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04 June 2015

California Air Resources Board
1001 I Street
P.O. Box 2815
Sacramento, CA 95812

Attention: ARB Board

Re: ESI's Comments on the Proposed Modifications to the Compliance Offset Protocol for U.S. Forest Projects

Dear ARB Board:

Environmental Services, Inc., (ESI) is a full-service environmental firm established in 1986 with the mission of providing superior solutions to environmental, natural and cultural resource needs. Since March of 2010, our Forestry, Carbon and Greenhouse Gas Division has completed hundreds of validations and verifications of forest carbon offset projects under the following GHG Programs: Verified Carbon Standard, Climate Action Reserve, American Carbon Registry, ISO, and the California Air Resources Board (ARB). ESI was accredited by ARB on 05 December 2012. Since that time, we have provided verification services for over 15 Early Action and five compliance offset projects, with an additional eight Improved Forest Management (IFM) projects actively undergoing verification.

ESI is herein providing comments on ARB's proposed modifications to the Compliance Offset Protocol for U.S. Forest Projects (Protocol) that was proposed on 20 May 2015. As described in our previous letter to ARB dated 15 December 2014, the even-aged management requirements found within Section 3.1(a)(4) (and associated verification procedures) and the definition of the Logical Management Unit (LMU) [Section 1.2(a)(31)] constitute our primary comments. We believe the requirements of these Sections of the modified Protocol will result in both additional verification difficulties and substantially increased verification costs.

Please find the detailed comments below. ESI also provides general suggestions for improvements that will allow the ARB program to continue to be effective in leading domestic Greenhouse Gas emission reductions, as well as accurate, additional, complete, consistent, permanent, and transparent Forest Carbon Offset Projects.

We are grateful for the opportunity to provide feedback, and thank you in advance for your time and consideration regarding these important matters. Should you have any questions or concerns, please do not hesitate to contact us.

Sincerely yours,

ENVIRONMENTAL SERVICES, INC.

Janice McMahon
Vice President and Regional Technical Manager
Forestry, Carbon, and GHG Services

Jonathan Pomp
ARB Lead Verifier (H2-14-188)

Enclosure

CS/JP/EJ/SM/MP/CS/ESI_USForest_Protocol_June2015_Updates_Comments_FINAL_2015-06-04.docx
K protocols ARB ProtocolUpdatesComments 06/04/15f

ESI's Comments on ARB's proposed modifications to the Compliance Offset Protocol for U.S. Forest Projects (Protocol) that were proposed on May 20, 2015

Key Updates of Concern

1. Even-aged management requirements [Section 3.1(a)(4)] and associated verification procedures [Section 8.1(b)(2)(E)]
    a. Verification Issues/Challenges

        The modified Protocol (proposed 20 May 2015) now requires additional verification requirements for areas where even-aged management prescriptions have been applied. In *Section 8.1 Full Verification*, subsection (b)(2)(E), the verification body is now required to evaluate conformance with harvest unit size by installing additional inventory plots in even-aged harvest areas. These additional sampling requirements will be very cumbersome to the verification field visit. As an example, if a project with 200,000 acres has 400 acres or more of even-aged management. This would require the OVB to sample 400 additional plots during a site visit, increasing time on-site and verification costs considerably.

        From a verification perspective, it will be extremely difficult to complete the proposed minimum verification elements required within a reasonable review scope. We believe the requirements of the proposed updates are trending more towards an absolute review scope, and that existing Protocol requirements (within both the 20 October 2011 and 14 November 2014 Protocols) sufficiently promote onsite standing live carbon stocks.

    b. Necessary Clarifications and Details Within the Modified Protocol
        i. Table 3.1
            1. Regarding Distribution of Age Classes/Sustainable Management, Table 3.1 states "If even-aged management is practiced, on a watershed scale up to 10,000 acres (or the project area, whichever is smaller), projects must maintain no more than 40 percent of their forested acres in ages less than 20 years. (Areas impacted by Significant Disturbance may be excluded from this test.)"

                The watershed scale portion of this requirement is ambiguous and has often left the OPO wondering the intent. If the distribution of age class is to be assessed against watershed size, a more precise definition or measurement method is needed. Further, the noted size appears to be arbitrary and insufficient to ensure adequate age classes exist across all landscapes.

                Please consider relegating this requirement to the project area itself, or provide more clarity and guidance regarding the "watershed scale up to 10,000 acres" portion of this requirement.

ii. Even-aged management requirements Section 3.1(a)(4)(B)
The currently proposed harvest adjacency requirements do not provide a clearly defined process for verification.

The proposed linear distance requirement is sufficient and avoids the confusion associated with the measurement of harvest adjacency areas.

iii. The definition of Countable Trees [Section 1.2(a)(20)]
The definition of Countable Trees is unclear, as written.

Please explain how reproducible tree measurements can be obtained under the currently proposed definition for "two growing seasons" and "healthy."

iv. The definition of Even-Aged Management [Section 1.2(a)(22)]
It is unclear what is meant by "By convention, the spread of ages does not differ by more than 20 percent of the intended rotation." Please clarify.

2. The definition (and related requirements) of the Logical Management Unit (LMU) [defined in Section 1.2(a)(31)]

When compared to the 20 October 2011 and 14 November 2014 Protocols, Section 5.2.1(d)(1) of the modified Protocol (proposed 20 May 2015) includes a different equation for determining the Minimum Baseline Level (MBL) where Initial Carbon Stocks are above Common Practice (CP) (Equation 5.5). This equation requires the use of the parameter WCS, the weighted average above-ground standing live tree carbon stocks per acre within the LMU containing the project area. In previously adopted Protocol versions, the MBL is set to equal CP when ICS is above CP (Equation 6.5).

ESI wishes to offer important comments on the definition of the LMU should ARB decide to move forward with Equation 5.5 as presented in the modified Protocol (proposed 20 May 2015). These are outlined below:

Section 1.2(a)(31) states "Logical Management Unit" or "LMU" means all land that the forest owner(s) and its affiliate(s) either own in fee or hold timber rights on and that are within the same assessment area(s) where the project is located." It is commonly known that Assessment Areas are not spatially explicit, but rather based on forest ecosystems or communities (groups of species).

How will a LMU be adequately defined by an OPO and verified by an OVB?

ESI suggests changing "assessment area(s)" to "Supersections," as these are spatially explicit and efficiently verifiable.

ESI is requesting ARB to develop step-by-step procedures for determining and verifying the LMU, per the definition included in Section 1.2(a)(31).

General Improvements

1. Section 5.2.1 Estimating Baseline Onsite Carbon Stocks – Private Land

   Section (h)(1) states "If a subsequent verification(s) detects correctable errors of greater than 5.00 percent to the baseline or to quantified GHG reductions or GHG removal enhancements, the baseline must be adjusted prior to a verification statement being issued. The corrected baseline would then supersede the originally verified baseline for the purpose of determining GHG emission reductions and GHG removal enhancements going forward."

   As written above, the new statement causes confusion on how to calculate QR_y (Equation 5.1). If a verifier is conducting a data check of Equation 5.1, then Δ BC_{onsite} and $BC_{wp,y}$ are ambiguous. It is unclear if a corrected, or the original baseline value, should be inserted.

2. Formatting

   Please revise section headings for the final protocol to improve readability and navigation. The current format of the draft 2015 Protocol is similar to the Regulation and makes desk review activities associated with verification more cumbersome, as all current templates, checklists, and internal documents will need to be revised. This will be an extremely costly expense to the verification bodies.

   Further, the current format is not reader-friendly. For example, it is difficult to navigate the subsections and also to know to what the over-arching section is referring. The previously adopted Protocol versions allowed the reader to quickly identify if the rule referred to for each project type (IFM, Reforestation, or Avoided Conversion projects).

   Please implement a format similar to the previous adopted versions of the Protocol, with each section and subsection fully numbered and available in the Table of Contents.

3. Section 5.2.1(b)

   States "(1) Identifying the total metric tons of CO_2e contained in the initial above-ground standing live tree carbon stocks within the project area; and (2) Dividing this amount by the number of acres in the project area."

   Forest sampling provides results on a per-acre basis, which is then multiplied by the acreage to determine the total.

   Please revise this section for consistency with professional forestry practices.

4. Section 5.2.1(e)(2)(B)

   This Section states "Providing evidence that activities similar to the proposed baseline growth and harvesting regime have taken place within the past 15 years on at least three other properties within the forest project's assessment area. At least one comparable site must be on land not

owned by the forest owner(s) and/or its affiliates, and no more than one comparable site may be within the project area. Comparable sites on land owned by the forest owner(s) and/or its affiliates must not have had harvest activities within two years before the offset project commencement date."

Again, Assessment Areas are not spatially explicit, but rather they are based on forest ecosystems or communities (groups of species). As such, it is unclear how an OPO can determine what percentage of a given Assessment Area they own.

Similar to the above suggestion regarding the LMU definition, ESI suggests modifying the proposed updated requirements in Section 5.2.1(e)(2) to apply to "Supersections" vs. Assessment Areas, as these are spatially explicit and efficiently verifiable.

5. Table 3.1 – Native Species and Composition of Native Species – Reforestation Projects
This table states "Reforestation projects as qualified in subchapter 5.1.1(b)(2) may defer assessment until the submission of the Offset Project Data Report that will undergo the second site-visit verification."

Subsequently the table states "Project is not eligible unless it is demonstrated that management activities will enable this goal to be achieved within 25 reporting periods."

These two statements are somewhat contradictory, as the OPO may try to defer assessment of criteria to second site visit verification and not address the demonstration at all in the first verification. ESI suggests the eligibility criteria under "Timeline for Meeting Criteria" is also adjusted to allow for projects to defer the demonstration until the second site visit verification.

6. 8.1.1. Sequential Sampling
Section 8.1.1(a) states, "The offset verifier must re-measure existing monumented sample plots when all plot locations within a project area can be found and it is statistically appropriate. If more than 10.00% any portion of a project area's sample plots cannot be relocated or measurement of project sample plots is not statistically appropriate, the verifier must install sample plots independent of the project's sample plots. If a monumented sample plot within the allowable 10.00% cannot be located, the verifier must move to the next sequential randomly selected plot. The verification approach will determine whether a paired or unpaired test will be used by the verifier."

In the second sentence of the above paragraph, the term relocated is ambiguous. Based on previous guidance from ARB, it is ESI understands that this term is referring to the re-establishment of plot center using unbiased methods, for example through the use of azimuths and distances from witness trees.

Please revise this section for additional clarity regarding the term "relocated." Further, should a 10% threshold be exceeded, can paired plots measured by the verifier up to the 10% threshold be

utilized in the calculation of the unpaired test; or are these plots required to be discarded and a newly determined unpaired analysis begins? Please clarify in the adopted Protocol.

7. Inconsistencies in the required carbon dioxide equivalents conversion factor
   Both equations C.8 and C.17 in Appendix C call for use of the carbon dioxide equivalents conversion factor of 3.664. All other sections of the modified Protocol (proposed 20 May 2015) require the use of a factor 3.667. Please revise the noted equations to ensure consistency in the carbon dioxide equivalents conversion factors required by the Protocol.