

PROJECT REVIEW REPORT

Project ID	2072
Project Name	<i>UK CowCredit project: A UK diary initiative to reduce methane from enteric fermentation</i>
Program(s)	VCS
Verification Period	07 May 2019 to 29 February 2020
Project Proponent	Mootral SA
Methodology	<i>VM0041 Methodology for the Reduction of Enteric Methane Emissions from Ruminants through the Use of 100% Natural Feed Supplement, v1.0</i>
Sectoral Scope(s)	<i>15. Livestock and manure management</i>
Validation/Verification Body (VVB)	<i>Earthood Services Private Limited</i>
Assessment Criteria	VCS Standard, v4.0
Date of First Issue	29 July 2020
Date of Final Issue	9 September 2020

Summary:

An accuracy review of the UK CowCredit project: A UK diary initiative to reduce methane from enteric fermentation project registration and verification approval request has been conducted by Verra in accordance with Section 4.3 of the *Registration and Issuance Process*.

The accuracy review has raised 10 assessment findings and no minor findings, detailed below. The VVB, in coordination with the project proponent, is hereby required to provide a response to the assessment findings presented in Section 1. The 10 assessment findings must be addressed to the satisfaction of Verra.

This project review report will be made publicly available. Confidential information may be provided as separate attachments.

1. ASSESSMENT FINDINGS

Finding 1

Applicability condition 6 and Section 8.2.1 of the applied methodology require that the efficacy of the supplement used be supported by evidence (e.g., evidence-based literature, peer-reviewed publications, study reports).

Based on the data provided by the project proponent, Verra has concerns about the efficacy demonstration of the supplement and the monitoring results. Verra's concern is that the data presented in the project description and monitoring report are based on a single study by Vrancken et al. (2019).

The VVB is requested to provide clarification on the methods used to evaluate the efficacy of the supplement. Specifically, the VVB is requested to justify why the evidence of a single study is robust enough to validate the efficacy of the supplement.

PP Response:

1. **Applicability condition 6:** "Evidence must be provided that there will be no increase in the manure emissions due to feed supplementation (e.g., evidence-based literature, peer-reviewed publications, study reports). "
 ->The applicability condition 6 is referring to the slurry analysis. The specific and direct inhibition of the methanogenesis in the rumen is not demonstrated to cause a major change in the overall rumen fermentation as this process is downstream of these metabolic processes. Consequently, feed supplements will not impact digestion in a way that would lead to an increase in the N₂O emissions in the manure decomposition (please see the studies referenced in the methodology). Following the applicability 6 of the methodology, a slurry analysis was performed in August 2019, where Mootral feed supplement was part of the feeding regimes of the cattle. Based on scientific literature and by comparing the results to the literature we demonstrated that there was no significant difference in the composition of the manure. Therefore, we conclude that the dedicated study performed on the first activity instance farm, is sufficient evidence for the validation of fulfilment of eligibility criteria. The study report has been provided to the VVB.
2. **Regarding the Enteric CH₄ emissions reduction factor** (default or determined percentage value), the supplement's percentage reduction of the enteric CH₄ per each animal group has been determined by performing direct measurements on the specific farm being verified. Therefore, the factors are very representative as it is the same farm and the cows are under the same regime as in the study. Additionally, the methodology allows determination of the enteric methane emissions reduction factor for each animal group by performing direct enteric methane measurements to estimate the methane production (Section 8.2.1., Option 2). The protocol described in Vrancken et al. (2019) shows that the factors derived by performing direct enteric methane measurements.
 We conclude that the direct enteric methane measurement in the farm is robust evidence of the efficacy of the supplement as described in the approved methodology.

VVB Response: The VVB response is as follows:

1. PP has shared supplementary evidences such as lab slurry analysis – Lancrop Laboratories (Issue Date – 12/08/2019), Technical Note TN650 (April 2013), and a guidebook “Think manures – A guide to manure management”, which were reviewed by the VVB assessment team.

Together, these documentary evidences are satisfactorily explaining that the application of feed supplement does not result in manure emissions increase. Therefore, it has been verified by VVB that more than one supporting documents were provided for review of the methodological choice being followed by PP, and all the documentary evidences shared were found reliable and valid for use.

2. PP has shared various literature for review by VVB, in the context of methane emissions from dairy cattle. Some of these are listed below:

- Hammond et al, 2016 (Review of current in vivo measurement techniques for quantifying enteric methane emission from ruminants, *Animal Feed Science and Technology* 219, 13-30)
- O'Brien et al, 2010 (The influence of strain of Holstein-Friesian cow and feeding system on greenhouse gas emissions from pastoral dairy farms, *J. Dairy Sci.* 93, 3390 – 3402)
- Eger et al, 2018 (Application of Mootral Reduces Methane Production by Altering the Archaea Community in the Rumen Simulation Technique, *Frontiers in Microbiology*, Original Research, published on 04/09/2018)
- Garnsworthy et al, 2012 (On-farm methane measurements during milking correlate with total methane production by individual dairy cows, *J. Dairy Sci.* 95, 3166 – 3180)
- Chagunda, 2013 (Opportunities and challenges in the use of the Laser Methane Detector to monitor enteric methane emissions from ruminants, *Animal* (2013), 7:s2, 394 – 400)

The above literature were reviewed together with the Vrancken et al, 2019 study, to understand the impacts of the feed supplement on the factors such as animal performance (e.g. diet regime, yield, manure, etc.) and the reduction in methane levels due to inhibition of methanogenesis.

Further to that, the referenced study Vrancken et al, 2019 was conducted at the farm where project activity's first instance is being implemented. The research considered the same cattle group that is under the project implementation, and physical aspects of the farm too are not much changed, which was discussed by VVB with the PP at the time of project on-site visit.

Direct methane measurements were used for the study, which is in-line with the methodology (Section 8.2.1, Option 2).

Based on the above discussion, it can be ascertained that the efficacy of the supplement is valid.

Verra Response:

It has been clarified that the study used as supporting evidence was conducted in the same environment, conditions, and location as the project activity. This is sufficient to justify the use of a single study to validate the supplement's efficacy. This finding is closed and no further response is required.

As this is a new technology with limited application experience, Verra would like to make it clear that we will require further supporting evidence beyond the Vrancken study to demonstrate the efficacy of the supplement for any application outside of the current project. Efficacy research should be conducted in vivo, be based on an appropriate sample size, explore durability of the effect over time and use reliable measurement techniques.

Finding 2

Section 3.10.1 (3) of the *VCS Standard, v4.0* states that “project location for grouped projects shall be specified using geodetic polygons to delineate the project's geographic area or areas...and provided in a KML file.”

A KML file was not provided by the project proponent. As this is a grouped project, the project

proponent is required to provide a KML file.

PP Response: A KML file has been provided. Section 1.7 of the MR updated.

VVB Response: VVB raised CAR 1.2 for the KML file requirement, and PP shared the KML file requested. Therefore, CAR1.2 was closed.

Therefore, this has been verified, and found acceptable by the VVB.

Verra Response:

Finding 3

Sections 3.16.1, 3.16.2, and 3.16.3 of the *VCS Standard, v4.0* requires the project proponent to conduct a local stakeholder consultation, set up a mechanism for ongoing communication, and to take into account all stakeholder input. Section 3.4.1 of the *VCS Standard, v4.0* requires the project proponent to use the *VCS Project Description Template* and adhere to all instructional language within the template.

Section 2.2 of the *VCS Project Description Template* requires a description of the process for and outcomes from the local stakeholder consultation conducted including:

- The procedures or methods used for engaging with local stakeholders
- the procedures or methods used for documenting the outcomes of the consultation,
- The mechanism for ongoing communication
- How due account of any and all input has been taken

Section 2.2 of the project description is missing information on the procedure for engagement, procedure for documenting outcomes, and the method of ongoing communication.

The project proponent is requested to update Section 2.2 of the project description to include information on procedure for engagement, procedure for documenting outcomes, and the method of ongoing communication.

PP Response: Updated. We have also provided the email discussions and meeting notes with various stakeholders.

VVB Response: PP has considered all the steps required for the local stakeholder consultation, and conducted the consultation in-line with the VCS requirements. This has been confirmed by VVB through document review for LSC, and discussions made with the PP at the time of on-site visit.

Also, in Section 2.2 of the VCS-PD, PP has updated the section to include procedure for engagement, procedure for documenting outcomes, and the method of ongoing communication.

Therefore, the updates made to the PD Section 2.2 have been verified by VVB, and found as containing the requisite information in-line with VCS Standard 4.0 requirements.

Verra Response:

The updates to Section 2.2 of the project description provide further detail on the stakeholder consultation. This finding is closed.

Finding 4

Section 3.15.1 of the *VCS Standard, v4.0* requires that data and parameters used for the quantification of GHG emission reductions and/or removals shall be provided in accordance with the methodology. Section 3.4.1 and 3.4.3 of the *VCS Standard, v4.0* requires the project proponent to use the *VCS Project Description Template* and the *VCS Monitoring Report Template* and adhere to all instructional language within the template.

Section 5.1 of the *Project Description Template* and Section 4.1 of the *Monitoring Report Template* require a description of the data and parameters available at validation.

Section 5.1 of the project description and Section 4.1 of the monitoring report exclude some of the parameters available at validation such as PE_j , $EF_{Production,i,j}$, and $EF_{r,i,j}$.

The project proponent is requested to update Sections 5.1 and 4.1 of the project description and monitoring report to include all relevant data and parameters at validation.

PP Response:

Parameters PE_j , $EF_{Production,i,j}$, $EF_{i,j}$ have been included in Sections 5.1 and 4.1 of the project description and monitoring report

VVB Response: The parameters PE_j , $EF_{Production,i,j}$, $EF_{i,j}$ are now added in the VCS-PD, which is the correct approach, since the project activity instances which would be added at a later stage, may choose any of the options available in the methodology VM0041, ver. 1.0. In those cases, these parameters shall be monitored.

Whereas, in the case of MR, these parameters are not added by PP since first project activity instance has not selected the methodological options which require the monitoring of the above mentioned parameters.

Therefore, VVB has verified the PD as well as MR, and found that only PD was required to add the parameters PE_j , $EF_{Production,i,j}$, $EF_{i,j}$ and not the MR.

Verra Response:

The appropriate parameters have been included in the project description, and the VVB's clarification on the monitoring report sufficiently responds to the finding. This finding is closed.

Finding 5

Section 3.4.1 of the *VCS Standard, v4.0* requires the project proponent to use the *VCS Project Description Template* and adhere to all instructional language within the template.

Section 5.3 of the *VCS Project Description Template* requires a description of the monitoring plan including details on:

- The methods for measuring, recording, storing, aggregating, collating and reporting data and parameters. Where relevant, include the procedures for calibrating monitoring equipment.
- The organizational structure, responsibilities and competencies of the personnel that will be carrying out monitoring activities.
- The policies for oversight and accountability of monitoring activities.
- The procedures for internal auditing and QA/QC.
- The procedures for handling non-conformances with the validated monitoring plan.
- Any sampling approaches used, including target precision levels, sample sizes, sample site

locations, stratification, frequency of measurement and QA/QC procedures.

Section 5.3 of the project description is missing information on: the methods for measuring, recording, storing, and aggregating data; policies for oversight; procedures for internal auditing; and procedures for handling non-conformances with validated monitoring plan.

The project proponent is requested to update Section 5.3 of the project description to include information on the methods for measuring, recording, storing, and aggregating data; policies for oversight; procedures for internal auditing; and procedures for handling non-conformances with validated monitoring plan.

PP Response: Updated

VVB Response: PP has updated Section 5.3 of VCS-PD, and it is including the information on methods for measuring, storing, recording and aggregating data; policies for oversight; procedures for internal auditing; and procedures for handling non-conformances with validated monitoring plan.

Therefore, this is found appropriate and valid.

Verra Response:

The updates to Section 5.3 of the project description provides further detail on methods for measuring, storing, recording and aggregating data; policies for oversight; procedures for internal auditing; and procedures for handling non-conformances with validated monitoring plan. The finding is closed.

Finding 6

Section 3.4.3 of the *VCS Standard, v4.0* requires project proponents to use the *VCS Monitoring Report Template* and adhere to all instructional text within the template.

Sections 1.9 and 1.10 of the *VCS Monitoring Report Template* require a description of the participation under other GHG Programs, any other forms of credit, and assurances that where there is participation under another program there will be no double counting of emissions.

Sections 1.9 and 1.10 of the monitoring report states “N/A”.

The project proponent is requested to update Sections 1.9 and 1.10 of the monitoring report to provide details on the participation under other GHG Programs, any other forms of credit, and assurances that where there is participation under another program there will be no double counting of emissions.

PP Response: Sections 1.9 and 1.10 are updated

VVB Response:

Section 1.9 & Section 1.10 of the monitoring report are now updated. The information provided in the relevant sections is appropriate and valid.

Verra Response:

The updates to Section 1.9 and 1.10 are sufficient, this finding is closed.

Finding 7

Sections 3.16.1, 3.16.2, and 3.16.3 of the *VCS Standard, v4.0* requires the project proponent to conduct a local stakeholder consultation, set up a mechanism for ongoing communication, and to take into account all stakeholder input. Section 3.4.3 of the *VCS Standard, v4.0* requires the project proponent to use the *VCS Monitoring Report Template* and adhere to all instructional language within the template.

Section 2.2 of the *VCS Monitoring Report Template* requires a description of the process for and outcomes from the local stakeholder consultation conducted including:

- The procedures or methods used for engaging with local stakeholders
- the procedures or methods used for documenting the outcomes of the consultation,
- The mechanism for ongoing communication
- How due account of any and all input has been taken

Section 2.2 of the monitoring report is missing information on the procedure for engagement, procedure for documenting outcomes, and the method of ongoing communication.

The project proponent is requested to update Section 2.2 of the monitoring report to include information on procedure for engagement, procedure for documenting outcomes, and the method of ongoing communication.

PP Response: same as finding 3, updated

VVB Response: , In Section 2.2 of the MR, PP has updated the section to include procedure for engagement, procedure for documenting outcomes, and the method of ongoing communication.

Therefore, the updates made to the MR Section 2.2 have been verified by VVB, and found as containing the requisite information in-line with VCS Standard 4.0 requirements.

Verra Response:

The update to Section 2.2 of the monitoring report provides sufficient information on the procedure for engagement, procedure for documenting outcomes, and the method of ongoing communication.

Finding 8

Section 4.1.3 of the *VCS Standard, v4.0* requires the project proponent to use the *VCS Joint Validation & Verification Template* and adhere to all instructional language within the template.

Section 3.1 of the *VCS Joint Validation & Verification Template* requires an identification, discussion, and justification of conclusions regarding the following:

- Project type, technologies and measures implemented, and eligibility of the project
- Project design, including eligibility criteria for grouped projects
- Project proponent and other entities involved in the project
- Ownership
- Project start date
- Project crediting period
- Project scale and estimated GHG emission reductions or removals
- Project location
- Conditions prior to project initiation

- Project compliance with applicable laws, statutes and other regulatory frameworks
- Participation under other GHG programs:
- Projects registered (or seeking registration) under other GHG program(s)
 - Rejection by other GHG programs
- Other forms of credit:
 - Emissions trading programs and other binding limits
- Other forms of environmental credit sought or received and eligible to be sought or received
- Additional information relevant to the project, including:
 - Leakage management for AFOLU projects
 - Commercially sensitive information
 - Sustainable development contributions

Section 3.1 of the joint validation and verification report is missing information on the eligibility criteria of the project, information on commercially sensitive information, and information on the sustainable development contributions of the project.

The VVB is requested to update Section 3.1 of the joint validation and verification report to include information on the eligibility criteria of the project, information on commercially sensitive information, and information on the sustainable development contributions of the project.

PP Response: Finding is addressed to VVB

VVB Response:

The information on eligibility criteria of the project, information on commercially sensitive information, and information on the sustainable development contributions of the project have been added to the joint validation and verification report.

Verra Response:

The updates to Section 3.1 of the joint validation and verification report contain updated information on the eligibility criteria of the project, information on commercially sensitive information, and information on the sustainable development contributions of the project have been added to the joint validation and verification report. This finding is closed.

Finding 9

Section 4.1.3 of the *VCS Standard, v4.0* requires the project proponent to use the *VCS Joint Validation & Verification Template* and adhere to all instructional language within the text.

Section 3.2 of the *VCS Joint Validation & Verification Template* requires the VVB to provide an overall conclusion regarding whether the project is eligible to participate under the VCS Program.

Section 3.2 of the joint validation and verification report is missing an overall conclusion regarding whether the project is eligible to participate under the VCS Program.

The VVB is requested to update Section 3.2 of the joint validation and verification report to include an overall conclusion regarding whether the project is eligible to participate under the VCS Program.

PP Response: Finding is addressed to VVB

VVB Response:

The information related to overall conclusion regarding whether the project is eligible to participate under the VCS Program has been added to Section 3.2 of joint validation and verification report.

Verra Response:

The update to Section 3.2 of the joint validation and verification report includes an overall conclusion regarding whether the project is eligible to participate under the VCS Program. This finding is closed.

Finding 10

Section 4.1.3 of the *VCS Standard, v4.0* requires the project proponent to use the *VCS Joint Validation & Verification Template* and adhere to all instructional language within the text.

Section 3.4.8 of the *VCS Joint Validation & Verification Template* requires the VVB to identify the parameters monitored, describe the steps taken to validate the suitability of the implemented monitoring system and to provide an overall conclusion regarding the adherence of the monitoring plan to the requirements of the applied methodology and any referenced tools.

Section 3.4.8 of the joint validation and verification report does not provide a sufficient discussion of the overall monitoring plan, procedures of monitoring, as well as the overall conclusion regarding the adherence of the monitoring plan to the requirements of the applied methodology and referenced tools.

The VVB is requested to update Section 3.4.8 of the joint validation and verification report to include further information on the discussion of the overall monitoring plan, procedures of monitoring, as well as the overall conclusion regarding the adherence of the monitoring plan to the requirements of the applied methodology and referenced tools.

PP Response: Finding is addressed to VVB

VVB Response:

Section 3.4.8 of the joint validation and verification report is now revised, and information on the discussion of the overall monitoring plan, procedures of monitoring, as well as the overall conclusion regarding the adherence of the monitoring plan to the requirements of the applied methodology and referenced tools is now included in the joint validation and verification report.

Verra Response:

The updates to Section 3.4.8 of the joint validation and verification report includes information on the discussion of the overall monitoring plan, procedures of monitoring, as well as the overall conclusion regarding the adherence of the monitoring plan to the requirements of the applied methodology and referenced tools. This finding is closed.

2. MINOR FINDINGS

No minor findings were raised.

3. ASSESSMENT CONCLUSION

On 29 July 2020 Verra concluded an accuracy review of the registration and issuance request for project 2072 UK CowCredit project: A UK diary initiative to reduce methane from enteric fermentation. This review resulted in 10 findings raised, detailed above.

On 29 July 2020, Verra sent the findings report to Earthood Services Pvt Ltd and the project proponent.

On 14 August 2020, Earthood Services Pvt Ltd submitted responses to the 10 assessment findings raised above.

On 9 September 2020, Verra determined that all findings had been appropriately responded to, and closed the review.