August 31, 2010). The assessment included the following items: eligibility criteria, baseline approach, additionality, project boundary, emissions, leakage, quantification of GHG reductions/removals, monitoring, data and parameters, and adherence to the project-level principals (relevance, completeness, consistency, accuracy, transparency, conservativeness).

ESI’s verification was generally broken down into four parts: desktop assessment, site visit, quantitative review, and meetings/interviews.

4.1 Desktop Assessment

ESI received and reviewed the submittals to the Reserve to assess conformance with the requirements of the Reserve’s Forest Project Protocol. Key factors that impacted the reported emissions reductions were identified, and a Verification and Sampling Plan was created to focus on the critical elements presenting potential risk for errors in reported data. These elements included:

- Appropriate and adequate documentation of IFM project type.
- Implementation of appropriate and adequate eligibility criteria, by reviewing documentation and field conditions relevant to additionality, voluntary implementation attestation, project start date, crediting period, minimum time commitment, implementation agreement, conservation easements (CEs)/deeds/titles, project location, regulatory compliance, sustainable harvesting and natural forest management.
- Completeness and accuracy of the *Finite Carbon – Berry Summit (CAR1004)* Project Design Document.
- Implementation of appropriate and adequate approach/tools for additionality (legal requirements test and performance test) by reviewing documentation and field conditions which reflect the most-likely without-project scenario, as it deviates from the with-project scenario.
- Implementation of appropriate and adequate approach to project boundary/project area definitions, by reviewing documentation of project boundaries and ownership status, and field conditions relative to clearly delineated ownership extents and control over management activities within the project area.
- Implementation of appropriate and adequate approach to GHG assessment boundary for IFM projects [i.e., define all sources, sinks and reservoirs that must be accounted for in quantifying IFM projects reductions and removals (Table 5.1 of the FPP v3.2)].
- Implementation of appropriate and adequate approach to the inventory methodology.
- Appropriate and adequate approach for quantifying and modeling net GHG reductions and removals (baseline/actual onsite carbon stocks, baseline/actual carbon in harvested wood products, project’s primary and secondary effects, total GHG reductions/removals) confirmed through documentation, re-calculations/sampling, and field condition assessment.
- Appropriate and adequate monitoring of onsite carbon stocks, by confirming the application of approved/acceptable monitoring practices in the field, and the appropriate handling and analysis of field data once collected.
- Appropriate and adequate approach to data and parameters, by reviewing data handling practices, and reviewing documentation at each step of the data analysis procedure.
- Implementation and adherence to project-level principles by reviewing documentation and discussing the application of project-level principles with core staff.

Prior to the field visit, the verification team conducted a desk review of project documents, which included the PDD, the Reserve listing/submittal documents, and supporting project documentation/reports. ESI found the documentation submitted by Finite Carbon to be adequate to proceed with the site visit.

Please see Appendix A for a listing of all documents ESI received and reviewed during project verification.

4.2 Site Visit

Following the initial desk review, ESI conducted an on-site assessment of the project area on 17-19 June 2013. The site visit was used to review project records with representatives of Berry Summit, LLC and Finite Carbon, discuss the calculation of carbon pools and sinks, and visit random portions of the ownership for reconnaissance to ground-truth the assertions of the PDD and submitted data.

During the site visit, the following 8 plots were randomly selected for quantitative field verification: 44, 47, 29, 24, 139, 135, 84 and 50. (Please refer to Appendix B, which details their location). Verifiers used the Inventory Methodology Verification Items in assessing the verification review intensity as defined by the Reserve in Table 10.5 of the Forest Project Protocol to determine the number of plots to install. The resulting range of number of plots to install ranged from 4-16, depending on the final verification field intensity score. Verifiers made final determinations on the verification evaluation items while in the field, especially items 1.b and 1.e, which required at least one day of field work observations to determine. As a result, verifiers determined that 8 total inventory plots would be re-sampled during the site visit (final verification field intensity of 2). Since the final verification field intensity was less than 3, all plots were located in the highest stocking level areas.

The Forest Owner was not made aware of the plots to be sampled until the morning of each day of the site visit. The verifier was able to independently locate each plot and determined that the plots were monumented in a way that allowed for a paired t-test. The verifier collected and recorded species, DBH and height data as described in the inventory methodology (section 6.1.2 and Appendix H of the PDD), while confirming the Project's adherence to its inventory methodology. The required Standing Live and Standing Dead pools were inventoried in accordance with Appendix A of the FPP. The project has an Inventory Update Process in place (Section 8 of PDD), but as this was the first verification event and the inventory occurred within the last year, the inventory update process had not yet been utilized. A paired t-test was conducted on the plot data obtained by the verifier, and the results indicated the data was within the 80% confidence interval, confirming our sample inventory was within the same population as the inventory submitted by the Forest Owner.

Additionally, project boundaries were visited in several areas of the *Finite Carbon – Berry Summit LLC (CAR1004)* project area to compare to the Global Positioning System (GPS) files and maps provided. All areas visited conformed to the provided data.

4.3 Quantitative Review

ESI conducted an intensive review of all input data, parameters, formulas, connections, conversions, statistics and resulting uncertainties and output data to ensure consistency with the Reserve's FPP (v3.2). Please refer to Section 5.12 (*Quantifying Net GHG Reductions and Removals*) for specific information about the quantitative review.

4.4 Meetings/Interviews

During the course of the project verification, ESI and Finite Carbon held multiple meetings. All other correspondence occurred via email. The details of the meetings are briefly described in the table below:

Date	Attendees	Topics Discussed
14 June 2013	Stewart McMorrow- ESI Matt Perkowski- ESI Tim McAbee- Finite Shawn McMahon- ESI Emily Warms- Climate Action Reserve Barbara Bamberger- California Air Resources Board	Overall Verification Opening Meeting - preliminary review of verification and sampling plan - review of travel logistics - review of project timeframes and deadlines - review of site visit agenda - discussion of goals of the site visit - review schedule for the site visit
17-19 June 2013	Stewart McMorrow – ESI Matt Smith – Finite Sean Carney- Finite Bill Kleiner- Western Forestry Services Emily Warms- CAR John Nickerson- CAR Barbara Bamberger- ARB	Verification Field Visit/Onsite Meetings - review sampling plan - discussion of goals of the site visit - see section 4.2 of this report
19 June 2013 and 01 July 2013	Stewart McMorrow - ESI Shawn McMahon - ESI Matt Perkowski – ESI Tim McAbee - Finite	Calculation and Modeling Review Meetings - to discuss calculations and client demonstrated how the regulatory and legal requirements are fully integrated into the model as well as to show the entire procedure used for modeling growth projections. REMSOFT process examined by verifiers in detailed 2-hour meeting on July 01, 2013.
01 August 2013	Stewart McMorrow – ESI Matt Perkowski – ESI Tim McAbee - Finite	Round One Findings (NCRs/CLs) Meeting - discuss NCRs that were issued and to answer any questions or concerns from the client. - Discussion of the verification plot findings and possible issues related to below ground biomass calculations.
18 October 2013	Tim McAbee – Finite Janice McMahon - ESI	Overall Closing Meeting - Review of draft verification report and findings lists - Next steps and project upload - Request feedback on process

4.5 Verification Milestones

The following table documents the main verification activities that occurred during the project verification process:

Project/Verification Activity	Date
ESI Internal Conflict of Interest (COI) process completed and approved (no issues). Berry Summit, LLC Notification.	10 May 2013
Reserve approval of NOVA/COI	10 June 2013

Opening meeting with Berry Summit, LLC	14 June 2013
Submission of Verification and Sampling Plan to Berry Summit, LLC for approval	17 June 2013 and 12 Sept 2013
Receipt of Signed Verification and Sampling Plan from Berry Summit, LLC	17 June 2013 and 16 Sept 2013
Field Verification	17-19 June 2013
Submission of Round 1 NCR's to Berry Summit, LLC	24 July 2013
Draft report and project information sent to Senior Independent Reviewer	18 September 2013
Draft verification report submitted to Berry Summit, LLC for review	25 September 2013
Draft (v2) verification report re-submitted to the Reserve for review	03 October 2013
ESI completed review of Project Implementation Agreement (PIA) execution and recording	18 October 2013
Closing Meeting with Berry Summit, LLC	18 October 2013

5 CLIMATE ACTION RESERVE FOREST PROJECT REQUIREMENTS (IFM)

5.1 Project Definition/Type

The *Finite Carbon – Berry Summit (CAR1004)* project has demonstrated that it occurs on land with canopy cover exceeding 10%. The site visit and review of aerial imagery confirmed canopy cover well exceeded the 10% canopy cover threshold across the project area. In addition, no broadcast fertilizer utilization occurs in the project area, as confirmed in the PDD (Section 2.1) and observed during the site visit.

The *Finite Carbon – Berry Summit (CAR1004)* project is an IFM project where the forest owner's strategy is to employ practices and technologies that will maintain or increase net carbon stocks for the duration of the project's required commitment period. The *Finite Carbon – Berry Summit (CAR1004)* project is not part of any previously registered Forest Project and is in compliance with the Reserve's project eligibility requirements set forth in the Reserve's FPP (v3.2).

5.2 Project Start Date and Reporting Period

The PDD (Section 3.2) indicates that the start date of the *Finite Carbon – Berry Summit (CAR1004)* project is the date on which the property's ownership was transferred to the forest owner (10 May 2013). ESI confirmed this attestation by reviewing a copy of the recorded deed as evidence that the property was in deed transferred to the forest owner. Further, ESI conducted an independent ownership search throughout California and confirmed the project area, and no others, to be under the clear ownership of Berry Summit, LLC. Accordingly, the start date reflects an initiation of a commitment to employ practices and technologies that will maintain or increase net carbon stocks for the duration of the FPP's required commitment period.

The reporting period is 10 May 2013 to 01 September 2013.

5.3 Project Area and Location

The project area consists of 2,112.86 acres located Humboldt County in the state of California, which is part of the Klamath Mountains. The project area is approximately 7 miles west of the City of Willow Creek and occupies area on both the north and south sides of CA Highway 299.

“From a regional perspective, the project area is considered part of the Western Forests of the United States and is classified primarily in the Douglas-fir major forest type group. The predominant forest

cover type that exists in the project area is Douglas-fir-Tanoak-Pacific Madrone. Forest stands are dominated mainly by Douglas-fir and tanoak, with a mixture of pacific madrone. Other common associated species are canyon live oak, bigleaf maple, Oregon white oak, ponderosa pine, sugar pine, incense cedar, red alder, and Port Orford cedar. Understory vegetation varies based on successional stage but it's not uncommon to find Pacific dogwood, salal, California huckleberry, Pacific rhododendron, and poison-oak.”⁴

The verifier confirmed the species located within the project area were consistent with the assessment areas chosen for the project during the site visit and by reviewing the species in the inventory data.

The approximate geometric center of the project area is 40.9050° latitude, -123.7580° longitude.

5.4 Additionality

Legal Requirement Test – Berry Summit, LLC has signed the Reserve’s Attestation of Voluntary Implementation form on 02 September 2013 indicating that the project’s improved forest management activities are not legally required and were not legally required at the time of the project’s start date. ESI reviewed the Rules and Regulations subject to the property as outlined in Table 1 of the PDD. In addition, the verifier conducted a risk-based review of applicable laws by visiting the California Department of Forestry’s (CAL FIRE) website and review of the 2013 California Forest Practice Rules. Based on the results of the legal requirement test, three main requirements were identified that the project must comply with before emissions reductions are considered: California Forest Practice Rules, Endangered Species Act, and Clean Water Act. ESI also confirmed that these legal constraints were properly modeled in the project’s baseline carbon stocks.

Performance Test – The *Finite Carbon – Berry Summit (CAR1004)* project is an IFM project eligible for registration with the Reserve. It automatically satisfies the Performance Test, in that any emissions reductions above and beyond the business-as-usual scenario are eligible. Therefore, the project activities have been deemed to pass the additionality test.

5.5 Permanence

This requirement states that GHGs must be permanently reduced or removed from the atmosphere to be credited as carbon offsets. For Forest Projects, this requirement is met by ensuring that the carbon associated with credited GHG reductions and removals remains stored for at least 100 years.

The Forest Owner ensures the permanence of GHG reductions and removals from the *Finite Carbon – Berry Summit (CAR1004)* project through three mechanisms:

1. The Forest Owner understands and has agreed to monitor onsite carbon stocks, submit regular monitoring reports, and submit to regular third-party verification of those reports along with periodic verification site visits (as detailed in Sections 8 through 10 of the FPP) for the duration of the project life.
2. The project Forest Owner has signed and recorded (Humboldt County California – 16 Oct 2013) a Project Implementation Agreement with the Reserve (as described in Section 3.5 of the FPP) which obligates Forest Owners to retire CRTs to compensate for reversals of GHG reductions and removals.

⁴ ibid

3. The Forest Owner understands that a percentage (19.2%) of their issued CRTs will be reserved for a Buffer Pool to provide insurance against reversals of GHG reductions and removals due to unavoidable causes.

The verifier confirmed that the reversal risk rating of 19.2% is appropriate by conducting a review of the project's risk assessment. Each of the four risk categories (i.e., Financial, Management, Social, and Natural Disturbance) mentioned in Appendix D of the FPP were separately reviewed and calculated. In addition, the risk category not mentioned in the FPP, the PIA risk category, was excluded and not calculated in the PDD per personal communication with General Counsel for the Climate Action Reserve on 23 August 2013.

5.6 Included Carbon Pools

Finite Carbon – Berry Summit (CAR1004) project includes the following carbon pools (primary and secondary effects): IFM-1 Standing live carbon, IFM-3 Standing dead carbon, IFM-7 Carbon in in-use products, IFM-8 Forest product carbon in landfills, IFM -9 Biological emissions from site prep activities, IFM-14 Biological emissions/removals from changes in harvesting on forestland outside project area, and IFM-17 Biological emissions from decomposition of forest products. No optional pools are included.

5.7 Leakage Assessment

The Reserve's FPP requires an assessment of leakage (secondary effects) on an annual basis. Finite Carbon applied all default "leakage" factors for secondary effects appropriately.

5.8 Ownership

Berry Summit, LLC signed the Reserve's Attestation of Title form (02 Sept 2013), thereby affirming that they have an exclusive ownership claim to the GHG reductions and removals achieved by *Finite Carbon – Berry Summit (CAR1004)*. The verifier has confirmed the Attestation of Title was signed on 02 September 2013 and was uploaded to the Reserve website on 04 September 2013. In addition, ESI reviewed/confirmed project area ownership by reviewing the title deed, use of independent property records services and review of Humboldt County Assessor's Office data. The verifier viewed property records utilizing the on-line property search called ParcelQuest that revealed additional proof of ownership. Finally, verifiers confirmed ownership of each assessor's parcel number as indicated in the 'CAR1004 ownership deed.pdf by reviewing the Humboldt County Assessor's Parcel GIS Web Portal. The main concern besides confirming ownership was the relic display of ownership by the USFS on parcel number 316-184-002 on the USGS maps (southern project area). This parcel was confirmed to be owned by Berry Summit, LLC through reviewing the current ownership records at the Humboldt County Assessors Office; however, use of USGS quad maps as base layers will still show the erroneous ownership of that parcel as being under the USFS. By these methods, the verifier was able to confirm that the property covered under this project is owned as stated by Berry Summit, LLC.

5.9 Regulatory Compliance

Berry Summit, LLC signed the Attestation of Regulatory Compliance (02 September 2013), thereby affirming the project's compliance status throughout the project reporting period. During the site reconnaissance and desk review verification activities, ESI sought to confirm that the *Finite Carbon – Berry Summit (CAR1004)* project is in compliance with all laws related to the scope of the IFM project under the Reserve's FPP.

The PDD (Section 3.9) indicates that that all of the laws and restrictions applicable to the project were considered in developing the project. "The forest owner attests that the project is in material

compliance with all applicable laws relevant to the project activity and as described in Section 3.1.1 Legal Requirement Test.”⁵ Verifiers met with the project developer for an extensive demonstration meeting that aimed to verify that all of these laws, where appropriate, were included in the modeling for both baseline and project scenarios. Verifiers were able to view the programming code in FVS where these limits were applied. Verifiers were satisfied with the demonstration and information provided.

Thus, ESI concludes that there is no basis to question the Attestation of Regulatory Compliance for this forest project.

5.10 Voluntary Implementation

Berry Summit, LLC signed the Attestation of Voluntary Implementation (02 September 2013), which affirmed that *Finite Carbon – Berry Summit (CAR1004)* was established and implemented voluntarily and continues to operate as such.

ESI’s own risk-based internal review of any applicable federal, state, and local laws did not yield additional results beyond those listed in the project documents. The silvicultural practices are common for the region and allowable by the governing legal authorities (CALFIRE) and found to be completely in compliance with the California Forest Practices Rules and not legally mandated.

The risk-based internal review mentioned above confirmed that the project was not legally required by any federal, state, or local laws at the time of the project’s start date and that the Attestation for Voluntary Implementation is accurate.

5.11 Sustainable Harvesting and Natural Forest Management Practices

Based on the conversations with the project developers and the PDD, *Finite Carbon – Berry Summit (CAR1004)* does not currently include commercial harvesting, and therefore, the Sustainable Harvesting Practices criteria outlined in the FPP V3.2, Section 3.10.1 does not need to be met at this time. As stated in the PDD, “commercial harvesting is not currently planned in the project area for the near term. If the forest owner elects to conduct commercial harvesting in the future it will adequately demonstrate sustainable long-term harvesting practices using the forest certification option, or other compliant options. The forest owner does not hold any other forest lands besides Berry Summit.”⁶

ESI confirmed the project’s intentions not to include commercial harvests at this time; however, this is an item that will need to be continually monitored throughout the future project crediting periods and project lifetime.

The project complies with the Natural Forest Management Practices criteria outlined in the FPP (v3.2), Section 3.10.2 as demonstrated by the following:

- Based on Basal Area (BA) per acre values derived from the 2013 inventory, native tree species constitute 100% of standing live carbon (PDD Section A10). This falls above the 95% minimum set by the Reserve.

⁵ ibid

⁶ ibid



- The Assessment Area Data File (part of FPP V3.2 Appendix F) requires that no single species in the Southern Cascade Mixed Conifer Assessment Area constitutes more than 65% prevalence (measured as the percentage of the BA of all live trees in the project area). In the case of the *Finite Carbon - Brosnan Forest (CAR658)*, the 2013 inventory determined that Douglas-fir held the highest percent composition at 47.4% for the assessment area. ESI confirmed this assertion while onsite and by reviewing the inventory data.
- ESI's review of the Project Area GIS files, and the site visit, confirmed the project areas hold approximately 5.9% of the Project Area's forested acres are composed of stands with ages less than 20 years.
- Based on the 2013 inventory data, the actual onsite carbon for standing dead wood was 2.16 metric tonnes of carbon per acre (equivalent to 3.05 % of standing live carbon). ESI's site visit confirmed that the level of both the standing dead and lying dead wood pools can be expected to remain stable throughout the life of the project and that the forest owner does not actively remove dead wood.
- ESI confirms that the project is designed for on-site standing live carbon stocks to be maintained and/or increased throughout the lifetime of the project. Carbon stocks will be monitored through new inventories to ensure this requirement is achieved.

5.12 Quantifying Net GHG Reductions and Removals

ESI conducted an intensive review of all input data, parameters, formulas, connections, conversions, statistics, resulting uncertainties, and output data to ensure consistency with the Reserve's FPP (v3.2). Further, ESI reproduced calculations for selected samples to ensure accuracy of the results. All data, conversion factors, formulas, and calculations were provided by the project proponent in spreadsheet format to ensure all formulas were accessible for review. The project proponent also provided a step-by-step overview of calculations to ensure ESI understood the approach and could confirm its consistency with the FPP (v3.2). ESI confirms that the project employed the correct quantitative process to determine above- and below-ground biomass from measured tree data in all cases. Specific items related to quantifying net GHG reductions and removals are detailed below.

Modeling

FVS was used by the project developer consultants (Finite Carbon) for modeling of the baseline scenario and for updating the actual on-site carbon stocks on behalf of the Forest Owner. Calibration occurred in the following way: the Klamath Mountains variant "NC" and project location code (indicating the closest National Forest – in this case, Shasta-Trinity) were input to the model along with the inventory design parameters for proper calibration. The Site Index (SI) value used for the modeling was derived from FVS, which uses a default Site Index (SI) to grow trees based on the project location; however, since site species site index values were used for each stratum, the project used site index values provided by the previous property owner, Green Diamond. The previous landowner is a commercial timber company who derived the site index values independently for the purpose of harvest planning. A personal conversation between ESI verifiers and representatives of Green Diamond found that this process was based on actual inventory data and was established well before the sale of the property or any indications of the carbon project were made clear by the purchasers. Douglas-fir was the site species for all for strata (MCF (20) SI 98; MCF (40) SI 106; MCF (60) SI 109; MCF (80) SI 101).

The baseline growth and harvest regime was designed to be in full compliance with all applicable California State and Federal laws and regulations. This included various patch clearcuts and selection harvest scenarios, as well as thinnings (See CAR1004 PDD Proprietary Apdx 2013 09 05.pdf). All legal and financial considerations were applied appropriately in the baseline modeling

through treatment types and output constraints. Based on similar sales on comparable sites and regional norms for harvesting costs and returns as well as direct consultation with local Registered Professional Foresters, managers have determined that stands on the Berry Summit project must exceed average removals of at least 2500 board feet of commercial volume per acre. These financial constraints are incorporated into the baseline harvesting scenario. Verifiers had personal communications with other foresters in the area and were able to confirm this average figure. As per FPP Section 6.2.1.3, the Forest Owner's explanation demonstrating financial feasibility is reasonable and acceptable to the verifier.

Modeling occurred in accordance with Section 6.2 and Appendix B of the FPP V3.2, and outputs demonstrated the required periodic harvest, inventory, and growth estimates. The verifier confirmed the project's modeling process (PDD Section 6.2.1 and CAR1004 PDD Proprietary Apdx 2013 09 05.pdf) contained the verification items listed in Section 10.3.1.3 of the FPP V3.2. In addition to being described in the PDD, modeling scenarios were demonstrated in associated spreadsheets. Since much of the calculations and modeling for this project are automated, the client has provided personal navigation through the various software programs that were used to generate the growth forecasting used to generate the baseline and update the project inventory. On two occasions, 19 June 2013 and 01 July 2013, the client and verifier used online meeting venues to demonstrate the various keyword limitations and programming language that illustrated the specific prescriptions and all applicable legal requirements.

Representative Verification Plot

The client was provided with a representative verification plot consisting of all the tree species encountered in the original inventory with varying DBH's and heights for the purpose of checking the calculation's process and accuracy. This plot was recalculated by verifiers and found to be within an acceptable range (less than 1%) for the purposes of assessing accuracy and correctness.

Applying a Confidence Deduction

The combined statistical uncertainty (with stratification) associated with the forest carbon inventory for this project was found to equal +/- 7.54% at a confidence level of 90%. Because the uncertainty is greater than 5%, a confidence deduction is required. As per the FPP Appendix A.4, this project applied the appropriate confidence deduction (2.54%) when calculating GHG reductions and removals.

Harvested Wood Products

ESI confirmed that the baseline Harvested Wood Products (HWP) calculations were in accordance with the guidelines of Table 10.11 and Appendix C of the FPP (v3.2). The verifier reviewed the spreadsheets associated with HWP calculations (CAR1004 RP1 Harvested-Wood-Products-Calculation-Worksheet 2013 09 03.xlsx) and compared the standards and factors used to those presented in the FPP (v3.2). The project developer did not provide harvest records for the project since no harvests have occurred during the reporting period or during the current ownership of the project area by Berry Summit, LLC. This was confirmed by verifiers through a personal conversation with CAL FIRE Forester, Kurt McCray.

The verifier confirmed the proper factors were used and that they were appropriate to the project's accounting of Harvested Wood Products. Additionally, the client held a meeting on 01 July 2013 where the Harvested Wood Products calculations were discussed in detail with verifiers, and the entire process was outlined and demonstrated.

Logical Management Unit

A “logical management unit” or “LMU” is defined as all land that the Forest Owner and its affiliate(s) either own in fee or hold timber rights on, and which it or they manage as an explicitly defined planning subunit. LMUs are generally characterized by having unique biological, geographical, and/or geological attributes, are generally delimited by watershed boundaries and/or elevation zones, and contain unique road networks.

The Berry Summit project area has been identified as one LMU. For the purposes of calculating the Weighted Carbon Stocks, the project area is the LMU and no commercial forestland within the LMU has been excluded from the project area. The LMU has been defined by identifying all lands where the forest owner and its affiliate(s) own in fee within the same Assessment Area(s) covered by the Project Area. Verifiers confirmed that Berry Summit, LLC does not own any other parcels in the same Assessment Area. Verifiers conducted ownership records searches in Humboldt, Trinity and Mendocino Counties using an independent parcel ownership service and found no other ownerships under the name Berry Summit, LLC. According to personal communication with the project owners, there are no other affiliate companies associated with the project area owners.

Primary Effects, Secondary Effects, and Total Net GHG Reductions/Removals

ESI reviewed the calculations associated with Primary Effects, Secondary Effects, and total Net GHG Reductions/Removals to ensure consistency with Section 6 of the FPP (v3.2). These three items are calculated automatically within the Reserve’s Monitoring Calculation Worksheet. The verification team performed re-calculations of all the cells in this worksheet to ensure that all totals and individual entries were correct and that all automatic calculations were accurate and not tampered with. For project emissions, the default leakage factor of 20% was applied to the difference in harvest volume relative to baseline harvest volume, which the verifier confirmed in the project’s calculations. Biological emissions from site preparation are not quantified separately but rather are captured by measuring changes in activities in included carbon reservoirs. For other carbon reservoirs, changes are unlikely to have a significant effect on total quantified GHG reductions/removals since natural regeneration is the method of site preparation.

Risk Rating & Buffer Pool Contribution

In addition, the Project’s risk analysis and buffer pool contribution were reviewed in detail. All relevant risk assessments were included, and the resulting risk rating was 19.2%. Thus, 19.2% of the CRTs issued to the project are to be contributed to the buffer pool. All risk values were derived from defaults, except the PIA factor. The 2% PIA subordinate clause risk factor has been waived since the project and all tons are being converted to ARB Offset Program and Compliance Offset Protocol (Reserve email dated 23 August 2013). The results were deemed appropriate and acceptable by the verifier.

Data Management & Analytical Systems

ESI also conducted a comprehensive assessment of all data collection and storage procedures to ensure all opportunities for error in transposition of data between data were minimized. ESI recalculated the statistics independently to confirm the accuracy of the reported precision and the results correlated. Field data collection utilized appropriate principles of forestry data collection, including appropriate tools and methods. Collected data was handled appropriately, including a structured process for quality checks. The Forest Owner’s analysis of collected data used appropriate formulas, conversions, and parameters, as supported by scientific literature. Where ranges of parameters exist, or other types of formulaic uncertainty, appropriately conservative values were used in data analysis.

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

6 VERIFICATION FINDINGS

The List of Findings has been compiled and is available under separate cover. The List of Findings is a confidential document between ESI (verifiers), Berry Summit, LLC (Project Forest Owner), and Finite Carbon (Project Developer Consultant) and is not publicly available.

After review of all project information, procedures, calculations, supporting documentation and site visit, ESI confirms that the *Finite Carbon – Berry Summit (CAR1004)* project (21 September 2013) is accurate and consistent with all aforementioned Reserve criteria and requirements. ESI confirms all verification activities, including objectives, scope and criteria, level of assurance, and project documentation to be complete and in adherence to the Reserve's Forest Project Protocol (v3.2), as documented in this report. ESI concludes without any qualifications or limiting conditions that the *Finite Carbon – Berry Summit (CAR1004)* project meets the requirements of the Reserve.

The GHG assertion provided by Berry Summit, LLC and verified by ESI has resulted in the GHG emission reduction or removal of 239,205 tCO₂ equivalents by the project during the reporting/verification period (10 May 2013 to 01 September 2013).

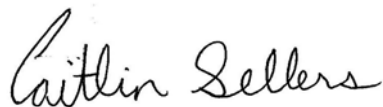
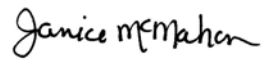
7 VERIFICATION STATEMENT

This verification statement confirms that Environmental Services, Inc., has evaluated the *Finite Carbon – Berry Summit (CAR1004)* project, and its Project Design Document dated 03 October 2013, developed by Berry Summit, LLC (Forest Owner), according to the criteria outlined by the Climate Action Reserve, and that this verification statement is consistent with ISO 14064-3:2006 and ISO 14065:2007. The dates of the period evaluated for this verification are 10 May 2013 to 01 September 2013.

Environmental Services, Inc., confirms all verification activities, including objectives, scope and criteria, level of assurance, project design documentations, and project implementation to be complete and in adherence to the Climate Action Reserve Forest Project Protocol, Version 3.2, August 31, 2010 as documented in this verification report for the project entitled *Finite Carbon – Berry Summit (CAR1004)*, dated 03 October 2013. ESI concludes without any qualifications or limiting conditions that the *Finite Carbon – Berry Summit (CAR1004)* project is without material discrepancy; the verification activities provide a reasonable level of assurance; the project meets the requirements of Climate Action Reserve. The project produces 239,205 gross CRTs before the 19.2% buffer withholding. Total net CRTs for the reporting period 10 May 2013 to 01 September 2013 are 193,277, and 45,928 CRTs will be contributed to the buffer pool.

8 VERIFICATION RESULTS / CONCLUSION

ESI confirms all verification activities including objectives, scope and criteria, level of assurance and the PDD to be complete and in adherence to the Climate Action Reserve Forest Project Protocol, Version 3.2, as documented in this report. ESI concludes without any qualifications or limiting conditions *Finite Carbon – Berry Summit (CAR1004)*, dated 03 October 2013 meets the requirements of the Climate Action Reserve Forest Project Protocol, Version 3.2.

Report Submitted to:	Berry Summit, LLC Climate Action Reserve
Report Submitted by:	Environmental Services, Inc. Corporate Office 7220 Financial Way, Suite 100 Jacksonville, Florida 32256
ESI Lead Verifier Name and Signature:	 Shawn McMahon Lead Verifier
Senior Internal Reviewer Name and Signature:	 Caitlin Sellers Senior Internal Reviewer
ESI Regional Technical Manager Name and Signature:	 Janice McMahon Vice President and Forestry, Carbon and GHG Division Regional Technical Manager
Date:	18 October 2013

SMM/SPM/CLS/JPM/rmb/VO13036.00 Verif_Report_Final_18Oct2013.doc
K PF 10/18/13f

APPENDIX A – Documents Received/Reviewed

During the project verification, ESI received and reviewed the following documents provided by Berry Summit, LLC and the Reserve.

Documents downloaded from Reserve Website

- CAR1004 ownership deed.pdf
- Att of Reg comp.pdf
- Att of Title.pdf
- Att of Vol Impl.pdf
- CAR1004.pdf

Documents received 12 June 2013

- CAR1004_PDD_2013_06_11[1].pdf
- CAR1004_SiteVisitGIS
 - o CAR1004_SiteVisit.mxd
 - o CAR1004_Shapefiles.zip
 - o CAR1004_SiteVisit.mdb
- ESI_kml
 - o Project_Plots.kmz
 - o _ags_dir70a23d9da5c343d1bbeb9e8d1406997f.tmp
 - doc.kml
 - o 1371070432-13315.gpx
 - o 1371070432-13315.gpx - Shortcut.lnk
 - o Project_Area.kmz
- Appendix H. CAR1004 Project Inventory Specifications 20130510 Proprietary.pdf
- CAR1004 PDD 2013 06 12.pdf
- CAR1004 PDD Worksheet Calculations ESI selection.xlsx
- CAR1004 PDD Worksheet Calculations.xlsx

Documents received 13 June 2013

- Appendix H. CAR1004 Project Inventory Specifications 20130510 Proprietary.pdf

Documents received 18 June 2013

- Stratification Rules for the Berry Summit IFM Carbon Project.docx
- CAR1004 PDD Proprietary Apdx 2013 06 12.pdf

- CAR1004 PDD with Apdx 2013 06 12.pdf

Documents received 20 June 2013

- Revised USFWS Attachement B NSO Take Avoidance Analysis-- Interior 2-27-08.pdf
- Berry Summit Attestation of Regulatory Compliance - 2013-6-20.pdf
- Berry Summit Attestation of Title - 2013-6-20.pdf
- Berry Summit Attestation of Voluntary Implementation - 2013-6-20.pdf
- CAR1004 PDD Proprietary Apdx 2013 06 20.pdf
- CAR1004 PDD with Apdx 2013 06 20.pdf
- CAR1004 PDD Worksheet Calculations.xlsx
- CAR1004 Verification Checklist.xlsx

Documents received 2 July 2013

- SiteVisit_TreeList.xlsx

Documents received 15 July 2013

- Verification plot_Berry Summit FC Response.xlsx
- CAR1004 Monitoring-Calculation-Worksheet 2013 06 20.xlsx

Documents received 23 July 2013

- CAR1004-1.pdf

Documents received 6 September 2013

- 036-BerrySummit-Reserve Project Verification NCR-CL-OFI-Round 1 FC Response.pdf
- Appendix I
 - o CAR1004_Geodatabase_20130510.mdb
- CAR1004_Geodatabase_20130510
- CAR1004 PDD with Apdx 2013 09 05



- o CAR1004 PDD with Apdx 2013 09 05.pdf
 - o CAR1004 PDD Proprietary Apdx 2013 09 05.pdf
- Guidance Correspondence
 - o RE CAR1004 Finite Carbon - Berry Summit.msg
 - o Cairns equation.msg
 - o RE CAR1004 Cairns Equation Guidance.msg
- 036-BerrySummit-Reserve Project Verification NCR-CL-OFI-Round 1 FC Response 20130905.docx
- CAR1004 Monitoring-Calculation-Worksheet 2013 09 03.xlsx
- CAR 1004 Round 1 NCR CL File Index.xlsx
- CAR1004_Geodatabase_20130510.mdb
- CAR1004 PDD Worksheet Calculations 20130905.xlsx
- CAR1004 RP1 Harvested-Wood-Products-Calculation-Worksheet 2013 09 03.xlsx
- CAR1004 Verification Checklist 20130905.xlsx
- Verification plot_Berry Summit FC Response 20130905.xlsx

Documents received 20 September 2013

- Berry Summit - Appointment of Officers.pdf
- Berry Summit LLC - Certificate of Formation (Filed).PDF

Documents received 23 September 2013

- CAR1004 PDD with Apdx 2013 09 21.pdf

Documents received 24 September 2013

- CAR1004 Forest-Monitoring-Report-2013 09 24.pdf

Document received 03 October 2013

- CAR1004 PDD with Apdx 2013_10_03

Document received 18 October 2013

- Berry Summit LLC Recorded Easement 10-17-13.pdf
- Berry Summit LLC Recorded PIA 10-17-13.pdf

APPENDIX B – Verification Sample Plot Locations

