

Full Coverage Bovine Annual Report Cover Sheet

Use this guide to help you complete your Annual Report If you are a Full Coverage bovine operation but do not have cropland, or if your cropland is enrolled under the ILRP and only has manure or chemical fertilizers applied to it.

If you are a Full Coverage bovine operation with cropland, and your cropland either:

1. Is not enrolled under the Irrigated Lands Regulatory Program (ILRP), OR
2. Is enrolled under the ILRP but bovine wastewater is applied to the cropland.

Use the **Full Coverage Bovine AR with Cropland** tool located at R5BovineQuestions@waterboards.ca.gov

If you are a Limited Time Bovine Operation, you may use the **Limited Time Bovine AR** tool located at R5BovineQuestions@waterboards.ca.gov

Please refer to your Notice of Applicability if you are not sure of the classification of your bovine operation (Full Coverage, Limited Time, or Limited Population).

**Full Coverage Bovine Annual Report
General Order No. R5-2017-0058**

Reporting Period: 01/01/ [] to 12/31/ []

BOVINE FACILITY INFORMATION

A. NAME OF BOVINE FACILITY: []

Physical address of bovine facility:

[]	[]	[]	[]
<i>Number and Street</i>	<i>City</i>	<i>County</i>	<i>Zip Code</i>

Street and nearest cross street (if no address): []

Date facility was placed in operation: []

County Assessor Parcel Number(s) for bovine facility: (Multiple parcels **must** be separated by a comma and space)

B. OPERATORS

Operator Name: [] Telephone no.: [] []

[]	[]	[]	[]
<i>Mailing Address Number and Street</i>	<i>City</i>	<i>County</i>	<i>Zip Code</i>

C. OWNERS

Property owner name [] Telephone no.: [] []

[]	[]	[]	[]
<i>Mailing Address Number and Street</i>	<i>City</i>	<i>County</i>	<i>Zip Code</i>

Which party is responsible for paying permit fees? []

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AVAILABLE NUTRIENTS

A. HERD INFORMATION (use pages 4 & 5 to calculate Animal Units)

	Beef Cattle	Dry Cows	Bred Heifers (2 yr. and older)	Heifers (1 yr. to breeding)	Calves (3 mo.-1 yr.)	Calves (less than 3 mo.)
Number open confinement						
Number under roof						
Maximum number						
Average number						
Average Live Weight (lbs)						
Animal Unit (AU) Multiplication Factor	1.2	Breed Dependent	0.73	0.73	0.35	0.21
Number open confinement						
Number under roof						
Maximum number						
Average number						

* Dry Cow Animal Unit multiplication factor is based of majority breed. Jersey=1.0, Guernsey=1.2, and Holstein=1.4

Predominant breed: []

B. MANURE GENERATED (use pages 6-9 to calculate)

Total manure excreted by the herd: [] tons per reporting period

Total nitrogen from manure: [] lbs per reporting period After ammonia losses (30% loss applied): [] lbs per reporting period

Total phosphorus from manure: [] lbs per reporting period

Total potassium from manure: [] lbs per reporting period for beef Cattle and Dry Cows

https://apps.co.merced.ca.us/dwnm/documents/AR_Computations_Documentation.pdf

<http://www.iowabeefcenter.org/CattlemenConference/feedlotmanuremanagement.pdf>

Animal Units (AU) Multiplication Factor

The following equations can be used to calculate **Animal Units**. The equations can be filled out using the information you provide in the **Bovine Annual Report** section **A. HERD INFORMATION**.

Beef Cattle

$$\underline{\hspace{2cm}} \text{ Number open confinement Beef Cattle} \times 1.2 \text{ Animal Units} = \underline{\hspace{2cm}} \text{ Animal Units}$$

$$\underline{\hspace{2cm}} \text{ Number under roof Beef Cattle} \times 1.2 \text{ Animal Units} = \underline{\hspace{2cm}} \text{ Animal Units}$$

$$\underline{\hspace{2cm}} \text{ Maximum number Beef Cattle} \times 1.2 \text{ Animal Units} = \underline{\hspace{2cm}} \text{ Animal Units}$$

$$\underline{\hspace{2cm}} \text{ Average number Beef Cattle} \times 1.2 \text{ Animal Units} = \underline{\hspace{2cm}} \text{ Animal Units}$$

Dry Cows

Dry Cow Animal Unit multiplication is based on majority breed. Enter the correct multiplication factor for *X* to complete the equation below

Multiplication Factors: Jersey = 1.0, Guernsey = 1.2, Holsteins = 1.4

$$\underline{\hspace{2cm}} \text{ Number open confinement Dry Cows} \times X \text{ Animal Units} = \underline{\hspace{2cm}} \text{ Animal Units}$$

$$\underline{\hspace{2cm}} \text{ Number under roof Dry Cows} \times X \text{ Animal Units} = \underline{\hspace{2cm}} \text{ Animal Units}$$

$$\underline{\hspace{2cm}} \text{ Maximum number Dry Cows} \times X \text{ Animal Units} = \underline{\hspace{2cm}} \text{ Animal Units}$$

$$\underline{\hspace{2cm}} \text{ Average number Dry Cows} \times X \text{ Animal Units} = \underline{\hspace{2cm}} \text{ Animal Units}$$

Bred Heifers (2 yr. and older)

$$\underline{\hspace{2cm}} \text{ Number open confinement Bred Heifers (2yr. and older)} \times 0.73 \text{ Animal Units} = \underline{\hspace{2cm}} \text{ Animal Units}$$

$$\underline{\hspace{2cm}} \text{ Number under roof Bred Heifers (2yr. and older)} \times 0.73 \text{ Animal Units} = \underline{\hspace{2cm}} \text{ Animal Units}$$

$$\underline{\hspace{2cm}} \text{ Maximum number Bred Heifers (2yr. and older)} \times 0.73 \text{ Animal Units} = \underline{\hspace{2cm}} \text{ Animal Units}$$

$$\underline{\hspace{2cm}} \text{ Average number Bred Heifers (2yr. and older)} \times 0.73 \text{ Animal Units} = \underline{\hspace{2cm}} \text{ Animal Units}$$

Heifers (1 yr. to breeding)

 Number open confinement Bred Heifers (1yr. –Breeding) × 0.73 Animal Units = _____ Animal Units

 Number under roof Bred Heifers (1yr. –Breeding) × 0.73 Animal Units = _____ Animal Units

 Maximum number Bred Heifers (1yr. –Breeding) × 0.73 Animal Units = _____ Animal Units

 Average number Bred Heifers (1yr. –Breeding) × 0.73 Animal Units = _____ Animal Units

Calves (3 mo. – 1 yr.)

 Number open confinement Calves (3mo. –1yr.) × 0.35 Animal Units = _____ Animal Units

 Number under roof Calves (3mo. –1yr.) × 0.35 Animal Units = _____ Animal Units

 Maximum number Calves (3mo. –1yr.) × 0.35 Animal Units = _____ Animal Units

 Average number Calves (3mo. –1yr.) × 0.35 Animal Units = _____ Animal Units

Calves (less than 3 mo.)

 Number open confinement Calves (less than 3mo.) × 0.21 Animal Units = _____ Animal Units

 Number under roof Calves (less than 3mo.) × 0.21 Animal Units = _____ Animal Units

 Maximum number Calves (less than 3mo.) × 0.21 Animal Units = _____ Animal Units

 Average number Calves (less than 3mo.) × 0.21 Animal Units = _____ Animal Units

Total manure excreted by the herd

The following equations can be used to calculate **Total manure excreted by the herd** in tons per reporting period. The equations can be filled out using the information you provide in the **Bovine Annual Report** section **A. HERD INFORMATION**.

1. *Average number of Beef Cattle* × 66 = _____ *lbs. manure/day*

2.
$$\left(\left(\left(\left(\frac{\text{Average Live weight (lbs) of Dry Cow}}{2.205} \right) \times 0.022 \right) + 21.844 \right) \times 2.205 \right) \times \text{Average number of Dry Cows} = \text{_____ lbs. manure/day}$$

3.
$$\left(\left(\left(\left(\frac{\text{Average Live weight (lbs) of Bred Heifers (2yr. and older)}}{2.205} \right) \times 0.022 \right) + 21.844 \right) \times 2.205 \right) \times \text{Average number of Bred Heifers (2yr. and older)} = \text{_____ lbs. manure/day}$$

4.
$$\left(\left(\left(\left(\frac{\text{Average Live weight (lbs) of Bred Heifers (1yr. -breeding)}}{2.205} \right) \times 0.022 \right) + 21.844 \right) \times 2.205 \right) \times \text{Average number of Bred Heifers (1yr. -breeding)} = \text{_____ lbs. manure/day}$$

5.
$$\left(\text{Average number of Calves (3mo. -1yr.)} + \text{Average number of Calves (less than 3 mo.)} \right) \times 0.0099 = \text{_____ lbs. manure/day}$$

Once you have lbs. manure/day for the categories of animals you have on site, enter them into the following equation:

$$(1. + 2. + 3. + 4. + 5.) \times \left(\frac{365 \text{ days}}{2000 \text{ lbs.}} \right) = \text{_____ Tons per reporting period}$$

Enter the value you receive for **tons per reporting period** into the **Bovine Annual Report** section **B. Manure Generated** column **Total manure excreted by the herd**.

Total nitrogen from manure

The following equations can be used to calculate **Total nitrogen from manure** in lbs. per reporting period. The equations can be filled out using the information you provide in the **Bovine Annual Report** section **A. HERD INFORMATION**.

1. *Average number of Beef Cattle* × 0.48 = *lbs. nitrogen/day*

2. *Average number of Dry Cows* × 0.50 = *lbs. nitrogen/day*

3. (*Average number of Heifers (2yr. and older)* + *Average number of Heifers (1yr. -breeding)*) × 0.26 = *lbs. nitrogen/day*

4. (*Average number of Calves (3mo. -1yr.)* + *Average number of Calves (Less than 3mo.)*) × 0.14 = *lbs. nitrogen/day*

Once you have lbs. nitrogen/day for the categories of animals you have on site, enter them into the following equation:

(1. +2. +3. +4.) × 365 *days* = *lbs. nitrogen/reporting period*

Enter the value you receive for **lbs. nitrogen per reporting period** into the **Total nitrogen from manure:** in the **Bovine Annual Report** section **B. Manure Generated** column **Total nitrogen from manure:.**

Total phosphorus from manure

The following equations can be used to calculate **Total phosphorus from manure** in lbs. per reporting period. The equations can be filled out using the information you provide in the **Bovine Annual Report** section **A. HERD INFORMATION**.

1. *Average number of Beef Cattle* $\times 0.085 =$ *lbs.phosphorus/day*

2. *Average number of Dry Cows* $\times 0.066 =$ *lbs.phosphorus/day*

3. $\left(\text{ *Average number of Heifers (2yr. and older)*} + \text{ *Average number of Heifers (1yr. -breeding)*} \right) \times 0.044 =$ *lbs.phosphorus/day*

4. $\left(\text{ *Average number of Calves (3mo. -1yr.)*} + \text{ *Average number of Calves (Less than 3mo.)*} \right) \times 0.0099 =$ *lbs.phosphorus/day*

Once you have lbs. phosphorus/day for the categories of animals you have on site, enter them into the following equation:

$$(1. + 2. + 3. + 4.) \times 365 \text{ days} = \text{ *lbs.phosphorus/reporting period*}$$

Enter the value you receive for **lbs. phosphorus per reporting period** into the **Total phosphorus from manure:** in the **Bovine Annual Report** section **B. Manure Generated** column **Total phosphorus from manure:.**

Total potassium from manure

The following equations can be used to calculate **Total potassium from manure** in lbs. per reporting period. The equations can be filled out using the information you provide in the **Bovine Annual Report** section **A. HERD INFORMATION**.

1. *Average number of Beef Cattle* $\times 0.30 =$ *lbs. potassium/day*

2. *Average number of Dry Cows* $\times 0.33 =$ *lbs. potassium/day*

Due to limited information, total potassium for heifers (2yr.and older), heifers (1yr.-breeding), calves (3mo.to 1yr.), and calves (Less than 3mo.) are not required.

Once you have lbs. potassium/day for the categories of animals you have on site, enter them into the following equation:

$(1. + 2.) \times 365 \text{ days} =$ *lbs. potassium/reporting period*

Enter the value you receive for **lbs. potassium per reporting period** into the **Total potassium from manure:** in the **Bovine Annual Report** section **B. Manure Generated** column **Total potassium from manure:.**

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C. NUTRIENT EXPORTS

Total manure exported: [] tons per reporting period (1 reporting period = 1 year)

How was the tonnage of exported manure determined?

[]

If all of the manure was **not** exported. What was done with the non-exported manure?

[]

Was wastewater (liquid manure) exported from your property?

- Yes (see statement below)
- No

Each time wastewater (liquid manure) is exported from the facility a Wastewater Tracking Manifest (Attachment D) needs to be completed in full and attached to this Annual Report. Attachment D is included as part of this Excel document in the tab named Attachment D.

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RECORD KEEPING REQUIREMENTS

A. DISCHARGE

Did a manure or wastewater discharge from the production area occur?

- Yes
- No

If **Yes**, complete the following:

- 1. Date and time the discharge started: []
- 2. Date and time the discharge ended: []
- 3. Estimated discharge flow: []
- 4. How was discharge flow measured: []
- 5. Estimated volume of discharge: []
- 6. How was volume measured: []
- 7. Location of discharge: []
- 8. Attach a map showing the location of the discharge and sample locations
- 9. Rationale for sample locations:

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B. MORTALITY MANAGEMENT

Indicate how mortality is handled:

- Rendering Service, Indicate name of company used: []
- Other

If Other, provide a detailed description of the facility's mortality management practices:

C. MECHANICAL BACKFLOW

Are there any mechanical backflow prevention devices installed at this facility?

- Yes
- No

When was the backflow prevention device last tested? []

Was a deficiency detected?

- Yes
- No

If Yes, describe the corrective actions taken below

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Annual Report Attachment Checklist

A. REQUIRED ATTACHMENTS - EVAPORATION POND MONITORING FOR FIRST ANNUAL REPORT

Only required when submitting the first Annual Report for the facility

1. Evaporation Pond Samples

Attachment A (tab below) needs to be filled out and submitted to the Water Board with your first annual report. Collect a sample following the first precipitation event that creates a volume of wastewater in an evaporation pond capable of producing a representative sample. The following needs to be provided:

- Tabulated Wastewater Sampling Data (Attachment A)
- Chain of Custody
- Sampling Results

2. If the facility exports wastewater a written agreement with each third party that receives wastewater from bovine operation:

- Wastewater written agreement (Attachment D)

B. ANNUALLY REQUIRED ATTACHMENTS

- Manure/ Wastewater tracking manifests (Attachment D)
- Solid Manure Sample Results (nitrogen and nutrient analysis) (Attachment C)
*If manure is exported **once a year**, one manure sample from each source (corral, separator, etc.) need to be analyzed*
*If manure is exported **two times or more** during a year, two of the exports from each source (corral, separator, etc.) needs to be analyzed*
- Lab Sheets and chain of custody forms for domestic and agricultural wells (each year for 2 years then once every 5 years)
- New or Revised wastewater written agreements

C. BIENNIALY (EVERY 2 YEARS) REQUIRED ATTACHMENTS

- Solid Manure Sample Results (mineral analysis) (Attachment B)
One separate sample for each source of manure (corral, separator, etc.)

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CERTIFICATION

A. OWNER AND/OR OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry and those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

[]

SIGNATURE OF OWNER OF FACILITY

[]

SIGNATURE OF OPERATOR OF FACILITY

[]

PRINT OR TYPE NAME

[]

PRINT OR TYPE NAME

[]

DATE

[]

DATE

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ATTACHMENT A - FIRST YEAR TABULATED ANALYTICAL DATA

Dischargers who do not land apply wastewater are required to conduct **one-time monitoring** of corral runoff retained in ponds for the constituents detailed in the table below.

This **one-time monitoring** must occur following the **first precipitation event** that creates a volume of wastewater in the pond capable of producing a representative sample. If this requirement has been met in a previous year, it does not need to be repeated.

Location Sampled:

Date Sampled:

Parameters	Value	DL	Date Analyzed
nitrate-nitrogen			
ammonia-nitrogen			
total Kjeldahl nitrogen			
total phosphorus			
total potassium			
total dissolved solids			
calcium			
magnesium			
sodium			
potassium			
bicarbonate			
carbonate			
sulfate			
chloride			

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ATTACHMENT B - SOLID MANURE SAMPLE RESULTS

This attachment needs to be completed **every other year**

Solid Manure Sample Number:

Location Sampled (Corral, Separator, etc.):

Date Sampled: Moisture percentage:

	Calcium (mg/kg)	Magnesium (mg/kg)	Sodium (mg/kg)	Potassium (mg/kg)	Chloride (mg/kg)
Value	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
DL	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Date Analyzed	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Solid Manure Sample Number:

Location Sampled (Corral, Separator, etc.):

Date Sampled: Moisture percentage:

	Calcium (mg/kg)	Magnesium (mg/kg)	Sodium (mg/kg)	Potassium (mg/kg)	Chloride (mg/kg)
Value	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
DL	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Date Analyzed	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Solid Manure Sample Number:

Location Sampled (Corral, Separator, etc.):

Date Sampled: Moisture percentage:

	Calcium (mg/kg)	Magnesium (mg/kg)	Sodium (mg/kg)	Potassium (mg/kg)	Chloride (mg/kg)
Value	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
DL	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Date Analyzed	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

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Solid Manure Sample Number:

Location Sampled (Corral, Separator, etc.):

Date Sampled:

Moisture percentage:

	Calcium (mg/kg)	Magnesium (mg/kg)	Sodium (mg/kg)	Potassium (mg/kg)	Chloride (mg/kg)
Value	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
DL	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Date Analyzed	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Solid Manure Sample Number:

Location Sampled (Corral, Separator, etc.):

Date Sampled:

Moisture percentage:

	Calcium (mg/kg)	Magnesium (mg/kg)	Sodium (mg/kg)	Potassium (mg/kg)	Chloride (mg/kg)
Value	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
DL	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Date Analyzed	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Solid Manure Sample Number:

Location Sampled (Corral, Separator, etc.):

Date Sampled:

Moisture percentage:

	Calcium (mg/kg)	Magnesium (mg/kg)	Sodium (mg/kg)	Potassium (mg/kg)	Chloride (mg/kg)
Value	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
DL	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Date Analyzed	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

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ATTACHMENT C - SOLID MANURE SAMPLE RESULTS

This attachment needs to be completed **twice a year** for each source (corral, separator, etc.)

Solid Manure Sample Number:

Location Sampled (Corral, Separator, etc.):

Date Sampled: Moisture percentage:

	total Kjeldahl nitrogen	total phosphorus	total potassium
Value			
DL			
Date Analyzed			

Solid Manure Sample Number:

Location Sampled (Corral, Separator, etc.):

Date Sampled: Moisture percentage:

	total Kjeldahl nitrogen	total phosphorus	total potassium
Value			
DL			
Date Analyzed			

Solid Manure Sample Number:

Location Sampled (Corral, Separator, etc.):

Date Sampled: Moisture percentage:

	total Kjeldahl nitrogen	total phosphorus	total potassium
Value			
DL			
Date Analyzed			

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Solid Manure Sample Number: []

Location Sampled (Corral, Separator, etc.): []

Date Sampled: []

Moisture percentage: []

	total Kjeldahl nitrogen	total phosphorus	total potassium
Value	[]	[]	[]
DL	[]	[]	[]
Date Analyzed	[]	[]	[]

Solid Manure Sample Number: []

Location Sampled (Corral, Separator, etc.): []

Date Sampled: []

Moisture percentage: []

	total Kjeldahl nitrogen	total phosphorus	total potassium
Value	[]	[]	[]
DL	[]	[]	[]
Date Analyzed	[]	[]	[]

Solid Manure Sample Number: []

Location Sampled (Corral, Separator, etc.): []

Date Sampled: []

Moisture percentage: []

	total Kjeldahl nitrogen	total phosphorus	total potassium
Value	[]	[]	[]
DL	[]	[]	[]
Date Analyzed	[]	[]	[]