



December 12th, 2012

Dear Climate Action Reserve Staff,

Camco International Group, Inc would like to thank you for the opportunity to provide comments on the latest draft version of the Livestock Project Protocol, version 4.0. Camco is extremely familiar with previous versions of the protocol, having registered projects to versions 2.0, 2.1 and 3.0 and we are supportive of the Reserve's efforts to periodically update and modify the protocol to take account of new developments and to learn from the experiences of Project Developers in working with protocol versions.

Camco supports many of the additions and updates to the protocol, particularly the efforts the Reserve is making to lower costs, simplify calculations and make it easier for developers to use site specific values rather than defaults. We provide specific comments below:

Project Start Date – 3.2

The Reserve has modified the Project Start date language so that developers have 6-months to select a start-date from when manure is first loaded into the digester. In Camco's experience digesters are often pre-loaded with lagoon water and heated before fresh manure begins to be added. This process can take 6-weeks or longer. It would be helpful to clarify that the loading of the digester refers to continuous loading with fresh manure and not the pre-loading/preparation process. This may avoid confusion going forward.

Uncontrolled Anaerobic Manure Management System – 3.4

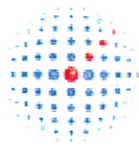
The new version requires developers to demonstrate that an uncontrolled anaerobic manure management system was in operation prior to the digester. Camco requests clarification here to make sure that facilities which use aerobic and anaerobic management components will still be eligible. For example, many dairies will have three or four different methods for managing manure, one of which may be uncontrolled anaerobic lagoons.

Baseline Assumptions for Greenfield Projects - Table B.10

In Camco's experience, some dairies drain their lagoons in October / November rather than September – this is to some extent dependent on dairy location. Camco requests that the Reserve permit developers to use a later month if common practice by other dairies in the region supports this.

Calculating Project Emissions – 5.2

The Reserve specifies that developers must use the default for Biogas Collection Efficiency specified in Table B.4. We recommend the Reserve permit developers to use a site-specific value for BCE as determined through independent analysis.

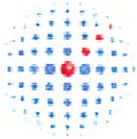


The Reserve has modified its language around determining a site specific Biogas Destruction Efficiency (BDE) for destruction devices to permit the use of an independent air emissions testing body that is accredited by a state or local agency, or the Stack Testing Accreditation Council (STAC). However, methane sampling and analysis of engine exhaust is not the same as stack testing for mass flux of regulated air contaminants and as such, the requirement for state or STAC accreditation is not warranted (and will contribute significantly to BDE analysis costs). Many states do not have 'accreditation' processes or requirements for testing exhaust gases for their State Air Permit testing – either from their state or STAC, however states do require compliance with established sampling procedures. Our recommendation is to allow sampling of engine exhaust and analysis of such exhaust for methane concentration in accordance to EPA Method 3C (Methane analysis) by certified laboratories or qualified field personnel. This would be more practical and lower costs and be similar to the sampling of biogas to determine methane concentration – samples may be taken by staff on-site and sent off to certified laboratories for testing.

Bo,L Sampling – 6.1

Camco welcomes the Reserve permitting developers to determine site-specific B_o values through sampling. However, the regime that the Reserve outlines is overly prescriptive and may in some cases be unworkable as well as result in significant costs. Camco suggests the following changes:

- Flexibility on sample location and mixing samples from all animal types – as it may not be feasible to isolate one animal type from another if housed within the same barn area or that barns that have a common manure collection system or pipeline. Samples in a common collection/pumping pit over the course of a single day will account for variations that might occur in manure from different animal housing areas.
- Samples should be able to be taken in April or October or any other month that represents the average annual temperatures for the site. Why limit to August – October? To save costs we would like to be able to take samples ourselves whilst on-site for verifications.
- Provided the feed to the cows has not changed (feeding formulas do not change every few weeks), a second sample, 2 weeks after the first, will add significant cost and should not provide any significant difference to B_o testing results. Camco suggests a requirement to take 1 sample (over a minimum 8 hour period) and split and analyze by triplicate.
- The control assay should not include a positive control with glucose/cellulose – rather a control of just seed inoculum by itself should be run along with the samples – which will allow proof of biogas production and enable the contribution of biogas from the seed stock to be deducted from the total biogas production. A single sample run with glucose/cellulose does not necessarily provide adequate biogas production comparison of manure digestion potential if off by more than 15%. Rather an analysis of the tested B_o,L should be provided by the laboratory conducting the test to compare the result to experience or other literature values.
- Camco recommends using the mean rather than 90% LCL if the highest and lowest values have already been removed from the statistical analysis as the arithmetic mean will account for both higher and lower measured values.

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- Bo values should be good for the entire year that a particular harvested feed is being used during which samples were taken – not the following calendar year when another harvest will provide the animal feedstock for that year.

Biogas Measurement Instrument QA/QC – 6.3

The Reserve has added an additional paragraph specifying that meters which are removed and not reinstalled should be field checked for calibration accuracy prior to removal. In some cases meters are removed because the screen may not be working or they may be damaged and thus it may be difficult / impossible to verify their calibration accuracy prior to removal (many meters have to be removed from the gas pipe in order to be calibrated in any case). The protocol should provide developers with flexibility to replace damaged meters provided they can document when the meter was damaged and show that the meter was in calibration prior to being damaged. For example, developers could use historic gas flow data to show the meter continued to function correctly.

Missing Data – Appendix D.

We recommend that data substitution be allowed for period of time greater than 7 days. There are many examples of missing data that can reasonably be accounted for with statistical analysis of periods of time before and after the missing data event provided that there is additional indication of either flow or destruction of biogas. The EPA acid rain program upon which the CAR data substitution procedure is based (and which was referenced in previous protocol versions), allows for data substitution for periods greater than 7 days. For many dairies, especially smaller ones, it is difficult to diagnose a problem, order replacement parts, ship replacement parts and have them installed by an appropriate person within a 7 day timeframe. The end result is repeated variances costing time and money.

We look forward to working with you on this and subsequent versions of the Protocol and hope that we are able to continue to provide helpful and useful comments going forward.

Yours sincerely,



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