

Climate Change Program  
California Air Resources Board  
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**COMPLIANCE OFFSET DEVELOPERS ASSOCIATION**

**Contact:**  
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Subject: Proposed Updates to Compliance Offset Protocols

Climate Change Program Staff:

The Compliance Offset Developers Association (CODA) appreciates the opportunity to comment on the proposed updates to the Compliance Offset Protocols - specifically for Livestock Projects - as incorporated by reference in the proposed amendments to the California Cap-and-Trade Regulation as described in the draft dated July 29, 2014.

CODA is an association comprised of six of the leading developers of emission reduction projects designed for compliance in the California Cap-and-Trade program. CODA's membership has substantial experience in the implementation of projects designed to result in emission reduction offsets, and represents a majority of the projects listed as ARB-Early Action projects or ARB Compliance Projects.

Our comments are based on practical experience over the last five years in working to generate and qualify offsets from the project types included in ARBs program. Incorporating them would provide OPOs/APDs with greater clarity on how they should monitor and operate projects and remove unnecessary cost and complexity without compromising environmental integrity.

Below are CODA's comments on the proposed protocol updates for **Livestock Projects**:

Section 5.1(i) – Ambient Temperatures:

While it may be appropriate to specify that a weather station should be used with an elevation difference of no more than 300 feet from the project location, the language does not allow for cases in which access to such a weather station is unattainable. CODA suggests that the language be modified to the following:

“The monthly average ambient temperature must be obtained from the closest weather station located in the same air basin and within an elevation difference of no more than 300 feet from the project location, **if available.**”

Section 5.1(k) – Removal of Volatile Solids:

It is common practice for liquids to be partially or fully removed from anaerobic lagoons for use in irrigation. By comparison, the practice of intentional removal of solids build-up is the intended target of Section 5.1(k). Yet the language is sufficiently broad to allow varying interpretations of what it means to “drain and clean” an anaerobic storage/treatment system. Consistency between verifications could be increased if the text was modified to reference the “**complete drainage and cleaning of solid buildup** from the anaerobic storage/treatment system.”

#### Sections 5.2(d) and 5.3(b) – Quarterly Methane Concentration:

The updated language regarding quarterly methane concentration will cause problems at the beginning of many crediting periods. Previous language allowed for quarterly methane concentration to apply to the entire quarter in which the sample was taken. The proposed language however, does not allow for a sample taken in March to apply to the other two months in the first quarter. If this happens in a livestock project's first reporting period, for example, what values can be used for January and February? CODA suggests the language be improved by including a provision for such scenarios or for allowing the sample to be used for the entire calendar quarter.

Furthermore, it seems that an ordinary "average" of more frequent samples is what was intended here, rather than a "weighted" average, because all observations carry equal weights. This should be revised to avoid confusion.

Finally, in the event that monthly methane concentration is sampled, or even more so if continuous monitoring is in place, the language of Section 5.2(d) requires the samples to be averaged on a quarterly basis. Allowing a provision for monthly averages would increase the accuracy of the quantified project methane emissions and better reflect any variation in methane concentration. Monthly values, if available, would also increase consistency between Section 5.2(d) and the application of monthly summations in Equation 5.6.

#### Section 5.2(e) - Site-Specific Destruction Efficiency:

Requires that OPOs/APDs receive prior written approval from the Executive Officer. There are 76 Livestock projects listed or registered on the Climate Action Reserve. If all of these decide to do site-specific tests – and each site may have more than one destruction device – the ARB may need to process in excess of 6 requests per month. CODA supports the ARB permitting the use of site-specific tests but to make the process easy to manage for OPOs/APDs we encourage the ARB to add language stating that if the ARB has not objected to the use of a site-specific test for destruction efficiency within one-week of it being submitted by the OPO/APD then the test shall be deemed approved. We would also appreciate some clarification as to whether tests need to be undertaken for each device every year or whether they are valid for the duration of a projects' crediting period?

#### Section 5.2(k) and Equation 5.6 - Venting Events:

This equation / section only represents what occurs during uncontrolled venting and does not accurately represent emissions during a scheduled shutdown of the digester. Typically, scheduled shutdowns are for the purpose of cleaning and/or major maintenance. During shutdown manure is removed from the digester, no more is added and heating is stopped while work takes place. Gas is typically drawn off and destroyed in a flare as much as possible prior to the digester being opened up. In these instances it does not make sense to estimate emissions based on the flow of gas for the previous seven days but to require the OPO/APD to account for the venting of the maximum amount of gas which can be stored in the digester and to designate the digester as unable to generate offsets for the period it was shutdown.

#### Section 5.2(l)

Typo on "emissions"

#### Section 6.2(a)(2): Options to Satisfy a Field Check:

It is specified in this language that the field check either be carried out by using a portable instrument or manufacturer specifications, but these are not the only ways a field check can be performed. Some livestock projects utilize a permanent fixture upstream to perform a field check. CODA does not see any

reason that a permanent fixture with verified accuracy should not be allowed for field checks, though the current language does not permit anything but a portable instrument or manufacturer specifications. The language could be improved by specifying an “in-line” instrument here rather than specifying portable nature of the instrument used to perform a field check.

Furthermore, it appears as though the option to have the equipment calibrated by the manufacturer or a certified calibration service instead of performing a field check (Section 6.1 footnote 21 of the current version of the protocol) has been removed. This was an oft-used provision of the protocol, as (1) oftentimes the equipment is due for factory calibration anyway at the end of a reporting period, and (2) some installations simply do not have sufficient options for an in-field check for calibration accuracy. CODA strongly encourages ARB to keep this option in the protocol.

#### Section 6.2(b) – Calibration Requirements after a Failed Field Check

There are some flow meter models, such as the Sage Prime flow meters, which have a built-in function to test the drift being experienced. According to the Sage Metering Inc., this test can be used as an indicator of corrosion build-up, poor sensor alignment, or other issues that do not necessarily mean that the equipment itself is out of calibration. Such a test is intended to work as a troubleshooting technique to be performed after the meter is cleaned and/or adjusted further to confirm that the issue was resolved and the as-found condition returned to within a 5% accuracy.

In many cases a simple cleaning of the meter and re-test will show that it is within calibration. In the case of Sage meters the manufacturer states that the meter is within calibration if it is within 5 milliwatts of the calibration milliwatt reading. In fact the operations manual states that a result between 6 and 10 milliwatts of the calibration milliwatt reading also indicates that the meter is still in calibration but influenced by another remediable factor present at the installation site. It would seem perverse to require an OPO to have to send their meter back to SAGE – a process which can take up to 6 weeks – for a calibration check if the meter is a few milliwatts out and the problem could have been resolved through simple cleaning as prescribed in the operations manual.

Upon resolution of such an external factor found during a field check, while application of an adjustment as prescribed in Section 6.2(c) is appropriate, sending the flow meter back to the manufacturer for calibration would be an unnecessary burden on the OPO resulting in several weeks without the flow meter in place. The Climate Action Reserve has come to this conclusion and the language provided in the Errata and Clarifications of January 21, 2014 identifies this important correction that CODA encourages ARB to also adopt.

#### Section 6.2(d) – Portable Instrument Calibration:

Whereas the language in Section 6.2(d) requires a calibration during each reporting period, this is not necessarily the most appropriate way to line up such an event. There are often third-party service providers who use their own portable devices for a quarterly field checks. They may own several units of identical equipment but they will use whichever device is available when called to do the onsite work. Such equipment may have been recently and appropriately calibrated yet may predate the reporting period. This particular device might not be used again and hence might not be recalibrated during the reporting period.

As such, requiring the equipment to be calibrated within the project’s reporting period causes complexities that cannot be resolved when working with third-party service providers who are properly maintaining their equipment and presenting records demonstrating as much. The reporting periods

would create a calibration scheduling requirement that would differ for every client, without resulting in improved data assurance. CODA recommends that language in Section 6.2(d) require that the portable instrument be *used no longer than a year from its last manufacturer calibration*, without specifying that the calibration date be within the reporting period.

Section 1.2(a)(18) and Table A.3 – Enclosed Vessel:

The definition provided for Enclosed Vessel differs from the literal interpretation of Table A.3. As ARB staff are aware, this table was previously contained within the Climate Action Reserve’s Livestock Project Protocol Version 2.2, released in November 2009. Note that the Climate Action Reserve adopted this table from the U.S. EPA Climate Leaders’ protocol<sup>1</sup>. The long-standing interpretation amongst developers, verifiers and the Climate Action Registry has been such that the covering of an anaerobic lagoon with a cover would have greater potential for gas leakage than an enclosed vessel specifically designed and constructed for use as an anaerobic digester. The covered lagoons therefore warrant the use of a lower biogas collection efficiency (BCE). Under this differentiation of digester system types, the use of the BCE table has been fairly straightforward and generally uncontested for years throughout hundreds of verifications.

As CODA members understand it, ARB has determined to interpret the table differently requiring that that the cover type on anaerobic digesters should ultimately determine the Biogas Collection Efficiency rather than the digester type, and that the cover type is essentially either “rigid/dual membrane” or “not rigid”. More specifically, the difference between an “enclosed vessel” and a “bank-to-bank” cover is being approved fully determined by the following definition: “Enclosed vessel means a digester that is topped by a hardened or dual membrane flexible cover that provides a complete enclosure to the digester itself.” Any cover that does not meet this criterion will be considered a bank-to-bank cover.

The original table developed by Climate Leaders, shown below, was created using information sourced from technical papers to arrive at a range of Methane Collection Efficiencies based on the digester system type. In the original table, “Cover Type” is a secondary descriptor used only to distinguish between lagoons that are partially covered (modular) or fully covered (bank-to-bank). The original research found that two main categories of system types exist in regards to BCE: (1) those designed and constructed specifically for use as a digester (complete mix, fixed film or plug-flow) or (2) an anaerobic lagoon initially designed for liquid manure storage that was capped with an impermeable cover and thereby converted to a biogas collection system. Each of the cited sources in the original table reference studies of lagoon covers’ effectiveness of collecting gases and odors, and with this information the authors converged upon the BCE range of 95 to 100% for anaerobic lagoons covered from “bank to bank”. In regards to purposefully-designed digesters that are not covered lagoons, the original research did not result in any differentiation by type, as evidenced by the single entry in the table, and so the *cover type* listed here as “enclosed vessel” seems to imply that any differentiation is not applicable because each of these vessels, by design, are enclosed. In other words, complete mix digesters, fixed film digesters, and plug-flow digesters are conventionally considered to be enclosed vessels by default, regardless of whether they contain a dual-membrane cover, flexible or rigid cover. Furthermore, the sources cited in the Climate Leaders table do not suggest that cover rigidity is a significant factor affecting gas leakage from purpose-engineered in-vessel digesters, nor are we aware of any scientific studies that have concluded otherwise.

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<sup>1</sup> U.S. EPA Climate Leaders, Offset Project Methodology for Managing Manure and Biogas Recovery Systems, August 2008.

**Table IIf. Digester Collection Efficiencies**

System Type	Cover Type	Percent of National Population	Methane Collection Efficiency	Description
Covered anaerobic lagoon (biogas capture)	Bank to bank, impermeable	<1%	95 to 100%	Methane reductions from biogas capture and utilization/flaring. Discounted from 100% due to cover leaks.
	Modular, impermeable	<1%	50 to 90%	Methane reductions from biogas capture and utilization/flaring. Percent methane reduction based on % surface area covered.
Complete mix, fixed film, or plug-flow digester	Enclosed vessel	<1%	98 to 100% (reduction from 100% due to system leaks)	Methane reductions from vessel containment of biogas and post-digester biogas combustion.

Source: Derived from data on cover effects as presented in Sommer et al., 2000, Bicudo et al., 2004, Nicolai et al., 2004, and Emission Solutions et al., 2000.

CODA urges ARB to reconsider its interpretation on the use of this table to come into line with the way the research was carried out – if ARB is aware of specific research which contradicts the current understanding then CODA asks that the research be made available. The reclassification of the information in this BCE table to be primarily based upon cover type rather than system type seems to be unfounded and clearly misinterprets the original source of the information.

Appendix B - Data Substitution:

CODA asks for clarification on the following aspects to the Data Substitution Methodology:

1. Appendix B(c): we are unsure whether this would deem a project unable to generate emissions reductions if one device is inoperable but all other devices are operable. This also seems to contradict 6.1(d)(1). For example, if the thermocouple for a flare was not working an OPO/APD would typically assign a BDE of 0% to any gas flowing through the flare during the period of inoperability but any gas flowing through other devices would be credited as normal, provided operability could be demonstrated. CODA suggests removing the last part of Appendix B(c) so that it reads: *“No data substitution is permissible for data gaps resulting from inoperable equipment that monitors the proper functioning of destruction devices”*.
2. Table B.1: In cases where data are missing for greater than one week the current approach specified in Table B.1. would not enable any credits to be generated and appears to contradict 6.1(d)(1). For example, take a flow meter which has to be sent back to the manufacturer for repair and which normally measures gas to a generator: It should be possible to estimate gas sent to the generator by using the kWh output of the generator for the period the flow meter is missing and the 99% confidence limit for methane concentration. Table B.1. appears to require any gas estimated as sent to the generator to be given a 0% BDE. Appendix B(c) already requires that no destruction can be credited if the device is inoperable so there does not seem to be a reason as to why the device should be given a BDE of 0%. CODA suggests the wording is modified to: *“To replace the missing data, use the 99% lower or upper confidence limit of all available valid data for the reporting period, whichever results in greater conservativeness”*.

Finally, CODA would like to comment on one aspect of the Proposed Regulation Order, Article 5, Section 95973(b). Greater clarity in the Regulation can help ODS and Livestock projects avoid uncertainty

regarding future invalidations. Our concern is that minor indiscretions could cause an invalidation which eliminate offsets from a project's entire reporting period rather than limiting it to the specific period of the violation. CODA suggests the following changes, **in bold**, to Section 95973:

(b) Local, Regional, and National Regulatory and Environmental Impact Assessment Requirements. An Offset Project Operator or Authorized Project Designee must fulfill all local, regional, and national requirements on environmental impact assessments that apply based on the offset project location. In addition, an offset project must also fulfill all local, regional, and national environmental and health and safety laws and regulations that apply based on the offset project location and that directly apply to the offset project, including as specified in a Compliance Offset Protocol. The project is out of regulatory compliance if the project activities were subject to enforcement action by a regulatory oversight body during the Reporting Period **as a result of the operation of the project**. An offset project is not eligible to receive ARB or registry offset credits for GHG reductions or GHG removal enhancements for the entire ~~Reporting Period~~ **if period in which** the offset project is not in compliance with regulatory requirements directly applicable to, **and as a result of**, the offset project during the Reporting Period.

CODA would be pleased to schedule a call to discuss the above comments and the likely implications for OPOs/APDs if ARB decides not to address the issues we have identified.

Thank you for your efforts to continue to improve this landmark program.

Sincerely,



Nick Facciola, Origin Climate Inc.

CC: Charles Purshouse, Camco International Group, Inc.  
Derek Six, Environmental Credit Corp.