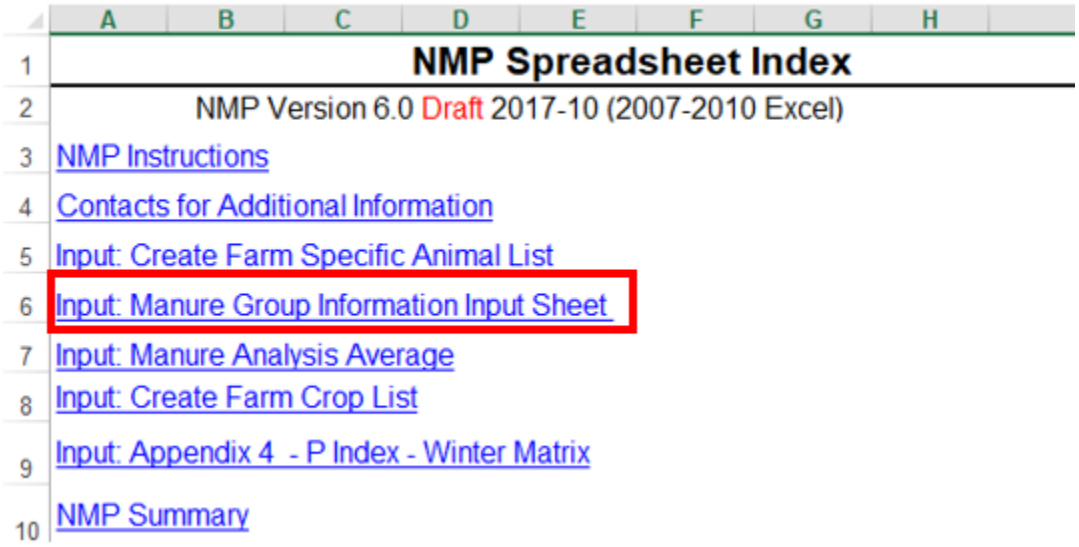
How to Complete NMP Appendix 3 Input

Purpose:

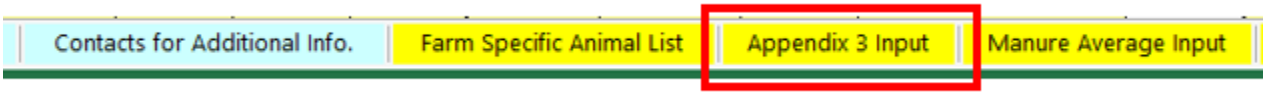
This procedure describes how to complete the Manure Group Information Input sheet. The sheet is labeled Appendix 3 Input in the Excel NMP workbook. All of the Manure Group information is entered here.

This particular worksheet requires data entry so it has a yellow colored sheet tab in the NMP workbook.

You can find it by looking for the hyper link in the NMP Spreadsheet Index



Or just scroll through the tabs until you find it. The tab in the NMP Spreadsheet that looks like this:



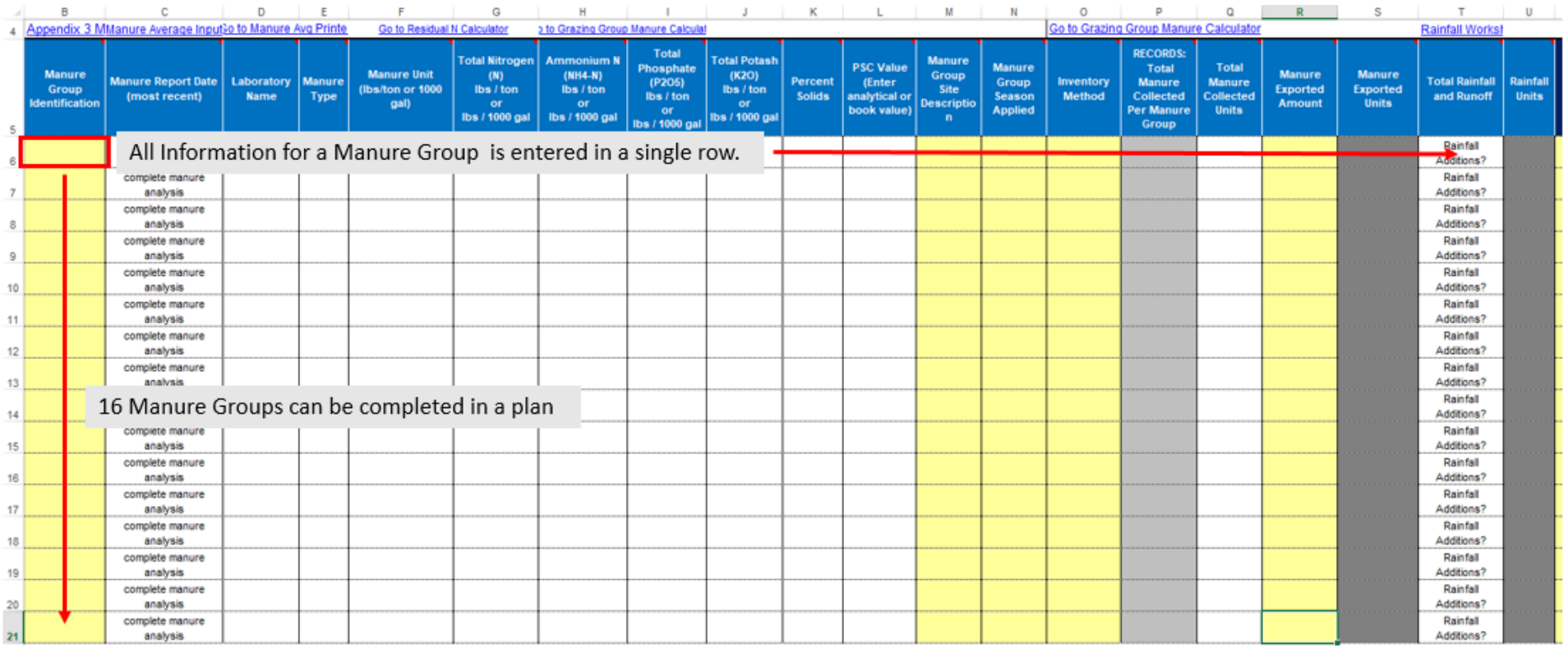
All the information to complete a Manure Group is entered in a row. A maximum of 16 Manure Groups can be entered. Each Manure Group can have a maximum of 6 Animal Groups. If the farm has more than 16 manure groups or more than 6 animal groups in a manure group then contact the SCC regional coordinator on a case by case basis and report in Appendix 10 how they were combined.

The following information entered in a single a row of Appendix 3 Input to complete a manure group.

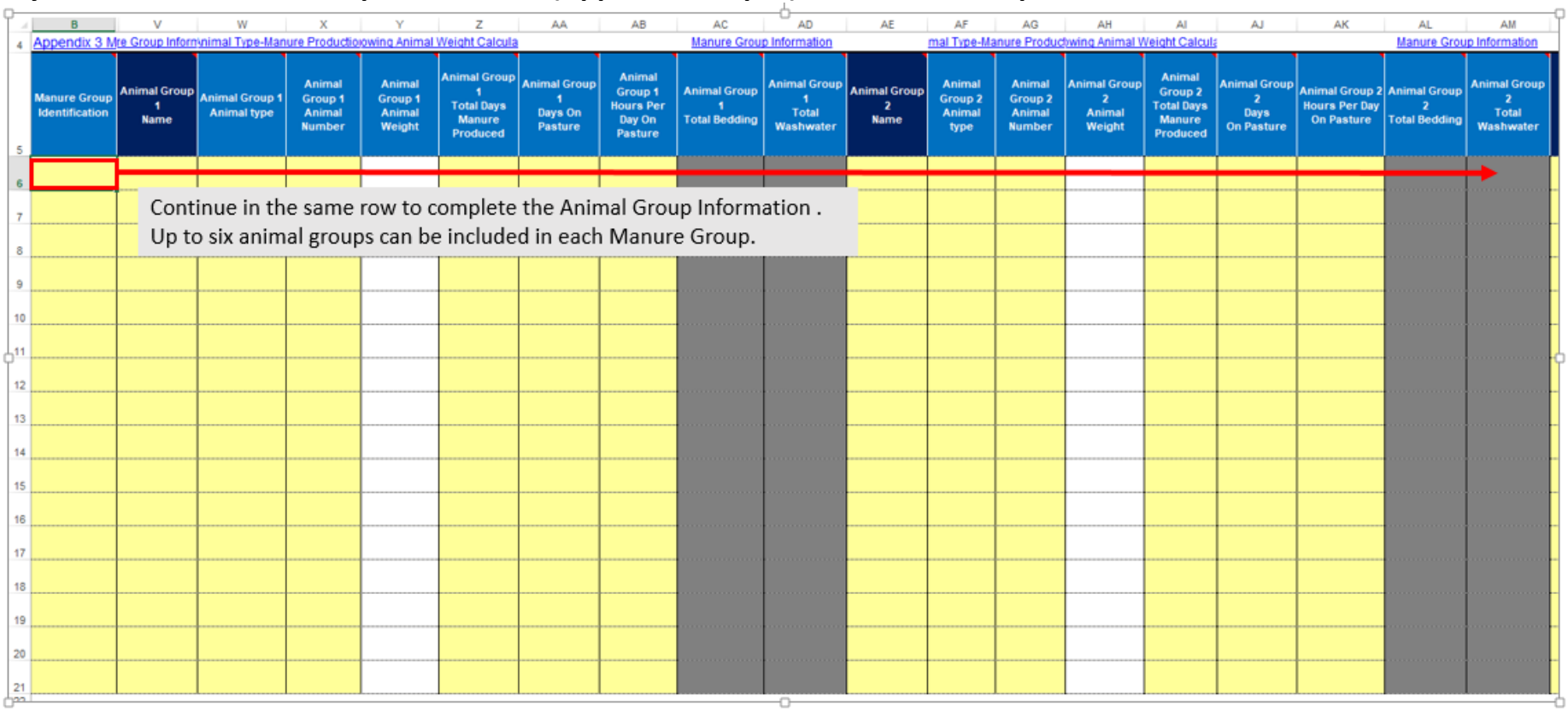
- Manure Group Name
- Manure Group Analysis Results (This information is completed in the Manure Average Input worksheet and transferred here)
- Manure Group Site Description and Season Applied
- Inventory Method
- Exported Manure Amount
- Rainfall Additions (This information is completed in the Rainfall worksheet and transferred here)
- Animal Groups 1 – 6 Information

How to Complete NMP Appendix 3 Input

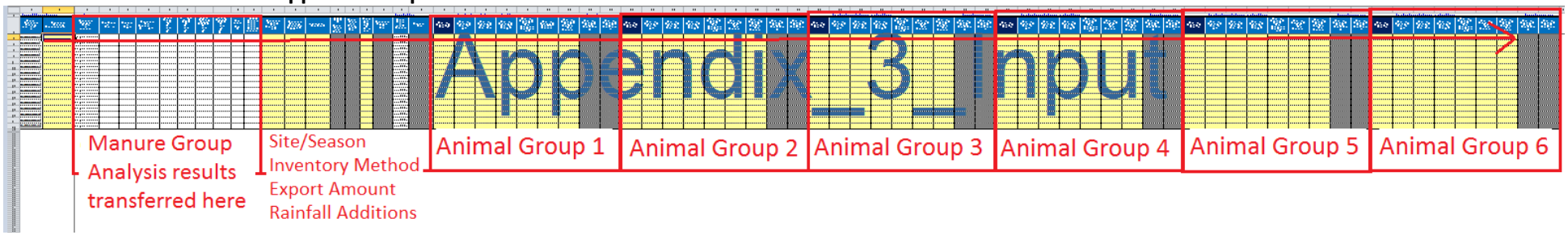
Layout of the Manure Group Information (Appendix 3 Input) sections up to the rainfall additions



Layout of the Manure Group Information (Appendix 3 Input) for Animal Groups 1 and 2



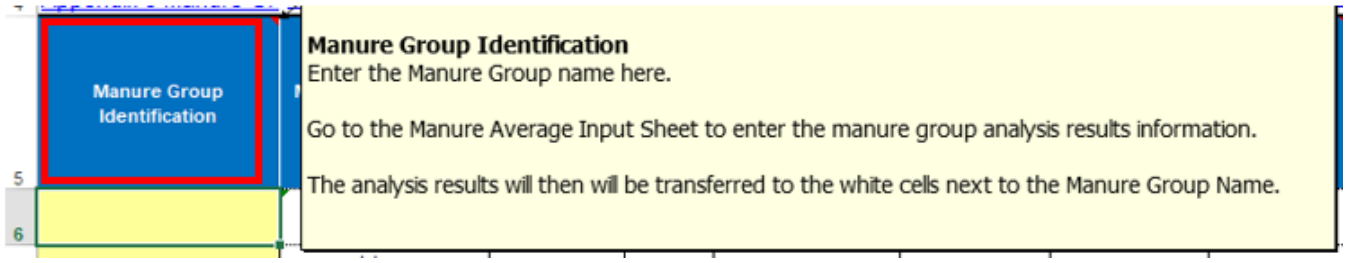
Here is a view of the entire Appendix 3 Input worksheet



How to Complete NMP Appendix 3 Input

The blue column headers cells have notes included to help you understand what needs to be entered or what the cell data is used for.

For example when you click in the blue column header “Manure Group Identification”, the following pop-up box will appear:



In each row of the worksheet there are yellow, white, and grey cells.

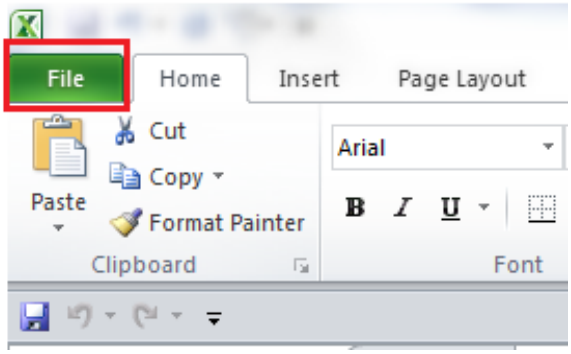
- Yellow cells: are for data entry.
- White cells: contain information that’s returned from a database look up. Don’t enter data into the white cells.
- Grey cells: are conditionally formatted to turn yellow if you need to enter data. For example the “Records” column is grey. If you selected “Records” for the Inventory Method the “Records cell would change to yellow indicating you need to complete it. You can make a selection in a grey cell but if it’s grey, you don’t need to enter the information and it should be blank.

The App 3 Input is only used for data entry and is not printed for submission. Once you complete the appropriate sections in a Manure Group row, the information is transferred to the printed Appendix 3 Manure Group Information worksheet that will be submitted for review and approval.

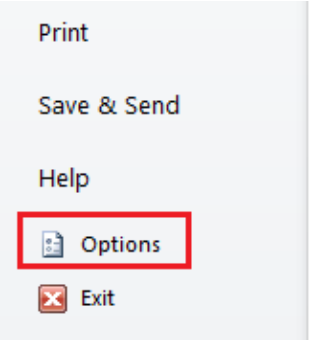
The printed Appendix 3 Manure Group Information worksheet is a grey colored tab in the workbook. There is no data entry required in this worksheet since all information is transferred from the App 3 Input sheet.

How to Complete NMP Appendix 3 Input

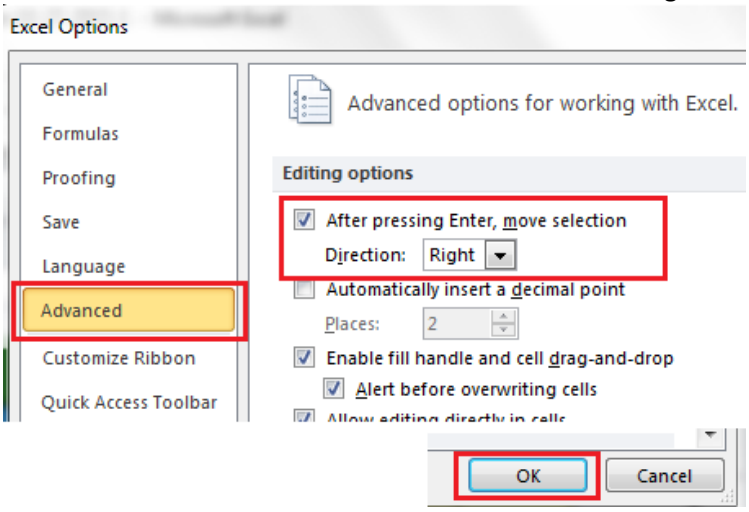
Navigating this worksheet will be easier if your cursor is set to move to the right after pressing enter.
To set your cursor to move to the right, Click on the file tab in the upper left hand corner of the worksheet



Select the Options icon.



Click on the “Advanced” tab and set the direction to “Right” after pressing enter, move selection. Then click OK



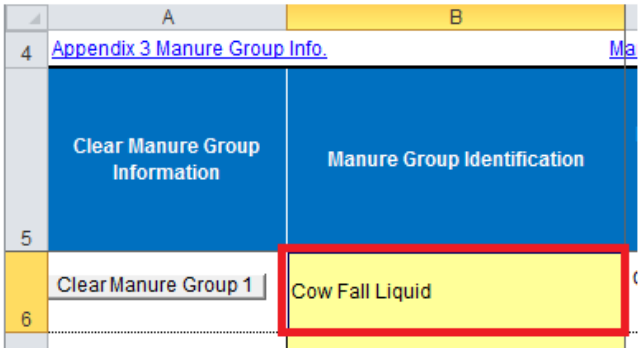
How to Complete NMP Appendix 3 Input

1. Procedure

1.1. Select the "App 3 Input" worksheet tab

1.2. Enter the Manure Group Name

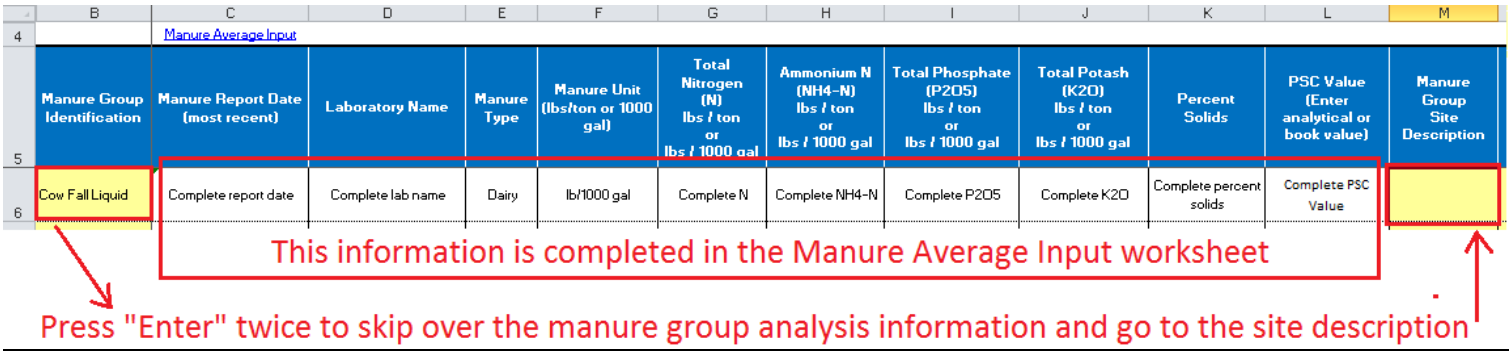
Enter a manure group name in the first available manure group cell.



After you type a name and press enter, the manure group analysis information cells will ask you to complete the information. This is completed in the Manure Average Input worksheet.

If you're not sure how to do this, read the guidance document: "How to complete the Manure Average Input worksheet".

If you have the manure analysis information and know how to enter it, then go the Manure Average Input page and complete it. If you want to add the information later, Press enter twice to jump over these cells and go to the next yellow cell which is the Manure Group Site Description.



How to Complete NMP Appendix 3 Input

In this example, the manure group analysis results have been completed in the Manure Average Input Worksheet. The 3 years of analysis values were entered in the yellow cells listed below:

Manure Group Identification	Year	Manure Analysis Report Date (Most recent in bold)	Laboratory Name (Most recent in bold)	Manure Type	Manure Unit (lbs/ton or 1000 gal)	Total Nitrogen (N) (lbs/ton or 1000 gal)	Ammonium N (NH_4-N) (lbs/ton or 1000 gal)	Total Phosphate (P_2O_5) (lbs/ton or 1000 gal)	Total Potash (K_2O) (lbs/ton or 1000 gal)	Percent Solids	PSC Value (Enter analytical or book value)
Cow Fall Liquid	**Average**	**11/1/2016**	**AASL**	**Dairy**	**lb/1000 gal**	**24.67**	**8.83**	**13.00**	**22.67**	**8.93**	**0.64**
Add 1 year	1 year ago	11/1/2016	AASL	Dairy	lb/1000 gal	25.00	8.50	12.00	23.00	6.40	0.80
	2 years ago	10/25/2015	AASL			31.00	10.60	16.00	33.00	12.00	0.67
	3 years ago	11/15/2014	AASL			18.00	7.40	11.00	12.00	8.40	0.45
Clear all years	4 years ago										
	5 years ago										

Manure Average Input

Analysis results are entered in the yellow cells.
The blue row is the average of the 3 years of analysis results

The average of the analysis results will be transferred to Appendix 3 Input worksheet

	B	D	E	F	G	H	I	J	K	L
4										
5	Manure Group Identification	Laboratory Name	Manure Type	Manure Unit (lbs/ton or 1000 gal)	Total Nitrogen (N) lbs / ton or lbs / 1000 gal	Ammonium N (NH4-N) lbs / ton or lbs / 1000 gal	Total Phosphate (P2O5) lbs / ton or lbs / 1000 gal	Total Potash (K2O) lbs / ton or lbs / 1000 gal	Percent Solids	PSC Value (Enter analytical or book value)
6	Cow Fall Liquid	AASL	Dairy	lb/1000 gal	24.67	8.83	13.00	22.67	8.93	0.64

Appendix 3 Input

1.3. Complete the Manure Group Site Description and Season Applied

Enter the Site Description and Season Applied. These are separate entries.

	B	C	L	M	N
4		Manure Average Input			
5	Manure Group Identification	Manure Report Date (most recent)	PSC Value (Enter analytical or book value)	Manure Group Site Description	Manure Group Season Applied
6	Cow Fall Liquid	11/1/2015	0.64	Slurrystore Tank	Fall

1.4. Enter the Inventory Method

If the Inventory Method selected is “Records”, the total amount of collected manure based on the farmers records will be entered in the "Records" column, (the color will change from grey to yellow). The “Total Manure Collected Units” is automatically populated from the manure group information entered in the Manure Average Input worksheet.

	A	B	M	N	O	P	Q
4	Appendix 3 Manure Group Info.						
5	Clear Manure Group Information	Manure Group Identification	Manure Group Site Description	Manure Group Season Applied	Inventory Method	RECORDS: Total Manure Collected Per Manure Group	Total Manure Collected Units
6	Clear Manure Group 1	Cow Fall Liquid	Slurrystore Tank	Fall	Records	250,000	gallons

If the Inventory Method selected is “Calculated”, the total amount of manure collected in the manure group is automatically calculated based on the values listed in the “Animal Type-Manure Production Worksheet and are the values from the Penn State Agronomy Guide Table 1.2-13. The records and total manure collected units will be greyed out.

	A	B	M	N	O	P	Q
4	Appendix 3 Manure Group Info.						
5	Clear Manure Group Information	Manure Group Identification	Manure Group Site Description	Manure Group Season Applied	Inventory Method	RECORDS: Total Manure Collected Per Manure Group	Total Manure Collected Units
6	Clear Manure Group 1	Cow Fall Liquid	Slurrystore Tank	Fall	Calculated		
7	Clear Manure Group 2				Select Method / Records / Calculated		

For this “How To” example, “Calculated” will be the selected Inventory Method for the rest of this example.

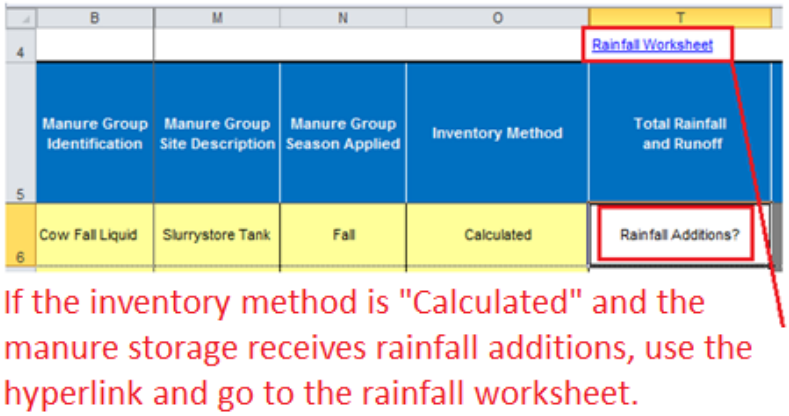
1.5. Complete the Manure Exported Amount

If manure from a manure group is exported off the operation, list the amount of manure in each manure group that is exported off the operation. If no manure is exported enter a zero.

	B	M	N	O	P	Q	R
5	Manure Group Identification	Manure Group Site Description	Manure Group Season Applied	Inventory Method	RECORDS: Total Manure Collected Per Manure Group	Total Manure Collected Units	Manure Exported Amount
6	Cow Fall Liquid	Slurrystore Tank	Fall	Calculated			0

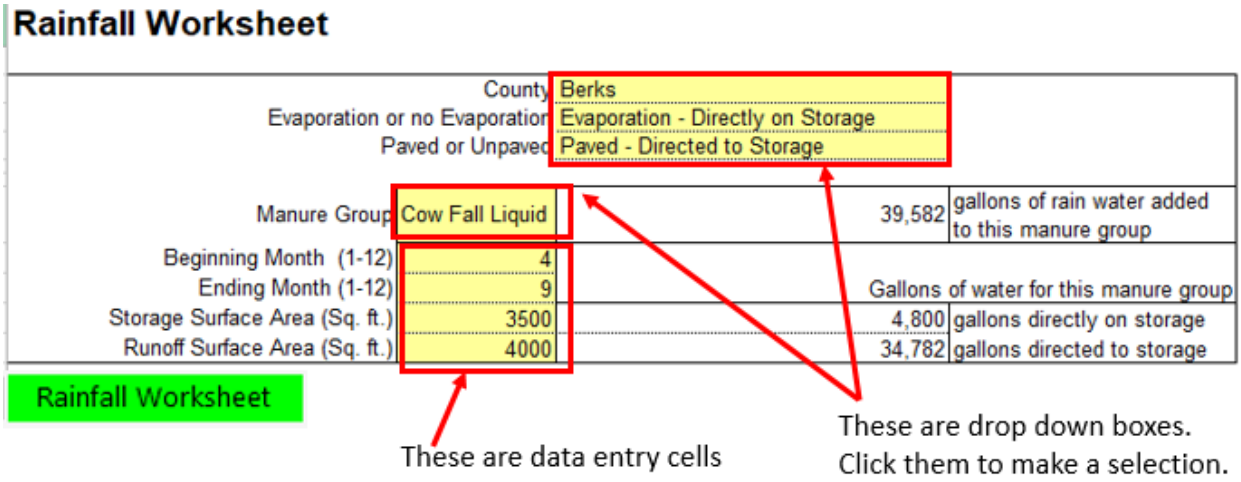
1.6. Complete the Total Rainfall and Runoff

If the "Calculated" inventory method was selected, use the Rainfall/Runoff worksheet if the manure group receives rain water either directly or from runoff. The link above will take you to the rainfall tab. The total rainfall amounts will transfer to the cell below

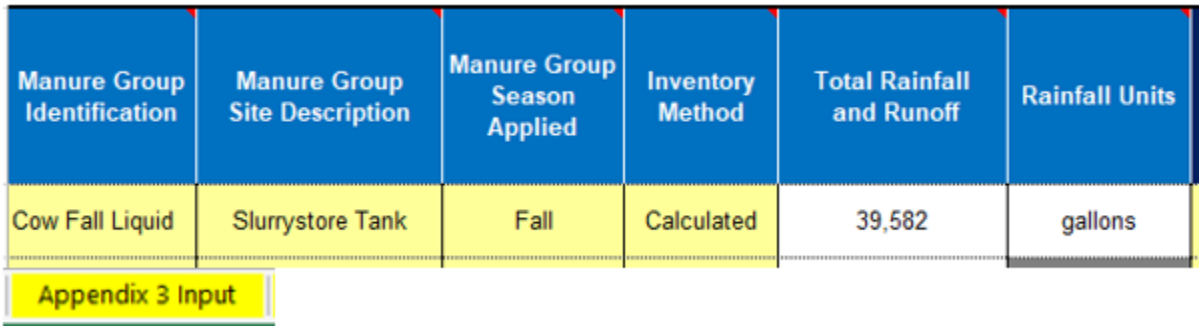


The rainfall worksheet has a tab color that's green and is considered an optional worksheet. You may not need to complete it if the manure storage doesn't receive rain water or runoff water. If the manure group storage does receive rainfall directly on the storage or runoff from roofs an ACA then complete the rainfall worksheet.

<u>The Rainfall Worksheet doesn't need to be completed for solid manure stacking areas.</u>



After the Rainfall worksheet is completed the rainfall additions are automatically transferred to Appendix 3 Input.



1.7. Complete the Animal Group Information

1.7.1. Animal Group 1 Name

All animal group names need be unique for each animal group. Even if it is the same group of animals. Make them unique by adding the season or some other unique identifier.
In the example below, a farm has a manure storage that is used to collect the manure from milk cows and is emptied and spread on the fields twice per year in the spring and fall.

The herd of milk cows would be the animal group contributing to the manure group. Each manure group would have the same milk cow's animal group. The difference would be the season when the manure group is applied

A manure storage for a herd of 110 milk cows emptied twice per may look like this:

Manure Group Identification	Manure Group Site Description	Manure Group Season Applied	Animal Group 1 Name	Animal Group 1 Animal type	Animal Group 1 Animal Number
Cow Fall Liquid	Slurrystore Tank	Fall	Lactating Cows Fall	Holstein Lactating Cow	110
Cow Spring Liquid	Slurrystore Tank	Spring	Lactating Cows Spring	Holstein Lactating Cow	110

Appendix 3 Input

Make the Animal Group names different. (Don't just name them Lactating Cows)
They are the same group of animals but their name needs to be unique in each manure group.

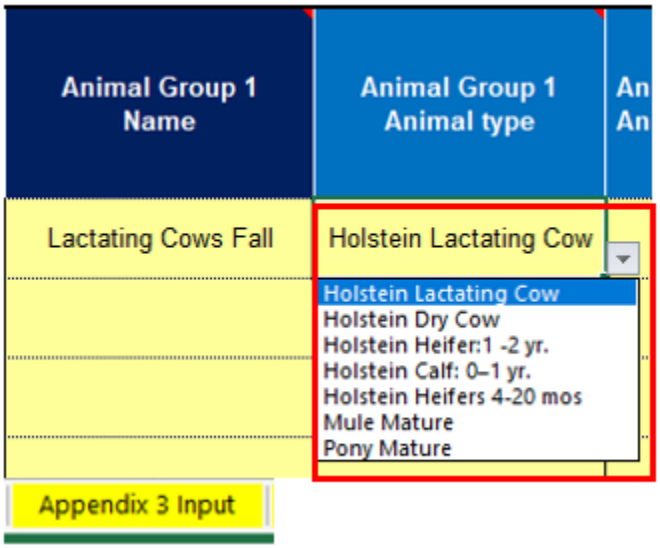
For the rest of this "How To" document example, only one manure group will be entered in Appendix 3 Input.

Manure Group Identification	Manure Group Site Description	Manure Group Season Applied	Animal Group 1 Name
Cow Fall Liquid	Slurrystore Tank	Fall	Lactating Cows Fall

Appendix 3 Input

1.7.2. Animal Group 1 - Animal Type

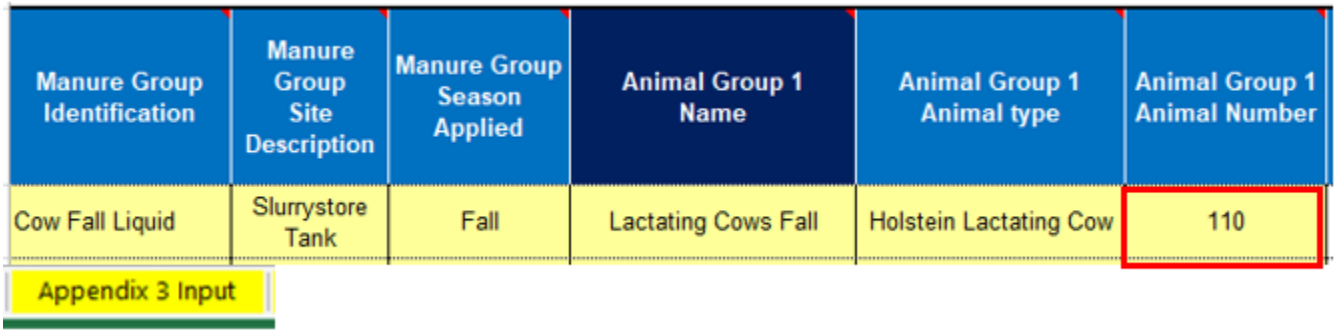
Select the animal type from the drop down list. This is a list of the animal types selected in the Farm Specific Animal List tab.



If the Animal Type dropdown list is blank then go Farm Specific Animal List tab and select the animal that will be on the farm.

1.7.3. Animal Group 1 - Animal Number

Include the average number of animals in each animal group on a typical production day for the agricultural operation.



1.7.4. Animal Group 1 - Animal Weight

The animal weight for this animal group will be automatically populated. Animal weights are populated automatically based on the animal type information completed in the Farm Specific Animal List.

Manure Group Identification	Manure Group Site Description	Manure Group Season Applied	Animal Group 1 Name	Animal Group 1 Animal type	Animal Group 1 Animal Number	Animal Group 1 Animal Weight
Cow Fall Liquid	Slurrystore Tank	Fall	Lactating Cows Fall	Holstein Lactating Cow	110	1450

Appendix 3 Input

1.7.5. Animal Group 1 - Total Days Manure Produced

The number of days the animal group contributes manure to the manure group. For example, the lactating cows fall liquid manure group is collected for 6 months so that is 180 days.

Manure Group Identification	Animal Group 1 Name	Animal Group 1 Animal type	Animal Group 1 Animal Number	Animal Group 1 Animal Weight	Animal Group 1 Total Days Manure Produced
Cow Fall Liquid	Lactating Cows Fall	Holstein Lactating Cow	110	1450	180

Appendix 3 Input

1.7.6. Animal Group 1 - Days on Pasture

If the animals contributing to a particular manure group are on pasture during the time frame of that manure group, the number of days on pasture during that period is entered. Enter a zero "0" if none. In the example below, the milk cows are on pasture for 180 days or the entire time the manure group is collected.

Manure Group Identification	Animal Group 1 Name	Animal Group 1 Animal type	Animal Group 1 Animal Number	Animal Group 1 Animal Weight	Animal Group 1 Total Days Manure Produced	Animal Group 1 Days On Pasture
Cow Fall Liquid	Lactating Cows Fall	Holstein Lactating Cow	110	1450	180	180

Appendix 3 Input

1.7.7. Animal Group 1 - Hours per Day on Pasture

If the animals contributing to a particular manure group are on pasture during the time frame of that manure group, the average number of hours per day on pasture during that period is entered. Enter a zero "0" if none. In the example the milk cows have unrestricted access to the pasture and are fed and watered at the barn so they are considered to be on pasture 12 hours per day.

Manure Group Identification	Animal Group 1 Name	Animal Group 1 Animal type	Animal Group 1 Animal Number	Animal Group 1 Animal Weight	Animal Group 1 Total Days Manure Produced	Animal Group 1 Days On Pasture	Animal Group 1 Hours Per Day On Pasture
Cow Fall Liquid	Lactating Cows Fall	Holstein Lactating Cow	110	1450	180	180	12

Appendix 3 Input

1.7.8. Animal Group 1 - Total Bedding

The amount of bedding used during the timeframe for this manure group. If none is added enter a Zero "0" If the inventory method is “Records then you don’t need to enter the Total Bedding. The cell will be conditionally formatted toc be colored grey. (Grey Cell = no data entry needed).

The amount of bedding will be in the units of the manure analysis. Liquid manure storage bedding calculations will need to be converted to gallons.

Example Calculation:

Lactating Cows Liquid Bedding Calculation

$$\frac{26 \text{ wks}}{1 \text{ manure group}} \times \frac{8 \text{ cu. yds}}{1 \text{ wk}} \times \frac{27 \text{ cu ft}}{1 \text{ cu. yds}} \times \frac{7.48 \text{ gal.}}{1 \text{ cu ft}} \times \frac{1 \text{ bedding}}{2 \text{ reduction factor}} = 21{,}004 \text{ gallons}$$

Manure Group Identification	Animal Group 1 Name	Animal Group 1 Animal type	Animal Group 1 Animal Number	Animal Group 1 Animal Weight	Animal Group 1 Total Days Manure Produced	Animal Group 1 Days On Pasture	Animal Group 1 Hours Per Day On Pasture	Animal Group 1 Total Bedding
Cow Fall Liquid	Lactating Cows Fall	Holstein Lactating Cow	110	1450	180	180	12	21,004

Appendix 3 Input

1.7.9. Animal Group 1 - Total Washwater

The amount of washwater or wastewater added to each manure group is entered. If none is added then enter a Zero "0". If the inventory method is “Records then you don’t need to enter the Total Washwater. The cell will be conditionally formatted to grey. (Grey Cell = no data entry needed)

Example Calculation:

Milkhouse Wastewater Calculation

$$\frac{225 \text{ gallons milkhouse wastewater}}{1 \text{ day}} \times \frac{180 \text{ days}}{1 \text{ manure group}} = \frac{40{,}500 \text{ gallons}}{\text{manure group}}$$

Manure Group Identification	Animal Group 1 Name	Animal Group 1 Animal type	Animal Group 1 Animal Number	Animal Group 1 Animal Weight	Animal Group 1 Total Days Manure Produced	Animal Group 1 Days On Pasture	Animal Group 1 Hours Per Day On Pasture	Animal Group 1 Total Bedding	Animal Group 1 Total Washwater
Cow Fall Liquid	Lactating Cows Fall	Holstein Lactating Cow	110	1450	180	180	12	21,004	40,500

Appendix 3 Input

1.8. Complete any additional manure Animal Groups

Complete any additional animal groups that contribute to the manure group. Up to six animal groups can be added to the Manure Group.

Animal Group 1 Total Washwater	Animal Group 2 Name	Animal Group 2 Animal type	Animal Group 2 Animal Number	Animal Group 2 Animal Weight	Animal Group 2 Total Days Manure Produced	Animal Group 2 Days On Pasture	Animal Group 2 Hours Per Day On Pasture	Animal Group 2 Total Bedding	Animal Group 2 Total Washwater
40,500	Heifers Fall (4-20 mos)	Holstein Heifers 4-20 mos	65	697	180	180	12	18,000	0

Appendix 3 Input

Any additional Manure Groups can be added in the 2nd row of App 3 Input

Manure Group Identification	Manure Report Date (most recent)	Laboratory Name	Manure Type	Manure Unit (lbs/ton or 1000 gal)
Cow Fall Liquid	11/1/2016	AASL	Dairy	lb/1000 gal
	complete manure analysis			
	complete manure			

Appendix 3 Input

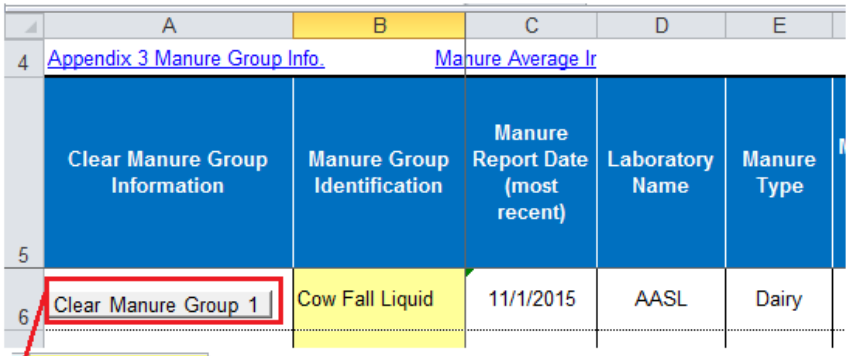
Add additional manure groups in the next available yellow row in App 3 Input as needed

How to Complete NMP Appendix 3 Input

2. Notes:

2.1. How to delete a manure group

If you need to start over and completely re-enter a manure group there is a button to clear or delete all the information of a manure group. This will also clear out or delete all the manure analysis information in the Manure Average Input sheet.



	A	B	C	D	E
4	Appendix 3 Manure Group Info.		Manure Average Ir		
5	Clear Manure Group Information	Manure Group Identification	Manure Report Date (most recent)	Laboratory Name	Manure Type
6	Clear Manure Group 1	Cow Fall Liquid	11/1/2015	AASL	Dairy

Appendix 3 Input

Click on the "Clear Manure Group" button to delete all information including the animal groups and analysis information entered in the Manure Average Input sheet

	A	B	C	D	E	F	G	H	I	J	K	L
5	Manure Group Identification	Year	Manure Analysis Report Date (Most recent in bold)	Laboratory Name (Most recent in bold)	Manure Type	Manure Unit (lbs/ton or 1000 gal)	Total Nitrogen (N) (lbs/ton or 1000 gal)	Ammonium N (NH_4-N) (lbs/ton or 1000 gal)	Total Phosphate (P_2O_5) (lbs/ton or 1000 gal)	Total Potash (K_2O) (lbs/ton or 1000 gal)	Percent Solids	PSC Value (Enter analytical or book value)
6	**Cow Fall Liquid**	**Average**	**11/1/2015**	**AASL**	**Dairy**	**lb/1000 gal**	**24.67**	**8.83**	**13.00**	**22.67**	**8.93**	**0.64**
7		1 year ago	11/1/2015	AASL	Dairy	lb/1000 gal	25.00	8.50	12.00	23.00	6.40	0.80
8		2 years ago	10/25/2014	AASL			31.00	10.60	16.00	33.00	12.00	0.67
9		3 years ago	11/15/2013	AASL			18.00	7.40	11.00	12.00	8.40	0.45
10		4 years ago										
11		5 years ago										

Manure Average Input

2.2. How a manure group will appear in the Printed Appendix 3 Manure Group Information Section after completing it in App 3 Input (Rows 4-16)

	A	B	C	D	E
3	**Row Descriptions**	**Each Manure Group uses two columns**		**Comments**	
4	**Appendix 3 Manure Group Information Crop Yrs. 2018**	Cow Fall Liquid		Manure Group Name is transferred from App 3 Input. Crop years are transferred from the NMP Summary	
5	Manure Report Date (note if averaging several reports)	November 1, 2016		The manure analysis information is transferred from the Manure Average Input sheet. It is the average of all years entered for the manure group. Each row description with a red triangle has a description to explain the results in the cell. THere are blue hyperlinks to go to the input sections.	
6	Laboratory Name	AASL			
7	Manure Type	Dairy			
8	Manure Unit (lbs/ton or 1000 gal)	lb/1000 gal			
9	Total Nitrogen (N) (lbs/ton or 1000 gal)	24.67			
10	Ammonium N (NH_4-N) (lbs/ton or 1000 gal)	8.83			
11	Total Organic N (lbs/ton or 1000 gal)	15.84			
12	Total Phosphate (P_2O_5) (lbs/ton or 1000 gal)	13.00			
13	Total Potash (K_2O) (lbs/ton or 1000 gal)	22.67	Go to NMP Index		
14	Percent Solids	8.93	Go to Appendix 3 Input		
15	PSC Value (analytical or book value)	0.64	Go to Manure Avg Input		
16	Manure Group AEU's	101.00		This is manure group Animal Equivalent Units, (AEU's). It is the sum of the AEU's from the six animal groups that are associated with the manure group and listed below.	

Appendix 3 Manure Group Info.

2.3. How the manure group will appear in the Printed Appendix 3 Manure Group Information Section after completing it in App 3 Input (Rows 17-35)

	A	B	C	D	E
17	Description: Site & Season Applied	Slurrystore Tank	Fall	The manure group site and season applied is transferred from App 3 Input and refers to both the the collected and uncollected manure.	
18	Inventory Method	Calculated		The Inventory Method, either "Calculated" or "Records", is selected in Appendix 3 Input. **Calculated:** If calculated is selected then the manure amount will be calculated based on the following information entered for an animal group. The animal types, weights, days, and hours/day on the operation. **Records:** If records is selected is to be based on previous farm records of the amount of manure generated.	
19		Collected Calc.	Uncollected Calc.	The two column are now separated. The collected manure is in the left column and the uncollected manure is in the right column.	
20	Manure Group Identification	Cow Fall Liquid	Cow Fall Liquid - uncollected		
21	CALCULATED: Total Manure Collected Per Manure Group	333,835.4	919.0	The Inventory Method is selected in Appendix 3 Input. In this example "Calculated" was selected so "Records" is greyed out. If "Records" was selected then "Calculated" would be greyed out.	
22	Units	gallons	Tons	**"Calculated"** means the amount of manure generated is based on book values taken from the Animal Type-Manure Production Table.	
23	RECORDS: Total Manure Collected Per Manure Group			**"Records"** means that a farmer provided a record of the amount of manure generated.	
24	Unit			The units, either gallons or tons will be based the the units selected for the manure group in the Manure Avg Input sheet.	
25		Collected	Uncollected		
26	Manure Used On-Farm	0.0	0.0	This is how much manure has already been planned to be allocated on the fields in App 4 Input. Appendix 4 Crop & Manure Management . THe collected manure is in the left column and the uncollected manure is in the right column.	
27	Units	Gallons	Tons		
28	Manure Exported	0.0		This is transferred from App 3 Input and is the amount of manure that is exported off the farm.	
29	Units	gallons			
30	Manure Allocation Balance	333,835.4	919.0	This is the amount of manure reaining to be applied,(mechanically for collected manure or by grazing for uncollected manure).	
31	Units	Gallons	Tons		
32	Manure Balance as a Percent of Total Manure Collected	100.0%		The amount of unallocated manure must not exceed 5% of the total amount of manure collected in the manure group. A positive value means there is manure remaining to be allocated or exported. A negative value means more manure was allocated or exported than was collected.	
33	Total Rainfall and Runoff	39,582		The total rainfall and runoff result is based on the Optional Rainfall worksheet Information.	
34		gallons			

Appendix 3 Manure Group Info.

The collected and uncollected manure values are in separate columns.
Collected manure is in the manure group analysis units and the uncollected manure is always in tons

2.4. How manure group will appear in the Printed Appendix 3 Manure Group Information Section after completing it in App 3 Input. This is the 1st Animal Group information section.
(Rows 36 - 51)

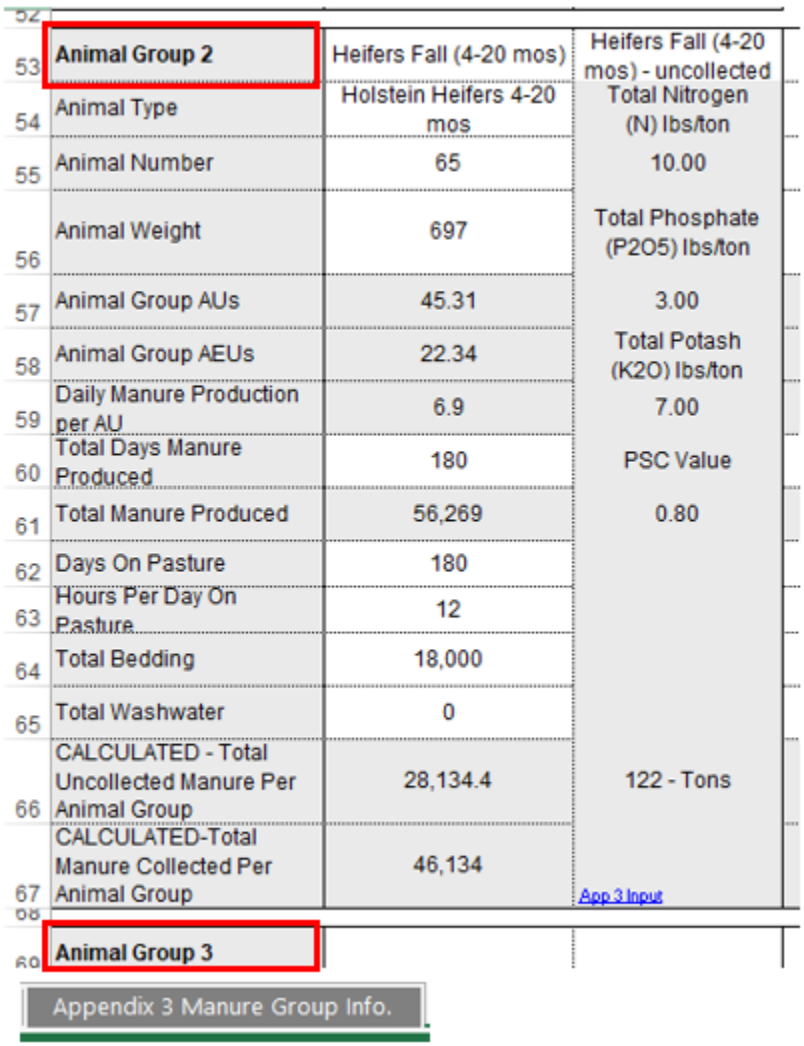
	A	B	C	D	E
35	**Appendix 3 Manure Group Information Crop Yrs. 2018**	Cow Fall Liquid		Page 2 will start here and the maure group name is transferred from App 3 Input	
36		Manure Generation per Animal Group	Uncollected Manure: Nutrient Analysis Book Values	This is the total manure produced,(row 46) minus the uncollected manure,(row 51) plus the bedding, (row 49) plus the washwater, (row 50).	
37	**Animal Group 1**	Lactating Cows Fall	Lactating Cows Fall - uncollected		
38	Animal Type	Holstein Lactating Cow	Total Nitrogen (N) lbs/ton	The Animal Group information in the white cells transfers from App 3 Input. The values in the grey cells are calculated values. The Uncollected manure nutrients are listed in the right column and are book values from the PSU Agronomy Guide unless the animal type and as excreted manure production and analysis results were entered by the planner.	
39	Animal Number	110	10.00		
40	Animal Weight	1,450	Total Phosphate (P2O5) lbs/ton		
41	Animal Group AUs	159.50	4.00	Animal Group Au's and AEU's are internal calculations	
42	Animal Group AEUs	78.66	Total Potash (K2O) lbs/ton		
43	Daily Manure Production per AU	13.0	8.00	The left column is the daily manure production is in the units of the manure analysis. In this example, the analysis is in gallons so the daily production is shown in gallons. 13 gallons /Au produced.	
44	Total Days Manure Produced	180	PSC Value	Transferred from App 3 Input Animal Group 1	
45	Total Manure Produced	373,230	0.80	The left column is the total manure produced by the animal group before subtracting uncollected manure.	
46	Days On Pasture	180		The Days on Pasture and hours/day on pasture are transferred from App 3 Input Animal Group 1.	
47	Hours Per Day On Pasture	12			
48	Total Bedding	21,004		The bedding units and washwater units are the same as the manure group units. In this example it's gallons.	
49	Total Washwater	40,500			
50	CALCULATED - Total Uncollected Manure Per Animal Group	186,615.0	797 - Tons	The total uncollected manure in the left column is in the manure analysis units (gallons). This is to subtract out the uncollected from the collected manure. The uncollected manure in the right column is in tons.	
51	CALCULATED-Total Manure Collected Per Animal Group	248,119	App 3 Input	This is the total manure produced,(row 45) minus the uncollected manure,(row 50) plus the bedding, (row 48) plus the washwater, (row 49).	

Appendix 3 Manure Group Info.

Animal Groups 2 through 6 will appear directly below Animal Group 1 in the manure group.

2.5. How the manure group will appear in the Printed Appendix 3 Manure Group Information Section after completing it in App 3 Input.

(Rows 53- 70)



53	**Animal Group 2**	Heifers Fall (4-20 mos)	Heifers Fall (4-20 mos) - uncollected
54	Animal Type	Holstein Heifers 4-20 mos	Total Nitrogen (N) lbs/ton
55	Animal Number	65	10.00
56	Animal Weight	697	Total Phosphate (P2O5) lbs/ton
57	Animal Group AUs	45.31	3.00
58	Animal Group AEUs	22.34	Total Potash (K2O) lbs/ton
59	Daily Manure Production per AU	6.9	7.00
60	Total Days Manure Produced	180	PSC Value
61	Total Manure Produced	56,269	0.80
62	Days On Pasture	180	
63	Hours Per Day On Pasture	12	
64	Total Bedding	18,000	
65	Total Washwater	0	
66	CALCULATED - Total Uncollected Manure Per Animal Group	28,134.4	122 - Tons
67	CALCULATED-Total Manure Collected Per Animal Group	46,134	App 3 Input
68			
69	**Animal Group 3**		

Appendix 3 Manure Group Info.

2.6. How the different worksheets that relate to the manure group are used in the Nutrient Management Plan.

2.6.1. Appendix 3 Input (yellow tab)

The Appendix 3 Input sheet information is automatically transferred to the Appendix 3 Manure Group Information sheet (Grey Tab). The "Appendix 3 Manure Group Information" sheet is the page that's printed for submission.

2.6.2. Manure Average Input (yellow tab)

The Manure Average Input sheet information is automatically transferred to the Manure Average Printed sheet (Grey Tab). The "Manure Average Printed" sheet is the page that's printed for submission.

2.6.3. Rainfall sheet (green tab)

The Rainfall sheet is optional and only needed if the manure storage receives rainfall directly or runoff. It's where information is entered and is printed for submission.

2.6.4. Animal Type-Manure Production (green tab)

The Animal Type Manure Production sheet is optional and only needed if an animal isn't listed in the Animal type list. It's where information is entered and is printed for submission.

2.6.5. Animal Weight Calculator (green tab)

The Animal Weight Calculator sheet is optional and only needed if you want to determine the weight of a growing animals. For example, it can be used to determine the weight of heifers growing from 4 months to 20 months. It's where information is entered and is printed for submission.

2.7. Example of the printed rainfall worksheet

Rainfall Worksheet — Crop Years 2018

County	Berks		
Evaporation or no Evaporation	Evaporation - Directly on Storage		
Paved or Unpaved	Paved - Directed to Storage		
Manure Group	Cow Fall Liquid	39,582	gallons of rain water added to this manure group
Beginning Month (1-12)	4		
Ending Month (1-12)	9		Gallons of water for this manure group
Storage Surface Area (Sq. ft.)	3500	4,800	gallons directly on storage
Runoff Surface Area (Sq. ft.)	4000	34,782	gallons directed to storage

Rainfall Worksheet

2.8. Example of the Animal-Type Manure Production worksheet

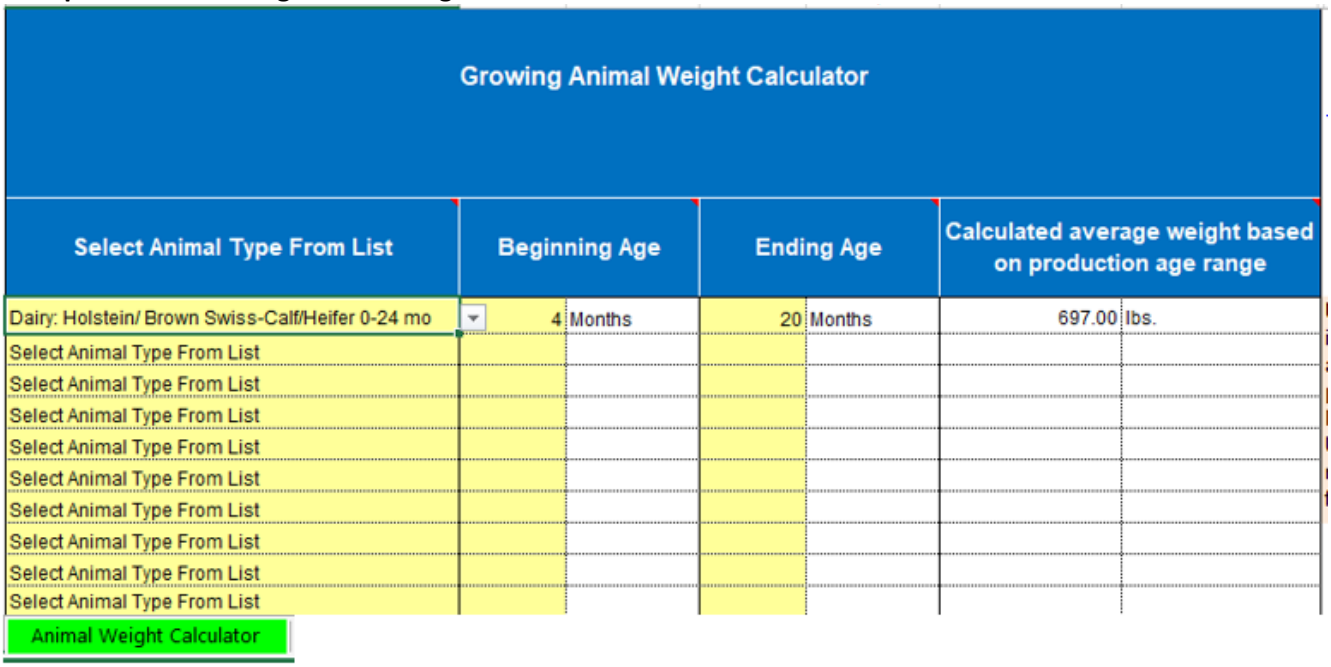
Animal Type and Manure Production-Analysis Values

Crop Years 2018

Animal Type	Standard Animal Weight	Animal weight used in NMP	Daily manure production: Calculated Collected Gallon/AU	Calculated Collected lb/AU	As Excreted Uncollected lbs/Animal AU	"As Excreted" nutrient values for Used for grazing calculations: Nitrogen lbs/Ton	P_2O_5 lbs/Ton	K_2O lbs/Ton	PSC Value	Select Manure Type	Common Animal Name
Light Horse Mature	1100	1100	6.7	55.0	55.0	12	5	9	0.80	Other	horses
Mule Foal: 0–6 mo.	190	190	6.7	55.0	55.0	12	5	9	0.80	Other	mules
Mule Weanling: 6–12 mo.	450	450	6.7	55.0	55.0	12	5	9	0.80	Other	mules
Mule Yearling: 12–24 mo.	700	700	6.7	55.0	55.0	12	5	9	0.80	Other	mules
Mule Two Year Old: 24–36 mo.	900	900	6.7	55.0	55.0	12	5	9	0.80	Other	mules
Mule Mature	1100	1100	6.7	55.0	55.0	12	5	9	0.80	Other	mules
Draft Horses											
Draft Horse Foal: 0–6 mo.	360	360	6.7	55.0	55.0	12	5	9	0.80	Other	horses
Draft Horse Weanling: 6–12 mo.	800	800	6.7	55.0	55.0	12	5	9	0.80	Other	horses
Draft Horse Yearling: 12–24 mo.	1150	1150	6.7	55.0	55.0	12	5	9	0.80	Other	horses
Draft Horse Two-Year-Old: 24–36 mo.	1450	1450	6.7	55.0	55.0	12	5	9	0.80	Other	horses
Draft Horse Mature	1800	1800	6.7	55.0	55.0	12	5	9	0.80	Other	horses
User Entered Animals											
Holstein Heifers 4-20 mos	697	697	6.9	60	60	10	3	7	0.80	Dairy	4-20 month Heifers

Animal Type-Manure Production

2.9. Example of the Growing Animal Weight Calculator worksheet



Growing Animal Weight Calculator						
Select Animal Type From List	Beginning Age		Ending Age		Calculated average weight based on production age range	
Dairy: Holstein/ Brown Swiss-Calf/Heifer 0-24 mo	4	Months	20	Months	697.00	lbs.
Select Animal Type From List						
Select Animal Type From List						
Select Animal Type From List						
Select Animal Type From List						
Select Animal Type From List						
Select Animal Type From List						
Select Animal Type From List						
Select Animal Type From List						
Select Animal Type From List						
Animal Weight Calculator						

4. Revision History

Date	Description of Significant Changes
October 5, 2017	First issue of the document.
June 15, 2018	Added guidance on page 1 when a farm exceeds the maximum of 16 manure groups or 6 animal groups in a manure group.

Prepared by Don Orner | Research Technologist | Penn State Extension – Nutrient Management