

Tracy Renewable Energy Plan for Manure Data Tracking and Reporting under LCFS

Background and Justification

Tracy Renewable Energy (TRE) produces ethanol fuel from energy beets using biogas produced onsite through anaerobic digestion of greenwaste, manure and crude glycerin.

The manure is collected from local dairies located within 5 miles of TRE and is diverted from anaerobic lagoons used for manure management at the local dairies. ARB has indicated to TRE that TRE can use the percentage of volatile solids (VS) provided by their supplier (OWS) for TRE's provisional fuel pathway if TRE develops a detailed plan to measure, track and report the VS content (on a dry basis) for the manure converted to biogas by TRE.

This document provides TRE's detailed plan to measure, track and report the moisture content and VS content of the manure processed by TRE. This document will be revised and updated as necessary (subject to ARB approval) as TRE begins production and manure data collection.

Manure Dry Matter and VS Content Measurements

TRE will analyze the manure provided by its 3 dairy suppliers once a month, using a well-mixed, one gallon sample provided by each dairy from its anaerobic lagoon. The samples will be transported to TRE by the same trucks that transport the feedstock manure to TRE.

TRE will analyze the moisture content and VS content of each sample following the protocols outlined in the publication "Recommended Methods of Manure Analysis", written at the University of Wisconsin-Madison and provided separately to ARB. All of the methods, results and pertinent information will be recorded in an Excel spreadsheet dedicated to tracking TRE's manure data.

TRE will take 5 gram samples of manure from each gallon of manure provided to TRE and assign it a sample number. Each sample will be heated in an oven at 50°C for 16 hours to vaporize the water content and determine the manure dry weight. TRE will record the date, time, source dairy, sample number, manure test method and pre-oven and post-oven manure weights and the calculated moisture content in the Excel spreadsheet as one row entry in the "Moisture Content" tab.

Next, the dried samples will be heated to approximately 550°C for 6 hours to vaporize the volatile components and determine the total VS content. TRE will record the date, time, source dairy, sample number, manure test method and pre-oven and post-oven manure weights and the calculated VS content in the Excel spreadsheet as one row entry in the "VS Content" tab. Samples will be stored for 6 months and then disposed.

TRE will calculate the weighted average manure parameters for the manure processed on a monthly basis, based on the monthly samples from each of the 3 dairies and truckloads of manure supplied by each dairy. The weighted average data will be calculated and tracked in a separate tab in the spreadsheet called "Weighted Average Data".

TRE will provide the manure data spreadsheet to ARB along with TRE's quarterly reports. The data will demonstrate to ARB that TRE is using conservative manure parameters that are consistent with TRE's LCFS fuel pathway.