

**Agricultural Inspections**  
**July 1, 2021 through June 30, 2022**

This document summarizes the accomplishments of the expanded agricultural inspection program from the timeframe July 1, 2021 through June 30, 2022. The expanded agricultural inspection program includes inspections that were conducted as part of the Act 38 Nutrient Management Program in the Pennsylvania portion of the Chesapeake Bay Watershed on Concentrated Animal Operations (CAOs) and Concentrated Animal Feeding Operations (CAFOs). As the program was expanded in 2016, it also includes inspections conducted as part of the Chesapeake Bay Agriculture Inspection Program (CBAIP) on agricultural operations that do not meet the definition of a CAO or CAFO.

In addition to Act 38 Nutrient Management status reviews, this report includes the results of both CBAIP Initial Inspections and CBAIP Phase 2 Inspections. Initial Inspections are on-site field inspections during which requests are made to produce the agricultural operation’s written Agriculture Erosion and Sediment Control Plan (Ag. E&S Plan) and/or Manure Management Plan (MMP). Phase 2 Inspections are inspections of production areas and fields to determine compliance with the BMP implementation schedules set forth in the operation’s Ag E&S Plan and/or MMP. Additionally, the BMPs are evaluated during a CBAIP Phase 2 Inspection to ensure they are functioning as intended to minimize the potential for pollution. To avoid duplication of the inspected acres that were also inspected during an Act 38 Nutrient Management Status Review, this report does not include Compliance Evaluation Inspections (CEIs) on CAFOs that were conducted by DEP staff.

All data related to the CBAIP and the Act 38 Nutrient Management Program were collected through a centralized geospatial database.

**Table 1. Total Number of PA farms in the Chesapeake Bay Watershed as Identified in the 2017 USDA Agriculture Census and Total PA Acres in Agriculture Land Use as Identified by the Chesapeake Bay Program.**

<b>2017 USDA Ag Census Farms in PA Chesapeake Bay Watershed</b>	<b>30,193</b>
<b>2018 Ag Land Use Acres in PA Chesapeake Bay Watershed</b>	<b>3,067,629</b>

**Table 2. County Locations and Total Number of Completed Agricultural Inspections by Inspection Type**

<b>CBAIP Initial Inspections (1691)</b>			<b>CBAIP Phase 2 Inspections (159)</b>	<b>Act 38 NM Status Reviews (822)</b>		
Adams	Franklin	Northumberland	Adams	Adams	Fulton	Snyder
Bedford	Fulton	Perry	Chester	Bedford	Huntingdon	Sullivan
Berks	Huntingdon	Potter	Clinton	Berks	Juniata	Tioga
Blair	Juniata	Schuylkill	Columbia	Blair	Lancaster	Union
Bradford	Lackawanna	Snyder	Franklin	Bradford	Lebanon	York
Cambria	Lancaster	Sullivan	Lancaster	Centre	Luzerne	
Centre	Lebanon	Susquehanna	Lebanon	Chester	Lycoming	
Clearfield	Luzerne	Tioga	Montour	Clinton	Mifflin	
Clinton	Lycoming	Union	Sullivan	Columbia	Montour	
Columbia	Mifflin	Wyoming	York	Cumberland	Northumberland	
Cumberland	Montgomery	York		Dauphin	Perry	
Dauphin	Montour			Franklin	Schuylkill	

**Table 3. Farms and Agriculture Acres Inspected within Pennsylvania’s portion of the Chesapeake Bay Watershed Since the Inception of the Expanded Agricultural Inspection Program**

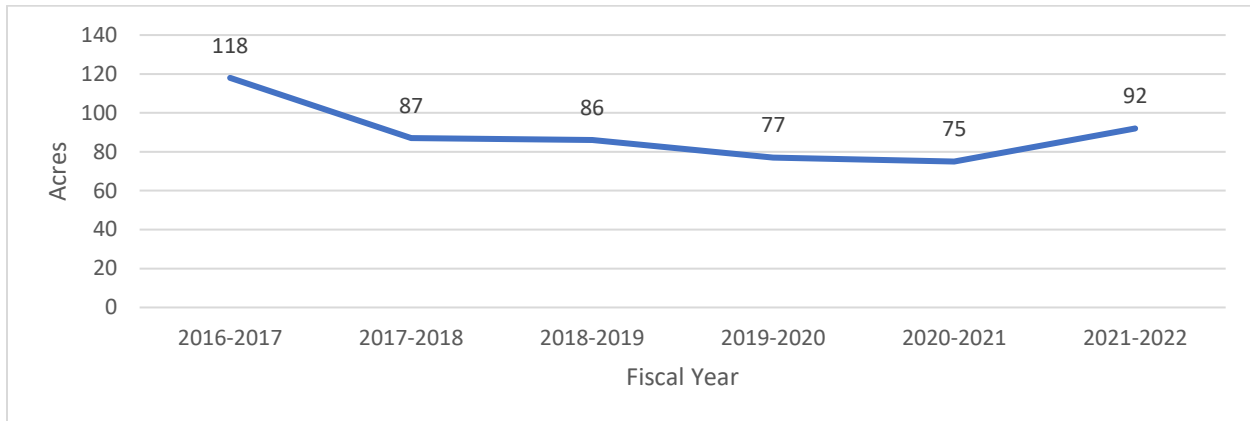
	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	Totals
<b>Total Farms Inspected</b>	2,823	2,924	2,951	2,538*	2,650	2,670	16,556
<b>Total Acres Inspected</b>	393,426 (12.7%)	329,468 (10.6%)	315,823 (10.3%)	258,805* (8.4%)*	275,568 (8.9%)	322,750 (10.5%)	1,895,840 (61.8%)
PA Bay Farms Inspected under the Act 38 Program	743	814	886	670*	702	822	4637
PA Bay Ag Acres Inspected under the Act 38 Program	147,762	145,680	138,139	115,083*	129,578	152,177	828,419
PA Farms Inspected under the CB Ag Inspection Program	2,080	2,110	2,065	1,868	1,948	1,850	11,921
PA Acres inspected under the CB Ag Inspection Program	245,664	183,788	177,684	143,722	145,990	170,573	1,067,421

\*Adjusted to reflect all unique agricultural operations inspected during the period of interest.

In 2021-2022, the total number of agricultural operations inspected increased by 20, and the acreage inspected in increased by 47,182 acres. For the entirety of 2021-2022, the expanded agricultural inspection program operated under normal procedures, unmodified due to the COVID-19 public health emergency. However, from April-July of 2022, routine inspections on poultry operations in Pennsylvania were suspended due the highly pathogenic avian influenza (HPAI) outbreak, likely resulting in fewer overall inspections completed than we would expect in normal years. Despite the incredible obstacles brought on by the HPAI outbreak, conservation district, PA State Conservation Commission, and PA DEP staff inspected more than 10% of the agricultural land in the PA portion of the Chesapeake Bay Watershed during the 2021-2022 reporting period.

Additionally, as represented in Figure 1, the average operation size increased for the first time since the inception of the CBAIP. Conservation district staff continue to reiterate that most operations managing large acreages received Initial Inspections during previous years of the CBAIP. However, several outlying large operations were inspected during 2021-2022. When large operations are removed, the average operation size inspected in 2021-2022 was 72 acres. Therefore, it is anticipated that the trend toward overall smaller operations will continue as the program matures.

**Figure 1: Average Size of Agricultural Operations Inspected Under CBAIP by Fiscal Year**



### **Compliance**

The compliance rate for Act 38 Nutrient Management Plan development and implementation in the Pennsylvania portion of the Chesapeake Bay Watershed was found to be 83% at the time of inspection. Reasons for non-compliance included failure to obtain a manure or soil sample, failure to apply manure consistently with the recommendations in the Nutrient Management Plan, and failure to keep adequate records. For non-compliant CAOs and CAFOs, the Act 38 Nutrient Management Program compliance assessment required follow-up activities resulting in the vast majority of them coming into compliance within 6 months after the annual inspection.

Out of the total 1,850 agricultural operations inspected as part of the 2021-2022 CBAIP, 1,532 were inspected by conservation districts and 318 were inspected by DEP regional offices. Of those inspected, regardless of inspection type, 69% were found to be compliant with MMP requirements and 68% were found to be in compliance with Ag. E&S Plan requirements. This is a slight increase over previous years. If implementation was evaluated, the compliance rates above include operations with complete plans as well as demonstrated BMP implementation and maintenance in accordance with the schedule set forth in the plans. With follow-up from the participating conservation districts and DEP, the regulatory compliance rate associated with the relevant plans for these operations increased to 99%.

The compliance rates listed above include both CBAIP Initial Inspections and Phase 2 Inspections. Verification of structural and agronomic BMPs outlined in the plans is a mandatory component of CBAIP Phase 2 inspections and may be completed during an Initial Inspection if the agricultural operation is willing to provide the information. Over 40% of applicable operations receiving an Initial Inspection voluntarily chose to participate in the BMP verification component of the inspection program. The quantitative outcomes of the BMP verification component of the inspection program and the resulting progress reported toward implementation of the Chesapeake Bay Watershed Implementation Plan (WIP) is described in detail in the BMP data collection and tracking section of this report.

Additionally, Table 4, provided below, identifies the BMP implementation and maintenance evaluation outcomes. Nearly all plans evaluated were being actively implemented and addressed the resource concerns associated with the operation. Only 8% of MMP-related violations and 4% of Ag. E&S-related violations were a result of failures to implement or maintain BMPs or the inadequate prescription of BMPs to protect the resource.

**Table 4. Percent of Operations Evaluated Meeting the BMP Implementation Requirements of the MMP an Ag. E&S Plan**

MMP – BMP Implementation & Maintenance		Ag. E&S Plan - BMP Implementation & Maintenance	
BMPs are actively being implemented according to the schedule outlined in the MMP.	96%	BMPs are actively being implemented according to the schedule outlined in the Ag. E&S Plan.	97%
BMPs in the MMP are functioning as intended	97%	BMPs in the Ag. E&S Plan are functioning as intended	98%
BMPs in the MMP address all manure-related resource concerns	94%	BMPs in the Ag. E&S Plan address all sediment-related resource concerns	97%

Verifications performed via the Resource Enhancement and Protection (REAP) Program, which is administered by the State Conservation Commission are not included in the above results. Since 2007, REAP has approved over 4,500 applications from almost 3,350 operators (operators can apply more than once to the program). An operator must have their environmental compliance status verified each time they apply.

**Chesapeake Bay Agricultural Inspection Program: Compliance and Enforcement**

Including Initial Inspections and Phase 2 Inspections, compliance rates for maintaining the applicable MMPs and Ag E&S Plans on the operation improved slightly over previous years of the inspection program. A 70% compliance rate was demonstrated for maintaining a complete MMP and a 68% compliance rate was demonstrated for maintaining a complete Ag. E&S Plan. For the first time this year, Phase 2 inspections are included in the overall compliance rates listed above and may account for the slight increase in compliance rates over previous years.

It is important to note, as is identified in Table 5, the percentage found to have had planning or technical assistance provided by an agency staff person or private consultant was 93% to develop the MMP and 98% to develop the Ag. E&S Plan.

**Table 5. Percent of Administratively Complete Plans Found at the Time of Inspection for Agricultural Operations Required to Have and Implement the Plan(s).**

Manure Management Plan		Ag. E&S Plan	
Administratively Complete at the Time of Inspection (Initial and Phase 2)	70%*	Administratively Complete at the Time of Inspection (Initial and Phase 2)	68%*
Administratively Complete at the Time of Inspection (Initial Only)	69%*	Administratively Complete at the Time of Inspection (Initial Only)	62%*
Administratively Complete at the Time of Inspection (Phase 2 Only)	81%*	Administratively Complete at the Time of Inspection (Phase 2 Only)	89%*
Planning/Technical Assistance Provided	93%	Planning/Technical Assistance Provided	98%

\*99% of all agricultural operations inspected in 2021 – 2022 met planning obligations by the end date of this report.

**Table 5. The total referrals to the DEP Bureau of Watershed Restoration and Nonpoint Source Management for continued non-compliance for plan violations and enforcement actions taken on those operations.**

	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	Total
<b>Referrals to DEP Bureau of Watershed Restoration and Nonpoint Source Management</b>	21	87	66	66	40	65	345
<b>Notices of Violation</b>	21	87	66	64*	39*	64*	341*
<b>Field Orders</b>	0	22	47	16	30	13	128
<b>Consent Order and Agreement</b>	0	1	2	3	4	3	13
<b>Closed Cases</b>	7	42	64	64	44	39	260

\*Corrective actions identified on the inspection report were satisfied before the NOV's were drafted or the referral was withdrawn.

### **BMP Data Collection and Tracking**

The expanded agricultural inspection program will report the BMPs verified at the time of all CBAIP Initial and Phase 2 Inspections and all Act 38 compliance checks completed in the reporting period to the Chesapeake Bay Program for annual progress. These BMPs include but are not limited to: implementation of MMPs and Act 38 Nutrient Management Plans for nutrient management, supplemental nutrient management, waste storage facilities, barnyard runoff control, heavy use area protection, forested and grassed buffers, fencing, and rotational and prescribed grazing. Verification of BMPs is a required component of CBAIP Phase 2 Inspections and Act 38 compliance checks. BMP verification may also be completed during CBAIP Initial Inspections if the agricultural operation is willing to provide the information.

The Chesapeake Bay Program Partnership has instituted credit durations for all BMPs. The nutrient management BMPs for nitrogen and phosphorus are considered annual practices, and therefore states must report progress toward meeting those goals annually. The expanded agricultural inspection program is responsible for the annual verification of nutrient management BMPs associated with both the Act 38 Nutrient Management Program and the CBAIP.

While agricultural operations and acres inspected via the Act 38 Nutrient Management Program typically remain constant over time, regulatory compliance and BMP implementation is assessed annually. After follow-up, nearly 100% of CAOs and CAFOs demonstrate full compliance with the implementation of their Act 38 Nutrient Management Plan within six months. Therefore, all active Act 38 Nutrient Management Plans are reported for Core N and Core P. When reporting nutrient management supplemental BMPs from the Act 38 Nutrient Management Program for Chesapeake Bay annual progress, the implemented acres are directly reported from the annual compliance check. In addition to nutrient management BMPs, verification of the structural BMPs, including but not limited to: waste storage facilities, heavy use area protection, barnyard runoff control, and riparian forest buffers occurs during the Act 38 annual compliance check and are reported for Chesapeake Bay annual progress.

The agricultural operations and acres inspected during CBAIP Initial Inspections are unique operations. This means that the operations have not been revisited unless a follow-up inspection was needed, or a Phase 2 Inspection was conducted. Since November of 2017, CBAIP Initial Inspections have included a voluntary MMP records check which demonstrates the operation is implementing the required MMP. The MMP records check is a required component of all Phase 2 Inspections, and therefore was completed

on all 159 Phase 2 Inspections completed during 2021-2022. When referencing only operations that received Phase 2 Inspections, 92% of the acres inspected had nutrients applied in accordance with the nitrogen and phosphorus nutrient management BMPs in the MMP. According to the records checks that were completed as part of the CBAIP in 2021-2022 including all inspection types, 46.3% of the total inspected acres receiving nutrients across the Pennsylvania portion of the Chesapeake Bay Watershed had nutrients applied in accordance with the nitrogen and phosphorus nutrient management BMPs in the MMP. However, only 33% of operations participated in the records check during Initial Inspections, when the records check was voluntary. When considering only operations that participated in the records check, regardless of inspection type, 97% of the acres were applied in accordance with a nutrient management BMPs in the MMP when nutrient application records were reviewed.

Through the efforts of participating county conservation districts and DEP staff and the on-going multi-agency integration of tracking and reporting using a centralized geodatabase, MMPs and Nutrient Balance Sheets covering over 975,000 acres have been verified as complete and documented in Pennsylvania's portion of Chesapeake Bay Watershed. In 2021-2022, a statistical subsample of over 86,000 acres of cropland covered by MMPs were directly inspected as part of the CBAIP resulting in over 460,000 reportable acres of core nitrogen and phosphorous nutrient management BMPs and over 17,000 reportable acres of supplemental nutrient management BMPs. Additionally, in 2021-2022, there were over 210,000 reportable acres of core nitrogen and phosphorous nutrient management BMPs from Act 38 Nutrient Management Plans and over 91,000 acres of supplemental nutrient management from Act 38 compliance checks on CAOs and CAFOs. This is a total of over 670,000 reportable acres of core nitrogen, 670,000 reportable acres of core phosphorus, and 108,000 acres of supplemental nutrient management BMPs (nitrogen and phosphorus rate, timing, and placement combined) toward Pennsylvania's Chesapeake Bay annual progress.

Manure Storage Facilities have a 15-year credit duration in the Chesapeake Bay Program modeling tools. As such, if the facilities are not re-verified to show that it is existing and functioning every 15 years, no nutrient or sediment reductions associated with the BMP will be reflected in the model after that date. These Manure Storage Facilities are spatially located and can therefore be verified as unique and not otherwise reported by any program that requires tracking and reporting in the centralized geodatabase. Through CBAIP in 2021-2022, 42 existing liquid manure storage facilities that are equal to or greater than 15 years of age can be reported and applied to the revised history accordingly. The total capacity of these reported liquid manure storage facilities is over 36,000,000 gallons.

Through the activities conducted as part of the expanded agricultural inspection program and other technical assistance provided by county conservation district staff, over 500 structural BMP records will be reported as reverified and 1,500 structural BMP records will be reported as verified for the first time in 2021-2022 Chesapeake Bay Progress.

### **Conclusion**

Another successful year of the expanded agricultural inspection program has shown that most agricultural operations are getting the plans they need. Completed Phase 2 inspections have demonstrated that these plans are being implemented.

A large part of the inspection program is education. County conservation district and DEP staff are using inspections as a catalyst to help operators understand what is needed and to get them on track to implement their plans. Implementing BMPs on the land helps to ensure long-term operational sustainability and environmental protection.

Planning and technical assistance are of paramount importance. The development and implementation of plans hinges on the professionals who provide technical assistance. Funding resources continue to be needed as well. Existing state programs like the Small Business Advantage Grants, Resource Enhancement and Protection (REAP) Program, Conservation Excellence Grants (CEG) and Growing Greener, new state programs such as the Agriculture Conservation Assistance Program (ACAP), and federal programs like NRCS Environmental Quality Incentives Program (EQIP), Conservation Reserve Program (CRP), Conservation Stewardship Program (CSP), and Regional Conservation Partnership Program (RCP), EPA Chesapeake Bay Implementation Grant (CBIG), and EPA Chesapeake Bay Regulatory Accountability Program (CBRAP), Bipartisan Infrastructure Law (BIL), and the Inflation Reduction Act (IRA) are critical for the continued improvements made to our local waters.

### **Acknowledgements**

This work would not be accomplished without the active participation of county conservation district and DEP staff. Their efforts are appreciated and the individuals performing inspections and enforcement activities are recognized for the professional and effective way they continue to carry out these functions.