

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Introduction

#### **2019 Water Resource Recovery Facilities Co-Digestion System Survey**

Thank you for your continued participation in EPA's AD data collection project!

The survey has been streamlined making it even easier to submit your data. Two years of operating data (2017 and 2018) will be collected this year. Completion of this survey is voluntary.

We hope the reports EPA has produced based on this data are useful to you and the rest of the biogas industry. As with previous years, the data collected through this survey will also be aggregated prior to its release. Thank you for taking the time to provide survey data. Your input is greatly appreciated.

The goals of this project have not changed. EPA is collecting the data requested in this survey to quantify and track the amount of food waste processed and available processing capacity in the United States. The survey also requests information on types of feedstocks processed, the sources of feedstocks and the end uses of anaerobic digestion products. This year (2019) is the third year of the project.

Please [contact us](#) with any questions about the survey or suggestions for improvement.

*The public reporting and record keeping burden for this collection of information is estimated to average 30 minutes per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.*

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Facility and Contact Information

To allow interested parties to verify the completeness of EPA's research, general information (facility name, city, state, and operational status) will be included in the report of findings (2020). All annual reports will be posted on EPA's anaerobic digestion website.

**\* 1. Facility Name**

**Project/Facility Name**

**Street Address**

**City/Town**

**State**

**ZIP/Postal Code**

**Phone Number**

**\* 2. Contact person for facility operations:**

**Name**

**Title**

**Email Address**

**Phone Number**

3. If you do not wish to have your facility's general information (facility name, city, and state) included in future EPA reports, please check the box below.

Please do not include the information provided on this page in future publications summarizing the data collected via this survey.

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Organic Waste Processing

This survey is designed to gather data on Water Resource Recovery Facilities (WRRFs) with co-digestion systems that accept and process organic wastes from offsite sources.

\* 4. In addition to wastewater solids, are other organic wastes accepted and processed in your co-digestion system?

Yes

No

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Co-digestion of Other Organic Wastes

\* 5. If other organic wastes are not being co-digested in your system at this time: (1) is your facility planning for or interested in co-digesting other organic wastes in the future?; **OR** (2) did your facility previously co-digest other organic wastes?

Yes

No

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Facility Operating Status

Please identify the operating status of the co-digestion system at your facility.

**\* 6. Facility operating status:**

- Planning stage; Design stage; Permitting Process
- Co-digestion system under construction
- Operational
- Temporary shut-down
- Ceased operation
- Other (please specify)

Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

Planning Stage; Design Stage; Permitting Process

\* 7. What is the targeted date for your co-digestion system to become operational (MM/DD/YYYY)?

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Co-digestion system under construction

\* 8. What is the targeted date for your co-digestion system to become operational (MM/DD/YYYY)?

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Operational

9. What date did your co-digestion system become operational (MM/DD/YYYY)?



## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Temporary Shut-down

10. What date did your co-digestion system temporarily shut-down (MM/DD/YYYY)?

11. What is the targeted date for your co-digestion system to re-start operations (MM/DD/YYYY)?

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Ceased Operation

12. What date did your co-digestion system cease operations (MM/DD/YYYY)?

13. Please state the reason your co-digestion system ceased operations:

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### WRRF Digestion Capacity

Instructions: It is assumed that the primary feedstock treated in the digester(s) at your facility is solids from your wastewater collection system. The following questions are designed to provide information about the capacity of your facility for co-digesting feedstocks other than wastewater solids. EPA is trying to determine how much outside feedstock could potentially be processed at your WRRF. If you had an unlimited amount of feedstock available to you – how much could you process in a year?

Later questions in this survey will ask how much food waste and non-food waste were processed or co-digested in your digesters in 2017 and 2018. The combined amount of food waste and non-food waste processed in any given year should be less than or equal to the available capacity reported below.

\* 14. Please identify your facility's available capacity to accept feedstocks from offsite sources.

\* 15. Please indicate if this available capacity for processing feedstocks (other than wastewater solids from your collection system) is provided in gallons per year or tons per year.

- Gallons per year  
 Tons per year

16. Please briefly describe how you calculated the available capacity to accept feedstocks from offsite sources.

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### WRRF Co-Digestion Capacity Months of Operation

\* 17. Please identify the number of months during the year 2017 that your co-digestion system received and processed feedstocks (other than wastewater solids from your collection system) from offsite sources.

\* 18. Please identify the number of months during the year 2018 that your co-digestion system received and processed feedstocks (other than wastewater solids from your collection system) from offsite sources.

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Handling of Off-site Feedstocks

\* 19. Please indicate how feedstocks from offsite sources are handled upon receipt at your facility.

- Fed into a separate digester
- Combined with wastewater solids
- Other (please specify)

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Food-Based Feedstocks

The following questions focus on the amount of food-based feedstocks or food waste that is processed in your digester.

Food-based feedstocks include, but are not limited to:

- Fruit/vegetative wastes
- Food processing industry waste
- Beverage processing industry waste
- Food service waste, pre & post-consumer
- Retail food waste
- Source-separated commercial, institutional or residential organic wastes
- Fats, oils and greases (FOG)
- Slaughterhouse wastes

\* 20. Does your facility accept/process food-based feedstocks?

- Yes
- No

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Amount of Food-Based Feedstocks Co-Digested in 2017 & 2018

The food-based feedstocks (food waste) received/processed at your facility may be in liquid form, solid form or both. In the spaces provided below, please provide the total volume of the liquids received/processed in gallons and the total weight of the solids in tons for the years specified. If you received/processed all food-based feedstocks in only one form, indicate "0" in the other space.

- \* 21. What was the total volume of food-based materials received/processed in liquid form at your facility during the 2017 calendar year? Please express your answer in gallons.

- \* 22. What was the total weight of food-based materials received/processed in solid form at your facility during the 2017 calendar year? Please express your answer in tons.

- \* 23. What was the total volume of food-based materials received/processed in liquid form at your facility during the 2018 calendar year? Please express your answer in gallons.

- \* 24. What was the total weight of food-based materials received/processed in solid form at your facility during the 2018 calendar year? Please express your answer in tons.

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Non-Food-Based Feedstocks

The following questions focus on the amount of non-food-based feedstocks that are processed in your digester.

Non-food-based feedstocks include, but are not limited to:

- Mixed yard waste
- Crop residues
- Manures
- Wastewater solids (sludge)
- Septage
- Litters
- De-icing fluid
- Lab (or Pharma) wastes
- Paper mill wastes
- Crude glycerin

\* 25. Does your facility accept/process non-food-based feedstocks?

- Yes
- No



## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Amount of Non-Food-Based Feedstocks Processed in 2017 & 2018

The non-food-based feedstocks received at your facility may be in liquid form, solid form or both. In the spaces provided below, please provide the total volume of the liquids received/processed in gallons and the total weight of the solids received/processed in tons. If you received/processed all non-food-based feedstocks in only one form, indicate "0" in the other space.

- \* 26. What was the total volume of non-food-based materials received/processed in liquid form at your facility during the 2017 calendar year? Please express your answer in gallons.

- \* 27. What was the total weight of non-food-based materials received/processed in solid form at your facility during the 2017 calendar year? Please express your answer in tons.

- \* 28. What was the total volume of non-food-based materials received/processed in liquid form at your facility during the 2018 calendar year? Please express your answer in gallons.

- \* 29. What was the total weight of non-food-based materials received/processed in solid form at your facility during the 2018 calendar year? Please express your answer in tons.

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Types of Feedstocks Processed

\* 30. Have the types of feedstocks received/processed in your digester changed since you last responded to this survey?

- Yes
- No
- This is my first response to this survey.

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Types of Feedstocks Processed

\* 31. Please identify the specific types of feedstocks that are received at/processed in your digester. Check all that apply.

- Beverage processing industry waste
- Crop residues
- Crude glycerin
- De-icing fluid
- Fats, oils and greases (FOG)
- Food processing industry waste
- Food service waste, pre & post-consumer
- Fruit/vegetative wastes
- Lab (or Pharma) wastes
- Landfill leachate
- Manures
- Mixed yard waste
- Paper mill wastes
- Retail food waste
- Septage
- Slaughterhouse wastes
- Source-separated commercial, institutional or residential organic wastes
- Wastewater solids (sludge) from other WRRFs
- Other (please specify)

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Tipping Fees

The following questions focus on fees charged for accepting and processing feedstocks at anaerobic digestion facilities (AKA Tipping Fees).

\* 32. Do you collect tipping fees?

- Yes
- No

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Tipping Fees

\* 33. Are you willing share information about the tipping fees you collect?

Yes

No

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Tipping Fee Revenue

This data is being gathered to analyze revenue potential for the biogas industry. An approximation of revenue collected is acceptable. If your facility was not operational during any of the years identified below, please indicate "N/A" or "0".

34. How much revenue did your facility collect in tipping fees in 2017?

35. How much revenue did your facility collect in tipping fees in 2018?

36. If you would like to provide any other relevant or important information related to tipping fees, please do so below.

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Feedstock Sources

37. Have the sources of the feedstocks received/processed in your digester changed since you last responded to this survey?

- Yes
- No
- This is my first response to this survey.

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Feedstock Sources

\* 38. Please identify the sources of the feedstocks that are received and processed in the co-digestion system at your facility. Check all that apply.

- Airports
- Biodiesel production
- Corporate complex
- Farmers markets
- Food/beverage processors
- Fruit/vegetable farms
- Grocery stores/supermarkets
- Healthcare
- Hospitality
- Industrial
- Laboratories/pharmaceutical companies
- Livestock farms
- Municipal/residential
- Prisons
- Restaurants and food service
- Retail stores
- Schools
- Sports and entertainment venues
- Other wastewater treatment plants
- Other (please specify)



## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Pre-Processing Information

39. Are pre-processing or de-packaging activities conducted on your feedstocks before they are added to your digester?

Yes

No

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Pre-Processing Information

40. Do pre-processing / de-packaging activities occur offsite or at your facility?

- Offsite
- Onsite (at your facility)
- Both

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Pre-Processing Information

41. Please identify the pre-packaging or de-packaging activities that are conducted at your facility. Check all that apply.

- Manual or mechanized de-packaging
- Screening for debris or sorting
- Grinding and/or maceration
- Third party processing
- Shredding
- Heating
- pH adjustment
- Centrifugal separation
- Liquid/solid separation

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Digester Operating Parameters

42. Please identify the operating temperature range for your digester.

- Mesophilic
- Thermophilic
- Unheated/Ambient

43. Please identify the design that best fits your design type/configuration:

- Continuously Stirred Tank Reactor (CSTR)
- Plug-flow
- Covered Lagoon
- Fixed film
- Suspended Media
- Percolating Bed
- Upflow Anaerobic Sludge Blanket (UASB)
- Anaerobic Sequencing Batch Reactor (ASBR)
- Membrane Bioreactor (MBR)
- Hybrid/Multi-stage
- Other (please specify)

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Product End-Uses - Biogas Volume

It is recognized that the metrics that facilities use to measure biogas production may vary. EPA does not expect you to convert your measurements. Please provide the average biogas production volume at your facility in one of the units identified below.

Standard Cubic Foot (SCF)

#### 44. For calendar year 2017

|                       |                      |
|-----------------------|----------------------|
| SCF per minute (SCFM) | <input type="text"/> |
| SCF per day (SCFD)    | <input type="text"/> |
| SCF per year (SCFY)   | <input type="text"/> |
| Other                 | <input type="text"/> |

#### 45. For calendar year 2018

|                       |                      |
|-----------------------|----------------------|
| SCF per minute (SCFM) | <input type="text"/> |
| SCF per day (SCFD)    | <input type="text"/> |
| SCF per year (SCFY)   | <input type="text"/> |
| Other                 | <input type="text"/> |

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Product End-Uses - Biogas Location

\* 46. Is the biogas produced at this facility used onsite, sold, or flared? (check all that apply)

Used onsite

Sold

Flared

Other (please specify)

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Product End-Uses - Biogas Utilization

\* 47. Please identify how the biogas produced in your digesters is used. It could be used onsite by the WRRF or offsite by a purchaser. Check all that apply:

- Produce mechanical power
- Produce heat and electricity (CHP)
- Produce electricity (including net metering)
- Produce electricity (sold to grid)
- Fuel boilers and furnaces to heat digesters
- Fuel boilers and furnaces to heat other spaces
- Compressed to vehicle fuels: used for company fleet/personal vehicles
- Renewable natural gas (processed in order to inject to pipeline)
- Other (please specify)

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Product End-Uses - Biogas Utilization

\* 48. Are you able to utilize all of the biogas produced?

Yes

No



## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Product End-Uses - Biogas Excess

49. Do you flare the excess biogas?

Yes

No

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Product End-Uses - Biogas Purification

\* 50. Do you have a gas cleaning system?

Yes

No

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Product End-Uses - Biogas Purification Details

51. What is removed by your gas cleaning system? (select all that apply)

- Moisture
- Sulfur
- Siloxanes
- Carbon dioxide
- Compressed gas
- Hydrogen sulfide
- Particulates
- OxygenNitrogenVOCs
- Nitrogen
- VOCs
- Other (please specify)

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Product End-Uses - Biosolids

52. Are the post digestion biosolids Class A or Class B?

- Class A
- Class B

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Product End-Uses - Biosolids

53. Do you re-use the post-digestion derived biosolids produced in your co-digestion system? (Select all that apply)

- Yes, de-watered and land applied
- Yes, land applied as-is with no dewatering or drying
- Yes, composted into a reusable or salable product
- Yes, dried into a reusable or salable product (e.g., fertilizer)
- Yes, processed into some other salable product
- No, landfilled
- No, incinerated
- Other (please specify)

54. If any digestate was disposed of in landfills or incinerated in 2017, please specify the amount in tons or gallons (if known):

55. If any digestate was disposed of in landfills or incinerated in 2018, please specify the amount in tons or gallons (if known):

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Digestate Land Application

\* 56. Is the de-watered/dried digestate further treated prior to land application?

Yes

No

Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

Digestate Land Application Further Processing

57. Please indicate what additional processing occurs and why.

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Liquid Digestate

\* 58. How do you manage the liquid digestate you produce? (Select all that apply)

Reused as fertilizer via land application

Recirculated through treatment plant

Other (please specify)



## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Digestate Land Application

\* 59. Is the liquid digestate further treated prior to land application?

Yes

No

Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

Digestate Land Application Further Processing

60. Please indicate what additional processing occurs and why.

## Data Tracking Form for Water Resource Recovery Facilities (WRRFs) Co-Digesting Food-based Materials

### Digestate Nutrient Recovery

61. Do you recover nutrients from your digestate?

- No
- Yes, phosphorous and nitrogen recovery by chemical precipitation (e.g., struvite)
- Other (please specify)

Please click **DONE** to submit your data.