State Conservation Commission Meeting

November 10, 2020

Virtual Meeting via Zoom

1:00 pm – 4:00 pm

Agenda

Executive Session – 12:00 – 1:00

Business Session – 1:00pm – 4:00pm

A. Opportunity for Public Comment

B. Business and Information Items

1. Approval of Minutes
   a. September 15, 2020 (A)
   b. October 13, 2020 (A)
2. Proposed 2021 Meeting and Conference Call Dates – Karl Brown SCC (A)
3. Update on Proposed Draft Commission Policy Comments, Karl G. Brown, SCC (NA)
4. Nutrient Management & Odor Management Program

   NMP - Nutrient Management Plan
   OMP - Odor Management Plan

   a. OMP - Odor Management Plan Amendment "A", Paul Riehl, Lancaster County – Karl Dymond, SCC (A)
   b. NMP - R&F Family Farms – Andrew Reitz & Jonathan Francis, Northumberland County – Michael Walker, SCC (A)
   c. NMP - Northridge Equestrian – Lisa Eick, Monroe County – Michael Walker, SCC (A)
5. Chesapeake Bay Implementation Grant (CBIG) Update and Expansion of Conservation Excellence Grant Program –Johan E Berger, SCC (NA
6. Update on PaOneStop Update – Jenifer Weld, PSU (NA)
7. Agricultural TMDLs and the Evolution of the Fishing Creek Alternative Restoration Plan – Scott Heidel, DEP (NA)
8. Chesapeake Bay Expanded Agricultural Inspection Program Update – Jill Whitcomb, DEP. (NA)

C. Written Reports

1. Program Reports
   a. Act 38 Nutrient and Odor Management Program Measurables Report
   b. Act 38 Facility Odor Management Program & Status Report on Plan Reviews
   c. REAP Accomplishment Report
2. Ombudsman Program Reports – Southern Allegheny Region (Blair County Conservation District) and Lancaster County Conservation District.

D. Cooperating Agency Reports

Adjournment

Next Public Meetings December 8, 2020 - Conference Call

January 19, 2021 - 'Virtual' Public Meeting

STATE CONSERVATION COMMISSION
MEETING

PA Department of Agriculture, Harrisburg, PA

Zoom Webinar System

Tuesday, September 15, 2020 - 1:00 p.m.

Draft Minutes

Members Present: Secretary Russell Redding, PDA; Secretary Patrick McDonnell, DEP; Mike Flinchbaugh; Ron Rohall; Ron Kopp; Mary Ann Warren; Don Koontz; Denise Coleman, NRCS; Adam Walters, DCED; Chris Houser, Penn State Extension; Kelly Stagen, PACD.

A. Public Input - none

B. Business and Information Items

Karl G. Brown, Executive Secretary, noted that an Executive Session was held to address Nutrient Management Program compliance and other program legal issues.

1. Approval of Minutes – July 22, 2020 - Public Meeting and August 11, 2020 – Conference Call.

Mary Ann Warren moved to approve the July 22, 2020 public meeting minutes. Motion seconded by Don Koontz. Motion carried.

Mike Flinchbaugh moved to approve the August 11, 2020 conference call minutes. Motion seconded by Ron Kopp. Motion carried.

2. Nutrient and Odor Management Program

a. Odor Management Plan – Kimberly Schlappich – Amendment B; Berks County. Karl Dymond, SCC, reported that the Kimberly Schlappich Farm is a duck operation in Center Township, Berks County. This Odor Management Plan amendment is coming before the Commission for consideration because the Odor Site Index exceeds 100 points. Any Odor Management Plan with on Odor Site Index above 100 points requires approval by the Commission (versus the Executive Secretary). This plan amendment proposes to update the approved best management practices required under the existing Odor Management Plan for the operation. Karl Dymond provided additional details on this proposed plan amendment.

Ron Rohall made a motion to approve the Kimberly Schlappich Odor Management Plan Amendment B. Motion seconded by Don Koontz. Motion carried.

b. Nutrient Management Plan – Joe Jurgielewicz & Son, Ltd – Sunbury Farm, Northumberland County. Brady Seeley, SCC, reported that the Joe Jurgielewicz and Sons Farm in Sunbury, Northumberland County is a duck operation with 24,000 finishing ducks. The Nutrient Management Plan for this operation is before the Commission because the operation is located in Northumberland County and the Northumberland Conservation District does not have a Nutrient Management Program delegation agreement with the Commission. Brady Seeley presented this Nutrient Management plan to the Commission for consideration.

Mike Flinchbaugh made a motion to approve the Joe Jurgielewicz and Sons Farm in Sunbury, Northumberland County – Odor Management Plan. Motion seconded by MaryAnn Warren. Motion carried.

c. Nutrient Management Plan – Cotner Farms, Inc. – Dean James, Northumberland County. Michael Walker, SCC, reported that Cotner Farms is a 477,000 egg layer operation in Rush Township, Northumberland County. The Nutrient Management Plan for this operation is before the Commission, because the operation is located in Northumberland County and the Northumberland Conservation District does not have a Nutrient Management Program delegation agreement with the Commission. Michael Walker presented this Nutrient Management Plan to the Commission for consideration.

Ron Kopp made a motion to approve the Cotner Farms Nutrient Management Plan. Motion seconded by Don Koontz. Motion carried.

d. Nutrient Management Plan- William Hoffman, Northumberland County. Michael Walker, SCC, reported tha**t t**he William Hoffman Farm is 60,000 broiler operation in Lewis Township, Northumberland County. The Nutrient Management Plan for this operation is before the Commission, because the operation is located in Northumberland County and the Northumberland Conservation District does not have a Nutrient Management Program delegation agreement with the Commission. Michael Walker presented this Nutrient Management Plan to the Commission for consideration.

Mike Flinchbaugh made a motion to approve the William Hoffman Farm Nutrient Management Plan. Motion seconded by Ron Rohall. Motion carried.

e. Nutrient Management Plan – Just-A-Mere Farm – Josh Daniels, Northumberland County. Michael Walker, SCC, reported that the Just-A-Mere Farm is owned by Josh Daniels and is a duck operation with 17,700 birds - located in Pillow Borough, Northumberland County. The Nutrient Management Plan for this operation is before the Commission, because the operation is located in Northumberland County and the Northumberland Conservation District does not have a Nutrient Management Program delegation agreement with the Commission. Michael Walker presented this Nutrient Management Plan to the Commission for consideration.

Don Koontz made a motion to approve the Just-A-Mere Farm Nutrient Management Plan. Motion seconded by Ron Kopp. Motion carried.

f. Nutrient Management Plan – John Pfleegor, Northumberland County. Michael Walker, SCC, reported that the John Pfleegor farm operation is a 4,000 hog swine

finishing operation located in Lewis Township, Northumberland County. The Nutrient Management Plan for this operation is before the Commission, because the operation is located in Northumberland County, and the Northumberland Conservation District does not have a Nutrient Management Program delegation agreement with the Commission. Michael Walker presented this Nutrient Management Plan to the Commission for consideration.

Mike Flinchbaugh made a motion to approve the John Pfleegor Nutrient Management Plan. Motion seconded by Ron Rohall. Motion carried.

g. Nutrient Management Plan – Jonathan Stauffer, Northumberland County. Michael Walker, SCC, reported that the Jonathan Stauffer Farm is an 84,000 bird layer operation in Upper Mahanoy Township, Northumberland County. The Nutrient Management Plan for this operation is before the Commission, because the operation is located in Northumberland County, and the Northumberland Conservation District does not have a Nutrient Management Program delegation agreement with the Commission. Michael Walker presented this Nutrient Management Plan to the Commission for consideration.

Don Koontz made a motion to approve the Jonathan Stauffer Nutrient Management Plan. Motion seconded by MaryAnn Warren. Motion carried.

h. Nutrient Management Plan – Will-O-Bett Farm – Paul Dagostin, Luzerne County. Michael Walker, SCC, reported that Will-O-Bett Farm is a 4,800 swine finishing operation located in Berwick Borough, Luzerne County. The Nutrient Management Plan for this operation is before the Commission, because the operation is located in Luzerne County and the Luzerne Conservation District does not have a Nutrient Management Program delegation agreement with the Commission.

Ron Rohall made a motion to approve the Will-O-Bett Farm Nutrient Management Plan. Motion seconded by Ron Kopp. Motion carried.

i. Nutrient Management Advisory Board Recommendation - Act 38 Nutrient Management Regulatory Changes – Chapter 83, Subchapter D Section 83.37. Frank Schneider, SCC, reported that the Nutrient Management Advisory Board (NMAB) met on August 27, 2020 and considered a recommendation from the Manure and Nutrient Planning Technical Team subcommittee on improvements to the Nutrient Management Plan process. Upon consideration, the NMAB passed a motion to make a recommendation to the State Conservation Commission (Commission) that the Commission consider revising the Nutrient Management regulations at 25 Pa. Code, Chapter 83 (Chapter 83), in order to address concerns around the current regulatory language that requires an immediate Nutrient Management Plan (NMP) amendment for any addition of land to an operation. Frank Schneider presented additional information regarding this agenda item.

Staff will work on looking at other portions of the regulations that may need to be updated and will report back to the Commission for action at a later date.

3. Draft Commission Policy Recommendations

a. Draft Conservation District Drone Utilization Policy. Karl Brown, SCC, reported that the use of drones for natural resource management and conservation programs is growing across the country. Several Pennsylvania conservation districts have purchased drones and currently utilize them for various purposes within their counties. A number of districts have asked the Commission and other state agencies if these drones can be used for state delegated or contracted duties. In order to provide guidance and direction to districts regarding the use of drones for various state and local programs, Commission staff has drafted a policy regarding when drones may be used and for what purpose. Commission staff is requesting approval to circulate the proposed draft drone utilization policy to county conservation districts for a 45-day comment period. Commission staff will consider any conservation district comments received on the draft in its final revisions to the proposed policy.

Ron Rohall made a motion to circulate the proposed Conservation District Drone Utilization Policy for a 45-day comment period. Don Koontz seconded the motion. Motion carried.

b. Draft Policy – Appointing Former Conservation District Employees as Conservation District Directors. Karl Brown, SCC, reported that the last 3 years have seen a significant number of retirements of conservation district managers and other conservation district staff across Pennsylvania. In a number of counties, consideration has been given to appointing former conservation district employees to director positions on county conservation districts boards of directors. Commission staff have seen instances where an immediate appointment of a former employee to a conservation district board had the potential to be disruptive and/or detrimental to operations of the district. Commission staff, in consultation with the Conservation District Advisory Committee (CDAC), have developed a proposed policy to define a former conservation district employee as "ineligible" for appointment as a district director for three (3) years after the end of their employment. Commission staff is requesting Commission approval to circulate this proposed draft policy to county conservation districts for a 45-day comment period.

MaryAnn Warren made a motion to circulate the proposed policy on appointing former conservation district employees as conservation district directors for a 45-day comment period. Motion seconded by Ron Rohall. Motion carried.

c. Conservation District Fund Allocation Program Statement of Policy, CDAC Recommendation to Reopen. Karl Brown, SCC, reported that at the August meeting of the CDAC, Commission staff and CDAC members discussed the feasibility of providing advanced payments under the Conservation District Financial Assistance Program (CDFAP) for FY 2020-21 payments for technicians and other positions. Based on time and staff constraints, it was decided that consideration of this change was not feasible for the current fiscal year but should be explored and considered for FY 2021-22. This change may require a change in the Commission's CDFAP *Statement of Policy*. It may also require modifications to DEP's Green Port system. Commission and agency staff will continue to work with the CDAC to explore the

feasibility of advanced payments, as well as what changes would be needed to implement advanced payments.

Action: No action is required at this time.

4. Chesapeake Bay Implementation Grant (CBIG) Update and Expansion of Conservation Excellence Grant Program. Karl Brown, SCC, reported that the Commission was recently approved as the recipient of a CBIG subaward from DEP. These are federal CBP funds, provided to DEP, and then passed through to the Commission. The purpose of this sub-award is to expand the CEG program to two additional Chesapeake Bay watershed "Tier 2" counties, and to develop a public-private partnership pilot to further demonstrate CEG "bundling" concepts for agricultural BMP implementation. Karl Brown and Johan Berger presented additional details regarding this agenda item.

MaryAnn Warren made the following motions:
1. A motion to approve of the expansion of the Conservation Excellence Grant Pilot Program into Cumberland and Franklin Counties using Chesapeake Bay Implementation Grant (CBIG) funding.
2. A motion to approve the expansion of the Conservation Excellence Grant Program concepts as a public-private partnership pilot in cooperation with Salisbury Township, Lancaster Farmland Trust, and technical service providers to implement CEG "bundled" financial assistance packages to farmers within the township.
Motions seconded by Secretary Redding. Motions carried.

C. Written Reports – Self Explanatory

1. Program Reports
   a. Act 38 Nutrient and Odor Management Program Measurables Report
   b. Certification and Education Program Accomplishment Report
   c. Act 38 Facility Odor Management Program and Status Report on Plan Reviews
   d. REAP Accomplishment Report

2. Ombudsman Program Reports – Southern Allegheny Region (Blair County Conservation District and Lancaster County Conservation District)

D. Cooperating Agency Reports – DCNR, PDA, Penn State, DCED, DEP, NRCS, PACD

DCNR – no report.

PDA – Secretary Russell Redding thanked Karl Brown and the SCC staff for all of their work that is being completed under the current COVID environment. The Secretary is proud of the work that the PDA has done over the past six months, despite the obstacles with COVID-19. He encouraged everyone to keep a running list of lessons learned from COVID. How do we keep critical aspects of Agriculture running? The Department has been working on worker safety (seasonal farm labor), related to COVID. The Spotted

Lanternfly is currently in the adult phase. Ag Progress Days conducted using a 'virtual' platform was successful. Senate Bill 915 (Fertilizer Act) was passed in the Senate and is currently in the House.

PSU – Chris Houser reported that Penn State completed the BMP survey with agricultural producers including 1800-1900 people. Lancaster and York are completed. Adams and Franklin are still working on theirs. During the 'virtual' Ag Progress Days, 1,050 people registered for 46 different webinars that were offered. 524 people took a "Writing Your Own Manure Management Plan" webinar.

DCED – no report.

DEP – Secretary Patrick McDonnell reported that there was an Environmental Quality Board (EQB) meeting on September 15, 2020. Carbon trading was discussed at this meeting and a public comment period on parameters is currently open.. DEP continues to telework successfully (and is still performing inspections and issuing permits). As of September 12, 2020, there was a shift in staff at DEP. The Conservation District Support Section was moved to the Chesapeake Bay office under the management of Jill Whitcomb. Conservation District Field Representatives from the regional offices will be reporting to the Conservation District Support Section. CREP was moved to the Chesapeake Bay Office. Kate Bresaw and Megan Porta are working in the new Agricultural Compliance Section. There are many web-based training models being offered under the Clean Water Academy.

NRCS – Denise Coleman thanked the Conservation Partnership – SCC, DEP, PACD – for helping with Boot Camps 1 and 2. According to evaluations, participants were happy with the trainings. NRCS is in the final days of contracts with EQIP and CSP. The cost share portion of the money has already been used.

PACD – Kelly Stagen reported that the PACD Region Meetings were held virtually this Fall throughout September and October 2020. The Winter meeting in January 2021 will be held virtually. PACD staff continues to work from home. Leadership Development activities are continuing virtually, as well.

Adjournment: Meeting adjourned at 3:16 p.m.

Next Public Meeting: October 13, 2020 – Conference Call
November 10, 2020 - Public Meeting, Virtual, via Zoom

STATE CONSERVATION COMMISSION CONFERENCE CALL

Skype Conference Call

Tuesday, October 13, 2020 @ 8:30 am

DRAFT MINUTES

Members Present: Deputy Secretary Greg Hostetter for Secretary Russell Redding, PDA; Secretary Patrick McDonnell, DEP; Drew Gilchrist for Secretary Cindy Adams-Dunn, DCNR; Denise Coleman, NRCS; Ron Rohall; Ron Kopp; Michael Flinchbaugh; Don Koontz; MaryAnn Warren; Brent Hales, Penn State Extension; Adam Walters, DCED; and Brenda Shambaugh, PACD.

A. Public Input: None.

B. Agency/Organization Updates

1. DCNR – Drew Gilchrist

   Drew reported that in late September 2020, DCNR's Bureau of Recreation and Conservation began announcing awardees for the Community Conservation Partnership Program for 2020 on a rolling basis. There were 440 applications totaling over $105 million in requests. Two-thirds of the submittals were awarded $55.9 million in projects for open space protection riparian buffer, trails, and playground development. The next round begins in November 2020 with three virtual workshops in the Eastern, Central, and Western parts of the state.

2. PACD – Brenda Shambaugh – Brenda reported that virtual Fall regional meetings are going well. She thanked the partners who have participated in the meetings. DEP Deputy Secretary Aneca Atkinson has been meeting with the conservation districts across the state. The PACD Winter meeting in January 2021 will be held virtually. PACD will be working with districts to contact legislators for environmental funding.

3. Pennsylvania Department of Agriculture – Deputy Secretary Greg Hostetter

   Deputy Secretary Hostetter reported that the Dairy Cares application period is now closed. There were 1,600 applicants for $1,500 payments. The Coronavirus Food Assistance Program (CFAP) distributed $170 million among dairy, livestock, non-specialty crops, and specialty crops industries. CFAP2 distributed $70 million to Pennsylvania. The USDA Food Safety Inspection Service (FSIS) is overseeing inspection of eggs during coronavirus. The 2021 Farm Show will be virtual with drop and go competitive events. Some Family Living events include baked goods and quilts. There will be no in-person events.

4. Penn State – Brent Hales

Brent Hales reported that Penn State continues to work remotely. Certifications are being provided for the agricultural community. Educators are being hired, and Penn State hopes to be done with this process by the end of 2020. There are ten new grant projects, which are being done in collaboration with external stakeholders.

5. DEP – Secretary Patrick McDonnell

Secretary McDonnell reported that the Principal Staff Committee meeting for the Bay was held during the week of October 5, 2020. A diversity initiative 'action plan' is being developed. There are significant impacts with Maryland and Virginia regarding climate change and land use. Conowingo 'draft' WIP will be released on October 14, 2020.

6. NRCS – Denise Coleman

Denise reported that the Federal Fiscal Year was completed on September 30, 2020. $50 million in financial assistance was distributed across Pennsylvania. Pennsylvania hosted a State Conservation Innovation Grant (CIG) signup…funds were awarded to four entities: Mid Atlantic 4R Alliance, PA Sustainable Ag, Team Ag, and Penn State. Penn State University: "Promoting Soil and Nutrient Conversations with Manure Injection and Cover Crop Inter-seeders"; PASA: Alley Cropping Demonstrations; Team Ag: Examining Carbon Storage and Regenerative Farming Practices; Mid Atlantic 4R Alliance: "Using Nitrogen Modeling to Determine Soil Health Contributions to Nitrogen Fertility"

7. DCED – Adam Walters – no report.

C. Information and Discussion Items

1. 2021 Proposed Meeting Dates (Karl Brown)– The following are proposed 2021 Commission meeting and conference call dates. These dates have been cleared with the Secretary's Offices at DEP and PDA and will be presented to the Commission for consideration in November. The following are proposed 2021 Commission meeting dates.

2021 Proposed Meeting Dates

Date		**Location**
January 19th	1:00 p.m. to 4:00 p.m.	Virtual
March 9th		Harrisburg
May 11th		Harrisburg
July 13th*		Harrisburg

September 14th Harrisburg
November 9th Harrisburg
**If possible, we will coordinate the July meeting date with PACD in order to hold a Joint Annual Conference.*

2021 Proposed Conference Call Dates (8:30-10:00AM)
February 9th
April 13th
June 8th
August 17th
October 12th
December 14th

2. Conservation District Director Appointment Process Ongoing (Karl Brown) – The annual process for nominating and appointing conservation district directors for 2020 is currently underway. Conservation district managers are encouraged to be in contact with their county chief clerk's office and their county commissioners regarding vacancies that will occur on your board for 2020, and to offer any assistance needed to help ensure a successful appointment process. Something as simple as providing up-to-date mailing addresses for nominating organizations can help ensure that nominating organizations have an opportunity to nominate possible director candidates for your board. Commission staff recently held three (3) webinar sessions on the conservation district director appointment process. One session was held for conservation district managers, and two were held for county chief clerks.

3. 2019 Annual Financial Audit Report Due December 31, 2020 (Karen Books) – Conservation district 2019 financial audit reports are due no later than December 31, 2020. As of October 5, 2020, thirty-six (36) conservation districts have submitted their financial audit report. Remaining districts are encouraged to ensure that their auditor is working on the audit and knows the deadline. If there are extenuating circumstances, a district may request extension. Requests for extension must be received by Karen Books by December 1st and must be submitted on district letterhead or through a district email account. Districts must include the reason for requesting the extension and the expected audit submission date. Failure to have an audit report in on time may result in DEP and PDA withholding all CDFAP payments to the district until the audit is received.

4. Fiscal Year Budgeting Spreadsheet (Karen Books) – On March 10, 2020 Commission approved the requirement for conservation districts to complete and submit a budgeting spreadsheet. The spreadsheet documents anticipated district staff salary and benefit costs by staff position and program on a fiscal year basis. The Commission also approved completion and submission of an "Actuals" spreadsheet, documenting the actual district staff salary and benefit costs by staff position and program at the end of each fiscal year. The submission due date for the budgeting spreadsheet is September 30th after the beginning of each fiscal year and the due date for the Actuals spreadsheet is September 30th after the end of each fiscal year. The Commission also approved indefinitely suspending the requirement for submission of the CDFAP year-end financial

statement. This suspension begins with the upcoming 2020 year-end Financial Statement, which would be due March 31, 2021. Sixty-two (62) districts met the submission deadline. The few districts that had not submitted have been contacted and are working to get those submitted.

5. Dirt, Gravel and Low Volume Road Program, USDA Conservation Innovation Grant, Utilizing Roadside Ditches for Nitrogen Bioreactors (Eric Chase) - In 2018, Penn State and Cornell University partnered with the Bradford County Conservation District to demonstrate a novel method to treat agricultural nitrogen at the field edge. This two-year project—funded by the Natural Resources Conservation Service (NRCS) Conservation Innovation Grants (CIG) Program—built on earlier successes utilizing the rural roadside ditch networks as the basis for a low-cost agricultural lands filtration system. This project specifically evaluated the effectiveness of using existing road ditches retrofitted with woodchip bioreactors to remove nitrogen from agricultural runoff and explored temporal and environmental changes on effectiveness. The results were used to determine nitrogen removal rates and limiting conditions for use of in-ditch woodchip bioreactors to improve water quality from farm field runoff and to enhance conservation practice standards. Eric Chase provided an update on this project.

6. Chesapeake Bay Program "Countywide Action Plan" (CAP) Update (Jill Whitcomb) - Forty-three of Pennsylvania's counties contain waterways that drain to either the Susquehanna or the Potomac rivers. This effort is part of the Phase 3 Watershed Implementation Plan (Phase 3 WIP). State agencies, led by the Department of Environmental Protection (DEP), are working with interested parties in the counties whose local waters run to the Chesapeake Bay to create Countywide Action Plans. These plans will outline how each county's share of the state's 2025 pollution reduction goals will be met. EPA's Chesapeake Bay Program has modeled Chesapeake Bay pollution sources including pollution entering Pennsylvania's waterways and where it originates. Each Pennsylvania county has its own goal to reduce its share of pollution. Some counties have more work to do than others. The Phase 3 WIP Steering Committee grouped the 43 counties into tiers. Tier 1 counties have the most pollution load to reduce, and Tier 4 counties have the least. Currently, there are four counties (Adams, Franklin, Lancaster and York) in the implementation phase, and four counties in the planning phase (Bedford, Centre, Cumberland and Lebanon.)

7. Dates to Remember:

PACD Regional Meetings (Virtual)
October 22 (10:00 am -12:00 pm) NC Region

SCC Meetings
November 10 Virtual

SCC Conference Calls

October 13	8:30am – 10am
December 8	8:30am – 10am

Conservation District Watershed Specialist Webinar Series

Oct. 6-8	Virtual

Building for Tomorrow Fall Leadership – Webinar Series

October 14 (1-2:00 pm)	Pa Environmental Rights Amendment & Responsibility for Natural Resources
October 20 (1-2:30 pm)	Adaptive Strategies & Contingency Planning for Conservation Districts (Session 1)
October 27 (1-2:30 pm)	Adaptive Strategies & Contingency Planning for Conservation Districts (Session 2)
November 17 (1-2:30 pm)	Adaptive Strategies & Contingency Planning for Conservation Districts (Session 3)

Pennsylvania Envirothon Coordinator Meetings (Virtual)

October 28 (10 am – 12pm)	PA Envirothon North West Region
October 29 (10 am – 12pm)	PA Envirothon North East Region
November 3 (10 am – 12pm)	PA Envirothon South West Region
November 4 (10 am – 12pm)	PA Envirothon South East Region

Intro to Conservation Planning

Nov. 4-6 (tentative)	Pennsylvania NRCS State Office, Harrisburg

Fluvial Geomorphology Webinar Series

Nov. 9, 10, 12 & 13	4 Part Webinar Series

Also, check the Conservation District Training/Special Events Calendar at, www.PACD.org Select the "Events" tab and then the "Training Calendar" tab.

8. Adjournment at 9:58 a.m.

COMMONWEALTH OF PENNSYLVANIA
STATE CONSERVATION COMMISSION

October 1, 2020

To: State Conservation Commission Members

From: Karl G. Brown
Executive Secretary

RE: Tentative 2021 Meeting Dates and Conference Call Dates

The following are proposed 2021 Commission meeting dates.

2021 Proposed Meeting Dates

Date		**Location**
January 19th	1:00 p.m. to 4:00 p.m.	Virtual
March 9th		Harrisburg
May 11th		Harrisburg
July 13th**		Harrisburg
September 14th		Harrisburg
November 9th		Harrisburg

2021 Proposed Conference Call Dates
(8:30-10:00AM)

February 9th
April 13th
June 8th
August 17th
October 12th
December 14th

**When times are more "normal", we will coordinate the July meeting date with PACD in order to hold a Joint Annual Conference.

COMMONWEALTH OF PENNSYLVANIA
STATE CONSERVATION COMMISSION

To: Members
State Conservation Commission

From: Karl G. Brown
Executive Secretary

RE: Update on Draft Policies
Drone Utilization Policy
Appointment of Former District Employees as District Directors

Action Requested: Update only, no action required at this time.

In September, the Commission directed staff to circulate the draft policies on Drone Utilization and Appointment of Former District Employees as District Directors to conservation districts and other interested parties for a 45-day comment period. This comment period ended November 2nd.

To date 11 conservation districts and or conservation district employees have submitted comments on these draft policies. Comments range from general support and or opposition to the policies, to recommendations on specific modifications to improve the draft policies.

Commission staff will review and summarize the comments submitted on these draft policies and will discuss them with the Conservation District Advisory Committee (CDAC) on December 10th. Based on the comments submitted, and the recommendations of CDAC, Commission staff will provide a revised draft of the policies for Commission consideration in January 2021.

COMMONWEALTH OF PENNSYLVANIA
STATE CONSERVATION COMMISSION

DATE: October 20, 2020

TO: Members
State Conservation Commission

FROM: Karl J. Dymond, OM Program Coordinator
State Conservation Commission

THROUGH: Karl G. Brown, Executive Secretary
State Conservation Commission

SUBJECT: Odor Management Plan Amendment "A" Review
Paul Riehl, Lancaster County

Action Requested

Action is requested to approve the Paul Riehl odor management plan (OMP) Amendment "A".

Background

This farm is located at 406 Glenbrook Road, Leola, PA 17540; West Earl Township, Lancaster County.

I have completed the required review of the Paul Riehl odor management plan Amendment "A" (plan amendment). Final corrections to the plan amendment were received by the State Conservation Commission on October 20, 2020. The plan amendment is considered to be in its final form for consideration of action.

The operation described in this plan is considered the following designations:

☒ A Concentrated Animal Operation (CAO) under the PA Nutrient and Odor Management Act
☐ A Voluntary Agricultural Operation (VAO) under the PA Nutrient and Odor Management Act
☐ A Concentrated Animal Feeding Operation (CAFO) under the Department of Environmental Protection Chapter 92 National Pollution Discharge Elimination System permitting, monitoring and compliance program

A brief description of the operation, concluding with staff recommendations, follows. Attached is a copy of the complete odor management plan amendment for the operation.

Farm Description

The Paul Riehl agricultural operation is an existing horse and goat operation which is proposing a new broiler operation. Special agricultural land-use designations for this operation include the following:

☐ Agricultural Security Area.
☒ Agricultural Zoning.
☐ Preserved Farm status under Pennsylvania's Farmland Preservation Program.
☐ This operation does not meet any special agricultural land-use designations.

The distance to the nearest property line is proposed to be 80 feet for the animal housing facility and 80 feet for the manure storage facility.

- A property line setback waiver is required to meet the Nutrient Management Program regulations and is attached to the plan.

Other Livestock Operations (≥ 8 AEUs) located within the Evaluation Distance Area include a dairy operation in the West 600' – 1,200' quadrant.

The surrounding land use for this area is suburban including the predominant terrain features of open farm land with homes along the road frontage.

Assessment

Amendment Changes:
The original OMP for this operation was approved on July 22, 2020, for the proposed Broiler Barn (12,000 broilers – 26.41 AEUs) with an Under-Barn Manure Storage Facility; these facilities have not yet been constructed.

This Amendment "A" is to change the animal type to broiler-breeder chickens (9,000 breeder-layer hens (31.95 AEUs) and 1,000 breeder-layer roosters (4.78 AEUs)); there are no proposed changes to the dimensions or location of the proposed facilities.

Animal Housing Facilities:
Existing Facilities – This site includes 5 goats (0.8 AEUs) and 1 driving horse (1.1 AEUs) in the following existing animal housing facility:

- Bank Barn – 45' x 60'

Currently Regulated Facilities – The regulated facilities in the July 22, 2020, approved plan were not constructed.

Proposed Regulated Facilities – This plan Amendment "A" proposes the expansion of the operation with 10,000 broiler-breeders (36.73 AEUs) in the following animal housing facility(ies):

- Broiler-Breeder Barn – 46' x 356' – 10.000-broiler-breeder capacity
- This Amendment "A" also proposes to bring on-site 11 goat doe-kid pairs (2.37 AEUs) which will be housed in the existing Bank Barn.

Manure Storage Facilities:
Existing Facilities – This plan amendment does not include any existing manure storage facilities on the site.

Currently Regulated Facilities – The regulated facilities in the July 22, 2020, approved plan were not constructed.

Proposed Regulated Facilities – This plan amendment proposes the expansion of the operation to include the following manure storage facility:

- Under-Barn Solid Manure Storage & Mortality Composting Facility – 25' x 46' x8' (with a typical 4' stack height) – 4,600-cuft. Capacity (approximate 143-ton capacity)
- A property line setback waiver is required to meet the Nutrient Management Program regulations and is attached to the plan.

Odor Site Index
On September 8, 2020, I performed a site assessment of the surrounding houses and businesses in the 'Evaluation Distance Area' to confirm the buildings identified on the plan map.

Note, no pre-plan submission on-site meeting was done with the operator, the plan writer and Dr. Mikesell, PSU OM Program Technical Advisor, since the Commission just approved the OMP on July 22, 2020, and the site conditions, proposed Level II Odor BMPs, and management characteristics of the operator have not changed significantly.

The confirmed Odor Site Index value for this proposed broiler barn and under-barn manure storage facility indicates a high potential for impacts with a score of 125.6. Due to the high potential for impacts, the appropriate Level I Odor BMPs for this operation are required and are properly identified in the plan. The proposed plan provides adequate detail and direction for facilitating the operator's Implementation and Operation & Maintenance of these required Odor BMPs, as well as the necessary documentation needed to demonstrate compliance with the plan and regulations.

Also due to the high potential for impacts, one or more specialized Level II Odor BMPs are required, in addition to the Level I Odor BMPs. This plan includes the following required Level II Odor BMPs:

- Poultry Litter Amendment
- Note – Even though it is not part of the plan, it should be noted that the operator intends to implement in the future, a Vegetative Buffer for Filtering (on the western end of the barn where the tunnel fans are) and potentially a second Vegetative Buffer for Screening (along the entire southern side of the barn).

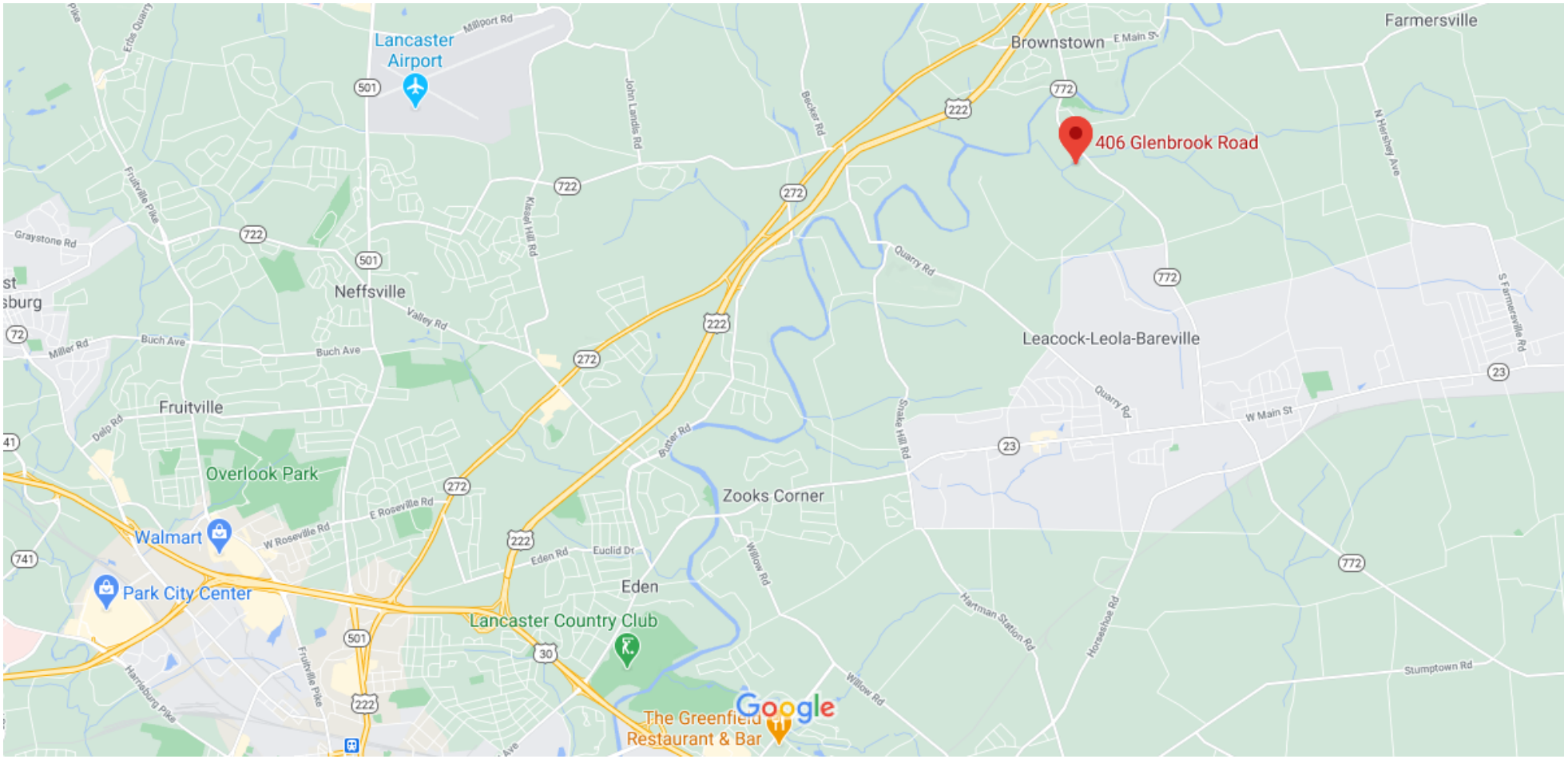
Recommendation

Based on staff reviews, the OMP Amendment "A" for the Paul Riehl operation meets the planning and implementation criteria established under the PA Nutrient & Odor Management Act and Facility Odor Management Regulations; I therefore recommend the plan amendment for State Conservation Commission approval.

Based on the information and the recommendation above, and in accordance with the State Conservation Commission odor management plan action policy of March 18, 2009, I take the following action on this odor management plan amendment on behalf of the State Conservation Commission.

_____	_____	_____
Karl G. Brown, Executive Secretary	Date	Approve or Disapprove

406 Glenbrook Rd



Odor Management Plan Amendment (A)

Prepared For:

Paul Riehl
406 Glenbrook Road.
Leola, PA 17540
717-656-0752
County/ Municipality: Lancaster/ West Earl Township

Prepared By:

Lewis Frame
OM Certification # 157 - OMC
TeamAg Incorporated
120 Lake Street
Ephrata, PA 17522
717-721-6795
lewf@teamaginc.com

For Official Use Only	
Date of Plan Submission:	September 4, 2020
Date of Plan Approval:	
Date(s) of Plan Updates (not requiring SCC action)**:**	

Table of Contents

Paul Riehl Odor Management Plan Amendment A

Planner and Operator Commitments & Responsibilities

Plan Development Requirements

This odor management plan (OMP) has been developed to meet the requirements of Pennsylvania's Nutrient and Odor Management Act, Act 38 of 2005 (Act 38), for the State Conservation Commission's (Commission) Odor Management Program for the following farm type(s): ***NOTE**: Select all check-boxes that apply.*

- ☒ Pennsylvania Act 38 Concentrated Animal Operation (CAO)
- ☐ Pennsylvania CAFO (Concentrated Animal Feeding Operation (CAFO) program
- ☐ Odor Management Program Volunteer Animal Operation (VAO)

Planner Signature & Agreement

The planner's signature below certifies that this plan was developed in conjunction with, and reviewed by the operator, prior to submitting it for review. The plan cannot be submitted until the operator understands and agrees with all the provisions of the plan. If the reviewer finds that the planner has not reviewed at least the Plan Summary with the farmer, then the plan reviewer is to relay that information to the certification program staff for their consideration.

The planner's signature and below date(s) certifies that a site visit(s) was conducted **by an Act 38 Certified Odor Management Specialist** to verify the criteria within the evaluation distance area at the time of developing the plan, specifically for the odor source(s), for locating houses, churches, businesses and public use facilities within the evaluation distance, as well as for the site land use and the surrounding land use factors.

The information contained in this plan is accurate to the best of my knowledge. This plan has been developed in accordance with the criteria established for the Act 38 Odor Management Program indicated above. I affirm the foregoing to be true and correct, and make these statements subject to the penalties of 18 Pa. C.S. § 4904, relating to unsworn falsification to authorities.

Planner Name: *Lewis Frame* *Certification number:* *#157-OMC*

Signature of Planner: Lewis R Frame III *Date:* *9/3/2020*

Date(s) Evaluation Distance Area Site Visit Conducted: *May 18th, 2020*

OMP Amendment Name: Paul Riehl Odor Management Plan Amendment A

Operator Requirements

Plan Implementation & Documentation: Odor Management Plans developed under Act 38 are required to be implemented as approved in order to maintain compliance. Implementation includes: adherence to installation of listed Odor Best Management Practices (Odor BMPs) within implementation schedule timeframes and conditions; maintenance of the Odor BMPs consistent with the operation and maintenance schedule timeframes; conditions contained in this plan; and record keeping obligations of the program. Agricultural operations are also required to keep and maintain accurate records of the Odor BMPs consistent with the schedules and are required to allow the Commission access to those records in order to determine the compliance status.

Post Construction Inspection: Prior to utilizing a new or expanded animal housing facility or manure storage facility addressed in this plan, the operation must receive written approval from the Commission confirming implementation of the plan. **In order to obtain this written approval the operator, upon completion of construction activities, must inform the Commission in writing via certified mail of their desire to begin using the new or expanded regulated facilities.** At that time the Commission will send out a representative to assess and verify the implementation of the approved Odor Management Plan.

Compliance Inspections: Plans developed under this program also require agricultural operations to allow periodic access by the Commission for status review and complaint inspections, in order to determine the status of the operation's compliance and whether a plan amendment is required. Inspections will be scheduled at least annually. Agricultural operations will provide the operation's biosecurity contact and protocols to the Commission.

Odor Management Plan Signature Requirements

In accordance with §83.741(i), plans shall be signed by the *Operator/ Authorized Representative* of the agricultural operation indicating concurrence with the information in the plan and acceptance of responsibilities under the plan. The following signature requirements apply:

(i) For sole proprietorships, the proprietor.
(ii) For partnerships, a general partner.
(iii) For corporations, a vice president or president. For any other authorized representative, the plan must contain an attachment, executed by the secretary of the corporation, which states that the person signing on behalf of the corporation is authorized to do so.

***NOTE**: When using a business name for the plan, the business name must be registered with the Pennsylvania Department of State.*

Operator Signature & Agreement

In accordance with §§83.751 (content of plans) and 83.762 (operator commitment statement), the *Signature of Operator/ Authorized Representative* below certifies that I was involved with the development of this plan, that the plan writer reviewed the plan with me, and that I am agreeable to the provisions outlined in this plan. All the information I provided in this odor management plan is accurate to the best of my knowledge and I will implement the practices and procedures outlined in the odor management plan in order to manage the potential for impacts from the offsite migration of odors associated with the operation for which this OMP is written.

Indicate business entity type: Sole Proprietor ☒ Partnership/ LP/ LLP ☐ Corporation/ LLC ☐

Signature of Operator/ Authorized Representative: Paul Riehl Date: 9/03/20

Print Name of Operator/ Authorized Representative: Paul Riehl

Title of Operator/ Authorized Representative: Owner

Business Legal Name of the Operation: _____

Plan Summary

Clearly detail why an amendment to the approved plan is required.

Since approval of the original odor management plan, the animal type for the proposed barn has changed from Broiler Chickens to Broiler-Breeder Chickens. No building dimensions or placement changes have been made in regards to this building.

A. Operation Summary (see Appendix 1 to view complete Operation Information)

Proposed Facilities:

Detail the Animal Type associated with the Proposed Facilities and consistent with the Animal Type detailed in the OSI. If animal numbers (AEUs) from existing facilities are voluntarily being added to the plan, detail the AEUs number; otherwise state "None", "Zero (0)" or "Not Applicable".

***NOTE**: AEU calculations and AEUs per acre calculation must reflect those in the most current Act 38 NMP, otherwise explain the difference and submit the calculations in Appendix 5: Supporting Documentation.*

Proposed OSI Animal Type:	Broiler-Breeder, Goats
Proposed Animal Numbers:	9,000 Broiler-Breeder Hens, 1,000 Breeder Roosters, 11 Goat Doe Pairs (Doe & Kid)
Proposed AEUs *(per animal type)*:	Hens:31.95 AEU's, Roosters:4.78AEU's , Goats: 2.37 AEU's
Voluntary Existing Animal Type:	0
Voluntary Existing AEUs *(per animal type)*:	0
Regulated AEUs under Previous Plan(s): *(Associated with Currently Regulated Facilities below)*	28.78 AEU's
Total AEUs Covered by this Plan:	39.1 AEU's
AEUs per acre for the operation:	5.58

Is there an approved Act 38 NMP for this operation? ☒ Yes ☐ No

***NOTE**: If No, explain in Appendix 5: Supporting Documentation.*

Currently Regulated Facilities:

Detail in the tables below, each regulated animal housing facility and/or manure storage facility that was previously approved and is already constructed. Detail the Dates and AEUs separately (copy & paste) for each previously approved plan or amendment.

Plan Approval Date: July 22nd, 2020 Currently Regulated AEUs: 28.78 AEU's

Animal Housing Facility ☐ None	Dimensions	Livestock Capacity
Broiler Facility – Not Constructed	45' x 356'	12,000 Broilers

Manure Storage Facility ☐ None	Dimensions	Usable Capacity
Under-Barn Solid Manure Storage/Mortality Composting Facility (Dual-Use) – Not Constructed	25' x 46' x 8' (4' Stack Height)	4,600 Cubic Feet/143 Tons

B. Odor Site Index Summary *(see Appendix 3 to view complete Index)*

***NOTE**: If multiple Geographic Centers are used, you must provide scores for each geographic center. Scores listed here must match the final scores in the OSI.*

Score: 125.55

C. Odor BMP Implementation, Operation & Maintenance Schedule

***NOTE**: All Required Odor BMPs from previous approved plans or plan amendments, which are still applicable to its associated regulated facility, must be identified below in addition to any proposed Odor BMPs associated with this plan amendment. If specific Odor BMPs that were previously approved no longer apply to this site specific scenario, contact Odor Management program staff to identify and discuss this operational change prior to submitting the plan amendment.*

Level I Odor BMPs Principles

1. Steps taken to reduce dust and feed accumulation in pens, aisles, and on animals.
2. Manage ventilation to provide sufficient fresh airflow throughout the facility to keep animals and facility surfaces clean and dry.
3. Manage manure to minimize damp, exposed manure that contributes to odor generation.
4. Remove mortalities daily and manage appropriately.
5. Manage feed nutrients to animal nutrient requirements in order to avoid excess nutrient excretion.
6. Manage manure storage facility to reduce exposed surface area and off-site odor transfer.

***Definitions**:*

- **Required Odor BMPs** – In accordance with §§83.771, 83.781-83.783, Required Odor BMPs are the Odor BMPs required for implementation when there is a neighboring facility or a public use facility in the evaluation distance area, or when the OSI score is 50 or more points (Level I Odor BMPs), and when the OSI score is 100 or more points (Level II Odor BMPs).
- **Voluntary Odor BMPs** – The operator has voluntarily chosen to include Odor BMPs in the plan. Voluntary Odor BMPs must meet the same program standards that Required Odor BMPs do for implementation, operation, maintenance, and documentation.
- **Supplemental Odor BMPs** – In accordance with §83.781(e), Supplemental Odor BMPs are implemented in addition to the approved Odor BMPs in the plan and are also associated with plan updates.

***NOTE**: Odor BMPs must be relevant to the site specific situation and must be maintained for the lifetime of the regulated facility unless otherwise approved.*

Level I Odor BMPs to be Implemented

Select each check-box that applies; if more than one category applies, clearly detail the respective Level I Odor BMPs criteria with each respective category. Detail below all Level 1 Odor BMPs Principles, adapted from the PA Odor BMP Reference List, that are applicable to the site specific factors of this animal operation and the regulated facilities.

☐ **None Required**

☐ **Voluntary Level I Odor BMP:**

☒ **Required Level I Odor BMP:**

☐ **Supplemental Level I Odor BMP:**

Broiler Breeder Barn:

1. **Reducing Dust & Feed Accumulation**
   a. *Feed Cleanup* – Spilled feed will be removed promptly.
   b. *Dust Control of Ventilation Components* – Mechanical ventilation system components (Fans motors, blades and shrouds) will be cleaned between each flock of broilers.
   c. *Feed Wastage* – Feeding equipment will be adjusted to ensure the appropriate flow rate of feed into the feeder. Feeder height will be checked daily and raised as needed to match the height of the birds. When present, feed junction boxes will be monitored daily for malfunction. Feed spills will be removed after any necessary repairs are performed. Feed height in the feed trough will be monitored daily and adjusted as needed.

2. **Manage ventilation to provide sufficient fresh airflow throughout the facility to keep animals and facility surfaces clean and dry:**
   a. *Ventilation Components* – Mechanical ventilation system components (Fans motors, blades and shrouds) will be checked daily for functionality.
   b. *Mechanical Ventilation* – The ventilation system will be designed to provide appropriate ventilation year-round. As ambient temperature increases, ventilation rate will automatically increase via computer controlled staged ventilation. Inlet openings will be automatically controlled by temperature, which will also be integrated into the computer controls. Fans are cleaned and inspected between each flock or as needed. Roof eve inlet openings are adjusted to provide adequate air distribution daily as temperature changes. Tunnel doors are controlled by temperature and computer controls. Tunnel doors, cables, winches, and other components of the ventilation system are inspected daily.

3. **Manage manure to minimize damp, exposed manure that contributes to odor generation:**
   a. *Moisture Control* – Water delivery system and drinkers will be checked daily for leaks. Repairs will be performed as needed. The height of the nipple waterers will be inspected daily and adjusted as needed to ensure that birds are always reaching up to the waterers.
   b. *Litter Maintenance* – Areas of damp litter will be caked out of the barn as needed (weekly) with a full cleanout occurring once per 13-month layer flock where manure is scraped into the attached under house manure stacking area where it is held until export.
   c. *Monitor for Egg Jams* - Facilities will be inspected daily for broken eggs. For systems using egg belts, seams will be monitored weekly. Broken eggs may not be discarded in the manure storage facility.
   d. *Clean Egg Conveyors* – Components of the egg conveyors will be cleaned weekly.

4. **Mortalities will be removed daily and manage appropriately by composting in the proposed dual-use manure storage/mortality composting facility. Ensure that mortality compost activities are kept in a separate pile from stacked poultry manure.**

5. **Feed is formulated to provide animal nutrient requirements in order to avoid excess nutrient excretion:**
   a. *Feeding* – Professional nutritionist formulates diets to match animal nutrient requirements.

6. **Manage Manure Storage Facilities to reduce exposed surface area and off-site odor transfer.**
   a. Manage Surface Water
      - Keep surface water from entering manure storage area - Grade surrounding area to avoid run on.
      - Keep leachate from leaving the manure storage area - Manage to avoid runoff of liquid from

bottom of the stack by mixing in dry material to absorb rainwater.

b. Manure Storage Area Cleanliness – A visual inspection of the manure storage area will be completed daily to ensure that any manure scattered during transport activities is cleaned up in a timely manner

Goats: Existing Bank Barn

1. **Reducing Dust & Feed Accumulation**
   - **a.** *Feed Cleanup* – Spilled feed will be removed promptly.
2. **Managing Ventilation**
   - **a.** *Natural Ventilation* – The ventilation system is designed to provide adequate fresh air while minimizing drafts so that aisles, pen surfaces, and animals remain relatively free of manure. During certain times of the year (particularly during periods of extreme temperatures) bedding may be used to minimize accumulation of manure on pen surfaces and animals.
3. **Managing Manure**
   - **a.** *Bedded Pack Systems* – Animals will be monitored for cleanliness and sufficient bedding will be added to keep at least 80% of exposed manure covered at all times. When bedded pack volume interferes with animal movement or when animals can no longer be kept clean, the bedded pack will be removed and replaced with fresh bedding.
4. **Managing Mortalities**
   - **a.** *Mortality Management* – Goat mortalities are managed as follows, 1) exported off site through the use of a mortality removal service, 2) buried on site, or 3) composted in a static pile.
5. **Managing Feed**
   - **a.** N/A
6. **Managing Manure Handling/Storage Area**
   - a. N/A

Level II Odor BMPs to be Implemented:

Select each check-box that applies; if more than one category applies, clearly detail the respective Level II Odor BMPs criteria with each respective category. Detail below all Level II Odor BMPs criteria addressing the following:

1. the general construction and implementation criteria
2. the corresponding timeframes of when each Odor BMP will be implemented
3. all operation and maintenance procedures for each Odor BMP along with the corresponding timeframes for carrying out those procedures
4. the lifespan of each Odor BMP.

***NOTE**: NRCS Conservation Practice Standards and Job Sheets that are in existence for the Level II Odor BMP are encouraged to be used for construction, implementation, and operation and maintenance criteria.*

☐ **None Required**

☐ **Voluntary Level II Odor BMP:**

☒ **Required Level II Odor BMP:**

☐ **Supplemental Level II Odor BMP:**

1. **Poultry Litter Amendment** – Poultry litter amendment of various brands and formulations lowers litter pH and creates a beneficial environment in the poultry house by controlling ammonia released from the litter. The ammonia bound by PLT reduces environmental emissions and increases the nutrient value of poultry manure.

   a. Implementation -

   i. Select Product – *(Product information for these amendments are provided in Appendix 5- Supporting Information)*

      a. Poultry Litter Treatment (PLT) – Solid

      b. Poultry Guard – Solid

      c. A1+ Clear Liquid 7 (A7) – Liquid

   ii. Application Rates

      a. Apply the amendment product at a timing and rate according to the product label. Labels of the product are available in appendix 5 of this plan. Also refer to directions for use on the product packaging as formulations of products can change.

      b. Should another brand of Poultry Litter Amendment be used than what than what is identified, the application rates and method should change to follow manufacturer's specification. The plan will be Updated to reflect the change in that brand, rates and methods.

   b. **Operation & Maintenance -**

      a. Odor BMP Lifespan – Poultry Litter Amendment will be used for the life of the layer barns, unless the plan is amended to change this requirement

      b. Should another brand of Poultry Litter Amendment be used than what is identified, the application rates and method should change to follow manufacturer's specifications. The plan will be updated to reflect the change in that brand, rate and method.

D. Documentation Requirements

The following information will be documented by the Operator for each Odor BMP to ensure compliance with the plan. Documentation is needed to demonstrate implementation of the plan as well as for corrective actions taken for significant maintenance activities needed to return an Odor BMP back to normal operating parameters.

Level I Odor BMP Documentation Requirements

Select each check-box that applies; if more than one category applies, clearly detail each documentation criterion.

☐ **None Required –** (***NOTE****: Delete the Odor BMP Implementation Commitment Statement and the Level I Maintenance Log*)

☐ **Level I Odor BMPs – Odor BMP Implementation Commitment Statement Only**

The Operator will annually complete the Odor BMP Implementation Commitment Statement.

☒ **Level I Odor BMP Documentation Criteria:**

The Operator will annually complete the 'Odor BMP Implementation Commitment Statement'. The Operator will also complete the Level I

Odor BMPs Maintenance Log upon any of the following occurrences:

Broilers: Proposed Broiler-Breeder Barn & Under-house MSF

1. **Reducing Dust & Feed Accumulation**
   - **a.** Feed Wastage - Document occurrences of damage to the feed delivery system, and the corrective actions taken, as well as occurrences when the accumulation of spilled feed was not able to be addressed in a timely manner and corrective actions taken.
   - **b.** Dust Cleaning and Sanitation – Document discrepancies with the cleaning and sanitation process and corrective actions. Document the dates of the between-groups maintenance activities.
   - **c.** Dust Control – Document any occurrences of damage to the drop tubes, and the corrective actions taken.
2. **Managing Ventilation**
   - **a.** Ventilation System Management – Document any occurrences of the system components not working correctly, and the corrective actions taken. Document the between-groups maintenance activities.
3. **Managing Manure**
   - **a.** Controlling Accumulated Manure – Document occurrences of when the accumulation of manure was not able to be addressed in a timely manner, and the corrective actions taken.
   - **b.** Monitor for Egg Jams – Document occurrences of when egg jams where found or not properly monitored regularly, and the corrective actions taken.
   - **c.** Clean Egg Conveyors – Document occurrences of when egg conveyors where not properly cleaned in accordance with this plan along with repairs and maintenance that were performed on the egg conveyor system, and corrective actions taken.
   - **d.** If manure management is to permanently change, this should be update to account for these changes.
4. **Managing Mortalities**
   - **a.** Mortality Management – Document any discrepancies with daily disposal, and the corrective actions taken.
5. **Managing Feed**
   - **a.** Feeding – Document any discrepancies with the feeding protocol, and the corrective actions taken.
6. **Managing Manure Handling/Storage Area**
   - a. Document any discrepancies with proper manure storage management and corrective actions taken.

Goats: Existing Bank Barn

1. **Reducing Dust & Feed Accumulation**
   - **a.** Feed Cleanup – Document any discrepancies in cleaning up spilled feed and corrective action taken.
2. **Managing Ventilation**
   - **a.** Natural Ventilation – Document discrepancies in ventilation management and corrective actions taken.
3. **Managing Manure**
   - **a.** Bedded Pack Systems –Document occurrences of when the accumulation of manure was not able to be addressed in a timely manner, and the corrective actions taken.
4. **Managing Mortalities**
   - **a.** Mortality Management – Document any discrepancies with daily disposal, and the corrective actions taken.
5. **Managing Feed**
   - **a.** N/A
6. **Managing Manure Handling/Storage Area**
   - a. N/A

Level II Odor BMP Documentation Requirements

Select each check-box that applies; if more than one category applies, clearly detail each documentation criterion.

☐ **None Required – (NOTE: Delete the Level II Quarterly Observation Log)**

☒ **Level II Odor BMP Documentation Criteria:**

The Operator will complete the Level II Odor BMPs Quarterly Observation Log, at least on a quarterly basis, detailing the proper implementation of the Odor BMPs as identified in the Implementation, Operation & Maintenance Schedule. The Operator will also complete the Level II Odor BMPs Quarterly Observation Log upon any of the following occurrences:

Poultry Litter Amendment

1. Document application timing and use rates of the selected poultry litter amendments. Retain itemized delivery slips or invoices of amendment products for use verification. Document (and Update the Odor Management Plan) when a different brand of additive is used other than those indicated in section C.
2. Document any discrepancies with the poultry litter amendment schedule and any corrective actions taken.

Odor BMP Implementation Commitment Statement

To be completed and signed annually by operators which have a neighboring facility or a public use facility in the evaluation distance area. This form is an attestment of the operator for the daily implementation of the Odor BMPs, and in accordance with §83.791, it is to be kept on site for at least 3 years.

(Copy This Page For Future Use)

OMP Amendment Name: Paul Riehl Odor Management Plan Amendment A

Level I Odor BMPs Principles

1. Steps were taken to reduce dust and feed accumulation in pens, aisles, and on animals.
2. Ventilation was managed to provide sufficient fresh airflow throughout the facility to keep animals and facility surfaces clean and dry.
3. Manure was managed to minimize damp, exposed manure that contributes to odor generation.
4. Mortalities were removed daily and managed appropriately.
5. Feed nutrients were matched to animal nutrient requirements to avoid excess nutrient excretion.
6. Manage manure storage to reduce exposed surface area and off-site odor transfer.

Odor Management Plan Requirements

In accordance with §§83.762 operator commitment statement), 83.771 (managing odors), 83.781 – 83.783 (Odor BMPs and schedules), 83.791 – 83.792 (documentation requirements) and 83.802 (plan implementation), I affirm that all the information I provided in the odor management plan is accurate to the best of my knowledge.

In order to manage the potential for impacts from the offsite migration of odors associated with the operation, I affirm that I have implemented the specific practices and procedures detailed in the odor management plan Odor BMP Implementation, Operation & Maintenance Schedule (principles identified above) from DATE: _____ to DATE: _____ (CY/ FY, etc.).

I affirm the foregoing to be true and correct, and make these statements subject to the penalties of 18 Pa. C.S. § 4904, relating to unsworn falsification to authorities.

Signature of Operator: _____ *Date:* _____

Name of Operator: _____

Title of Operator: _____

Level I Odor BMPs – Maintenance Log YEAR _____

*(**NOTE**: The operator will record occurrences of mechanically related maintenance activities or for any corrective actions taken.)*

(Copy This Page For Future Use)

List ODOR BMPs	*DATE*	*NOTES*

Level II Odor BMPs – Quarterly Observation Log YEAR _____

*(**NOTE**: The operator will record observations relating to 1) the implementation of each Level II Odor BMP at least on the first day (approximately) of each quarter of the year or in accordance with the Implementation, Operation & Maintenance Schedule, and 2,) for mechanically related maintenance activities, as soon as possible upon the observation that maintenance is needed, or upon **each occurrence of any corrective actions taken**.)*

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Select Quarter:	☐ 1st Quarter (January)	☐ 2nd Quarter (April)	☐ 3rd Quarter (July)	☐ 4th Quarter (October)

LEVEL II ODOR BMP NAME: Poultry Litter Amendment

List ACTIVITIES	*DATE*	*NOTES*
Poultry Litter Amendment Application & Product Used		
Poultry Litter Amendment Application Error		

Appendix 1: Operation Information

Part A: Odor Source Factors

1. **Site Livestock History:** 1.9 Horse & Goat AEU's
   Detail the Maximum AEUs of Livestock on this site (which may also include any animals from regulated facilities) within the past 3 years.

Existing Facilities Description:

***NOTE**: If the facilities or animal information differ from the most current Nutrient Management Plan, detail the differences in Appendix 5: Supporting Documentation.*

***Definitions**:* Existing facilities are those animal housing facilities or manure storage facilities constructed before February 27, 2009, and are not subject to Odor Management program requirements. These are the baseline facilities which were identified in the originally approved OMP.

2. **List the Existing Animal Types:** Horse & Goats **Existing Animal Numbers:** 1 Mature Driving Horse & 5 Goats (1 Buck, 4 Does)
3. **Existing Animal Equivalent Units (AEUs) per Animal Type:** 1.10 Mature Driving Horse, & 0.80 Goats
4. **Existing Animal Housing Facility(ies):**

   Describe all existing animal housing facilities including their dimensions, capacity and existing Odor BMPs used to address potential impacts.

Animal Housing Facility	Dimensions	Livestock Capacity	Existing Odor BMPs
Bank Barn	45' x 60'	5 Horses, 20 Goats	Bedded Pack Manure

5. **Existing Manure Storage Facility(ies) and Manure Handling Systems:**

   a. *Describe all existing manure storage facilities and manure treatment technology facilities, including their dimensions, capacity and existing Odor BMPs used to address potential impacts.*

Manure Storage Facility	Dimensions	Usable Capacity	Existing Odor BMPs
None			

   b. *Provide a narrative description detailing the manure handling systems, including manure storage facilities, manure stacking areas, and manure treatment technology facilities.*

   Manure is being removed from the existing barn and exported to a neighboring farm for land application

Currently Regulated Facilities:

Detail the information below for each constructed regulated facility, clearly indicating what was previously approved in the original plan and then separately (copy & paste) for each approved plan amendment.

Previous Plan Approval Date: July 22nd, 2020 Previous OSI Score: 125.55Currently Regulated AEUs: 28.78

6. **Currently regulated animal housing facility(ies):** ☐ ***None Regulated***

   a. Population Date(s): Not Populated *Detail the dates that each regulated animal housing facility was populated.*

   b. *Provide a detailed description of all currently regulated animal housing facilities including their dimensions and livestock capacity.*

Animal Housing Facility	Dimensions	Livestock Capacity
Broiler Facility	46' x 356'	12,000 Broilers

7. Currently regulated manure storage facility(ies): ☐ *None Regulated*

a. Storage Use Date(s): Not Constructed Detail *the dates that each regulated animal housing facility was utilized.*

b. *Provide a detailed description of all currently regulated manure storage facilities, manure stacking areas and manure treatment technology facilities including their dimensions and storage capacity.*

Manure Storage Facility	Dimensions	Useable Capacity
Under-Barn Solid Manure Storage/ Mortality Composting Facility (Dual-Use)	25' x 46' x 8' (4' Stack Height)	4,600 ft^3 / Approx. 143 Tons

8. Required Odor BMPs for the currently regulated facility(ies): ☒ Yes/ None Required ☐

Detail in the Plan Summary, C. Odor BMP Implementation, Operation & Maintenance Schedule, all Required Odor BMPs from previous approved plans or plan amendments which are still applicable to its associated regulated facility. If specific Odor BMPs that were previously approved no longer apply to this site specific scenario, contact Odor Management program staff to identify and discuss this operational change prior to submitting the plan amendment.

a. Previous Approved Odor BMPs are no longer applicable and are not part of the OMP. ☐ Yes/ No ☒
This is only applicable when the Plan Amendment is either 1) changing Odor BMPs and that the new Odor BMPs are detailed in the Plan Summary, or that 2) due to a change from the newest evaluation for the Plan Amendment, the OSI allows for this change in Odor BMP requirement.

Proposed Regulated Facility(ies) Description:

Detail the information below, clearly indicating:
1) The animals that will be housed in the proposed animal housing facility(ies), which include expansions onto existing facilities;
2) The manure type (animal type detailed in the OSI) that will be stored in the proposed storage facility and identifying the Act 38 Nutrient Management Program requirements that must be followed for the proposed manure storage facility(ies);
3) If Voluntary Existing Animal Numbers and AEUs or Transferred Existing AEUS do not apply, state "None", "Zero (0)" or "Not Applicable" for that criterion.

***NOTE**: The Animal Type associated with the Proposed Facilities must be consistent with the Animal Type detailed in the OSI.*

***NOTE**: If the proposed facilities, animal information, and AEU calculations differ from the most current Nutrient Management Plan (NMP), detail the differences in Appendix 5: Supporting Documentation.*

***Definitions**:*
- **Proposed AEUs** are the new additional AEUs associated with the proposed regulated animal housing facility(ies).
- **Voluntary Existing AEUs** are the AEUs associated with the existing animal housing facility(ies).
- **Proposed AEUs** and **Voluntary Existing AEUs** are used for determining the Odor Site Index evaluation distance area.
- **Transferred Existing AEUs** are existing AEUs on the site that will be transferred into the animal housing facility being evaluated.
- **Total AEUs** are used for determining significant change of the regulated facility(ies); a significant change will require an amendment to the plan. A significant change is defined as a net increase of equal to or greater than 25% in AEUs, as measured from the time of the initial plan approval.

9. (a) Proposed Facility OSI Animal Types: Broiler-Breeders, Goats

Proposed Animal Numbers per animal type: 9,000 Breeder-Layer Hens, 1,000 Breeder Roosters, 11 Goat Doe Pairs (Doe & Kid)

Proposed AEUs per animal type: Hens: 31.95 AEU's, Roosters: 4.78 AEU's, Goats: 2.37 AEU's

(b) Voluntary Existing Animal Types: None

Voluntary Existing Animal Numbers: 0

Voluntary Existing AEUs per animal type: 0

(c) Regulated AEUs under Previous Plan(s) *(Associated with Currently Regulated Facilities)*: 28.78 AEU's

(d) Total AEUs Covered by this Plan: 39.1 AEU's

(e) Acres for the operation associated with an approved Act 38 NMP or acres utilized for the CAO calculation: 7.4 Acres

(f) Total AEUs/ Acre for the operation: 5.58

***NOTE**: The AEUs per acre calculation is only used to verify CAO status. AEUs per acre calculation must reflect the calculations in the most current NMP, otherwise explain the difference and submit the calculations in Appendix 5: Supporting Documentation.*

(g) Transferred Existing Animal Types: ☐ Check only when Applicable

***NOTE:** Detail the following information in Appendix 5: Supporting Documentation when 0 "Proposed AUEs" are proposed due to transferring existing animals on the site into the animal housing facility being evaluated:*

1) The OSI Animal Type associated with the Proposed Facilities,
2) The numbers of animals transferred, and
3) The AEUs. This information will be used for determining a significant change which will require an amendment to the plan.

10. Proposed new or expanded animal housing facility(ies):

Detail all proposed animal housing facilities, or portions thereof, including their dimensions and livestock capacity.

***NOTE**: If the proposed facilities differ from the most current NMP, detail the differences in Appendix 5: Supporting Documentation.*

Animal Housing Facility ☐ None Proposed	Dimensions	Livestock Capacity
Broiler-Breeder Facility – Formerly Broiler Facility	46' x 352'	9,000 Hens, 1,000 Roosters

11. Proposed new or expanded manure storage facility(ies):

NOTE: If the proposed facilities differ from the most current NMP, detail the differences in Appendix 5: Supporting Documentation.

(a) *Provide a narrative description detailing all manure handling systems (including all manure storage facilities, manure stacking areas, and manure treatment technology facilities) after the addition of the proposed facilities.*

Existing – Manure collected from the animals residing in the bank barn (Horses & Goats) will continue to be exported and land applied to a neighboring farm when cleaned out.

Proposed – Manure will be collected daily from the center of the proposed barn through a slotted floor and moved to the proposed under-barn manure storage daily via an automated scraper system. On either side of the barn are scratch areas (litter) which are bedded with shavings; during raising each flock, any damp litter is caked out as needed and put in the under-barn manure storage. Mortalities will also be composted in this manure storage in a pile separate from the main manure stack.

Proposed AEU's (Goats)- The additional goats on the farm will be managed the same way as the existing Horse/Goat AEU's in the existing bank barn. The goats spend a majority of year on pasture and any collected manure from the barns will be exported as they were before.

(b) *Detail all proposed manure storage facilities, manure stacking areas, and manure treatment technology facilities.*
***NOTE**: If a waiver is required, it must be attached in Appendix 5: Supporting Documentation for the plan to be administratively complete.*

Manure Storage Facility ☐ None Proposed	**Dimensions**	**Usable Capacity**
Under-Barn Solid Manure Storage/ Mortality Composting Facility (Dual-Use)	25' x 46' x 8' (4' Stack Height)	4,600 ft^3 / Approx. 143 Tons

Act 38 NM Program Setback Requirements Verification

***NOTE**: When manure storage facilities are proposed, N/A cannot be detailed for both c & d*

(c) **Existing Operations** ☐ Not Applicable.

Select all check-boxes that apply for Existing Operations proposing manure storage facilities.

In accordance with planning provisions of the Commission's Nutrient Management Program regulations, the proposed manure storage(s) is part of an existing operation (operation that produced livestock or poultry on or before October 1, 1997) and will be located having a minimum setback distance of the following:

i. 100' minimum setback distance (in accordance with **§83.351(a)(2)(v)(A)-(E))** from wetlands, water bodies and wells (public and private). ☐Yes ☒ Not Applicable

ii. 100' minimum setback distance (in accordance with **§83.351(a)(2)(v)(F)**) a from the property line; otherwise an executed Manure Storage Setback Waiver from the Neighboring Landowner, must be attached. ☐Yes ☒ Not Applicable

iii. 200' minimum setback distance (in accordance with **§83.351(a)(2)(v)(G)**) from wetlands, water bodies and wells (public and private) for a manure storage facility of 1.5 million gallons or larger capacity or that is located on slopes exceeding 8%. ☐Yes ☒ Not Applicable

iv. 200' minimum setback distance (in accordance with **§83.351(a)(2)(v)(H)**) from the property line for a manure storage facility of 1.5 million gallons or larger capacity or that is located on slopes exceeding 8% and the slope is toward the property line; otherwise an executed Manure Storage Setback Waiver from the Neighboring Landowner, must be attached. ☐Yes ☒ Not Applicable

(d) **New Operations/ New Animal Enterprises** ☐ Not Applicable.

Select all check-boxes that apply for New Operations/ New Animal Enterprises proposing manure storage facilities.

If the proposed manure storage(s) is part of a new operation (operation that produced livestock or poultry after October 1, 1997), or a new animal enterprise (an existing operation that expanded after October 1, 1997, via producing different livestock or poultry than what was previously produced – see NM Tech Manual, Section III) and in accordance with planning provisions of the Commission's Nutrient Management Program regulations the proposed storage will be located having a minimum setback distance of the following:

i. 100' minimum setback distance (in accordance with **§83.351(a)(2)(vi)(A)-(E))** f from wetlands, water bodies and wells (public and private). ☒Yes ☐ Not Applicable

ii. 200' minimum setback distance (in accordance with **§83.351(a)(2)(v)(F))** from the property line; otherwise an executed Manure Storage Setback Waiver from the Neighboring Landowner, must be attached. ☒Yes ☐ Not Applicable

iii. 200' minimum setback distance (in accordance with **§83.351(a)(2)(v)(G)**) from wetlands, water bodies and wells (public and private) for a manure storage facility of 1.5 million gallons or larger capacity or that is located on slopes exceeding 8%. ☐Yes ☒ Not Applicable

iv. 300' minimum setback distance (in accordance with **§83.351(a)(2)(v)(H)**) from the property line for a manure storage facility of 1.5 million gallons or larger capacity or that is located on slopes exceeding 8% and the slope is toward the property line; otherwise an executed Manure Storage Setback Waiver from the Neighboring Landowner, must be attached. ☐Yes ☒ Not Applicable

12. Construction activities of the proposed regulated facilities:

***NOTE**: Construction activities must be started within 3 years of the plan approval date.*

a. *Detail the proposed construction sequence timeframes for each proposed regulated facility (or portions thereof* The building framing and construction will take place beginning October 2020

b. *Have construction activities started on any of the proposed regulated facilities?* ☒ Yes ☐ No *If yes, please detail:* Site work, excavating has begun.

Part B: Site Land Use Factors

1) Select the applicable check-box below for each special agricultural land use designation, and

2) Provide written verification in Appendix 5: Supporting Documentation for each agricultural land use designation claimed.

***NOTE**: Documentation verifying each claimed land use must be attached for the plan to be administratively complete.*

Agricultural land use designations applicable to the site being evaluated:

1. Agricultural Security Area ☐ Yes / No ☒
2. Agricultural Zoning ☒ Yes / No ☐
3. Preserved Farm ☐ Yes / No ☒

Part C: Surrounding Area Land Use Factors

***NOTE**: Detail applicable criteria for 1 and 2 on the Operational Map in Appendix 2.*

1. Other Livestock Operations (≥ 8 AEUs) within the evaluation distance area ☒ Yes / No ☐
   If yes, then list the type of operation, the direction (N, S, E, W) and quadrant (distance range from the facility). Dairy Operation, West Quadrant, 600'-1,200' .

2. Distance to nearest property line measurements:
   ***NOTE**: Measured from nearest corner of the proposed animal housing facility and/or manure storage facility to the property line. Measurements must also be detailed on the Operational Map in Appendix 2.*
   a. Animal Housing Facility measurement 80(ft.) ☐ Not Applicable
   b. Manure Storage Facility measurement 80(ft.) ☐ Not Applicable

3. If nearest property (from the nearest property line measurements indicated in "2" above) is less than 300', is this neighboring property a Preserved Farm? ☐ Yes / No ☒

   ***NOTE:** Documentation verifying this claimed status must be attached for the plan to be administratively complete.*

   (a) *If "Yes" is indicated, detail the name and address in Appendix 5: Supporting Documentation of the nearest neighboring property owner who has a Preserved Farm.*

Appendix 2: Operational Maps

Topographic Map

Odor Management Plans must include a topographic map drawn to scale with a map legend, identifying:

- Operation boundaries;
- Location of existing and proposed animal housing and manure storage facilities on the operation;
- Location of operation-related neighboring facilities;
- Location of neighboring facilities (normally occupied homes, active businesses and churches) and public use facilities within the evaluation distance area;
- Local topography (as indicated by the topographic lines);
- Geographic center with concentric circles drawn at 600' intervals for the entire evaluation distance area;
- Identification of the various map quadrants to include North, South, East and West;
- Distance to nearest property line from the nearest facility;
- Road names within the evaluation distance area; and
- All neighboring facilities and public use facilities that are being given credit for the Intervening Topography and Vegetation Factor.

In order to distinguish the following criteria from the other neighboring facilities and public use facilities, the Operational Map and the associated map legend must have separate symbols detailing the following:

- All operation-related neighboring facilities, and
- All neighboring facilities and public use facilities which are being given credit for the Intervening Topography and Vegetation Factor.

***NOTE**: The scale chosen must be reasonable and practical for use in evaluating the OMP. For example:*

- *A scale of 1" = 600' is an example of a scale that is reasonable for use in determining evaluation distances, setbacks, etc., but may not be practical for larger evaluation distance areas for fitting the map on one 8 ½' x 11' sheet of paper.*
- *A scale of 1.37" = 267.5' is an example of a scale that may be practical for fitting on one 8 ½' x 11' sheet of paper, but in a scale that is not reasonable or very useful.*
- *Maps need to be to a scale that shows sufficient detail to be reasonable and useful. Planners are encouraged to use a scale that can be divided evenly by, or into, 600' by a round whole number*
- *Multiple maps are encouraged to be provided for the purpose of facilitating specific details, i.e. aerial maps, etc.*

Site Map

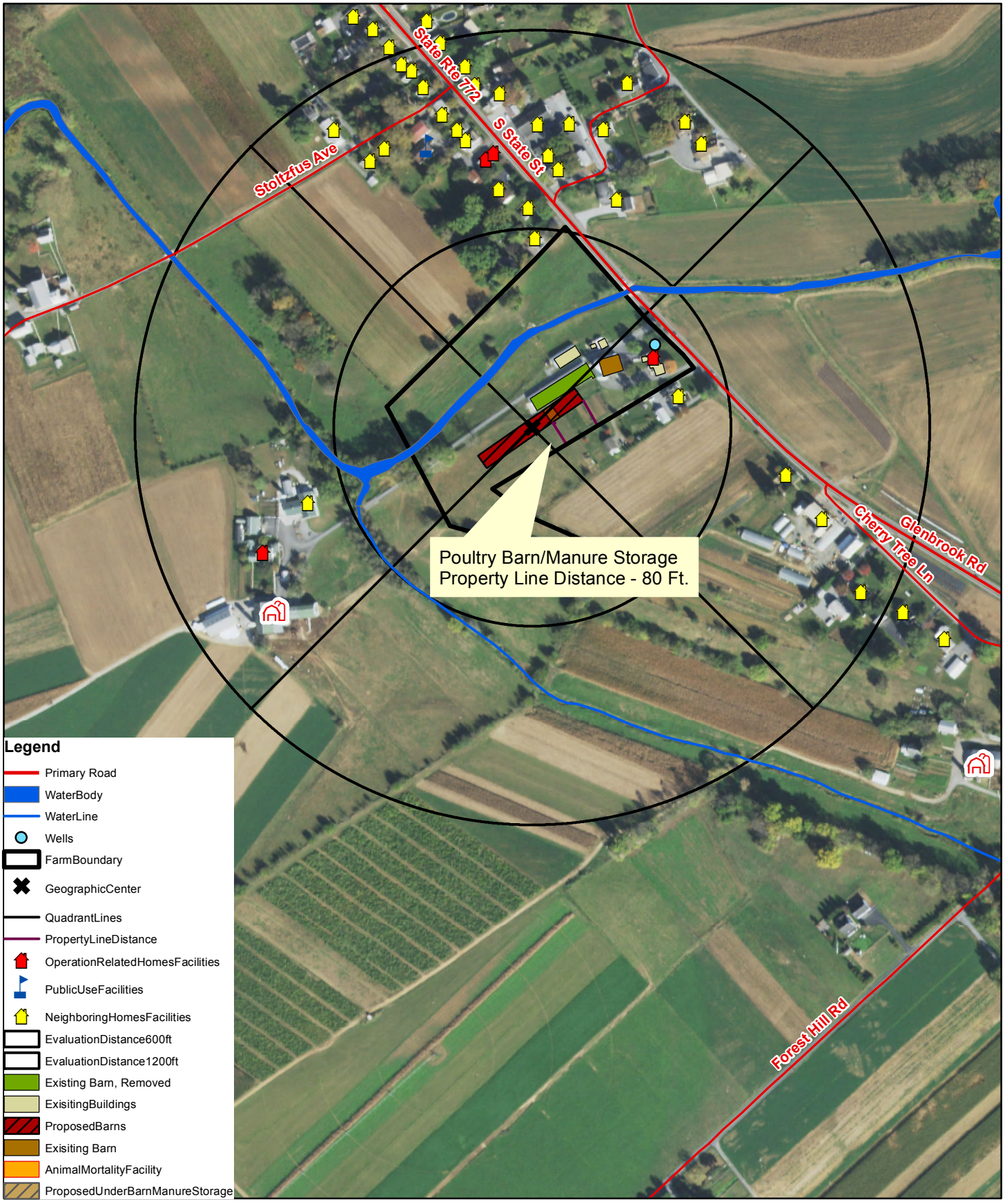
The purpose of the site map is to facilitate the plan review process of identifying specific details about the operation being evaluated. Odor Management Plans must include a site map of the operational related facilities drawn to scale with a map legend, identifying at a minimum the following:

- Operation boundaries;
- Location of existing and proposed animal housing and manure storage facilities on the operation;
- Geographic center with concentric circles drawn at 600' intervals; and
- Distance to nearest property line from the nearest facility

If there are multiple facilities on the site, detail the name of each of the facilities as per what the operator refers to them as, i.e. Layer #1 – Layer #5, mortality composting facility, etc.

If the evaluation distance area is small enough, i.e. a 1200' evaluation distance area, to clearly identify the specific details required, then a separate map will not be required.

Paul Riehl - Odor Management Plan Map



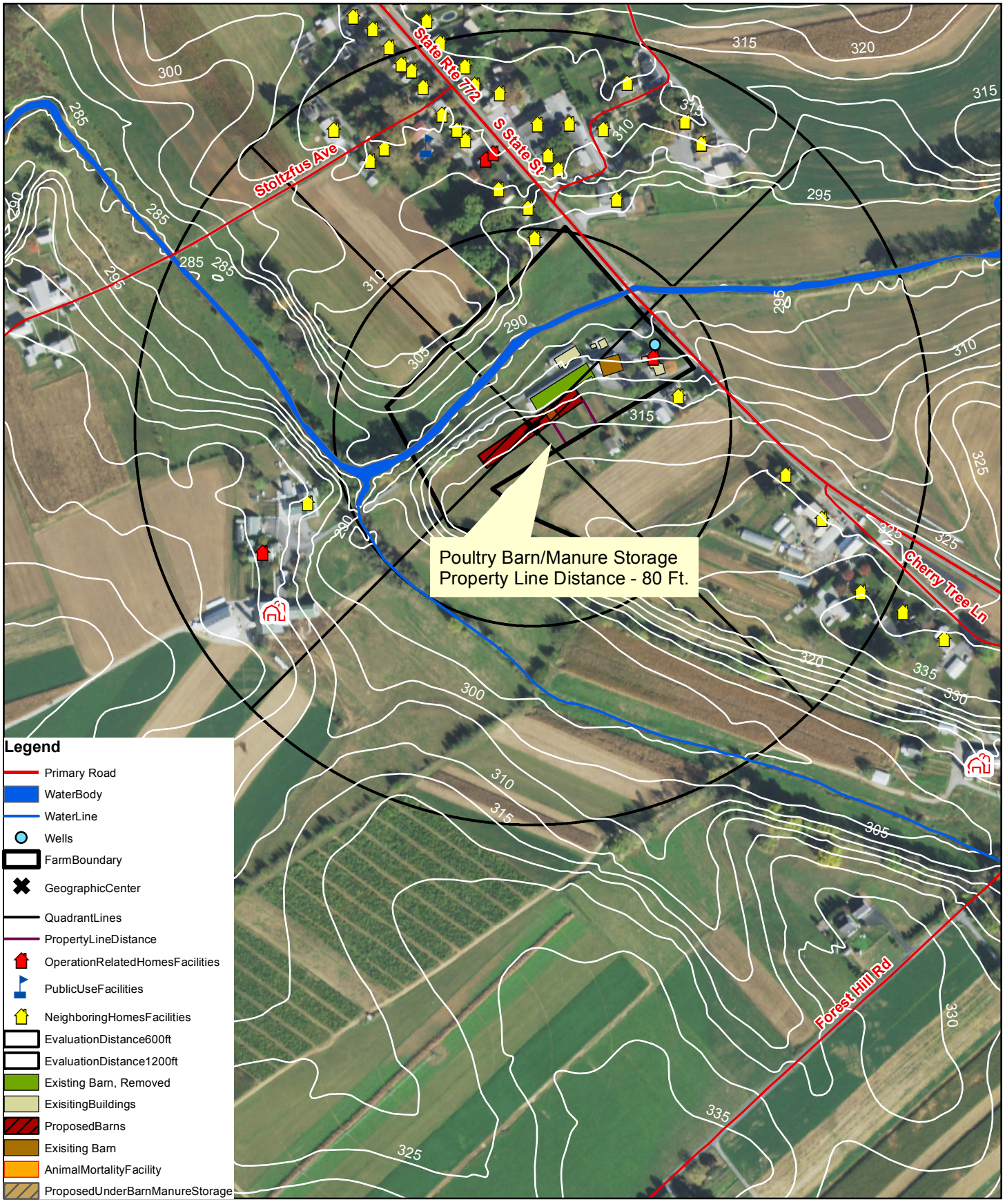
TeamAg Incorporated

0 250 500 1,000 1,500 Feet

N W E S

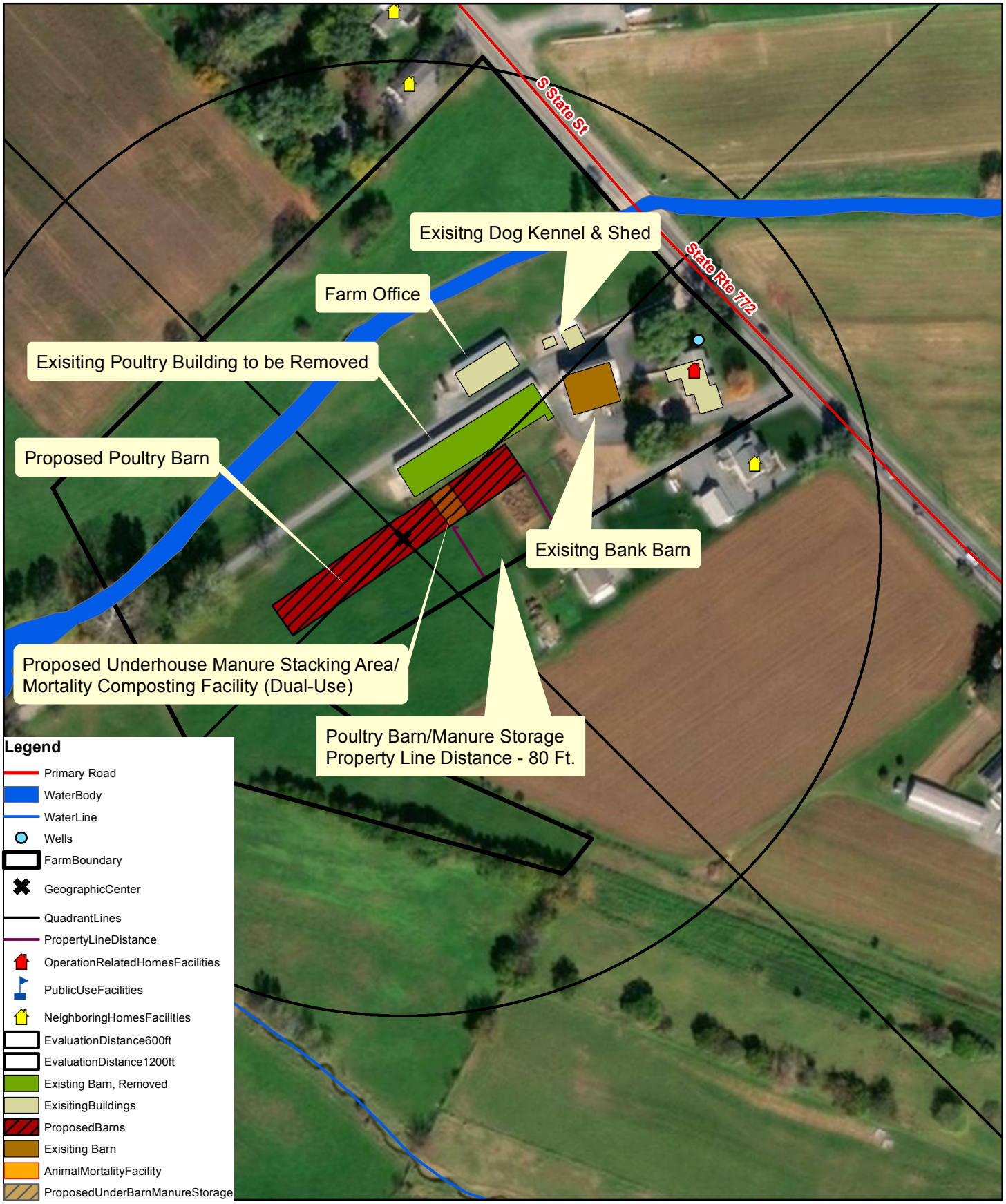
Field verification of application setbacks and buffers is required prior to land application of manure.

Paul Riehl - Odor Management Plan Topography Map



****Field verification of application setbacks and buffers is required prior to land application of manure.****

Paul Riehl - Odor Management Plan Farmstead Map



TeamAg Incorporated

0 100 200 400 600 Feet

N W E S

Field verification of application setbacks and buffers is required prior to land application of manure.

Appendix 3: Plan Evaluation – OSI

Act 38 Odor Managment Plan - Odor Site Index

Operator Name	Paul Riehl	
Planner Name	Lewis Frame	
Type of Operation	Broilers	
Voluntary Existing AEUs	0	
Proposed AEUs	39.1	
Previously Approved AEUs	0	
AEUs Covered by OMP	39.1	
Evaluation Distance	1200'	
Part A: Odor Source Factors		**OSI Score**
Facility Size Covered by OMP	39.1	2
Site Livestock History	1-49 AEUs _9pts	9
Manure Handling System	Poultry/ Swine / Cattle - deep pit under building, liquid or dry _ 4pts	4
		15.00
Part B: Site Land Use		
Ag Security Zone	No (0 pct)	0
Ag Zoning	Yes (-10 pct)	-15.5
Preserved Farm	No (0 pct)	0
		-15.50
Part C: Surrounding Land Use		
Other Livestock >8 AEU in evaluation distance	1 or more (0 pts)	0.00
Distance to Nearest Property Line	<150' (10 pts)	10.00
If nearest property is <300', is it preserved farmland	No (0 pts)	0.00
Neighboring Homes		117.00
Public Use Facilities		13.00
		140.00
Species Adjustment Factor	Broilers,turkeys (-.1)	125.55
	Final OSI Score	**125.55**
	Level 2 BMPs Required	

Act 38 Odor Managment Plan - Odor Site Index

East Quadrant	<600	600-1200	1200-1800	1800-2400	2400-3000		
# Neighboring Facilities	1	3		Select from list	Select from list		
Facility Value	**15**	**7**	**3**	**0**	**0**		
Home Shielding	<600 None (1)	600-1200 None (1)	Select from list	Select from list	Select from list	**Total Facilities**	**36.0**
# Public Use Facilities						**Total Public**	**0.0**
Public Use Value	**40**	**20**	**10**	**5**	**3**		
Public Use Shielding	Select from list	Select from list	Select from list	Select from list	Select from list	**Total East**	**36.0**
South Quadrant	<600	600-1200	1200-1800	1800-2400	2400-3000		
# Neighboring Facilities	0	0		Select from List	Select from List		
Facility Value	**10**	**5**	**2**	**0**	**0**		
Home Shielding	Select from list	Select From List	Select from list	Select from list	Select from list	**Total Facilities**	**0.0**
# Public Use Facilities						**Total Public**	**0.0**
Public Use Value	**30**	**15**	**7**	**4**	**2**		
Public Use Shielding	Select from list	Select from list	Select from list	Select from list	Select from list	**Total South**	**0.0**
North Quadrant	<600	600-1200	1200-1800	1800-2400	2400-3000		
# Neighboring Facilities	1	24		Select from List	Select from List		
Facility Value	**6**	**3**	**0.5**	**0**	**0**		
Home Shielding	<600 None (1)	600-1200 None (1)	Select from list	Select from list	Select from list	**Total Facilities**	**78.0**
# Public Use Facilities		1				**Total Public**	**13.0**
Public Use Value	**25**	**13**	**6**	**3**	**1**		
Public Use Shielding	Select from list	600-1200 None (1)	Select from list	Select from list	Select from list	**Total North**	**91.0**
West Quadrant	<600	600-1200	1200-1800	1800-2400	2400-3000		
# Neighboring Facilities	0	1		Select from list	Select from list		
Facility Value	**6**	**3**	**0.5**	**0**	**0**		
Home Shielding	Select from list	600-1200 None (1)	Select From List	Select from list	Select from list	**Total Facilities**	**3.0**
# Public Use Facilities						**Total Public**	**0.0**
Public Use Value	**25**	**13**	**6**	**3**	**1**		
Public Use Shielding	Select from list	Select from list	Select from list	Select from list	Select from list	**Total West**	**3.0**
						Grand Total	**130.0**

Appendix 4: Biosecurity

Biosecurity Protocol Contact Information

Detail the point of contact for information on this operation's biosecurity protocols:

Name:	Paul Riehl	Phone:	717-656-0752
E-mail:	bencopf@gmail.com	Relationship:	Owner/Operator

Appendix 5: Supporting Documentation

This section is reserved for the plan writer when developing this plan to have a dedicated area to include supporting documentation such as for agricultural land use designation verification, Nutrient Management program setback waiver verification, AEU calculation verification when no NMP is available, etc.

Provide a heading for each topic discussed in this Appendix.

Nutrient Management Plan: An Act 38 Nutrient Management Plan is currently being developed for this operation. As part of the nutrient management plan, all manure produced from the proposed poultry facility will be exported off of the farm. Appendix 3 of the Nutrient Management Plan that is currently being developed is attached to this plan for AEU calculations.

Operationally related homes: There are 3 homes that are considered to be operationally related.

1. On the property of the proposed poultry building, a house is inhabited by Paul Riehl the farms owner/operator
2. In the west 600'-1,200' quadrant, is a dairy farm that is owned and operated by family members of the owner/operator and routinely assist with farming activities on the Paul Riehl Farm.
3. In the north 600'-1,200' quadrant, at the address of 332 & 334 S. State Street, Leola, PA. There is split unit home that is owned by Paul Riehl.

Vegetative Buffers: While a vegetative buffer is not being proposed as part of this initial odor management plan, the owner is currently exploring funding opportunities such as the Resource Enhancement & Protection Program (REAP) to establish a vegetative buffer area on the western side of his barn where the tunnel fans will outlet. At which time this vegetative buffer is to be installed, it is understood that an Odor Management Plan Amendment will be required to account for the addition of Best Management Practices.

Site Livestock History: As shown in the operational map, there was a barn on the site that was operated as a poultry facility before the current owner purchased the property, which has since been demolished to allow for construction of the new facility. Along with the property's history with animal housing, the farm itself is located in an area with several working livestock operations which produce and regularly land apply manure to surrounding fields.

Underneath Proposed Poultry Barn - In addition to the proposed under-barn storage, there will also be a 20' x 46' under barn area that will be used as a cistern for collecting rainwater for animal watering. There will also be a 55' x 46' under-barn area for equipment/ bedding storage. These areas are not to be used for manure storage. If at a certain point the operator wishes to uses these areas for manure storage, this plan should be amended to reflect those changes.

Appendix 3 Manure Group Information Crop Yrs. 2021, 2022, 2023	Layer Manure			Horse Manure			Goat Manure			Field P1 - Grazing Calculator			Field P2 - Grazing Calculator		
Manure Report Date (note if averaging several reports)	Book Value			Book Value			Book Value			Uncollected Book			Uncollected Book		
Laboratory Name	n/a			n/a			n/a			PSU Agronomy Guide			PSU Agronomy Guide		
Manure Type	Poultry			Other			Other			Other			Other		
Manure Unit (lbs/ton or 1000 gal)	lb/ton			lb/ton			lb/ton			lb/ton			lb/ton		
Total Nitrogen (N) (lbs/ton or 1000 gal)	61.00			12.00			23.00			21.01			21.01		
Ammonium N (NH_4-N) (lbs/ton or 1000 gal)	Complete NH4-N			Complete NH4-N			Complete NH4-N			0.00			0.00		
Total Organic N (lbs/ton or 1000 gal)	Check N values in Manure Avg Input		Go to NMP Index	Check N values in Manure Avg Input			Check N values in Manure Avg Input			21.01			21.01		
Total Phosphate (P_2O_5) (lbs/ton or 1000 gal)	58.00		Go to Appendix 3 Input	5.00			8.00			7.46			7.46		
Total Potash (K_2O) (lbs/ton or 1000 gal)	33.00		Go to Manure Avg Input	9.00			20.00			18.01			18.01		
Percent Solids	Complete percent solids		Grazing Calculator	Complete percent solids			Complete percent solids			0.00			0.00		
PSC Value (analytical or book value)	0.80			0.80			0.80			0.80			0.80		
Percent Moisture	Check Percent Solids			Check Percent Solids			Check Percent Solids			100.00			100.00		
Manure Group AEU's	36.73			1.10			3.43			0.00			0.00		
Description: Site & Season Applied	Poultry Barn		Exported	Barn		Exported	Barn		Exported	Records		Grazing	Records		Grazing
Inventory Method	Calculated			Calculated			Calculated			Records			Records		
	Collected Calc.		Uncollected Calc.	Collected Calc.		Uncollected Calc.	Collected Calc.		Uncollected Calc.	Collected Calc.		Uncollected Calc.	Collected Calc.		Uncollected Calc.
Manure Group Identification	Layer Manure			Horse Manure		Horse Manure - uncollected	Goat Manure		Goat Manure - uncollected	Field P1 - Grazing Calculator			Field P2 - Grazing Calculator		
CALCULATED: Total Manure Collected Per Manure Group	161.3			7.2		4.1	8.8		18.5	0.0			0.0		
Units	Tons			Tons		Tons	Tons		Tons	Tons			Tons		
RECORDS: Total Manure Collected Per Manure Group										8.5			4.9		
Unit										tons			tons		
	Collected		Uncollected	Collected		Uncollected	Collected		Uncollected	Collected		Uncollected	Collected		Uncollected
Manure Used On-Farm	0.0		0.0	0.0		4.1	0.0		18.5	8.5		0.0	4.9		0.0
Units	Tons			Tons		Tons	Tons		Tons	Tons			Tons		
Manure Exported	161.3			8.0			9.0			0.0			0.0		
Units	tons			tons			tons								
Manure Allocation Balance	0.0		0.0	-0.8		0.0	-0.2		0.0	0.0		0.0	0.0		0.0
Units	Tons			Tons		Tons	Tons		Tons	Tons			Tons		
Manure Balance as a Percent of Total Manure Collected	0.0%			-11.0%			-2.7%			-0.1%			0.0%		
Total Rainfall and Runoff	0			0			0			0			0		
	tons			tons			tons			tons			tons		

Appendix 3 Manure Group Information Crop Yrs. 2021, 2022, 2023	Layer Manure		Horse Manure		Goat Manure		Field P1 - Grazing Calculator		Field P2 - Grazing Calculator	
	Manure Generation per Animal Group	Uncollected Manure: Nutrient Analysis Book Values	Manure Generation per Animal Group	Uncollected Manure: Nutrient Analysis Book Values	Manure Generation per Animal Group	Uncollected Manure: Nutrient Analysis Book Values	Manure Generation per Animal Group	Uncollected Manure: Nutrient Analysis Book Values	Manure Generation per Animal Group	Uncollected Manure: Nutrient Analysis Book Values
Animal Group 1	Breeder Layers (Sasso Breed)		Driving Horse	Driving Horse - uncollected	Goat Doe	Goat Doe - uncollected				
Animal Type	Layer, breeder hen, brown egg, : 17-70 wk.		Light Horse Mature	Total Nitrogen (N) lbs/ton	Meat Goat Doe	Total Nitrogen (N) lbs/ton				
Animal Number	9000		1	12.00	15	23.00				
Animal Weight	3.55 lbs		1100 lbs	Total Phosphate (P2O5) lbs/ton	150 lbs	Total Phosphate (P2O5) lbs/ton				
Animal Group AUs	31.95 AUs		1.10 AUs	5.00	2.25 AUs	8.00				
Animal Group AEUs	31.95 AEUs		1.10 AEUs	Total Potash (K2O) lbs/ton	2.25 AEUs	Total Potash (K2O) lbs/ton				
Daily Manure Production per AU	24.0 lb		55.0 lb	9.00	40.0 lb	20.00				
Total Days Manure Produced	365 days		365 days	PSC Value	365 days	PSC Value				
Total Manure Produced	139.94 tons		11.04 tons	0.80	16.43 tons	0.80				
Days On Pasture	0 days		270 days		270 days					
Hours Per Day On Pasture	0 hrs		12 hrs		24 hrs					
Total Bedding	0.40 tons		0.25 tons		2.14 tons					
Total Washwater	0.00 tons		0.00 tons		0.00 tons					
CALCULATED - Total Uncollected Manure Per Animal Group			4.08 tons	4.08 - Tons	12.15 tons	12.15 - Tons				
CALCULATED-Total Manure Collected Per Animal Group	140.34 tons		7.21 tons		6.42 tons					
Animal Group 2	Breeder Rooster (Sasso Breed)				Goat Kid	Goat Kid - uncollected				
Animal Type	Layer, breeder rooster, brown egg: 17-70 wk.				Meat Goat Kid: 0–1 yr.	Total Nitrogen (N) lbs/ton				
Animal Number	1000				15	23.00				
Animal Weight	4.78 lbs				65 lbs	Total Phosphate (P2O5) lbs/ton				
Animal Group AUs	4.78 AUs				0.98 AUs	8.00				
Animal Group AEUs	4.78 AEUs				0.98 AEUs	Total Potash (K2O) lbs/ton				
Daily Manure Production per AU	24.0 lb				40.0 lb	20.00				
Total Days Manure Produced	365 days				365 days	PSC Value				
Total Manure Produced	20.94 tons				7.12 tons	0.80				
Days On Pasture	0 days				270 days					
Hours Per Day On Pasture	0 hrs				24 hrs					
Total Bedding	Check Bedding				0.09 tons					
Total Washwater	Check Washwater				0.00 tons					
CALCULATED - Total Uncollected Manure Per Animal Group					5.27 tons	5.27 - Tons				
CALCULATED-Total Manure Collected Per Animal Group	20.94 tons				1.94 tons					

Appendix 3 Manure Group Information Crop Yrs. 2021, 2022, 2023	Layer Manure		Horse Manure		Goat Manure		Field P1 - Grazing Calculator		Field P2 - Grazing Calculator	
	Manure Generation per Animal Group	Uncollected Manure: Nutrient Analysis Book Values	Manure Generation per Animal Group	Uncollected Manure: Nutrient Analysis Book Values	Manure Generation per Animal Group	Uncollected Manure: Nutrient Analysis Book Values	Manure Generation per Animal Group	Uncollected Manure: Nutrient Analysis Book Values	Manure Generation per Animal Group	Uncollected Manure: Nutrient Analysis Book Values
Animal Group 3					Goat Buck	Goat Buck - uncollected				
Animal Type					Meat Goat Buck	Total Nitrogen (N) lbs/ton				
Animal Number					1	23.00				
Animal Weight					200 lbs	Total Phosphate (P2O5) lbs/ton				
Animal Group AUs					0.20 AUs	8.00				
Animal Group AEUs					0.20 AEUs	Total Potash (K2O) lbs/ton				
Daily Manure Production per AU					40.0 lb	20.00				
Total Days Manure Produced					365 days	PSC Value				
Total Manure Produced					1.46 tons	0.80				
Days On Pasture					270 days					
Hours Per Day On Pasture					24 hrs					
Total Bedding					0.02 tons					
Total Washwater					0.00 tons					
CALCULATED - Total Uncollected Manure Per Animal Group					1.08 tons	1.08 - Tons				
CALCULATED-Total Manure Collected Per Animal Group					0.40 tons					

Appendix 3 Manure Group Information Crop Yrs. 2021, 2022, 2023	Field P3 - Grazing Calculator		
Manure Report Date (note if averaging several reports)	Uncollected Book		
Laboratory Name	PSU Agronomy Guide		
Manure Type	Other		
Manure Unit (lbs/ton or 1000 gal)	lb/ton		
Total Nitrogen (N) (lbs/ton or 1000 gal)	21.01		
Ammonium N (NH_4-N) (lbs/ton or 1000 gal)	0.00		
Total Organic N (lbs/ton or 1000 gal)	21.01		
Total Phosphate (P_2O_5) (lbs/ton or 1000 gal)	7.46		
Total Potash (K_2O) (lbs/ton or 1000 gal)	18.01		
Percent Solids	0.00		
PSC Value (analytical or book value)	0.80		
Percent Moisture	100.00		
Manure Group AEU's	0.00		
Description: Site & Season Applied	Records		Grazing
Inventory Method	Records		
	Collected Calc.		Uncollected Calc.
Manure Group Identification	Field P3 - Grazing Calculator		
CALCULATED: Total Manure Collected Per Manure Group Units	0.0 Tons		
RECORDS: Total Manure Collected Per Manure Group Unit	9.1 tons		
Manure Used On-Farm Units	Collected 9.1 Tons		Uncollected 0.0
Manure Exported Units	0.0		
Manure Allocation Balance Units	0.0 Tons		0.0
Manure Balance as a Percent of Total Manure Collected	0.0%		
Total Rainfall and Runoff	0 tons		

Manure Storage Setback Waiver
(From Neighboring Landowner)

To Whom It May Concern:

I hereby consent to waive the required setback distance of 200 feet from my property line for the proposed manure storage facility to be built on the parcel of property with tax # 83988 currently owned by Paul K Riehl.

My property is identified by parcel # 116680.

I understand that this manure storage facility will be closer to my property line than required setbacks provided under §83.351(a)(2) of the regulations developed to implement Act 38 of 2005. This manure storage facility has my consent to be no closer than 75 feet from my adjoining property line. I understand that such a waiver is acceptable to the Pennsylvania State Conservation Commission under §83.351(a)(2) of the aforementioned regulations.

x Eli B Stoltzfus
Landowner Name (print)

x
Landowner Signature

6-19-20
Date

394 Glenbrook Rd
Leola PA 17540
Landowner Address

717 475 7818
Telephone Number

IN WITNESS WHEREOF, I have hereunto set my hand and official seal.

(Seal) Jessica C. Orbach
Notary Public

My Commission Expires 8/30/2023
Date

Commonwealth of Pennsylvania - Notary Seal
Jessica C. Orbach, Notary Public
Lancaster County
My commission expires August 30, 2023
Commission number 1354042
Member, Pennsylvania Association of Notaries

Commonwealth of Pennsylvania
County of Lancaster

Zoning Map

West Earl Township, Lancaster County

Date: June, 2017

Legend

- Roadway Centerline
- West Earl Parks
- West Earl Township
- Ag Security
- Parcel
- Overlay District
- A (Agricultural)
- C-1 (Local Commercial)
- C-2 (Highway Commercial)
- I (Industrial)
- PE (Professional Enterprise)
- R-1 (Residential Low)
- R-2 (Residential High)
- Municipal Boundary
- Streams

N

EPHRATA BOROUGH
EPHRATA TOWNSHIP
AKRON BOROUGH
EPHRATA TOWNSHIP
WARWICK TOWNSHIP
WEST EARL TOWNSHIP
EARL TOWNSHIP
MANHEIM TOWNSHIP
UPPER LEACOCK TOWNSHIP

Scale: 1" = 1,500'

Feet

1,500 750 0 1,500 3,000 4,500

WEST EARL TOWNSHIP
TALMAGE BROWNSTOWN FARMERSVILLE
ESTABLISHED 1833

BECKER ENGINEERING

PLT®- POULTRY LITTER TREATMENT

PRODUCT DATA SHEET FOR BROILERS BREEDER

- Immediately binds ammonia for improved air quality
- Lowers pH of poultry litter (8.5 average down to 2.0) creating an environment unfavorable for bacteria growth
- Paw quality improves through the reduction of ammonia released from litter
- Enables safe reuse of litter–eliminating cost of new litter and cleanout
- Ammonia bound in the litter is beneficial to crops and forages, and increases the nitrogen fertilizer value
- Can be safely used in any production model (traditional, antibiotic free, no antibiotics ever, raised without antibiotics) anytime throughout the growout cycle
- Can be applied with any type of spreader or with professional application services

PLT® litter treatment lowers litter pH and eliminates ammonia for improved air quality in poultry houses. As the only litter treatment that can be safely applied with birds in the house, PLT® helps maintain air quality from placement through growout. Plus, PLT® helps poultry producers decrease environmental emissions and increase the nutrient value of poultry litter.

SAFER CHOICE
Meets U.S. EPA Safer Product Standards
epa.gov/saferchoice

** Sodium Bisulfate has been reviewed by EPA's Safer Choice Program and qualifies for use in Safer Choice-labeled products.*

PLT®

For optimal performance of PLT® and to gain the maximum performance benefits for birds, the following application procedures are recommended.

APPLICATION PROCEDURE FOR FLOOR-RAISED PULLETS

1. Completely clean out litter from house. The thick, wet, decaying litter on the floor MUST be removed. Corners and footings should be swept or shoveled if necessary. Wash and disinfect house as desired. Allow time for dirt pad to dry completely. Disinfectants with an acidic pH are preferred.
2. Apply PLT® litter amendment directly to surface of DRY dirt pad at rate of 100-200 lbs./1,000 sq. ft. (49-91 kg/100 m^2). If desired, apply insecticides to dirt pad during or after PLT® application.
3. Install dry bedding material and prepare house as normal for bird placement.
4. If applying on built-up litter, open inlets fully and turn fans on OR drop sidewall curtains to exhaust ammonia as quickly as possible. Once ammonia is exhausted, turn fans off or close sidewall curtains. This prevents PLT® from being wasted on ammonia already released.
5. Apply PLT® on TOP OF THE LITTER EVENLY 2-24 hours prior to bird placement at a rate of 75-100 lbs./1,000 sq. ft. (37-49 kg/100 m^2). A broadcast or drop spreader can be used to apply PLT®. DO NOT TILL PLT® INTO THE LITTER.
6. Ventilate house to maintain a relative humidity between 50% and 70% while the birds are in the brood chamber as low or high humidity conditions may affect results. Also, humidity above 70% will cause litter caking and increased ammonia production. Check relative humidity levels frequently to control moisture and avoid unnecessary over-ventilation. PLT® litter treatment activation is not dependent on litter temperature.
7. Re-apply PLT® to the entire house at 75-100 lbs./1,000 sq. ft. (37-49 kg/100 m^2), 24 hours prior to initiation of restricted feeding, or prior to cholera vaccination and final series of killed vaccinations.

APPLICATION PROCEDURE FOR BROILER BREEDERS & FLOOR-RAISED COMMERCIAL LAYERS

1. Completely remove all litter from the house. Sweep or shovel litter from corners, around footings, etc. Wash down and disinfect house if necessary and allow pad to dry completely.
2. Apply PLT® to the entire dirt pad at 75-200 lbs./1,000 sq. ft. (37-91 kg/100 m^2).
3. Install dry bedding material and prepare houses as normal for pullet transfer.
4. Apply PLT® to the scratch area at 75-100 lbs./1,000 sq. ft. (37-49 kg/100 m^2) 24 hours prior to pullet transfer. Do not till PLT® into the litter.
5. Re-apply PLT® to the scratch area at 75-100 lbs./1,000 sq. ft. (37-49 kg/100 m^2) on weeks 24, 28, 32, 38, 44, 50 and 56 (if carrying flock out to 65 weeks).

PROPER STORAGE AND HANDLING INSTRUCTIONS

When applying PLT®, please wear the following protective items: safety goggles, long pants with pant leg outside of boot or shoe, long sleeve shirt, gloves and dust mask. Store PLT® in a dry area and tightly re-seal open bags when storing. Be sure to prevent exposure from moisture prior to application. **DO NOT MIX** PLT® with liquid chlorine bleach, ammonia cleansers, or similar products. Wash and disinfect equipment immediately after application using a strong, alkaline disinfectant.

QUALITY AND SAFETY

- Non-hazardous per current U.S. Department of Transportation definition
- Sodium Bisulfate is on the EPA Safer Choice Program Safer Chemical Ingredient List
- Produced following a Quality Management System certified to the ISO 9001:2008 Standard
- GMO-Free, BSE-risk free material

JH Ag
30354 Tracy Road, Walbridge, OH 43465
888-858-4425 • JonesHamiltonAg.com

Al+Clear Liquid A7 Application Guidelines

Guidelines for A7 Application and House Prep:

1. **Schedule application 3 days before chick placement. (Application schedule can be 3 to 5 days before chick placement, 3 days are recommended to start, during cold weather and for in house windrowing).**
2. **The grower should be present and available to turn tunnel fans on before: turned off during application; and set vent time after application.**
3. **If application is done or scheduled after dark, house lights should be turned on.**
4. **Make to have the equipment up so truck can enter the brood chamber with the end doors unlocked or opened.**
5. **Note: Application rate must be increased by 25% when in house composting**

House prep before application:

1. **Natural ammonia cook off is recommended to improve efficacy and longevity (Close house as soon as previous flock is caught to maintain heat along with using attic vents; exhaust the ammonia and moisture as it released from the litter).**
2. **Decake litter and work litter as normal (as recommended by your Poultry Integrator). If possible, allow for a minimum of three days between working litter and the A7 application.**
   (Goal is to have the litter below 30% moisture at the 3" to 4" depth and below 25% on the litter surface. Do not over work litter to a powder consistency; all litter amendments require some moisture for activation.)
3. **Exhaust ammonia and moisture from the house daily after decaking and working the litter. Goal is to not allow moisture or ammonia to get trapped in the litter.**
4. **Purge the house of ammonia prior to the A7 application with one or two tunnel fans. Goal is to get ammonia below 25 ppm prior to application.**
5. **Turn fans off during the application.**

Application and House Set Up:

1. **Apply Al+Clear Liquid A7 (General Chemical Approved A7 Applicator) at an equivalent dry rate. 20 gallons = 75lb dry / 25 gallons = 100 lb dry.**
2. **Run one to two tunnel fans after application until the brood chamber curtain (curtains) have been dropped. Avoid pulling air from untreated litter into brood chamber:**
3. **Lower equipment**
4. **Drop the brood chamber curtain (curtains) as soon as equipment is lowered.**
5. **Start and continue minimum ventilation without auxiliary heat. Make sure to avoid pulling in air from any part of the house that has not been treated with a litter amendment.**
6. **Prepare house for chicks according to Poultry Integrator's Recommendations.**
7. **When it is time to preheat continue on minimum ventilation, add auxiliary heat.**
8. **Adjust ventilation above minimum ventilation rate if ammonia levels exceed 25 ppm.**

Poultry Guard® Litter Amendment Application Guide

STEPS:

- **1. Safety Procedures and Protective gear**
  - Wear gloves, eye protection and dust mask
  - Wear long sleeve shirt and pants that cover boots
  - Cover shoes with plastic boots or wear rubber boots
  - Have a container of water containing baking soda with a rag to wipe off face and arms if material starts to cause discomfort

- **2. Preparation of litter prior to application**
  - Crust out litter as soon as possible after birds are removed
  - For short layouts set cruster to remove only the top cake
  - If applying a top dressing of new litter apply Poultry Guard prior to the top dressing
  - Wash downs and disinfecting must be accomplished at least two days prior to applying Poultry Guard

- **3. House preparation**
  - Turn exhaust fans on to ventilate existing ammonia from house
  - Apply Poultry Guard
  - Drop brood curtain immediately after application
  - Run one small exhaust fan in off end to prevent ammonia from migrating from the off chamber into treated area

- **4. How to Apply**
  - Use any type of mechanical spreader
  - Apply product evenly over the area to be treated
  - Have the equipment up so the Poultry Guard can be evenly applied to the litter throughout the whole area
  - If feed line paper is used, apply before putting paper down

- **5. When to Apply**
  - For Ammonia control in Brood Chamber
    - Apply as close to placement as possible but no more than 3 days pre placement
    - Can be applied when birds are present. A drop spreader is recommended for this application
    - **For Bare Ground “Shock Treatment**
      - Apply any time after the house has been completely cleaned out to the floor, including sides and corners.
      - Apply at least 2 days after wash down and disinfect
      - **For Easy Litter Acidification “E.L.A.”**
        - Apply up to 10 days pre placement.
        - Apply after crusting out
        - Apply one (1) hour prior to incorporation into the litter base
        - Incorporate Poultry Guard into the litter with equipment such as a Cultivator, Drag Harrow or Spring Tooth Harrow.

- **6. How Much to Apply**
  Recommended use rates:

  - Ammonia control in the brood chamber – 100 to 125 lbs./1000 sq. ft. The higher rate may be needed if the litter has been windrowed or birds placed on a short turn around.
  - Bare Ground “Shock Treatment”- 100 lbs./1000 sq. ft. full house application after a complete clean out.
  - “E.L.A.” – 200 – 300 lbs./1000 sq. ft.

- **7. Clean Up**

  - Thoroughly clean the application equipment with water after use and spray with a light coat of oil
  - Household ammonia or baking soda can be used to neutralize the product

- **8. After Application**

  - After application a fog may appear and at times may be quite thick depending on the moisture content of the litter. Running fans for a short period will remove the fog
  - Follow the recommended ventilation run times to control moisture and provide adequate oxygen
  - A minimum of 30-sec/5 min is suggested
  - Setup can be started immediately after application

COMMONWEALTH OF PENNSYLVANIA
STATE CONSERVATION COMMISSION

DATE: October 22, 2020

TO: Karl G. Brown, Executive Secretary
State Conservation Commission

FROM: Michael J. Walker, NM Regional Coordinator
State Conservation Commission

SUBJECT: Nutrient Management Plan Review (1)
Northumberland County, Pennsylvania

Action Requested

Action on a Nutrient Management Plan amendment for the following operation in Northumberland County:

1. R&F Family Farms – Andrew Reitz & Jonathan Francis located at 214 Cedar Road, Paxinos, PA 17860

Background

I have completed the required review of the subject nutrient management plan listed above. Final corrections to the plan were received at the PDA Region 2 office on October 22, 2020. As of that date, the plan was considered to be in its final form. The operation, located in Northumberland County, is considered to be a concentrated animal operation (CAO) under the PA Nutrient and Odor Management Act. This operation is also classified as a Concentrated Animal Feeding Operation (CAFO) under DEP regulatory authority. The Commission is the proper authority to act on this plan, because Northumberland County Conservation District has not been delegated plan review and action responsibilities under the PA Nutrient and Odor Management Act Program.

A brief description of the operation, concluding with the staff recommendation, is attached. Also attached is a copy of the complete nutrient management plan for the operation.

Thank you for considering this plan for Commission action.

Farm Descriptions

R&F Family Farms NMP amendment, Northumberland County – R&F Family Farm is operated by Andrew Reitz & Jonathan Francis and is an existing swine finishing operation located off Irish Valley Road, in southern Northumberland County. The operators rent 19.7 acres from the land owner and are operating 3 swine finish barns on this property. There is no cropland, hayland or pasture associated with this operation. This operation does not conduct any plowing or tilling activities. The livestock operation currently averages 11,790 finishing swine animals housed in 3 separate swine barns (Barn 1 – 2190 head barn, Barn 2 – 4800 head barn and Barn 3 – 4800 head barn). All swine animals are 100% confined year-round. Liquid manure generated from the swine animals is collected in under-barn manure storages located under each individual swine barn. All manure collected is then exported to known manure importers during the spring, summer and fall. One importer uses a certified manure hauler. Moralities are currently being composted in a roofed bin mortality composter and when needed the finish compost will also be exported to a known importer.

Approximately 3,493,400 gallons of liquid swine manure and approximately 32 tons of mortality compost are generated each year. The submitted plan includes Nutrient Balance Sheets for 3 known importers that are able to utilize all manure and compost generated at this operation.

The combined animal equivalent units on R&F Family Farms agricultural operation are planned at 1865.40. The animal equivalent units per acre for the R&F operation equals 1865.40, classifying the operation as a concentrated animal operation under Act 38 of 2005.

Based on my review, the NMP amendment developed for R&F Family Farms - Andrew Reitz & Jonathan Francis operation meets the requirements of the PA Nutrient and Odor Management Act and Regulations, and I therefore recommend Commission approval.

NON-FINAL FORM
Version 1.0
This NMP may be reviewed prior to a formal action by the Conservation District Board. The final form of the plan will be available at least 7 days prior to Board action. You may contact the Conservation District to determine the current status of the NMP
July 30, 2020
Month, Day Year

NON-FINAL FORM
Version 2.0
This NMP may be reviewed prior to a formal action by the Conservation District Board. The final form of the plan will be available at least 7 days prior to Board action. You may contact the Conservation District to determine the current status of the NMP
August 25, 2020
Month, Day Year

Nutrient Management Plan

For Crop Year(s)
2021-2022-2023

Prepared For

R&F Family Farms

Andrew Reitz & Jonathan Francis
473 Irish Valley Road, Paxinos, PA 17860
570-713-5637

Operation's Location Address (if different than above)

214 Cedar Road, Paxinos, PA 17860

Site Name (CAFOs)

R & F Family Farms

NON-FINAL FORM
Version 3.0
This NMP may be reviewed prior to a formal action by the Conservation District Board. The final form of the plan will be available at least 7 days prior to Board action. You may contact the Conservation District to determine the current status of the NMP
September 1, 2020
Month, Day Year

NON-FINAL FORM
Version 4.0
This NMP may be reviewed prior to a formal action by the Conservation District Board. The final form of the plan will be available at least 7 days prior to Board action. You may contact the Conservation District to determine the current status of the NMP
October 22, 2020
Month, Day Year

Prepared By

Jedd Moncavage, CPSS
TeamAg Inc.
120 Lake Street, Ephrata, PA 17522
717-721-6795

Nutrient Management Specialist's Program Certification Number
872-NMC

Administratively Complete Date
July 30, 2020

Plan Approval Date

Plan Update Submission Date(s)
(updates to the approved plan not requiring board action)

FINAL FORM
This version of the plan will be considered for action by the ~~Conservation District Board~~ SCC at their November 10, 20 20 meeting
October 22, 2020
MONTH, DAY AND YEAR

TeamAg Incorporated

Table of Contents

Nutrient Management Plan Summary

Total acres reported in NMP Summary: 0 **Crop Year(s)** 2021

Whole Farm Note:

If manure runs out for any field, consult Appendix 4 of the plan for that field. The fertilizer required on any part of the field that does not receive manure can be determined from the 'Net Nutrients Required' for that field.

Fall manure applications require at least 25% cover unless the crop management unit is planted to a cover crop in time to allow for appropriate growth to control runoff until the next growing season, or the manure is injected or mechanically incorporated within 5 days using minimal soil disturbance techniques consistent with no-till farming practices.

Operation Acres:

Total Acres: 19.7 **Total Acres Available For Nutrient Application Under Operator's Control: Owned:** 0 **Rented:** 0

Animal Equivalent Units: 1865.40 **Animal Equivalent Units Per Acre:** 1865.40

CMU/Field ID	Acres	Crop	Manure Group	Application Season	Application Management	Planned Manure Rate[1]		Starter/Other Fertilizer (lb/A)			Supplemental Fertilizer (lb/A)			Nutrient Balance (lb/A)[2]		
								N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
This appendix is not relevant to this farm situation because no cropped fields are included in the plan.	0													0		

[1] See rate calibration table (Nutrient Management Plan Summary Notes).

[2] Positive numbers = nutrient deficit; Negative numbers = nutrient excess

NMP Summary Notes

Crop Years 2021

CMU/Field ID	Notes
This appendix is not relevant to this farm situation because no cropped fields are included in the plan.	

[1] See rate calibration table (Nutrient Management Plan Summary Notes).
[2] Positive numbers = nutrient deficit; Negative numbers = nutrient excess

Nutrient Management Plan Summary

Total acres reported in NMP Summary: 0 **Crop Year(s)** 2022

Whole Farm Note:

If manure runs out for any field, consult Appendix 4 of the plan for that field. The fertilizer required on any part of the field that does not receive manure can be determined from the 'Net Nutrients Required' for that field.

Fall manure applications require at least 25% cover unless the crop management unit is planted to a cover crop in time to allow for appropriate growth to control runoff until the next growing season, or the manure is injected or mechanically incorporated within 5 days using minimal soil disturbance techniques consistent with no-till farming practices.

Operation Acres:

Total Acres: 19.7 **Total Acres Available For Nutrient Application Under Operator's Control: Owned:** 0 **Rented:** 0

Animal Equivalent Units: 1865.40 **Animal Equivalent Units Per Acre:** 1865.40

CMU/Field ID	Acres	Crop	Manure Group	Application Season	Application Management	Planned Manure Rate[1]		Starter/Other Fertilizer (lb/A)			Supplemental Fertilizer (lb/A)			Nutrient Balance (lb/A)[2]		
								N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
This appendix is not relevant to this farm situation because no cropped fields are included in the plan.	0													0		

[1] See rate calibration table (Nutrient Management Plan Summary Notes).

[2] Positive numbers = nutrient deficit; Negative numbers = nutrient excess

NMP Summary Notes

Crop Years 2022

CMU/Field ID	Notes
This appendix is not relevant to this farm situation because no cropped fields are included in the plan.	

[1] See rate calibration table (Nutrient Management Plan Summary Notes).
[2] Positive numbers = nutrient deficit; Negative numbers = nutrient excess

Nutrient Management Plan Summary

Total acres reported in NMP Summary: 0 **Crop Year(s)** 2023

Whole Farm Note:

If manure runs out for any field, consult Appendix 4 of the plan for that field. The fertilizer required on any part of the field that does not receive manure can be determined from the 'Net Nutrients Required' for that field.

Fall manure applications require at least 25% cover unless the crop management unit is planted to a cover crop in time to allow for appropriate growth to control runoff until the next growing season, or the manure is injected or mechanically incorporated within 5 days using minimal soil disturbance techniques consistent with no-till farming practices.

Operation Acres:

Total Acres: 19.7 **Total Acres Available For Nutrient Application Under Operator's Control: Owned:** 0 **Rented:** 0

Animal Equivalent Units: 1865.40 **Animal Equivalent Units Per Acre:** 1865.40

CMU/Field ID	Acres	Crop	Manure Group	Application Season	Application Management	Planned Manure Rate[1]		Starter/Other Fertilizer (lb/A)			Supplemental Fertilizer (lb/A)			Nutrient Balance (lb/A)[2]		
								N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
This appendix is not relevant to this farm situation because no cropped fields are included in the plan.	0													0		

[1] See rate calibration table (Nutrient Management Plan Summary Notes).

[2] Positive numbers = nutrient deficit; Negative numbers = nutrient excess

NMP Summary Notes

Crop Years 2023

CMU/Field ID	Notes
This appendix is not relevant to this farm situation because no cropped fields are included in the plan.	

[1] See rate calibration table (Nutrient Management Plan Summary Notes).
[2] Positive numbers = nutrient deficit; Negative numbers = nutrient excess

Manure Spreader Calibration Notes

1

Crop Years 2021

Manure Application Rate	Manure Spreader Used	Spreader Settings	Tractor Used (if applicable)	Tractor Settings (speed, gear, rpm, pto, etc.)
This appendix is not relevant to this farm situation because no cropped fields are included in the plan.				

Additional Nutrient Management Plan Requirements

Manure Management and Stormwater BMP Implementation Summary

Best Management Practice	NRCS Practice Code [1]	BMP Location	Implementation Season & Year
None			

1 If applicable, enter USDA-NRCS Practice Code. For other non-technical BMPs, leave blank.

In-Field Manure Stacking Procedures

Manure must be applied to the field within 120 days of stacking or the stacks must be covered. Stacks must be implemented and maintained according to sound BMPs, addressing concerns such as soil type, soil slope, shape of the pile, setbacks, and rotation of piles.

This operation does not field stack manure.

Additional CAFO Requirements

In-field stacking criteria, winter storage requirements, and other issues identified by DEP's review of the nutrient management plan.

1. No Concentrated Animal Feeding Operation (CAFO) may stack manure for greater than 14 days unless the stack is properly located and covered or otherwise stored / protected to prevent discharge to surface water during a storm event.

2. No CAFO may land apply manure within 100 feet of surface water or conduit to surface water (such as, but not limited to, a sink hole, tile drain inlet or irrigation well), unless a permanent 35 foot vegetated buffer is present between the surface water or conduit to surface water. Importers utilized by the CAFO operation should use the setbacks identified in their Nutrient Management Plan or the Nutrient Balance Sheets provided by the CAFO operator. These setback requirements may be greater than 100 feet in some cases.

3. CAFO operators are advised to have their manure storage facilities near empty by December 15th in order to provide as much manure storage volume as possible during the winter months. This operation should have at least a minimum of 1.5 feet of space in the 2,190 head under-barn storage on December 15th. This will allow adequate storage over the 76 day winter period. This operation should have at least a minimum of 1.5 of space in each of the 4,800 head under-barn storages on December 15th. This will allow adequate storage over the 76 day winter period. See Appendix 10 for required winter storage volume calculations.

4. Measures taken to prevent a discharge to surface water from the storage of raw materials such as feed and supplies is as follows. Swine feed is protected in bins. Other raw materials such as chemicals or fuels are discussed in the farm's Pollution Prevention and Contingency Plan (PPC Plan).

Proposed Manure Storage Description

Type, dimensions, volume, freeboard and location on map.

None

Description of Planned Alternative Manure Technology Practices

Type of practice, volume of manure addressed, and result of practice.

There are no alternative manure technology practices planned for this operation.

Exported Manure Summary

Summarize in a short paragraph the arrangements proposed for the manure to be exported from the operation. This information is described in more detail in Appendix 8 of this plan.

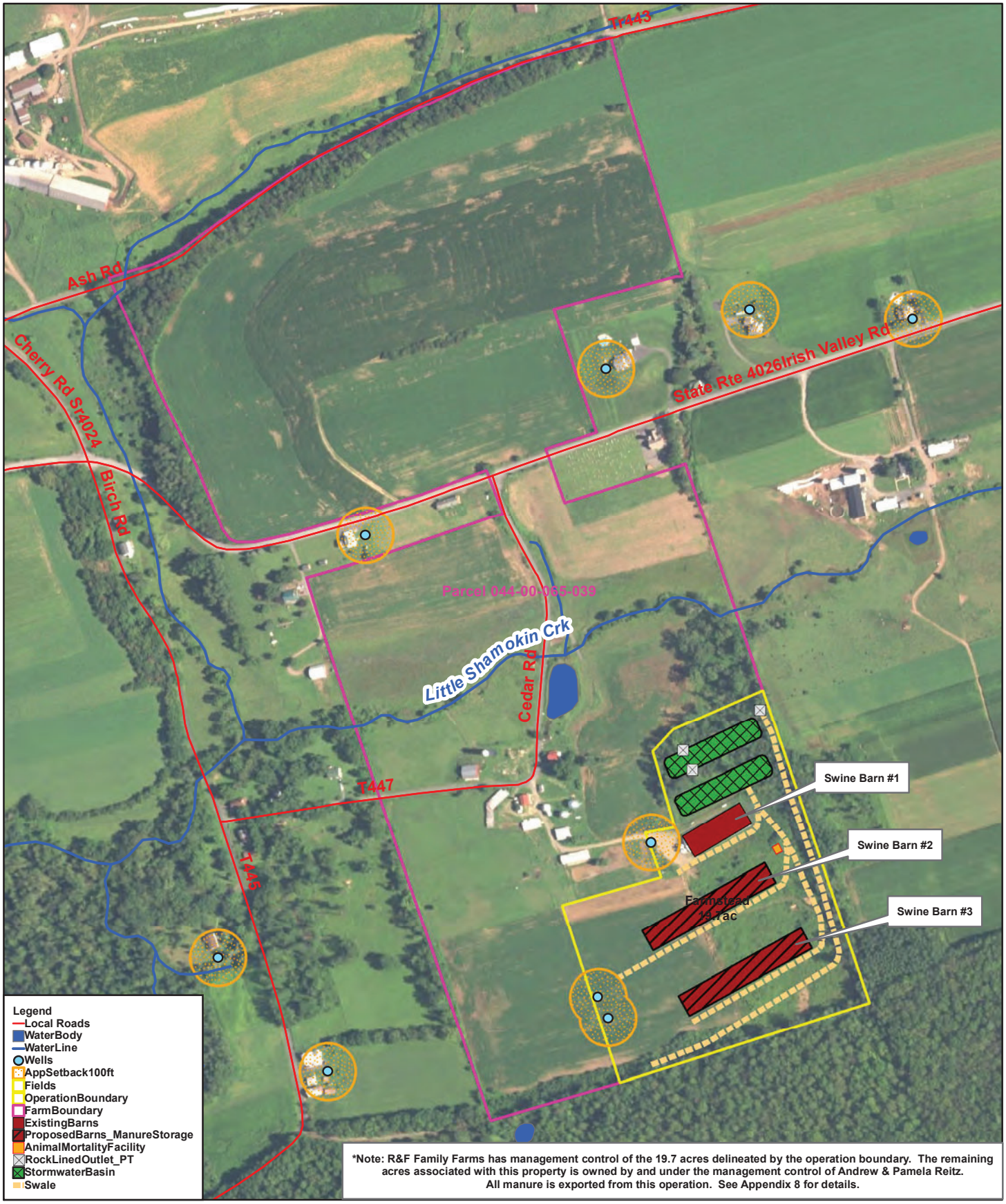
Liquid swine manure is exported to known manure importers for application on cropland. See Appendix 8 for details.

Operator Management Map

Three types of maps are required for an Act 38 Nutrient Management Plan: 1) Topographic Map, 2) Soils Map, and 3) Operator Management Map. The **Operator Management Map** is to be included here in the Nutrient Management Plan Summary and must include field identification, acreage and boundaries, manure application setback areas and buffers and associated landscape features (streams and other water bodies, sinkholes and active water wells), location of existing and proposed structural BMPs (including manure storage facilities), location of existing or proposed emergency manure stacking areas and in-field manure stacking areas, and road names adjacent to and within the operation. All features on the map must be clearly identified and include a legend for setback areas and other features. The Topographic Map and Soils Map must be included in Appendix 9.

R&F Family Farms Operator Management Map

Agenda Item B.4.b



*Note: R&F Family Farms has management control of the 19.7 acres delineated by the operation boundary. The remaining acres associated with this property is owned by and under the management control of Andrew & Pamela Reitz. All manure is exported from this operation. See Appendix 8 for details.

TeamAg Incorporated

0 250 500 1,000 1,500 Feet

N W E S

Appendix 1

Nutrient Management Plan Agreement & Responsibilities

Plan Implementation Requirements

This nutrient management plan has been developed to meet the requirements of the following programs:

X	Pennsylvania Act 38 of 2005	X	CAO		VAO (check one)
X	Pennsylvania CAFO (Concentrated Animal Feeding Operation) program				
	Other program:				

Plans developed under these programs are required to be implemented as approved in order to maintain compliance with the specific law or program. Implementation includes adherence to manure and fertilizer application rates, timing, setbacks and conditions; installation of listed BMPs within implementation timeframes; and record keeping obligations of the program.

The nutrient management plan has been developed as a: (check one)

	1-Year Plan for Crop Year		(annual updates will be completed)	
X	3-Year Plan for Crop Years	2021	2022	2023

Records required to be maintained include the following:

1) Annual crop yields
2) Manure and fertilizer application rates, locations and date of application
3) Manure production figures for the various manure groups listed in your plan
4) Soil test reports (testing required every 3 years per crop management unit)
5) Manure test reports (testing required once a year for each manure group)
6) Number of animals on pasture, number of days on pasture, and hours per day on pasture
7) For operations exporting manure, Manure Export Sheets
8) BMP designs and certification for new liquid and semi-solid manure storage facilities

The following has been confirmed:

	Verification of Ag E&S Plan	X	No Ag E&S Plan Required
X	Verification of Existing Site Specific Emergency Response Plan		

Verification that owners of rented/leased lands have been notified that a nutrient management plan has been developed which calls for manure to be applied to their lands and that they have no objections to the plan requirements.

	Owners Notified	X	No Rented/Leased Lands

Specialist Signature

I affirm that the information contained in this nutrient management plan is true, accurate and complete to the best of my knowledge and belief, based on information provided by the operator; that this plan has been developed in accordance with the criteria established for the program(s) indicated above; and that I have presented the final complete plan to the operator and discussed the content and implementation of this plan with the operator, subject to the penalties of 18 Pa.C.S.A. § 4904, relating to unsworn falsification to authorities.

Specialist Signature Jedd Mowrey

Date 7/21/202

Operator Signature

I understand and agree that I will implement the practices, procedures and record keeping obligations as outlined in this plan in order to protect water quality and address the nutrient needs of the crops associated with the operation. I agree that if I use a commercial hauler or broker for the application or export of manure, that only haulers or brokers that hold a valid certification issued by the Pa Department of Agriculture, under Act 49 of 2004, will be used. I affirm that all information provided in this nutrient management plan is true, accurate and complete to the best of my knowledge and belief, and reflects the current and planned activities of the operation; and that, if this plan was completed by a nutrient management specialist, I have reviewed the final completed plan and the specialist has discussed the content and implementation of this plan with me, subject to the penalties of 18 Pa.C.S.A. § 4904, relating to unsworn falsification to authorities.

Operator Signature 

Operator Title Co-Owner R&F Family Farms

Date 07/29/2020

Appendix 2

Operation Information

Operation Description

Animal types and numbers; cropland, hayland and pastureland acreage; farmstead acreage; crop rotation (crops, sequence of crops, and number of years for each crop); manure group management (contributing animal groups, collection, storage and handling procedures); composting (including mortality) management.

R&F Family Farms, operated by Jonathan Francis and Andrew Reitz, raise finishing swine in Northumberland County, PA. The farm consists of 19.7 acres of farmstead. The 19.7 acres of farmstead is leased from another property owner. There is no cropland, hayland or pasture associated with this operation. This operation does not conduct any plowing or tilling activities. The livestock operation currently averages 11,790 finishing swine housed in 3 barns. All livestock are 100% confined year round and will not have access to pasture. All liquid swine manure will be collected in under-barn manure storages located under each swine barn and exported to known manure importers using a certified manure hauler during the spring, summer and fall. See Appendix 8 for details. Moralities are currently composted in a roofed bin composter.

County(s)

Northumberland County / Shamokin Township

Name of Receiving Stream(s)/Watershed(s)

Little Shamokin Creek – CWF

Notation of Special Protection Waters

None

Operation Acres

Total Acres: 19.7

Total Acres Available for Nutrient Application Under Operator's Control

Owned: 0

Rented: 0

Names & Addresses of Owners of Rented or Leased Land and/or Facilities

NA

Existing Manure Storages & Capacity

Type of storage, dimensions, useable capacity, freeboard, top or bottom loaded, dimensions and description of contributing runoff area, description of wastewater additions, types and amounts of bedding. Briefly describe, for each manure group, manure storage management during removal (degree of agitation, method of manure removal, extent the storage is emptied, type of unremoved manure, etc.) and manure sampling procedures.

Storage Name	Dimensions	Useable Capacity	Freeboard	Loading	Bedding	Runoff	Washwater
Barn 1 2,190 Head Under-Barn Storage	80.17' x 222.67' x 5.5'	734,409 gallons	6"	Top	None	None	Barn Wash Water
Barn 2 4,800 Head Under-Barn Storage	81'6" x 501' x 6'	1,647,770 gallons	6"	Top	None	None	Barn Wash Water
Barn 3 4,800 Head Under-Barn Storage	81'6" x 501' x 6'	1,647,770 gallons	6"	Top	None	None	Barn Wash Water

Due to the swine manure storage being located under the swine housing, it is not agitated during manure removal. The majority of manure is removed from the storage when it is emptied. A small amount of accumulated solids remains after the storage is emptied. The preferred method for obtaining manure sample would be to take multiple sub-samples of liquid swine manure, collected during hauling events, then combined into one representative sample. The spring 2019 manure samples obtained by the operator were taken as grab samples from the storage and are not representative of the manure when it is applied to the field and therefore will not be used in this update because they were significantly lower than previous samples and are not considered acceptable. A representative nutrient content will be obtained by sampling each barn separately and the averaging the samples together.

Manure Application Equipment Capacity & Practical Application Rates

Description of application equipment, practical application rates based on calibration and calibration method used, the data recorded during equipment calibration is to be retained on the farm. If applicable, name and Act 49 certification number of custom applicator.

This section is not relevant to this farm situation because no cropped fields are included in the plan.

Appendix 6

Manure Management

Date of Site Evaluation: 6/15/2020

Statement Documenting Areas Evaluated During Site Evaluation

List and clearly identify each of the specific areas evaluated.

Barn 1 (2190 head finisher), Barns 2 & 3 (4800 head each) as well as the mortality composter were evaluated during the site visit. The roof of the composter blew off in a storm in in the summer of 2019. The compost materials that was in the composter at the time was emergency exported without obtaining a sample for nutrient analyses. There was no finished compost available for sampling at the time of this plans development. The mortality composter was already repaired/replaced at the time of the site visit. A sample of compost will be obtained as soon as a finished batch is available.

Identification of Inadequate Manure Management Practices and Conditions

List of each specific inadequate manure management practice or condition identified.

None

BMPs to Address Manure Management Problem Areas

List of specific BMPs (including PA Technical Guide standard name and number) and management changes that will be implemented to address each of the inadequate practices listed above.

None

Appendix 7

Stormwater Control

Date of Site Evaluation: 6/15/2020

Statement Documenting Areas Evaluated During Site Evaluation

List and clearly identify each of the specific areas evaluated.

This Appendix is not relevant to this farm situation because no cropped fields are included in the plan.

Identification of Critical Runoff Problem Areas

List of each specific critical runoff problem area identified.

NA

BMPs to Address Critical Runoff Problem Areas

List of BMPs (including PA Technical Guide standard name and number) and specific management changes that will be implemented to address each of the critical runoff problem areas listed above.

NA

Nutrient Balance Sheet

Prepared for

Lloyd Reitz
122 Reitz Road
Shamokin, PA 17872
570-648-8001
Northumberland

Prepared by

Jedd Moncavage
872-NMC
TeamAg Inc.
120 Lake Street
Ephrata, PA 17522
717-721-6795

Nutrient Management Specialist or Broker 2 Signature

Date of Development July 22, 2020

This nutrient balance sheet has been developed for manure exported for agricultural land application under the following Act 38 export option:

- ☑ Exported to a known operation (included in Exporter NMP)
- ☐ Exported through a broker (include Broker information below if not prepared by a broker)

Broker Information

NA
NA
NA
NA

Exporter Information

R&F Family Farms
214 Cedar Road
Paxinos, PA 17860
570-713-5637
Northumberland

TeamAg Incorporated

Exporter/Importer Agreement

Manure Used For Agricultural Land Application

Developed consistent with the PA Nutrient and Odor Management Act Program

1) This agreement is entered into on 8/20/20, by R&F Family Farms (the "exporter") who will supply manure, and Lloyd V. Reitz Farms (the "importer"), who will receive the manure from the exporter.

2) The purpose of this agreement is to set forth the mutual responsibilities and understanding of the parties with respect to the export of manure from the exporter to the importer.

3) The exporter is located at (county, twp, and address): Northumberland Co / Shamokin Twp
214 Cedar Grove Road, Paxinos, PA 17860

4) The exporter will, as the supply of manure allows, provide the following amounts of manure during the seasons outlined below:

Tons of Mortality Compost ***(species)*** **manure, per season:**
Spring 32 tons Summer 0 OR Fall 32 tons Winter 0

Gallons of Swine ***(species)*** **manure, per season:**
Spring 1,303,500 Summer 1,303,500 Fall 1,303,500 Winter 170,000

Total planned manure exported: (supply of manure may be less than what is planned)
Tons of Mortality Compost *(species)* manure: 32 tons/yr
Gallons of Swine *(species)* manure: 4,080,500 gal/yr maximum

If multi-species are planned, please add additional lines:

5) The importer's location and other relevant information as it relates to this manure export, is as follows (maps indicating the location of importing fields must be attached to the supporting Nutrient Balance Sheets if manure is to be land applied at the importing site):

a) **Phone number**: 570-648-8001
b) **County(s)**: Northumberland
c) **Address:** 122 Reitz Road, Shamokin, PA 17872
d) **Township(s)**: Shamokin
d) **Owner(s) of the property receiving manure**: Andrew & Pamela Reitz, Joe Krushinskie, Steve
- Krushinskie, Andrew & Taryn Reitz, Joanne Long, Lloyd & Pamela Reitz, Glenn Haupt, James Snyder

e) **Total cropland acres managed by the importer**: 969.5
f) **Number and type of animals raised by the importer**: 350 Milk Cows, 300 Heifers, 150 Calves
g) **Number of acres available for this imported manure**: 529.6
h) **Other manures (type, amount) imported to the site AND/OR utilized on the site**: (Note- this would include manure that is generated on the site by the importers animals, etc.) ~2,304,975 gal & 4,345 tons of dairy manure
If other manure is generated, imported and/or utilized, is it applied to the same acres as indicated in item "g" above (relating to "acres available"): Yes or No

- **If other manure is generated, imported and/or utilized, is it applied during the same season as the imported manure:** Yes or No - Yes, but not in the same crop year

6) The exporter will use a Manure Export Sheet to record all manure exported to the importer. These Manure Export Sheets are available from the county conservation district or the State Conservation Commission. Computer generated forms other than the manure export sheet may be used if they contain the same information as, and are reasonably similar in format to, the forms available from the State Conservation Commission or the conservation district.

7) Records relating to the export of manure shall be prepared by the exporter in accordance with the following requirements of the Nutrient and Odor Management Act regulations:
   a) A Manure Export Sheet shall be used to document all manure exports for their records
      - A copy of the Manure Export Sheet shall be provided to the importer
      - A copy of the Manure Export Sheet shall be retained on site by the exporter

   b) When the exporter (or someone working for, or contracted by the exporter) applies the exported manure, the exporter shall maintain the following exported manure records:
      - Application dates, areas, rates and methods

   c) Records shall be maintained by the exporter for a minimum of 3 years

   d) A manure export informational packet (as supplied by the conservation district or State Conservation Commission) shall be provided to the importer by the time of the manure export. This information only needs to be provided once to the importer.
      The manure export informational packet must include the following:
      i. Exported Manure Informational Packet Guidance Sheet
      ii. Nutrient Management Planning an Overview (Agronomy Facts 60)
      iii. Manure Management for Environmental Protection
      iv. Land Application of Manure- A supplement to the Manure Management Manual Plan Guidance
      v. Manure Export Sheet
      vi. Manure Transfer Summary Sheets
      vii. Manure Field Stacking Requirements Fact Sheet

8) Where applicable, the importer shall properly store manure received from the exporter in accordance with the provisions of the Manure Management Manual and the Pa Technical Guide and shall not cause contamination of surface or ground water. This shall include manure stacked in application fields which may not be retained in fields for > 120 days unless covered or otherwise protected .

9) Manure received by the importer shall be applied to the land at the rate(s) and method(s) provided in the attached “Nutrient Balance Sheet(s)”, or in accordance with a Nutrient Management Plan approved for the importing operation. If the importer wishes to change the lands used for imported manure, the nutrient balance sheet must be revised to reflect the changes and be submitted to the conservation district or State Conservation Commission (and DEP if the exporter is a CAFO) prior to implementing the changes.

10) The importer shall comply with applicable manure application setbacks for the imported manure, as

outlined in the Nutrient Balance Sheet map(s).

11) For any lands not owned by the importer where the manure will be applied (i.e., rented lands), the importer hereby confirms that the importer has the authority to apply manure on those lands. yes

12) This agreement shall remain in full effect unless terminated by either party upon thirty days prior written notice to the other party. If this agreement is terminated, the exporter shall notify the county conservation district office that approved their nutrient management plan, of the termination.

Exporter Signature, Name and Date		Importer Signature, Name and Date	
~~(signature)~~ (signature)		Lloyd V Reitz	(name)
8/20/20	(name)		
Jonathan Ferris	(date)	3-20-20	(date)

Nutrient Balance Sheet Summary

Importing Farm: Lloyd Reitz

Whole Farm Note: Do not apply imported manure within 100 feet of water wells or 150 feet of surface water or conduits to surface water. Do not apply other manures to crop fields that receive importer manure in the same crop

Fall manure applications require at least 25% cover unless the crop management unit is planted to a cover crop in time to allow for appropriate growth to control runoff until the next growing season, or the manure is injected or mechanically incorporated within 5 days using minimal soil disturbance techniques consistent with no-till farming practices.

Crop Group	Fields	Acres	Crop	Manure Group	Application Season	Application Management	Multiple Designation	Planned Manure Rate[1]		Starter/Other Fertilizer (lb/A)			Supplemental Fertilizer (lb/A)			Nutrient Balance (lb/A)[2]		
										N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
Corn Grain Spring App	22,23,26,155,163,164	39.9	Corn for Grain	R&F Swine Manure	Spring: 1.2-15	Spring 1.2-15: Incorporated after 7 days		8000	Gal/A							52	-246	-142.5
Corn Silage Spring App	9,31,32,43,85A,85B,87	38.7	Corn for Silage	R&F Swine Manure	Spring: 1.2-15	Spring 1.2-15: Incorporated after 7 days		8000	Gal/A							48	-220	-8
Small Grain Silage-Corn Silage Double Crop	4A,4B,8,10,34,38,40,47,53,55,56,77,81,88,89,92,93,96,97,98,104-128,106-130,116-123,118-125,120-127,121,132,144,147,149,150	184.7	Small Grain Silage	R&F Swine Manure	Early Fall: 1.2-15	Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days		8000	Gal/A							142	-228	120
Small Grain Silage-Corn Silage Double Crop	4A,4B,8,10,34,38,40,47,53,55,56,77,81,88,89,92,93,96,97,98,104-128,106-130,116-123,118-125,120-127,121,132,144,147,149,150	184.7	Corn for Silage	R&F Swine Manure	Spring: 1.2-15	Spring 1.2-15: Incorporated after 7 days		8000	Gal/A				25			0	-448	112
Est Mixed Grasses Early Fall Apps	19,33,35,36,39,46,86,90,91,99,101,,117-124,119-126,138,143,156,161,162	105.1	Established Mixed Grasses	R&F Swine Manure	Early Fall: 1.2-15	Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days		8000	Gal/A				187			0	-222	108
Est Mixed Grasses Late Fall Apps	94,95,102,103,105-129,109,111,112,122,137,146,148	65.7	Established Mixed Grasses	R&F Swine Manure	Late Fall: 1.2-15	Late Fall 1.2-15: Spring grass hay, small grains or Summer corn, annuals with green manure cover crop		8000	Gal/A				173			0	-222	108
Est Mixed Grasses Summer Apps	15A,15B,44,45,79,100,107,131,145	42.8	Established Mixed Grasses	R&F Swine Manure	Summer: 1.2-15	Summer 1.2-15: Incorporated after 7 days		8000	Gal/A				187			0	-222	108
Planting Mixed Grasses	140,142	6.9	Planting Mixed Grasses	R&F Swine Manure	Early Fall: 1.2-15	Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days		8000	Gal/A				87			0	-252	8

[1] See Nutrient Management Plan Summary Notes

[2] Positive numbers = nutrient deficit; Negative numbers = nutrient excess

[3] Multiple Designation Mi=Initial, M=Middle(s), Mf=Final

Crop Group	Fields	Acres	Crop	Manure Group	Application Season	Application Management	Multiple Designation	Planned Manure Rate[1]		Starter/Other Fertilizer (lb/A)			Supplemental Fertilizer (lb/A)			Nutrient Balance (lb/A)[2]		
										N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
Winter Barley	16,25,27,29,30,37,157	67.3	Winter Barley	R&F Swine Manure	Early Fall: 1.2-15	Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days		8000	Gal/A				10			0	-258	-57
Winter Barley-DC Sudangrass	152,153	32	Winter Barley	R&F Swine Manure	Early Fall: 1.2-15	Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days		8000	Gal/A				10			0	-258	-57
Winter Barley-DC Sudangrass	152,153	32	Sorghum-Sudangrass	R&F Swine Manure	Spring: 1.2-15	Spring 1.2-15: Incorporated after 7 days		8000	Gal/A				24			0	-430	-109
Corn for Grain (No-till)	159	3.6	Corn for Grain (No-till)													130	66	49.5
Corn for Grain (No-till)	20,160	23.4	Corn for Grain (No-till)	R&F Swine Manure	Spring: 1.2-15	Spring 1.2-15: Incorporated after 7 days		3000	Gal/A				101			0	-51	-22.5
Corn for Silage (No-till)	6,14,41,134,136,12A,12B,13A,13B	82.1	Corn for Silage (No-till)	R&F Swine Manure	Spring: 1.2-15	Spring 1.2-15: Incorporated after 7 days		3000	Gal/A				108			0		
Established Alfalfa Grass	21	10.4	Established Alfalfa Grass													0	90	300
Established Alfalfa Grass with Manure	11,42,78,154	24.7	Established Alfalfa Grass with Manure	R&F Swine Manure	Early Fall: 1.2-15	Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days		3000	Gal/A							0	-27	228
Established Alfalfa Grass with Manure	113,114,115,139,141	27.7	Established Alfalfa Grass with Manure	R&F Swine Manure	Winter: 1.2-15	Winter 1.2-15: Spring grass hay, small grains or Summer corn, annuals with green manure cover crop		3000	Gal/A							0	-27	228
Established Alfalfa Grass with Manure	17,151	8.8	Established Alfalfa Grass with Manure	R&F Swine Manure	Summer: 1.2-15	Summer 1.2-15: Incorporated after 7 days		3000	Gal/A							0	-27	228
Established Alfalfa Grass with Manure	7,108,110,133	34	Established Alfalfa Grass with Manure													265	90	300
Established Alfalfa Grass with Manure	80	1.9	Established Alfalfa Grass with Manure	R&F Swine Manure	Late Fall: 1.2-15	Late Fall 1.2-15: Spring grass hay, small grains or Summer corn, annuals with green manure cover crop		3000	Gal/A							0	-27	228
Small Grain Silage	12A,12B	29	Small Grain Silage	R&F Swine Manure	Winter: 1.2-15	Winter 1.2-15: Spring grass hay, small grains or Summer corn, annuals with green manure cover crop		3000	Gal/A				159			0	-33	240
Small Grain Silage	14,13A,13B	27.3	Small Grain Silage													193	84	312
Small Grain Silage	41	1	Small Grain Silage													193	84	312

[1] See Nutrient Management Plan Summary Notes

[2] Positive numbers = nutrient deficit; Negative numbers = nutrient excess

[3] Multiple Designation Mi=Initial, M=Middle(s), Mf=Final

Crop Group	Fields	Acres	Crop	Manure Group	Application Season	Application Management	Multiple Designation	Planned Manure Rate[1]		Starter/Other Fertilizer (lb/A)			Supplemental Fertilizer (lb/A)			Nutrient Balance (lb/A)[2]		
										N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
Small Grain Silage	6,134,136	24.8	Small Grain Silage	R&F Swine Manure	Early Fall: 1.2-15	Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days		3000	Gal/A				174			0	-33	240
Winter Barley	18B	2.6	Winter Barley													61	54	135
Winter Barley	24,28,158A,158B,18A	44.1	Winter Barley	R&F Swine Manure	Early Fall: 1.2-15	Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days		3000	Gal/A				42			0	-63	63

[1] See Nutrient Management Plan Summary Notes

[2] Positive numbers = nutrient deficit; Negative numbers = nutrient excess

[3] Multiple Designation Mi=Initial, M=Middle(s), Mf=Final

NBS Summary Notes

Importing Farm: Lloyd Reitz

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Crop Group	Fields	Crop	Manure Group	Nutrient Balance Notes	Notes
Corn Grain Spring App	22,23,26,155,163, 164	Corn for Grain	R&F Swine Manure	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied.
Corn Silage Spring App	9,31,32,43,85A,85 B,87	Corn for Silage	R&F Swine Manure	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied.
Small Grain Silage-Corn Silage Double Crop	4A,4B,8,10,34,38, 40,47,53,55,56,77, 81,88,89,92,93,96, 97,98,104-128,106- 130,116-123,118- 125,120- 127,121,132,144,1 47,149,150	Small Grain Silage	R&F Swine Manure	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied.
Small Grain Silage-Corn Silage Double Crop	4A,4B,8,10,34,38, 40,47,53,55,56,77, 81,88,89,92,93,96, 97,98,104-128,106- 130,116-123,118- 125,120- 127,121,132,144,1 47,149,150	Corn for Silage	R&F Swine Manure	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied.
Est Mixed Grasses Early Fall Apps	19,33,35,36,39,46, 86,90,91,99,101,,1 17-124,119- 126,138,143,156,1 61,162	Established Mixed Grasses	R&F Swine Manure	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied.
Est Mixed Grasses Late Fall Apps	94,95,102,103,105- 129,109,111,112,1 22,137,146,148	Established Mixed Grasses	R&F Swine Manure	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied.
Est Mixed Grasses Summer Apps	15A,15B,44,45,79, 100,107,131,145	Established Mixed Grasses	R&F Swine Manure	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied.

Crop Group	Fields	Crop	Manure Group	Nutrient Balance Notes	Notes
Planting Mixed Grasses	140,142	Planting Mixed Grasses	R&F Swine Manure	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied.
Winter Barley	16,25,27,29,30,37, 157	Winter Barley	R&F Swine Manure	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied.
Winter Barley-DC Sudangrass	152,153	Winter Barley	R&F Swine Manure	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied.
Winter Barley-DC Sudangrass	152,153	Sorghum-Sudangrass	R&F Swine Manure	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied.
Corn for Grain (No-till)	159	Corn for Grain (No-till)		Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	
Corn for Grain (No-till)	20,160	Corn for Grain (No-till)	R&F Swine Manure	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	Field 20: 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied. Field 160: 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied.
Corn for Silage (No-till)	6,14,41,134,136,12A,12B,13A,13B	Corn for Silage (No-till)	R&F Swine Manure	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	Field 6: 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied. Field 14: 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied. Field 41: 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied. Field 134: 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied. Field 136: 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied. Field 12A: 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied. Field 12B: 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied. Field 13A: 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied. Field 13B: 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied.
Established Alfalfa Grass	21	Established Alfalfa Grass		Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	

Crop Group	Fields	Crop	Manure Group	Nutrient Balance Notes	Notes
Established Alfalfa Grass with Manure	11,42,78,154	Established Alfalfa Grass with Manure	R&F Swine Manure	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	Field 11: 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied. Field 42: 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied. Field 78: 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied. Field 154: 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied.
Established Alfalfa Grass with Manure	113,114,115,139,141	Established Alfalfa Grass with Manure	R&F Swine Manure	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	Field 113: To apply manure to this field during winter the following conditions must be met: The field must have at least 25% plant cover or crop residue at the time of manure application. Manure may be applied to this field if it is snow or ice covered. 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied. Field 114: To apply manure to this field during winter the following conditions must be met: The field must have at least 25% plant cover or crop residue at the time of manure application. Manure may be applied to this field if it is snow or ice covered. 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied. Field 115: To apply manure to this field during winter the following conditions must be met: The field must have at least 25% plant cover or crop residue at the time of manure application. Manure may be applied to this field if it is snow or ice covered. 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied. Field 139: To apply manure to this field during winter the following conditions must be met: The field must have at least 25% plant cover or crop residue at the time of manure application. Manure may be applied to this field if it is snow or ice covered. 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied. Field 141: To apply manure to this field during winter the following conditions must be met: The field must have at least 25% plant cover or crop residue at the time of manure application. Manure may be applied to this field if it is snow or ice covered. 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied.
Established Alfalfa Grass with Manure	17,151	Established Alfalfa Grass with Manure	R&F Swine Manure	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	Field 17: 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied. Field 151: 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied.
Established Alfalfa Grass with Manure	7,108,110,133	Established Alfalfa Grass with Manure		Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	
Established Alfalfa Grass with Manure	80	Established Alfalfa Grass with Manure	R&F Swine Manure	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	Field 80: 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied.

Crop Group	Fields	Crop	Manure Group	Nutrient Balance Notes	Notes
Small Grain Silage	12A,12B	Small Grain Silage	R&F Swine Manure	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	Field 12A: To apply manure to this field during winter the following conditions must be met: The field must have at least 25% plant cover or crop residue at the time of manure application. Manure may be applied to this field if it is snow or ice covered. 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied. Field 12B: To apply manure to this field during winter the following conditions must be met: The field must have at least 25% plant cover or crop residue at the time of manure application. Manure may be applied to this field if it is snow or ice covered. 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied.
Small Grain Silage	14,13A,13B	Small Grain Silage		Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	
Small Grain Silage	41	Small Grain Silage		Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	
Small Grain Silage	6,134,136	Small Grain Silage	R&F Swine Manure	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	Field 6: 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied. Field 134: 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied. Field 136: 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied.
Winter Barley	18B	Winter Barley		Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	
Winter Barley	24,28,158A,158B, 18A	Winter Barley	R&F Swine Manure	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	Field 24: 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied. Field 28: 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied. Field 158A: 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied. Field 158B: 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied. Field 18A: 100ft application setback from wells, 100ft application setback from surface water. Do not apply other manure, in the same growing season, where R&F Swine Manure was or will be applied.

Manure Group Information

Appendix 3 Manure Group Information	R&F Swine Manure	R&F Mortality Compost
Manure Report Date (note if averaging several reports)	July 23, 2020	Avg of existing samples
Laboratory Name	Skyview Labs	Spectrum & PSU
Manure Type	Swine	Swine
Manure Unit (lbs/ton or 1000 gal)	lb/1000 gal	lb/ton
Total Nitrogen (N) (lbs/ton or 1000 gal)	29.70	29.67
Ammonium N (NH_4-N) (lbs/ton or 1000 gal)	12.72	5.97
Total Organic N (lbs/ton or 1000 gal)	16.98	23.70
Total Phosphate (P_2O_5) (lbs/ton or 1000 gal)	39.02	24.62
Total Potash (K_2O) (lbs/ton or 1000 gal)	24.02	18.27
Percent Solids	8.41	60.90
PSC Value (analytical or book value)	1.00	0.66

Option 1 P Removal Option 2 Nitrogen Based Nutrient Balance Sheets	Corn Grain Spring App			Corn Silage Spring App			Small Grain Silage-Corn Silage Double Crop			Small Grain Silage-Corn Silage Double Crop			Est Mixed Grasses Early Fall Apps		
Crop Group Identification															
Fields	22,23,26,155,163,164			9,31,32,43,85A,85B,87			4A,4B,8,10,34,38,40,47,53,55,56,77,81,88,89,92,93,96,97,98,104-128,106-130,116-123,118-125,120-127,121,132,144,147,149,150			4A,4B,8,10,34,38,40,47,53,55,56,77,81,88,89,92,93,96,97,98,104-128,106-130,116-123,118-125,120-127,121,132,144,147,149,150			19,33,35,36,39,46,86,90,91,99,101,,117-124,119-126,138,143,156,161,162		
Acres	39.9			38.7			184.7			184.7			105.1		
NBS Option	Option 2 Nitrogen Requirement			Option 2 Nitrogen Requirement			Option 2 Nitrogen Requirement			Option 2 Nitrogen Requirement			Option 2 Nitrogen Requirement		
Mehlich 3 Soil Test P For Option 2 enter maximum Soil Test For Option 3 enter soil test for PI	ppm P 196			ppm P 188			ppm P 166			ppm P 166			ppm P 158		
P Index Part A Evaluation															
Part A Result															
Crop	Corn for Grain			Corn for Silage			Small Grain Silage			Corn for Silage			Established Mixed Grasses		
Planned Yield	165 bu/A			23 ton/A			12 ton/A			23 ton/A			6 ton/A		
Crop Removal Recommendations (lb/A)	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**
	165	66	50	161	92	184	204	84	312	161	92	184	300	90	300
Soil Test Recommendation (lb/A)															
Other Nutrients Applied (lb/A) (Nutrients applied regardless of manure)															
P Index Application Method															
Double Crop Carry Over N (lb/A)	0			0			[34]	Winter Double Crop		34	Summer Double Crop		0		
Manure History Description Residual Manure N (lb/A)	35	Continuously - Summer Crop		35	Continuously - Summer Crop		11	Continuously - Winter Double Crop		24	Continuously - Summer Double Crop		35	Continuously - Summer Crop	
Legume History Description Residual Legume N (lb/A)	0	No Previous Year Legume		0	No Previous Year Legume		0	Legume N credit does not apply to this crop		0	No Previous Year Legume		0	No Previous Year Legume	
Net Nutrients Required (lb/A)	130	66	50	126	92	184	193	84	312	103	-136	304	265	90	300
Manure Group	R&F Swine Manure			R&F Swine Manure			R&F Swine Manure			R&F Swine Manure			R&F Swine Manure		
Units	lb/1000 gal			lb/1000 gal			lb/1000 gal			lb/1000 gal			lb/1000 gal		
Manure Nutrient Content	**N**	**P2O5**	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**
(lbs/ton or 1000 gal)	29.70	39.02	24.02	29.70	39.02	24.02	29.70	39.02	24.02	29.70	39.02	24.02	29.70	39.02	24.02
Application Season: Management (Incorporation, cover crops, etc.)	Spring 1.2-15: Incorporated after 7 days			Spring 1.2-15: Incorporated after 7 days			Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days			Spring 1.2-15: Incorporated after 7 days			Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days		
Availability Factors (Total N or NH4-N & Organic N)	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**
		0.10	0.50		0.10	0.50		0.10	0.30		0.10	0.50		0.10	0.50
P Index Application Method															
N Balanced Manure Rate (ton; gal/A)	13,320 gal/A			12,910 gal/A			30,346 gal/A			10,553 gal/A			27,152 gal/A		
P Removal Balance Manure Rate (ton or gal/A; If required by P Index)	1,691 gal/A Crop P Removal (lb/A) 66.0			2,358 gal/A Crop P Removal (lb/A) 92.0			4,511 gal/A Crop P Removal (lb/A) 176.0			0 gal/A Crop P Removal (lb/A) 0.0			2,307 gal/A Crop P Removal (lb/A) 90.0		
P Index Value															
Planned Manure Rate (ton or gal/A)	**8000 gal/A**			**8000 gal/A**			**8000 gal/A**			**8000 gal/A**			**8000 gal/A**		
Nutrients Applied at Planned Manure Rate (lb/A)	78	312	192	78	312	192	51	312	192	78	312	192	78	312	192
Nutrient Balance after Manure	52	-246	-143	48	-220	-8	142	-228	120	25	-448	112	187	-222	108
Supplemental Fertilizer (lb/A)	0	0	0	0	0	0	0	0	0	25	0	0	187	0	0
P Index Application Method															
Final Nutrient Balance (lb/A)	**52**	**-246**	**-143**	**48**	**-220**	**-8**	**142**	**-228**	**120**	**0**	**-448**	**112**	**0**	**-222**	**108**
Multiple Application															
Soil test or Crop Removal	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs		

Option 1 P Removal Option 2 Nitrogen Based Nutrient Balance Sheets	Est Mixed Grasses Late Fall Apps			Est Mixed Grasses Summer Apps			Planting Mixed Grasses			Winter Barley			Winter Barley-DC Sudangrass		
Crop Group Identification															
Fields	94,95,102,103,105-129,109,111,112,122,137,146,148			15A,15B,44,45,79,100,107,131,145			140,142			16,25,27,29,30,37,157			152,153		
Acres	65.7			42.8			6.9			67.3			32		
NBS Option	Option 2 Nitrogen Requirement			Option 2 Nitrogen Requirement			Option 2 Nitrogen Requirement			Option 2 Nitrogen Requirement			Option 2 Nitrogen Requirement		
Mehlich 3 Soil Test P For Option 2 enter maximum Soil Test For Option 3 enter soil test for PI	ppm P 143			ppm P 166			ppm P 169			ppm P 196			ppm P 149		
P Index Part A Evaluation															
Part A Result															
Crop	Established Mixed Grasses			Established Mixed Grasses			Planting Mixed Grasses			Winter Barley			Winter Barley		
Planned Yield	6 ton/A			6 ton/A			4 ton/A			90 bu/A			90 bu/A		
Crop Removal Recommendations (lb/A)	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**
	300	90	300	300	90	300	200	60	200	72	54	135	72	54	135
Soil Test Recommendation (lb/A)															
Other Nutrients Applied (lb/A) (Nutrients applied regardless of manure)															
P Index Application Method															
Double Crop Carry Over N (lb/A)	0			0			0			0			[34]	Winter Double Crop	
Manure History Description Residual Manure N (lb/A)	35	Continuously - Summer Crop		35	Continuously - Summer Crop		35	Continuously - Summer Crop		11	Continuously - Winter Crop		11	Continuously - Winter Crop	
Legume History Description Residual Legume N (lb/A)	0	No Previous Year Legume		0	No Previous Year Legume		0	Legume N credit does not apply to this crop		0	Legume N credit does not apply to this crop		0	Legume N credit does not apply to this crop	
Net Nutrients Required (lb/A)	265	90	300	265	90	300	165	60	200	61	54	135	61	54	135
Manure Group	R&F Swine Manure			R&F Swine Manure			R&F Swine Manure			R&F Swine Manure			R&F Swine Manure		
Units	lb/1000 gal			lb/1000 gal			lb/1000 gal			lb/1000 gal			lb/1000 gal		
Manure Nutrient Content	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**
(lbs/ton or 1000 gal)	29.70	39.02	24.02	29.70	39.02	24.02	29.70	39.02	24.02	29.70	39.02	24.02	29.70	39.02	24.02
Application Season: Management (Incorporation, cover crops, etc.)	Late Fall 1.2-15: Spring grass hay, small grains or Summer corn, annuals with green manure cover crop			Summer 1.2-15: Incorporated after 7 days			Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days			Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days			Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days		
Availability Factors (Total N or NH4-N & Organic N)	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**
		0.50	0.30		0.10	0.50		0.10	0.50		0.10	0.30		0.10	0.30
P Index Application Method															
N Balanced Manure Rate (ton; gal/A)	23,144 gal/A			27,152 gal/A			16,906 gal/A			9,591 gal/A			9,591 gal/A		
P Removal Balance Manure Rate (ton or gal/A; If required by P Index)	2,307 gal/A Crop P Removal (lb/A) 90.0			2,307 gal/A Crop P Removal (lb/A) 90.0			1,538 gal/A Crop P Removal (lb/A) 60.0			1,384 gal/A Crop P Removal (lb/A) 54.0			4,972 gal/A Crop P Removal (lb/A) 194.0		
P Index Value															
Planned Manure Rate (ton or gal/A)	**8000 gal/A**			**8000 gal/A**			**8000 gal/A**			**8000 gal/A**			**8000 gal/A**		
Nutrients Applied at Planned Manure Rate (lb/A)	92	312	192	78	312	192	78	312	192	51	312	192	51	312	192
Nutrient Balance after Manure	173	-222	108	187	-222	108	87	-252	8	10	-258	-57	10	-258	-57
Supplemental Fertilizer (lb/A)	173	0	0	187	0	0	87	0	0	10	0	0	10	0	0
P Index Application Method															
Final Nutrient Balance (lb/A)	**0**	**-222**	**108**	**0**	**-222**	**108**	**0**	**-252**	**8**	**0**	**-258**	**-57**	**0**	**-258**	**-57**
Multiple Application															
Soil test or Crop Removal	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs		

Option 1 P Removal Option 2 Nitrogen Based Nutrient Balance Sheets	Winter Barley-DC Sudangrass		
Crop Group Identification			
Fields	152,153		
Acres	32		
NBS Option	Option 2 Nitrogen Requirement		
Mehlich 3 Soil Test P For Option 2 enter maximum Soil Test For Option 3 enter soil test for PI	ppm P 149		
P Index Part A Evaluation			
Part A Result			
Crop	Sorghum-Sudangrass		
Planned Yield	20 ton/A		
Crop Removal Recommendations (lb/A)	**N**	**P2O5**	**K2O**
	160	140	140
Soil Test Recommendation (lb/A)			
Other Nutrients Applied (lb/A) (Nutrients applied regardless of manure)			
P Index Application Method			
Double Crop Carry Over N (lb/A)	34	Summer Double Crop	
Manure History Description Residual Manure N (lb/A)	24	Continuously - Summer Double Crop	
Legume History Description Residual Legume N (lb/A)	0	No Previous Year Legume	
Net Nutrients Required (lb/A)	102	-118	83
Manure Group	R&F Swine Manure		
Units	lb/1000 gal		
Manure Nutrient Content	**N**	P2O5	**K20**
(lbs/ton or 1000 gal)	29.70	39.02	24.02
Application Season: Management (Incorporation, cover crops, etc.)	Spring 1.2-15: Incorporated after 7 days		
Availability Factors (Total N or NH4-N & Organic N)	**Total N**	**NH4-N**	**Org. N**
		0.10	0.50
P Index Application Method			
N Balanced Manure Rate (ton; gal/A)	10,451 gal/A		
P Removal Balance Manure Rate (ton or gal/A; If required by P Index)	0 gal/A Crop P Removal (lb/A) 0.0		
P Index Value			
Planned Manure Rate (ton or gal/A)	**8000 gal/A**		
Nutrients Applied at Planned Manure Rate (lb/A)	78	312	192
Nutrient Balance after Manure	24	-430	-109
Supplemental Fertilizer (lb/A)	24	0	0
P Index Application Method			
Final Nutrient Balance (lb/A)	**0**	**-430**	**-109**
Multiple Application			
Soil test or Crop Removal	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs		

Option 3 P Index Nutrient Balance Sheets	6			6			7			11			12A		
Field Identification															
Crop Group	Small Grain Silage			Corn for Silage (No-till)			Established Alfalfa Grass with Manure			Established Alfalfa Grass with Manure			Small Grain Silage		
Acres	18.7			18.7			11.2			12.2			20.1		
NBS Option	Option 3 P Index			Option 3 P Index			Option 3 P Index			Option 3 P Index			Option 3 P Index		
Mehlich 3 Soil Test P For Option 2 enter maximum Soil Test For Option 3 enter soil test for PI	ppm P 394			ppm P 394			ppm P 176			ppm P 67			ppm P 54		
P Index Part A Evaluation	Soil Test P			Soil Test P			No to All Part A	Run Part B Voluntarily		<150ft			Winter		
Part A Result	Part B			Part B			Part B			Part B			Part B		
Crop	Small Grain Silage			Corn for Silage (No-till)			Established Alfalfa Grass with Manure			Established Alfalfa Grass with Manure			Small Grain Silage		
Planned Yield	12 ton/A			23 ton/A			6 ton/A			6 ton/A			12 ton/A		
Crop Removal Recommendations (LB/A)	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**
	204	84	312	161	92	184	300	90	300	300	90	300	204	84	312
Soil Test Recommendation (lb/A)															
Other Nutrients Applied (lb/A) (Nutrients applied regardless of manure)															
P Index Application Method															
Double Crop Carry Over N (lb/A)	[13]	Winter Double Crop		0	Summer Double Crop		0			0			[13]	Winter Double Crop	
Manure History Description Residual Manure N (lb/A)	11	Continuously - Winter Double Crop		24	Continuously - Summer Double Crop		35	Continuously - Summer Crop		35	Continuously - Summer Crop		11	Continuously - Winter Double Crop	
Legume History Description Residual Legume N (lb/A)	0	No Previous Year Legume		0	No Previous Year Legume		0	No Previous Year Legume		0	No Previous Year Legume		0	No Previous Year Legume	
Net Nutrients Required (lb/A)	193	84	312	137			265	90	300	265	90	300	193	84	312
Manure Group	R&F Swine Manure			R&F Swine Manure			0			R&F Swine Manure			R&F Swine Manure		
Units	lb/1000 gal			lb/1000 gal			#N/A			lb/1000 gal			lb/1000 gal		
Manure Nutrient Content	**N**	**P2O5**	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**
(lbs/ton or 1000 gal)	29.70	39.02	24.02	29.70	39.02	24.02	#N/A	#N/A	#N/A	29.70	39.02	24.02	29.70	39.02	24.02
Application Season: Management (Incorporation, cover crops, etc.)	Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days			Spring 1.2-15: Incorporated after 7 days						Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days			Winter 1.2-15: Spring grass hay, small grains or Summer corn, annuals with green manure cover crop		
Availability Factors (Total N or NH4-N & Organic N)	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**
		0.10	0.30		0.10	0.50					0.10	0.50		0.50	0.30
P Index Application Method	April - Oct: No incorp or incorp > 1 wk.			April - Oct: No incorp or incorp > 1 wk.						April - Oct: No incorp or incorp > 1 wk.			Surface app. when frozen/snow covered		
N Balanced Manure Rate (ton; gal/A)	30,346 gal/A			14,037 gal/A						27,152 gal/A			16,856 gal/A		
P Removal Balance Manure Rate (ton or gal/A; If required by P Index)	2,153 gal/A			2,358 gal/A			#N/A			2,307 gal/A			2,153 gal/A		
	Crop P Removal (lb/A) 84.0			Crop P Removal (lb/A) 92.0			Crop P Removal (lb/A) 90.0			Crop P Removal (lb/A) 90.0			Crop P Removal (lb/A) 84.0		
P Index Value	69			69			22			76			73		
Planned Manure Rate (ton or gal/A)	**3,000 gal/A**			**3,000 gal/A**			**No Manure Applied**			**3,000 gal/A**			**3,000 gal/A**		
Nutrients Applied at Planned Manure Rate (lb/A)	19	117	72	29	117	72	#N/A	#N/A	#N/A	29	117	72	34	117	72
Nutrient Balance after Manure	174	-33	240	108				90	300	0	-27	228	159	-33	240
Supplemental Fertilizer (lb/A)	174	0	0	108	0	0	0	0	0	0	0	0	159	0	0
P Index Application Method															
Final Nutrient Balance (lb/A)	**0**	**-33**	**240**	**0**			**265**	**90**	**300**	**0**	**-27**	**228**	**0**	**-33**	**240**
Multiple Application															
Soil test or Crop Removal	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs		

Option 3 P Index Nutrient Balance Sheets	12A			12B			12B			13A			13A		
Field Identification															
Crop Group	Corn for Silage (No-till)			Small Grain Silage			Corn for Silage (No-till)			Small Grain Silage			Corn for Silage (No-till)		
Acres	20.1			8.9			8.9			7.7			7.7		
NBS Option	Option 3 P Index			Option 3 P Index			Option 3 P Index			Option 3 P Index			Option 3 P Index		
Mehlich 3 Soil Test P For Option 2 enter maximum Soil Test For Option 3 enter soil test for PI	ppm P 54			ppm P 52			ppm P 52			ppm P 38			ppm P 38		
P Index Part A Evaluation	Run Part B Voluntarily			Winter			Run Part B Voluntarily			<150ft			<150ft		
Part A Result	Part B			Part B			Part B			Part B			Part B		
Crop	Corn for Silage (No-till)			Small Grain Silage			Corn for Silage (No-till)			Small Grain Silage			Corn for Silage (No-till)		
Planned Yield	23 ton/A			12 ton/A			23 ton/A			12 ton/A			23 ton/A		
Crop Removal Recommendations (LB/A)	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**
	161	92	184	204	84	312	161	92	184	204	84	312	161	92	184
Soil Test Recommendation (lb/A)															
Other Nutrients Applied (lb/A) (Nutrients applied regardless of manure)															
P Index Application Method															
Double Crop Carry Over N (lb/A)	0	Summer Double Crop		[13]	Winter Double Crop		0	Summer Double Crop		[0]	Winter Double Crop		0	Summer Double Crop	
Manure History Description Residual Manure N (lb/A)	24	Continuously - Summer Double Crop		11	Continuously - Winter Double Crop		24	Continuously - Summer Double Crop		11	Continuously - Winter Double Crop		24	Continuously - Summer Double Crop	
Legume History Description Residual Legume N (lb/A)	0	No Previous Year Legume		0	No Previous Year Legume		0	No Previous Year Legume		0	No Previous Year Legume		0	No Previous Year Legume	
Net Nutrients Required (lb/A)	137			193	84	312	137			193	84	312	137		
Manure Group	R&F Swine Manure			R&F Swine Manure			R&F Swine Manure			0			R&F Swine Manure		
Units	lb/1000 gal			lb/1000 gal			lb/1000 gal			#N/A			lb/1000 gal		
Manure Nutrient Content	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**
(lbs/ton or 1000 gal)	29.70	39.02	24.02	29.70	39.02	24.02	29.70	39.02	24.02	#N/A	#N/A	#N/A	29.70	39.02	24.02
Application Season: Management (Incorporation, cover crops, etc.)	Spring 1.2-15: Incorporated after 7 days			Winter 1.2-15: Spring grass hay, small grains or Summer corn, annuals with green manure cover crop			Spring 1.2-15: Incorporated after 7 days						Spring 1.2-15: Incorporated after 7 days		
Availability Factors (Total N or NH4-N & Organic N)	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**
		0.10	0.50		0.50	0.30		0.10	0.50					0.10	0.50
P Index Application Method	April - Oct: No incorp or incorp > 1 wk.			Surface app. when frozen/snow covered			April - Oct: No incorp or incorp > 1 wk.						April - Oct: No incorp or incorp > 1 wk.		
N Balanced Manure Rate (ton; gal/A)	14,037 gal/A			16,856 gal/A			14,037 gal/A						14,037 gal/A		
P Removal Balance Manure Rate (ton or gal/A; If required by P Index)	2,358 gal/A			2,153 gal/A			2,358 gal/A			#N/A			2,358 gal/A		
	Crop P Removal (lb/A) 92.0			Crop P Removal (lb/A) 84.0			Crop P Removal (lb/A) 92.0			Crop P Removal (lb/A) 84.0			Crop P Removal (lb/A) 92.0		
P Index Value	46			73			46			7			70		
Planned Manure Rate (ton or gal/A)	**3,000 gal/A**			**3,000 gal/A**			**3,000 gal/A**			**No Manure Applied**			**3,000 gal/A**		
Nutrients Applied at Planned Manure Rate (lb/A)	29	117	72	34	117	72	29	117	72	#N/A	#N/A	#N/A	29	117	72
Nutrient Balance after Manure	108			159	-33	240	108				84	312	108		
Supplemental Fertilizer (lb/A)	108	0	0	159	0	0	108	0	0	0	0	0	108	0	0
P Index Application Method															
Final Nutrient Balance (lb/A)	**0**			**0**	**-33**	**240**	**0**			**193**	**84**	**312**	**0**		
Multiple Application															
Soil test or Crop Removal	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs		

Option 3 P Index Nutrient Balance Sheets	13B			13B			14			14			17		
Field Identification															
Crop Group	Small Grain Silage			Corn for Silage (No-till)			Small Grain Silage			Corn for Silage (No-till)			Established Alfalfa Grass with Manure		
Acres	2.2			2.2			17.4			17.4			6.9		
NBS Option	Option 3 P Index			Option 3 P Index			Option 3 P Index			Option 3 P Index			Option 3 P Index		
Mehlich 3 Soil Test P For Option 2 enter maximum Soil Test For Option 3 enter soil test for PI	ppm P 38			ppm P 38			ppm P 56			ppm P 56			ppm P 71		
P Index Part A Evaluation	<150ft			<150ft			<150ft			<150ft			<150ft		
Part A Result	Part B			Part B			Part B			Part B			Part B		
Crop	Small Grain Silage			Corn for Silage (No-till)			Small Grain Silage			Corn for Silage (No-till)			Established Alfalfa Grass with Manure		
Planned Yield	12 ton/A			23 ton/A			12 ton/A			23 ton/A			6 ton/A		
Crop Removal Recommendations (LB/A)	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**
	204	84	312	161	92	184	204	84	312	161	92	184	300	90	300
Soil Test Recommendation (lb/A)															
Other Nutrients Applied (lb/A) (Nutrients applied regardless of manure)															
P Index Application Method															
Double Crop Carry Over N (lb/A)	[0]	Winter Double Crop		0	Summer Double Crop		[0]	Winter Double Crop		0	Summer Double Crop		0		
Manure History Description Residual Manure N (lb/A)	11	Continuously - Winter Double Crop		24	Continuously - Summer Double Crop		11	Continuously - Winter Double Crop		24	Continuously - Summer Double Crop		35	Continuously - Summer Crop	
Legume History Description Residual Legume N (lb/A)	0	No Previous Year Legume		0	No Previous Year Legume		0	No Previous Year Legume		0	No Previous Year Legume		0	No Previous Year Legume	
Net Nutrients Required (lb/A)	193	84	312	137			193	84	312	137			265	90	300
Manure Group	0			R&F Swine Manure			0			R&F Swine Manure			R&F Swine Manure		
Units	#N/A			lb/1000 gal			#N/A			lb/1000 gal			lb/1000 gal		
Manure Nutrient Content	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**
(lbs/ton or 1000 gal)	#N/A	#N/A	#N/A	29.70	39.02	24.02	#N/A	#N/A	#N/A	29.70	39.02	24.02	29.70	39.02	24.02
Application Season: Management (Incorporation, cover crops, etc.)				Spring 1.2-15: Incorporated after 7 days						Spring 1.2-15: Incorporated after 7 days			Summer 1.2-15: Incorporated after 7 days		
Availability Factors (Total N or NH4-N & Organic N)	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**
					0.10	0.50					0.10	0.50		0.10	0.50
P Index Application Method				April - Oct: No incorp or incorp > 1 wk.						April - Oct: No incorp or incorp > 1 wk.			April - Oct: No incorp or incorp > 1 wk.		
N Balanced Manure Rate (ton; gal/A)				14,037 gal/A						14,037 gal/A			27,152 gal/A		
P Removal Balance Manure Rate (ton or gal/A; If required by P Index)	#N/A			2,358 gal/A			#N/A			2,358 gal/A			2,307 gal/A		
	Crop P Removal (lb/A) 84.0			Crop P Removal (lb/A) 92.0			Crop P Removal (lb/A) 84.0			Crop P Removal (lb/A) 92.0			Crop P Removal (lb/A) 90.0		
P Index Value	7			70			9			64			66		
Planned Manure Rate (ton or gal/A)	**No Manure Applied**			**3,000 gal/A**			**No Manure Applied**			**3,000 gal/A**			**3,000 gal/A**		
Nutrients Applied at Planned Manure Rate (lb/A)	#N/A	#N/A	#N/A	29	117	72	#N/A	#N/A	#N/A	29	117	72	29	117	72
Nutrient Balance after Manure		84	312	108				84	312	108			0	-27	228
Supplemental Fertilizer (lb/A)	0	0	0	108	0	0	0	0	0	108	0	0	0	0	0
P Index Application Method															
Final Nutrient Balance (lb/A)	**193**	**84**	**312**	**0**			**193**	**84**	**312**	**0**			**0**	**-27**	**228**
Multiple Application															
Soil test or Crop Removal	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs		

Option 3 P Index Nutrient Balance Sheets	18A			18B			20			21			24		
Field Identification															
Crop Group	Winter Barley			Winter Barley			Corn for Grain (No-till)			Established Alfalfa Grass			Winter Barley		
Acres	8.8			2.6			19.8			10.4			8.2		
NBS Option	Option 3 P Index			Option 3 P Index			Option 3 P Index			Option 3 P Index			Option 3 P Index		
Mehlich 3 Soil Test P For Option 2 enter maximum Soil Test For Option 3 enter soil test for PI	ppm P 234			ppm P 234			ppm P 81			ppm P 137			ppm P 154		
P Index Part A Evaluation	Soil Test P			<150ft Soil Test P			<150ft			<150ft			<150ft		
Part A Result	Part B			Part B			Part B			Part B			Part B		
Crop	Winter Barley			Winter Barley			Corn for Grain (No-till)			Established Alfalfa Grass			Winter Barley		
Planned Yield	90 bu/A			90 bu/A			165 bu/A			6 ton/A			90 bu/A		
Crop Removal Recommendations (LB/A)	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**
	72	54	135	72	54	135	165	66	50	0	90	300	72	54	135
Soil Test Recommendation (lb/A)															
Other Nutrients Applied (lb/A) (Nutrients applied regardless of manure)															
P Index Application Method															
Double Crop Carry Over N (lb/A)	0			0			0			0			0		
Manure History Description Residual Manure N (lb/A)	11	Continuously - Winter Crop		11	Continuously - Winter Crop		35	Continuously - Summer Crop		35	Continuously - Summer Crop		11	Continuously - Winter Crop	
Legume History Description Residual Legume N (lb/A)	0	No Previous Year Legume		0	No Previous Year Legume		0	No Previous Year Legume		0	No Previous Year Legume		0	No Previous Year Legume	
Net Nutrients Required (lb/A)	61	54	135	61	54	135	130	66	50	0	90	300	61	54	135
Manure Group	R&F Swine Manure			0			R&F Swine Manure			0			R&F Swine Manure		
Units	lb/1000 gal			#N/A			lb/1000 gal			#N/A			lb/1000 gal		
Manure Nutrient Content	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**
(lbs/ton or 1000 gal)	29.70	39.02	24.02	#N/A	#N/A	#N/A	29.70	39.02	24.02	#N/A	#N/A	#N/A	29.70	39.02	24.02
Application Season: Management (Incorporation, cover crops, etc.)	Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days						Spring 1.2-15: Incorporated after 7 days						Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days		
Availability Factors (Total N or NH4-N & Organic N)	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**
		0.10	0.30					0.10	0.50					0.10	0.30
P Index Application Method	April - Oct: No incorp or incorp > 1 wk.						April - Oct: No incorp or incorp > 1 wk.						April - Oct: No incorp or incorp > 1 wk.		
N Balanced Manure Rate (ton; gal/A)	9,591 gal/A						13,320 gal/A						9,591 gal/A		
P Removal Balance Manure Rate (ton or gal/A; If required by P Index)	1,384 gal/A			#N/A			1,691 gal/A			#N/A			1,384 gal/A		
	Crop P Removal (lb/A) 54.0			Crop P Removal (lb/A) 54.0			Crop P Removal (lb/A) 66.0			Crop P Removal (lb/A) 90.0			Crop P Removal (lb/A) 54.0		
P Index Value	67			35			74			24			71		
Planned Manure Rate (ton or gal/A)	**3,000 gal/A**			**No Manure Applied**			**3,000 gal/A**			**No Manure Applied**			**3,000 gal/A**		
Nutrients Applied at Planned Manure Rate (lb/A)	19	117	72	#N/A	#N/A	#N/A	29	117	72	#N/A	#N/A	#N/A	19	117	72
Nutrient Balance after Manure	42	-63	63		54	135	101	-51	-23		90	300	42	-63	63
Supplemental Fertilizer (lb/A)	42	0	0	0	0	0	101	0	0	0	0	0	42	0	0
P Index Application Method															
Final Nutrient Balance (lb/A)	**0**	**-63**	**63**	**61**	**54**	**135**	**0**	**-51**	**-23**	**0**	**90**	**300**	**0**	**-63**	**63**
Multiple Application															
Soil test or Crop Removal	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs		

Option 3 P Index Nutrient Balance Sheets	28			41			41			42			78		
Field Identification															
Crop Group	Winter Barley			Small Grain Silage			Corn for Silage (No-till)			Established Alfalfa Grass with Manure			Established Alfalfa Grass with Manure		
Acres	19.0			1.0			1.0			5.4			4.1		
NBS Option	Option 3 P Index			Option 3 P Index			Option 3 P Index			Option 3 P Index			Option 3 P Index		
Mehlich 3 Soil Test P	ppm P			ppm P			ppm P			ppm P			ppm P		
For Option 2 enter maximum Soil Test For Option 3 enter soil test for PI	100			95			95			95			56		
P Index Part A Evaluation	<150ft			<150ft			<150ft			<150ft			<150ft		
Part A Result	Part B			Part B			Part B			Part B			Part B		
Crop	Winter Barley			Small Grain Silage			Corn for Silage (No-till)			Established Alfalfa Grass with Manure			Established Alfalfa Grass with Manure		
Planned Yield	90 bu/A			12 ton/A			23 ton/A			6 ton/A			6 ton/A		
Crop Removal Recommendations (LB/A)	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**
	72	54	135	204	84	312	161	92	184	300	90	300	300	90	300
Soil Test Recommendation (lb/A)															
Other Nutrients Applied (lb/A) (Nutrients applied regardless of manure)															
P Index Application Method															
Double Crop Carry Over N (lb/A)	0			[0]	Winter Double Crop		0	Summer Double Crop		0			0		
Manure History Description Residual Manure N (lb/A)	11	Continuously - Winter Crop		11	Continuously - Winter Double Crop		24	Continuously - Summer Double Crop		35	Continuously - Summer Crop		35	Continuously - Summer Crop	
Legume History Description Residual Legume N (lb/A)	0	No Previous Year Legume		0	No Previous Year Legume		0	No Previous Year Legume		0	No Previous Year Legume		0	No Previous Year Legume	
Net Nutrients Required (lb/A)	61	54	135	193	84	312	137			265	90	300	265	90	300
Manure Group	R&F Swine Manure			0			R&F Swine Manure			R&F Swine Manure			R&F Swine Manure		
Units	lb/1000 gal			#N/A			lb/1000 gal			lb/1000 gal			lb/1000 gal		
Manure Nutrient Content	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**
(lbs/ton or 1000 gal)	29.70	39.02	24.02	#N/A	#N/A	#N/A	29.70	39.02	24.02	29.70	39.02	24.02	29.70	39.02	24.02
Application Season: Management (Incorporation, cover crops, etc.)	Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days						Spring 1.2-15: Incorporated after 7 days			Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days			Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days		
Availability Factors (Total N or NH4-N & Organic N)	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**
		0.10	0.30					0.10	0.50		0.10	0.50		0.10	0.50
P Index Application Method	April - Oct: No incorp or incorp > 1 wk.						April - Oct: No incorp or incorp > 1 wk.			April - Oct: No incorp or incorp > 1 wk.			April - Oct: No incorp or incorp > 1 wk.		
N Balanced Manure Rate (ton; gal/A)	9,591 gal/A						14,037 gal/A			27,152 gal/A			27,152 gal/A		
P Removal Balance Manure Rate (ton or gal/A; If required by P Index)	1,384 gal/A			#N/A			2,358 gal/A			2,307 gal/A			2,307 gal/A		
	Crop P Removal (lb/A) 54.0			Crop P Removal (lb/A) 84.0			Crop P Removal (lb/A) 92.0			Crop P Removal (lb/A) 90.0			Crop P Removal (lb/A) 90.0		
P Index Value	61			17			79			69			76		
Planned Manure Rate (ton or gal/A)	**3,000 gal/A**			**No Manure Applied**			**3,000 gal/A**			**3,000 gal/A**			**3,000 gal/A**		
Nutrients Applied at Planned Manure Rate (lb/A)	19	117	72	#N/A	#N/A	#N/A	29	117	72	29	117	72	29	117	72
Nutrient Balance after Manure	42	-63	63		84	312	108			0	-27	228	0	-27	228
Supplemental Fertilizer (lb/A)	42	0	0	0	0	0	108	0	0	0	0	0	0	0	0
P Index Application Method															
Final Nutrient Balance (lb/A)	**0**	**-63**	**63**	**193**	**84**	**312**	**0**			**0**	**-27**	**228**	**0**	**-27**	**228**
Multiple Application															
Soil test or Crop Removal	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs		

Option 3 P Index Nutrient Balance Sheets	80			108			110			113			114		
Field Identification															
Crop Group	Established Alfalfa Grass with Manure			Established Alfalfa Grass with Manure			Established Alfalfa Grass with Manure			Established Alfalfa Grass with Manure			Established Alfalfa Grass with Manure		
Acres	1.9			5.1			10.0			1.5			4.1		
NBS Option	Option 3 P Index			Option 3 P Index			Option 3 P Index			Option 3 P Index			Option 3 P Index		
Mehlich 3 Soil Test P For Option 2 enter maximum Soil Test For Option 3 enter soil test for PI	ppm P 56			ppm P 42			ppm P 105			ppm P 40			ppm P 40		
P Index Part A Evaluation	<150ft			Run Part B Voluntarily			<150ft			Winter			Winter		
Part A Result	Part B			Part B			Part B			Part B			Part B		
Crop	Established Alfalfa Grass with Manure			Established Alfalfa Grass with Manure			Established Alfalfa Grass with Manure			Established Alfalfa Grass with Manure			Established Alfalfa Grass with Manure		
Planned Yield	6 ton/A			6 ton/A			6 ton/A			6 ton/A			6 ton/A		
Crop Removal Recommendations (LB/A)	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**
	300	90	300	300	90	300	300	90	300	300	90	300	300	90	300
Soil Test Recommendation (lb/A)															
Other Nutrients Applied (lb/A) (Nutrients applied regardless of manure)															
P Index Application Method															
Double Crop Carry Over N (lb/A)	0			0			0			0			0		
Manure History Description Residual Manure N (lb/A)	35	Continuously - Summer Crop		35	Continuously - Summer Crop		35	Continuously - Summer Crop		35	Continuously - Summer Crop		35	Continuously - Summer Crop	
Legume History Description Residual Legume N (lb/A)	0	No Previous Year Legume		0	No Previous Year Legume		0	No Previous Year Legume		0	No Previous Year Legume		0	No Previous Year Legume	
Net Nutrients Required (lb/A)	265	90	300	265	90	300	265	90	300	265	90	300	265	90	300
Manure Group	R&F Swine Manure			0			0			R&F Swine Manure			R&F Swine Manure		
Units	lb/1000 gal			#N/A			#N/A			lb/1000 gal			lb/1000 gal		
Manure Nutrient Content	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**
(lbs/ton or 1000 gal)	29.70	39.02	24.02	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	29.70	39.02	24.02	29.70	39.02	24.02
Application Season: Management (Incorporation, cover crops, etc.)	Late Fall 1.2-15: Spring grass hay, small grains or Summer corn, annuals with green manure cover crop									Winter 1.2-15: Spring grass hay, small grains or Summer corn, annuals with green manure cover crop			Winter 1.2-15: Spring grass hay, small grains or Summer corn, annuals with green manure cover crop		
Availability Factors (Total N or NH4-N & Organic N)	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**
		0.50	0.50								0.50	0.50		0.50	0.50
P Index Application Method	April - Oct: No incorp or incorp > 1 wk.									Surface app. when frozen/snow covered			Surface app. when frozen/snow covered		
N Balanced Manure Rate (ton; gal/A)	17,845 gal/A									17,845 gal/A			17,845 gal/A		
P Removal Balance Manure Rate (ton or gal/A; If required by P Index)	2,307 gal/A			#N/A			#N/A			2,307 gal/A			2,307 gal/A		
	Crop P Removal (lb/A) 90.0			Crop P Removal (lb/A) 90.0			Crop P Removal (lb/A) 90.0			Crop P Removal (lb/A) 90.0			Crop P Removal (lb/A) 90.0		
P Index Value	76			7			19			73			52		
Planned Manure Rate (ton or gal/A)	**3,000 gal/A**			**No Manure Applied**			**No Manure Applied**			**3,000 gal/A**			**3,000 gal/A**		
Nutrients Applied at Planned Manure Rate (lb/A)	45	117	72	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	45	117	72	45	117	72
Nutrient Balance after Manure	0	-27	228		90	300		90	300	0	-27	228	0	-27	228
Supplemental Fertilizer (lb/A)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P Index Application Method															
Final Nutrient Balance (lb/A)	**0**	**-27**	**228**	**265**	**90**	**300**	**265**	**90**	**300**	**0**	**-27**	**228**	**0**	**-27**	**228**
Multiple Application															
Soil test or Crop Removal	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs		

Option 3 P Index Nutrient Balance Sheets	115			133			134			134			136		
Field Identification															
Crop Group	Established Alfalfa Grass with Manure			Established Alfalfa Grass with Manure			Small Grain Silage			Corn for Silage (No-till)			Small Grain Silage		
Acres	4.0			7.7			2.1			2.1			4.0		
NBS Option	Option 3 P Index			Option 3 P Index			Option 3 P Index			Option 3 P Index			Option 3 P Index		
Mehlich 3 Soil Test P For Option 2 enter maximum Soil Test For Option 3 enter soil test for PI	ppm P 46			ppm P 27			ppm P 35			ppm P 35			ppm P 35		
P Index Part A Evaluation	Winter			<150ft			<150ft			<150ft			<150ft		
Part A Result	Part B			Part B			Part B			Part B			Part B		
Crop	Established Alfalfa Grass with Manure			Established Alfalfa Grass with Manure			Small Grain Silage			Corn for Silage (No-till)			Small Grain Silage		
Planned Yield	6 ton/A			6 ton/A			12 ton/A			23 ton/A			12 ton/A		
Crop Removal Recommendations (LB/A)	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**
	300	90	300	300	90	300	204	84	312	161	92	184	204	84	312
Soil Test Recommendation (lb/A)															
Other Nutrients Applied (lb/A) (Nutrients applied regardless of manure)															
P Index Application Method															
Double Crop Carry Over N (lb/A)	0			0			[13]	Winter Double Crop		0	Summer Double Crop		[13]	Winter Double Crop	
Manure History Description Residual Manure N (lb/A)	35	Continuously - Summer Crop		35	Continuously - Summer Crop		11	Continuously - Winter Double Crop		24	Continuously - Summer Double Crop		11	Continuously - Winter Double Crop	
Legume History Description Residual Legume N (lb/A)	0	No Previous Year Legume		0	No Previous Year Legume		0	No Previous Year Legume		0	No Previous Year Legume		0	No Previous Year Legume	
Net Nutrients Required (lb/A)	265	90	300	265	90	300	193	84	312	137			193	84	312
Manure Group	R&F Swine Manure			0			R&F Swine Manure			R&F Swine Manure			R&F Swine Manure		
Units	lb/1000 gal			#N/A			lb/1000 gal			lb/1000 gal			lb/1000 gal		
Manure Nutrient Content	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**
(lbs/ton or 1000 gal)	29.70	39.02	24.02	#N/A	#N/A	#N/A	29.70	39.02	24.02	29.70	39.02	24.02	29.70	39.02	24.02
Application Season: Management (Incorporation, cover crops, etc.)	Winter 1.2-15: Spring grass hay, small grains or Summer corn, annuals with green manure cover crop						Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days			Spring 1.2-15: Incorporated after 7 days			Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days		
Availability Factors (Total N or NH4-N & Organic N)	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**
		0.50	0.50					0.10	0.30		0.10	0.50		0.10	0.30
P Index Application Method	Surface app. when frozen/snow covered						April - Oct: No incorp or incorp > 1 wk.			April - Oct: No incorp or incorp > 1 wk.			April - Oct: No incorp or incorp > 1 wk.		
N Balanced Manure Rate (ton; gal/A)	17,845 gal/A						30,346 gal/A			14,037 gal/A			30,346 gal/A		
P Removal Balance Manure Rate (ton or gal/A; If required by P Index)	2,307 gal/A			#N/A			2,153 gal/A			2,358 gal/A			2,153 gal/A		
	Crop P Removal (lb/A) 90.0			Crop P Removal (lb/A) 90.0			Crop P Removal (lb/A) 84.0			Crop P Removal (lb/A) 92.0			Crop P Removal (lb/A) 84.0		
P Index Value	74			7			67			67			69		
Planned Manure Rate (ton or gal/A)	**3,000 gal/A**			**No Manure Applied**			**3,000 gal/A**			**3,000 gal/A**			**3,000 gal/A**		
Nutrients Applied at Planned Manure Rate (lb/A)	45	117	72	#N/A	#N/A	#N/A	19	117	72	29	117	72	19	117	72
Nutrient Balance after Manure	0	-27	228		90	300	174	-33	240	108			174	-33	240
Supplemental Fertilizer (lb/A)	0	0	0	0	0	0	174	0	0	108	0	0	174	0	0
P Index Application Method															
Final Nutrient Balance (lb/A)	**0**	**-27**	**228**	**265**	**90**	**300**	**0**	**-33**	**240**	**0**			**0**	**-33**	**240**
Multiple Application															
Soil test or Crop Removal	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs		

Option 3 P Index Nutrient Balance Sheets	136			139			141			151			154		
Field Identification															
Crop Group	Corn for Silage (No-till)			Established Alfalfa Grass with Manure			Established Alfalfa Grass with Manure			Established Alfalfa Grass with Manure			Established Alfalfa Grass with Manure		
Acres	4.0			13.5			4.6			1.9			3.0		
NBS Option	Option 3 P Index			Option 3 P Index			Option 3 P Index			Option 3 P Index			Option 3 P Index		
Mehlich 3 Soil Test P For Option 2 enter maximum Soil Test For Option 3 enter soil test for PI	ppm P 35			ppm P 53			ppm P 76			ppm P 53			ppm P 135		
P Index Part A Evaluation	<150ft			Winter			Winter			<150ft			<150ft		
Part A Result	Part B			Part B			Part B			Part B			Part B		
Crop	Corn for Silage (No-till)			Established Alfalfa Grass with Manure			Established Alfalfa Grass with Manure			Established Alfalfa Grass with Manure			Established Alfalfa Grass with Manure		
Planned Yield	23 ton/A			6 ton/A			6 ton/A			6 ton/A			6 ton/A		
Crop Removal Recommendations (LB/A)	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**
	161	92	184	300	90	300	300	90	300	300	90	300	300	90	300
Soil Test Recommendation (lb/A)															
Other Nutrients Applied (lb/A) (Nutrients applied regardless of manure)															
P Index Application Method															
Double Crop Carry Over N (lb/A)	0	Summer Double Crop		0			0			0			0		
Manure History Description Residual Manure N (lb/A)	24	Continuously - Summer Double Crop		35	Continuously - Summer Crop		35	Continuously - Summer Crop		35	Continuously - Summer Crop		35	Continuously - Summer Crop	
Legume History Description Residual Legume N (lb/A)	0	No Previous Year Legume		0	No Previous Year Legume		0	No Previous Year Legume		0	No Previous Year Legume		0	No Previous Year Legume	
Net Nutrients Required (lb/A)	137			265	90	300	265	90	300	265	90	300	265	90	300
Manure Group	R&F Swine Manure			R&F Swine Manure			R&F Swine Manure			R&F Swine Manure			R&F Swine Manure		
Units	lb/1000 gal			lb/1000 gal			lb/1000 gal			lb/1000 gal			lb/1000 gal		
Manure Nutrient Content	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**
(lbs/ton or 1000 gal)	29.70	39.02	24.02	29.70	39.02	24.02	29.70	39.02	24.02	29.70	39.02	24.02	29.70	39.02	24.02
Application Season: Management (Incorporation, cover crops, etc.)	Spring 1.2-15: Incorporated after 7 days			Winter 1.2-15: Spring grass hay, small grains or Summer corn, annuals with green manure cover crop			Winter 1.2-15: Spring grass hay, small grains or Summer corn, annuals with green manure cover crop			Summer 1.2-15: Incorporated after 7 days			Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days		
Availability Factors (Total N or NH4-N & Organic N)	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**
		0.10	0.50		0.50	0.50		0.50	0.50		0.10	0.50		0.10	0.50
P Index Application Method	April - Oct: No incorp or incorp > 1 wk.			Surface app. when frozen/snow covered			Surface app. when frozen/snow covered			April - Oct: No incorp or incorp > 1 wk.			April - Oct: No incorp or incorp > 1 wk.		
N Balanced Manure Rate (ton; gal/A)	14,037 gal/A			17,845 gal/A			17,845 gal/A			27,152 gal/A			27,152 gal/A		
P Removal Balance Manure Rate (ton or gal/A; If required by P Index)	2,358 gal/A			2,307 gal/A			2,307 gal/A			2,307 gal/A			2,307 gal/A		
	Crop P Removal (lb/A) 92.0			Crop P Removal (lb/A) 90.0			Crop P Removal (lb/A) 90.0			Crop P Removal (lb/A) 90.0			Crop P Removal (lb/A) 90.0		
P Index Value	69			72			69			78			69		
Planned Manure Rate (ton or gal/A)	**3,000 gal/A**			**3,000 gal/A**			**3,000 gal/A**			**3,000 gal/A**			**3,000 gal/A**		
Nutrients Applied at Planned Manure Rate (lb/A)	29	117	72	45	117	72	45	117	72	29	117	72	29	117	72
Nutrient Balance after Manure	108			0	-27	228	0	-27	228	0	-27	228	0	-27	228
Supplemental Fertilizer (lb/A)	108	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P Index Application Method															
Final Nutrient Balance (lb/A)	**0**			**0**	**-27**	**228**	**0**	**-27**	**228**	**0**	**-27**	**228**	**0**	**-27**	**228**
Multiple Application															
Soil test or Crop Removal	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs		

Option 3 P Index Nutrient Balance Sheets	158A			158B			159			160		
Field Identification												
Crop Group	Winter Barley			Winter Barley			Corn for Grain (No-till)			Corn for Grain (No-till)		
Acres	7.0			1.1			3.6			3.6		
NBS Option	Option 3 P Index			Option 3 P Index			Option 3 P Index			Option 3 P Index		
Mehlich 3 Soil Test P For Option 2 enter maximum Soil Test For Option 3 enter soil test for PI	ppm P 123			ppm P 123			ppm P 134			ppm P 134		
P Index Part A Evaluation	<150ft			<150ft			<150ft			<150ft		
Part A Result	Part B			Part B			Part B			Part B		
Crop	Winter Barley			Winter Barley			Corn for Grain (No-till)			Corn for Grain (No-till)		
Planned Yield	90 bu/A			90 bu/A			165 bu/A			165 bu/A		
Crop Removal Recommendations (LB/A)	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**
	72	54	135	72	54	135	165	66	50	165	66	50
Soil Test Recommendation (lb/A)												
Other Nutrients Applied (lb/A) (Nutrients applied regardless of manure)												
P Index Application Method												
Double Crop Carry Over N (lb/A)	0			0			0			0		
Manure History Description Residual Manure N (lb/A)	11	Continuously - Winter Crop		11	Continuously - Winter Crop		35	Continuously - Summer Crop		35	Continuously - Summer Crop	
Legume History Description Residual Legume N (lb/A)	0	No Previous Year Legume		0	No Previous Year Legume		0	No Previous Year Legume		0	No Previous Year Legume	
Net Nutrients Required (lb/A)	61	54	135	61	54	135	130	66	50	130	66	50
Manure Group	R&F Swine Manure			R&F Swine Manure			0			R&F Swine Manure		
Units	lb/1000 gal			lb/1000 gal			#N/A			lb/1000 gal		
Manure Nutrient Content	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**
(lbs/ton or 1000 gal)	29.70	39.02	24.02	29.70	39.02	24.02	#N/A	#N/A	#N/A	29.70	39.02	24.02
Application Season: Management (Incorporation, cover crops, etc.)	Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days			Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days						Spring 1.2-15: Incorporated after 7 days		
Availability Factors (Total N or NH4-N & Organic N)	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**
		0.10	0.30		0.10	0.30					0.10	0.50
P Index Application Method	April - Oct: No incorp or incorp > 1 wk.			April - Oct: No incorp or incorp > 1 wk.						April - Oct: No incorp or incorp > 1 wk.		
N Balanced Manure Rate (ton; gal/A)	9,591 gal/A			9,591 gal/A						13,320 gal/A		
P Removal Balance Manure Rate (ton or gal/A; If required by P Index)	1,384 gal/A			1,384 gal/A			#N/A			1,691 gal/A		
	Crop P Removal (lb/A) 54.0			Crop P Removal (lb/A) 54.0			Crop P Removal (lb/A) 66.0			Crop P Removal (lb/A) 66.0		
P Index Value	67			70			24			69		
Planned Manure Rate (ton or gal/A)	**3,000 gal/A**			**3,000 gal/A**			**No Manure Applied**			**3,000 gal/A**		
Nutrients Applied at Planned Manure Rate (lb/A)	19	117	72	19	117	72	#N/A	#N/A	#N/A	29	117	72
Nutrient Balance after Manure	42	-63	63	42	-63	63		66	50	101	-51	-23
Supplemental Fertilizer (lb/A)	42	0	0	42	0	0	0	0	0	101	0	0
P Index Application Method												
Final Nutrient Balance (lb/A)	**0**	**-63**	**63**	**0**	**-63**	**63**	**130**	**66**	**50**	**0**	**-51**	**-23**
Multiple Application												
Soil test or Crop Removal	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs		

Phosphorus Index
Populated from NBS Input P Index sheet

Go to NBS P Index Input Go to NBS Index

Pennsylvania P Index Version 2

PART A: SCREENING TOOL CMU/Field ID		PART A: SCREENING TOOL	CMU/Field ID	6 - Small Grain Silage
Is the CMU in a Special Protection watershed?		Is the CMU in a Special Protection watershed?	If the answer is Yes to any of these questions, Part B must be used.	**No**
A significant farm management change as defined by Act 38?		Is there a significant farm management change as defined by Act 38?		**No**
Soil Test Mehlich 3 P greater than 200 ppm P?		Is the Soil Test Mehlich 3 P greater than 200 ppm P? (enter soil test value in ppm P)		**394**
Contributing Distance from CMU to receiving water <150 ft.?		Is the Contributing Distance from this CMU to receiving water less than 150 ft.?		**No**
Is winter manure application planned for this field ?		Is winter manure application planned for this field ?		**No**
Run P Index Part B voluntarily? (No to all Part A questions.)		Run P Index Part B voluntarily? (Answers are No to all Part A questions.)		**No**

PART B: SOURCE FACTORS: Mehlich 3 Soil Test P (ppm P)	Mehlich 3 Soil Test P (ppm P)					394
Soil Test Rating = 0.20* Mehlich 3 Soil Test P (ppm P)						79
FERTILIZER P APPLIED REGARDLESS OF MANURE (Starter or other)					Fertilizer P (lb P2O5/acre)	0
P INDEX APPLICATION METHOD OF FERTILIZER P APPLIED REGARGLESS OF MANURE[3]	0.2 Placed or injected 2" or more deep	0.4 Incorporated <1 week following application	0.6 Incorporated > 1 week or not incorporated following application in April - October	0.8 Incorporated >1 week or not incorporated following application in Nov. - March	1.0 Surface applied to frozen or snow covered soil	-
SUPPLEMENTAL P FERTILIZER					Fertilizer P (lb P2O5/acre)	0
P INDEX APPLICATION METHOD OF SUPPLEMENTAL P FERTILIZER[3]	0.2 Placed or injected 2" or more deep	0.4 Incorporated <1 week following application	0.6 Incorporated > 1 week or not incorporated following application in April - October	0.8 Incorporated >1 week or not incorporated following application in Nov. - March	1.0 Surface applied to frozen or snow covered soil	-
Fertilizer Rating = Fertilizer Rate x Fertilizer Application Method						0
MANURE P RATE					Manure P (lb P2O5/acre)	117
MANURE APPLICATION METHOD[3]	0.2 Placed or injected 2" or more deep	0.4 Incorporated <1 week following application	0.6 Incorporated > 1 week or not incorporated following application in April - October	0.8 Incorporated >1 week or not incorporated following application in Nov. - March	1.0 Surface applied to frozen or snow covered soil	0.6
P SOURCE COEFFICIENT[3]	Refer to: Test results for P Source Coefficient OR Book values from P Index Fact Sheet Table 1					1
Manure Rating = Manure Rate x Manure Application Method x P Source Coefficient						70
Source Factor Sum						149
PART B: TRANSPORT FACTORS EROSION	Soil Loss (ton/acre/yr)					1.6
RUNOFF POTENTIAL	0 *Drainage Class is* Excessively	2 *Drainage Class is* Somewhat Excessively	4 *Drainage Class is* Well/Moderately Well	6 *Drainage Class is* Somewhat Poorly	8 *Drainage Class is* Poorly/Very Poorly	2
SUBSURFACE DRAINAGE	0 None		1 Random		2 [1] Patterned	0
CONTRIBUTING DISTANCE	0 > 500 ft.	2 350 to 500 ft.	4 200 to 349 ft.	6 100 to 199 ft. OR < 100 ft. with 35 ft. buffer	9 [2] < 100 ft.	2
Transport Sum = Erosion + Runoff Potential + Subsurface Drainage + Contributing Distance						6
MODIFIED CONNECTIVITY	0.85 50 ft. Riparian Buffer APPLIES TO DIST < 100 FT		1.0 Grassed Waterway or None	1.1 Direct Connection APPLIES TO DIST > 100 FT		1.0
Transport Sum x Modified Connectivity / 24						0.23
P Index Value = 2 x Source x Transport						**69**

Low: 59 or less
Nitrogen based management

Medium: 60 to 79
Nitrogen based management

High: 80 to 99
Phosphorus limited to crop removal

Very High: 100 or greater
No Phosphorus applied

Phosphorus Index
Populated from NBS Input P Index sheet

PART A: SCREENING TOOL CMU/Field ID	6 - Corn for Silage (No till)	7 - Established Alfalfa Grass with Manure	11 - Established Alfalfa Grass with Manure	12A - Small Grain Silage	12A - Corn for Silage (No-till)	12B - Small Grain Silage	12B - Corn for Silage (No-till)
Is the CMU in a Special Protection watershed?	**No**	**No**	**No**	**No**	**No**	**No**	**No**
A significant farm management change as defined by Act 38?	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Soil Test Mehlich 3 P greater than 200 ppm P?	**394**	**176**	**67**	**54**	**54**	**52**	**52**
Contributing Distance from CMU to receiving water <150 ft.?	**No**	**No**	**Yes**	**No**	**No**	**No**	**No**
Is winter manure application planned for this field ?	**No**	**No**	**No**	**Yes**	**No**	**Yes**	**No**
Run P Index Part B voluntarily? (No to all Part A questions.)	**No**	**Yes**	**No**	**No**	**Yes**	**No**	**Yes**
PART B: SOURCE FACTORS: Mehlich 3 Soil Test P (ppm P)	394	176	67	54	54	52	52
Soil Test Rating = 0.20* Mehlich 3 Soil Test P (ppm P)	79	35	13	11	11	10	10
FERTILIZER P APPLIED REGARDLESS OF MANURE (Starter or other)	0	0	0	0	0	0	0
P INDEX APPLICATION METHOD OF FERTILIZER P APPLIED REGARGLESS OF MANURE[3]	-	-	-	-	-	-	-
SUPPLEMENTAL P FERTILIZER	0	0	0	0	0	0	0
P INDEX APPLICATION METHOD OF SUPPLEMENTAL P FERTILIZER[3]	-	-	-	-	-	-	-
Fertilizer Rating = Fertilizer Rate x Fertilizer Application Me	0	0	0	0	0	0	0
MANURE P RATE	117	0	117	117	117	117	117
MANURE APPLICATION METHOD[3]	0.6	-	0.6	1	0.6	1	0.6
P SOURCE COEFFICIENT[3]	1		1	1	1	1	1
Manure Rating = Manure Rate x Manure Application Metho	70	0	70	117	70	117	70
Source Factor Sum	149	35	83	128	81	127	80
PART B: TRANSPORT FACTORS EROSION	1.6	1.6	0.97	0.84	0.84	0.84	0.84
RUNOFF POTENTIAL	2	2	4	4	4	4	4
SUBSURFACE DRAINAGE	0	0	0	0	0	0	0
CONTRIBUTING DISTANCE	2	4	6	2	2	2	2
Transport Sum = Erosion + Runoff Potential + Subsurface	6	8	11	7	7	7	7
MODIFIED CONNECTIVITY	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Transport Sum x Modified Connectivity / 24	0.23	0.32	0.46	0.29	0.29	0.29	0.29
P Index Value = 2 x Source x Transport	**69**	**22**	**76**	**73**	**46**	**73**	**46**

Low: 59 or less
Nitrogen based management

Phosphorus Index
Populated from NBS Input P Index sheet

PART A: SCREENING TOOL CMU/Field ID	13A - Small Grain Silage	13A - Corn for Silage (No-till)	13B - Small Grain Silage	13B - Corn for Silage (No-till)	14 - Small Grain Silage	14 - Corn for Silage (No-till)	17 - Established Alfalfa Grass with Manure
Is the CMU in a Special Protection watershed?	**No**	**No**	**No**	**No**	**No**	**No**	**No**
A significant farm management change as defined by Act 38?	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Soil Test Mehlich 3 P greater than 200 ppm P?	**38**	**38**	**38**	**38**	**56**	**56**	**71**
Contributing Distance from CMU to receiving water <150 ft.?	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Is winter manure application planned for this field ?	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Run P Index Part B voluntarily? (No to all Part A questions.)	**No**	**No**	**No**	**No**	**No**	**No**	**No**
PART B: SOURCE FACTORS: Mehlich 3 Soil Test P (ppm P)	38	38	38	38	56	56	71
Soil Test Rating = 0.20* Mehlich 3 Soil Test P (ppm P)	8	8	8	8	11	11	14
FERTILIZER P APPLIED REGARDLESS OF MANURE (Starter or other)	0	0	0	0	0	0	0
P INDEX APPLICATION METHOD OF FERTILIZER P APPLIED REGARGLESS OF MANURE[3]	-	-	-	-	-	-	-
SUPPLEMENTAL P FERTILIZER	0	0	0	0	0	0	0
P INDEX APPLICATION METHOD OF SUPPLEMENTAL P FERTILIZER[3]	-	-	-	-	-	-	-
Fertilizer Rating = Fertilizer Rate x Fertilizer Application Me	0	0	0	0	0	0	0
MANURE P RATE	0	117	0	117	0	117	117
MANURE APPLICATION METHOD[3]	-	0.6	-	0.6	-	0.6	0.6
P SOURCE COEFFICIENT[3]		1		1		1	1
Manure Rating = Manure Rate x Manure Application Metho	0	70	0	70	0	70	70
Source Factor Sum	8	78	8	78	11	81	84
PART B: TRANSPORT FACTORS EROSION	0.77	0.77	0.77	0.77	1.5	1.5	1.4
RUNOFF POTENTIAL	4	4	4	4	2	2	2
SUBSURFACE DRAINAGE	0	0	0	0	0	0	0
CONTRIBUTING DISTANCE	6	6	6	6	6	6	6
Transport Sum = Erosion + Runoff Potential + Subsurface	11	11	11	11	10	10	9
MODIFIED CONNECTIVITY	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Transport Sum x Modified Connectivity / 24	0.45	0.45	0.45	0.45	0.40	0.40	0.39
P Index Value = 2 x Source x Transport	**7**	**70**	**7**	**70**	**9**	**64**	**66**

Low: 59 or less
Nitrogen based management

Phosphorus Index
Populated from NBS Input P Index sheet

PART A: SCREENING TOOL CMU/Field ID	18A - Winter Barley	18B - Winter Barley	20 - Corn for Grain (No-till)	21 - Established Alfalfa Grass	24 - Winter Barley	28 - Winter Barley	41 - Small Grain Silage
Is the CMU in a Special Protection watershed?	**No**	**No**	**No**	**No**	**No**	**No**	**No**
A significant farm management change as defined by Act 38?	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Soil Test Mehlich 3 P greater than 200 ppm P?	**234**	**234**	**81**	**137**	**154**	**100**	**95**
Contributing Distance from CMU to receiving water <150 ft.?	**No**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Is winter manure application planned for this field ?	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Run P Index Part B voluntarily? (No to all Part A questions.)	**No**	**No**	**No**	**No**	**No**	**No**	**No**
PART B: SOURCE FACTORS: Mehlich 3 Soil Test P (ppm P)	234	234	81	137	154	100	95
Soil Test Rating = 0.20* Mehlich 3 Soil Test P (ppm P)	47	47	16	27	31	20	19
FERTILIZER P APPLIED REGARDLESS OF MANURE (Starter or other)	0	0	0	0	0	0	0
P INDEX APPLICATION METHOD OF FERTILIZER P APPLIED REGARGLESS OF MANURE[3]	-	-	-	-	-	-	-
SUPPLEMENTAL P FERTILIZER	0	0	0	0	0	0	0
P INDEX APPLICATION METHOD OF SUPPLEMENTAL P FERTILIZER[3]	-	-	-	-	-	-	-
Fertilizer Rating = Fertilizer Rate x Fertilizer Application Me	0	0	0	0	0	0	0
MANURE P RATE	117	0	117	0	117	117	0
MANURE APPLICATION METHOD[3]	0.6	-	0.6	-	0.6	0.6	-
P SOURCE COEFFICIENT[3]	1		1		1	1	
Manure Rating = Manure Rate x Manure Application Metho	70	0	70	0	70	70	0
Source Factor Sum	117	47	86	27	101	90	19
PART B: TRANSPORT FACTORS EROSION	0.88	0.88	0.31	0.31	0.42	0.14	0.74
RUNOFF POTENTIAL	2	2	4	4	2	2	4
SUBSURFACE DRAINAGE	0	0	0	0	0	0	0
CONTRIBUTING DISTANCE	4	6	6	6	6	6	6
Transport Sum = Erosion + Runoff Potential + Subsurface	7	9	10	10	8	8	11
MODIFIED CONNECTIVITY	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Transport Sum x Modified Connectivity / 24	0.29	0.37	0.43	0.43	0.35	0.34	0.45
P Index Value = 2 x Source x Transport	**67**	**35**	**74**	**24**	**71**	**61**	**17**

Low: 59 or less
Nitrogen based management

Phosphorus Index
Populated from NBS Input P Index sheet

PART A: SCREENING TOOL CMU/Field ID	41 - Corn for Silage (No-till)	42 - Established Alfalfa Grass with Manure	78 - Established Alfalfa Grass with Manure	80 - Established Alfalfa Grass with Manure	108 - Established Alfalfa Grass with Manure	110 - Established Alfalfa Grass with Manure	113 - Established Alfalfa Grass with Manure
Is the CMU in a Special Protection watershed?	**No**	**No**	**No**	**No**	**No**	**No**	**No**
A significant farm management change as defined by Act 38?	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Soil Test Mehlich 3 P greater than 200 ppm P?	**95**	**95**	**56**	**56**	**42**	**105**	**40**
Contributing Distance from CMU to receiving water <150 ft.?	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**No**
Is winter manure application planned for this field ?	**No**	**No**	**No**	**No**	**No**	**No**	**Yes**
Run P Index Part B voluntarily? (No to all Part A questions.)	**No**	**No**	**No**	**No**	**Yes**	**No**	**No**
PART B: SOURCE FACTORS: Mehlich 3 Soil Test P (ppm P)	95	95	56	56	42	105	40
Soil Test Rating = 0.20* Mehlich 3 Soil Test P (ppm P)	19	19	11	11	8	21	8
FERTILIZER P APPLIED REGARDLESS OF MANURE (Starter or other)	0	0	0	0	0	0	0
P INDEX APPLICATION METHOD OF FERTILIZER P APPLIED REGARGLESS OF MANURE[3]	-	-	-	-	-	-	-
SUPPLEMENTAL P FERTILIZER	0	0	0	0	0	0	0
P INDEX APPLICATION METHOD OF SUPPLEMENTAL P FERTILIZER[3]	-	-	-	-	-	-	-
Fertilizer Rating = Fertilizer Rate x Fertilizer Application Me	0	0	0	0	0	0	0
MANURE P RATE	117	117	117	117	0	0	117
MANURE APPLICATION METHOD[3]	0.6	0.6	0.6	0.6	-	-	1
P SOURCE COEFFICIENT[3]	1	1	1	1			1
Manure Rating = Manure Rate x Manure Application Metho	70	70	70	70	0	0	117
Source Factor Sum	89	89	81	81	8	21	125
PART B: TRANSPORT FACTORS EROSION	0.7	1.3	1.2	1.2	1.8	1.1	1
RUNOFF POTENTIAL	4	2	4	4	4	4	4
SUBSURFACE DRAINAGE	0	0	0	0	0	0	0
CONTRIBUTING DISTANCE	6	6	6	6	4	6	2
Transport Sum = Erosion + Runoff Potential + Subsurface	11	9	11	11	10	11	7
MODIFIED CONNECTIVITY	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Transport Sum x Modified Connectivity / 24	0.45	0.39	0.47	0.47	0.41	0.46	0.29
P Index Value = 2 x Source x Transport	**79**	**69**	**76**	**76**	**7**	**19**	**73**

Low: 59 or less
Nitrogen based management

Phosphorus Index
Populated from NBS Input P Index sheet

PART A: SCREENING TOOL CMU/Field ID	114 - Established Alfalfa Grass with Manure	115 - Established Alfalfa Grass with Manure	133 - Established Alfalfa Grass with Manure	134 - Small Grain Silage	134 - Corn for Silage (No-till)	136 - Small Grain Silage	136 - Corn for Silage (No-till)
Is the CMU in a Special Protection watershed?	**No**	**No**	**No**	**No**	**No**	**No**	**No**
A significant farm management change as defined by Act 38?	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Soil Test Mehlich 3 P greater than 200 ppm P?	**40**	**46**	**27**	**35**	**35**	**35**	**35**
Contributing Distance from CMU to receiving water <150 ft.?	**No**	**No**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Is winter manure application planned for this field ?	**Yes**	**Yes**	**No**	**No**	**No**	**No**	**No**
Run P Index Part B voluntarily? (No to all Part A questions.)	**No**	**No**	**No**	**No**	**No**	**No**	**No**
PART B: SOURCE FACTORS: Mehlich 3 Soil Test P (ppm P)	40	46	27	35	35	35	35
Soil Test Rating = 0.20* Mehlich 3 Soil Test P (ppm P)	8	9	5	7	7	7	7
FERTILIZER P APPLIED REGARDLESS OF MANURE (Starter or other)	0	0	0	0	0	0	0
P INDEX APPLICATION METHOD OF FERTILIZER P APPLIED REGARGLESS OF MANURE[3]	-	-	-	-	-	-	-
SUPPLEMENTAL P FERTILIZER	0	0	0	0	0	0	0
P INDEX APPLICATION METHOD OF SUPPLEMENTAL P FERTILIZER[3]	-	-	-	-	-	-	-
Fertilizer Rating = Fertilizer Rate x Fertilizer Application Me	0	0	0	0	0	0	0
MANURE P RATE	117	117	0	117	117	117	117
MANURE APPLICATION METHOD[3]	1	1	-	0.6	0.6	0.6	0.6
P SOURCE COEFFICIENT[3]	1	1		1	1	1	1
Manure Rating = Manure Rate x Manure Application Metho	117	117	0	70	70	70	70
Source Factor Sum	125	126	5	77	77	77	77
PART B: TRANSPORT FACTORS EROSION	1	1	2	0.4	0.4	0.78	0.78
RUNOFF POTENTIAL	4	4	8	4	4	4	4
SUBSURFACE DRAINAGE	0	0	0	0	0	0	0
CONTRIBUTING DISTANCE	0	2	6	6	6	6	6
Transport Sum = Erosion + Runoff Potential + Subsurface	5	7	16	10	10	11	11
MODIFIED CONNECTIVITY	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Transport Sum x Modified Connectivity / 24	0.21	0.29	0.67	0.43	0.43	0.45	0.45
P Index Value = 2 x Source x Transport	**52**	**74**	**7**	**67**	**67**	**69**	**69**

Low: 59 or less
Nitrogen based management

Phosphorus Index
Populated from NBS Input P Index sheet

PART A: SCREENING TOOL CMU/Field ID	139 - Established Alfalfa Grass with Manure	141 - Established Alfalfa Grass with Manure	151 - Established Alfalfa Grass with Manure	154 - Established Alfalfa Grass with Manure	158A - Winter Barley	158B - Winter Barley	159 - Corn for Grain (No-till)
Is the CMU in a Special Protection watershed?	No	No	No	No	No	No	No
A significant farm management change as defined by Act 38?	No	No	No	No	No	No	No
Soil Test Mehlich 3 P greater than 200 ppm P?	53	76	53	135	123	123	134
Contributing Distance from CMU to receiving water <150 ft.?	No	No	Yes	Yes	Yes	Yes	Yes
Is winter manure application planned for this field ?	Yes	Yes	No	No	No	No	No
Run P Index Part B voluntarily? (No to all Part A questions.)	No	No	No	No	No	No	No
PART B: SOURCE FACTORS: Mehlich 3 Soil Test P (ppm P)	53	76	53	135	123	123	134
Soil Test Rating = 0.20* Mehlich 3 Soil Test P (ppm P)	11	15	11	27	25	25	27
FERTILIZER P APPLIED REGARDLESS OF MANURE (Starter or other)	0	0	0	0	0	0	0
P INDEX APPLICATION METHOD OF FERTILIZER P APPLIED REGARGLESS OF MANURE[3]	-	-	-	-	-	-	-
SUPPLEMENTAL P FERTILIZER	0	0	0	0	0	0	0
P INDEX APPLICATION METHOD OF SUPPLEMENTAL P FERTILIZER[3]	-	-	-	-	-	-	-
Fertilizer Rating = Fertilizer Rate x Fertilizer Application Me	0	0	0	0	0	0	0
MANURE P RATE	117	117	117	117	117	117	0
MANURE APPLICATION METHOD[3]	1	1	0.6	0.6	0.6	0.6	-
P SOURCE COEFFICIENT[3]	1	1	1	1	1	1	
Manure Rating = Manure Rate x Manure Application Metho	117	117	70	70	70	70	0
Source Factor Sum	128	132	81	97	95	95	27
PART B: TRANSPORT FACTORS EROSION	0.78	2.3	1.6	0.48	0.46	0.88	0.64
RUNOFF POTENTIAL	4	4	4	2	2	2	4
SUBSURFACE DRAINAGE	0	0	0	0	0	0	0
CONTRIBUTING DISTANCE	2	0	6	6	6	6	6
Transport Sum = Erosion + Runoff Potential + Subsurface	7	6	12	8	8	9	11
MODIFIED CONNECTIVITY	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Transport Sum x Modified Connectivity / 24	0.28	0.26	0.48	0.35	0.35	0.37	0.44
P Index Value = 2 x Source x Transport	**72**	**69**	**78**	**69**	**67**	**70**	**24**

Low: 59 or less
Nitrogen based management

Phosphorus Index
Populated from NBS Input P Index sheet

PART A: SCREENING TOOL CMU/Field ID	160 - Corn for Grain (No-till)
Is the CMU in a Special Protection watershed?	**No**
A significant farm management change as defined by Act 38?	**No**
Soil Test Mehlich 3 P greater than 200 ppm P?	**134**
Contributing Distance from CMU to receiving water <150 ft.?	**Yes**
Is winter manure application planned for this field ?	**No**
Run P Index Part B voluntarily? (No to all Part A questions.)	**No**
PART B: SOURCE FACTORS: Mehlich 3 Soil Test P (ppm P)	134
Soil Test Rating = 0.20* Mehlich 3 Soil Test P (ppm P)	27
FERTILIZER P APPLIED REGARDLESS OF MANURE (Starter or other)	0
P INDEX APPLICATION METHOD OF FERTILIZER P APPLIED REGARGLESS OF MANURE[3]	-
SUPPLEMENTAL P FERTILIZER	0
P INDEX APPLICATION METHOD OF SUPPLEMENTAL P FERTILIZER[3]	-
Fertilizer Rating = Fertilizer Rate x Fertilizer Application Me	0
MANURE P RATE	117
MANURE APPLICATION METHOD[3]	0.6
P SOURCE COEFFICIENT[3]	1
Manure Rating = Manure Rate x Manure Application Metho	70
Source Factor Sum	97
PART B: TRANSPORT FACTORS EROSION	0.51
RUNOFF POTENTIAL	2
SUBSURFACE DRAINAGE	0
CONTRIBUTING DISTANCE	6
Transport Sum = Erosion + Runoff Potential + Subsurface	9
MODIFIED CONNECTIVITY	1.0
Transport Sum x Modified Connectivity / 24	0.35
P Index Value = 2 x Source x Transport	**69**

Low: 59 or less
Nitrogen based management

PA Technical Manual Supplement 10: Winter Manure Application Matrix

Populated from NBS Input P Index Sheet

Go to NBS Index

Go to NBS P Index Input

User Notes for the Winter Manure Application Matrix

1. Under Act 38, any one of the following conditions meets the "winter" definition - see §83.201.
   - December 15 to February 28
   - Frozen ground (4 inch depth)
   - Snow-covered ground
2. All setbacks including those specific to winter manure application must be followed - see §83.294 (f) and (g).
   - No winter manure application within 100 ft. of an above ground agricultural drainage inlet where surface flow is toward the inlet.
   - No winter manure application within 100 ft. of a wetland (identified on National Wetland Inventory Maps) within the 100 year floodplain of an Exceptional Value stream segment if surface flow is toward the wetland.
3. Fields receiving winter manure applications must have 25% cover or an established cover crop - see §83.294 (g).

Verify the CMU meets the required cover conditions described in User Note 3.

	CMU/Field ID	12A - Small Grain Silage	12B - Small Grain Silage
Does the CMU have 25% cover or an established cover crop?	Does the CMU have 25% cover or an established cover crop?	Yes	Yes

Evaluation Criteria	**Evaluation Criteria Descriptions and Ranking Values**					
	4	3	2[b]	1[c]		
Field Slope	< 4 %	4 - 8%	9 - 15%	> 15%	3	3
Distance from Water Bodies[a] Determined using Phosphorus Index Contributing Distance	> 350 ft.	350 - 200 ft	199 - 100 ft	<100 ft	4	4
Drainage Class Determined using Phosphorus Index Runoff Potential	Somewhat Excessively OR Excessively	Well OR Moderately Well	Somewhat Poorly	Poorly OR Very Poorly	3	3
Runoff Control	Recommended conservation practices are in place. **Very low potential for concentrated flow.**	Some conservation practices are in place. **Low potential for concentrated flow.**	Some conservation practices are in place. **Moderate potential for concentrated flow.**	No conservation practices are in place. **High potential for concentrated flow.**	3	3
					13	13
					Good	Good

[a] Includes Perennial and Intermittent streams with defined bed and bank, Lakes, Ponds, Open sinkholes, and Active private and public water sources.

[b] If a field receives a rating of "2" in any two categories the field is not recommended for winter application regardless of the final field Ranking Value.

[c] If a field receives a rating of "1" in any one category the field is not recommended for winter application regardless of the final field Ranking Value.

Recommended Winter Manure Application Prioritization		
Ranking Value - Category	*Ranking Category*	*Recommendation for Winter Manure Spreading Prioritization*
Greater than 12 - Good	Good	These fields should receive first priority for winter manure application.
8 to 12 - Fair	Fair	These fields should receive second priority for winter manure application.
Less than 8 - Poor	Poor	These fields are not recommended for winter manure application.

PA Technical Manual Supplement 10:
Winter Manure Application Matrix

User Notes for the Winter Manure Application Matrix

1. Under Act 38, any one of the following conditions me
   - December 15 to February 28
   - Frozen ground (4 inch depth)
   - Snow-covered ground
2. All setbacks including those specific to winter manure
   - No winter manure application within 100 ft. of an abo
   - No winter manure application within 100 ft. of a wetl
     Exceptional Value stream segment if surface flow is t
3. Fields receiving winter manure applications must hav

Verify the CMU meets the required cover conditions described in User Note 3.

	113 - Established Alfalfa Grass with Manure	114 - Established Alfalfa Grass with Manure	115 - Established Alfalfa Grass with Manure	139 - Established Alfalfa Grass with Manure	141 - Established Alfalfa Grass with Manure
Does the CMU have 25% cover or an established cover crop?	Yes	Yes	Yes	Yes	Yes
Evaluation Criteria					
Field Slope	2	2	2	3	2
Distance from Water Bodies[a] Determined using Phosphorus Index Contributing Distance	4	4	4	4	4
Drainage Class Determined using Phosphorus Index Runoff Potential	3	3	3	3	3
Runoff Control	3	3	3	3	3
	12	12	12	13	12
	Fair	Fair	Fair	Good	Fair

[a] Includes Perennial and Intermittent streams with defined bed and b
[b] If a field receives a rating of "2" in any two categories the field is no
[c] If a field receives a rating of "1" in any one category the field is not

Recommended Winter Manure Application Prioritization
Ranking Value - Category
Greater than 12 - Good
8 to 12 - Fair
Less than 8 - Poor

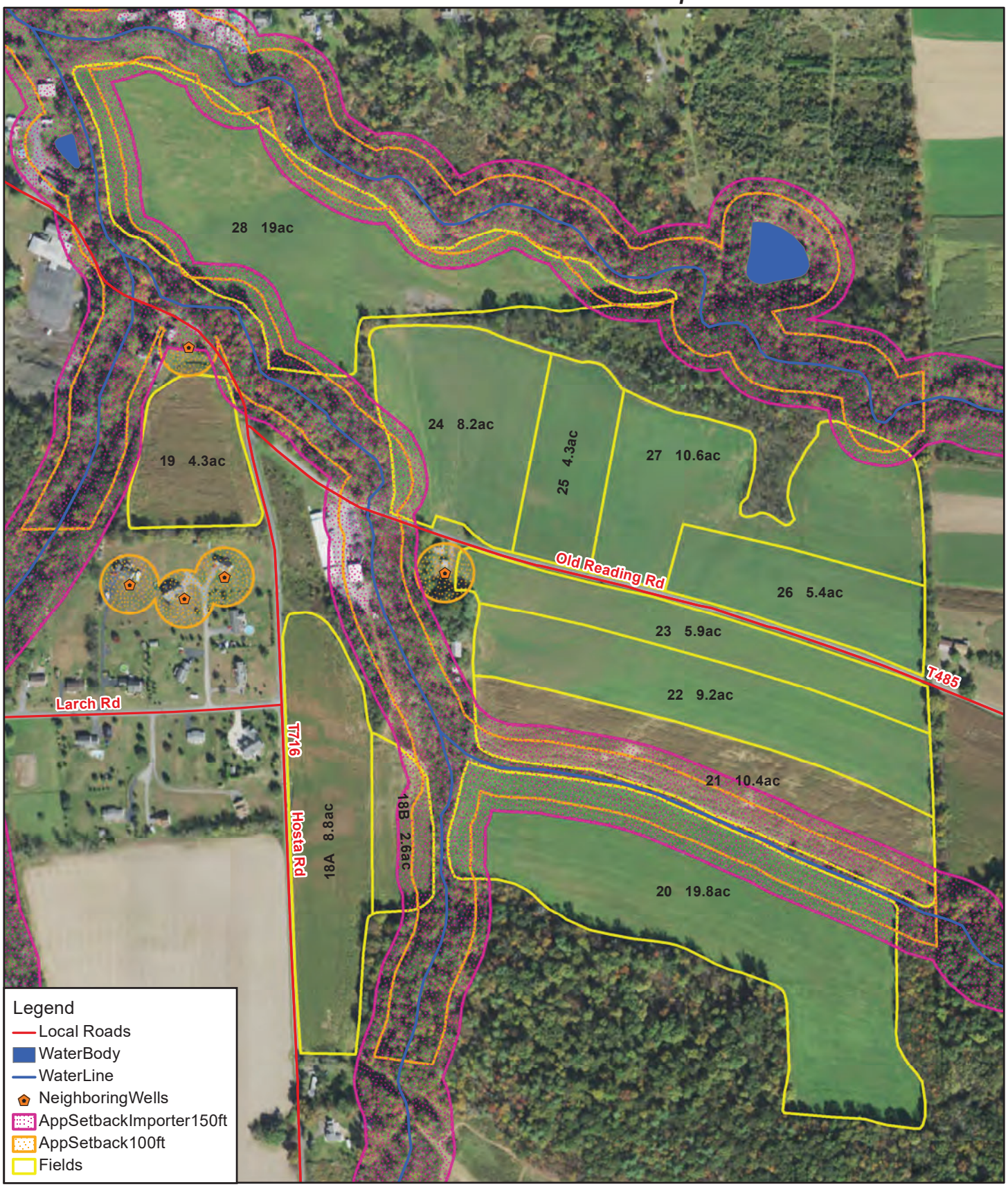
Appendix 1

Operation Maps

Maps (or aerial photographs) required in Nutrient Balance Sheets must identify: road and road names adjacent to and within the operation; field identification, boundaries and acreage; manure application setback areas and vegetated buffers and associated landscape features (streams and other water bodies, sinkholes, and active water wells or springs); and location of in-field manure stacking areas (including each site in stacking area rotation).

Lloyd Reitz

Nutrient Balance Sheet Map 1



TeamAg Incorporated

0 250 500 1,000 Feet

N W E S

****Field verification of application setbacks and buffers is required prior to land application of manure.****

Lloyd Reitz

Nutrient Balance Sheet Map 2

TeamAg Incorporated

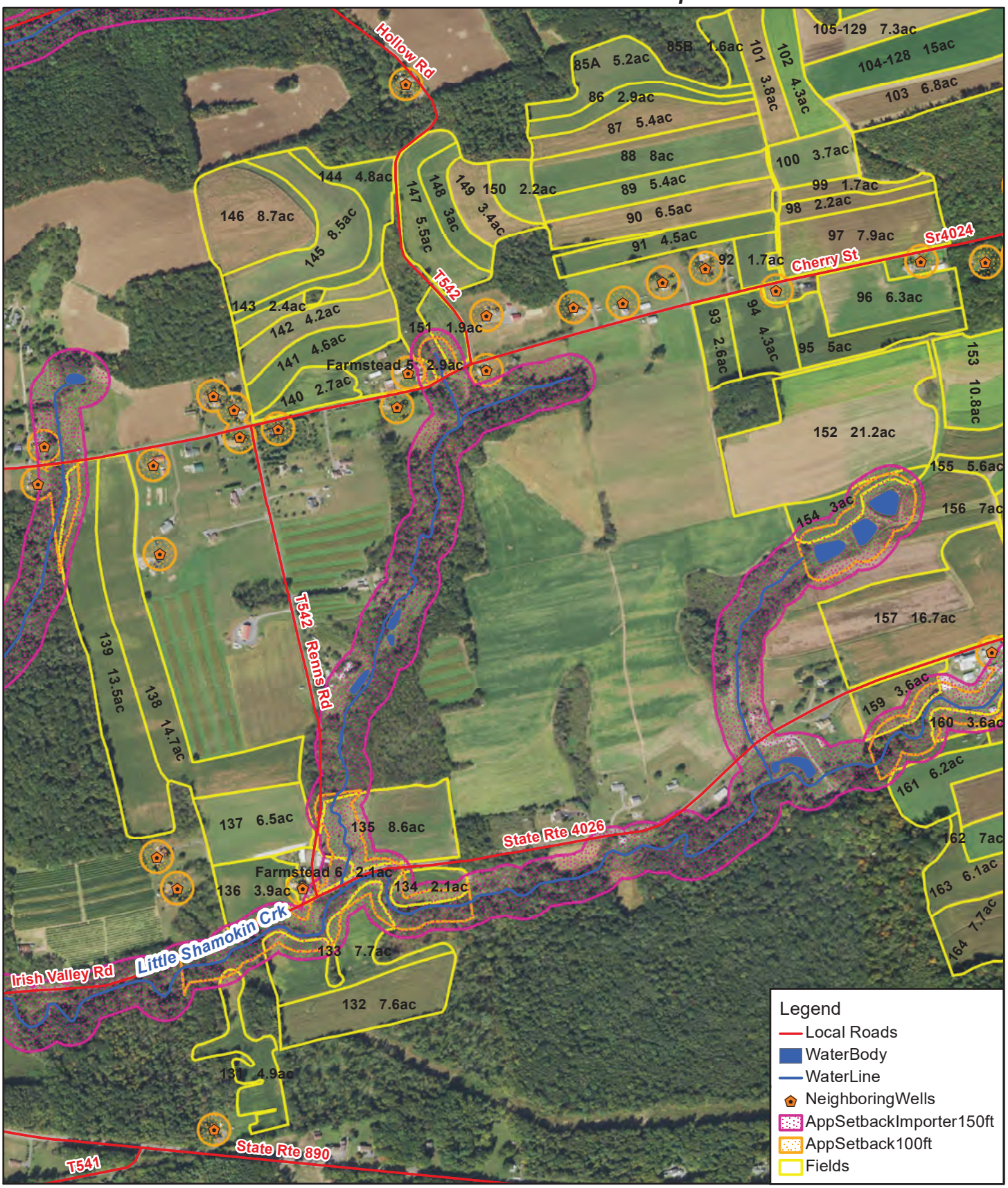
0 250 500 Feet

N W E S

****Field verification of application setbacks and buffers is required prior to land application of manure.****

Lloyd Reitz

Nutrient Balance Sheet Map 3



TeamAg Incorporated

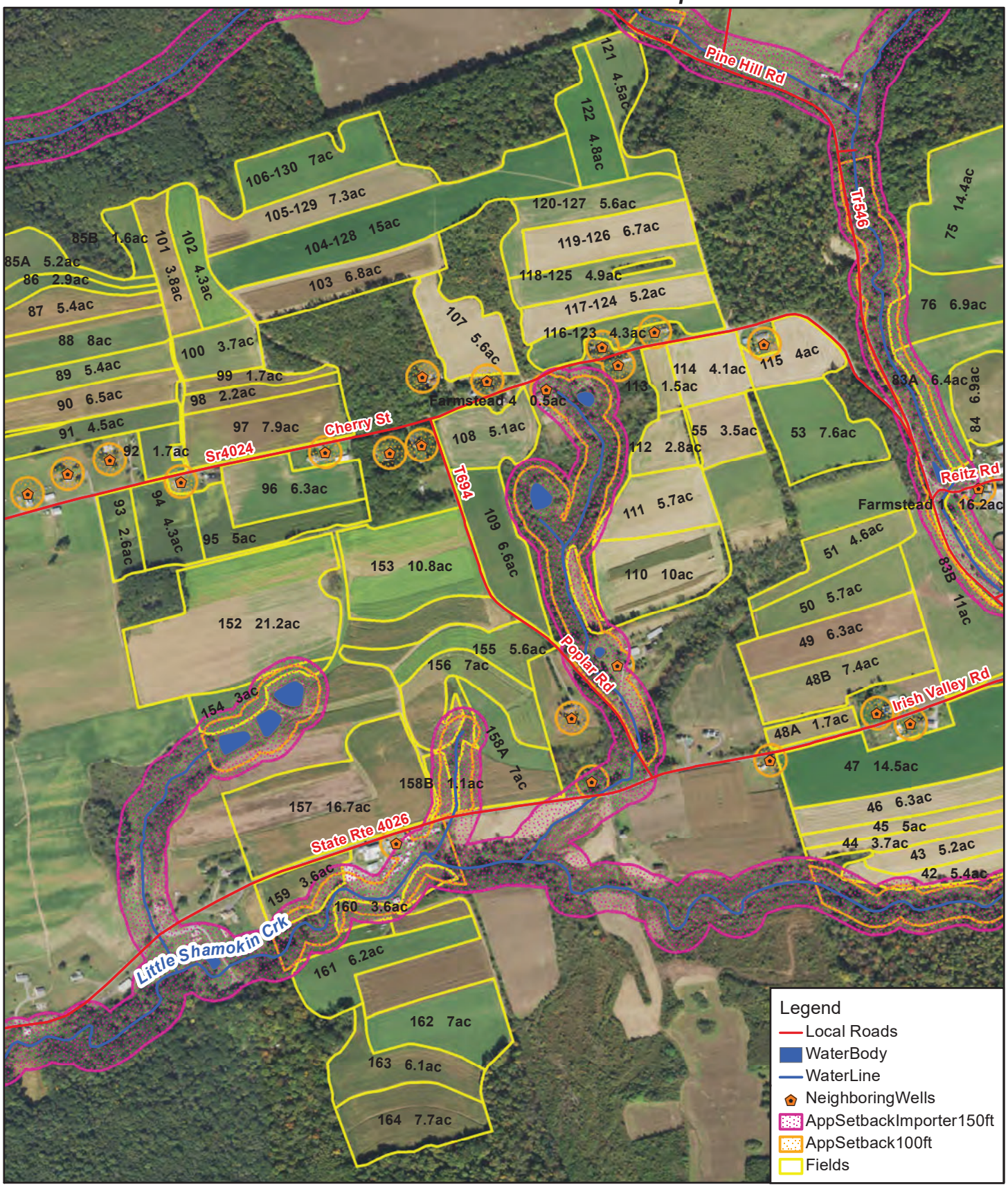
0 250 500 1,000 1,500 Feet

N W E S

****Field verification of application setbacks and buffers is required prior to land application of manure.****

Lloyd Reitz

Nutrient Balance Sheet Map 4



TeamAg Incorporated

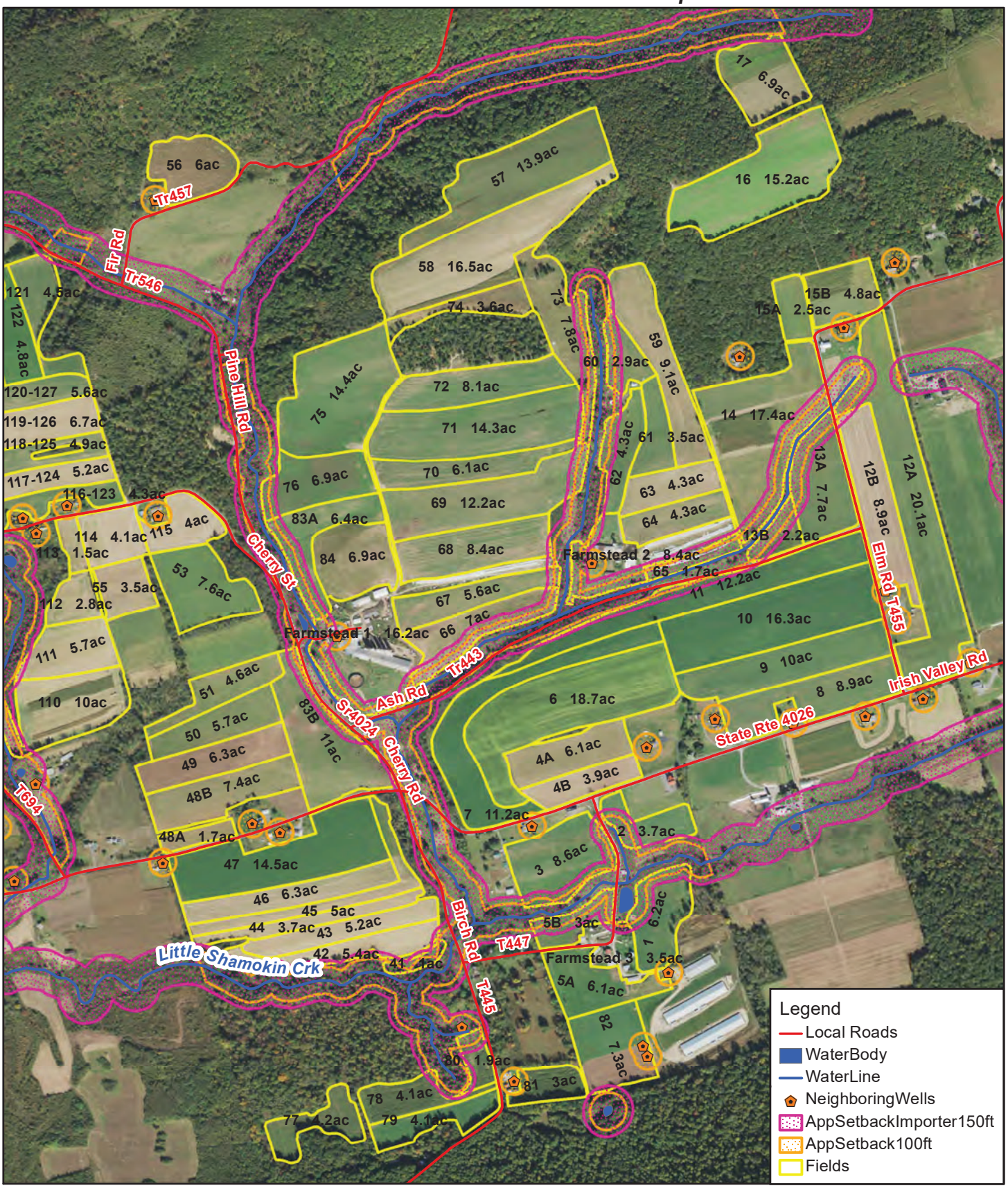
0 250 500 1,000 1,500 Feet

N W E S

Field verification of application setbacks and buffers is required prior to land application of manure.

Lloyd Reitz

Nutrient Balance Sheet Map 5



TeamAg Incorporated

Feet
0 250 500 1,000 1,500 2,000

N
W E
S

****Field verification of application setbacks and buffers is required prior to land application of manure.****

Nutrient Balance Sheet

Prepared for

Matthew Shaffer
2362 Boyles Run Road
Sunbury, PA 17801
570-988-3484
Northumberland

Prepared by

Jedd Moncavage
872-NMC
TeamAg Inc.
120 Lake Street
Ephrata, PA 17522
717-721-6795

Nutrient Management Specialist or Broker 2 Signature

Date of Development August 24, 2020

This nutrient balance sheet has been developed for manure exported for agricultural land application under the following Act 38 export option:

- ☑ Exported to a known operation (included in Exporter NMP)
- ☐ Exported through a broker (include Broker information below if not prepared by a broker)

Broker Information

NA
NA
NA
NA

Exporter Information

R&F Family Farms
473 Irish Valley Road
Paxinos, PA 17860
570-713-5637
Northumberland

TeamAg Incorporated

Exporter/Importer Agreement

Manure Used For Agricultural Land Application

Developed consistent with the PA Nutrient and Odor Management Act Program

1) This agreement is entered into on May 1st, 2020 , by R&F Family Farms (the "exporter") who will supply manure, and Matthew Shaffer (the "importer"), who will receive the manure from the exporter.

2) The purpose of this agreement is to set forth the mutual responsibilities and understanding of the parties with respect to the export of manure from the exporter to the importer.

3) The exporter is located at (county, twp, and address): Northumberland Co / Shamokin Twp.
473 Irish Valley Road, Paxinos, PA 17860

4) The exporter will, as the supply of manure allows, provide the following amounts of manure during the seasons outlined below:

Tons of _____ *(species)* manure, per season:
Spring _____ Summer _____ Fall _____ Winter _____

Gallons of SWINE *(species)* manure, per season:
Spring: 282,800 Summer _____ Fall 282,800 Winter _____

Total planned manure exported: (supply of manure may be less than what is planned)
Tons of _____ *(species)* manure: _____
Gallons of SWINE *(species)* manure: 565,600gal/yr

If multi-species are planned, please add additional lines:

5) The importer's location and other relevant information as it relates to this manure export, is as follows (maps indicating the location of importing fields must be attached to the supporting Nutrient Balance Sheets if manure is to be land applied at the importing site):

a) **Phone number**: 570-988-3484
b) **County(s)**: Northumberland
c) **Address:** 2364 Boyles Run Road, Sunbury, PA 17801
d) **Township(s)**: Lower Augusta & Rockefeller
d) **Owner(s) of the property receiving manure**: Nathan & Trish Clark
e) **Total cropland acres managed by the importer**: 70
f) **Number and type of animals raised by the importer**: 0

g) **Number of acres available for this imported manure**: 70
h) **Other manures (type, amount) imported to the site AND/OR utilized on the site**: (Note- this would include manure that is generated on the site by the importers animals, etc.) Poultry

- **If other manure is generated, imported and/or utilized, is it applied to the same acres as indicated in item "g" above (relating to "acres available")**: ☒ Yes or ☐ No

- **If other manure is generated, imported and/or utilized, is it applied during the same season as the imported manure:** ☐Yes or ☒No

6) The exporter will use a Manure Export Sheet to record all manure exported to the importer. These Manure Export Sheets are available from the county conservation district or the State Conservation Commission. Computer generated forms other than the manure export sheet may be used if they contain the same information as, and are reasonably similar in format to, the forms available from the State Conservation Commission or the conservation district.

7) Records relating to the export of manure shall be prepared by the exporter in accordance with the following requirements of the Nutrient and Odor Management Act regulations:
   a) A Manure Export Sheet shall be used to document all manure exports for their records
      - A copy of the Manure Export Sheet shall be provided to the importer
      - A copy of the Manure Export Sheet shall be retained on site by the exporter

   b) When the exporter (or someone working for, or contracted by the exporter) applies the exported manure, the exporter shall maintain the following exported manure records:
      - Application dates, areas, rates and methods

   c) Records shall be maintained by the exporter for a minimum of 3 years

   d) A manure export informational packet (as supplied by the conservation district or State Conservation Commission) shall be provided to the importer by the time of the manure export. This information only needs to be provided once to the importer.
      The manure export informational packet must include the following:
      i. Exported Manure Informational Packet Guidance Sheet
      ii. Nutrient Management Planning an Overview (Agronomy Facts 60)
      iii. Manure Management for Environmental Protection
      iv. Land Application of Manure- A supplement to the Manure Management Manual Plan Guidance
      v. Manure Export Sheet
      vi. Manure Transfer Summary Sheets
      vii. Manure Field Stacking Requirements Fact Sheet

8) Where applicable, the importer shall properly store manure received from the exporter in accordance with the provisions of the Manure Management Manual and the Pa Technical Guide and shall not cause contamination of surface or ground water. This shall include manure stacked in application fields which may not be retained in fields for > 120 days unless covered or otherwise protected .

9) Manure received by the importer shall be applied to the land at the rate(s) and method(s) provided in the attached "Nutrient Balance Sheet(s)", or in accordance with a Nutrient Management Plan approved for the importing operation. If the importer wishes to change the lands used for imported manure, the nutrient balance sheet must be revised to reflect the changes and be submitted to the conservation district or State Conservation Commission (and DEP if the exporter is a CAFO) prior to implementing the changes.

10) The importer shall comply with applicable manure application setbacks for the imported manure, as outlined in the Nutrient Balance Sheet map(s).

11) For any lands not owned by the importer where the manure will be applied (i.e., rented lands), the importer hereby confirms that the importer has the authority to apply manure on those lands.

12) This agreement shall remain in full effect unless terminated by either party upon thirty days prior written notice to the other party. If this agreement is terminated, the exporter shall notify the county conservation district office that approved their nutrient management plan, of the termination.

Exporter Signature, Name and Date

(signature)

Jonathan Francis, Co-Owner R&F Family Farms (name)

May 1st, 2020 (date)

Importer Signature, Name and Date

(signature)

MATTHEW SHAFFER (name)

MAY 1, 2020 (date)

NBS Summary Notes

Importing Farm: Matthew Shaffer

22

Crop Group	Fields	Crop	Manure Group	Nutrient Balance Notes	Notes
Spring New Aflalfa	MS1-31	Planting Alfalfa with Manure	R&F Swine Liquid	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface waters.. Do not apply other manure, in the same crop year, where R&F manure was or will be applied.
Spring Est Alfalfa	MS1-31	Established Alfalfa with Manure	R&F Swine Liquid	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface waters.. Do not apply other manure, in the same crop year, where R&F manure was or will be applied.
Spring Corn Sialge after Alfalfa	MS1-31	Corn for Silage	R&F Swine Liquid	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface waters.. Do not apply other manure, in the same crop year, where R&F manure was or will be applied.
Spring Corn Silage	MS1-31	Corn for Silage	R&F Swine Liquid	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface waters.. Do not apply other manure, in the same crop year, where R&F manure was or will be applied.
Alt for Fall New Aflalfa	MS1-31	Planting Alfalfa with Manure	R&F Swine Liquid	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface waters.. Do not apply other manure, in the same crop year, where R&F manure was or will be applied.
Alt for Fall Est Alfalfa	MS1-31	Established Alfalfa with Manure	R&F Swine Liquid	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface waters.. Do not apply other manure, in the same crop year, where R&F manure was or will be applied.
Alt for Fall Corn Sialge after Alfalfa	MS1-31	Corn for Silage	R&F Swine Liquid	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface waters.. Do not apply other manure, in the same crop year, where R&F manure was or will be applied.
Alt for Fall Corn Silage	MS1-31	Corn for Silage	R&F Swine Liquid	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface waters.. Do not apply other manure, in the same crop year, where R&F manure was or will be applied.

Nutrient Balance Sheet Summary

Importing Farm: Matthew Shaffer

Whole Farm Note: Do not apply other manure, in the same crop year, where R&F manure was or will be applied

Fall manure applications require at least 25% cover unless the crop management unit is planted to a cover crop in time to allow for appropriate growth to control runoff until the next growing season, or the manure is injected or mechanically incorporated within 5 days using minimal soil disturbance techniques consistent with no-till farming practices.

Crop Group	Fields	Acres	Crop	Manure Group	Application Season	Application Management	Multiple Designation	Planned Manure Rate[1]		Starter/Other Fertilizer (lb/A)			Supplemental Fertilizer (lb/A)			Nutrient Balance (lb/A)[2]		
										N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
Spring New Aflalfa	MS1-31	8.8 of 70.7	Planting Alfalfa with Manure	R&F Swine Liquid	Spring: 1.2-15	Spring 1.2-15: Incorporated after 7 days		9000	Gal/A							0	-291	-16
Spring Est Alfalfa	MS1-31	26.5 of 70.7	Established Alfalfa with Manure	R&F Swine Liquid	Spring: 1.2-15	Spring 1.2-15: Incorporated after 7 days		9000	Gal/A							0	-276	34
Spring Corn Sialge after Alfalfa	MS1-31	8.8 of 50.7	Corn for Silage	R&F Swine Liquid	Spring: 1.2-15	Spring 1.2-15: Incorporated after 7 days		7000	Gal/A				2			0	-173	32
Spring Corn Silage	MS1-31	26.6 of 70.7	Corn for Silage	R&F Swine Liquid	Spring: 1.2-15	Spring 1.2-15: Incorporated after 7 days		9000	Gal/A				52			0	-251	-16
Alt for Fall New Aflalfa	MS1-31	8.8 of 70.7	Planting Alfalfa with Manure	R&F Swine Liquid	Early Fall: 1.2-15	Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days		9000	Gal/A							0	-291	-16
Alt for Fall Est Alfalfa	MS1-31	26.5 of 70.7	Established Alfalfa with Manure	R&F Swine Liquid	Early Fall: 1.2-15	Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days		9000	Gal/A							0	-276	34
Alt for Fall Corn Sialge after Alfalfa	MS1-31	8.8 of 50.7	Corn for Silage	R&F Swine Liquid	Early Fall: 1.2-15	Early Fall 1.2-15: next summer use by a summer crop following a harvested winter crop or no winter crop		8000	Gal/A				2			0	-212	8
Alt for Fall Corn Silage	MS1-31	26.6 of 70.7	Corn for Silage	R&F Swine Liquid	Early Fall: 1.2-15	Early Fall 1.2-15: next summer use by a summer crop following a harvested winter crop or no winter crop		9000	Gal/A				64			0	-251	-16

[1] See Nutrient Management Plan Summary Notes

[2] Positive numbers = nutrient deficit; Negative numbers = nutrient excess

[3] Multiple Designation Mi=Initial, M=Middle(s), Mf=Final

Manure Group Information

Appendix 3 Manure Group Information	R&F Swine Liquid
Manure Report Date (note if averaging several reports)	July 23, 2020
Laboratory Name	Skyview Labs
Manure Type	Swine
Manure Unit (lbs/ton or 1000 gal)	lb/1000 gal
Total Nitrogen (N) (lbs/ton or 1000 gal)	29.71
Ammonium N (NH_4-N) (lbs/ton or 1000 gal)	12.72
Total Organic N (lbs/ton or 1000 gal)	16.99
Total Phosphate (P_2O_5) (lbs/ton or 1000 gal)	39.02
Total Potash (K_2O) (lbs/ton or 1000 gal)	24.02
Percent Solids	8.41
PSC Value (analytical or book value)	1.00

Option 1 P Removal Option 2 Nitrogen Based Nutrient Balance Sheets	Spring New Aflalfa			Spring Est Alfalfa			Spring Corn Sialge after Alfalfa			Spring Corn Silage			Alt for Fall New Aflalfa		
Crop Group Identification															
Fields	MS1-31			MS1-31			MS1-31			MS1-31			MS1-31		
Acres	8.8 of 70.7			26.5 of 70.7			8.8 of 50.7			26.6 of 70.7			8.8 of 70.7		
NBS Option	Option 2 Nitrogen Requirement			Option 2 Nitrogen Requirement			Option 2 Nitrogen Requirement			Option 2 Nitrogen Requirement			Option 2 Nitrogen Requirement		
Mehlich 3 Soil Test P For Option 2 enter maximum Soil Test For Option 3 enter soil test for PI	ppm P 47			ppm P 47			ppm P 47			ppm P 47			ppm P 47		
P Index Part A Evaluation															
Part A Result															
Crop	Planting Alfalfa with Manure			Established Alfalfa with Manure			Corn for Silage			Corn for Silage			Planting Alfalfa with Manure		
Planned Yield	4 ton/A			5 ton/A			25 ton/A			25 ton/A			4 ton/A		
Crop Removal Recommendations (lb/A)	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**
	200	60	200	250	75	250	175	100	200	175	100	200	200	60	200
Soil Test Recommendation (lb/A)															
Other Nutrients Applied (lb/A) (Nutrients applied regardless of manure)															
P Index Application Method															
Double Crop Carry Over N (lb/A)	0			0			0			0			0		
Manure History Description Residual Manure N (lb/A)	35	Continuously - Summer Crop		35	Continuously - Summer Crop		35	Continuously - Summer Crop		35	Continuously - Summer Crop		35	Continuously - Summer Crop	
Legume History Description Residual Legume N (lb/A)	0	No Previous Year Legume		0	No Previous Year Legume		70	1st yr. after alfalfa 25-49% stand, Moderate		0	No Previous Year Legume		0	No Previous Year Legume	
Net Nutrients Required (lb/A)	165	60	200	215	75	250	70	100	200	140	100	200	165	60	200
Manure Group	R&F Swine Liquid			R&F Swine Liquid			R&F Swine Liquid			R&F Swine Liquid			R&F Swine Liquid		
Units	lb/1000 gal			lb/1000 gal			lb/1000 gal			lb/1000 gal			lb/1000 gal		
Manure Nutrient Content	**N**	**P2O5**	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**
(lbs/ton or 1000 gal)	29.71	39.02	24.02	29.71	39.02	24.02	29.71	39.02	24.02	29.71	39.02	24.02	29.71	39.02	24.02
Application Season: Management (Incorporation, cover crops, etc.)	Spring 1.2-15: Incorporated after 7 days			Spring 1.2-15: Incorporated after 7 days			Spring 1.2-15: Incorporated after 7 days			Spring 1.2-15: Incorporated after 7 days			Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days		
Availability Factors (Total N or NH4-N & Organic N)	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**
		0.10	0.50		0.10	0.50		0.10	0.50		0.10	0.50		0.10	0.50
P Index Application Method															
N Balanced Manure Rate (ton; gal/A)	16,888 gal/A			22,006 gal/A			7,165 gal/A			14,330 gal/A			16,888 gal/A		
P Removal Balance Manure Rate (ton or gal/A; If required by P Index)	1,538 gal/A Crop P Removal (lb/A) 60.0			1,922 gal/A Crop P Removal (lb/A) 75.0			2,563 gal/A Crop P Removal (lb/A) 100.0			2,563 gal/A Crop P Removal (lb/A) 100.0			1,538 gal/A Crop P Removal (lb/A) 60.0		
P Index Value															
Planned Manure Rate (ton or gal/A)	**9000 gal/A**			**9000 gal/A**			**7000 gal/A**			**9000 gal/A**			**9000 gal/A**		
Nutrients Applied at Planned Manure Rate (lb/A)	88	351	216	88	351	216	68	273	168	88	351	216	88	351	216
Nutrient Balance after Manure	0	-291	-16	0	-276	34	2	-173	32	52	-251	-16	0	-291	-16
Supplemental Fertilizer (lb/A)	0	0	0	0	0	0	2	0	0	52	0	0	0	0	0
P Index Application Method															
Final Nutrient Balance (lb/A)	**0**	**-291**	**-16**	**0**	**-276**	**34**	**0**	**-173**	**32**	**0**	**-251**	**-16**	**0**	**-291**	**-16**
Multiple Application															
Soil test or Crop Removal	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs		

Option 1 P Removal Option 2 Nitrogen Based Nutrient Balance Sheets	Alt for Fall Est Alfalfa			Alt for Fall Corn Sialge after Alfalfa			Alt for Fall Corn Silage		
Crop Group Identification									
Fields	MS1-31			MS1-31			MS1-31		
Acres	26.5 of 70.7			8.8 of 50.7			26.6 of 70.7		
NBS Option	Option 2 Nitrogen Requirement			Option 2 Nitrogen Requirement			Option 2 Nitrogen Requirement		
Mehlich 3 Soil Test P For Option 2 enter maximum Soil Test For Option 3 enter soil test for PI	ppm P 47			ppm P 47			ppm P 47		
P Index Part A Evaluation									
Part A Result									
Crop	Established Alfalfa with Manure			Corn for Silage			Corn for Silage		
Planned Yield	5 ton/A			25 ton/A			25 ton/A		
Crop Removal Recommendations (lb/A)	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**
	250	75	250	175	100	200	175	100	200
Soil Test Recommendation (lb/A)									
Other Nutrients Applied (lb/A) (Nutrients applied regardless of manure)									
P Index Application Method									
Double Crop Carry Over N (lb/A)	0			0			0		
Manure History Description Residual Manure N (lb/A)	35	Continuously - Summer Crop		35	Continuously - Summer Crop		35	Continuously - Summer Crop	
Legume History Description Residual Legume N (lb/A)	0	No Previous Year Legume		70	1st yr. after alfalfa 25-49% stand, Moderate		0	No Previous Year Legume	
Net Nutrients Required (lb/A)	215	75	250	70	100	200	140	100	200
Manure Group	R&F Swine Liquid			R&F Swine Liquid			R&F Swine Liquid		
Units	lb/1000 gal			lb/1000 gal			lb/1000 gal		
Manure Nutrient Content	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**
(lbs/ton or 1000 gal)	29.71	39.02	24.02	29.71	39.02	24.02	29.71	39.02	24.02
Application Season: Management (Incorporation, cover crops, etc.)	Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days			Early Fall 1.2-15: next summer use by a summer crop following a harvested winter crop or no winter crop			Early Fall 1.2-15: next summer use by a summer crop following a harvested winter crop or no winter crop		
Availability Factors (Total N or NH4-N & Organic N)	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**
		0.10	0.50		0.00	0.50		0.00	0.50
P Index Application Method									
N Balanced Manure Rate (ton; gal/A)	22,006 gal/A			8,235 gal/A			16,471 gal/A		
P Removal Balance Manure Rate (ton or gal/A; If required by P Index)	1,922 gal/A Crop P Removal (lb/A) 75.0			2,563 gal/A Crop P Removal (lb/A) 100.0			2,563 gal/A Crop P Removal (lb/A) 100.0		
P Index Value									
Planned Manure Rate (ton or gal/A)	**9000 gal/A**			**8000 gal/A**			**9000 gal/A**		
Nutrients Applied at Planned Manure Rate (lb/A)	88	351	216	68	312	192	76	351	216
Nutrient Balance after Manure	0	-276	34	2	-212	8	64	-251	-16
Supplemental Fertilizer (lb/A)	0	0	0	2	0	0	64	0	0
P Index Application Method									
Final Nutrient Balance (lb/A)	**0**	**-276**	**34**	**0**	**-212**	**8**	**0**	**-251**	**-16**
Multiple Application									
Soil test or Crop Removal	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs		

Matt Shaffer NBS Map

TeamAg Incorporated

0 250 500 1,000 Feet

N W E S

Application buffers/setbacks are approximate, field verification is required prior to land application

Nutrient Balance Sheet

Prepared for

Michael Riehl
1610 Irish Valley Road
Paxinos, PA 17860
570-644-2478
Northumberland

Prepared by

Jedd Moncavage
872-NMC
TeamAg Inc.
120 Lake Street
Ephrata, PA 17522
717-721-6795

Nutrient Management Specialist or Broker 2 Signature

Date of Development August 24, 2020

This nutrient balance sheet has been developed for manure exported for agricultural land application under the following Act 38 export option:

- ☑ Exported to a known operation (included in Exporter NMP)
- ☐ Exported through a broker (include Broker information below if not prepared by a broker)

Broker Information

NA
NA
NA
NA

Exporter Information

R&F Family Farms
473 Irish Valley Road
Paxinos, PA 17860
570-713-5637
Northumberland

TeamAg Incorporated

Exporter/Importer Agreement

Manure Used For Agricultural Land Application

Developed consistent with the PA Nutrient and Odor Management Act Program

1) This agreement is entered into on 8/25/2020, by R&F Farms (the "exporter") who will supply manure, and Michael Riehl (the "importer"), who will receive the manure from the exporter.

2) The purpose of this agreement is to set forth the mutual responsibilities and understanding of the parties with respect to the export of manure from the exporter to the importer.

3) The exporter is located at (county, twp, and address): Northumberland Co / Shamokin Twp
214 Cedar Grove Road, Paxinos, PA 17860

4) The exporter will, as the supply of manure allows, provide the following amounts of manure during the seasons outlined below:

Tons of _____ *(species)* manure, per season:
Spring _____ Summer _____ Fall _____ Winter _____

Gallons of Swine *(species)* manure, per season:
Spring 200,000 Summer _____ Fall 200,000 Winter _____

Total planned manure exported: (supply of manure may be less than what is planned)
Tons of _____ *(species)* manure: _____
Gallons of Swine *(species)* manure: 400,000

If multi-species are planned, please add additional lines:

5) The importer's location and other relevant information as it relates to this manure export, is as follows (maps indicating the location of importing fields must be attached to the supporting Nutrient Balance Sheets if manure is to be land applied at the importing site):

a) **Phone number**: 570-644-2478
b) **County(s)**: Northumberland
c) **Address:** 1610 Irish Valley Road, Paxinos, PA 17860
d) **Township(s)**: Shamokin
d) **Owner(s) of the property receiving manure**: Michael Riehl
e) **Total cropland acres managed by the importer**: 155.9
f) **Number and type of animals raised by the importer**: 100 head total (cows/heifers/horses)
g) **Number of acres available for this imported manure**: 70
h) **Other manures (type, amount) imported to the site AND/OR utilized on the site**: (Note- this would include manure that is generated on the site by the importers animals, etc.) ~1200 tons from cows/heifers/horses

- **If other manure is generated, imported and/or utilized, is it applied to the same acres as indicated in item "g" above (relating to "acres available")**: Yes or No : NO

- **If other manure is generated, imported and/or utilized, is it applied during the same season as the imported manure:** Yes or No : NO

6) The exporter will use a Manure Export Sheet to record all manure exported to the importer. These Manure Export Sheets are available from the county conservation district or the State Conservation Commission. Computer generated forms other than the manure export sheet may be used if they contain the same information as, and are reasonably similar in format to, the forms available from the State Conservation Commission or the conservation district.

7) Records relating to the export of manure shall be prepared by the exporter in accordance with the following requirements of the Nutrient and Odor Management Act regulations:
   a) A Manure Export Sheet shall be used to document all manure exports for their records
      - A copy of the Manure Export Sheet shall be provided to the importer
      - A copy of the Manure Export Sheet shall be retained on site by the exporter

   b) When the exporter (or someone working for, or contracted by the exporter) applies the exported manure, the exporter shall maintain the following exported manure records:
      - Application dates, areas, rates and methods

   c) Records shall be maintained by the exporter for a minimum of 3 years

   d) A manure export informational packet (as supplied by the conservation district or State Conservation Commission) shall be provided to the importer by the time of the manure export. This information only needs to be provided once to the importer.
      The manure export informational packet must include the following:
      i. Exported Manure Informational Packet Guidance Sheet
      ii. Nutrient Management Planning an Overview (Agronomy Facts 60)
      iii. Manure Management for Environmental Protection
      iv. Land Application of Manure- A supplement to the Manure Management Manual Plan Guidance
      v. Manure Export Sheet
      vi. Manure Transfer Summary Sheets
      vii. Manure Field Stacking Requirements Fact Sheet

8) Where applicable, the importer shall properly store manure received from the exporter in accordance with the provisions of the Manure Management Manual and the Pa Technical Guide and shall not cause contamination of surface or ground water. This shall include manure stacked in application fields which may not be retained in fields for > 120 days unless covered or otherwise protected .

9) Manure received by the importer shall be applied to the land at the rate(s) and method(s) provided in the attached “Nutrient Balance Sheet(s)”, or in accordance with a Nutrient Management Plan approved for the importing operation. If the importer wishes to change the lands used for imported manure, the nutrient balance sheet must be revised to reflect the changes and be submitted to the conservation district or State Conservation Commission (and DEP if the exporter is a CAFO) prior to implementing the changes.

10) The importer shall comply with applicable manure application setbacks for the imported manure, as

outlined in the Nutrient Balance Sheet map(s).

11) For any lands not owned by the importer where the manure will be applied (i.e., rented lands), the importer hereby confirms that the importer has the authority to apply manure on those lands.

12) This agreement shall remain in full effect unless terminated by either party upon thirty days prior written notice to the other party. If this agreement is terminated, the exporter shall notify the county conservation district office that approved their nutrient management plan, of the termination.

Exporter Signature, Name and Date	Importer Signature, Name and Date
(signature)	Michael S Riegl (signature)
Jonathan Francis (name)	Michael S Riegl (name)
8/25/2020 (date)	8/25/20 (date)

NBS Summary Notes

Importing Farm: Mike Riehl

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Crop Group	Fields	Crop	Manure Group	Nutrient Balance Notes	Notes
N Based: Spring New Aflalfa	700-1,2A,2B,2C,2D,2E,3A,3B,4	Planting Alfalfa with Manure	R&F Swine Liquid	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface waters.
N Based: Spring Est Alfalfa	700-1,2A,2B,2C,2D,2E,3A,3B,4	Established Alfalfa with Manure	R&F Swine Liquid	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface waters.
N Based: Spring Corn Sialge after Alfalfa	700-1,2A,2B,2C,2D,2E,3A,3B,4	Corn for Silage	R&F Swine Liquid	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface waters.
N Based: Spring Corn Silage	700-1,2A,2B,2C,2D,2E,3A,3B,4	Corn for Silage	R&F Swine Liquid	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface waters.
N Based: Alt for Fall New Aflalfa	700-1,2A,2B,2C,2D,2E,3A,3B,4	Planting Alfalfa with Manure	R&F Swine Liquid	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface waters.
N Based: Alt for Fall Est Alfalfa	700-1,2A,2B,2C,2D,2E,3A,3B,4	Established Alfalfa with Manure	R&F Swine Liquid	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface waters.
N Based: Alt for Fall Corn Sialge after Alfalfa	700-1,2A,2B,2C,2D,2E,3A,3B,4	Corn for Silage	R&F Swine Liquid	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface waters.
N Based: Alt for Fall Corn Silage	700-1,2A,2B,2C,2D,2E,3A,3B,4	Corn for Silage	R&F Swine Liquid	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface waters.
P Based: Spring New Aflalfa	8701-1A,1B,1C,1D 9057-1,2,3	Planting Alfalfa with Manure	R&F Swine Liquid	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface waters.

Crop Group	Fields	Crop	Manure Group	Nutrient Balance Notes	Notes
P Based: Spring Est Alfalfa	8701-1A,1B,1C,1D 9057-1,2,3	Established Alfalfa with Manure	R&F Swine Liquid	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface waters.
P Based: Spring Corn Sialge after Alfalfa	8701-1A,1B,1C,1D 9057-1,2,3	Corn for Silage	R&F Swine Liquid	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface waters.
P Based: Spring Corn Silage	8701-1A,1B,1C,1D 9057-1,2,3	Corn for Silage	R&F Swine Liquid	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface waters.
P Based: Alt for Fall New Aflalfa	8701-1A,1B,1C,1D 9057-1,2,3	Planting Alfalfa with Manure	R&F Swine Liquid	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface waters.
P Based: Alt for Fall Est Alfalfa	8701-1A,1B,1C,1D 9057-1,2,3	Established Alfalfa with Manure	R&F Swine Liquid	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface waters.
P Based: Alt for Fall Corn Sialge after Alfalfa	8701-1A,1B,1C,1D 9057-1,2,3	Corn for Silage	R&F Swine Liquid	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface waters.
N Based: Alt for Fall Corn Silage	8701-1A,1B,1C,1D 9057-1,2,3	Corn for Silage	R&F Swine Liquid	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs	100ft application setback from wells, 150ft application setback from surface waters.

Nutrient Balance Sheet Summary

Importing Farm: Mike Riehl

Whole Farm Note: Do not apply other manure where R&F manure was or will be applied

Fall manure applications require at least 25% cover unless the crop management unit is planted to a cover crop in time to allow for appropriate growth to control runoff until the next growing season, or the manure is injected or mechanically incorporated within 5 days using minimal soil disturbance techniques consistent with no-till farming practices.

Crop Group	Fields	Acres	Crop	Manure Group	Application Season	Application Management	Multiple Designation	Planned Manure Rate[1]		Starter/Other Fertilizer (lb/A)			Supplemental Fertilizer (lb/A)			Nutrient Balance (lb/A)[2]		
										N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
N Based: Spring New Aflalfa	700-1,2A,2B,2C,2D,2E,3A,3B,4	12 of 96	Planting Alfalfa with Manure	R&F Swine Liquid	Spring: 1.2-15	Spring 1.2-15: Incorporated after 7 days		9000	Gal/A							0	-291	-16
N Based: Spring Est Alfalfa	700-1,2A,2B,2C,2D,2E,3A,3B,4	36 of 96	Established Alfalfa with Manure	R&F Swine Liquid	Spring: 1.2-15	Spring 1.2-15: Incorporated after 7 days		9000	Gal/A							0	-276	34
N Based: Spring Corn Sialge after Alfalfa	700-1,2A,2B,2C,2D,2E,3A,3B,4	12 of 96	Corn for Silage	R&F Swine Liquid	Spring: 1.2-15	Spring 1.2-15: Incorporated after 7 days		7000	Gal/A				2			0	-173	32
N Based: Spring Corn Silage	700-1,2A,2B,2C,2D,2E,3A,3B,4	36 of 96	Corn for Silage	R&F Swine Liquid	Spring: 1.2-15	Spring 1.2-15: Incorporated after 7 days		9000	Gal/A				52			0	-251	-16
N Based: Alt for Fall New Aflalfa	700-1,2A,2B,2C,2D,2E,3A,3B,4	12 of 96	Planting Alfalfa with Manure	R&F Swine Liquid	Early Fall: 1.2-15	Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days		9000	Gal/A							0	-291	-16
N Based: Alt for Fall Est Alfalfa	700-1,2A,2B,2C,2D,2E,3A,3B,4	36 of 96	Established Alfalfa with Manure	R&F Swine Liquid	Early Fall: 1.2-15	Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days		9000	Gal/A							0	-276	34
N Based: Alt for Fall Corn Sialge after Alfalfa	700-1,2A,2B,2C,2D,2E,3A,3B,4	12 of 96	Corn for Silage	R&F Swine Liquid	Early Fall: 1.2-15	Early Fall 1.2-15: next summer use by a summer crop following a harvested winter crop or no winter crop		8000	Gal/A				2			0	-212	8
N Based: Alt for Fall Corn Silage	700-1,2A,2B,2C,2D,2E,3A,3B,4	36 of 96	Corn for Silage	R&F Swine Liquid	Early Fall: 1.2-15	Early Fall 1.2-15: next summer use by a summer crop following a harvested winter crop or no winter crop		9000	Gal/A				64			0	-251	-16
P Based: Spring New Aflalfa	8701-1A,1B,1C,1D 9057-1,2,3	7.5 of 60.1	Planting Alfalfa with Manure	R&F Swine Liquid	Spring: 1.2-15	Spring 1.2-15: Incorporated after 7 days		No Manure Applied	Gal/A							0	60	200
P Based: Spring Est Alfalfa	8701-1A,1B,1C,1D 9057-1,2,3	22 of 60.1	Established Alfalfa with Manure	R&F Swine Liquid	Spring: 1.2-15	Spring 1.2-15: Incorporated after 7 days		No Manure Applied	Gal/A							0	75	250
P Based: Spring Corn Sialge after Alfalfa	8701-1A,1B,1C,1D 9057-1,2,3	7.5 of 60.1	Corn for Silage	R&F Swine Liquid	Spring: 1.2-15	Spring 1.2-15: Incorporated after 7 days		2500	Gal/A				46			0	2	140

[1] See Nutrient Management Plan Summary Notes

[2] Positive numbers = nutrient deficit; Negative numbers = nutrient excess

[3] Multiple Designation Mi=Initial, M=Middle(s), Mf=Final

Crop Group	Fields	Acres	Crop	Manure Group	Application Season	Application Management	Multiple Designation	Planned Manure Rate[1]		Starter/Other Fertilizer (lb/A)			Supplemental Fertilizer (lb/A)			Nutrient Balance (lb/A)[2]		
										N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
P Based: Spring Corn Silage	8701-1A,1B,1C,1D 9057-1,2,3	22 of 60.1	Corn for Silage	R&F Swine Liquid	Spring: 1.2-15	Spring 1.2-15: Incorporated after 7 days		No Manure Applied	Gal/A				140			0	100	200
P Based: Alt for Fall New Aflalfa	8701-1A,1B,1C,1D 9057-1,2,3	7.5 of 60.1	Planting Alfalfa with Manure	R&F Swine Liquid	Early Fall: 1.2-15	Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days		No Manure Applied	Gal/A							0	60	200
P Based: Alt for Fall Est Alfalfa	8701-1A,1B,1C,1D 9057-1,2,3	22 of 60.1	Established Alfalfa with Manure	R&F Swine Liquid	Early Fall: 1.2-15	Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days		No Manure Applied	Gal/A							0	75	250
P Based: Alt for Fall Corn Sialge after Alfalfa	8701-1A,1B,1C,1D 9057-1,2,3	7.5 of 60.1	Corn for Silage	R&F Swine Liquid	Early Fall: 1.2-15	Early Fall 1.2-15: next summer use by a summer crop following a harvested winter crop or no winter crop		2500	Gal/A				49			0	2	140
N Based: Alt for Fall Corn Silage	8701-1A,1B,1C,1D 9057-1,2,3	22 of 60.1	Corn for Silage	R&F Swine Liquid	Early Fall: 1.2-15	Early Fall 1.2-15: next summer use by a summer crop following a harvested winter crop or no winter crop		No Manure Applied	Gal/A				140			0	100	200

[1] See Nutrient Management Plan Summary Notes

[2] Positive numbers = nutrient deficit; Negative numbers = nutrient excess

[3] Multiple Designation Mi=Initial, M=Middle(s), Mf=Final

Manure Group Information

Appendix 3 Manure Group Information	R&F Swine Liquid
Manure Report Date (note if averaging several reports)	July 23, 2020
Laboratory Name	Skyview Labs
Manure Type	Swine
Manure Unit (lbs/ton or 1000 gal)	lb/1000 gal
Total Nitrogen (N) (lbs/ton or 1000 gal)	29.71
Ammonium N (NH_4-N) (lbs/ton or 1000 gal)	12.72
Total Organic N (lbs/ton or 1000 gal)	16.99
Total Phosphate (P_2O_5) (lbs/ton or 1000 gal)	39.02
Total Potash (K_2O) (lbs/ton or 1000 gal)	24.02
Percent Solids	8.41
PSC Value (analytical or book value)	1.00

Option 1 P Removal Option 2 Nitrogen Based Nutrient Balance Sheets	N Based: Spring New Aflalfa			N Based: Spring Est Alfalfa			N Based: Spring Corn Sialge after Alfalfa			N Based: Spring Corn Silage			N Based: Alt for Fall New Aflalfa		
Crop Group Identification															
Fields	700-1,2A,2B,2C,2D,2E,3A,3B,4			700-1,2A,2B,2C,2D,2E,3A,3B,4			700-1,2A,2B,2C,2D,2E,3A,3B,4			700-1,2A,2B,2C,2D,2E,3A,3B,4			700-1,2A,2B,2C,2D,2E,3A,3B,4		
Acres	12 of 96			36 of 96			12 of 96			36 of 96			12 of 96		
NBS Option	Option 2 Nitrogen Requirement			Option 2 Nitrogen Requirement			Option 2 Nitrogen Requirement			Option 2 Nitrogen Requirement			Option 2 Nitrogen Requirement		
Mehlich 3 Soil Test P For Option 2 enter maximum Soil Test For Option 3 enter soil test for PI	ppm P 159			ppm P 159			ppm P 159			ppm P 159			ppm P 159		
P Index Part A Evaluation															
Part A Result															
Crop	Planting Alfalfa with Manure			Established Alfalfa with Manure			Corn for Silage			Corn for Silage			Planting Alfalfa with Manure		
Planned Yield	4 ton/A			5 ton/A			25 ton/A			25 ton/A			4 ton/A		
Crop Removal Recommendations (lb/A)	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**
	200	60	200	250	75	250	175	100	200	175	100	200	200	60	200
Soil Test Recommendation (lb/A)															
Other Nutrients Applied (lb/A) (Nutrients applied regardless of manure)															
P Index Application Method															
Double Crop Carry Over N (lb/A)	0			0			0			0			0		
Manure History Description Residual Manure N (lb/A)	35	Continuously - Summer Crop		35	Continuously - Summer Crop		35	Continuously - Summer Crop		35	Continuously - Summer Crop		35	Continuously - Summer Crop	
Legume History Description Residual Legume N (lb/A)	0	No Previous Year Legume		0	No Previous Year Legume		70	1st yr. after alfalfa 25-49% stand, Moderate		0	No Previous Year Legume		0	No Previous Year Legume	
Net Nutrients Required (lb/A)	165	60	200	215	75	250	70	100	200	140	100	200	165	60	200
Manure Group	R&F Swine Liquid			R&F Swine Liquid			R&F Swine Liquid			R&F Swine Liquid			R&F Swine Liquid		
Units	lb/1000 gal			lb/1000 gal			lb/1000 gal			lb/1000 gal			lb/1000 gal		
Manure Nutrient Content	**N**	**P2O5**	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**
(lbs/ton or 1000 gal)	29.71	39.02	24.02	29.71	39.02	24.02	29.71	39.02	24.02	29.71	39.02	24.02	29.71	39.02	24.02
Application Season: Management (Incorporation, cover crops, etc.)	Spring 1.2-15: Incorporated after 7 days			Spring 1.2-15: Incorporated after 7 days			Spring 1.2-15: Incorporated after 7 days			Spring 1.2-15: Incorporated after 7 days			Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days		
Availability Factors (Total N or NH4-N & Organic N)	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**
		0.10	0.50		0.10	0.50		0.10	0.50		0.10	0.50		0.10	0.50
P Index Application Method															
N Balanced Manure Rate (ton; gal/A)	16,888 gal/A			22,006 gal/A			7,165 gal/A			14,330 gal/A			16,888 gal/A		
P Removal Balance Manure Rate (ton or gal/A; If required by P Index)	1,538 gal/A Crop P Removal (lb/A) 60.0			1,922 gal/A Crop P Removal (lb/A) 75.0			2,563 gal/A Crop P Removal (lb/A) 100.0			2,563 gal/A Crop P Removal (lb/A) 100.0			1,538 gal/A Crop P Removal (lb/A) 60.0		
P Index Value															
Planned Manure Rate (ton or gal/A)	**9000 gal/A**			**9000 gal/A**			**7000 gal/A**			**9000 gal/A**			**9000 gal/A**		
Nutrients Applied at Planned Manure Rate (lb/A)	88	351	216	88	351	216	68	273	168	88	351	216	88	351	216
Nutrient Balance after Manure	0	-291	-16	0	-276	34	2	-173	32	52	-251	-16	0	-291	-16
Supplemental Fertilizer (lb/A)	0	0	0	0	0	0	2	0	0	52	0	0	0	0	0
P Index Application Method															
Final Nutrient Balance (lb/A)	**0**	**-291**	**-16**	**0**	**-276**	**34**	**0**	**-173**	**32**	**0**	**-251**	**-16**	**0**	**-291**	**-16**
Multiple Application															
Soil test or Crop Removal	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs		

Option 1 P Removal **Option 2 Nitrogen Based** **Nutrient Balance Sheets**	N Based: Alt for Fall Est Alfalfa			N Based: Alt for Fall Corn Sialge after Alfalfa			N Based: Alt for Fall Corn Silage			P Based: Spring New Aflalfa			P Based: Spring Est Alfalfa		
Crop Group Identification															
Fields	700-1,2A,2B,2C,2D,2E,3A,3B,4			700-1,2A,2B,2C,2D,2E,3A,3B,4			700-1,2A,2B,2C,2D,2E,3A,3B,4			8701-1A,1B,1C,1D 9057-1,2,3			8701-1A,1B,1C,1D 9057-1,2,3		
Acres	36 of 96			12 of 96			36 of 96			7.5 of 60.1			22 of 60.1		
NBS Option	Option 2 Nitrogen Requirement			Option 2 Nitrogen Requirement			Option 2 Nitrogen Requirement			Option 1 P Removal			Option 1 P Removal		
Mehlich 3 Soil Test P For Option 2 enter maximum Soil Test For Option 3 enter soil test for PI	ppm P 159			ppm P 159			ppm P 159			ppm P			ppm P		
P Index Part A Evaluation															
Part A Result															
Crop	Established Alfalfa with Manure			Corn for Silage			Corn for Silage			Planting Alfalfa with Manure			Established Alfalfa with Manure		
Planned Yield	5 ton/A			25 ton/A			25 ton/A			4 ton/A			5 ton/A		
Crop Removal Recommendations (lb/A)	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**
	250	75	250	175	100	200	175	100	200	200	60	200	250	75	250
Soil Test Recommendation (lb/A)															
Other Nutrients Applied (lb/A) (Nutrients applied regardless of manure)															
P Index Application Method															
Double Crop Carry Over N (lb/A)	0			0			0			0			0		
Manure History Description Residual Manure N (lb/A)	35	Continuously - Summer Crop		35	Continuously - Summer Crop		35	Continuously - Summer Crop		35	Continuously - Summer Crop		35	Continuously - Summer Crop	
Legume History Description Residual Legume N (lb/A)	0	No Previous Year Legume		70	1st yr. after alfalfa 25-49% stand, Moderate		0	No Previous Year Legume		0	No Previous Year Legume		0	No Previous Year Legume	
Net Nutrients Required (lb/A)	215	75	250	70	100	200	140	100	200	165	60	200	215	75	250
Manure Group	R&F Swine Liquid			R&F Swine Liquid			R&F Swine Liquid			R&F Swine Liquid			R&F Swine Liquid		
Units	lb/1000 gal			lb/1000 gal			lb/1000 gal			lb/1000 gal			lb/1000 gal		
Manure Nutrient Content	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**
(lbs/ton or 1000 gal)	29.71	39.02	24.02	29.71	39.02	24.02	29.71	39.02	24.02	29.71	39.02	24.02	29.71	39.02	24.02
Application Season: Management (Incorporation, cover crops, etc.)	Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days			Early Fall 1.2-15: next summer use by a summer crop following a harvested winter crop or no winter crop			Early Fall 1.2-15: next summer use by a summer crop following a harvested winter crop or no winter crop			Spring 1.2-15: Incorporated after 7 days			Spring 1.2-15: Incorporated after 7 days		
Availability Factors (Total N or NH4-N & Organic N)	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**
		0.10	0.50		0.00	0.50		0.00	0.50		0.10	0.50		0.10	0.50
P Index Application Method															
N Balanced Manure Rate (ton; gal/A)	22,006 gal/A			8,235 gal/A			16,471 gal/A			16,888 gal/A			22,006 gal/A		
P Removal Balance Manure Rate (ton or gal/A; If required by P Index)	1,922 gal/A Crop P Removal (lb/A) 75.0			2,563 gal/A Crop P Removal (lb/A) 100.0			5,126 gal/A Crop P Removal (lb/A) 200.0			1,538 gal/A Crop P Removal (lb/A) 60.0			1,922 gal/A Crop P Removal (lb/A) 75.0		
P Index Value															
Planned Manure Rate (ton or gal/A)	**9000 gal/A**			**8000 gal/A**			**9000 gal/A**			**No Manure Applied gal/A**			**No Manure Applied gal/A**		
Nutrients Applied at Planned Manure Rate (lb/A)	88	351	216	68	312	192	76	351	216	0	0	0	0	0	0
Nutrient Balance after Manure	0	-276	34	2	-212	8	64	-251	-16	0	60	200	0	75	250
Supplemental Fertilizer (lb/A)	0	0	0	2	0	0	64	0	0	0	0	0	0	0	0
P Index Application Method															
Final Nutrient Balance (lb/A)	**0**	**-276**	**34**	**0**	**-212**	**8**	**0**	**-251**	**-16**	**0**	**60**	**200**	**0**	**75**	**250**
Multiple Application															
Soil test or Crop Removal	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs		

Option 1 P Removal Option 2 Nitrogen Based Nutrient Balance Sheets	P Based: Spring Corn Sialge after Alfalfa			P Based: Spring Corn Silage			P Based: Alt for Fall New Aflalfa			P Based: Alt for Fall Est Alfalfa			P Based: Alt for Fall Corn Sialge after Alfalfa		
Crop Group Identification															
Fields	8701-1A,1B,1C,1D 9057-1,2,3			8701-1A,1B,1C,1D 9057-1,2,3			8701-1A,1B,1C,1D 9057-1,2,3			8701-1A,1B,1C,1D 9057-1,2,3			8701-1A,1B,1C,1D 9057-1,2,3		
Acres	7.5 of 60.1			22 of 60.1			7.5 of 60.1			22 of 60.1			7.5 of 60.1		
NBS Option	Option 1 P Removal			Option 1 P Removal			Option 1 P Removal			Option 1 P Removal			Option 1 P Removal		
Mehlich 3 Soil Test P For Option 2 enter maximum Soil Test For Option 3 enter soil test for PI	ppm P			ppm P			ppm P			ppm P			ppm P		
P Index Part A Evaluation															
Part A Result															
Crop	Corn for Silage			Corn for Silage			Planting Alfalfa with Manure			Established Alfalfa with Manure			Corn for Silage		
Planned Yield	25 ton/A			25 ton/A			4 ton/A			5 ton/A			25 ton/A		
Crop Removal Recommendations (lb/A)	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**	**N**	**P2O5**	**K2O**
	175	100	200	175	100	200	200	60	200	250	75	250	175	100	200
Soil Test Recommendation (lb/A)															
Other Nutrients Applied (lb/A) (Nutrients applied regardless of manure)															
P Index Application Method															
Double Crop Carry Over N (lb/A)	0			0			0			0			0		
Manure History Description Residual Manure N (lb/A)	35	Continuously - Summer Crop		35	Continuously - Summer Crop		35	Continuously - Summer Crop		35	Continuously - Summer Crop		35	Continuously - Summer Crop	
Legume History Description Residual Legume N (lb/A)	70	1st yr. after alfalfa 25-49% stand, Moderate		0	No Previous Year Legume		0	No Previous Year Legume		0	No Previous Year Legume		70	1st yr. after alfalfa 25-49% stand, Moderate	
Net Nutrients Required (lb/A)	70	100	200	140	100	200	165	60	200	215	75	250	70	100	200
Manure Group	R&F Swine Liquid			R&F Swine Liquid			R&F Swine Liquid			R&F Swine Liquid			R&F Swine Liquid		
Units	lb/1000 gal			lb/1000 gal			lb/1000 gal			lb/1000 gal			lb/1000 gal		
Manure Nutrient Content	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**	**N**	P2O5	**K20**
(lbs/ton or 1000 gal)	29.71	39.02	24.02	29.71	39.02	24.02	29.71	39.02	24.02	29.71	39.02	24.02	29.71	39.02	24.02
Application Season: Management (Incorporation, cover crops, etc.)	Spring 1.2-15: Incorporated after 7 days			Spring 1.2-15: Incorporated after 7 days			Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days			Early Fall 1.2-15: fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days			Early Fall 1.2-15: next summer use by a summer crop following a harvested winter crop or no winter crop		
Availability Factors (Total N or NH4-N & Organic N)	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**	**Total N**	**NH4-N**	**Org. N**
		0.10	0.50		0.10	0.50		0.10	0.50		0.10	0.50		0.00	0.50
P Index Application Method															
N Balanced Manure Rate (ton; gal/A)	7,165 gal/A			14,330 gal/A			16,888 gal/A			22,006 gal/A			8,235 gal/A		
P Removal Balance Manure Rate (ton or gal/A; If required by P Index)	2,563 gal/A Crop P Removal (lb/A) 100.0			2,563 gal/A Crop P Removal (lb/A) 100.0			1,538 gal/A Crop P Removal (lb/A) 60.0			1,922 gal/A Crop P Removal (lb/A) 75.0			2,563 gal/A Crop P Removal (lb/A) 100.0		
P Index Value															
Planned Manure Rate (ton or gal/A)	**2500 gal/A**			**No Manure Applied gal/A**			**No Manure Applied gal/A**			**No Manure Applied gal/A**			**2500 gal/A**		
Nutrients Applied at Planned Manure Rate (lb/A)	24	98	60	0	0	0	0	0	0	0	0	0	21	98	60
Nutrient Balance after Manure	46	2	140	140	100	200	0	60	200	0	75	250	49	2	140
Supplemental Fertilizer (lb/A)	46	0	0	140	0	0	0	0	0	0	0	0	49	0	0
P Index Application Method															
Final Nutrient Balance (lb/A)	**0**	**2**	**140**	**0**	**100**	**200**	**0**	**60**	**200**	**0**	**75**	**250**	**0**	**2**	**140**
Multiple Application															
Soil test or Crop Removal	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs			Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs		

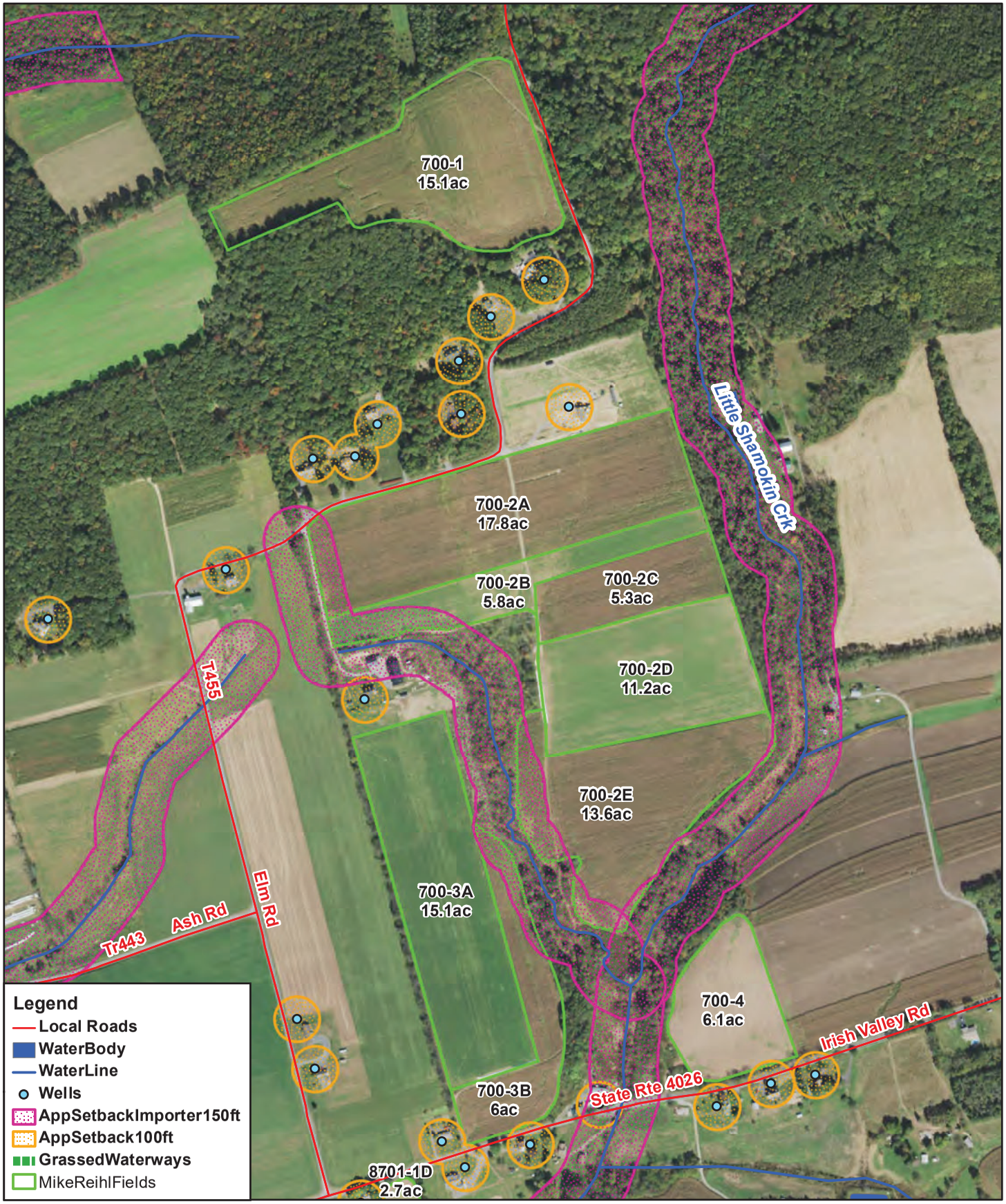
Option 1 P Removal Option 2 Nitrogen Based Nutrient Balance Sheets	N Based: Alt for Fall Corn Silage		
Crop Group Identification			
Fields	8701-1A,1B,1C,1D 9057-1,2,3		
Acres	22 of 60.1		
NBS Option	Option 1 P Removal		
Mehlich 3 Soil Test P For Option 2 enter maximum Soil Test For Option 3 enter soil test for PI	ppm P		
P Index Part A Evaluation			
Part A Result			
Crop	Corn for Silage		
Planned Yield	25 ton/A		
Crop Removal Recommendations (lb/A)	**N**	**P2O5**	**K2O**
	175	100	200
Soil Test Recommendation (lb/A)			
Other Nutrients Applied (lb/A) (Nutrients applied regardless of manure)			
P Index Application Method			
Double Crop Carry Over N (lb/A)	0		
Manure History Description Residual Manure N (lb/A)	35	Continuously - Summer Crop	
Legume History Description Residual Legume N (lb/A)	0	No Previous Year Legume	
Net Nutrients Required (lb/A)	140	100	200
Manure Group	R&F Swine Liquid		
Units	lb/1000 gal		
Manure Nutrient Content	**N**	P2O5	**K20**
(lbs/ton or 1000 gal)	29.71	39.02	24.02
Application Season: Management (Incorporation, cover crops, etc.)	Early Fall 1.2-15: next summer use by a summer crop following a harvested winter crop or no winter crop		
Availability Factors (Total N or NH4-N & Organic N)	**Total N**	**NH4-N**	**Org. N**
		0.00	0.50
P Index Application Method			
N Balanced Manure Rate (ton; gal/A)	16,471 gal/A		
P Removal Balance Manure Rate (ton or gal/A; If required by P Index)	0 gal/A		
	Crop P Removal (lb/A) 0.0		
P Index Value			
Planned Manure Rate (ton or gal/A)	**No Manure Applied gal/A**		
Nutrients Applied at Planned Manure Rate (lb/A)	0	0	0
Nutrient Balance after Manure	140	100	200
Supplemental Fertilizer (lb/A)	140	0	0
P Index Application Method			
Final Nutrient Balance (lb/A)	**0**	**100**	**200**
Multiple Application			
Soil test or Crop Removal	Nutrient Balances for P2O5 and K2O are based on Crop Removal and SHOULD NOT be used to determine additional fertilizer needs		

Appendix 1

Operation Maps

Maps (or aerial photographs) required in Nutrient Balance Sheets must identify: road and road names adjacent to and within the operation; field identification, boundaries and acreage; manure application setback areas and vegetated buffers and associated landscape features (streams and other water bodies, sinkholes, and active water wells or springs); and location of in-field manure stacking areas (including each site in stacking area rotation).

Mike Riehl NBS Map 1



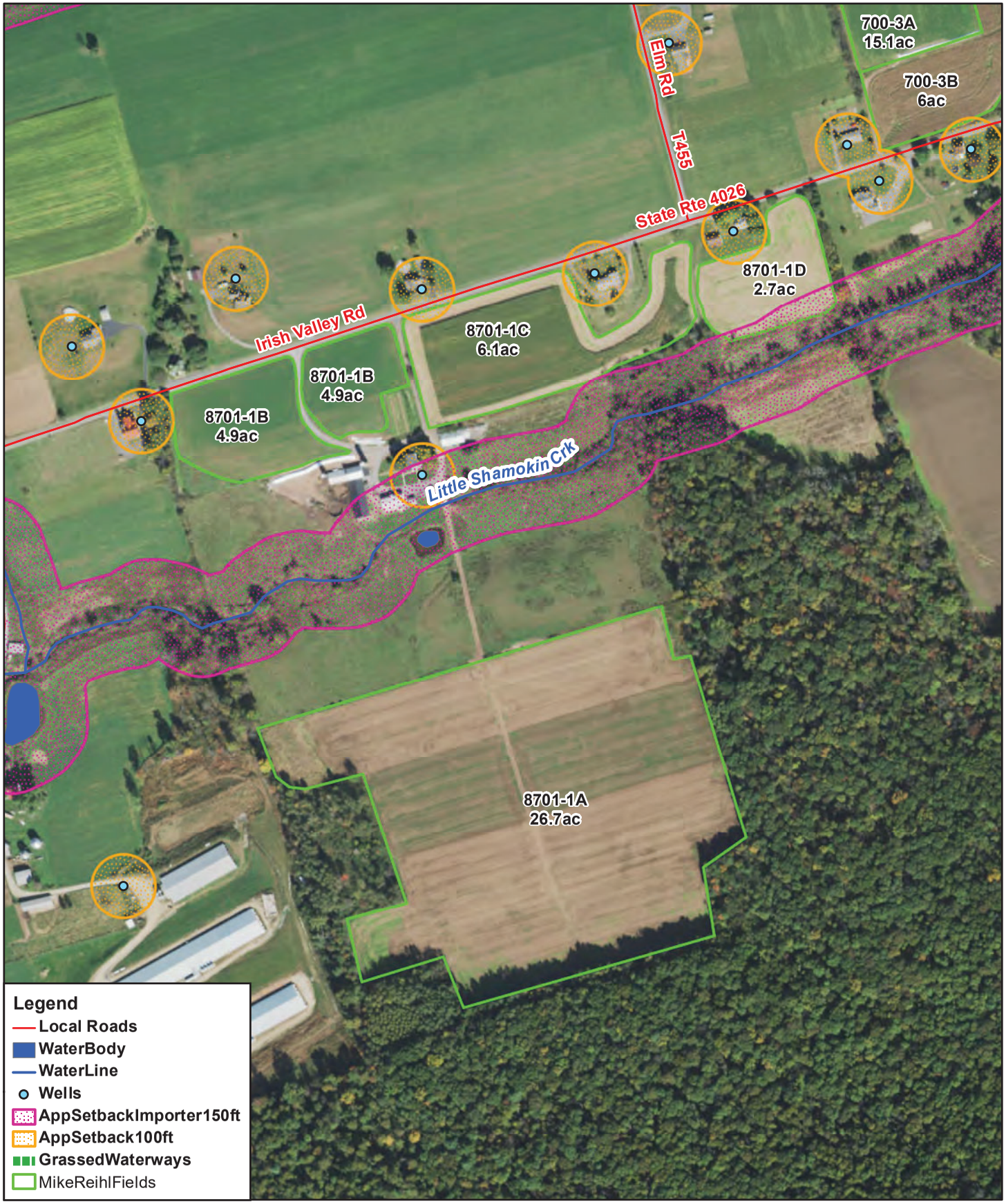
TeamAg Incorporated

0 250 500 1,000 1,500 Feet

N W E S

Application buffers/setbacks are approximate, field verification is required prior to land application

Mike Riehl NBS Map 2



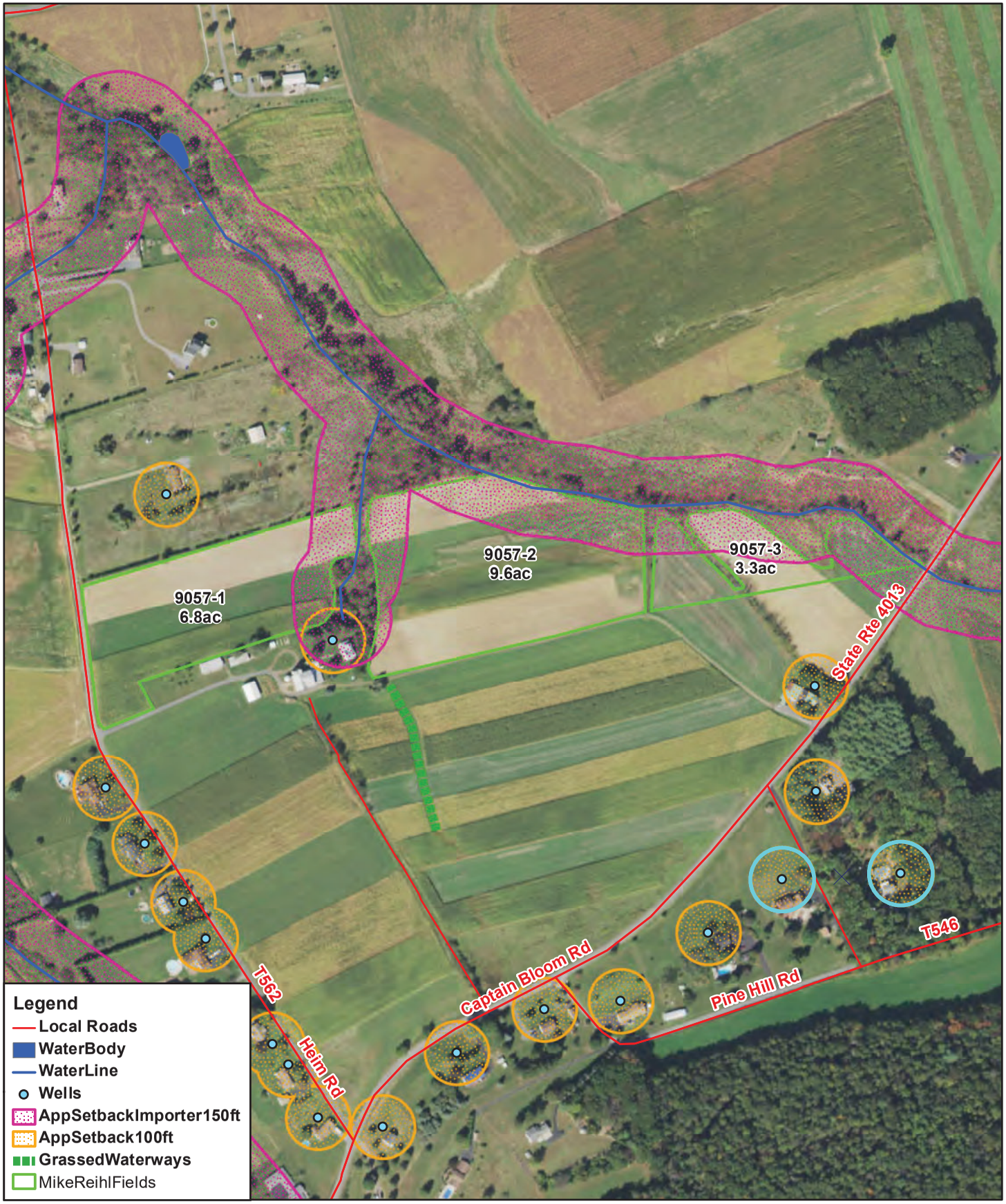
TeamAg Incorporated

0 250 500 1,000 Feet

N W E S

Application buffers/setbacks are approximate, field verification is required prior to land application

Mike Riehl NBS Map 3



Application buffers/setbacks are approximate, field verification is required prior to land application

Appendix 10
Supporting Information & Documentation

Crop Years 2021

Includes if applicable the Rainfall Additions Worksheet, Winter Application Matrix, Residual N Calculation Worksheet and other supplemental worksheets included in the NMP Spreadsheet. Attach information and documentation necessary to support plan content not included elsewhere in the NMP Spreadsheet or appendices. Examples include, but are not limited to, documentation of animal weights if Agronomy Facts 54 is not used, bedding calculations, or calculations for irrigation rates.

CAFO Winter Freeboard Calculations

3,493,400gal annual manure production / 11790 hogs = 296.3gal/hog
Barn 1 = 2190 hogs X 296.3gal/hog / 365dpy X 76winter days = 135,113gal winter production
Barn 2 = 4800 hogs X 296.3gal/hog / 365dpy X 76winter days = 296,138gal winter production
Barn 3 = 4800 hogs X 296.3gal/hog / 365dpy X 76winter days = 296,138gal winter production

Barn 1 = ((135,113gal / 7.48gal/cuft / (80.17ft x 222.67ft)) + 0.5ft freeboard = 1.5ft winter freeboard
Barn 2 = ((296,138gal / 7.48gal/cuft / (81.5ft x 501ft)) + 0.5ft freeboard = 1.5ft winter freeboard
Barn 3 = ((296,138gal / 7.48gal/cuft / (81.5ft x 501ft)) + 0.5ft freeboard = 1.5ft winter freeboard

R&F Family Farms 2020 Manure Sample Averages
Sample Date: 7/23/20 Skyview Labs

Barn	Total N	NH4 N	P2O5	K2O	% Solids
1	15.7	8.3	27.9	16	7.6
2	26.1	8.9	30.7	19.2	10.5
3	27.1	8.8	26.9	18.2	9.5
Avg	**22.97**	**8.67**	**28.50**	**17.80**	**9.20**

Manure Analysis 5 Year Running Average

Manure Average for Crop Years. 2021	Spring Swine Liquid					
	Average	1 year ago	2 years ago	3 years ago	4 years ago	5 years ago
Manure Report Date	**Jul 23 2020**	Jul 23 2020	Jul 12 2018	Mar 17 2017		
Laboratory Name	**Skyview Labs (avg)**	Skyview Labs (avg)	Skyview Labs	Spectrum Analytic, Inc.		
Manure Type	**Swine**	Swine	Swine	Swine		
Manure Unit (lbs/ton or 1000 gal)	**lb/1000 gal**	lb/1000 gal	lb/1000 gal	lb/1000 gal		
Total Nitrogen (N) (lbs/ton or 1000 gal)	**29.71**	22.97	31.80	34.35		
Ammonium N (NH_4-N) (lbs/ton or 1000 gal)	**12.72**	8.67	8.60	20.90		
Total Organic N (lbs/ton or 1000 gal)	**16.99**	14.30	23.20	13.45		
Total Phosphate (P_2O_5) (lbs/ton or 1000 gal)	**39.02**	28.50	52.90	35.65		
Total Potash (K_2O) (lbs/ton or 1000 gal)	**24.02**	17.80	29.90	24.35		
Percent Solids	**8.41**	9.20	10.50	5.54		
PSC Value (Enter analytical or book value)	**0.99**	1.00	1.00	0.97		

Manure Average for Crop Years. 2021	Fall Spring Swine Liquid					
	Average	1 year ago	2 years ago	3 years ago	4 years ago	5 years ago
Manure Report Date	**Jul 23 2020**	Jul 23 2020	Jul 12 2018	Mar 17 2017		
Laboratory Name	**Skyview Labs (avg)**	Skyview Labs (avg)	Skyview Labs	Spectrum Analytic, Inc.		
Manure Type	**Swine**	Swine	Swine	Swine		
Manure Unit (lbs/ton or 1000 gal)	**lb/1000 gal**	lb/1000 gal	lb/1000 gal	lb/1000 gal		
Total Nitrogen (N) (lbs/ton or 1000 gal)	**29.71**	22.97	31.80	34.35		
Ammonium N (NH_4-N) (lbs/ton or 1000 gal)	**12.72**	8.67	8.60	20.90		
Total Organic N (lbs/ton or 1000 gal)	**16.99**	**14.30**	**23.20**	**13.45**		
Total Phosphate (P_2O_5) (lbs/ton or 1000 gal)	**39.02**	28.50	52.90	35.65		
Total Potash (K_2O) (lbs/ton or 1000 gal)	**24.02**	17.80	29.90	24.35		
Percent Solids	**8.41**	9.20	10.50	5.54		
PSC Value (Enter analytical or book value)	**0.99**	1.00	1.00	0.97		

Manure Analysis 5 Year Running Average

Manure Average for Crop Years. 2021	Mortality Compost					
	Average	1 year ago	2 years ago	3 years ago	4 years ago	5 years ago
Manure Report Date	**Average of Existing Samples**	Average of Existing Samples				
Laboratory Name	**Spectrum Analytic, Inc. & PSU**	Spectrum Analytic, Inc. & PSU				
Manure Type	**Other**	Other				
Manure Unit (lbs/ton or 1000 gal)	**lb/ton**	lb/ton				
Total Nitrogen (N) (lbs/ton or 1000 gal)	**29.67**	29.67				
Ammonium N (NH_4-N) (lbs/ton or 1000 gal)	**5.97**	5.97				
Total Organic N (lbs/ton or 1000 gal)	**23.70**	**23.70**				
Total Phosphate (P_2O_5) (lbs/ton or 1000 gal)	**24.62**	24.62				
Total Potash (K_2O) (lbs/ton or 1000 gal)	**18.27**	18.27				
Percent Solids	**60.91**	60.91				
PSC Value (Enter analytical or book value)	**0.66**	0.66				

Emergency Response Plan

If an emergency spill or leak should occur you need to take the following actions:

1) **Ensure that you and other people are safe. If the spill or leak involves a public road:**
   a. Contact the police for traffic control: *State Police - 911*
   b. Use flares, safety cones, etc. to warn approaching motorists

2) **Stop the leak or spill:**
   a. If the leak or spill occurs while emptying the storage:
      i. Stop pumps, close valves and / or stop siphoning of manure
      ii. Park on top of the flexible piping to pinch it closed
      iii. If necessary, direct manure to another storage structure
      iv. Plug holes in the impoundment, build dams to capture the leak and either pump the manure back into the storage or spread it on crop fields according to your nutrient management plan

   b. If the spill happens while on the road:
      i. Pull off to the side of the road
      ii. Plug the leak or otherwise stop the flow of manure from the tank
      iii. Build a berm or dike to keep manure from flowing into streams, ditches, etc.
      iv. Call the police for traffic control: *State Police – 911*

3) **Contain and control the leak or spill:**
   a. Build a containment dam to capture the manure using soil, gravel, hay bales, etc. Provide an area for the impounded manure to run into and be temporarily stored. Limit the area in contact with manure. Local individuals with excavation and manure hauling equipment are:
      i. *Andrew Reitz – 570-898-5054*
      ii. *Tri-County Spreading – 570-692-0188*

   b. Prevent manure from running into streams, ditches, waterways, etc.

   c. Use absorbent materials such as straw, hay, sawdust, animal feed or soil to soak up the manure and to limit or stop manure flow.

   d. Check for contaminated subsurface tile lines and divert manure flow from inlet structures

4) **Notify the proper authorities:**
   Pennsylvania Department of Environmental Protection Emergency Response – 570-327-3636
   Northumberland County Conservation District – 570-495-4665
   PA Fish & Boat Commission Northcentral Regional Office – 814-359-5250
   TeamAg, Inc. Nutrient Management Specialist – 570-764-7003

   a. Make a record of the details of the spill and the actions you took to remedy the situation. Take pictures of the extent of the spill as well as your containment and cleanup practices.

   b. If a spill enters a sinkhole or otherwise has the potential to enter groundwater, notify adjacent landowners who use private wells for their water supply.

5) **Clean up the leak or spill:**
   a. Clean up procedures may be directed by the authorities listed above.

   b. Pick up absorbent materials you used and properly dispose of the material.

   c. Restore damaged areas if necessary.

TeamAg Incorporated

COMMONWEALTH OF PENNSYLVANIA
STATE CONSERVATION COMMISSION

DATE: October 27, 2020

TO: Members
State Conservation Commission

FROM: Michael J. Walker
State Conservation Commission

SUBJECT: Nutrient Management Plan Review (1)
Northridge Equestrian – Lisa Eick, Monroe County, Pennsylvania

Action Requested

Action on a Nutrient Management Plan for the following operation in Monroe County:

1. Northridge Equestrian – Lisa Eick,
   Site - 167 Old Stage Coach Road, Gilbert, PA 18331

Background

I have completed the required review of the subject nutrient management plan listed above. Final corrections to the plan were received at the PDA Region 2 office on October 26, 2020. As of that date, the plan was considered to be in its final form. The operation, located in Monroe County, is considered to be a concentrated animal operation (CAO) under the PA Nutrient and Odor Management Act. The Commission is the proper authority to take action on this plan, because Monroe County Conservation District has not been delegated plan review and action responsibilities (Level II) under the PA Nutrient and Odor Management Act Program.

A crop year 2021 NMP for this operation was also reviewed and will be acknowledge, since manure has been exported and land applied after the start of the current crop year.

A brief description of the operation, concluding with the staff recommendation, is attached. Also attached is a copy of the complete nutrient management plan for the operation.

Thank you for considering this plan for Commission action.

Farm Descriptions

Northridge Equestrian – Lisa Eick NMP CY 2022-2024, Monroe County – The Northridge Equestrian is operated by Lisa Eick on rented property currently owned by John Pesapane. The operation is an equine boarding and training agricultural operation located in Monroe County near the borough of Brodheadsville, PA. The operation has a capacity to stable 29 horses in two horse stable barns, presently they are only utilizing one horse barn with a capacity of 20 horses. The operation has an indoor arena for training horses and riders. Horses are stabled inside the barns most of the time but are exercised in the adjoining pastures approximately 7 hours per day. Manure is handed as a solid form on this operation and is removed from the stalls daily. Manure deposited on the arena area or animal walkways is collected on an as-needed basis. All collected manure is stacked on an unroofed improved area approximately 80 feet by 30 feet and exported off the operation 2 times per year. Approximately 220 tons of manure will be generated per year if 20 horses are on the operation the entire year. Approximately 62 tons of this manure is animal applied to pastures and the remaining 156 tons will be exported to the known importer for alternative uses. The importer has a landscaping and excavation business and composts the manure with other soil materials. The finished material will be utilized as a soil amendment material.

The combined animal equivalent units at Northridge Equestrian are 23.4. The crop production acres associated with this operation are approximately 3.7 acres of pasture. The operator does not have control of any other crop production land and imports the majority of the feed and bedding for these animals. The animal equivalent units per acre for Northridge Equestrian operation are 6.32, classifying this operation as a concentrated animal operation under Act 38 of 2005.

The proposed NMP for Northridge Equestrian indicates Forage and Biomass planting in all the pasture areas as a needed BMPs. The operator is working with Penn State Extension concerning pasture renovations.

Based on my review, the NMP developed for Northridge Equestrian – Lisa Eick operation meets the requirements of the PA Act 38 Nutrient Management Regulations, and I therefore recommend Commission approval.

NON-FINAL FORM
Version 1.0
This NMP may be reviewed prior to a formal action by the Conservation District Board. The final form of the plan will be available at least 7 days prior to Board action. You may contact the Conservation District to determine the current status of the NMP
September 24, 2020
Month, Day Year

Nutrient Management Plan

For Crop Year(s)

2022 2023 2024

Prepared For

Operator's Name, Mailing Address, Telephone Number(s)

Northridge Equestrian
Lisa Eick
474 Jonas Rd. Effort, PA 18330
(570) 656-2807

NON-FINAL FORM
Version 2.0
This NMP may be reviewed prior to a formal action by the Conservation District Board. The final form of the plan will be available at least 7 days prior to Board action. You may contact the Conservation District to determine the current status of the NMP
October 26, 2020
Month, Day Year

Operation's Location Address (if different than above)

167 Old Stagecoach Rd. Gilbert, PA 18331

Site Name (CAFOs)

Prepared By

Nutrient Management Specialist's Name, Address, Telephone Number(s)

Amber Funk
Red Barn Consulting, Inc
3050 Yellow Goose Road, Lancaster, PA 17601
717-393-2176 ext 109

Nutrient Management Specialist's Program Certification Number

2498-NMC

Administratively Complete Date

September 24, 2020

Plan Approval Date

Plan Update Submission Date(s)

(updates to the approved plan not requiring board action)

FINAL FORM
This version of the plan will be considered for action by the Conservation District Board at their November 10, 2020 meeting
October 26, 2020
MONTH, DAY AND YEAR

Table of Contents

Nutrient Management Plan Summary

Total acres reported in NMP Summary: 3.7 **Crop Year(s)** 2022

Whole Farm Note:

If manure runs out for any field, consult Appendix 4 of the plan for that field. The fertilizer required on any part of the field that does not receive manure can be determined from the 'Net Nutrients Required' for that field.

Fall manure applications require at least 25% cover unless the crop management unit is planted to a cover crop in time to allow for appropriate growth to control runoff until the next growing season, or the manure is injected or mechanically incorporated within 5 days using minimal soil disturbance techniques consistent with no-till farming practices.

Operation Acres:

Total Acres: 5.1 **Total Acres Available For Nutrient Application Under Operator's Control:** **Owned:** 0 **Rented:** 3.7

Animal Equivalent Units: 23.40 **Animal Equivalent Units Per Acre:** 6.32

CMU/Field ID	Acres	Crop	Manure Group	Application Season	Application Management	Planned Manure Rate[1]		Starter/Other Fertilizer (lb/A)			Supplemental Fertilizer (lb/A)			Nutrient Balance (lb/A)[2]		
								N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
1	0.2	Established Pasture (without legume)	Horses Pasture - Uncollected	Grazing	Grazing anytime with nutrient uptake during growing season	Grazing	See Notes	0	0	0	13	0	0	0	-151	-240
3	0.3	Established Pasture (without legume)	Horses Pasture - Uncollected	Grazing	Grazing anytime with nutrient uptake during growing season	Grazing	See Notes	0	0	0	0	0	0			
3	0.3	Established Pasture (without legume)	Draft Horses - Uncollected	Grazing	Grazing anytime with nutrient uptake during growing season	Grazing	See Notes	0	0	0	22	0	0	0	-82	-155
4	0.1	Established Pasture (without legume)	Horses Pasture - Uncollected	Grazing	Grazing anytime with nutrient uptake during growing season	Grazing	See Notes	0	0	0	13	0	0	0	-161	-250
5	0.9	Established Pasture (without legume)	Horses Pasture - Uncollected	Grazing	Grazing anytime with nutrient uptake during growing season	Grazing	See Notes	0	0	0	56	0	0	0	-72	-129

[1] See rate calibration table (Nutrient Management Plan Summary Notes).

[2] Positive numbers = nutrient deficit; Negative numbers = nutrient excess

CMU/Field ID	Acres	Crop	Manure Group	Application Season	Application Management	Planned Manure Rate[1]		Starter/Other Fertilizer (lb/A)			Supplemental Fertilizer (lb/A)			Nutrient Balance (lb/A)[2]		
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6	0.6	Established Pasture (without legume)	Horses Pasture - Uncollected	Grazing	Grazing anytime with nutrient uptake during growing season	Grazing	See Notes	0	0	0	0	0	0			
6	0.6	Established Pasture (without legume)	Draft Horses - Uncollected	Grazing	Grazing anytime with nutrient uptake during growing season	Grazing	See Notes	0	0	0	56	0	0	0	-71	-127
7	0.6	Established Pasture (without legume)	Horses Pasture - Uncollected	Grazing	Grazing anytime with nutrient uptake during growing season	Grazing	See Notes	0	0	0	75	0	0	0	-81	-145
8	1	Established Pasture (without legume)	Horses Pasture - Uncollected	Grazing	Grazing anytime with nutrient uptake during growing season	Grazing	See Notes	0	0	0	59	0	0	0	-65	-46

[1] See rate calibration table (Nutrient Management Plan Summary Notes).

[2] Positive numbers = nutrient deficit; Negative numbers = nutrient excess

NMP Summary Notes

Crop Years 2022

CMU/Field ID	Notes
1	2 Horses on pasture for ~7 hrs/ day 365 days. Horses have access to water troughs and are given small amounts of hay occassionally while in pasture.
3	2 Horses on pasture for ~7 hrs/ day 365 days. Horses have access to water troughs and are given small amounts of hay occassionally while in pasture.
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Nutrient Management Plan Summary

Total acres reported in NMP Summary: 3.7 **Crop Year(s)** 2023

Whole Farm Note:

If manure runs out for any field, consult Appendix 4 of the plan for that field. The fertilizer required on any part of the field that does not receive manure can be determined from the 'Net Nutrients Required' for that field.

Fall manure applications require at least 25% cover unless the crop management unit is planted to a cover crop in time to allow for appropriate growth to control runoff until the next growing season, or the manure is injected or mechanically incorporated within 5 days using minimal soil disturbance techniques consistent with no-till farming practices.

Operation Acres:

Total Acres: 5.1 **Total Acres Available For Nutrient Application Under Operator's Control:** **Owned:** 0 **Rented:** 3.7

Animal Equivalent Units: 23.40 **Animal Equivalent Units Per Acre:** 6.32

CMU/Field ID	Acres	Crop	Manure Group	Application Season	Application Management	Planned Manure Rate[1]		Starter/Other Fertilizer (lb/A)			Supplemental Fertilizer (lb/A)			Nutrient Balance (lb/A)[2]		
								N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
1	0.2	Established Pasture (without legume)	Horses Pasture - Uncollected	Grazing	Grazing anytime with nutrient uptake during growing season	Grazing	See Notes	0	0	0	13	0	0	0	-151	-240
3	0.3	Established Pasture (without legume)	Horses Pasture - Uncollected	Grazing	Grazing anytime with nutrient uptake during growing season	Grazing	See Notes	0	0	0	0	0	0			
3	0.3	Established Pasture (without legume)	Draft Horses - Uncollected	Grazing	Grazing anytime with nutrient uptake during growing season	Grazing	See Notes	0	0	0	22	0	0	0	-82	-155
4	0.1	Established Pasture (without legume)	Horses Pasture - Uncollected	Grazing	Grazing anytime with nutrient uptake during growing season	Grazing	See Notes	0	0	0	13	0	0	0	-161	-250
5	0.9	Established Pasture (without legume)	Horses Pasture - Uncollected	Grazing	Grazing anytime with nutrient uptake during growing season	Grazing	See Notes	0	0	0	56	0	0	0	-72	-129

[1] See rate calibration table (Nutrient Management Plan Summary Notes).

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CMU/Field ID	Acres	Crop	Manure Group	Application Season	Application Management	Planned Manure Rate[1]		Starter/Other Fertilizer (lb/A)			Supplemental Fertilizer (lb/A)			Nutrient Balance (lb/A)[2]		
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7	0.6	Established Pasture (without legume)	Horses Pasture - Uncollected	Grazing	Grazing anytime with nutrient uptake during growing season	Grazing	See Notes	0	0	0	75	0	0	0	-81	-145
8	1	Established Pasture (without legume)	Horses Pasture - Uncollected	Grazing	Grazing anytime with nutrient uptake during growing season	Grazing	See Notes	0	0	0	59	0	0	0	-65	-46

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NMP Summary Notes

Crop Years 2023

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Nutrient Management Plan Summary

Total acres reported in NMP Summary: 3.7 **Crop Year(s)** 2024

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3	0.3	Established Pasture (without legume)	Draft Horses - Uncollected	Grazing	Grazing anytime with nutrient uptake during growing season	Grazing	See Notes	0	0	0	22	0	0	0	-82	-155
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[1] See rate calibration table (Nutrient Management Plan Summary Notes).

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NMP Summary Notes

Crop Years 2024

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[1] See rate calibration table (Nutrient Management Plan Summary Notes).

[2] Positive numbers = nutrient deficit; Negative numbers = nutrient excess

Manure Spreader Calibration Notes

1

Crop Years 2022 2023 2024

Manure Application Rate	Manure Spreader Used	Spreader Settings	Tractor Used (if applicable)	Tractor Settings (speed, gear, rpm, pto, etc.)
N/A - 100% Export				

Additional Nutrient Management Plan Requirements

Manure Management and Stormwater BMP Implementation Summary

Best Management Practice	NRCS Practice Code [1]	BMP Location	Implementation Season & Year
Forage & Biomass Planting	512	All Pastures	Fall/Spring - Annually

1 If applicable, enter USDA-NRCS Practice Code. For other non-technical BMPs, leave blank.

In-Field Manure Stacking Procedures

Manure must be applied to the field within 120 days of stacking or the stacks must be covered. Stacks must be implemented and maintained according to sound BMPs, addressing concerns such as soil type, soil slope, shape of the pile, setbacks, and rotation of piles.

There is no in-field stacking of manure on the operation.

Additional CAFO Requirements

In-field stacking criteria, winter storage requirements, and other issues identified by DEP's review of the nutrient management plan.

Not applicable.

Proposed Manure Storage Description

Type, dimensions, volume, freeboard and location on map.

None

Description of Planned Alternative Manure Technology Practices

Type of practice, volume of manure addressed, and result of practice.

None

Exported Manure Summary

Summarize in a short paragraph the arrangements proposed for the manure to be exported from the operation. This information is described in more detail in Appendix 8 of this plan.

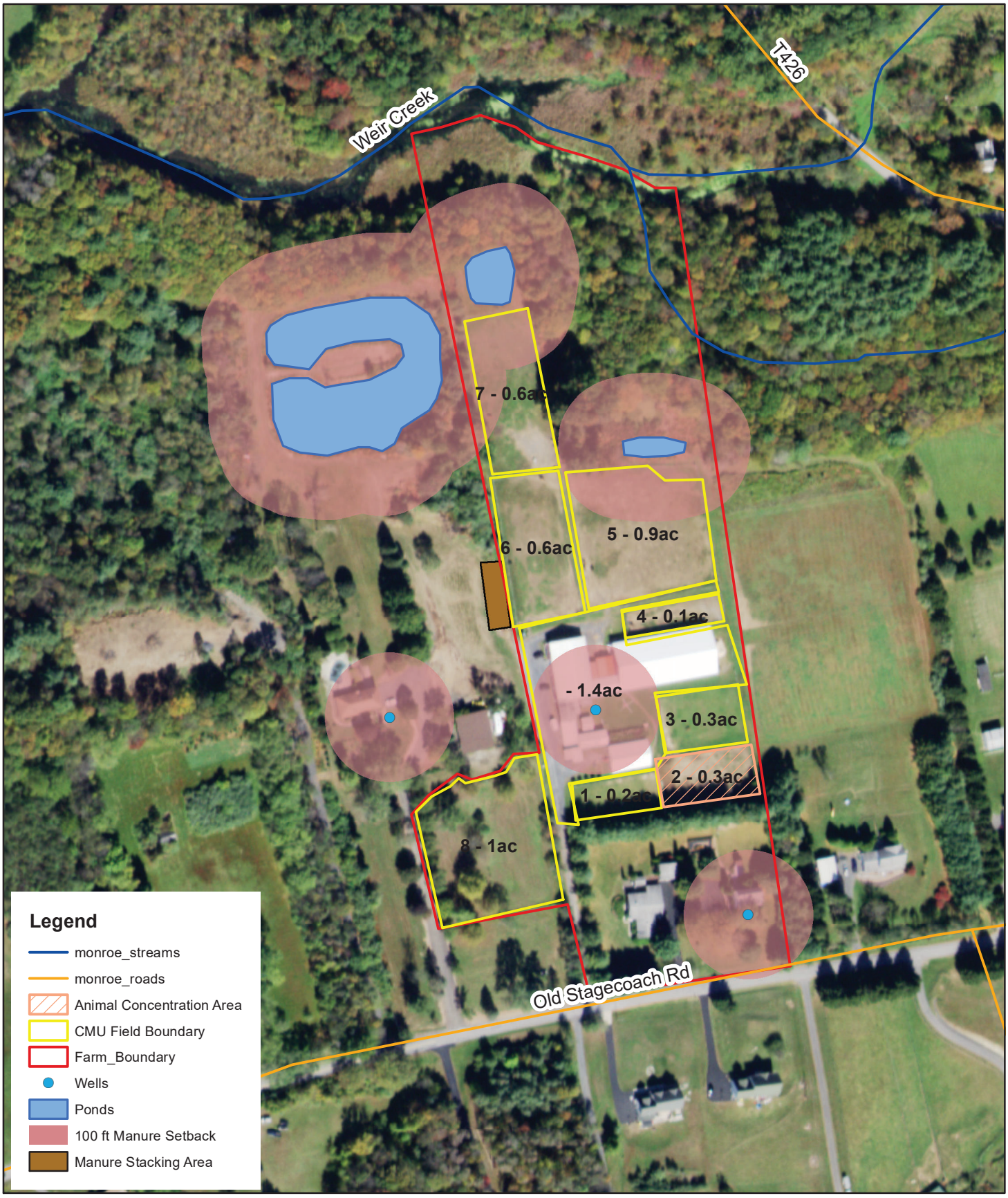
All excess collected manure produced on this operation is exported off-site to be used for non-agricultural purposes or exported in small quantities.

Operator Management Map

Three types of maps are required for an Act 38 Nutrient Management Plan: 1) Topographic Map, 2) Soils Map, and 3) Operator Management Map. The **Operator Management Map** is to be included here in the Nutrient Management Plan Summary and must include field identification, acreage and boundaries, manure application setback areas and buffers and associated landscape features (streams and other water bodies, sinkholes and active water wells), location of existing and proposed structural BMPs (including manure storage facilities), location of existing or proposed emergency manure stacking areas and in-field manure stacking areas, and road names adjacent to and within the operation. All features on the map must be clearly identified and include a legend for setback areas and other features. The Topographic Map and Soils Map must be included in Appendix 9.

Northridge Equestrian - Lisa Eick

Nutrient Management Plan Map



red barn CONSULTING

Appendix 1

Nutrient Management Plan Agreement & Responsibilities

Plan Implementation Requirements

This nutrient management plan has been developed to meet the requirements of the following programs:

X	Pennsylvania Act 38 of 2005	X	CAO		VAO (check one)
	Pennsylvania CAFO (Concentrated Animal Feeding Operation) program				
	Other program:				

Plans developed under these programs are required to be implemented as approved in order to maintain compliance with the specific law or program. Implementation includes adherence to manure and fertilizer application rates, timing, setbacks and conditions; installation of listed BMPs within implementation timeframes; and record keeping obligations of the program.

The nutrient management plan has been developed as a: (check one)

	1-Year Plan for Crop Year			(annual updates will be completed)
X	3-Year Plan for Crop Years	2022	2023	2024

Records required to be maintained include the following:

1) Annual crop yields
2) Manure and fertilizer application rates, locations and date of application
3) Manure production figures for the various manure groups listed in your plan
4) Soil test reports (testing required every 3 years per crop management unit)
5) Manure test reports (testing required once a year for each manure group)
6) Number of animals on pasture, number of days on pasture, and hours per day on pasture
7) For operations exporting manure, Manure Export Sheets
8) BMP designs and certification for new liquid and semi-solid manure storage facilities

The following has been confirmed:

X	Verification of Ag E&S Plan		No Ag E&S Plan Required
X	Verification of Existing Site Specific Emergency Response Plan		

Verification that owners of rented/leased lands have been notified that a nutrient management plan has been developed which calls for manure to be applied to their lands and that they have no objections to the plan requirements.

X	Owners Notified		No Rented/Leased Lands

Specialist Signature

I affirm that the information contained in this nutrient management plan is true, accurate and complete to the best of my knowledge and belief, based on information provided by the operator; that this plan has been developed in accordance with the criteria established for the program(s) indicated above; and that I have presented the final complete plan to the operator and discussed the content and implementation of this plan with the operator, subject to the penalties of 18 Pa.C.S.A. § 4904, relating to unsworn falsification to authorities.

Specialist Signature _____

Date 16 Sept 2020

Operator Signature

I understand and agree that I will implement the practices, procedures and record keeping obligations as outlined in this plan in order to protect water quality and address the nutrient needs of the crops associated with the operation. I agree that if I use a commercial hauler or broker for the application or export of manure, that only haulers or brokers that hold a valid certification issued by the Pa Department of Agriculture, under Act 49 of 2004, will be used. I affirm that all information provided in this nutrient management plan is true, accurate and complete to the best of my knowledge and belief, and reflects the current and planned activities of the operation; and that, if this plan was completed by a nutrient management specialist, I have reviewed the final completed plan and the specialist has discussed the content and implementation of this plan with me, subject to the penalties of 18 Pa.C.S.A. § 4904, relating to unsworn falsification to authorities.

Operator Signature Lisa M. Eick

Operator Title Owner – Northridge Equestrian

Date 9/16/20

Appendix 2

Operation Information

Operation Description

Animal types and numbers; cropland, hayland and pastureland acreage; farmstead acreage; crop rotation (crops, sequence of crops, and number of years for each crop); manure group management (contributing animal groups, collection, storage and handling procedures); composting (including mortality) management.

Northridge Equestrian rents the boarding facility and associated pastures from Silver Cloud Equestrian Center, LLC. Twenty (20) horses on the property are housed in the barn and pastured. There are 1.4 Ac of rented farmstead & related facilities, 3.7 Ac pasture. There is no cropland. Manure and bedding are removed from the stalls and transported directly to the manure storage area, as located on the map. All manure generated on the farm is exported for non-land application use. Mortalities are removed offsite by an outside company who composts the carcass.

County(s)

Monroe

Name of Receiving Stream(s)/Watershed(s)

Weir Creek / Pohopoco Creek

Notation of Special Protection Waters

Pohopoco Creek - HQ

Operation Acres

Total Acres: 5.1

Total Acres Available for Nutrient Application Under Operator's Control

Owned: 0

Rented: 3.7

Names & Addresses of Owners of Rented or Leased Land and/or Facilities

John Pesapane 167 Old Stagecoach Rd. Gilbert, PA 18331
Mary Howard 153 Old Stagecoach Rd. Gilbert, PA 18331

Existing Manure Storages & Capacity

Type of storage, dimensions, useable capacity, freeboard, top or bottom loaded, dimensions and description of contributing runoff area, description of wastewater additions, types and amounts of bedding. Briefly describe, for each manure group, manure storage management during removal (degree of agitation, method of manure removal, extent the storage is emptied, type of unremoved manure, etc.) and manure sampling procedures.

Manure is stacked, on an improved surface, dimensions: 80'L x 30'W x 7'H = 16,800 CuFt. Manure is exported in spring/fall. Manure is not exported for land-use, so no manure sample is required. Approximately 12 tons of wood shavings are used per month for bedding.

Manure Application Equipment Capacity & Practical Application Rates

Description of application equipment, practical application rates based on calibration and calibration method used, the data recorded during equipment calibration is to be retained on the farm. If applicable, name and Act 49 certification number of custom applicator.

No manure is mechanically applied, operation exports 100% of collected manure.

Appendix 7

Stormwater Control

Date of Site Evaluation: 06/23/2020

Statement Documenting Areas Evaluated During Site Evaluation

List and clearly identify each of the specific areas evaluated.

Pastures 1,3 4,5,6,7 &8 were evaluated during the site visit.

Identification of Critical Runoff Problem Areas

List of each specific critical runoff problem area identified.

None identified.

BMPs to Address Critical Runoff Problem Areas

List of BMPs (including PA Technical Guide standard name and number) and specific management changes that will be implemented to address each of the critical runoff problem areas listed above.

Forage and biomass planting to occur annually where needed in combination with resting pastures to encourage healthy pasture growth

Appendix 8

Importer/Broker Agreements & NBSs

Nutrient Balance Sheets are not required for importers that have an approved Nutrient Management Plan.

Exporter/Importer Agreement

Manure Used For Other Than Agricultural Land Application

Developed consistent with the PA Nutrient and Odor Management Act Program

1) This agreement is entered into on March 3, 2017, by Northridge Equestr (the "exporter") who will supply manure, and Richard Frantz (the "importer"), who will receive the manure from the exporter.

2) The purpose of this agreement is to set forth the mutual responsibilities and understanding of the parties with respect to the export of manure from the exporter to the importer.

3) The exporter is located at (county, twp, and address): 167 Old Stage Coach Road, Gilbert, PA 18331 Chestnuthill Township, Monroe County

4) The exporter will, as the supply of manure allows, provide the following amounts of manure during the seasons outlined below:

Tons of *horse* manure, per season:

Spring 128 **Summer** 0 **Fall** 128 **Winter** 0

~~**Gallons of *(Species)* manure, per season:**~~

~~**Spring** ____ **Summer** ____ **Fall** ____ **Winter** ____~~

Total planned manure exported: (supply of manure may be less than what is planned)

Tons of *horse* manure: 256
~~**Gallons of *(Species)* manure:** ____~~

If multi-species are planned, please add additional lines:

5) The importer's location and other relevant information as it relates to this manure export, is as follows:

a) **Phone number**: 570-992-6836

b) **County(s)**: Monroe County

c) **Address:** ~~337~~ 337 Frantz Road, Broadheadsville, PA 18322

d) **Owner of the property receiving manure**: Richard Frantz

e) **Proposed usage of the imported manure**: landscaping

6) The exporter will use a Manure Export Sheet to record all manure exported to the importer. These Manure Export Sheets are available from the county conservation district or the State Conservation Commission. Computer generated forms other than the manure export sheet may be used if they contain the same information as, and are reasonably similar in format to, the forms available from the State Conservation Commission or the conservation district.

7) Records relating to the export of manure shall be prepared by the exporter in accordance with the following requirements of the Nutrient and Odor Management Act regulations:
   a) A Manure Export Sheet shall be used to document all manure exports for their records
      - A copy of the Manure Export Sheet shall be provided to the importer
      - A copy of the Manure Export Sheet shall be retained on site by the exporter

   b) Records shall be maintained by the exporter for a minimum of 3 years

8) Where applicable, the importer shall properly store manure received from the exporter in accordance with the provisions of the Manure Management Manual and the Pa Technical Guide and shall not cause contamination of surface or ground water. This shall include manure stacked in application fields which may not be retained in fields for greater than 120 days unless covered or otherwise protected (15 days if the manure is stacked in fields under the management control of a CAFO).

9) This agreement shall remain in full effect unless terminated by either party upon thirty days prior written notice to the other party. If this agreement is terminated, the exporter shall notify the county conservation district office that approved their nutrient management plan, of the termination.

Exporter Signature, Name and Date

Lisa m. Eick. (signature)

Lisa m. Eick (name)

3/6/17 (date)

Importer Signature, Name and Date

Richard H. Frantz (signature)

Richard H. Frantz (name)

3-6-17 (date)

COMMONWEALTH OF PENNSYLVANIA
STATE CONSERVATION COMMISSION

November 2, 2020

To: Members
State Conservation Commission

From: Johan E. Berger, Conservation Program Specialist
Financial Administration, Policy, Certification & Conservation District Programs

RE: Conservation Excellence Grant Program Update

During the September 15, 2020 public meeting of the State Conservation Commission, staff briefing the Commission on several major elements of the Conservation Excellence Grant Program as noted below:

1. The Commission was awarded a sub-grant of funds ($3.848 million) as part of DEP's *Chesapeake Bay Implementation Grant Program* for expansion of the *Conservation Excellence Grant Program* (CEG) in Tier 2 counties identified in the ChesBay Phase III WIP. The Commission took action to expand the CEG Program to Cumberland and Franklin counties.

2. CEG Expansion - The *'Agreement for Delegation of Administrative Responsibilities for the Conservation Excellence Grant Program*' and '*Required Output Measures'* have been distributed to the respective Cumberland and Franklin County conservation district Board of Directors for their consideration and signature. Both delegation agreements will provide up to $1.154 million to each conservation district.

   - As of this report, the Cumberland County Conservation District Board of Directors has approved and signed the CEG delegation agreement. The Cumberland Board indicated they will provide CEG grants at a cost share rate of 75% of actual project costs.

   - The Franklin County Conservation District Board of Directors will be considering the delegation agreement during their public meeting on November 9, 2020. It is expected the Board will agree to participate in the CEG program and sign the delegation agreement. The conservation district and State Conservation Commission staff continue to discuss a cost share rate for the program in Franklin County.

3. Public-Private Partnership – Commission staff is also actively engaged with Lancaster Farmland Trust and Salisbury Township to develop a public-private partnership model that will utilize CEG's financial bundling (grants, tax credits and loans) concepts in a public private partnership. This agreement will be for up to $1.154 million.

4. CEG Program activities. The Lancaster and York county conservation districts have been accepting CEG applications since July 2020. The following actions have been taken by the respective conservation districts on CEG applications and grants to applicants:

   Lancaster County

   - The Lancaster County Conservation District Board of Directors took action at their October meeting on one (1) CEG grant - a waterway project ($10,000) which also included REAP credits and farmer funding. The grassed waterway project is complete, and the District is awaiting bills to be submitted for payment.
   - Two (2) more CEG applications totaling over $100,000 will be approved at the district's November 4, 2020 board meeting.
     - A project totaling $113,000 for a waste storage facility, HUAP and stream bank fencing.
     - A project totaling roughly $35,000 for a waterway, diversion and other associated BMPs.
     - Lancaster anticipates one (1) CEG application prepared for approval in December.
   - Outreach efforts include posting CEG information on the conservation district website and newsletter.

   York County

   - The York County Conservation District Board of Directors took action at their October meeting on five (5) CEG applications:
     - One grant for a grassed waterway ($24,756.88)
     - Four grants for cover crops ($13,100.00) have been approved totaling 360 acres (230 acres of multispecies, 130 acres of single species-first time cover crop). Cover crop payments are flat-rate payments - $9,200 of CEG will be dispersed in the spring for multispecies cover crops and $3,900 will be dispersed for single species cover crops.
   - York's outreach to date has been to post information on their website, two (2) District Facebook posts, an article in the York County Coalition for Clean Waters, two (2) newsletter articles. Flyers have been distributed to NRCS, FSA, PSU Extension and the county Farmland Preservation Program.

PAOneStop UPDATE

PAOneStop.psu.edu

Jen Weld

PAOneStop Director

Department of Ecosystem Science and Management, Penn State University

Pennsylvania State Conservation Commission

November 10, 2020 – Virtual Meeting

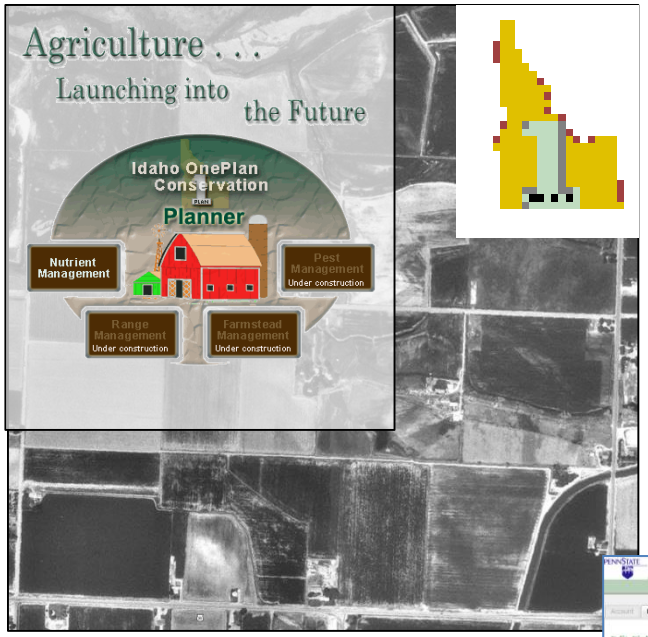
Overview…

- PAOneStop: A perspective
  - Development
  - Importance of imagery
- PAOneStop: Advancements
  - Platform and Infrastructure
  - New modules
  - Outreach, Education and Collaborations
- PAOneStop: Rising to the Challenge
  - Imagery
  - Integration
  - Reporting

Funding: 2018 through 2021

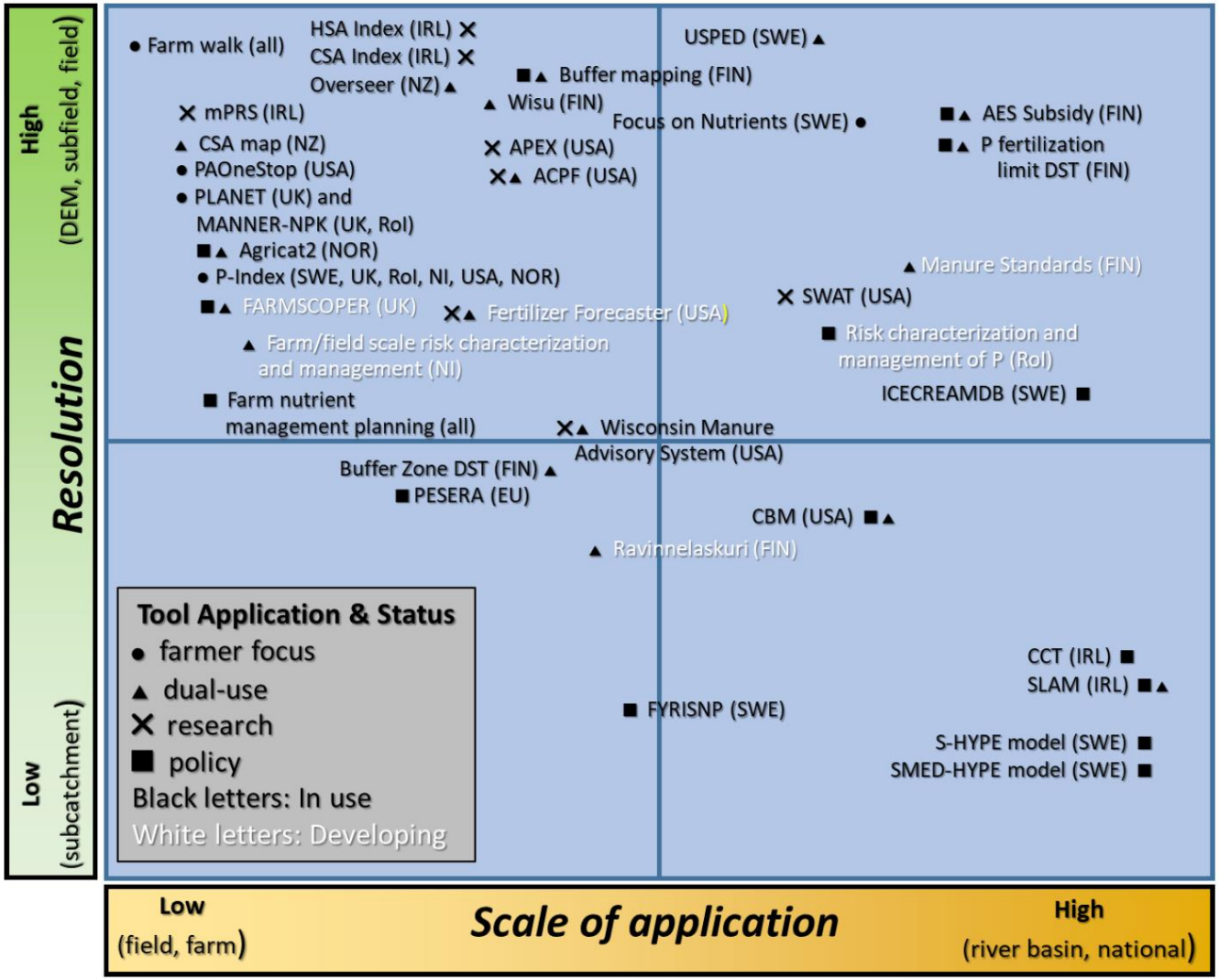
- Pennsylvania State Conservation Commission
- Pennsylvania Dept. of Agriculture
- Pennsylvania Dept. of Environmental Protection
- Sustainable Chesapeake/NFWF
  - Manure Management Plan Module
  - Nutrient Balance Sheet
  - Manure Matching
  - Supporting workshops
- Growing Greener
  - Nutrient Balance Sheet
- Centers for Dairy and Beef Excellence
  - Environmental Planning Workshop series

PAOneStop: A perspective



Idaho OnePlan inspired collaborative PAOneStop development (SCC, PDA, DEP and PSU)

PAOneStop: A perspective



PAOneStop Uniquely Identified as:

- Designed for farmer use
- High resolution
- Applied at field or farm scale

Figure 1. from Drohan et al., 2019. Drohan, P. J., Bechmann, M., Buda, A., Djodjic, F., Doody, D., Duncan, J. M., … Withers, P. J. A. (2019). A Global Perspective on Phosphorus Management Decision Support in Agriculture: Lessons Learned and Future Directions. *Journal of Environmental Quality*, *48*(5), 1218–1233. https://doi.org/10.2134/jeq2019.03.0107.

PAOneStop: Advancements

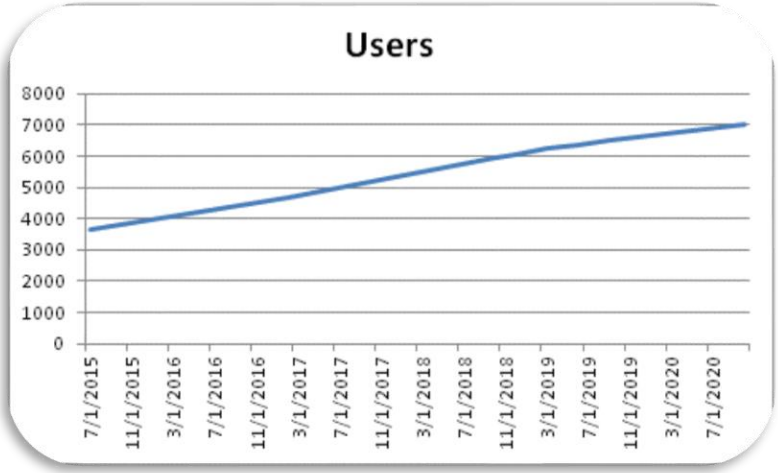
- Platform and Infrastructure
  - 2018: Transition to paonestop.psu.edu
  - 2018 & 2019: Updated NAIP imagery
  - 2019 -2020: Migration to virtual machine hosting
  - Established a Letter of Understanding
- New modules available in demonstration format
  - Manure Management Plan Module
  - Nutrient Balance Sheet
  - Manure Matching
  - Funding:
    - Growing Greener
    - NFWF and Sustainable Chesapeake
- Outreach and Education
  - Ag Progress Days (2019 and 2020)
  - In-person and virtual workshops
  - Environmental Planning Workshop series
    - Centers for Dairy and Beef Excellence
  - Newly designed Extension flyers and signage

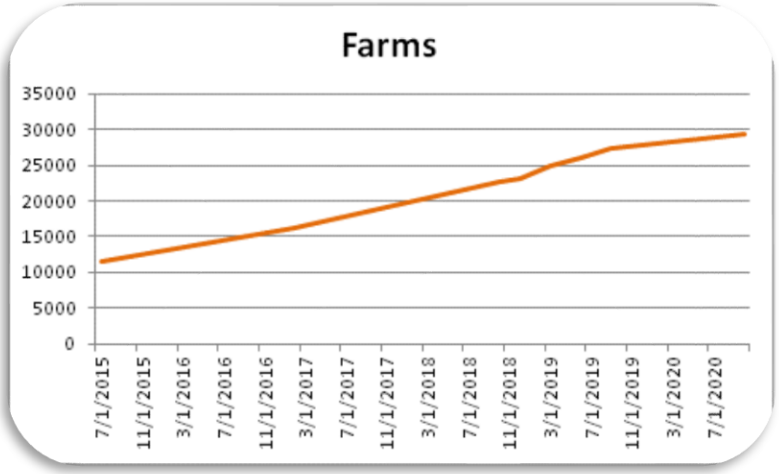
PAOneStop: Collaboration

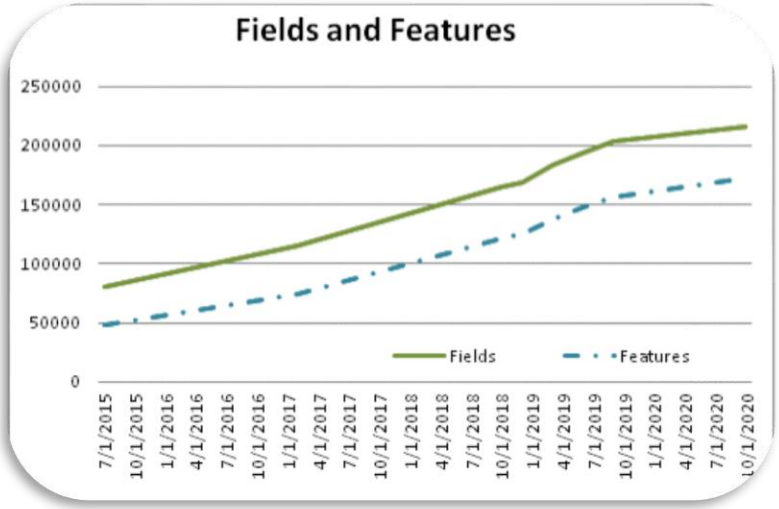
Agricultural Erosion & Sedimentation Control Program

- Workgroup – Representing 3 Extension Teams/Workgroups
- Curriculum Development
  - Train-the-Trainer
  - Workshop Development
- Development of an Extension landing page
- Ongoing updates to PAOneStop
  - Updated Ag E&S Plan Report
  - Development of a plan dashboard
  - Updated soils information
  - Updated mapping layers

PAOneStop Trends: July 15, 2015 to October 15, 2020







Numbers as of 10/15/2020	
Users	6,991
Farms	29,403
Fields	216,374
Features	172,732

PAOneStop: Rising to the Challenge

- Imagery
  - PAOneStop development included imagery
  - Allows farmers to define their own fields
- Integration
  - PAOneStop integrates
    - RUSLE soil databases
    - Ability to create crop rotations
    - Ability to specify setback distances
    - Expand to: P Index, NBSs, MMP, Feed inventory
  - Database development
    - Farmer information – protected
    - Coordinated with AgMap and PARN
  - Reporting
    - Compliance planning requirements
    - Expansion to record and/or annual reporting
- Outreach and Education
  - Integrated outreach approach
    - Ag E&S Control Program
    - Expand to GIS training
  - Increase in user numbers

Rose et al. (2016) Design Agenda for DS Development

- tool performance
- ease of use
- peer recommendation
- trust
- costs
- habit matching to the farmer
- relevance to user
- farmer-adviser compatibility
- age appropriateness for different farmers/skills
- scaling capability across farming systems
- farming type flexibility
- information technology education dependence
- can the tool be used effectively
- compliance satisfaction
- level of marketing by developers

Figure 1. from Drohan et al., 2019. Rose, D.C., W.J. Sutherland, C. Parker, M. Lobley, M. Winter, C. Morris, et al. 2016. Decision support tools for agriculture: Towards effective design and delivery. Agric. Syst. 149:165–174. doi:10.1016/j.agsy.2016.09.009

Thank you

Jen Weld

PAOneStop Director

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Bureau of Clean Water

Agricultural TMDLs and the Evolution of the Fishing Creek Alternative Restoration Plan

2020

Tom Wolf, Governor

Patrick McDonnell, Secretary

Agricultural Pollution is Widespread

Agricultural TMDLs

Total Maximum Daily Loads (TMDLs):

- Address polluted stream segments on 303(d) List of Impaired Waters as directed under the Clean Water Act
- Identify pollution sources and their level of pollution in a watershed
- Model and develop maximum numeric pollution load limits/pollution reduction goals to restore ecological health using the Reference Watershed Approach

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Reference Watershed Approach

Reference Watershed Approach used for non-point source (NPS) pollution, such as agriculture:

- reference watershed must be attaining its designated use; not polluted
- similar in size and characteristics to the impaired watershed
- implementing best management practices (BMPs) to reduce pollution from similar source sectors not being managed properly in the impaired watershed
- Both watersheds are modeled and the loading rate of the reference is applied to the area of the impaired to produce the TMDL/load reduction goal; then…

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Total Maximum Daily Load (TMDL)

TMDL = MOS + WLA + LA

The above formula applies generally to TMDLs.
The following is agricultural TMDL specific:

- MOS = Margin Of Safety = 10% of the TMDL is reduced for conservative safety = TMDL * 0.1
- WLA = Waste Load Allocation = the existing permitted point source loads plus a bulk reserve of 1% of the TMDL for new permits and permit expansion is subtracted = sum of permit loads + (TMDL * 0.01)
- LA = Load Allocation = the remaining portion of the TMDL that is divided between targeted non-point source sectors = TMDL – MOS – WLA = LA

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Load Allocation (LA)

TMDL - MOS - WLA = LA

LA = LNR + ALA

(non-point source agricultural pollution example)

- LNR = loads not reduced = sum of source sectors not targeted for reduction, such as: forest, wetlands, open land subtracted from the LA without reduction

- ALA = adjusted load allocation = remaining LA divided between source sectors targeted for reduction, such as: croplands, pastures and streambanks

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Pollution Load Reductions

Equal Marginal Percent Reduction Method (EMPR)

- The ALA is further parsed out numerically to the targeted source sectors being reduced
- First, if a source exceeds the ALA, it is reduced to the ALA
- Then all sources receive an equal percent reduction to meet the ALA
- This is where the numeric load reduction goals of the TMDL are assigned to the targeted source sectors of croplands, pastures and streambanks for pollutants such as sediment and nutrients
- Future load reductions can be measured by applying numeric BMP efficiency standards to proposed BMP units and applying these reductions to the load reduction goals of the TMDL
- Note: TMDLs set a maximum pollution load limit for a waterbody
- ***Implementation*** of the TMDL is a separate function as is the tracking of future load reductions/TMDL attainment

New Vision: ARPs (TMDLs + Implementation)

Alternative Restoration Plans (ARPs)

- Mirror TMDLs by:
  - addressing stream impairments
  - identifying pollution types and sources
  - developing maximum numeric pollution load limits
- ARPs add Implementation to TMDLs by:
  - teaming up with local partners on BMP implementation
  - providing ongoing BMP modeling to local partners quantifying their numeric pollution load reductions
  - providing enhanced ecological monitoring to track environmental responses to BMP implementation and pollution reduction
  - assisting in the grant process
  - conducting Adaptive Management through time to attain pollution reduction goals and watershed restoration
  - ***TMDLs + Implementation = ARPs***

  (of note: ARP development and implementation require significantly more effort than TMDL development)

ARPs

- Multiple uses but work well for NPS pollution
  - Target HUC12 or smaller
  - Fishing Creek is 11 square miles, just shy of its HUC12
- Phased restoration
  - Phase 1 - Regulatory Compliance
    - financial incentives for agricultural conservation plan development
    - compliance visits ensure implementation of plans
  - Phase 2 - Habitat Improvement and Protection
    - stream, wetland and forest habitat restoration/preservation
- Adaptive Management
  - monitor: chemistry, ecology and habitat
  - remodel BMPs as implementation evolves
  - Active support and protection of the natural system to give it a fighting chance to heal and thrive

Fishing Creek ARP

- Streambank Fencing = Higher Milk Profits
- Partners, including Plain Sect Farmers and Donegal Trout Unlimited (DTU), implementing BMPs
- NFWF, GG and 319 grants
  - streambank fencing and microbiological somatic cell count monitoring to indicate trends in cow herd health
  - conservation plan development and implementation
  - stream, forest, wetland (HABITAT) restoration/preservation/protection
    - 22 of 26 stream miles are polluted by siltation from agriculture
- Adaptive management
- Protecting a PA threatened species:
  - Chesapeake logperch, *Percina bimaculata*

Fishing Creek Pollution Sources

Existing Sediment Loading Values for Fishing Creek			
Source	Area, acres	Sediment, lbs/yr	Loading Rate, lbs/ac/yr
HAY/PASTURE	(25%) 1,825	(4%) 54,807	140
CROPLAND	(42%) 3,015	(85%) 5,263,838	1,746
FOREST	(25%) 1,810	(0.09%) 5,715	3
WETLAND	67	161	2
OPEN LAND	435	64	0
LOW DENSITY MIXED	62	4,407	71
MEDIUM DENSITY MIXED	15	661	45
HIGH DENSITY MIXED	2	59	24
STREAMBANKS		(10%) 632,962	
TOTAL	7,230	6,162,674	852

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Fishing Creek ARP

Reference Watershed Approach reduction goal:

Note: Existing load in Fishing Creek was 6,162,674 lbs/yr

Pollutant	Loading Rate in Reference, lbs/ac/yr	Total Area in Impaired Watershed, ac	AL, lbs/yr	AL, lbs/day
Sediment	449	7,230	3,249,202	8,902

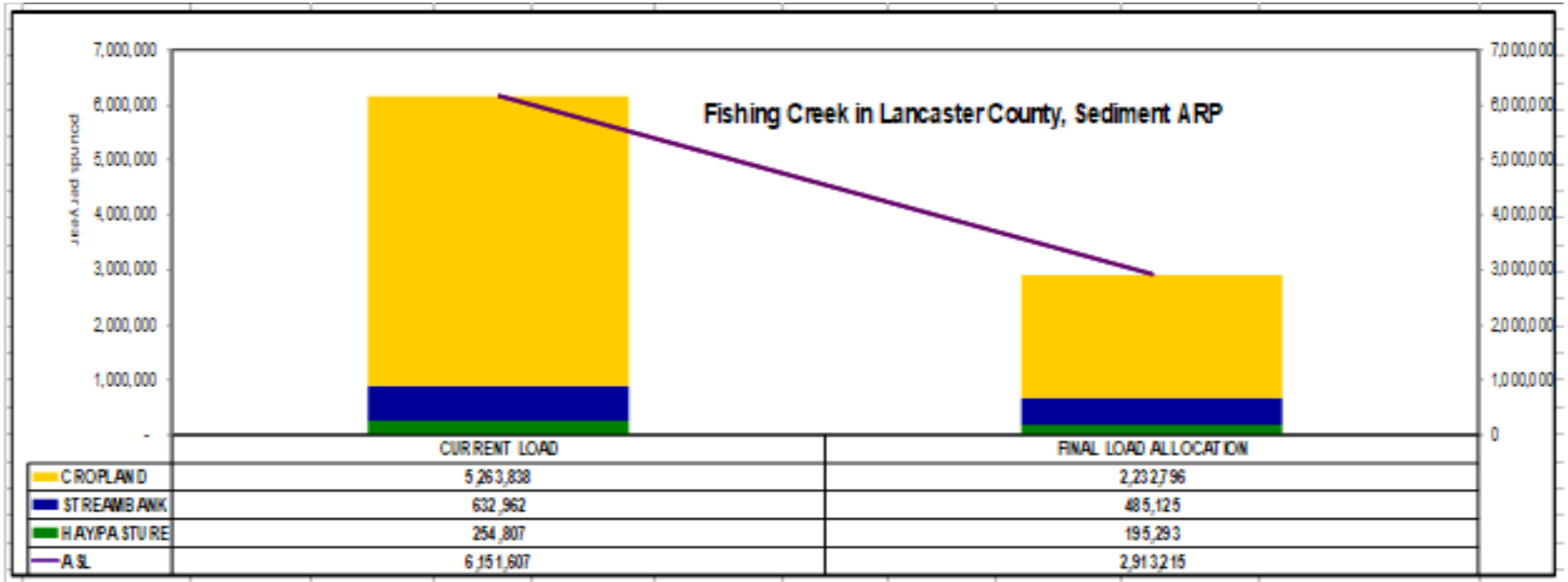
ARP components are slightly different than those of regular TMDLs

Component	Sediment, lbs/yr	Sediment, lbs/day
AL (Allowable Load)	3,249,202	8,902
UF (Uncertainty Factor)	324,920	890
SL (Source Load) = (LNR+ASL)	2,924,282	8,012
LNR (Loads Not Reduced)	11,067	30
ASL (Adjusted Source Load: here is the load reduction)	2,913,215	7,981

EMPR/Pollution Reduction Goals

Parsing out the load reduction: (ASL/ALA = 2,913,215)

		Allowable Loading Rate	Allowable Load	Current Loading Rate	Current Load	
Source	Acres	lbs/acre/yr	lbs./yr	lbs/acre/yr	lbs/yr	Reduction
Cropland	3,015	741	2,232,796	1,746	5,263,838	58%
Hay/Pasture	1,825	107	195,293	140	254,807	23%
Streambanks			485,125		632,962	23%



Fishing Creek Pollution Solution

Phased Annual Sediment Load Reductions

	Current Load	Phase 1 Reduction	Allowable Load	Phase 2 Reduction
	lbs/yr	lbs/yr	lbs/yr	lbs/yr
Fishing Creek Watershed	6,162,674	5,145,729	3,249,202	3,009,223
Load Reduction		1,016,945	2,913,472	3,153,451
Percent Reduction		17%	47%	51%

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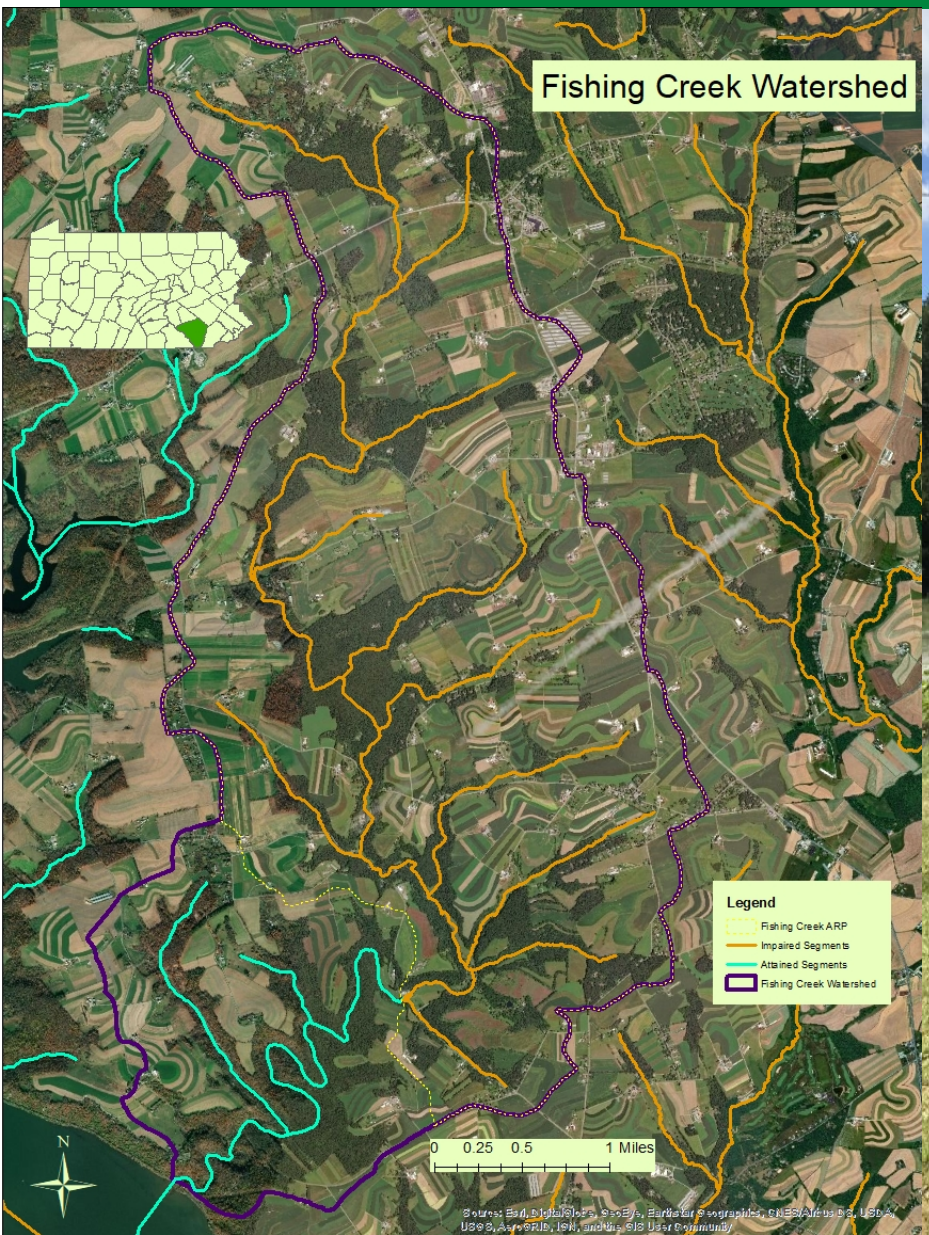
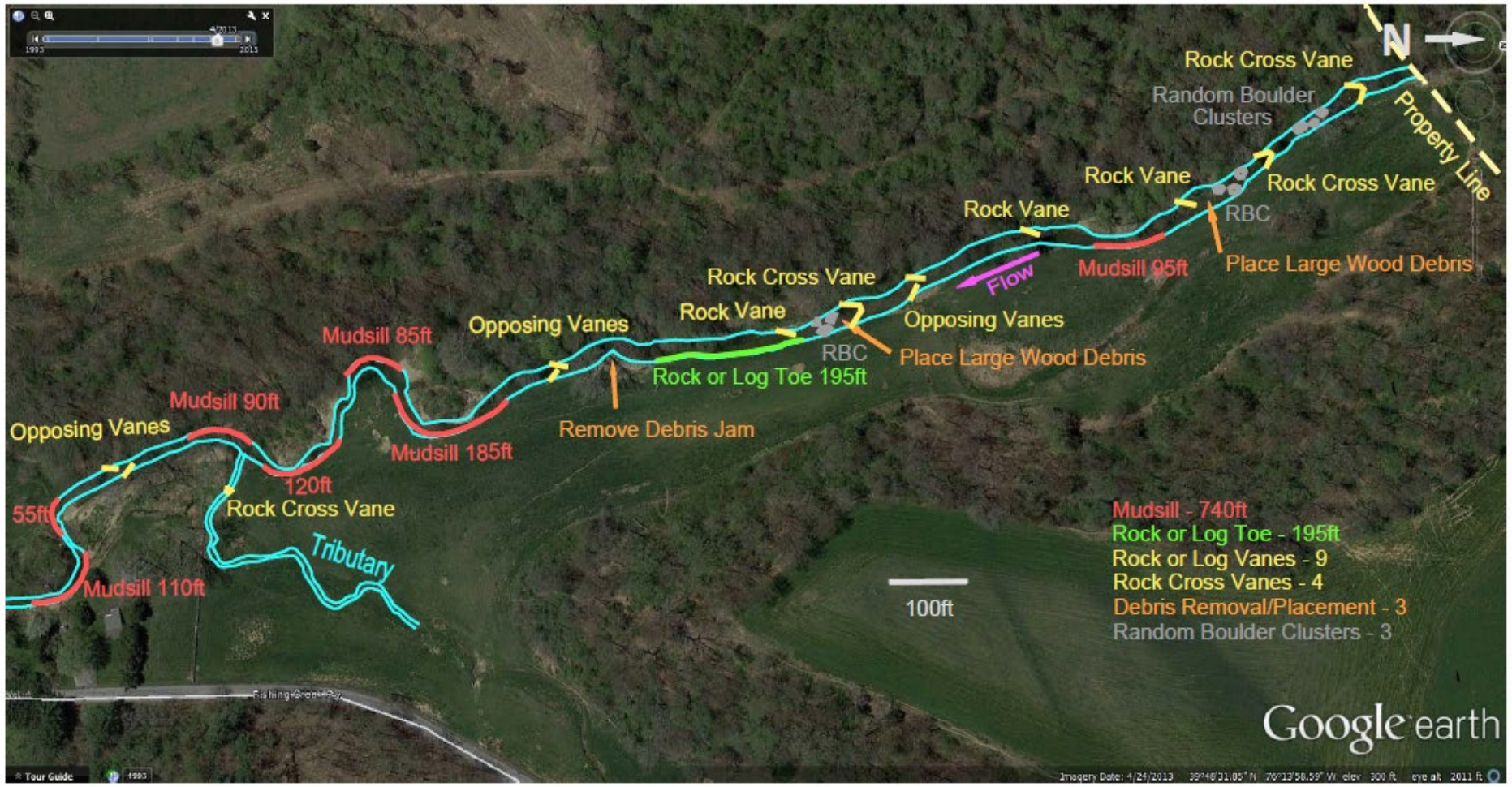
Fishing Creek Watershed/Partners



Natural Stream Restoration Design



Partners for Fish & Wildlife

Donegal Chapter of Trout Unlimited

Fishing Creek Habitat Restoration Project Upstream

Drumore Township, Lancaster County, PA

Drawn by: C.Keller, A. Smith

Stream Restoration Implementation

Before

After

Links:

Drone video of work: https://youtu.be/YbE90H62KJM

DTU video: https://vimeo.com/374217402

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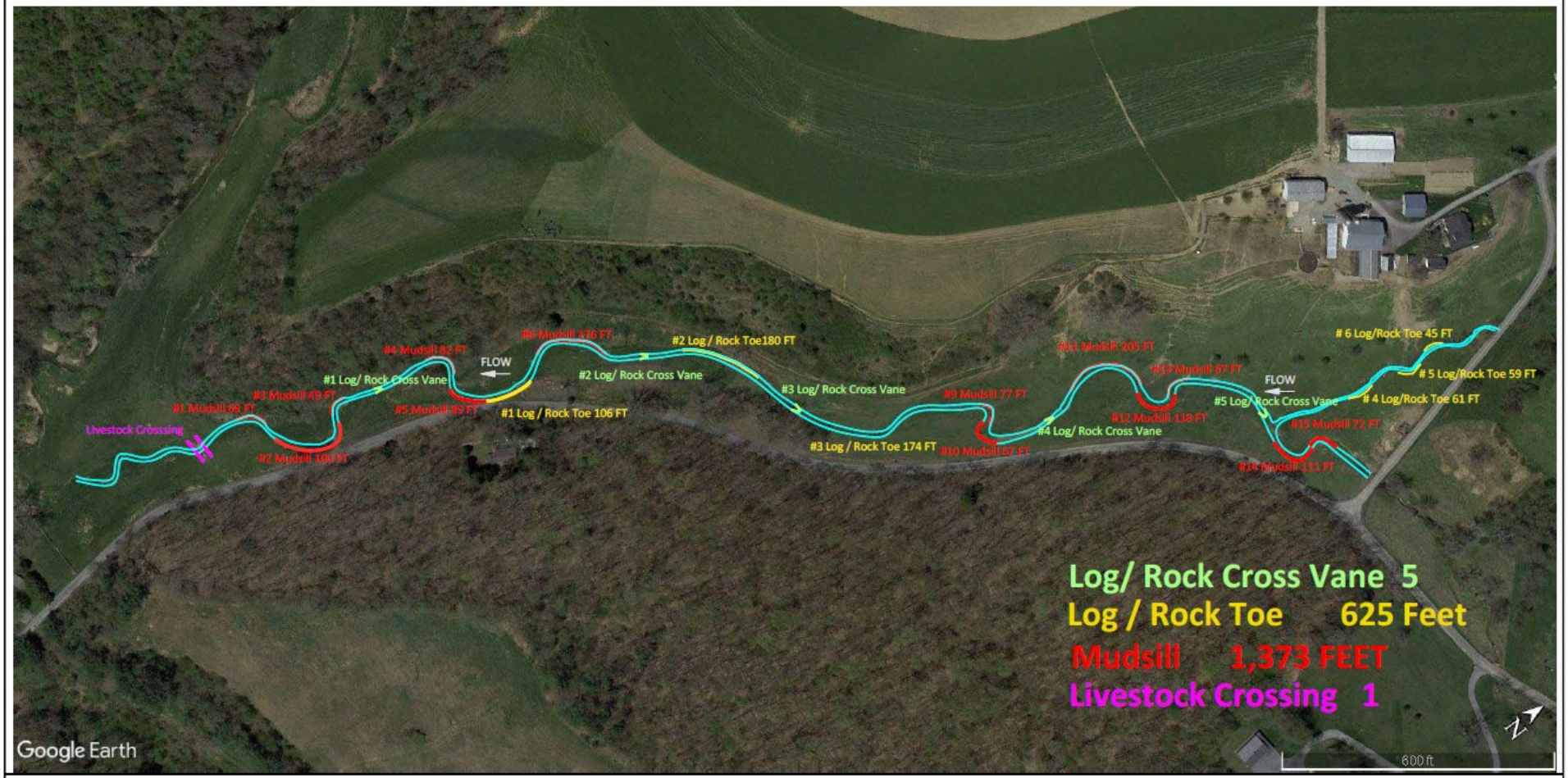
Natural Stream Restoration Design



Fishing Creek Tributary At Bieler Farms

Drumore Township, Lancaster County, PA

U.S. Fish and Wildlife Service Partners for Fish & Wildlife

Donegal Chapter of Trout Unlimited

Lancaster County Conservation District

Drawn by: G. Port and K. Miller

Stream Restoration Implementation

Before

After

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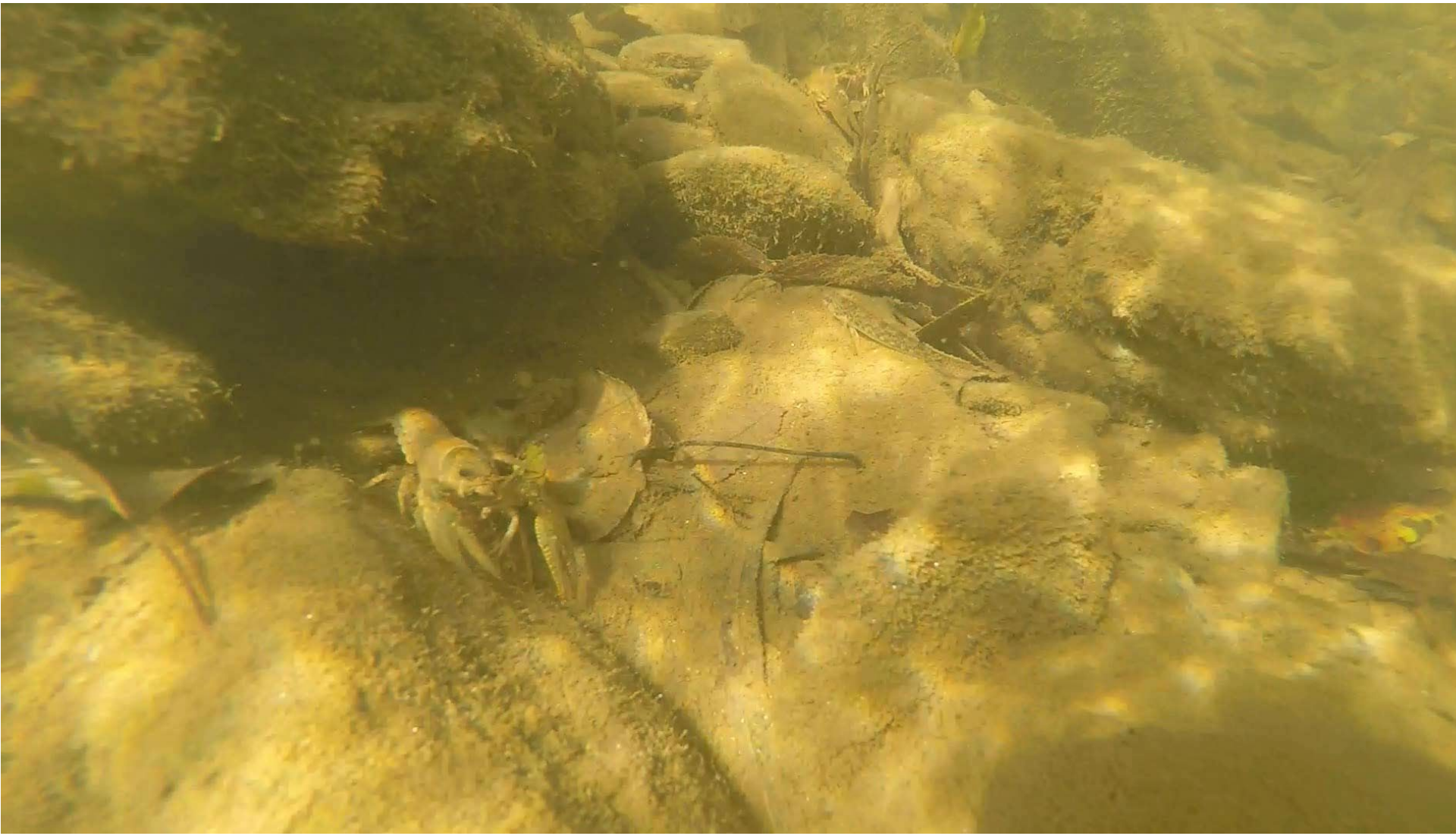
Volunteers !!!

Native Trees and Shrubs



Summary

- Local leaders and grant funding are essential to BMP implementation and ecosystem revitalization
- DEP provides technical expertise in modeling and ecological monitoring, and assistance throughout the grant process
- Adaptive management ensures the ARP can guide restoration and provide habitat protection through time
- Enhanced stream, forest, riparian corridor and wetland restoration/preservation gives nature the ability to heal critical habitat and repopulate species struggling to survive
- Post-BMP trends in herd health and ecological responses in the Fishing Creek Watershed will be communicated to protect high quality ecological functionality and promote vibrant and necessary agriculture throughout the region

Any Questions or Comments?

Chesapeake Logperch (*Percina bimaculata*).
Credit: Rob Criswell.

Scott Heidel
Water Program Specialist
TMDLs and DEP Dive Team
Bureau of Clean Water
Rachel Carson State Office Building
400 Market Street
Harrisburg, PA 17101
Phone: 717-772-5647
scheidel@pa.gov

Underwater Videos Credit:
Rebecca Whiteash
Aquatic Biologist
Water Quality Standards and DEP Dive Team
Bureau of Clean Water

Special Thanks to the Donegal Chapter of Trout Unlimited.
Thank you DTU!

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Chesapeake Bay Program Office

Chesapeake Bay Expanded Agricultural Inspection Program Update

State Conservation Commission
November 10, 2020

Tom Wolf, Governor

Patrick McDonnell, Secretary

Agenda

- Review – Agricultural Inspection Programs
- Results – Inspection Numbers and Compliance Rates
- Future – Data Collection and Data Management

Expanded Agricultural Inspections

	Pennsylvania Nutrient Management Program (Act 38)	Chesapeake Bay Agricultural Inspection Program (CBAIP)	CBAIP – Phase 2 Pilot: (NEW)
began	1997	2016	2020
led by	SCC and CCDs	DEP and CCDs	DEP and CCDs
location			Adams, Chester, Lancaster (CCDs) and York (DEP) counties
focus	High animal density and larger scale livestock/poultry operations, such as Concentrated Animal Operations (CAOs) and NPDES permitted Concentrated Animal Feeding Operations (CAFOs)	Remaining less intensive, smaller scale agricultural operations	Remaining less intensive, smaller scale agricultural operations
required compliance	Environmental planning and implementation requirements under 25 Pa. Code Chap. 83 regulations require Nutrient Management Plans (Act 38 NMP) and 25 Pa. Code Chap. 92a regulations for CAFOs Includes requirements for agricultural erosion and sediment control	Environmental planning requirements for 25 Pa. Code Chap. 102 regulations require Agriculture Erosion and Sediment Control Plans (Ag E&S) and 25 Pa. Code Chap. 91 regulations require Manure Management Plans (MMP)	Implementation requirements for Ag E&S Plans and Manure Management Plans

Number of Agricultural Inspections Performed: July 1, 2019 – June 30, 2020

Total:

- Approximately 3,067,629 agricultural acres in Pennsylvania's part of the Bay Watershed
- 241,489 acres (7.9%) inspected— 2,464 farm operations

Act 38 Nutrient Management Program:

- 596 agricultural operations inspected
- 97,767 acres inspected

Chesapeake Bay Agricultural Inspections Program:

- 1,868 agricultural operations inspected
- 143,722 acres inspected

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Expanded Agricultural Inspections: Compliance Rates on Initial Inspections

- **Act 38 Nutrient Management Program:**
  - 85% compliance rate for Act 38 Planning and Implementation Requirements.

- **Chesapeake Bay Agricultural Inspections Program:**
  - 61% compliance rate for Manure Management Planning requirements.
  - 62% compliance rate for Agricultural Erosion and Sediment Control/Conservation Planning requirements.

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CB Agricultural Inspection Program – MMP

Manure Management –

- 1,330 out of 1,868 operations inspected were required to have MMPs

- At the time of initial inspection:
  - 813 farms had administratively complete MMPs
  - 85% reported using assistance to develop plans

CB Agricultural Inspection Program – MMP

- Over 491,000 acres of MMPs and Nutrient Balance Sheets (NBSs) verified as complete and documented
- Bay inspections accounted for **196,000** reportable acres of Core-N from MMPs and NBSs
- Act 38 inspections accounted for **158,000** reportable acres of Core-N
- Report for progress **75** existing liquid manure storage facilities that are 15 years or more in age, totaling over **21,000,000** gallons in capacity

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CB Agricultural Inspection Program – Ag E&S

Agricultural Erosion and Sediment Control (Ag E&S) –

- 1,384 out of 1,868 operations inspected were required to have Ag E&S Plans
- At the time of initial inspection:
    - 860 farms had administratively complete Ag E&S (or NRCS Conservation) Plan
    - 99% reported using assistance with development of the Ag E&S Plan

CB Agricultural Inspection Program: Enforcement

	2016-2017	2017-2018	2018-2019	2019-2020	Total
Referrals to DEP Bay Program Office	21	87	66	66	240
Notices of Violation	21	87	66	64*	238
Field Orders	0	22	47	16	85
Consent Order and Agreement	0	1	2	3	6
Closed Cases	7	42	64	64	177

* Corrective actions identified on the inspection report were satisfied for two (2) operations before NOVs were drafted.

CB Agricultural Inspections: Future

- Centralized PracticeKeeper Geo-database for Ag Inspection Reporting/Data Collection
- Provided interim inspection guidance in April in response to COVID-19
- Finalizing PracticeKeeper Ag Inspection Module SOP and associated web-based training
- Chesapeake Bay Ag Inspection Program – Phase 2
  - Phase 2 SOP finalized in June 2020
  - “Pilot” counties include Adams, Chester, Cumberland, and Lancaster
  - DEP SCRO focusing Phase 2 inspection efforts in York County

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Chesapeake Bay Program Office

Jill Whitcomb, Director

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Agricultural Inspections
July 1, 2019 through June 30, 2020

This document summarizes the accomplishments of the expanded agricultural inspection program from the timeframe July 1, 2019 through June 30, 2020. There were no major changes to the program in 2019-2020; however, interim procedures to be followed during the COVID -19 public health emergency were released on April 2, 2020, and continued through the end of this report date, which allowed for continued operations while maintaining social distance. All data related to the Chesapeake Bay Agriculture Inspection Program (CBAIP) and the Act 38 Nutrient Management Program were collected through a centralized geospatial database, which, for the first time reflects a full year of Act 38 inspection data.

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 Bay Program.

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

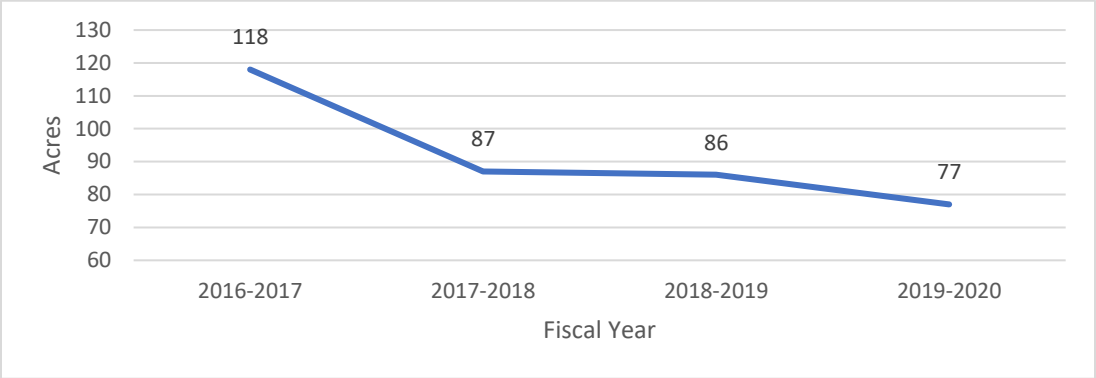
Table 2. Farms and agriculture acres inspected within Pennsylvania's portion of the Chesapeake Bay Watershed Since the Inception of the Expanded Agricultural Inspection Program

	2016-2017	2017-2018	2018-2019	2019-2020	Totals
Total Farms Inspected	2,823	2,924	2,951	2,464	11,162
Total Acres Inspected	393,426 (12.7%)	329,468 (10.6%)	315,823 (10.3%)	241,489 (7.9%)	1,280,206 (41.7%)
PA Bay Farms Inspected under the Act 38 Program	743	814	886	596	3039
PA Bay Ag Acres Inspected under the Act 38 Program	147,762	145,680	138,139	97,767	529,348
PA Farms Inspected under the CB Ag Inspection Program	2,080	2,110	2,065	1,868	8,123
PA Acres inspected under the CB Ag Inspection Program	245,664	183,788	177,684	143,722	750,858

The total number of farms inspected in 2019-2020 decreased by 487 compared to the previous year's total, and the acreage inspected decreased by 76,334 acres, due to the COVID-19 public health emergency and reduced average farm size (see discussion below).

The average farm size inspected under the CBAIP continues to decrease as represented below in Figure 1.

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



Interim procedures for inspections conducted under the CBAIP during the COVID-19 public health emergency greatly reduced disruptions to program activities; however, lower inspection numbers and inspected acres can partially be attributed to the COVID-19 public health emergency. March and April saw respective 26% and 52% reductions in the number of inspections completed under the CBAIP compared to the previous year. Historically, 20% of the year's inspections are completed in March and April. Conversely, inspections completed in March and April of 2020 contributed only 13% of the total inspections completed in 2019-2020. The percent of inspections completed in May of 2020 is consistent with previous years (approximately 10%); however, the number of inspections completed in June of 2020 is more than 178% of those completed in June of 2019, contributing 18% of the total inspections for the 2019-2020 fiscal year.

Historical data is not readily available for the Act 38 program identifying the date of inspection; therefore, we cannot compare specific months in 2020 to the same months in previous years. However, the date of inspection is a data point captured in the centralized geodatabase, and we can clearly see a reduction in the percent of inspections completed March through May of 2020 as compared to other months throughout the 2019-2020 fiscal year. The Act 38 inspections completed in March, April, and May of 2020 contribute only 11% of the total inspections completed in 2019-2020. The number of inspections completed in June of 2020 begin to approach pre-COVID levels but are still a percentage point lower than any month between July 2019 and February 2020.

The COVID-19 public health emergency created unprecedented obstacles to program implementation during the 2019-2020 fiscal year. However, due to the achievements of county conservation district partners and DEP Regional Office inspectors in previous years, the expanded agricultural inspection program has inspected a total of 1,280,206 acres over the four years of the program, an average of 10.4% of the agricultural land use acres in the Pennsylvania portion of the Chesapeake Bay Watershed per year of the program.

Compliance

The compliance rate for Act 38 Nutrient Management Plan ("NMP") development and implementation for the Chesapeake Bay Watershed was found to be 85% at the time of inspection. Further follow-up activities are required as part of the compliance assessment of Act 38 regulated farms, with the vast majority of those found to be out of compliance coming into compliance within 6 months after the annual inspection. For agricultural operations that were inspected as part of the initial CBAIP, farm planning compliance rates at the time of the initial inspection were found to be 61% for Manure Management Plans

(MMPs) and 62% for Agricultural Erosion and Sediment Control (Ag E&S) Plans and NRCS Conservation Plans that meet the Chapter 102 regulatory requirements. With follow-up from the conservation districts and DEP after initial inspections, the MMP and Ag E&S Plan compliance rate for these operations increased to 98%.

Not included in the above results are the verifications performed via the Resource Enhancement and Protection (REAP) Program, which is administered by the State Conservation Commission. Since 2007, REAP has approved over 3,600 applications from almost 2,800 farmers (farmers can apply more than once to the program). A farmer must have their environmental compliance status verified each time they apply.

Chesapeake Bay Agricultural Inspection Program: Compliance and Enforcement

Compliance rates at the time of initial inspection for MMPs and Ag E&S Plans are comparable to the previous years. It is important to note the percentage found to have had planning and/or technical assistance provided by another party (agency or private consultant) to develop the plan.

Table 3. The percent of administratively complete plans found at the time of initial inspection for farms required to have and implement the plan(s).

Manure Management Plan	Percent of Total Required
Administratively Complete at the time of Initial Inspection	61%
Planning/Technical Assistance Provided	85%
Agricultural Erosion and Sediment Control (Ag E&S) Plan	**Percent of Total Required**
Administratively Complete at the time of Initial Inspection	62%
Planning/Technical Assistance Provided	99%

It should be noted that 98% of all farms inspected in 2019 – 2020 met the planning obligations by the end of the state fiscal year.

Table 4. The total referrals to the DEP Bureau of Clean Water for continued non-compliance for plan violations, along with further enforcement actions taken on those operations.

	2016-2017	2017-2018	2018-2019	2019-2020	Total
Referrals to DEP Bay Program Office	21	87	66	66	240
Notices of Violation	21	87	66	64*	238
Field Orders	0	22	47	16	85
Consent Order and Agreement	0	1	2	3	6
Closed Cases	7	42	64	64	177

*Corrective actions identified on the inspection report were satisfied for two operations before the NOVs were drafted.

BMP Data Collection and Tracking

The CBAIP will again report the best management practices identified at the time of inspection to the Chesapeake Bay Program for annual progress. These best management practices include reporting the implementation of MMPs, manure storages, barnyard runoff controls, forested and grassed buffers, stream fencing, and rotational and prescribed grazing. Other practices may be collected by the inspector if the farmer has implemented those practices and is willing to provide the information.

The Chesapeake Bay Program Partnership has instituted credit durations for all best management practices reported for the states' annual progress. The Nutrient Management best management practices for nitrogen and phosphorus are considered annual credits, therefore the states must report progress toward meeting those goals annually. While those farms and acres inspected via the Act 38 Nutrient Management Program typically remain constant over time, compliance is assessed annually.

The farms and acres inspected under the CBAIP are unique operations. This means that the operations had not been re-visited, unless a follow-up inspection was needed. Out of the total 1,868 farms inspected, 1,560 were inspected by conservation districts and 308 were inspected by DEP regional offices.

Since November of 2017, we have included a voluntary (inspectors were not required but were strongly encouraged) MMP records check of inspected operations which demonstrates if the operation is following their MMP. In 2019-2020, 40% of the inspected operations demonstrated that they are following the MMP through this records check. Through the efforts of county conservation district and DEP staff, over 491,000 acres of MMPs and Nutrient Balance Sheets (NBSs) have been verified as complete and documented in Pennsylvania's portion of Chesapeake Bay Watershed. In 2019-2020, a statistical subsample of over 60,000 acres of cropland covered by MMPs were directly inspected as part of the CBAIP resulting in over 196,000 reportable acres of Core-N from MMPs and NBSs. Additionally, over 158,000 reportable acres of Core-N resulted from Act 38-regulated Concentrated Animal Operations (CAOs) and Concentrated Animal Feeding Operations (CAFOs). This is a total of over 354,000 reportable acres of Core-N toward Pennsylvania's annual numeric 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, the practice is removed from the system. Through the CBAIP in 2019-2020, we can report for progress 75 existing liquid manure storage facilities that are equal to or greater than 15 years of age going back to 1985. The total capacity of these reported liquid manure storage facilities is over 21,000,000 gallons.

Conclusion

Another successful year of the expanded agricultural inspection program has shown that most farmers are getting the plans they need. A large part of the inspection program is education. Conservation district and DEP staff are using inspections as a catalyst to help farmers understand what is needed and to get them on track to implement their plans. Implementing best management practices on the land helps to ensure long-term farm sustainability and environmental protection.

Planning and technical assistance are of paramount importance. As indicated by the high percentages of planning/technical assistance provided for MMPs and Ag E&S Plans (Table 3), the development and implementation of plans hinges on the professionals who provide assistance. Funding resources continue to be needed as well. State programs like the Agricultural Plan Reimbursement Program, Small Business Advantage Grants, Resource Enhancement and Protection (REAP) Program, and Growing Greener, as well as, federal programs like NRCS Environmental Quality Incentives Program (EQIP), EPA

Chesapeake Bay Implementation Grant (CBIG), and EPA Chesapeake Bay Regulatory Accountability Program (CBRAP) are critical for the continued improvements made to our local waters.

Acknowledgements

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

COMMONWEALTH OF PENNSYLVANIA
STATE CONSERVATION COMMISSION

DATE: October 28, 2020

TO: State Conservation Commission Members

FROM: Frank X. Schneider, Director
Nutrient and Odor Management Programs

THROUGH: Karl G. Brown
Executive Secretary

RE: Nutrient and Odor Management Programs Report

The Nutrient and Odor Management Program Staff of the State Conservation Commission offer the following report of measurable results for the time-period of September / October 2020.

For the months of September and October 2020, staff and delegated conservation districts have:

1. COVID-19:
    a. All staff working remotely and assisting CD and other agencies. Normal work functions occurring.

2. Odor Management Plans:
    a. 15 OMPs in the review process
    b. 12 OMPs Approved
    c. 0 OMP approvals Rescinded

3. Reviewed and approved 136 Nutrient Management (NM) Plans in the 3rd quarter of 2020.
    a. Those approved NM plans covered 29,611 acres
    b. Those approved NM plans included 75,166.78 Animal Equivalent Units (AEUs), generating 1,000,618.64 tons of manure.

4. Managing twenty-one (21) enforcement or compliance actions, currently in various stages of the compliance or enforcement process.

5. Continue to assist Legal as we work thru three (3) active Environmental Hearing Board appeals for various plans or permits

6. Continue to daily answer questions for NMP and OMP writers, NMP reviewers, delegated Conservation Districts, and others.

7. Assisted DEP with various functions and as workgroup members in Federal and State settings for the Chesapeake Bay Program.

8. Coordinate / Conduct / and Proved support for an Act 38 Deeper Dive, 9,000-gallon application rule workgroups

COMMONWEALTH OF PENNSYLVANIA
STATE CONSERVATION COMMISSION

DATE: October 26, 2020

TO: Members
State Conservation Commission

FROM: Karl J. Dymond
State Conservation Commission

SUBJECT: November 2020 Status Report on Facility Odor Management Plan Reviews

Detailed Report of Recent Odor Management Plan Actions

In accordance with Commission policy, attached is the Odor Management Plans (OMPs) actions report for your review. No formal action is needed on this report unless the Commission would choose to revise any of the plan actions shown on this list at this time. This recent plan actions report details the OMPs that have been acted on by the Commission and the Commission's Executive Secretary since the last program status report provided to the Commission at the September 2020 Commission meeting.

Program Statistics

Below are the overall program statistics relating to the Commission's Odor Management Program, representing the activities of the program from its inception in March of 2009, to October 26, 2020.

The table below summarizes approved plans grouped by the Nutrient Management Program Coordinator areas.

	Central	NE/NC	SE/SC	West	Totals
2009	7	6	28	1	42
2010	5	7	25	2	39
2011	10	12	15	2	39
2012	9	17	16	2	44
2013	10	11	38	3	62
2014	13	16	44	2	75
2015	15	15	61	2	93
2016	19	16	59	4	98
2017	25	24	44	3	96
2018	14	13	40	1	68
2019	12	11	14		37
2020	5	8	32		45
Total	144	156	416	22	
Grand Total					738

As of August 24, 2020, there are seven hundred and thirty-eight **approved** plans and/or amendments, nine plans have been **denied**, twelve plans/ amendments have been **withdrawn** without action taken, eighty-two plans/ amendments were **rescinded,** and fifteen plans/ amendments are going through the **plan review process**.

OMP Actions Status Report

Action	OMP Name	County	Municipality	Species	AEUs	OSI Score	Status	Amend
8/28/2020	Light, Noah	Lebanon	Bethel Twp	Pullets	260.88	33.5	Approved	A
8/28/2020	Noecker, Gerry	Berks	Centre Twp	Duck	51.40	58.2	Approved	
9/11/2020	Good, Eric	York	Dover	Broilers	322.16	36.2	Approved	
9/11/2020	Penn England, LLC - Dilling Farm	Blair	Woodbury Twp	Cattle	0.00	69.0	Approved	
9/15/2020	Schlappich, Kimberly	Berks	Centre Twp	Duck	152.88	203.7	Approved	B
9/22/2020	Hillandale Gettysburg, LP - Energy Works	Adams	Tyrone Twp	Layers	0.00	25.2	Approved	
9/22/2020	Stone Chimney Farms, LLC	York	Lower Chanceford Twp	Broilers	181.30	13.7	Approved	B
9/29/2020	Cleveland Pork, Inc.	Columbia	Cleveland Twp	Swine	726.90	30.4	Approved	
10/6/2020	Mullen, Nathan A	Lebanon	Bethel Twp	Cattle	41.36	27.0	Approved	
10/9/2020	Stewhills Farm, LLC	York	Chanceford Twp	Swine	363.45	31.5	Approved	
10/13/2020	Beiler, Christ S	Clinton	Greene Twp	Veal	75.95	55.1	Approved	
10/13/2020	Hershey Farms, LLC - Home Farm	Lancaster	Mount Joy Twp	Broilers	198.53	5.2	Approved	A
10/13/2020	King, David S - Home Farm	Chester	Honey Brook Twp	Broilers	15.92	54.3	Approved	
10/13/2020	Zimmerman, Roy - Silver Hill Rd Farm	Lancaster	Brecknock Twp	Turkey	93.48	46.2	Approved	A

As of October 26, 2020.

COMMONWEALTH OF PENNSYLVANIA
STATE CONSERVATION COMMISSION

DATE: November 2, 2020

TO: State Conservation Commission

FROM: Johan E. Berger
Financial, Certification and Conservation District Programs

SUBJ: 2020 Program Accomplishments (January 1, 2020- October 31, 2020)
Resource Protection and Enhancement Program (REAP)

REAP Program Summary

The REAP program allows farmers, businesses, and landowners to earn state tax credits in exchange for the implementation of conservation Best Management Practices (BMPs) on Pennsylvania farms. REAP is a "first-come, first-served" program – no rankings. The program is administered by the State Conservation Commission and the tax credits are awarded by the Pennsylvania Department of Revenue. Eligible applicants receive between 50% and 75% of project costs in the form of State tax credits for up to $250,000 per agricultural operation in any consecutive 7-year period.

Additional provisions grant the Commission the ability to 1) reserve and target up to $3.0 million of the total annual allocation for best management practices for nutrient and sediment reduction within the Chesapeake Bay watershed and, 2) the option to implement a 90% REAP tax credit option for certain high-priority BMPs within watersheds covered by an approved TMDL. Those practices include: riparian forest buffers; livestock exclusion from streams and supporting practices; stream crossings; cover crops; soil health BMPs; and other BMPs determined appropriate by the SCC. The FY2020 REAP program now includes the ability for an eligible applicant to receive a 90% tax credit for eligible BMPS listed above.

Program Accomplishments

The FY2020 REAP application period opened in August 2020. Due to impacts of the state 'Interim' FY2020 Executive Budget, the current annual tax credit allocation for FY2020 is $10 million. Allocation of an additional $3.0 million in tax credits, allowable under the tax code, is still pending passage of a final state budget after November 30, 2020.

Below is a summary of the FY2020 round of REAP applications, credits awarded to date, and a summary of REAP credits awarded for specific BMPs of interest. The FY2020 round of REAP began with approximately $3 million already allocated to approved 'roll-over' FY2019 applications.

Special note: The summary below includes approved applications that were submitted by farmers after REAP exhausted it's $13 million allocation (approximately April 1, 2020). These applications (approx. 50) were rolled-over to the FY2020-21 round of REAP.

(1.) Applications Received - FY 2020

Applications	Total Cost	Other Public Funds	REAP Requests	Credits Granted
FY2020 175	**$17.7 million**	**$1.57 million**	**$6.2 million**	**$1.93 million**

(2.) Summary of selected BMPs granted REAP tax credits - FY 2019 & FY 2020

	FY2019	FY2020
a. REAP Request (project types)		
1) Proposed Projects	$3.7 million	$3.25 million
2) Completed Projects	$11.7 million	$3.0 million
b. No-Till Equipment, Manure Injectors, Rollers	$7.0 million	$3.5 million
c. Structural BMPs and cover crops	$7.4 million	$2.2 million
d. Plans (Ag E&S, Conservation, Manure & Nut. Mgt.)	$397,000	$41,100
e. Low Disturbance Residue Mgt. Equipment*	$309,800	$0
f. Precision Ag Equipment	$291,000	$311,000
g. Sponsored Applications**	46	18

* Residue Management Equipment is not eligible for REAP tax credits in FY 2020
**Sponsorship has been limited to new projects for FY2020, which will likely reduce the overall number of sponsored applications

(3.) Summary of Program Activities - January 01, 2020 – October 31, 2020

The following is a summary of program activities accomplished in calendar year **2020**. Please note that actions (i.e. credits issued) may have been taken on projects or activities approved in prior fiscal years (i.e. FY2018-19 and FY2019-20).

a. Tax Credits issued to applicants for completed, eligible projects $8.6M

b. Number of BMPs completed associated with issued tax credits 341 projects

c Number of tax credit 'sales' completed 201 sale *transactions*

d Total tax credits processed through 'sales $3.7 million

e. Number of site inspections conducted on completed projects 8

f. Educational and promotional activities included speaking events and various visits to conservation districts and NRCS offices across Pennsylvania. 22

PENNSYLVANIA AGRICULTURAL OMBUDSMAN PROGRAM

BUILDING BRIDGES

Farmers * Municipalities * Citizens
Conservation Districts * Agribusiness

To: Members
State Conservation Commission

November 10, 2020

From: Shelly Dehoff
Agriculture/Public Liaison

Through: Karl G. Brown, Executive Secretary
State Conservation Commission

Re: Agricultural Ombudsman Program Update

Activities: Since mid-September 2020, I have taken part or assisted in a number of events, including the following:

- Provided hour long presentation on good neighbor relations and conflict management for the Clean Water Partners Leadership Academy.
- Co-planned and finalized details, logistics and publicity for Lancaster Co Ag Week; attended the virtual and in-person events; and provided follow up social media coverage.
- Wrote LCCD newsletter article related to offering "Stop the Bleed" training to the Ag community
- Events as South Central Task Force Agriculture Subcommittee Planning Specialist
    - Hosted September and October monthly Ag Subcommittee meeting virtually
    - Continued working with Mass Evacuation Planning Specialist and assorted ag agencies to create planning guidelines/recommendations when mass evacuation or shelter-in-place events occur as it concerns livestock, poultry or companion animals
    - Participated in Oct and Nov monthly Exercise Working Group virtual meetings
    - Working with local municipal law enforcement and PA State Police to provide computer based training about handling aggressive dogs for 9-county region.
    - Working with fellow Planning Specialist to procure more grain bin rescue kits for the region.
    - Working on revising/updating 2 publications previously created by Ag Subcomm; using monthly meetings as work sessions and working with graphic designer for new versions
- Participated and recorded minutes for Sept and October Lancaster Co. Agriculture Council meetings (virtually)
- Still participating in Mushroom Farmers of PA virtual calls to stay aware of latest in phorid fly controls in mushroom houses and in neighborhoods

Local Government Interaction: I have been asked to provide educational input regarding agriculture:

Lancaster Co- farmer requested information for municipality related to proper composting of butcher waste
Cumberland Co—provided update to farmer re: ACRE request based on AG's attorney response

Moderation or Liaison Activities: I have been asked to provide moderation or liaison assistance with a particular situation:

York Co—Provided advice to Conservation District about neighbor/farmer manure issue and how to handle it

Research and Education Activities:

Multi County—consultant asked for details about dealing with food residual waste conflicts in multiple counties; provided tips and ideas and offered assistance if necessary

Fly Complaint Response Coordination: I have taken complaints or am coordinating fly-related issues in:

Bucks—1 new complaint for CAO equine operation
Chester—New complaint related to phorid flies

1383 Arcadia Road Room 200 Lancaster, PA 17601 *Phone*: 717-880-0848 *Fax*: 717-299-9459
Email: shellydehoff@lancasterconservation.org *Website*: www.agombudsman.com
Funded through the Lancaster Co. Conservation District and the PA Department of Agriculture

PENNSYLVANIA AGRICULTURAL OMBUDSMAN PROGRAM

BUILDING BRIDGES

Farmers*Municipalities*Citizens
Conservation Districts*Agribusiness

To: Members, State Conservation Commission — October 31, 2020
From: Beth Futrick, Agriculture/Public Liaison
Through: Karl G. Brown, Executive Secretary, State Conservation Commission
Re: Ombudsman Program Update – Southern Alleghenies Region

Activities: September-October

- Project Advisory Committee w/ SARE Poultry Pest Short Course development w/ Dr. Machtinger
  - Reviewing final draft
  - Producer outreach to participate in the course.
- Organize a virtual pasturewalk workshops with Huntingdon CD
- Organized a virtual workshop on food safety with Huntingdon CD, Penn State Extension, and PA Dept. of Ag
- Partner with Food Trust – Blair County Advisory group on "Ready, Set, Grow": Farm to Early Care & Education
- Meet with NFWF to discuss upcoming grant proposal ideas
  - Potential producer outreach to develop prescribed pasture plans
- Prepare to plant multi-functional riparian buffer at Blair CD's NatureWorksPark

Conflict Issues/Municipal Assistance

- Beaver County – noise pollution complaint – propane cannon for deer control
- Bedford County – review Bedford Township ordinance
- Juniata County – feather/manure complaint

Meetings/Trainings/Events

Farm to School ZOOM meeting – Aug 26
Virtual Pasturewalk – Aug 27
Riparian buffer prep and planting Sept 23 – 26
Southern Alleghenies Planning & Development Commission CEDs meeting Sept 29
Johnstown's Local Food Local Places virtual conference Oct 1-2
Odor Management Training – Oct 5
Meeting with Dr. Gregory Martin – review SARE Poultry Pest Course details - Oct 6
BCCD's NatureworksPark Ribbon Cutting event – Oct 8
Southern Alleghenies RC&D and SAC meetings – Oct 9
PASA workshop – Oct 14

Reports & Grant Applications

--BCCD Board Report
--DCNR Multi-functional buffer grant report – Match updates and reports.
--Review LFPP grant application
--Prepare for upcoming NFWF grant proposals

Blair County Conservation District
1407 Blair Street, Hollidaysburg, PA 16648
Phone: 814-696-0877x113 Fax: 814-696-9981
Email: bfutrick@blairconservationdistric.org Web-site: www.paagombudsman.com
Funded through the Blair County Conservation District and the PA Department of Agriculture