



Maryland Department of Agriculture

Office of the Secretary

Larry Hogan, Governor
Boyd K. Rutherford, Lt. Governor
Joseph Bartenfelder, Secretary
Julianne A. Oberg, Deputy Secretary

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October 27, 2021

The Honorable Lawrence J. Hogan, Jr.
Governor
100 State Circle
Annapolis, MD 21401

The Honorable Adrienne A. Jones
Speaker
Maryland House of Delegates
State House, H-101
100 State Circle
Annapolis, MD 21401

The Honorable Bill Ferguson
President
Maryland Senate
State House, H-107
100 State Circle
Annapolis, MD 21401

RE: Report Required by AG § 8-807 - MSAR # 11904

Dear Governor Hogan, Speaker Jones and President Ferguson:

AG § 8-807 states, “(a) On or before December 31 of each year, the Department of Agriculture shall report to the Governor, and, in accordance with § 2- 1257 of the State Government Article, the General Assembly, on:

(1) The farm acreage covered by nutrient management plans and the implementation and evaluation of those plans; and

(2) In consultation with the Nutrient Management Advisory Committee, the implementation of the requirements of the Water Quality Improvement Act of 1998.

(b) The report required under subsection (a) (2) of this section shall include information regarding:

(1) The level of participation in the nutrient management plan program;

(2) Additional resources that may be needed to meet the requirements of § 8–803.1 of this subtitle;

(3) The effectiveness of nutrient application education programs; and

(4) The effectiveness of the Manure Transportation Project set forth in § 8–704.2 of this title.

(c) (1) Beginning in 2020, the report required under this section shall include information on the production and use of animal manure by farm operations covered by nutrient management plans during the previous year, including:

(i) The amount of animal manure exported by farm operations to alternative use facilities or other farm operations in the State;

- (ii) The amount of animal manure exported out of the State by farm operations;
and
 - (iii) The amount of animal manure land applied by farm operations in the State
and the source of that manure.
- (2) The information required under this subsection shall be reported: (i) By geographic area, including by county or local watershed; and (ii) In a manner that protects the identity of individual farm operation.

I am resubmitting the 2020 annual report as there was an error in the original. I hope you find the information contained in this report useful. Should you have any questions, please do not hesitate to reach out to Cassie Shirk, Director of Legislation and Government Affairs, at cassie.shirk@maryland.gov or 410-841-5889.

Sincerely,

A handwritten signature in cursive script that reads "Joseph Bartenfelder".

Joseph Bartenfelder
Secretary, Department of Agriculture

Pursuant to §8-807 of the Annotated Code of Maryland, the Maryland Department of Agriculture (MDA) is reporting on the coverage, implementation and evaluation of Nutrient Management Plans (NMPs) being used on Maryland farms.

Background

The Water Quality Improvement Act of 1998 requires all farmers grossing \$2,500 a year or more or livestock producers with 8,000 pounds or more of live animal weight to run their operations using a NMP. NMPs help farmers manage fertilizers, animal waste, and other nutrient sources more efficiently in order to meet crop needs while protecting water quality in streams, rivers and the Chesapeake Bay. Plans that address both nitrogen and phosphorus inputs are required for all agricultural operations, which produce plants, food, feed, fiber, animals or other agricultural products.

Farmers are required to keep their NMPs current, take new soil samples a minimum of once every three years and file annual reports with MDA describing how they implemented their NMPs during the previous year.

Farmers who own or manage 10 or more acres of agricultural land and apply their own nutrients, are required to attend a two-hour MDA-sponsored education program on nutrient application once every three years. Professionals and farmers certified to prepare NMPs are required to take continuing education courses in order to keep abreast of the latest nutrient management technologies and regulations.

Enforcement Activities

MDA strives to maintain a staff of nutrient management specialists to ensure that farmers are complying with the Nutrient Management Law and that environmental objectives are being met. In 2020, MDE was fully staffed with nine Agricultural Nutrient Management Specialists and two Urban Nutrient Management Specialists. One of the Urban Specialists is being trained to conduct reviews of certified consultants and completed 39 consultant reviews in the last six months of 2020. These specialists review NMPs submitted by farmers, analyze annual reports describing how farmers implement their plans during the previous year, and perform on-farm inspections to make certain that plans are up-to-date and being followed properly. MDA is authorized to issue fines and penalties, take administrative actions and pursue judicial actions, including civil and criminal proceedings. In CY20, MDA issued \$7,400 in fines to seven farmers. The breakdown is as follows: four farmers fined \$350 (\$1,400) and three farmers fined \$2,000 (\$6,000).

NMP Submissions

Maryland farmers are required by law to submit NMPs to MDA that have been developed by an MDA-certified consultant or farm operator who is trained and certified by MDA to develop a plan solely for their operation. As of December 2020, NMPs have been submitted for 5,251 farm operations. This represents a total farm acreage of 1,238,254 acres required to be protected by these plans, which is approximately 7,269 fewer acres than CY19.

Annual Implementation Reports

Farmers are required to maintain an updated NMP at the farm level to reflect changes in their operation. Annual Implementation Reports (AIRs) are required to be filed with MDA by March 1 of each year describing how nutrients were used in their operations. Every year MDA issues warning letters to farmers who fail to file the required AIR by the deadline, followed by notification of pending fines. In CY20, the Program made the decision to delay the warning letters by 30 days. The enforcement process was therefore also delayed by 30 days. By December 2020, 5,122 farm operations (regular AIRs- 4579, (concentrated animal feeding operations (CAFO)) AIRs- 543) had submitted AIRs to MDA. Seventy-nine farmers remain out of compliance at the end of the calendar year, resulting in \$19,750 of pending, uncollected fines. Eighteen farmers have paid the \$250 fine for a total of \$4,500 collected. At the end of the year, no farm operators had been sent to the Central Collections Unit as part of the enforcement process, but will be soon. In 2020, 181 regular operations and 19 CAFO operations were made inactive after contacting the farm operators to confirm they no longer farm or no longer meet the Nutrient Management requirements of income or animal numbers. There were also new operators added, and some were farm transfers, so the net loss of operators is much less. The implementation report covers 1,238,254 acres of land.

On-Farm Plan Implementation Reviews and Inspections

MDA conducted 690 plan implementation reviews and inspections in CY20 to verify that farmers' nutrient application records and receipts were in line with their NMPs. The inspections included both on-farm and virtual inspections due to the restrictions placed on in-person reviews because of COVID-19. This is a reduction in reviews from 2019 when 920 reviews were completed. Travel restrictions in March and April prohibited the typical inspection process. The program adopted a plan for virtual reviews and a transition to virtual reviews has been successful, but slow to be accepted early on. For those unable to provide records and plans electronically, farm visits resumed in the summer with a no-contact policy in effect. It is anticipated the program will continue implementation reviews indefinitely using a mix of both virtual and in-person reviews. There are a large number of farm operations in Maryland that do not have access to computers or the Internet, which may pose a challenge as the program moves toward electronic submission of AIRs in January 2021, and if virtual reviews are found to be an efficient method of review. Approximately 64% of those inspected were fully in compliance, 30% were determined to be out of compliance due to having no plan, an expired plan or incomplete plan. 2% failed their inspections due to over application of nutrients and 3% failed due to inadequate records or nutrient application setback violations. MDA is working to bring these farmers into compliance.

Production and Utilization of Animal Manures, Including Import and Export

The following information is provided to meet the new AIR reporting requirements outlined below. The data is provided in three attachments and was compiled using the most recent complete AIR data which is for the CY19.

(c) (1) Beginning in 2020, the report required under this section shall include information on the production and use of animal manure by

Other Animal Manure	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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Baltimore

Beef	4,778.0	724.8	0.0	0.0	85.0	8.0	0.0	0.0	4,863.0	732.8	0.0	0.0
Compost	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	4.0	0.0	0.0
Dairy	5,469.0	671.5	5,955,245.0	673.4	0.0	0.0	0.0	0.0	5,469.0	671.5	5,955,245.0	673.4
Horse	1,635.4	640.8	0.0	0.0	99.0	60.0	0.0	0.0	1,734.4	700.8	0.0	0.0
Poultry	1,805.9	831.9	0.0	0.0	3,240.0	691.0	0.0	0.0	5,045.9	1,522.9	0.0	0.0
Sheep	37.0	34.9	0.0	0.0	0.0	0.0	0.0	0.0	37.0	34.9	0.0	0.0
Swine	305.2	34.5	409,988.2	136.1	0.0	0.0	0.0	0.0	305.2	34.5	409,988.2	136.1
Other Animal Manure	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Calvert

Beef	800.5	133.1	0.0	0.0	0.0	0.0	0.0	0.0	800.5	133.1	0.0	0.0
Compost	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dairy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Horse	142.1	60.3	0.0	0.0	0.0	0.0	0.0	0.0	142.1	60.3	0.0	0.0
Poultry	0.1	1.0	0.0	0.0	749.0	262.0	0.0	0.0	749.1	263.0	0.0	0.0
Sheep	0.2	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.0	0.0	0.0
Swine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other Animal Manure	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Caroline

Beef	621.0	107.0	2,740.0	415.0	0.0	0.0	0.0	0.0	621.0	107.0	2,740.0	415.0
Compost	5,225.1	1,423.7	0.0	0.0	4,625.0	1,455.0	580.0	145.0	9,850.1	2,878.7	580.0	145.0
Dairy	7,625.0	372.0	8,485,500.0	615.5	0.0	0.0	0.0	0.0	7,625.0	372.0	8,485,500.0	615.5
Horse	201.0	270.2	0.0	0.0	97.0	13.0	0.0	0.0	298.0	283.2	0.0	0.0
Poultry	19,705.1	11,690.5	0.0	0.0	35,198.0	22,488.0	0.0	0.0	54,903.1	34,178.5	0.0	0.0
Sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Swine	12.0	27.0	20,000.0	0.0	0.0	0.0	0.0	0.0	12.0	27.0	20,000.0	0.0
Other Animal Manure	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Carroll

Beef	18,797.9	3,828.3	737,200.0	227.0	56.0	10.0	0.0	0.0	18,853.9	3,838.3	737,200.0	227.0
Compost	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dairy	31,683.5	3,449.6	32,976,674.0	4,382.0	1,692.0	164.0	3,168,000.0	677.0	33,375.5	3,613.6	36,144,674.0	5,059.0
Horse	1,275.4	362.4	0.0	0.0	60.0	37.0	0.0	0.0	1,335.4	399.4	0.0	0.0
Poultry	2.0	15.2	0.0	0.0	16,547.0	6,840.0	0.0	0.0	16,549.0	6,855.2	0.0	0.0
Sheep	80.5	86.1	0.0	0.0	0.0	0.0	0.0	0.0	80.5	86.1	0.0	0.0
Swine	83.4	77.4	303,200.0	83.0	0.0	0.0	750,000.0	188.0	83.4	77.4	1,053,200.0	271.0
Other Animal Manure	61.0	22.2	0.0	0.0	0.0	0.0	0.0	0.0	61.0	22.2	0.0	0.0

Cecil

Beef	3,550.5	470.4	233,210.0	33.0	0.0	0.0	0.0	0.0	3,550.5	470.4	233,210.0	33.0
Compost	180.0	24.3	0.0	0.0	600.0	78.0	0.0	0.0	780.0	102.3	0.0	0.0
Dairy	10,777.6	880.2	25,493,307.0	2,148.7	247.0	50.0	7,340,000.0	652.0	11,024.6	930.2	32,833,307.0	2,800.7
Horse	1,366.8	216.0	0.0	0.0	2,805.0	0.4	0.0	0.0	4,171.8	216.4	0.0	0.0
Poultry	1,025.8	347.8	0.0	0.0	6,996.0	2,970.0	0.0	0.0	8,021.8	3,317.8	0.0	0.0
Sheep	4.2	7.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	7.0	0.0	0.0
Swine	306.0	65.0	701,820.0	53.0	0.0	0.0	362,000.0	94.0	306.0	65.0	1,063,820.0	147.0
Other Animal Manure	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Charles

Beef	232.5	55.6	0.0	0.0	0.0	0.0	0.0	0.0	232.5	55.6	0.0	0.0
Compost	0.0	0.0	0.0	0.0	25.0	3.0	0.0	0.0	25.0	3.0	0.0	0.0
Dairy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Horse	368.7	83.1	0.0	0.0	0.0	0.0	0.0	0.0	368.7	83.1	0.0	0.0
Poultry	1.0	19.0	0.0	0.0	127.0	210.0	0.0	0.0	128.0	229.0	0.0	0.0
Sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Swine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other Animal Manure	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Dorchester

Beef	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Compost	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dairy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Horse	3.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	7.0	0.0	0.0
Poultry	16,064.0	5,942.8	0.0	0.0	27,001.0	13,141.0	0.0	0.0	43,065.0	19,083.8	0.0	0.0
Sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Swine	0.0	0.0	12,000.0	6.5	0.0	0.0	0.0	0.0	0.0	0.0	12,000.0	6.5
Other Animal Manure	193.0	9.1	0.0	0.0	0.0	0.0	0.0	0.0	193.0	9.1	0.0	0.0

Frederick

Beef	20,369.0	3,896.8	6,954,404.0	990.0	0.0	0.0	840,000.0	84.0	20,369.0	3,896.8	7,794,404.0	1,074.0
Compost	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dairy	42,406.0	6,115.1	84,016,228.0	14,450.5	8,747.0	955.0	5,083,478.0	2,969.0	51,153.0	7,070.1	89,099,706.0	17,419.5
Horse	2,706.2	820.1	0.0	0.0	2,400.0	156.0	0.0	0.0	5,106.2	976.1	0.0	0.0
Poultry	5,309.4	3,154.1	0.0	0.0	6,389.0	2,656.0	0.0	0.0	11,698.4	5,810.1	0.0	0.0
Sheep	118.5	45.7	0.0	0.0	0.0	0.0	0.0	0.0	118.5	45.7	0.0	0.0
Swine	689.0	101.7	512,000.0	224.0	0.0	0.0	0.0	0.0	689.0	101.7	512,000.0	224.0

Swine	0.0	0.0	4,750,617.0	400.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4,750,617.0	400.0
Other Animal Manure	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Montgomery

Beef	1,414.7	404.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,414.7	404.7	0.0	0.0
Compost	0.0	0.0	0.0	0.0	82.0	6.0	0.0	0.0	0.0	82.0	6.0	0.0	0.0
Dairy	410.0	67.5	1,170,000.0	160.0	0.0	0.0	0.0	0.0	0.0	410.0	67.5	1,170,000.0	160.0
Horse	2,951.2	622.5	0.0	0.0	20.0	10.0	0.0	0.0	0.0	2,971.2	632.5	0.0	0.0
Poultry	2.9	5.1	0.0	0.0	87.0	93.0	0.0	0.0	0.0	89.9	98.1	0.0	0.0
Sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Swine	14.0	37.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.0	37.5	0.0	0.0
Other Animal Manure	168.0	1.5	6,300.0	80.0	0.0	0.0	0.0	0.0	0.0	168.0	1.5	6,300.0	80.0

Prince George's

Beef	81.0	62.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	81.0	62.0	0.0	0.0
Compost	301.5	61.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	301.5	61.0	0.0	0.0
Dairy	0.0	0.0	1,604,000.0	320.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,604,000.0	320.1
Horse	394.5	127.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	394.5	127.8	0.0	0.0
Poultry	4.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5	1.0	0.0	0.0
Sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Swine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other Animal Manure	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Queen Anne's

Beef	1,856.0	621.4	0.0	0.0	236.0	60.0	0.0	0.0	0.0	2,092.0	681.4	0.0	0.0
Compost	0.0	0.0	0.0	0.0	1,720.0	86.0	0.0	0.0	0.0	1,720.0	86.0	0.0	0.0
Dairy	5,047.0	538.1	10,203,197.0	1,289.7	0.0	0.0	540,000.0	90.0	0.0	5,047.0	538.1	10,743,197.0	1,379.7
Horse	427.2	141.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	427.2	141.2	0.0	0.0
Poultry	4,737.0	2,238.4	0.0	0.0	43,529.0	20,068.5	0.0	0.0	0.0	48,266.0	22,306.9	0.0	0.0
Sheep	12.5	10.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.5	10.4	0.0	0.0
Swine	30.0	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0	12.0	0.0	0.0
Other Animal Manure	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

St. Marys

Beef	1,961.0	433.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,961.0	433.0	0.0	0.0
Compost	0.0	0.0	0.0	0.0	20.0	7.0	0.0	0.0	0.0	20.0	7.0	0.0	0.0
Dairy	662.0	339.0	134,000.0	56.0	0.0	0.0	0.0	0.0	0.0	662.0	339.0	134,000.0	56.0

Horse	783.5	256.5	0.0	0.0	128.0	22.0	0.0	0.0	911.5	278.5	0.0	0.0
Poultry	3,080.9	918.5	0.0	0.0	6,926.0	2,568.0	0.0	0.0	10,006.9	3,486.5	0.0	0.0
Sheep	86.0	43.0	0.0	0.0	0.0	0.0	0.0	0.0	86.0	43.0	0.0	0.0
Swine	127.0	45.0	40,000.0	20.0	0.0	0.0	0.0	0.0	127.0	45.0	40,000.0	20.0
Other Animal Manure	12.0	9.3	0.0	0.0	0.0	0.0	0.0	0.0	12.0	9.3	0.0	0.0

Somerset

Beef	515.0	69.8	0.0	0.0	0.0	0.0	0.0	0.0	515.0	69.8	0.0	0.0
Compost	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dairy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Horse	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Poultry	4,896.6	2,615.8	0.0	0.0	6,658.0	3,603.0	0.0	0.0	11,554.6	6,218.8	0.0	0.0
Sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Swine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other Animal Manure	14.0	10.1	0.0	0.0	0.0	0.0	0.0	0.0	14.0	10.1	0.0	0.0

Talbot

Beef	527.0	121.4	0.0	0.0	0.0	0.0	0.0	0.0	527.0	121.4	0.0	0.0
Compost	0.0	0.0	0.0	0.0	18.0	7.0	0.0	0.0	18.0	7.0	0.0	0.0
Dairy	1,129.0	277.7	1,666,000.0	300.7	96.0	12.0	888,600.0	207.0	1,225.0	289.7	2,554,600.0	507.7
Horse	723.4	122.3	0.0	0.0	17.0	17.0	0.0	0.0	740.4	139.3	0.0	0.0
Poultry	3,983.5	2,403.4	0.0	0.0	17,213.0	10,490.0	0.0	0.0	21,196.5	12,893.4	0.0	0.0
Sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Swine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other Animal Manure	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Washington

Beef	13,954.3	2,252.9	2,682,000.0	1,225.0	120.0	22.0	0.0	0.0	14,074.3	2,274.9	2,682,000.0	1,225.0
Compost	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dairy	51,784.0	7,425.1	97,546,966.0	16,903.3	915.0	197.0	3,274,894.0	603.0	52,699.0	7,622.1	100,821,860.0	17,506.3
Horse	706.0	116.0	0.0	0.0	264.0	37.0	0.0	0.0	970.0	153.0	0.0	0.0
Poultry	4,507.5	2,248.0	1,180,000.0	190.0	8,042.0	4,938.0	0.0	0.0	12,549.5	7,186.0	1,180,000.0	190.0
Sheep	416.0	123.0	0.0	0.0	0.0	0.0	0.0	0.0	416.0	123.0	0.0	0.0
Swine	539.3	108.0	954,000.0	333.9	30.0	8.0	0.0	0.0	569.3	116.0	954,000.0	333.9
Other Animal Manure	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Wicomico

Beef	85.0	36.0	0.0	0.0	0.0	0.0	0.0	0.0	85.0	36.0	0.0	0.0
Compost	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dairy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Horse	70.0	5.5	0.0	0.0	130.0	34.0	0.0	0.0	200.0	39.5	0.0	0.0
Poultry	3,470.6	1,681.3	0.0	0.0	6,566.0	4,102.0	0.0	0.0	10,036.6	5,783.3	0.0	0.0
Sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Swine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other Animal Manure	11.4	11.4	0.0	0.0	0.0	0.0	0.0	0.0	11.4	11.4	0.0	0.0

Worcester

Beef	38.0	22.3	0.0	0.0	0.0	0.0	0.0	0.0	38.0	22.3	0.0	0.0
Compost	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dairy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Horse	119.5	90.1	0.0	0.0	0.0	0.0	0.0	0.0	119.5	90.1	0.0	0.0
Poultry	3,507.0	2,100.0	0.0	0.0	26,313.0	12,930.0	0.0	0.0	29,820.0	15,030.0	0.0	0.0
Sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Swine	0.0	0.0	554,000.0	84.0	0.0	0.0	0.0	0.0	0.0	0.0	554,000.0	84.0
Other Animal Manure	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

State Totals

Beef	128,274.7	20,016.5	12,315,849.0	3,428.9	1,012.0	180.0	840,000.0	84.0	129,286.7	20,196.5	13,155,849.0	3,512.9
Compost	5,710.6	1,513.0	0.0	0.0	7,090.0	1,642.0	580.0	145.0	12,800.6	3,155.0	580.0	145.0
Dairy	201,118.7	24,581.5	367,763,508.0	50,201.4	11,822.0	1,390.0	21,786,172.0	5,580.0	212,940.7	25,971.5	389,549,680.0	55,781.4
Horse	17,305.5	5,165.2	55.0	12.0	6,110.0	392.4	0.0	0.0	23,415.5	5,557.6	55.0	12.0
Poultry	119,087.6	39,518.5	1,180,000.0	190.0	262,439.0	129,267.5	0.0	0.0	381,526.6	168,786.0	1,180,000.0	190.0
Sheep	985.9	398.5	0.0	0.0	0.0	0.0	0.0	0.0	985.9	398.5	0.0	0.0
Swine	2,245.9	620.1	8,257,625.2	1,340.5	80.0	18.0	1,112,000.0	282.0	2,325.9	638.1	9,369,625.2	1,622.5
Other Animal Manure	753.2	186.1	6,300.0	80.0	0.0	0.0	0.0	0.0	753.2	186.1	6,300.0	80.0

Attachment 2

2019 Manure Sent to Alternative Use / Manure Broker / Other Farm Operation

County	Type of Manure	Alternative Use		Manure Broker		Other Farm Operation		Total	
		Tons	Gallons	Tons	Gallons	Tons	Gallons	Tons	Gallons

Allegany

Beef	0.0	0.0	0.0	0.0	3.0	0.0	3.0	0.0
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Anne Arundel

Beef	0.0	0.0	15.0	0.0	0.0	0.0	15.0	0.0
Horse	16,660.0	0.0	447.0	0.0	442.0	0.0	17,549.0	0.0

Baltimore

Beef	0.0	0.0	0.0	0.0	102.0	0.0	102.0	0.0
Horse	8,486.0	0.0	17,102.1	0.0	756.0	0.0	26,344.1	0.0
Poultry	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.0
Swine	0.0	0.0	0.0	0.0	93.0	0.0	93.0	0.0

Calvert

Horse	0.0	0.0	0.0	0.0	23.5	0.0	23.5	0.0
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Caroline

Dairy	0.0	0.0	0.0	0.0	500.0	0.0	500.0	0.0
Horse	0.0	0.0	0.0	0.0	135.0	0.0	135.0	0.0
Poultry	420.0	0.0	4,730.0	0.0	25,156.0	0.0	30,306.0	0.0

Carroll

Beef	0.0	0.0	0.0	0.0	446.3	0.0	446.3	0.0
Dairy	0.0	0.0	0.0	0.0	3,031.0	4,618,000.0	3,031.0	4,618,000.0
Horse	57.0	0.0	572.0	0.0	326.0	0.0	955.0	0.0
Poultry	0.0	0.0	0.0	0.0	5,966.0	0.0	5,966.0	0.0
Sheep	0.0	0.0	0.0	0.0	46.0	0.0	46.0	0.0
Swine	0.0	0.0	0.0	0.0	0.0	1,000,000.0	0.0	1,000,000.0

Cecil

Dairy	0.0	0.0	0.0	0.0	0.0	175,000.0	0.0	175,000.0
Horse	626.9	0.0	652.2	0.0	1.5	0.0	1,280.6	0.0
Poultry	0.0	0.0	214.0	0.0	16,689.0	0.0	16,903.0	0.0
Swine	0.0	0.0	0.0	0.0	0.0	819,170.0	0.0	819,170.0

Charles

Beef	0.0	0.0	0.0	0.0	9.0	0.0	9.0	0.0
Horse	28.0	0.0	0.0	0.0	104.8	0.0	132.8	0.0

Dorchester

Horse	0.0	0.0	0.0	0.0	21.0	0.0	21.0	0.0
Poultry	0.0	0.0	1,125.0	0.0	13,094.4	0.0	14,219.4	0.0

Frederick

Beef	0.0	0.0	0.0	0.0	790.5	500,000.0	790.5	500,000.0
Dairy	0.0	0.0	0.0	0.0	1,554.0	3,042,800.0	1,554.0	3,042,800.0
Horse	809.0	0.0	43.0	0.0	2,068.2	20.0	2,920.2	20.0
Poultry	0.0	0.0	0.0	0.0	1,135.0	0.0	1,135.0	0.0
Swine	0.0	0.0	0.0	0.0	136.0	0.0	136.0	0.0

Garrett

Dairy	0.0	0.0	0.0	0.0	115.0	84,000.0	115.0	84,000.0
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Harford

Beef	0.0	0.0	0.0	0.0	200.0	0.0	200.0	0.0
Horse	669.4	0.0	2,103.3	0.0	464.2	0.0	3,236.9	0.0

Howard

Beef	7.0	0.0	0.0	0.0	58.0	0.0	65.0	0.0
Horse	1,080.2	0.0	832.3	0.0	800.8	0.0	2,713.3	0.0

Kent

Beef	0.0	0.0	0.0	0.0	580.0	0.0	580.0	0.0
Dairy	0.0	0.0	0.0	0.0	1,092.0	1,374,000.0	1,092.0	1,374,000.0
Horse	547.5	0.0	300.0	0.0	24.0	0.0	871.5	0.0
Poultry	0.0	0.0	0.0	0.0	12,306.5	0.0	12,306.5	0.0

Montgomery

Beef	59.0	0.0	0.0	0.0	0.0	0.0	59.0	0.0
Horse	1,655.0	0.0	2,489.1	0.0	1,178.5	0.0	5,322.6	0.0
Swine	0.0	0.0	15.0	0.0	0.0	0.0	15.0	0.0

Prince George's

Compost	0.0	0.0	0.0	0.0	12.0	0.0	12.0	0.0
Dairy	0.0	0.0	0.0	0.0	10.0	0.0	10.0	0.0
Horse	0.0	0.0	129.0	0.0	133.0	0.0	262.0	0.0
Other Animal Manure	0.0	0.0	0.0	0.0	177.0	0.0	177.0	0.0

Queen Anne's

Beef	0.0	0.0	0.0	0.0	366.0	0.0	366.0	0.0
Dairy	0.0	0.0	0.0	0.0	0.0	600,000.0	0.0	600,000.0
Horse	0.0	0.0	0.0	0.0	70.8	64.0	70.8	64.0

Poultry	30.0	0.0	660.0	0.0	25,441.3	0.0	26,131.3	0.0
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St. Mary's

Beef	50.0	0.0	0.0	0.0	86.0	0.0	136.0	0.0
Other Animal Manure	0.0	0.0	0.0	0.0	0.0	10,000.0	0.0	10,000.0

Somerset

Beef	0.0	0.0	0.0	0.0	1,730.7	0.0	1,730.7	0.0
Poultry	1,400.0	0.0	14,957.2	0.0	4,948.4	0.0	21,305.6	0.0

Talbot

Dairy	0.0	0.0	0.0	0.0	100.0	889,000.0	100.0	889,000.0
Horse	26.0	0.0	150.0	0.0	18.0	0.0	194.0	0.0
Poultry	0.0	0.0	0.0	0.0	2,519.4	0.0	2,519.4	0.0

Washington

Beef	0.0	0.0	0.0	0.0	732.0	0.0	732.0	0.0
Dairy	0.0	0.0	0.0	0.0	2,672.0	3,841,400.0	2,672.0	3,841,400.0
Horse	0.0	0.0	0.0	0.0	262.3	0.0	262.3	0.0
Poultry	0.0	0.0	0.0	0.0	176.1	0.0	176.1	0.0

Wicomico

Horse	0.0	0.0	23.0	0.0	118.0	0.0	141.0	0.0
Poultry	821.0	0.0	3,388.6	0.0	6,710.1	175.0	10,919.7	175.0

Worcester

Horse	0.0	0.0	0.0	0.0	50.0	0.0	50.0	0.0
Poultry	840.0	0.0	15,862.6	0.0	17,650.7	0.0	34,353.3	0.0

State Totals

Beef	116.0	0.0	15.0	0.0	5,103.5	500,000.0	5,234.5	500,000.0
Compost	0.0	0.0	0.0	0.0	12.0	0.0	12.0	0.0
Dairy	0.0	0.0	0.0	0.0	9,074.0	14,624,200.0	9,074.0	14,624,200.0
Horse	30,645.0	0.0	24,843.0	0.0	6,997.6	84.0	62,485.6	84.0
Poultry	3,511.0	0.0	40,937.4	0.0	131,793.1	175.0	176,241.5	175.0
Sheep	0.0	0.0	0.0	0.0	46.0	0.0	46.0	0.0
Swine	0.0	0.0	15.0	0.0	229.0	1,819,170.0	244.0	1,819,170.0
Other Animal Manure	0.0	0.0	0.0	0.0	177.0	10,000.0	177.0	10,000.0
Total	34,272.0	0.0	65,810.4	0.0	153,432.2	16,953,629.0	253,514.6	16,953,629.0

Attachment 3

2019 - Manure Exported Out of State

71SW	Type of Manure	Pennsylvania		Delaware		New Jersey		Virginia		West Virginia		total (All States)	
		Gallons	Tons	Gallons	Tons	Gallons	Tons	Gallons	Tons	Gallons	Tons	Gallons	Tons
Allegany													
	Horse		284.0										284.0
Baltimore													
	Horse		1,680.5									0.0	1,680.5
	Swine		10.0									0.0	10.0
Caroline													
	Beef				6.0							0.0	6.0
	Horse				194.4							0.0	194.4
	Poultry				394.0							0.0	394.0
Carroll													
	Beef		126.6									0.0	126.6
	Horse		164.0									0.0	164.0
Cecil													
	Dairy	1,499,610.0	326.0									1,499,610.0	326.0
	Horse		14,261.5		10.0							0.0	14,271.5
	Poultry				5,140.0		920.0					0.0	6,060.0
Charles													
	Horse								4.0			0.0	4.0
Dorchester													
	Poultry				2,238.4							0.0	2,238.4
Frederick													
	Beef									112.0		0.0	112.0
Harford													
	Dairy	420,000.0	120.0									420,000.0	120.0
	Horse		1,604.0									0.0	1,604.0
	Poultry		60.0									0.0	60.0

Howard

Horse		299.0									0.0	299.0
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Kent

Horse				60.0							0.0	60.0
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Montgomery

Horse		4,297.0						5.0			0.0	4,302.0
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Prince George's

Horse		37.0									0.0	37.0
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Queen Anne's

Horse		373.0									0.0	373.0
Poultry				582.0							0.0	582.0

Somerset

Poultry		884.0		25,852.0							0.0	26,736.0
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Talbot

Horse		971.0									0.0	971.0
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Washington

Beef									135.0		0.0	135.0
Dairy	1,812,400.0	3,005.0									1,812,400.0	3,005.0
Horse		75.0									0.0	75.0
Poultry		330.0									0.0	330.0
Swine	180,000.0	48.0									180,000.0	48.0

Wicomico

Poultry				33,544.7							0.0	33,544.7
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Worcester

Poultry		264.0		23,819.6				2,986.0			0.0	27,069.6
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State Totals

Beef	0.0	126.6	0.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	247.0
Dairy	3,732,010.0	3,451.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Horse	0.0	24,046.0	0.0	264.4	0.0	0.0	0.0	9.0	0.0	0.0	0.0	0.0
Poultry	0.0	1,538.0	0.0	91,570.7	0.0	920.0	0.0	2,986.0	0.0	0.0	0.0	0.0
Swine	180,000.0	58.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	3,912,010.0	29,219.6	0.0	91,841.1	0.0	920.0	0.0	2,995.0	0.0	0.0	0.0	247.0

Out of State - Total Gallons

3,912,010.
0

Out of State - Total Tons

125,222.7