

Dairy Operations Input Data (Paper Version)

For using the
NAQSAT (National Air Quality Site Assessment Tool (NAQSAT))

The NAQSAT is a web-based tool that can't be downloaded. Site evaluation is best done with a mobile device that has wireless access at the site location. Areas without wireless should have the data recorded on a paper version and entered back at the office. This on-line tool is interactive and some answers will generate additional questions. These are indented from the original question, in this form.

There are seven areas to be completed after the Housing questions.

<input type="checkbox"/>	Feed and Water
<input type="checkbox"/>	Collection and Transfer
<input type="checkbox"/>	Manure Storage
<input type="checkbox"/>	Land Application
<input type="checkbox"/>	Mortalities
<input type="checkbox"/>	On-farm Roads
<input type="checkbox"/>	Perception

Dairy Operations Input Data (Paper Version)

Housing type:

Animal and Housing

Complete the following questions based on the type of housing chosen above.

1.0 Pasture - If checked, answer the following questions:

a. Describe pasture conditions:

Heavily trampled, wet, little vegetation



Trampled and soft; some vegetation remaining



Minimal hoof damage; hard surface; significant vegetation



Complete grass cover; no bare areas



b. Describe the lanes and intensity used areas of the pasture (may include water, feed, shade areas)

- Muddy; soft surface; ponding



- Soft spots; little ponding



- Hard surface; occasional ponding



- Hard surface; well drained



c. Is the lane surface improved? (limestone, gravel, asphalt, concrete, geotextile)

- Yes
- No

2.0 Freestall / Tiestall / Stanchion / Confinement - If checked, answer the following questions:

a. Bedding Conditions

- Uneven; Wet Bedding; Manure Accumulations



- Some Wet Stalls with Manure



- Dry; Groomed Regularly



- Dry; Full; Clean; Well Groomed



b. Percentage of floor manure covered:

- Up to 25%
- 26 to 50%
- > 50%

3.0 Freestall / Tiestall / Stanchion with lot - If checked, answer the following questions:

a. Bedding Conditions

- Uneven; Wet Bedding; Manure Accumulations



- Some Wet Stalls with Manure



- Dry; Groomed Regularly



- Dry; Full; Clean; Well Groomed



b. Percentage of floor manure covered:

- Up to 25%
- 26 to 50%
- > 50%

c. Lot Conditions

- Deep wet manure; significant ponding
- Large wet areas; poorly drained
- Varied surface and wetness
- Dry throughout and well drained

d. At what time of the day do animals have access to the lot? Check all that apply

- Morning
- Mid-day
- Evening

e. Time of day that harrowing occurs?

- Morning
- Mid-day

4.0 **Bedded Pack / Compost Barns** - If checked, answer the following question:

a. Bedding Conditions

- Wet bedding; deep manure accumulation; matted manure on hides



- Wet bedding; exposed manure; animal hides are dirty



- Little exposed manure; mostly clean hides



- Dry surface; clean hides



5.0 Dry Lot (Open Lots) - If checked, answer the following questions:

- a. Surface comparison for average pen conditions:
 - Deep wet manure; significant ponding
 - Large wet areas; poorly drained
 - Varied surface wetness
 - Dry throughout and well drained

- b. How fast does the surface water drain after a rainfall event?
 - Within 72 hours
 - Remain we for more than 72 hours

- c. Is there supplemental shade structures?
 - Yes
 - No

- d. Are the pens sprinkled for dust control?
 - Yes
 - No

- e. The runoff control pond is designed and operated for which of the following:
 - Evaporation
 - Storage followed by land application
 - Treatment
 - Does not apply

Dairy Operations Input Data (Paper Version)

1.0 Number of rations formulated the lactating herd:

- 1
- 2 to 3
- 4 or more
- Weekly
- Twice monthly
- Monthly or less frequently
- Never
- I don't know

3.0 What is the roughage source? Check all that apply

- Fermented Forages** (high moisture crops cut and stored: silage-corn, etc. grasses; alfalfa; clover; small grains - sorghum, etc.; ethanol by-products)
- Unfermented Forages** (corn-grain; soybeans; sorghum)
- Co-product feeds** (cottonseed hulls, pulps)

4.0 Does the operation use ionophores? (The name ionophore is the technical name for a class of additives commonly fed to cattle to improve feed efficiency and rate of gain. Trade names for the most common products in this class include Rumens in[®], Boated[®] and Catalyst[®]. Ionophores are added to feeds or supplements and are designed to effect the microbial population found in the rumen.)

- Yes
- No

5.0 Is the ration formulated based on crude protein or metabolizable protein?

- Metabolizable protein** (Metabolizable protein accounts for rumen degradation of protein. Metabolizable protein is true protein absorbed by the intestine.)
- Crude Protein** (Protein in cattle diets is commonly expressed as crude protein (CP). Crude protein is comprised of both true protein and non-protein nitrogen.)
 - a. If Crude Protein is checked, what is the CP for each ration identified?
 - $\geq 17\%$
 - $< 17\%$
 - Don't know

6.0 What percent of distillers grains are fed? (include dry and wet sources as a percent of diet on dry basis)

- 0
- 1-10%
- 10-20%
- 20-40%
- > 40%

7.0 Sulfur odor (or rotten egg) smell in livestock water?

- No
- Yes - If checked, answer the following questions:
 - a. If yes, is sulfur from water supply considered in feed ration?

- Yes
- No

8.0 What is the diet fat content on a dry matter basis?

- < 5%
- 5-8%
- > 8%
- Don't know

9.0 What feed ration inputs are processed on-site, not including crop harvest?

(such as grinding, cutting, screening, mixing, etc.) Check all that apply

- a. **Roughage** - If checked, answer the following question:
 - 1) Is the operation doing any mitigation to control dust during processing? See below
 - Yes
 - No

- b. **Grain Grinding/Processing** - If checked, answer the following question:
 - 1) Is the operation doing any mitigation to control dust during processing? See Below
 - Yes
 - No

- c. **Other Products** (Total Mixed Ration) - If checked, answer the following question:
 - 1) Is the operation doing any mitigation to control dust during processing? See below
 - Yes
 - No

FYI *Dust control would include enclosing the receiving area to the degree practicable, preferably with doors at both ends of a receiving shed; specifying dust-tight cleaning and processing equipment; using lip-type shaft seals at bearings on conveyor and other equipment housings; using flanged inlets and outlets on all spouting, transitions, and miscellaneous hoppers; and fully enclosing and sealing all areas in contact with products handled; reduced belt speed on conveyers; aspiration systems - dust collection in cyclone or fabric filters; dust containment in hoods or sheds; and oil suppression systems, etc.*

10.0 How are fermented and wet feeds (hays, grains, co-products stored on site?

Check all that apply

- | | |
|--|--|
| <input type="checkbox"/> Upright silo | <input type="checkbox"/> Commodity barn |
| <input type="checkbox"/> Uncovered bunkers / piles | <input type="checkbox"/> Bags / wraps |
| <input type="checkbox"/> Coved bunkers / piles | <input type="checkbox"/> No fermented feeds onsite |

11.0 How is water supplied to livestock

- Cups, bowls, or bells
- Stock tank or circulating tank
- Overflow waterers (seasonal and run continuously)

12.0 How often are all waterers checked and repaired for leaks?

- Daily
- At least weekly
- Weekly or less frequently

Dairy Operations Input Data (Paper Version)

1.0 What best describes the manure handling system? Check all that apply

Complete the following questions based on the type of handling chosen above.

Flush - If checked, answer the following questions:

a. Are there "odor bursts" when flushing occurs?

1) How often is the housing flushed? Assumes no drying between flushes.

- Weekly
- 2-3 times per week
- Once daily
- 2-3 times per day
- More than 3 times per day

Yes

1) How often is the housing flushed? Assumes no drying between flushes.

- Weekly
- 2-3 times per week
- Once daily
- 2-3 times per day
- More than 3 times per day

b. Typical conditions half-way between cleaning?

Complete manure coverage; deep manure; cows splash when walking



Majority manure coverage; minimal splashing



Some manure accumulation



- Minimal manure coverage



Scrape/vacuum - If checked, answer the following questions:

a. How often are the pens scraped or vacuumed?

- Less than once daily
- Once Daily
- 2 to 3 times daily
- More than 3 times daily

b. Typical conditions half way between cleaning?

- Complete manure coverage; deep manure; cows splash when walking



- Majority manure coverage; minimal splashing



- Some manure accumulation



- Minimal manure coverage



Gutter

a. How often are the gutters cleaned?

- Less than once daily
- Once Daily
- 2 to 3 times daily
- More than 3 times daily

Deep pit - no additional questions

Solid Removal - if check, answer the following:

a. How often does a complete clean out occur?

- More than once a year
- Yearly
- Less than once per year

2.0 How does the operation transfer the majority of manure from housing to storage?

- Open conduit or channel - If checked, answer the following question:
 - a. Does ponding occur?
 - Yes
 - No
- Closed conduit or pipe or channel
- Does not apply

3.0 Is the majority of liquid manure typically loaded into the storage above or below the surface?

- Above *(Question is not applicable for deep pit operations)*
- Below

4.0 What method is used to transfer the majority of manure from storage to the field?

- Does not apply
- Pipe, closed channel, hose or drag line
- Open Channel
- Tank-type spreader or tanker - If checked, answer the following question:
 - a. If a truck or spreader is used to transport manure to fields, is the manure transferred to the land application equipment in a closed transfer system?
 - Yes
 - No
 - Not Applicable

- Open Spreader or truck - If checked, answer the following question:
 - a. If a truck or spreader is used to transport manure to fields, is it covered (whether the truck leave the farm and goes on a public road or not)?
 - Yes
 - No

5.0 Is manure spilled at the loading station/area?

- No
- Yes - If checked, answer the following questions:
 - a. Is manure tracked offsite?
 - Yes
 - No

Dairy Operations Input Data (Paper Version)

1.0 Is manure hauled daily?

- Yes - if checked, no additional questions to complete.
- No - If checked, answer additional questions below as they pertain to the operation.

2.0 Is milkhouse washwater stored separate from manure?

- No

3.0 What percent of the manure is stored as liquid or slurry (does not stack) in the predominant housing? (on a scale of 0-100%)

- _____ If 0% - Complete Section 4.0 and skip Section 5.0
If $\geq 1\%$ - Complete Sections 4.0 and 5.0
If 100%, complete Section 5.0 only

4.0 Do any of these processes occur onsite? Check all that apply

- Storage/stockpile - see below
- Composting - see below
- Pelletizing - no additional questions
- Gasification - no additional questions
- Incineration/burn - See below

Complete the following questions based on how Section 4.0 was answered.

Storage/stockpile - If checked, answer the following questions:

- a. How often is seepage noticed?
 - Rarely
 - Commonly
- b. Does water pond around the base of compost piles (from rainfall events or leachate) for greater than 24 hours?
 - Ponding / standing water is not present more than 24 hrs. after a rainfall event
 - Ponding / standing water is present more than 24 hrs. after a rainfall event
- c. How often are maggots noticed?
 - Rarely
 - Commonly
- d. How often are flies noticed?
 - Rarely
 - Commonly

Composting - If checked, answer the following questions:

- a. How often is seepage noticed?
 - Rarely
 - Commonly
- b. **Does water pond around the base of compost piles (from rainfall events or leachate) for greater than 24 hours?**
 - Ponding or standing water is not present more than 24 hrs. after a rainfall event
 - Ponding or standing water is present more than 24 hrs. after a rainfall event
- c. Is there a specific recipe?
 - No
 - Yes -What is the recipe?

- 3:1 or greater carbon source (stalks, sawdust, straw, etc.):manure
- < 3:1 carbon source (stalks, sawdust, straw, etc.):manure
- d. What is average of the highest two consecutive weekly temperature readings of your compost pile?
 - Don't know
 - < 120 F
 - 120 to 140 F
 - > 140 F
- e. **How often is compost cover added?**
 - With each manure addition
 - At least once daily
 - Less frequently than each manure addition
- f. How often are maggots noticed?
 - Rarely
 - Commonly
- g. How often are flies noticed?
 - Rarely
 - Commonly

Pelletizing

Gasification

Incineration/burn - If checked, answer the following question:

a. Is there a scrubber in place for gas emissions?

- Yes
- No

5.0 STAGED STORAGE INFORMATION

For each stage of manure storage present, complete stage storage section below. For example, if you have a 2-stage manure storage system, you will need to complete two separate stages of storage. EXAMPLE If the operation has gutters and an outside storage pit - this would considered 2-stage system.

For each stage, complete the corresponding information as it relates to the nitrogen (N) content of the liquid/slurry (see three choices below). If you don't know the N and solid content, answer questions for the unknown section based on the consistency of the liquid. Label the stage with a description of storage structure. Using the example from above Stage 1 is gutter and Stage 2 is the storage pit.

Options for manure nutrient value for each stage of storage

- Less than 5 lb. N / 1000 gallons and be less than 4% solids.
- Greater than 5 lb. N / 1000 gallons and greater than 4% total solids
- Don't know what the N and solid content of liquid / slurry

STAGE 1 _____ (Description of storage structure)

Less than 5 lb. nitrogen (N)/1000 gallon and less than 4% total solids - If checked, answer the following questions:

a. Is the solids content less than 1%?

- Yes
- No

b. Is there aeration?

- No
- Yes - If yes, complete the following:
 - 1) What is the DO (Dissolved Oxygen) or Redox (Reduction Oxygen) analysis of the storage?
 - DO > 0.1 mg/L
 - DO < 0.1 mg/L
 - Redox > -50 mV
 - Redox < -50 mV

c. Is there an anaerobic digester?

- No
- Yes - If yes, complete the following:
 - 1) Does the operation employ anything to mitigate ammonia release from the digester? (i.e. biogas capture)
 - Yes
 - No

d. Pick the color that best represents the liquid in the structure during the summer.

- Red / Maroon to Purple
- Black or brown - If checked, answer the following questions:
 - 1) Describe the material for any cover on the structure
 - No cover
 - Natural Crust
 - Permeable, such as straw, corn stalks, geotextile, etc.
 - Impermeable, such as plastic, etc.- If yes, complete the following:
 - a) How is the vent air treated?
 - No treatment
 - Combusted
 - Flared
 - Converted to pipeline quality gas
 - 2) What percent of the surface is exposed or uncovered?
 - ≤ 25%
 - 26-40%
 - 41-60%
 - 61-85%
 - ≥ 86%

Greater than 5 lb. N/1000 gallon and greater than 4% total solids - If checked, answer the following questions:

- a. Describe the material for any cover on the structure
 - No cover
 - Building (slatted floor or deep pits)
 - Natural Crust
 - Permeable, such as straw, corn stalks, geotextile, etc.

Impermeable, such as plastic, etc. - If yes, complete the following:

1) How is the vent air treated?

- No treatment
- Combusted
- Flared
- Converted to pipeline quality gas

b. What percent of the surface is exposed or uncovered?

- $\leq 25\%$
- 26-40%
- 41-60%
- 61-85%
- $\geq 86\%$

Don't know the nitrogen content of the liquid/slurry. Complete the following.

Which best describes the consistency of the product in the storage pit:

Water (thin) or Motor Oil (thick)?

Water - If checked, answer the following questions:

a. Is the solids content less than 1%?

- Yes
- No

b. Is there aeration?

- No
- Yes - If yes, complete the following:

1) What is the DO (Dissolved Oxygen) or Redox (Reduction Oxygen) analysis of the storage?

- DO > 0.1 mg/L
- DO < 0.1 mg/L
- Redox > -50 mV
- Redox < -50 mV

c. Pick the color that best represents the liquid in the structure during the summer.

- Red / Maroon to Purple
- Black or brown - If checked, complete the following:

1) Describe the material for the cover on the structure

- No Cover
- Natural Crust
- Permeable, such as straw, corn stalks, geotextile, etc.
- Impermeable, such as plastic, etc. - If yes, complete the following:

a) How is vent are treated?

- No treatment
- Combusted
- Flared
- Converted to pipeline quality gas

2) What percent of the surface is exposed or uncovered?

- $\leq 25\%$

- 26-40%
- 41-60%
- 61-85%
- $\geq 86\%$

Motor Oil - If checked, answer the following questions:

- a. Describe the material for any cover that you may have on it
- No cover
 - Building (slatted floors or deep pit)
 - Natural Crust
 - Permeable, such as straw, corn stalks, geotextile, etc.
 - Impermeable, such as plastic - If yes, complete the following:
 - 1) How is vent air treated?
 - No treatment
 - Combusted
 - Flared
 - Converted to pipeline quality gas
- b. What percent of the surface is exposed or uncovered?
- $\leq 25\%$
 - 26-40%
 - 41-60%
 - 61-85%
 - $\geq 86\%$

STAGE 2 _____ (Description of storage structure)

Less than 5 lb. nitrogen (N)/1000 gallon and less than 4% total solids - If checked, answer the following questions:

- a. Is the solids content less than 1%?
- Yes
 - No
- b. Is there aeration?
- No
 - Yes - If yes, complete the following:
 - 1) What is the DO (Dissolved Oxygen) or Redox (Reduction Oxygen) analysis of the storage?
 - DO > 0.1 mg/L
 - DO < 0.1 mg/L
 - Redox > -50 mV
 - Redox < -50 mV
- c. Is there an anaerobic digester?
- No
 - Yes

1) Does the operation employ anything to mitigate ammonia release from the digester? (i.e. biogas capture)

- Yes
- No

d. Pick the color that best represents the liquid in the structure during the summer.

- Red / Maroon to Purple
- Black or brown

1) Describe the material for any cover on the structure

- No cover
- Natural Crust
- Permeable, such as straw, corn stalks, geotextile, etc.
- Impermeable, such as plastic, etc. - If yes, complete the following:

a) How is the vent air treated?

- No treatment
- Combusted
- Flared
- Converted to pipeline quality gas

2) What percent of the surface is exposed or uncovered?

- $\leq 25\%$
- 26-40%
- 41-60
- 61-85%
- $\geq 86\%$

Greater than 5 lb. N/1000 gallon and greater than 4% total solids - If checked, answer the following questions:

a. Describe the material for any cover on the structure

- No cover
- Building (slatted floor or deep pits)
- Natural Crust
- Permeable, such as straw, corn stalks, geotextile, etc.
- Impermeable, such as plastic, etc. - If yes, complete the following:

1) How is the vent air treated?

- No treatment
- Combusted
- Flared
- Converted to pipeline quality gas

b. What percent of the surface is exposed or uncovered?

- $\leq 25\%$
- 26-40%
- 41-60%
- 61-85%
- $\geq 86\%$

Don't know the nitrogen content of the liquid/slurry. Complete the following.

*Which best describes the consistency of the product in the storage pit:
Water (thin) or Motor Oil (thick)?*

- **Water** - If checked, answer the following questions:
 - a. Is the solids content less than 1%?
 - Yes
 - No
 - b. Is there aeration?
 - No
 - Yes - If yes, complete the following:
 - 1) What is the DO (Dissolved Oxygen) or Redox (Reduction Oxygen) analysis of the storage?
 - DO > 0.1 mg/L
 - DO < 0.1 mg/L
 - Redox > -50 mV
 - Redox < -50 mV
 - c. Pick the color that best represents the liquid in the structure during the summer.
 - Red / Maroon to Purple
 - Black or brown - If checked, complete the following:
 - 1) Describe the material for the cover on the structure
 - No Cover
 - Natural Crust
 - Permeable, such as straw, corn stalks, geotextile, etc.
 - Impermeable, such as plastic, etc. - If yes, complete the following:
 - a) How is vent are treated?
 - No treatment
 - Combusted
 - Flared
 - Converted to pipeline quality gas
 - 2) What percent of the surface is exposed or uncovered?
 - ≤ 25%
 - 26-40%
 - 41-60%
 - 61-85%
 - ≥ 86%
- **Motor Oil** - If checked, answer the following questions:
 - a. Describe the material for any cover that you may have on it
 - No cover
 - Building (slatted floors or deep pit)
 - Natural Crust
 - Permeable, such as straw, corn stalks, geotextile, etc.
 - Impermeable, such as plastic - If yes, complete the following:
 - 1) How is vent air treated?
 - No treatment
 - Combusted
 - Flared
 - Converted to pipeline quality gas

b. What percent of the surface is exposed or uncovered?

- ≤ 25%
- 26-40%
- 41-60%
- 61-85%
- ≥ 86%

STAGE 3 _____ (Description of storage structure)

Less than 5 lb. nitrogen (N)/1000 gallon and less than 4% total solids - If checked, answer the following questions:

a. Is the solids content less than 1%?

- Yes
- No

b. Is there aeration?

- No
- Yes - If yes, complete the following:

1) What is the DO (Dissolved Oxygen) or Redox (Reduction Oxygen) analysis of the storage?

- DO > 0.1 mg/L
- DO < 0.1 mg/L
- Redox > -50 mV
- Redox < -50 mV

c. Is there an anaerobic digester?

- No
- Yes - If yes, complete the following:

1) Does the operation employ anything to mitigate ammonia release from the digester? (i.e. biogas capture)

- Yes
- No

d. Pick the color that best represents the liquid in the structure during the summer.

- Red / Maroon to Purple
- Black or brown - If checked, complete the following:

1) Describe the material for any cover on the structure

- No cover
- Natural Crust
- Permeable, such as straw, corn stalks, geotextile, etc.
- Impermeable, such as plastic, etc. - If yes, complete the following:

a) How is the vent air treated?

- No treatment
- Combusted
- Flared
- Converted to pipeline quality gas

2) What percent of the surface is exposed or uncovered?

- $\leq 25\%$
- 26-40%
- 41-60
- 61-85%
- $\geq 86\%$

Greater than 5 lb. N/1000 gallon and greater than 4% total solids - If checked, answer the following questions:

- a. Describe the material for any cover on the structure
 - No cover
 - Building (slatted floor or deep pits)
 - Natural Crust
 - Permeable, such as straw, corn stalks, geotextile, etc.
 - Impermeable, such as plastic, etc. - If yes, complete the following:
 - 1) How is the vent air treated?
 - No treatment
 - Combusted
 - Flared
 - Converted to pipeline quality gas
- b. What percent of the surface is exposed or uncovered?
 - $\leq 25\%$
 - 26-40%
 - 41-60%
 - 61-85%
 - $\geq 86\%$

Don't know the nitrogen content of the liquid/slurry. Complete the following.

Which best describes the consistency of the product in the storage pit:

Water (thin) or Motor Oil (thick)?

- Water** - If checked, answer the following questions:
 - a. Is the solids content less than 1%?
 - Yes
 - No
 - b. Is there aeration?
 - No
 - Yes - If yes, complete the following:
 - 1) What is the DO (Dissolved Oxygen) or Redox (Reduction Oxygen) analysis of the storage?
 - DO > 0.1 mg/L
 - DO < 0.1 mg/L
 - Redox > -50 mV
 - Redox < -50 mV
 - c. Pick the color that best represents the liquid in the structure during the summer.
 - Red / Maroon to Purple
 - Black or brown - If checked, complete the following:
 - 1) Describe the material for the cover on the structure
 - No Cover
 - Natural Crust

- Permeable, such as straw, corn stalks, geotextile, etc.
- Impermeable, such as plastic, etc. - If yes, complete the following:
 - a) How is vent are treated?
 - No treatment
 - Combusted
 - Flared
 - Converted to pipeline quality gas
 - 2) What percent of the surface is exposed or uncovered?
 - $\leq 25\%$
 - 26-40%
 - 41-60%
 - 61-85%
 - $\geq 86\%$
- **Motor Oil** - If checked, answer the following questions:
 - a. Describe the material for any cover that you may have on it
 - No cover
 - Building (slatted floors or deep pit)
 - Natural Crust
 - Permeable, such as straw, corn stalks, geotextile, etc.
 - Impermeable, such as plastic - If yes, complete the following:
 - 1) How is vent air treated?
 - No treatment
 - Combusted
 - Flared
 - Converted to pipeline quality gas
 - 2) What percent of the surface is exposed or uncovered?
 - $\leq 25\%$
 - 26-40%
 - 41-60%
 - 61-85%
 - $\geq 86\%$

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1.0 Where does the manure go? Check all that apply.

- Moved offsite (sold or given away) directly from housing - If checked, answer the
 - a. Do you want land application considered as part of the assessment for your operation?
 - Yes - If checked, answer the below questions for solids/liquid application:
 - No
- Year-round pasture-based
- Land applied - If checked, complete the following:

What form of manure is land applied? Solid or Liquid - Check all that apply

- Solid** - If checked, answer the following questions:
 - a. How long are solids piled or staged/stored on the field prior to application?
 - < 3 days
 - > or = 3 days - If checked, answer the following questions:
 - 1) Are solids covered?
 -
 - Yes
 - No
 - 2) Is there any ponded leachate?
 - Yes
 - No
 - Directly land applied not piled or staged/stored
 - b. Are the majority of the solids composted prior to application?
 - Yes
 - No - If checked, answer the following question:
 - 1) When are solids incorporated?
 - At time of application
 - < 24 hours after application
 - 24 hours to 3 days following application
 - More than 3 days after application or not incorporated
- Liquid** - choose predominant method of application
 - Surface applied and not incorporated
 - Inject - If checked, answer the following questions:
 - a. What portion of the field is manure left exposed on the surface?
 - 100% of the manure is covered
 - All manure is covered except on the headlands where manure is left exposed
 - Manure is left exposed in the injection slot
 - Manure is left exposed in the injection slot and the headlands

Continued . . . Choose predominant method of application

- Incorporate within 24 hours
- Incorporate 24 hours or greater following application
- Irrigation - If checked, answer the following questions:
 - a. What is the predominant method for application of the liquids?

- Flood or furrow
 - High pressure sprinkler or gun
 - Low pressure sprinkler (drop drag line)
 - Low pressure sprinkler (low canopy system)
- b. Does ponding occur after irrigation?
- Yes
 - No
- c. Is freshwater added?
- Yes
 - No

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1.0 Other than during freezing weather, how long before carcasses are

- Within 24 hours of death
- Within a week of death
- Less Frequently

2.0 How is mortality handled?

- Managed off-site (rendered, landfilled or offsite composting) - no additional questions
- Buried on-site - If checked, answer the following questions:
- Composted on-site - If checked, answer the following questions:

Complete the following based on the answer for 2.0 "How is mortality handled?"

- Buried on-site - If checked, answer the following question:
 - a. Is cover added to the burial pit or pile every time mortality is added?
 - Yes
 - No
- Composted on-site - If checked, answer the following questions:
 - a. How often is seepage noticed?
 - Rarely
 - Commonly
 - b. Does water pond around the base of the compost pile (from rainfall events or leachate) for greater than 24 hours?
 - Ponding or standing water is not present more than 24 hr. after a rainfall event
 - Ponding or standing water is present more than 24 hr. after a rainfall event
 - c. Is there a specific compost recipe?
 - No
 - Yes - If checked, answer the following questions:
 - 1) What is the recipe?
 - \geq 3:1 carbon source (stalks, sawdust, straw, etc.): mortality
 - $<$ 3:1 carbon source (stalks, sawdust, straw, etc.): mortality
 - d. What is average of the highest two consecutive weekly temperature readings of compost pile?
 - Don't know
 - $<$ 120F
 - 120F to 140F
 - $>$ 140F
 - e. How often are maggots noticed?
 - Rarely
 - Commonly

f. How often are uncovered carcass parts visible or noticed?

- Rarely
- Commonly

g. How often is compost cover added?

- Immediately after each carcass addition
- At least once daily
- Less frequently than each carcass addition

Dairy Operations Input Data (Paper Version)

1.0 Are unpaved roads used for any of the following activities? Check all that apply

- a. Routine service traffic (feed delivery, milk truck, renderer)
- b. Less frequent service traffic (manure handling)
- c. General transportation (veterinarians, maintenance, nutritionists, managers, employees, farm tours)

If you checked any one of a and/or b and/or c - or all three, complete the following:

1) Unpaved roads are surfaced with: (Check all that apply)

- Caliche/limestone - Caliche is a sedimentary rock, a hardened natural cement of calcium carbonate that binds other materials—such as gravel, sand, clay, and silt. Found in the western USA in dry and arid regions.
- Unimproved dirt road
- Washed gravel
- Gravel

2) Which is the predominant road-surface treatment used?

- Petroleum products, resins, emulsions as per manufacturer recommendations
- Salts or hygroscopic materials (i.e. magnesium chloride)
- Fresh Water
- Holding pond wastewater
- None

3) Are speed limits strictly enforced, or is speed controlled by passive means (i.e. speed

- Speed limits are not present or are not enforced by management
- Speed limits are enforced by management
- Speed is controlled by speed bumps or other passive means

4) Does the operation restrict public access to private roads?

- Yes
- No

5) Are most roads lined with windbreaks or shelterbelts?

- No
- Some or all roads are lined with vegetation

DAIRY CATTLE - PERCEPTION

1.0 Does the operation employ any of the following to reduce nuisance issues?

Check all that apply

- Property line vegetative buffers
- Cleaning up spilled manure from roads
- None of the above

2.0 Does the operation practice "track-out control" (manure on tires) of manure or mud on vehicles leaving the property? (Does the operation have a means of controlling how much manure/mud leaves their property on the tires of all vehicles leaving their property?)

- Yes
- No

3.0 Are most roads lined with windbreaks or shelterbelts?

- No
- Some or all roads lined with vegetation

4.0 Is the operation mindful of neighbors when timing manure removal from housing or storage?

- Yes
- No

5.0 Does the operation consider how the following impact nuisance conditions when planning manure applications? Check all that apply

- Timing relative to neighbor activities
- Time of day
- Season
- Weather forecasts (wind direction relative to neighbor's location)
- None of the above

6.0 Are compost piles, mortalities, or manure storage visible from public roads?

- Yes
- No

7.0 Are efforts made to ensure a pleasing roadside appearance?

- Yes
- No