

National Air Quality Site Assessment Tool (NAQSAT) Inventory Jobsheet

General Instructions - Broiler Chickens

Inventory Sheets have been developed for each species listed in NAQSAT.

- Swine
- Beef - excluding pasture situations
- Dairy Cattle
- Horses
- Laying Chickens
- Broiler Chickens
- Turkeys

Requirements for Completing NAQSAT Reports

- AFOs with 300 animal units and greater that are requesting EQIP assistance (CAP and/or Practice) must complete and provide two NAQSAT reports to the field office. Reports include 1) Baseline (for current management conditions) and 2) Planned practices (for operation with the planned management/practice changes, i.e. planned construction of building and elimination of open lots, etc.).
- How to calculate total Animal Units?

Option 1: Animal Units = (Average weight of the animal in pounds divided by 1,000 pounds) multiplied by the total one-time animal type. Repeat for each type of animal; combine totals.

Option 2: If you don't know the average weight for each species - Use the following Species Specific Conversion factors to Animal Units (Head Count x Conversion Factor = AU)

| Animal Type | No. of Animals | Multiply by | Conversion factor | Equals | A.U. by Type |
|--------------------------------------------------------|----------------|-------------|-------------------|--------|--------------|
| Dairy Mature Cow (\leq 1000 lbs.) | | multiply by | 1.0 | equals | |
| Dairy Mature Cow ($>$ 1000 lbs.) | | multiply by | 1.4 | equals | |
| Dairy - Heifer | | multiply by | 0.7 | equals | |
| Dairy - Calf | | multiply by | 0.2 | equals | |
| Beef - Cow/Calf Pair | | multiply by | 1.2 | equals | |
| Beef - Finishing Cattle | | multiply by | 1.0 | equals | |
| Beef Feeder Cattle - backgrounding, heifer development | | multiply by | 0.7 | equals | |
| Swine ($>$ 300 lbs.) Sows, boars | | multiply by | 0.4 | equals | |
| Swine (55-300 lb.) Gilts, feeder, finishing | | multiply by | 0.3 | equals | |
| Swine ($<$ 55 lb.) Nursery | | multiply by | 0.1 | equals | |
| Horse | | multiply by | 1.0 | equals | |
| Sheep, Lambs, Goats | | multiply by | 0.1 | equals | |
| Chickens, Over 5 lbs. | | multiply by | 0.005 | equals | |
| Chickens, Under 5 lbs. | | multiply by | 0.003 | equals | |
| Turkeys, Over 5 lbs. | | multiply by | 0.018 | equals | |
| Turkeys, Under 5 lbs. | | multiply by | 0.005 | equals | |
| Ducks | | multiply by | 0.01 | equals | |

Completing Inventory Sheet

- Separate inventory sheets will need to be completed for each species.
- Separate inventory sheets will need to be completed for species of different housing, i.e. beef feeding operation with open lots and confinement barns requires two different NAQSATs reports.
- All possible questions in NAQSAT have been listed in the inventory sheets, only answer the questions that apply to the operation requesting assistance.

Entering inputs in NAQSAT:

- Click on the management category of interest - start at the top with animals and housing and work down the list to perception.
- Only questions that pertain to the user's operation will be asked.
- All questions that appear need to be answered.
- The program is set up to include or remove questions from view on the basis of user input. Answers to some questions will generate additional questions to be answered. The program may pause momentarily while those questions are populated.
- Pictures are used when a visual appraisal of current practices is most appropriate. Placing the cursor over the picture will generate a text description of the management practice. Clicking on the green X in the top right-hand corner of the picture will generate a larger view. Click the red X or outside of the photo to return to the data input screen.
- Save data after completing each category by clicking on the "Save Progress" button at the bottom of the page. Each NAQSAT session is assigned a unique URL. Bookmark the URL to facilitate easily returning to the NAQSAT session at a later date. Click on the red X to return to the input section and move to a new management category.
- Do not use the browser "back" button. Clicking on the browser "back" button will return you to the NAQSAT home page, and all unsaved inputs will be lost.

Generating output:

- Before getting results, click on the "Save Progress" button to ensure that all inputs are saved.
- To generate results, click on the "Get Results" button at the bottom of the page.

Interpreting results:

- The effectiveness of current practices for each management category and each emission of concern is reflected by the percentage of green in the boxes under each emission. The larger the green area in each box, the more effective current management practices are and the fewer the opportunities to reduce emissions of that constituent in that management category.
- If all boxes are completely green, it does not mean there are no emissions. Fully green boxes simply indicate that the current management practices for the existing structural facilities provide few or no opportunities to reduce the emissions of that constituent in that management category.

- “Sheet not complete” identifies some questions required to complete the analysis that were not answered in that management category.
- N/A (Not Applicable or Not Available) – Sufficient data was not available at the creation of this tool to provide the impact of a practice on emission of a specific constituent, or a selected answer in a sheet does not have an impact on emissions of a specific constituent.

Returning to inputs:

- Clicking on the red X in the upper right-hand corner will take users back to the input section.
- Return directly to a management category by clicking on that category on the “Effectiveness Results” page.
- Do not click on the browser “back” button.

Exiting NAQSAT:

- Save all inputs before exiting NAQSAT.
- All scenarios will remain active on the NAQSAT site for 30 days.
- If you re-access the data, the 30-day period starts over again.

Printing Reports:

- The “Effectiveness Results” screen contains a print button in the lower left-hand corner as well as the saved session URL (Figure 5). All inputs are printed as well as the “Effectiveness Results” page.

Broiler Chickens 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 |

BROILER CHICKENS - BIRD GENDER & HOUSING TYPE

1.0 What is the average market weight per year?

- Unknown - Move to Section 2.0 and answer housing questions.
- 2.0 to 3.5 lb.
- 3.5 to 4.5 lb.
- 4.5 to 5.2 lb.
- 5.2 to 6.0 lb.
- 6.0 to 7.0 lb.
- > 7.0 lb.

IF you checked any of these, choose the annual feed conversion below that corresponds to your answer here.
Then complete housing questions in Section 2.0.

- 2.0 to 3.5 lb.
 - a. What is the annual average feed conversion (lb. feed to lb. gain)?
 - < 1.25
 - 1.25 to 1.4
 - 1.4 to 1.6
 - 1.6 to 1.8
 - > 1.8
- 3.5 to 4.5 lb.
 - a. What is the annual average feed conversion (lb. feed to lb. gain)?
 - < 1.3
 - 1.3 to 1.5
 - 1.5 to 1.7
 - 1.7 to 1.9
 - > 1.9
- 4.5 to 5.2 lb.
 - a. What is the annual average feed conversion (lb. feed to lb. gain)?
 - < 1.4
 - 1.4 to 1.6
 - 1.6 to 1.8
 - 1.8 to 2.0
 - > 2.0
- 5.2 to 6.0 lb.
 - a. What is the annual average feed conversion (lb. feed to lb. gain)?
 - < 1.5
 - 1.5 to 1.7
 - 1.7 to 1.9
 - 1.9 to 2.1
 - > 2.1
- 6.0 to 7.0 lb.

- a. What is the annual average feed conversion (lb. feed to lb. gain)?
 - < 1.6
 - 1.6 to 1.75
 - 1.75 to 1.95
 - 1.95 to 2.1
 - > 2.10
- > 7.0 lb.
 - a. What is the annual average feed conversion (lb. feed to lb. gain)?
 - < 1.8
 - 1.8 to 2.0
 - 2.0 to 2.2
 - 2.2 to 2.4
 - > 2.4

2.0 What type of Housing?

- Curtain - If checked, answer the following questions:
 - a. What mitigation strategies are used with the housing? Check all that apply
 - Vegetative Buffer
 - Exhaust Ducting
 - Scrubber
 - Dispersion walls
 - Attic Inlets
 - Ceiling fans
 - Litter Amendments (to manage ammonia, i.e. Acidifiers; Alkaline material; Adsorbers; Inhibitors; Microbial & Enzymatic Treatments)
 - None
 - b. Does the operation fog or sprinkle?
 - No
 - Yes - If checked, answer the following:
 - 1) When the operation fogs/sprinkles, does the floor get wet?
 - Yes
 - No
- Tunnel - If checked, answer the following questions:
 - a. What mitigation strategies are used with the housing? Check all that apply.
 - Vegetative Buffer
 - Exhaust Ducting
 - Scrubber
 - Dispersion walls
 - Attic Inlets
 - Ceiling fans
 - Litter Amendments (to manage ammonia, i.e. Acidifiers; Alkaline material; Adsorbers; Inhibitors; Microbial & Enzymatic Treatments)
 - None

b. Does the operation fog or sprinkle?

No

Yes - If checked, answer the following:

1) Are you wetting your floor when you fog?

Yes

No

Natural (Outside access) - If checked, answer the following question:

a. Is there bare ground?

Yes

No

BROILER CHICKENS - FEED & WATER

1.0 Does the operation have control or input into diet formulation?

- No
- Yes - if yes, answer following questions:
 - a. Number of rations or phases formulated:
 - < 4
 - ≥ 4

 - b. How many supplemental amino acids included?
 - 1
 - 2
 - 3 or more
 - Don't know

 - c. Is the feed pelleted?
 - Yes
 - No

 - d. How often are feed ingredients analyzed?
 - Weekly
 - Twice monthly
 - Monthly or less frequently
 - Never
 - Don't know

 - e. Is there a sulfur odor (rotten eggs) in the water?
 - No
 - Yes - If checked, answer the following question:
 - 1) Is sulfur from water supply considered in feed ration?
 - Yes
 - No

2.0 Is feed made or processed on site?

- No
- Yes - if yes, answer following question:
 - a. Which best describes grain delivery to the feedmill?
 - Choke flow (reduces free fall distance during hopper car unloading).
 - Free flow
 - Don't know

3.0 How is water supplied to the animals in the facility?

- Nipple drinkers
- Trough, cup, bowls, or belts

4.0 How often are all waterers checked then repaired for leaks?

- Daily
- At Least weekly
- Weekly or less

5.0 How often are the waterers flushed?

- End of flock or between flocks
- More than once per flock
- less than once per flock

BROILER CHICKENS - COLLECTION AND TRANSFER

1.0 How often does a complete clean-out occur?

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

2.0 Does more than 1 flock use the same litter?

- No
- Yes - if yes, answer following question:
 - a. Is the litter mechanically altered? Check all that apply
 - Is the litter tilled or windrowed between flocks
 - Is the litter de-caked between flocks
 - Nothing is done to the litter between flocks

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

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

BROILER CHICKENS - MANURE STORAGE

1.0 Do any of the process occur onsite? **Check all that apply**

- Storage / Stockpile - If checked, answer the following questions:
- How often is seepage noticed?
 - Rarely
 - Commonly
 - 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 hr. after a rainfall event
 - Ponding or standing water is present more than 24 hr. after a rainfall event
 - How often are maggots noticed?
 - Rarely
 - Commonly
 - How often are flies noticed?**
 - Rarely
 - Commonly
- Composting - If checked, answer the following questions:
- How often is seepage noticed?
 - Rarely
 - Commonly
 - 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 hr. after a rainfall event
 - Ponding or standing water is present more than 24 hr. after a rainfall event
 - 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
 - How often are maggots and flies noticed?
 - Rarely
 - Commonly
- Pelletizing
- Gasification
- Incineration / burn - If checked, answer the following question:
- Is there a scrubber in place for gas emission?
 - Yes
 - No

BROILER CHICKENS - LAND APPLICATION

1.0 Where does manure go? Check all that apply

- Moved off-site (sold or given away) directly from the housing - no other questions
- Composted or stockpiled, then sold or given away - no additional questions
- Land applied - If checked, please complete the following:

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

Solid - If checked, answer the following questions:

a. How long are solids piled, or staged, on the field prior to application?

- Directly land applied; not piled or staged
- < 3 days
- \geq 3 days - If checked, answer the following questions:

1) Are solids covered?

- Yes
- No

2) Is there ponded leachate?

- Yes
- No

b. Are the majority of the solids composted prior to land 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 - If checked, answer the following questions:

a. Select the predominant application method

- Surface applied and not incorporated
- Inject - If checked, answer the following question:
 - 1) 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
- Incorporate within 24 hours
- incorporate 24 hours or greater following application?
- Irrigation - If checked, answer the following questions:
 - 1) Choose predominant irrigation method for liquids
 - Flood or furrow irrigation

continued

- High pressure sprinkler or gun
 - Low pressure sprinkler (drop drag line)
 - Low pressure sprinkler (low canopy system)
- 2) Does ponding occur following irrigation?
- Yes
 - no

BROILER CHICKENS - MORATALITIES

1.0 How long before carcasses are picked up or put into the disposal system?

- Daily
- Less Frequently

2.0 How is mortality handled? Check all that apply

- Managed Off-site (such as rendered or landfilled, or offsite composting) - If checked, answer the following questions:

- a. Are temporarily stored carcasses treated (fermentation, etc.) or protected (freezer, etc.)?
- Always
 - Never
 - Most of the time

- Buried On-site - If checked, answer the following questions:

- a. Is cover added to the burial pit or pile every time mortality is added?
- Yes
 - No
- b. Is a temporary cover adequately sealed?
- Always
 - Never
 - Most of the time

- 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 compost piles (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. Does the operation follow a specific compost recipe?
- No
 - Yes
 - 1) What is the recipe?
 - > 3:1 parts litter: bird
 - < 3:1 parts litter: bird

- d. What is average of the highest two consecutive weekly temperature readings of the compost pile?
- Don't know
 - < 120 F
 - 120 to 140 F
 - > 140 F

- e. How often are maggots or flies 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
- Contained (in-vessel) incinerated on-site - If checked, answer the following questions:
 - a. Does the operation have a functioning secondary burner?
 - Yes
 - No
 - b. Does the operation monitor and record temperature of the incinerator to verify that targeted operating conditions are met?
 - Yes
 - No

BROILER CHICKENS - ON-FARM ROADS (Roads private to operation; not county or highway roads)

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

- Routine service traffic (feed delivery, rendering, etc.)
- Less frequent service traffic (manure handling)
- General transportation (veterinarians, maintenance, nutritionists, managers, employees, farm tours)
- Does not apply: no additional questions

If you checked any one of the first three activities above, then complete the following:

2.0 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

3.0 Which is the predominant road-surface treatment used?

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

4.0 Are speed limits strictly enforced, or is speed controlled by passive means (e. g., 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

5.0 Does the operation restrict public access to private roads?

- Yes
- No

6.0 Are most roads lined with windbreaks or shelterbelts?

- No
- Some or all roads are lined with vegetation

BROILER CHICKENS - PERCEPTION

1.0 Does the operation employ 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?

- None
- Some or all roads are 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 location)
- None of the above

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

- Yes
- No

6.0 Are efforts made to ensure a pleasing roadside appearance?

- Yes
- No