Form Approved
OMB No. 2040-0250

JUN 10 2013

EPA I.D. NUMBER *(copy from Item 1 of Form 1)*

FORM 2B NPDES	**EPA**	U.S. ENVIRONMENTAL PROTECTION AGENCY APPLICATIONS FOR PERMIT TO DISCHARGE WASTEWATER CONCENTRATED ANIMAL FEEDING OPERATIONS AND AQUATIC ANIMAL PRODUCTION FACILITIES

I. GENERAL INFORMATION Applying for: Individual Permit ☒ Coverage Under General Permit ☐

A. TYPE OF BUSINESS	B. CONTACT INFORMATION	C. FACILITY OPERATION STATUS
☒ 1. Concentrated Animal Feeding Operation (complete items B, C, D, and section II) ☐ 2. Concentrated Aquatic Animal Production Facility (complete items B, C, and section III)	Owner/or Operator Name: Murphy-Brown LLC Telephone: (804) 834-2109 Address: P.O. Box 1240 Facsimile: (804) 834-8926 City: Waverly State: VA Zip Code: 23890	☒ 1. Existing Facility ☐ 2. Proposed Facility

D. FACILITY INFORMATION

Name: Murphy-Brown LLC Farm 15 Telephone: (804) 834-2109

Address: 31303 Barretts Church Road Facsimile: (804) 834-8926

City: Waverly State: Virginia Zip Code: 23890

County: Sussex Latitude: 36 deg. 53 min. 39 sec. Longitude: 77 deg. 05 min. 16 sec.

If contract operation: Name of Integrator: N/A

Address of Integrator: N/A

II. CONCENTRATED ANIMAL FEEDING OPERATION CHARACTERISTICS

A. TYPE AND NUMBER OF ANIMALS

1. TYPE	2. ANIMALS: NO. IN OPEN CONFINEMENT	2. ANIMALS: NO. HOUSED UNDER ROOF
☐ Mature Dairy Cows		
☐ Dairy Heifers		
☐ Veal Calves		
☐ Cattle (not dairy or veal calves)		
☒ Swine (55 lbs. or over)		7,350
☒ Swine (under 55 lbs.)		3,150
☐ Horses		
☐ Sheep or Lambs		
☐ Turkeys		
☐ Chickens (Broilers)		
☐ Chickens (Layers)		
☐ Ducks		
☐ Other: Specify _____		
3. TOTAL ANIMALS		10,500

B. MANURE, LITTER, AND/OR WASTEWATER PRODUCTION AND USE

1. How much manure, litter, and wastewater is generated annually by the facility? N/A tons 10.7M gallons
2. If land applied how many acres of land under the control of the applicant are available for applying the CAFOs manure/litter/wastewater? 104 acres
3. How many tons of manure or litter, or gallons of waste-water produced by the CAFO will be transferred annually to other persons? 0 tons 0 gallons

C. ☒ TOPOGRAPHIC MAP

D. TYPE OF CONTAINMENT, STORAGE AND CAPACITY

1. Type of Containment	Total Capacity (in gallons)
☐ Lagoon	
☐ Holding Pond	
☐ Evaporation Pond	
☐ Other: Specify _____	

2. Report the total number of acres contributing drainage: 104 acres

3. Type of Storage	Total Number of Days	Total Capacity (gallons/tons)
☒ Anaerobic Lagoon	180	13,440,514 gals.
☐ Storage Lagoon		
☐ Evaporation Pond		
☐ Aboveground Storage Tanks		
☐ Belowground Storage Tanks		
☐ Roofed Storage Shed		
☐ Concrete Pad		
☐ Impervious Soil Pad		
☐ Other: Specify _____		

E. NUTRIENT MANAGEMENT PLAN

Note: Effective February 27, 2009, a permit application is not complete until a nutrient management plan is submitted to the Permitting Authority.

1. Please indicate whether a nutrient management plan has been included with this permit application. ☒ Yes ☐ No

2. If no, please explain:

3. Is a nutrient management plan being implemented for the facility? ☒ Yes ☐ No

4. The date of the last review or revision of the nutrient management plan. Date: 12/01/12

5. If not land applying, describe alternative use(s) of manure, litter, and/or wastewater:

F. LAND APPLICATION BEST MANAGEMENT PRACTICES

Please check any of the following best management practices that are being implemented at the facility to control runoff and protect water quality:

☒ Buffers ☒ Setbacks ☒ Conservation tillage ☐ Constructed wetlands ☐ Infiltration field ☒ Grass filter ☐ Terrace

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III. CONCENTRATED AQUATIC ANIMAL PRODUCTION FACILITY CHARACTERISTICS

A. For each outfall give the maximum daily flow, maximum 30-day flow, and the long-term average flow.				B. Indicate the total number of ponds, raceways, and similar structures in your facility.		
1. Outfall No.	2. Flow (*gallons per day*)			1. Ponds	2. Raceways	3. Other
	a. Maximum. Daily	b. Maximum 30 Day	c. Long Term Average	C. Provide the name of the receiving water and the source of water used by your facility.		
				1. Receiving Water	2. Water Source	

D. List the species of fish or aquatic animals held and fed at your facility. For each species, give the total weight produced by your facility per year in pounds of harvestable weight, and also give the maximum weight present at any one time.

1. Cold Water Species			2. Warm Water Species		
a. Species	b. Harvestable Weight *(pounds)*		a. Species	b. Harvestable Weight *(pounds)*	
	(1) Total Yearly	(2) Maximum		(1) Total Yearly	(2) Maximum

E. Report the total pounds of food during the calendar month of maximum feeding.	1. Month	2. Pounds of Food

IV. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. Name and Official Title (*print or type*)	B. Telephone (910) 293-3434
Kraig Westerbeek - Assistant Vice President of Environment, Health, & Safety	
C. Signature	D. Date Signed 4-8-13

INSTRUCTIONS

GENERAL

This form must be completed by all applicants who check "yes" to Item II-B in Form 1. Not all animal feeding operations or fish farms are required to obtain NPDES permits. Exclusions are based on size and whether or not the facility discharges proposed to discharge. *See* the description of these exclusions in the CAFO regulations at 40 CFR 122.23.

For aquatic animal production facilities, the size cutoffs are based on whether the species are warm water or cold water, on the production weight per year in harvestable pounds, and on the amount of feeding in pounds of food (*for cold water species*). Also, facilities which discharge less than 30 days per year, or only during periods of excess runoff (*for warm water fish*) are not required to have a permit.

Refer to the Form 1 instructions to determine where to file this form.

Item I-A

See the note above to be sure that your facility is a "concentrated animal feeding operation" (CAFO).

Item I-B

Use this space to give owner/operator contact information.

Item I-C

Check "proposed" if your facility is not now in operation or is expanding to meet the definition of a CAFO in accordance with the CAFO regulations at 40 CFR 122.23.

Item I-D

Use this space to give a complete legal description of your facility's location including name, address, and latitude/longitude. Also, if a contract grower, the name and address of the integrator.

Item II

Supply all information in item II if you checked (1) in item I-A.

Item II-A

Give the maximum number of each type of animal in open confinement or housed under roof (either partially or totally) which are held at your facility for a total of 45 days or more in any 12 month period. Provide the total number of animals confined at the facility.

Item II-B

Provide the total amount of manure, litter, and wastewater generated annually by the facility. Identify if manure, litter, and wastewater generated by the facility is to be land applied and the number of acres, under the control of the CAFO operator, suitable for land application. If the answer to question 3 is yes, provide the estimated annual quantity of manure, litter, and wastewater that the applicant plans to transfer off-site.

Item II-C

Check this box if you have submitted a topographic map of the entire operation, including the production area and land under the operational control of the CAFO operator where manure, litter, and/or wastewater are applied with Form 1.

Item II-D

1. Provide information on the type of containment and the capacity of the containment structure (s).
2. The number of acres that are drained and collected in the containment structure (s).
3. Identify the type of storage for the manure, litter, and/or wastewater. Give the capacity of this storage in days.

Item II-E

Provide information concerning the status of submitting a nutrient management plan for the facility to complete the application. In those cases where the nutrient management plan has not been submitted, provide an explanation. If not land applying, describe the alternative uses of the manure, litter, and wastewater (*e.g.*, composting, pelletizing, energy generation, etc.).

Item II-F

Check any of the identified conservation practices that are being implemented at the facility to control runoff and protect water quality.

Item III

Supply all information in Item III if you checked (2) in Item I-A.

Item III-A

Outfalls should be numbered to correspond with the map submitted in Item XI of Form 1. Values given for flow should be representative of your normal operation. The maximum daily flow is the maximum measured flow occurring over a calendar day. The maximum 30-day flow is the average of measured daily flow over the calendar month of highest flow. The long-term average flow is the average of measure daily flows over a calendar year.

Item III-B

Give the total number of discrete ponds or raceways in your facility. Under "other," give a descriptive name of any structure which is not a pond or a raceway but which results in discharge to waters of the United States.

Item III-C

Use names for receiving water and source of water which correspond to the map submitted in Item XI of Form 1.

Item III-D

The names of fish species should be proper, common, or scientific names as given in special Publication No. 6 of the American Fisheries Society. "A List of Common and Scientific Names of Fishes from the United States and Canada." The values given for total weight produced by your facility per year and the maximum weight present at any one time should be representative of your normal operation.

Item III-E

The value given for maximum monthly pounds of food should be representative of your normal operation.

Item IV

The Clean Water Act provides for severe penalties for submitting false information on this application form.

Section 309(C)(2) of the Clean Water Act provides that "Any person who knowingly makes any false statement, representation, or certification in any application... shall upon conviction, be punished by a fine of no more than $10,000 or by imprisonment for not more than six months, or both."

Federal regulations require the certification to be signed as follows:

A. For corporation, by a principal executive officer of at least the level of vice president.

B. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or

C. For a municipality, State, federal, or other public facility, by either a principal executive officer or ranking elected official.

Paper Reduction Act Notice

The public reporting and recordkeeping burden for this collection of information is estimated to average 9.5 hours per response. The public reporting and recordkeeping burden for development of the nutrient management plan to be submitted with the form is estimated to average 58 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT
CONCENTRATED ANIMAL FEEDING OPERATIONS

PERMIT APPLICATION ADDENDUM

PLEASE TYPE OR PRINT ALL INFORMATION - ALL PARTS OF THIS FORM MUST BE COMPLETED

For DEQ Use Only:
Complete: Yes ☐ No ☐
Initials: _____
Date: _____

I. CONTACT INFORMATION

Owner Name:	Murphy-Brown LLC				
Mailing Address:	P.O. Box 1240				
City:	Waverly	State:	Virginia	Zip Code:	23890
E-Mail Address:	robritt@murphybrownllc.com				
Business Phone:	(804) 834-2109	Mobile Phone:	(804) 731-9603	Home Phone:	
Best day of the week & time to contact the applicant:	Day(s)		Time(s)		☐ AM
	Mon.- Fri.		8:00am – 5:00pm		☐ PM

II. FARM/FACILITY INFORMATION

Farm/Facility Name:	Murphy-Brown LLC Farm 15		
Location:	31303 Barretts Church Road, Waverly, VA, 23890		
Does Farm/Facility have an existing permit?	X Yes	If yes, Permit Number:	VPA00576
	☐ No		

III. FARM OPERATING MANUAL

A. Operating Manual been developed for this facility? — Has a Farm ☐ Yes X No

B. If yes, provide the date of the last review/revision of the Farm Operating Manual. Date:_____

C. Manual (if already developed) is attached: — A copy of the ☐ Yes ☐ No.
The attached copy may be a hard copy or an electronic copy.

IV. GROUNDWATER MONITORING PLAN

A. If the facility has an existing permit, is groundwater monitoring required? — X Yes ☐ No

B. Groundwater Monitoring Plan been developed for this facility? — If yes, has a ☐ Yes X No ? N/A

C. If yes, provide the date of the last review/revision of the Groundwater Monitoring Plan. Date:_____

D. If no, please explain: A geophysical evaluation of the site is being conducted to establish the Ground Water Monitoring Plan.

E.

A copy of the Plan (if already developed) is attached: ? Yes **X** No ? N/A

The attached copy may be a hard copy or an electronic copy.

IV. DISCHARGE POINT AND BEST MANAGEMENT PRACTICES (BMPs) RELATED TO A DISCHARGE POINT

For each discharge point, provide the following information in the table below:

a) a descriptive name of the discharge point;
b) the latitude and longitude of its location;
c) the name of the nearest potential receiving water;
d) all areas contributing manure, litter, process wastewater, or storm water from the facility; and
e) the treatment received or BMPs utilized, installed or constructed prior to the discharge point.

For DEQ Use: I.D. Number	Discharge Point	Latitude	Longitude	Name of Nearest Potential Receiving Water	Area Contributing Flow	Treatment or BMPs
	1	36°54'0.00" N	77°05'02.09" W	Unnamed tributary to German Swamp	Production Area - Farm 15	Secondary Containment
	2					
	3					
	4					
	5					

V. BEST MANAGEMENT PRACTICES (BMPs)

A.

BMPs are utilized, installed or constructed for each of the areas listed in Section V above. X Yes ☐ No

B.

If no, please explain:_____

C. Attach to this Addendum, a description of the BMPs listed above in Section V or a copy of the Farm Operating Manual (if already developed). *The attached copy may be a hard copy or an electronic copy.*

VI. OTHER ATTACHMENTS (see instructions for requirements)

A.

Government Ordinance Form (LGOF) is attached: The completed and signed Local ? Yes ? No X On file with DEQ

B.

A copy of the Department of Conservation and Recreation (DCR) Nutrient Management Plan (NMP) approval letter is attached: X Yes ? No

VII. CERTIFICATION STATEMENT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed Name: Kraig Westerbeek

Official Title: *Assistant Vice President of Environment, Health, & Safety*

Signature:

Date: 5/14/2014

ADDITIONAL INFORMATION AND INSTRUCTIONS
VPDES CAFO PERMIT APPLICATION ADDENDUM

GENERAL INFORMATION

This permit application addendum must be completed and submitted when an owner of a concentrated animal feeding operation makes application to the Department of Environmental Quality for a Virginia Pollutant Discharge Elimination (VPDES) Permit. Contact the nearest DEQ regional office if you have questions about completing this form. Please type or print all information. All parts of this form must be completed.

DEFINITION OF TERMS

Best Management Practice (BMP): means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to surface waters. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Process Wastewater: Process wastewater from an AFO means water directly or indirectly used in the operation of the AFO for any of the following: spillage or overflow from animal or poultry watering systems; washing, cleaning, or flushing pens, barns, manure pits, or other AFO facilities; direct contact swimming, washing, or spray cooling of the (confined) animals; or dust control. Process wastewater from an AFO also includes any water that comes into contact with any raw materials, products, or byproducts including manure, litter, feed, milk, eggs or bedding.

Production Area: means that part of an AFO that includes the animal confinement area, the manure storage area, the raw materials storage area, and the waste containment areas. The animal confinement area includes but is not limited to open lots, housed lots, feedlots, confinement houses, stall barns, free stall barns, milkrooms, milking centers, cowyards, barnyards, medication pens, walkers, animal walkways, and stables. The manure storage area includes but is not limited to lagoons, runoff ponds, storage sheds, stockpiles, under house or pit storages, liquid impoundments, static piles, and composting piles. The raw materials storage areas include but is not limited to feed silos, silage bunkers, and bedding materials. The waste containment area includes but is not limited to settling basins, and areas within berms and diversions that separate uncontaminated storm water. Also included in the definition of production area is any egg washing or egg processing facility, and any area used in the storage, handling, treatment, or disposal of mortalities.

Storm Water: means storm water run-off, snow melt run-off, and surface run-off and drainage.

APPLICATION ADDENDUM INSTRUCTIONS

I. CONTACT INFORMATION

Give the name, mailing address, telephone numbers and e-mail address (if available) of the person to whom this permit will be issued. Please provide the best day of the week and time for DEQ to make contact with the owner during regular working hours.

II. FARM/FACILITY INFORMATION

Give the name of the farm or facility. Give the physical location for the animal feeding operation other than the owner's mailing address (e.g. Rt. 653, 1 mile west of Rt. 702). List the number of any expiring or currently effective permits issued to the concentrated animal feeding operation under the VPA or VPDES permit program.

III. FARM OPERATING MANUAL

Indicate if a Farm Operating Manual has been developed for this facility. If yes, provide the date of the last review/revision of the Farm Operating Manual. If the Manual has already been developed then indicate whether a copy of the Manual is attached to this Addendum. *The attached copy may be a hard copy or an electronic copy.*

Permit requirements for development of a manual:
The Permittee shall develop and submit a Farm Operating Manual for approval by the Department within 90 days of the effective date of this permit. The Farm Operating Manual shall include at a minimum the following information:

a. identification of land features or structures where storm water will likely leave the production area(s) and enter surface waters of the state;

b. identification of land features or structures in the land application area(s) which will increase the risk of nitrogen and phosphorus transport to surface waters of the state; land features or structures include tile lines, pipes or ditches;

c. practices and procedures which will be followed to ensure that the waste storage facilities are designed and operated in accordance with the permit;

d. practices, procedures and applicable best management practices (BMPs) which will be utilized to ensure compliance with the requirements of this permit including but not limited to the following:

(1) if applicable, identification of the location of BMP(s) that are installed or will be installed at the CAFO facility, for BMP(s) that will be installed include the expected timeframe for installation;

(2) specification of appropriate maintenance that will be performed for each BMP(s);

(3) specification of the steps that will be taken in the event that a BMP(s) is found deficient,

(a) as a result of the visual inspections as required by the permit, or

(b) as a result of other routine inspections, as prescribed by the Farm Operating Manual, of BMP(s) utilized or installed in accordance with the permit.

The steps shall include any actions that will be taken to correct deficiencies in accordance with the permit.

e. practices and procedures which will be followed to ensure that all equipment needed for the proper operation of the permitted facilities is maintained in good working order, including but not limited to the following:

(1) retention of the equipment manufacturer's operation and maintenance manuals or other reference source to allow for timely maintenance and prompt repair of equipment when appropriate; and

(2) specification of the frequencies of inspections in order to detect leaks on equipment used for liquid manure handling and land application; and

f. an emergency plan which includes appropriate procedures for employees to follow in case of an emergency such as; an unauthorized discharge of manure, poultry waste, from the production area or catastrophic animal mortality. The emergency plan must include appropriate information for assistance with the particular emergency and must include contact information for local, state and federal agencies required to be notified in the case of any of the above mentioned events.

The Permittee shall operate the CAFO facility in accordance with the approved Farm Operating Manual which becomes an enforceable part of the permit. Any changes in those practices and procedures shall be documented and submitted to the Department for staff approval within 90 days of the effective date of the changes. The existing manual shall continue to be implemented until the revised manual is approved by the Department. Upon approval of submitted manual changes, the revised manual becomes an enforceable part of the permit. Noncompliance with the approved manual shall be deemed a violation of the permit.

IV. GROUNDWATER MONITORING PLAN

If the facility has an existing permit, indicate whether groundwater monitoring is required. If groundwater monitoring is required, indicate if a groundwater monitoring plan has been developed for this facility. If yes, provide the date of the last review/revision of the plan. If a plan has not been developed, please explain why the plan has not been developed. If the plan has already been developed then indicate whether a copy of the plan is attached to this Addendum. *The attached copy may be a hard copy or an electronic copy.*

Permit requirements for development of a plan:
The Permittee shall develop and submit a Groundwater Monitoring Plan for approval by the Department within 90 days of the effective date of this permit. The Groundwater Monitoring Plan shall include at a minimum the following information:

(1) Procedures to ensure appropriate methods and practices are being used when monitoring groundwater, and

(2) Procedures to ensure appropriate measures are taken where monitoring results demonstrate potential noncompliance with the permit and the approved monitoring plan.

V. DISCHARGE POINT AND BEST MANAGEMENT PRACTICES (BMPs) RELATED TO A DISCHARGE POINT

For each discharge point, provide the following information in the table below:

a) a descriptive name of the discharge point;
b) the latitude and longitude of its location;
c) the name of the nearest potential receiving water;
d) all areas contributing manure, litter, process wastewater, or storm water from the facility; and
e) the treatment received or BMPs utilized, installed or constructed prior to the discharge point.

VI. BEST MANAGEMENT PRACTICES (BMPs)

If the facility has an existing permit, indicate whether groundwater monitoring is required. If groundwater monitoring is required, indicate if a groundwater monitoring plan has been developed for this facility. If yes, provide the date of the last review/revision of the plan. If a plan has not been developed, please explain why the plan has not been developed. If the plan has already been developed then indicate whether a copy of the plan is attached to this Addendum. *The attached copy may be a hard copy or an electronic copy*

VII. OTHER ATTACHMENTS

Local Government Ordinance Form (LGOF)

State Law requires that the owner of any proposed pollutant management activities or those which have not previously been issued a valid VPA or VPDES permit must attach to the permit application, the completed LGOF. The LGOF is the notification from the governing body of the county, city or town where the operation is located that the operation is consistent with all ordinances adopted pursuant to Chapter 22 (§ 15.2-2200 et seq.) of Title 15.2 of the Code of Virginia.

Nutrient Management Plan (NMP) Approval Letter

A copy of the letter from the Virginia Department of Conservation and Recreation (DCR) approving the operation's NMP and certifying that the NMP was developed by a certified nutrient management planner in accordance with §10.1-104.2 of the Code of Virginia must be attached to the permit application. However, if a current NMP approval letter is on file at the DEQ regional office then it is not necessary to attach the NMP approval letter.

VIII. CERTIFICATION STATEMENT

The Certification must bear an original signature in ink, photocopies are not acceptable. State regulations require the permit application to be signed as follows:

1. For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy-making or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions that govern the operation of the regulated facility, including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

2. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

3. For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

BMP Description – Secondary Containment

The BMP is a grass covered earthen containment structure that collects runoff from the production area. The structure has a manually operated value that is maintained as normally closed. The BMP is inspected daily by the farm production staff. Once water collects in the structure it is visually inspected to ensure it does not contain any contaminants and it released. The BMP has an emergency spillway for structural integrity during extreme rainfall events.

VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT CONCENTRATED ANIMAL FEEDING OPERATION

Permit Application Addendum

Murphy-Brown LLC
Farms 15
Permit VPA 00576

VIII.B MORTALITY DISPOSAL METHODS

The mortality disposal method utilized for this site is rendering. Mortality is removed from the Barn and placed in a mortality ben for pickup and removal from the site. The mortality ben is a synthetic container with a lid. The dead box is picked up and emptied daily by truck, the contents of the box are delivered to the rendering facility. In the event unforeseen circumstances prevent daily pick up of mortality, the mortality is held inside the barn until daily removal can resume.

XI. CHEMICAL HANDLING METHODS

Murphy-Brown LLC maintains a list of all chemicals used on its facilities. The list of hazardous chemical used by Murphy-Brown is maintained by a third party contractor. The contractor provides emergency information for all products used by the company. This includes Material Safety Data Sheets outlining the manufactures guidelines for handling, storage, and disposal. Information is available 24 hours a day for all worksites within the Murphy-Brown organization. Employees are trained to handle, store, and dispose of chemicals pre the manufactures label. Chemicals are not disposed in any manure, process waste water or storm water.

Douglas W. Domenech
Secretary of Natural Resources

David A. Johnson
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

203 Governor Street
Richmond, Virginia 23219-2010
(804) 786-1712

February 21, 2013

Mr. R. O. Britt
Murphy-Brown Farm 8515 (15)
P.O. Box 1240
Waverly, VA 23890

Dear Mr. Britt,

Your nutrient management plan (NMP), dated 12/1/2012, for a 10500 head swine operation has been approved by the Virginia Department of Conservation and Recreation for coverage under a Virginia Pollution Abatement (VPA) or Virginia Pollutant Discharge Elimination System (VPDES) permit. Your NMP was written by a nutrient management planner certified by the Virginia Department of Conservation and Recreation.

A copy of this letter must be kept with your nutrient management plan. A copy of this letter and a copy of the approved plan must be sent to the Piedmont Regional Office of the Virginia Department of Environmental Quality (DEQ).

It should be noted that this plan expires 12/1/2015. We recommend the process of revising this nutrient management plan begin at least six months prior to the expiration date.

If you have any questions concerning this letter, please feel free to contact me at bobby.long@dcr.virginia.gov or (434) 547-8172.

Sincerely,

Bobby Long

Bobby Long
Nutrient Management Coordinator – Animal Waste
Division of Stormwater Management

cc: Tim Sexton, DCR Nutrient Management Program Manager
R O Britt
DEQ Piedmont Regional Office

Nutrient Management Plan Special Conditions for Virginia Pollution Abatement (VPA) and Virginia Pollutant Discharge Elimination System (VPDES) Permits

September 2011

The following management practices will be utilized for <u>swine operations</u> requiring a VPA or VPDES permit:

1. Soil samples for manure application fields will be analyzed at least once every three (3) years for pH, phosphorus, potassium, calcium, and magnesium in order to maximize the efficient utilization of nutrients. A representative soil sample of each field will be comprised of at least twenty (20) cores randomly sampled throughout the field. Soil sampling core depth will be from 0-4 inches for land which has not been tilled within the past three (3) years, or 0-6 inches for land that has been tilled within the past three (3) years. Soil pH will be maintained at appropriate agronomic levels to promote optimum crop growth and nutrient utilization.

2. Soil test analysis will be performed by one of the laboratories listed below. Soil phosphorus levels must be determined using the Mehlich I or Mehlich III procedure.
   - A&L Eastern Laboratories
   - Agri-Analysis Testing Laboratory
   - AgroLab
   - Brookside Laboratories
   - Logan Labs
   - Midwest Laboratories (must request Mehlich III)
   - Spectrum Analytical Laboratories
   - Virginia Tech Soil Testing Lab
   - Waters Agricultural Laboratories (GA)

3. Representative manure samples will be analyzed at a minimum of once per year for VPA permits and twice per year for VPDES permits for the following: total nitrogen or total Kjeldahl nitrogen (TKN), ammonium nitrogen, total phosphorus, total potassium, calcium, magnesium, and percent (%) moisture. Separate samples shall be taken from all manure sources to be used for application (i.e. under-house, lagoon, compost, etc.). All manure analyses shall be performed using laboratory methods consistent with *Recommended Methods of Manure Analysis*, publication A3769, University of Wisconsin, 2003 or other methods approved by the Virginia Department of Conservation and Recreation (DCR). Manure analysis results will be used to determine actual manure rates that do not exceed the nitrogen and phosphorus application rates specified in the nutrient management plan using either the most recent manure analysis results (not greater than 1 year old) or the facility's average results based on actual manure analysis.

4. All crops will be planted and harvested in a timely manner using commercially acceptable management practices.

5. Make manure applications at or near planting or to existing actively growing crops to ensure that nutrients are properly utilized. Utilize the spreading schedule contained in the nutrient management plan and the spreading schedule in #26 of this document to determine appropriate manure application times and rates. Additional commercial

fertilizer applications (especially nitrogen) should be made as a split application separate from the manure applications, either as a sidedress or topdress application.

6. For permanent hay or pasture, an adequate stand of hay and/or pasture crop species will be established prior to land application of manure. Commercially acceptable stands of the listed species will be maintained and other weeds and grasses controlled. All hay crops will be harvested in a timely and regular manner, removed from fields, and utilized for a suitable purpose.

7. Manure will be applied to application sites in a uniform manner.

8. Do not spread manure within the following setback areas:
   - 100 feet from wells or springs
   - 35 feet from surface waters if the entire setback is a permanent perennial vegetated buffer
   - **OR**
   - 100 feet from surface waters if there is not a permanent perennial vegetated buffer of at least 35 feet in width
   - 50 feet from sinkholes*
   - 50 feet from limestone rock outcrops
   - 25 feet from other rock outcrops
   - 10 feet from agricultural drainage ditches (5 feet if injected)
   - 200 feet from occupied dwellings (unless waived in writing by the occupant)

   *Waste shall not be applied in areas subject to concentrated flow generated by runoff from storm events such that it would discharge into sinkholes in the area.

9. To avoid manure runoff from application fields*:
   - Do not spread manure on soils that are saturated.
   - Do not apply liquid manure (above 85% moisture content) or commercial fertilizers to frozen, ice or snow-covered ground.

   *If runoff is observed, reduce the application rate immediately to prevent overland flow, which reaches buffer areas or accumulates in low-lying areas.

10. For odor control and to reduce drift, avoid spreading on windy days.

11. Liquid irrigation systems will be operated in a manner to prevent runoff into buffered areas and low-lying areas. Use a liquid application rate at or below the specified maximum hydraulic application rate for each field per application. Traveling guns used for irrigation of effluent should be operated in a full circle pattern whenever possible to allow for maximum infiltration. A small wedge shaped area may be left dry ahead of the gun to reduce soil compaction.

12. Spreader calibration is extremely critical to ensure proper application rates. Calibration

of equipment or verification of actual equipment application rates shall occur at a minimum of once per year.

13. New waste storage facilities shall be designed, constructed and operated in accordance with the USDA-NRCS *Field Office Technical Guide* and other appropriate NRCS design criteria.

14. Earthen waste storage structures must be regularly inspected and repaired if leaks, slope failures, excessive embankment settlement, eroded banks, or burrowing animals are detected. A protective cover of appropriate vegetation will be established and maintained on all disturbed areas (lagoon and storage pit embankments, berms, pipe runs, etc.). Vegetation such as trees, shrubs and other woody species are limited to areas considered to be appropriate such as wind breaks or visual screens, and are not to be present on lagoon and storage pit embankments, berms, or pipe runs.

15. New lagoons will be charged to at least ½ of treatment volume capacity with water prior to placement of hogs into production facilities in order to promote biological treatment activity and to reduce odor. When charging lagoons, carefully manage the rate of the water input to avoid damage to lagoon liners.

16. For operations with anaerobic lagoons, pumping shall be managed to maintain the lagoon level between the maximum and minimum operating level. The lagoon level shall be pumped to near the minimum operating level in preparation for the late fall-winter period. The effluent removed shall be uniformly applied, to the designated fields in the nutrient management plan, at or below the maximum rate specified in the plan. Visible markers or another practical method shall be used in new lagoons to indicate the minimum and maximum operating levels based on the lagoon design specifications.

17. Waste discharge from inlet pipe(s) must not have direct contact with clay liner, in order to avoid erosion of the liner. The discharge line(s) must extend past the minimum operating level such that lagoon influent will discharge over the water surface.

18. Waste handling structures, piping, pumps, etc. should be inspected on a regular basis to prevent breakdowns, leaks and spills.

19. Composting of animal mortalities will be conducted in accordance with the latest guidance developed by Virginia Cooperative Extension.

20. Any facility required in the General Permit to monitor groundwater shall monitor groundwater for the following parameters at a frequency of at least once annually: static water level, ammonia nitrogen, nitrate nitrogen, pH and conductivity.

21. Nutrient management plans that contain fields in which row crops will be grown will be revised at least once every three (3) years. Nutrient management plans that contain only hay or pasture fields will be revised at least once every five (5) years. Any such plan revisions will be submitted to DCR for review and approval.

22. This nutrient management plan must be amended or modified and submitted to DCR for review and approval if animal numbers increase above the level specified in the plan; animal types including intended market weights are changed; additional imported manure, biosolids, or industrial waste that was not identified in the existing plan is

applied to fields under the control of the operator; available land area for the utilization of manure decreases below the level necessary to utilize manure in the plan; and/or manure application fields have Mehlich I soil phosphorus levels at or above 55ppm (110 lbs/acre) where either cropping systems, rotations, or fields are changed.

23. Minor plan amendments involving changes to the cropping system, crop rotations, specific application fields, manure analysis results or minor fluctuations in animal market weights or animal numbers (10% or less cumulative increases since this original plan was developed) may be made to this nutrient management plan without he prior approval of DCR by the specific certified nutrient management planner that developed this plan. Any such plan amendments must be made prior to subsequent nutrient application to fields impacted by the change. Certified nutrient management planners shall provide a copy of any such plan amendments to DCR within two (2) weeks of the plan modification.

24. All major plan modifications shall be submitted to DCR for review and approval prior to implementing any changes. Major modifications include, but are not limited to, proposed changes to the plan expiration date; increases in animal numbers of greater than 10%; changes in animal type including intended market weight; additional imported manure, biosolids, or industrial wastes not included in the original plan are to be applied; or available land area for the utilization of manure decreases below the level necessary to utilize manure in the plan due to sale of land, expired lease, etc.

25. These conditions do not override any more restrictive plan requirements if required by other specific legislative, regulatory or incentive programs which apply to a specific operator.26. Manure spreading schedule:

CLOSURE OF ANIMAL WASTE STORAGE FACILITIES

When the animal waste storage facility is no longer needed, the owner or operator shall close the storage facility in a manner that minimizes the need for further maintenance, and controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, the post closure escape of uncontrolled leachate, surface runoff, or waste decomposition products to ground water, surface water or to the atmosphere. At closure, the owner or operator shall remove all liquid waste and animal waste residue from the waste storage facility. All devices used to convey animal waste into the animal waste storage facility shall be removed. Removed waste materials shall either be utilized according to this nutrient management plan or disposed of as solid waste according to the requirements of the Virginia Solid Waste Management Regulations, 9 VAC 20-80-10 et seq.

Once the animal waste is removed, the owner or operator is required to follow the procedures outlined below to either backfill the facility or convert the facility to a fresh water pond:

- If the facility will be backfilled, clay liners on interior side slopes will be removed using earth moving equipment or destroyed using sub-soiling equipment and any

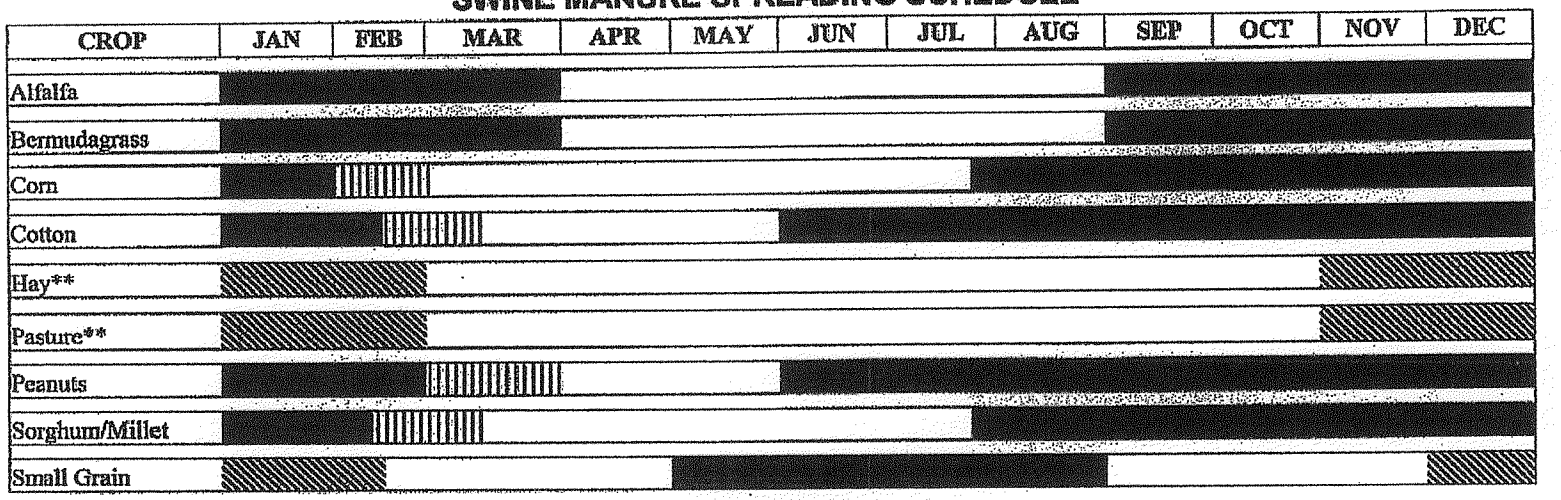
synthetic liners on side slopes will be rolled or folded and placed in the bottom of the structure prior to backfilling. Such liner removal or destruction shall, at a minimum, occur in the area from the top of the structure to a depth of within three feet of the structure bottom or groundwater whichever is greatest in elevation at the time of closure. The storage facility shall be backfilled with clean material. The animal waste storage facility site shall have a final earthen cover that is designed and constructed to: minimize infiltration of rainwater; minimize erosion of the final cover or side slope material; prevent ponding and support a suitable vegetative cover. In order to ensure proper drainage, the final cover shall have a minimum slope of 5%. Following installation, the owner or operator shall maintain the integrity and effectiveness of the final cover, including any repair needed due to settlement, subsistence, erosion or other events and preventing run-on and run-off from eroding or otherwise damaging the final cover.

- If the facility will be converted to a fresh water pond, the structure to be converted shall be reconstructed as necessary to meet the standard specification for ponds (practice #378) as contained in the Natural Resources Conservation Service (NRCS) Field Office Technical Guide and shall include a principle spillway and an emergency spillway if an embankment of three feet or more exists.

The owner or operator shall complete these closure activities within six months after the last date on which animal waste is placed in the waste storage facility unless the nutrient management plan is revised and approved by the Department of Conservation and Recreation (DCR). The owner and operator shall notify the regional office of the Department of Environmental Quality (DEQ) upon completion or grading of the final earthen cover or completion of the converted pond structure.

6. Manure spreading schedule.

SWINE MANURE SPREADING SCHEDULE*



*Do not spread liquid manure, dry or semi solid manure on soils that are saturated.

*Do not spread liquid manure/effluent (above 85.5% moisture content) to frozen, ice or snow covered ground.

*Application of dry or semi solid manure (85.5% moisture content or less) should be avoided on frozen, ice or snow covered ground. If necessary applications may be made to fields that have: (i) slopes not greater than 6.0%, (ii) 60% uniform ground cover from crop residue or an existing actively growing crop such as a small grain or tall fescue with an exposed plant height of ≥ 3", (iii) a minimum 200-foot vegetated or adequate crop residue buffer between the application area and all surface water courses, and (iv) soils characterized by USDA as "well drained".

** Cool season grasses only, Fescue and or Orchardgrass

Spread liquid manure and dry or semi solid manure at the rates and times specified in the nutrient management plan

Do not spread liquid manure and dry or semi solid manure during these shaded months.

Manure applications will not be made earlier than 30 days prior to planting on environmentally sensitive sites.
On fields <u>not listed as environmentally sensitive</u>:
- Liquid manure applications will not occur more than 60 days prior to spring planting.

Manure applications are not recommended during this period (late fall-winter). If necessary uniformly apply a maximum of 3,000 gallons per acre per application. If using an irrigation system apply up to a maximum of a ¼ inch per acre per hour. Do not exceed 40 pounds of plant available nitrogen per acre during this entire period. Allow sufficient drying time between applications. Fields must have greater than 60% uniform live cover with plant height greater than three (3) inches.

Use of hog manure effluent in cropping rotations:

Double-crop sorghum – (planted after Spring harvest of small grain) Effluent applications may begin after the small grain harvest and no more than 30 days prior to planting of the grain sorghum. Effluent applications may continue until ½ of the plants in the field have headed but not later than August 31. Total N applied cannot exceed nutrient needs less the residual N from previous effluent applications, legumes, etc. as defined in Standards and Criteria, revised October 2005.

Soybeans – (double crop and full season) Effluent applications may begin no more than 30 days prior to planting of the soybeans. However, effluent application is not recommended prior to growth stage V6 (six unfolded trifoliate leaves). Nitrogen needs will be established using expected yield for corn based on the soil productivity for the field. Effluent applications may continue until growth stage R6 (full-seed stage) but not later than September 30.

NUTRIENT MANAGEMENT PLAN IDENTIFICATION

Operator
Murphy-Brown LLC Farm 8515
Murphy-Brown LLC
Waverly, VA 23890
804-834-1229

Integrator:*None*

Farm Coordinates
Easting: 314200, Northing: 4086200, zone: 17

Watershed Summary
watershed: CU46
county: Sussex

Nutrient Management Planner
R.O. Britt
434 East Main Street
Waverly, VA 23890

Certification Code: 571

Acreage Use Summary
Total Acreage in this plan: 90.5

Cropland:	31.8
Hayland:	58.7
Pasture:	0.
Specialty:	0.

Livestock Summary

Beef Cattle	0
Dairy Cattle	0
Poultry	0
Swine	10500
Other	0

Manure Production Balance

	Imported	Produced	Exported	Used	Net
kgals	0.	8465.8	0.	7930.7	535.1
tons	0.	0.	0.	0.	0.

Plan written 12/1/2012
Valid until 12/1/2015

Signature: _____ 3/8/2013
Planner **date**

Nutrient Management Plan Balance Sheet
(Spring, 2013-Winter, 2015)
Farm 15
Planner: R.O. Britt (cert. No. 571)

Tract: 2050 Location: Sussex
(N = N based, 1P = P based, 1.5P = P based at 1.5 removal, 0P = No P allowed)

Field CFSA No. /Name	Size (ac) Total/ Used	Yr.	Crop	Needs N-P-K (lbs/ac)	Leg /Man Resid	Manure/Biosld Rate & Type (season)	IT (d)	Man/Bios N-P-K (lbs/ac)	Net = Needs - appld N-P-K (lbs/ac)	Sum P rem cred	Commercial N-P-K (lbs/ac)	Notes	
1050/Field 1(N)	5/5	2013	Bermudagrass hay mt.	235-60-0	0/0	58.1k Swine (Sp)	N/A	128-52-453	0-(35)-(835)	N/A		1	
						48.9k Swine (Su)	N/A	107-44-382					
		2014	... ...	235-60-0	0/12	50.9k Swine (Sp)	N/A	112-46-397	0-(65)-(1630)	N/A		1	
						50.9k Swine (Su)	N/A	112-46-397					
		2015	... ...	235-60-0	0/16	49.9k Swine (Sp)	N/A	110-45-389	0-(95)-(2410)	N/A		1	
						49.9k Swine (Su)	N/A	110-45-389					
1050/Field 2 / Hydrant 3(N)	3/3	2013	Fescue grass hay mt.	90-60-0	0/0	13.6k Swine (Sp)	N/A	30-12-106	0-25-(320)	N/A		1	
						13.6k Swine (Su)	N/A	30-12-106					
						13.8k Swine (Fa)	N/A	30-12-108					
		2014	... ...	90-60-0	0/4	12.9k Swine (Sp)	N/A	28-12-101	0-50-(625)	N/A		1	
						12.9k Swine (Su)	N/A	28-12-101					
						13.2k Swine (Fa)	N/A	29-12-103					
		2015	... ...	90-60-0	0/6	12.7k Swine (Sp)	N/A	28-11-99	0-75-(920)	N/A		1	
						12.7k Swine (Su)	N/A	28-11-99					
						12.7k Swine (Fa)	N/A	28-11-99					
1050/Field 2 / Hydrant 4(N)	5/5	2013	Bermudagrass hay mt.	235-0-0	0/0	53.5k Swine (Sp)	N/A	117-48-418	0-(95)-(835)	N/A		1	
						53.5k Swine (Su)	N/A	117-48-418					
		2014	... ...	235-0-0	0/12	50.9k Swine (Sp)	N/A	112-46-397	0-(185)-(1630)	N/A		1	
						50.9k Swine (Su)	N/A	112-46-397					
		2015	... ...	235-0-0	0/16	49.9k Swine (Sp)	N/A	110-45-389	0-(275)-(2410)	N/A		1	
						49.9k Swine (Su)	N/A	110-45-389					

Tract: 2050 **Location: Sussex**

Field CFSA No. /Name	Size (ac) Total/ Used	Yr.	Crop	Needs N-P-K (lbs/ac)	Leg /Man Resid	Manure/Biosld Rate & Type (season)	IT (d)	Man/Bios N-P-K (lbs/ac)	Net = Needs - appld N-P-K (lbs/ac)	Sum P rem cred	Commercial N-P-K (lbs/ac)	Notes
1050/Field 2 / Hydrant 5(N)	3/3	2013	Fescue grass hay mt.	70-40-0	0/0	10.6k Swine (Sp)	N/A	23-10-83	0-10-(250)	N/A		1
						10.6k Swine (Su)	N/A	23-10-83				
						10.6k Swine (Fa)	N/A	23-10-83				
		2014	... ...	70-40-0	0/3	10.1k Swine (Sp)	N/A	22-9-79	0-25-(485)	N/A		1
						10.1k Swine (Su)	N/A	22-9-79				
						10.1k Swine (Fa)	N/A	22-9-79				
		2015	... ...	70-40-0	0/5	9.9k Swine (Sp)	N/A	22-9-77	0-40-(715)	N/A		1
						9.9k Swine (Su)	N/A	22-9-77				
						9.9k Swine (Fa)	N/A	22-9-77				
1050/Field 2 / Hydrant 6(N)	4/4	2013	Bermudagrass hay mt.	235-60-0	0/0	53.5k Swine (Sp)	N/A	117-48-417	0-(35)-(835)	N/A		1
						53.5k Swine (Su)	N/A	117-48-417				
		2014	... ...	235-60-0	0/12	50.9k Swine (Sp)	N/A	112-46-397	0-(65)-(1630)	N/A		1
						50.8k Swine (Su)	N/A	112-46-396				
		2015	... ...	235-60-0	0/16	49.8k Swine (Sp)	N/A	109-45-388	0-(95)-(2410)	N/A		1
						49.9k Swine (Su)	N/A	110-45-389				
1050/Field 2 / Hydrant 7(N)	3/3	2013	Fescue grass hay mt.	90-0-0	0/0	13.6k Swine (Sp)	N/A	30-12-106	0-(35)-(320)	N/A		1
						13.6k Swine (Su)	N/A	30-12-106				
						13.6k Swine (Fa)	N/A	30-12-106				
		2014	... ...	90-0-0	0/4	13.k Swine (Sp)	N/A	29-12-101	0-(70)-(625)	N/A		1
						13.k Swine (Su)	N/A	29-12-101				
						13.k Swine (Fa)	N/A	29-12-101				
		2015	... ...	90-0-0	0/6	12.7k Swine (Sp)	N/A	28-11-99	0-(105)-(925)	N/A		
						12.7k Swine (Su)	N/A	28-11-99				
						12.8k Swine (Fa)	N/A	28-12-100				

Tract: 2050 **Location: Sussex**

Field CFSA No. /Name	Size (ac) Total/ Used	Yr.	Crop	Needs N-P-K (lbs/ac)	Leg /Man Resid	Manure/Biosld Rate & Type (season)	IT (d)	Man/Bios N-P-K (lbs/ac)	Net = Needs - appld N-P-K (lbs/ac)	Sum P rem cred	Commercial N-P-K (lbs/ac)	Notes	
1050/Field 2 / Hydrant 8(N)	4/4	2013	Bermudagrass hay mt.	235-0-0	0/0	53.5k Swine (Sp)	N/A	117-48-418	0-(95)-(835)	N/A		1	
						53.5k Swine (Su)	N/A	117-48-418					
		2014	... ...	235-0-0	0/12	50.9k Swine (Sp)	N/A	112-46-397	0-(185)-(1630)	N/A		1	
						50.8k Swine (Su)	N/A	112-46-396					
		2015	... ...	235-0-0	0/16	49.9k Swine (Sp)	N/A	110-45-389	0-(275)-(2410)	N/A		1	
						49.9k Swine (Su)	N/A	110-45-389					
1050/Field 2 / Hydrant 9(N)	4/4	2013	Bermudagrass hay mt.	235-60-0	0/0	53.5k Swine (Sp)	N/A	117-48-418	0-(35)-(835)	N/A		1	
						53.5k Swine (Su)	N/A	117-48-418					
		2014	... ...	235-60-0	0/12	50.9k Swine (Sp)	N/A	112-46-397	0-(65)-(1630)	N/A		1	
						50.8k Swine (Su)	N/A	112-46-396					
		2015	... ...	235-60-0	0/16	49.9k Swine (Sp)	N/A	110-45-389	0-(95)-(2410)	N/A		1	
						49.8k Swine (Su)	N/A	109-45-388					
1050/Field 2 / Hydrant 10(N)	4/4	2013	Bermudagrass hay mt.	235-0-0	0/0	53.5k Swine (Sp)	N/A	117-48-418	0-(95)-(835)	N/A		1	
						53.5k Swine (Su)	N/A	117-48-418					
		2014	... ...	235-0-0	0/12	50.9k Swine (Sp)	N/A	112-46-397	0-(185)-(1630)	N/A		1	
						50.8k Swine (Su)	N/A	112-46-396					
		2015	... ...	235-0-0	0/16	49.9k Swine (Sp)	N/A	110-45-389	0-(275)-(2410)	N/A		1	
						49.9k Swine (Su)	N/A	110-45-389				1	
1050/Field 2 / Hydrant 11(N)	4/4	2013	Bermudagrass hay mt.	235-60-0	0/0	53.5k Swine (Sp)	N/A	117-48-418	0-(35)-(835)	N/A		1	
						53.5k Swine (Su)	N/A	117-48-418					
		2014	... ...	235-60-0	0/12	50.9k Swine (Sp)	N/A	112-46-397	0-(65)-(1630)	N/A		1	
						50.8k Swine (Su)	N/A	112-46-396					
		2015	... ...	235-60-0	0/16	49.9k Swine (Sp)	N/A	110-45-389	0-(95)-(2410)	N/A		1	
						49.9k Swine (Su)	N/A	110-45-389					

Tract: 2050 **Location: Sussex**

Field CFSA No. /Name	Size (ac) Total/ Used	Yr.	Crop	Needs N-P-K (lbs/ac)	Leg /Man Resid	Manure/Biosld Rate & Type (season)	IT (d)	Man/Bios N-P-K (lbs/ac)	Net = Needs - appld N-P-K (lbs/ac)	Sum P rem cred	Commercial N-P-K (lbs/ac)	Notes	
1050/Field 2 / Hydrant 12(N)	4/4	2013	Bermudagrass hay mt.	235-0-0	0/0	53.5k Swine (Sp)	N/A	117-48-418	0-(95)-(835)	N/A		1	
						53.5k Swine (Su)	N/A	117-48-418					
		2014	... ...	235-0-0	0/12	50.9k Swine (Sp)	N/A	112-46-397	0-(185)-(1630)	N/A		1	
						50.9k Swine (Su)	N/A	112-46-397					
		2015	... ...	235-0-0	0/16	49.9k Swine (Sp)	N/A	110-45-389	0-(275)-(2410)	N/A		1	
						49.9k Swine (Su)	N/A	110-45-389					
1050/Field 2 / Hydrant 13(N)	4/4	2013	Bermudagrass hay mt.	235-60-0	0/0	53.5k Swine (Sp)	N/A	117-48-417	0-(35)-(835)	N/A		1	
						53.6k Swine (Su)	N/A	118-48-418					
		2014	... ...	235-60-0	0/12	50.9k Swine (Sp)	N/A	112-46-397	0-(65)-(1630)	N/A		1	
						50.8k Swine (Su)	N/A	112-46-396					
		2015	... ...	235-60-0	0/16	49.9k Swine (Sp)	N/A	110-45-389	0-(95)-(2410)	N/A		1	
						49.9k Swine (Su)	N/A	110-45-389					
1050/Field 2 / Hydrant 14(N)	1/1	2013	Bermudagrass hay mt.	270-0-0	0/0	61.5k Swine (Sp)	N/A	135-55-480	0-(110)-(960)	N/A		1	
						61.5k Swine (Su)	N/A	135-55-480					
		2014	... ...	270-0-0	0/13	58.4k Swine (Sp)	N/A	128-53-456	0-(215)-(1870)	N/A		1	
						58.4k Swine (Su)	N/A	128-53-456					
		2015	... ...	270-0-0	0/18	57.3k Swine (Sp)	N/A	126-52-447	0-(320)-(2765)	N/A		1	
						57.3k Swine (Su)	N/A	126-52-447					
1050/Field 3 / Hydrant 15(N)	4/4	2013	Bermudagrass hay mt.	270-50-0	0/0	63.2k Swine (Sp)	N/A	139-57-493	0-(60)-(960)	N/A		1	
						59.8k Swine (Su)	N/A	131-54-466					
		2014	... ...	270-50-0	0/13	58.4k Swine (Sp)	N/A	128-53-456	0-(115)-(1870)	N/A		1	
						58.4k Swine (Su)	N/A	128-53-456					
		2015	... ...	270-50-0	0/18	57.3k Swine (Sp)	N/A	126-52-447	0-(170)-(2765)	N/A		1	
						57.3k Swine (Su)	N/A	126-52-447					

Tract: 2050 **Location: Sussex**

Field CFSA No. /Name	Size (ac) Total/ Used	Yr.	Crop	Needs N-P-K (lbs/ac)	Leg /Man Resid	Manure/Biosld Rate & Type (season)	IT (d)	Man/Bios N-P-K (lbs/ac)	Net = Needs - appld N-P-K (lbs/ac)	Sum P rem cred	Commercial N-P-K (lbs/ac)	Notes	
1050/Field 3 / Hydrant 16(N)	7/7	2013	Bermudagrass hay mt.	235-50-0	0/0	53.5k Swine (Sp)	N/A	117-48-418	0-(45)-(835)	N/A		1	
						53.5k Swine (Su)	N/A	117-48-418					
		2014	... ...	235-50-0	0/12	50.9k Swine (Sp)	N/A	112-46-397	0-(85)-(1630)	N/A		1	
						50.8k Swine (Su)	N/A	112-46-396					
		2015	... ...	235-50-0	0/16	49.9k Swine (Sp)	N/A	110-45-389	0-(125)-(2410)	N/A		1	
						49.9k Swine (Su)	N/A	110-45-389					

Commercial Application Methods:

br - Broadcast ba - Banded sd - Sidedress

Notes:

1 The maximum waster water application rate per event for this field is 0.6 in./ac. or 16,292 gals./ac. Sufficient drying time will be allowed between subsequent irrigation events so that field capacity is not exceeded due to irrigation events

Tract: 25223 Location: Sussex
(N = N based, 1P = P based, 1.5P = P based at 1.5 removal, 0P = No P allowed)

Field CFSA No. /Name	Size (ac) Total/ Used	Yr.	Crop	Needs N-P-K (lbs/ac)	Leg /Man Resid	Manure/Biosld Rate & Type (season)	IT (d)	Man/Bios N-P-K (lbs/ac)	Net = Needs - appld N-P-K (lbs/ac)	Sum P rem cred	Commercial N-P-K (lbs/ac)	Notes	
3894/Field 4 / Hydrant 17(N)	4/4	2013	Corn (grain)	140-40-0	0/0	29.6k Swine (Sp)	N/A	65-27-231	0-(15)-(495)	N/A		1,2,3,4	
						34.2k Swine (Su)	N/A	75-31-267					
			Wheat (grain)	100-40-0	0/8	12.7k Swine (Fa)	N/A	28-11-99	0-(15)-(820)	N/A			
		2014	... ...	-- -- --		29.3k Swine (Sp)	N/A	64-26-228					
			Sorghum (grain)	100-40-0	0/0	45.6k Swine (Su)	N/A	100-41-355	0-(15)-(1175)	N/A		1,2,3,4	
			Rye (cover)	0-0-0	0/0				0-(15)-(1175)	N/A			
		2015	Corn (grain)	140-40-0	0/12	22.1k Swine (Sp)	N/A	49-20-172	10-(25)-(1595)	N/A	10-0-0(ba)	1,2,3,4,	
						31.8k Swine (Su)	N/A	70-29-248					
			Wheat (grain)	100-40-0	0/12	13.6k Swine (Fa)	N/A	30-12-106	0-(20)-(1910)	N/A		1,5,6,4	
3894/Field 4 / Hydrant 18(N)	5/5	2013	Corn (grain)	150-60-0	0/0	30.7k Swine (Sp)	N/A	67-28-240	0-0-(535)	N/A		1,2,3,4	
						37.6k Swine (Su)	N/A	83-34-293					
			Wheat (grain)	100-40-0	0/9	14.k Swine (Fa)	N/A	31-13-109	0-0-(860)	N/A		1,7,5,6,4	
		2014	... ...	-- -- --		27.7k Swine (Sp)	N/A	61-25-216					
			Sorghum (grain)	110-40-0	0/0	50.1k Swine (Su)	N/A	110-45-391	0-(5)-(1250)	N/A		1,2,3,4	
			Rye (cover)	0-0-0	0/0				0-(5)-(1250)	N/A			
		2015	Corn (grain)	150-60-0	0/12	27.9k Swine (Sp)	N/A	61-25-218	0-0-(1740)	N/A		1,2,3,4	
						34.9k Swine (Su)	N/A	76-31-272					
			Wheat (grain)	100-40-0	0/13	13.5k Swine (Fa)	N/A	30-12-105	0-5-(2050)	N/A			
3894/Field 4 / Hydrant 19(N)	7/7	2013	Corn (grain)	120-40-0	0/0	27.3k Swine (Sp)	N/A	60-25-213	0-(10)-(425)	N/A		1,2,3,4	
						27.4k Swine (Su)	N/A	60-25-213					
			Wheat (grain)	100-40-0	0/7	13.7k Swine (Fa)	N/A	30-12-107	0-(10)-(760)	N/A		1,7,5,6,4	
		2014	... ...	-- -- --		29.3k Swine (Sp)	N/A	64-26-228					
			Sorghum (grain)	100-40-0	0/0	45.6k Swine (Su)	N/A	100-41-355	0-(10)-(1115)	N/A		1,2,3,4	
			Rye (cover)	0-0-0	0/0				0-(10)-(1115)	N/A			
		2015	Corn (grain)	120-40-0	0/11	18.6k Swine (Sp)	N/A	41-17-145	0-(15)-(1500)	N/A		1,2,3,4	
						31.k Swine (Su)	N/A	68-28-242					
			Wheat (grain)	100-40-0	0/12	13.7k Swine (Fa)	N/A	30-12-107	0-(10)-(1815)	N/A		1,7,5,6,4	

Tract: 25223 **Location: Sussex**

Field CFSA No. /Name	Size (ac) Total/ Used	Yr.	Crop	Needs N-P-K (lbs/ac)	Leg /Man Resid	Manure/Biosld Rate & Type (season)	IT (d)	Man/Bios N-P-K (lbs/ac)	Net = Needs - appld N-P-K (lbs/ac)	Sum P rem cred	Commercial N-P-K (lbs/ac)	Notes
3894/Field 4 / Hydrant 20(N)	5/5	2013	Corn (grain)	130-40-0	0/0	26.2k Swine (Sp)	N/A	58-24-204	0-(15)-(460)	N/A		1,2,3,4
						33.k Swine (Su)	N/A	72-30-258				
			Wheat (grain)	100-40-0	0/8	13.7k Swine (Fa)	N/A	30-12-107	0-(15)-(790)	N/A		1,7,5,6,4
		2014	... ...	-- -- --		28.5k Swine (Sp)	N/A	62-26-222				
			Sorghum (grain)	100-40-0	0/0	45.6k Swine (Su)	N/A	100-41-355	0-(15)-(1145)	N/A		1,2,3,4
			Rye (cover)	0-0-0	0/0				0-(15)-(1145)	N/A		
		2015	Corn (grain)	130-40-0	0/11	23.5k Swine (Sp)	N/A	52-21-183	0-(25)-(1565)	N/A		1,2,3,4
						30.5k Swine (Su)	N/A	67-27-238				
			Wheat (grain)	100-40-0	0/12	13.7k Swine (Fa)	N/A	30-12-107	0-(20)-(1880)	N/A		1,7,5,6,4
3894/Field 4 / Hydrant 21(N)	5/5	2013	Corn (grain)	150-60-0	0/0	30.7k Swine (Sp)	N/A	67-28-240	0-0-(535)	N/A		1,2,3,4
						37.6k Swine (Su)	N/A	83-34-293				
			Wheat (grain)	100-40-0	0/9	13.7k Swine (Fa)	N/A	30-12-107	0-0-(860)	N/A		1,7,5,6,4
		2014	... ...	-- -- --		28.k Swine (Sp)	N/A	61-25-218				
			Sorghum (grain)	110-40-0	0/0	50.1k Swine (Su)	N/A	110-45-391	0-(5)-(1250)	N/A		1,2,3,4
			Rye (cover)	0-0-0	0/0				0-(5)-(1250)	N/A		
		2015	Corn (grain)	150-60-0	0/12	28.1k Swine (Sp)	N/A	62-25-219	0-0-(1740)	N/A		1,2,3,4
						34.7k Swine (Su)	N/A	76-31-270				
			Wheat (grain)	100-40-0	0/13	13.7k Swine (Fa)	N/A	30-12-107	0-5-(2050)	N/A		1,7,5,6,4
3894/Field 4 / Hydrant 22(N)	6/6	2013	Corn (grain)	150-60-0	0/0	30.7k Swine (Sp)	N/A	67-28-240	0-0-(535)	N/A		1,2,3,4
						37.6k Swine (Su)	N/A	83-34-293				
			Wheat (grain)	100-40-0	0/9	13.7k Swine (Fa)	N/A	30-12-107	0-0-(860)	N/A		1,7,5,6,4
		2014	... ...	-- -- --		28.k Swine (Sp)	N/A	61-25-218				
			Sorghum (grain)	110-40-0	0/0	50.1k Swine (Su)	N/A	110-45-391	0-(5)-(1250)	N/A		1,2,3,4
			Rye (cover)	0-0-0	0/0				0-(5)-(1250)	N/A		
		2015	Corn (grain)	150-60-0	0/12	28.k Swine (Sp)	N/A	61-25-218	0-0-(1740)	N/A		1,2,3,4
						34.8k Swine (Su)	N/A	76-31-271				
			Wheat (grain)	100-40-0	0/13	13.7k Swine (Fa)	N/A	30-12-107	0-5-(2055)	N/A		1,7,5,6,4

Commercial Application Methods:

br - Broadcast ba - Banded sd - Sidedress

Notes:

1 Commercial fertilizer applications may be used in addition to or in place of organic fertilizer applicatins to suplament crop needs and meet yield goals. Fetrilizer application shall not exceed the total nitrogen recommendation for the field.

2 Band nitrogen with planter

3 Apply side dress nitrogen when crop is 12 to 24 inches tall. A pre-side dress tissue sample is reccomended prior to nutrient application.

4 The maximum waster water application rate per event for this field is 0.6 in./ac. or 16,292 gals./ac. Sufficient drying time will be allowed between subsequent irrigation events so that field capacity is not exceeded due to irrigation events

5 Topdress during Fall

6 Topdress during early Spring

7 Lagoon effluent may be applied in conjunction with or in place of commercial fertilizer. Effluent application shall not exceed the total nitrogen recommendation for the field.

Farm 15 Narrative

This nutrient management plan is an update for Murphy-Brown LLC farm 8515; covered by permit number VPA00576. This farm is located near the intersection of Rt. 605 and Rt. 606 in Sussex County, just north of the Sussex-Southampton county line.

This facility is managed by Murphy-Brown LLC. Swine waste at this facility is stored and treated at this site by a single stage anaerobic lagoon system. Under normal circumstances, effluent from the anaerobic lagoon system is land applied with irrigation equipment. The primary means of irrigation on this site is a hard hose traveler. Occasionally application is conducted through the use of an Aerway field applicator. In order to balance effluent utilization, effluent from any lagoon may be applied to any field. Nutrient content of the effluent is based on an average value of yearly lagoon analysis. Approximately 90.5 acres are available for land application. This update includes a change in the irrigation design to accommodate the construction of the proposed new secondary lagoon.

Crop rotation varies between fields/hydrants. Hydrants 3,5 and 7 are in fescue hay. Hydrants 9-16 are in bermuda hay. Hydrants 17-22 are in a corn, wheat, grain sorghum, cover crop rotation.

Commercial fertilizer may be used to supplement crop nutrient needs. In the event that freeboard levels are not sufficient lagoon effluent may be used to replace commercial fertilizer outlined in this plan. All nutrient applications, commercial and or effluent will not exceed the nitrogen recommendations established within the plan

Soil Test Summary

Tract	Field	Acre	Date	P2O5	K2O	Lab	Soil pH	Lime Date	rec. lime tons/Ac
2050	Field 1	5	2012-Fa	H- (55 P lbs/acre)	VH (558 K lbs/acre)	Virginia Tech	6.6		
2050	Field 2 / Hydrant 3	3	2012-Fa	H- (55 P lbs/acre)	VH (558 K lbs/acre)	Virginia Tech	6.6		
2050	Field 2 / Hydrant 4	5	2012-Fa	VH (131 P lbs/acre)	VH (594 K lbs/acre)	Virginia Tech	7.		
2050	Field 2 / Hydrant 5	3	2012-Fa	H- (55 P lbs/acre)	VH (558 K lbs/acre)	Virginia Tech	6.6		
2050	Field 2 / Hydrant 6	4	2012-Fa	H- (55 P lbs/acre)	VH (558 K lbs/acre)	Virginia Tech	7.		
2050	Field 2 / Hydrant 7	3	2012-Fa	VH (131 P lbs/acre)	VH (594 K lbs/acre)	Virginia Tech	7.		
2050	Field 2 / Hydrant 8	4	2012-Fa	VH (131 P lbs/acre)	VH (594 K lbs/acre)	Virginia Tech	7.		
2050	Field 2 / Hydrant 9	4	2012-Fa	H- (55 P lbs/acre)	VH (558 K lbs/acre)	Virginia Tech	7.		
2050	Field 2 / Hydrant 10	4	2012-Fa	VH (131 P lbs/acre)	VH (594 K lbs/acre)	Virginia Tech	7.		
2050	Field 2 / Hydrant 11	4	2012-Fa	H- (55 P lbs/acre)	VH (558 K lbs/acre)	Virginia Tech	6.6		
2050	Field 2 / Hydrant 12	4	2012-Fa	VH (131 P lbs/acre)	VH (594 K lbs/acre)	Virginia Tech	7.		
2050	Field 2 / Hydrant 13	4	2012-Fa	H- (55 P lbs/acre)	VH (558 K lbs/acre)	Virginia Tech	6.6		
2050	Field 2 / Hydrant 14	1	2012-Fa	VH (131 P lbs/acre)	VH (594 K lbs/acre)	Virginia Tech	7.		
2050	Field 3 / Hydrant 15	4	2012-Fa	H (68 P lbs/acre)	VH (701 K lbs/acre)	Virginia Tech	7.		
2050	Field 3 / Hydrant 16	7	2012-Fa	H (68 P lbs/acre)	VH (701 K lbs/acre)	Virginia Tech	7.		
25223	Field 4 / Hydrant 17	4	2012-Fa	M+ (32 P lbs/acre)	VH (403 K lbs/acre)	Virginia Tech	6.8		
25223	Field 4 / Hydrant 18	5	2012-Fa	M+ (32 P lbs/acre)	VH (403 K lbs/acre)	Virginia Tech	6.9		
25223	Field 4 / Hydrant 19	7	2012-Fa	M+ (32 P lbs/acre)	VH (403 K lbs/acre)	Virginia Tech	6.8		
25223	Field 4 / Hydrant 20	5	2012-Fa	M+ (32 P lbs/acre)	VH (470 K lbs/acre)	Virginia Tech	6.7		
25223	Field 4 / Hydrant 21	5	2012-Fa	M+ (32 P lbs/acre)	VH (470 K lbs/acre)	Virginia Tech	6.7		
25223	Field 4 / Hydrant 22	6	2012-Fa	M+ (32 P lbs/acre)	VH (470 K lbs/acre)	Virginia Tech	6.7		

Manure Production Summary

Manure Name: Swine Effluent

Animal Summary
Feeder Swine: 10500

Manure Storage Capacity: 12239.3 kgals

Manure Analysis:
TKN: 4.39
P_2O_5: .9
NH_4: 3.48
K_2O: 7.8

Plant Available Nutrients:
Immediate Incorporation:
3.59 lbs N
.90 lbs P_2O_5
7.80 lbs K_2O
Surface Applied:
2.02 lbs N
.90 lbs P_2O_5
7.80 lbs K_2O
Residual N:
yr 1: .11 lbs
yr 2: .05 lbs
yr 3: .02 lbs

Manure Production

Dec-Feb	2116
Mar-May	2116
Jun-Aug	2116
Sep-Nov	2116

Total Produced: 8466
Manure Sold/yr: 0
Manure purch./yr: 0

Liquid Manure Production Details

production [kgal/yr] = (# confined)[animals] * (avg wt)[animal-lbs/animal] * (prod factor)[gal/yr/animal-lb] * (0.001)[kgal/gal] + (# confined)[animals] * (waste-water)[gal/day/animal] * (365)[day/yr] * (0.001)[kgal/gal]

Group Name	animal type	%(#) confined	avg wt	prod factor	waste water	production
Finishing	Feeder Swine	100(10500)	145.0	2.75	0.7	6869.6

Net Precipitation Excess

NPE [kgal/yr] = {precip (50.[in/yr]) - evap (40.[in/yr])} * pit/lagoon factor (0.9) * surface area (182904.8[sq-ft]) * (1/12)[ft/in] * (7.48)[gal/cu-ft] * (0.001)[kgal/gal] = 1596.15[kgal/yr]

Field Productivities for Major Crops

Tract Name	Tract/ Field	Field Name	Acres	Predominant Soil Series	Corn	Small Grain	Alfalfa	Grass Hay	Environmental Warnings
2050	1050/1050	Field 1	5	Udorthents	V	V	Not Suited	Not Suited	
	1050/1050	Field 2 / Hy	3	Roanoke	V	V	Not Suited	Not Suited	
	1050/1050	Field 2 / Hy	5	Craven	IVb	III	Not Suited	IV	
	1050/1050	Field 2 / Hy	3	Craven	IVb	III	Not Suited	IV	
	1050/1050	Field 2 / Hy	4	Craven	IVb	III	Not Suited	IV	
	1050/1050	Field 2 / Hy	3	Yemassee	V	V	Not Suited	Not Suited	
	1050/1050	Field 2 / Hy	4	Slagle	IVb	IV	Not Suited	IV	
	1050/1050	Field 2 / Hy	4	Yemassee	V	V	Not Suited	Not Suited	
	1050/1050	Field 2 / Hy	4	Slagle	IVb	IV	Not Suited	IV	
	1050/1050	Field 2 / Hy	4	Yemassee	V	V	Not Suited	Not Suited	
	1050/1050	Field 2 / Hy	4	Slagle	IVb	IV	Not Suited	IV	
	1050/1050	Field 2 / Hy	4	Yemassee	V	V	Not Suited	Not Suited	
	1050/1050	Field 2 / Hy	1	Slagle	IIb	I	III	I	
	1050/1050	Field 3 / Hy	4	Slagle	IIb	I	III	I	
	1050/1050	Field 3 / Hy	7	Slagle	IVa	III	III	III	
25223	3894/3894	Field 4 / Hy	4	Slagle	IIIa	II	III	II	
	3894/3894	Field 4 / Hy	5	Slagle	IIb	I	III	I	
	3894/3894	Field 4 / Hy	7	Slagle	IVa	III	III	III	

3894/3894	Field 4 / Hy	5	Slagle	IIIb	II	III	II
3894/3894	Field 4 / Hy	5	Slagle	IIb	I	III	I
3894/3894	Field 4 / Hy	6	Slagle	IIb	I	III	I

Yield Range

Field Productivity Group	Corn Grain Bu/Acre	Barley/Intensive Wheat Bu/Acre	Std. Wheat Bu/Acre	Alfalfa Tons/Acre	Grass/Hay Tons/Acre
I	>170	>80	>64	>6	>4.0
II	150-170	70-80	56-64	4-6	3.5-4.0
III	130-150	60-70	48-56	<4	3.0-3.5
IV	100-130	50-60	40-48	NA	<3.0
V	<100	<50	<40	NA	NA

Farm Summary Report

Plan: **Revision** **Spring, 2013 - Winter, 2015**

Farm Name: **Farm 15**
Location: Sussex
Specialist: R.O. Britt
N-based Acres: 90.5
P-based Acres: 0.0

Tract Name: **2050**
FSA Number: 1050
Location: Sussex

Field Name: **Field 1**
Total Acres: 4.58 Usable Acres: 4.58
FSA Number: 1050
Tract: 2050
Location: Sussex
Slope Class: A Hydrologic Group: C

Riparian buffer width: 1623 ft
Distance to stream: 1623 ft

Conservation Practices:
Pasture (>75% cover)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 13.97

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 0.11 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	5.1	M-(18 P lbs/acre)	H+(297 K lbs/acre)	Virginia Tech
Fa-2012	6.6	H-(55 P lbs/acre)	VH(558 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
100	31	Udorthents

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2013-Sp	0.0 tons	Bermudagrass (hay), maint. - No Till
2014-Sp	0.0 tons	Bermudagrass (hay), maint. - No Till
2015-Sp	0.0 tons	Bermudagrass (hay), maint. - No Till

Field Name: **Field 2 / Hydrant 3**
Total Acres: 3.04 Usable Acres: 3.04
FSA Number: 1050
Tract: 2050
Location: Sussex
Slope Class: A Hydrologic Group: C

Riparian buffer width: 100 ft
Distance to stream: 223 ft

Conservation Practices:
Pasture (>75% cover)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 10.4

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 0.11 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	6.9	VH(167 P lbs/acre)	VH(958 K lbs/acre)	Virginia Tech
Fa-2012	6.6	H-(55 P lbs/acre)	VH(558 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
100	22A	Roanoke

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2013-Sp	3.8 * tons	Fescue grass (hay), maint. - No Till
2014-Sp	3.8 * tons	Fescue grass (hay), maint. - Tilled
2015-Sp	3.8 * tons	Fescue grass (hay), maint. - Tilled

Field Name: **Field 2 / Hydrant 4**
Total Acres: 5.31 Usable Acres: 5.31
FSA Number: 1050
Tract: 2050
Location: Sussex
Slope Class: B Hydrologic Group: C

Riparian buffer width: 100 ft
Distance to stream: 1294 ft

Conservation Practices:
Pasture (>75% cover)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 24.41

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0

T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 4.46 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	6.9	VH(281 P lbs/acre)	VH(1105 K lbs/acre)	Virginia Tech
Fa-2012	7.0	VH(131 P lbs/acre)	VH(594 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
100	9B	Craven

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2013-Sp	3.1 * tons	Bermudagrass (hay), maint. - No Till
2014-Sp	3.1 * tons	Bermudagrass (hay), maint. - No Till
2015-Sp	3.1 * tons	Bermudagrass (hay), maint. - No Till

Field Name: **Field 2 / Hydrant 5**
Total Acres: 2.60 Usable Acres: 2.60
FSA Number: 1050
Tract: 2050
Location: Sussex
Slope Class: B Hydrologic Group: C

Riparian buffer width: 500 ft
Distance to stream: 500 ft

Conservation Practices:
Pasture (>75% cover)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 4.81

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 0.3 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	6.2	VH(167 P lbs/acre)	VH(958 K lbs/acre)	Virginia Tech
Fa-2012	6.6	H-(55 P lbs/acre)	VH(558 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
100	9B	Craven

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2013-Sp	1.0 tons	Fescue grass (hay), maint. - No Till
2014-Sp	1.0 tons	Fescue grass (hay), maint. - Tilled
2015-Sp	1.0 tons	Fescue grass (hay), maint. - Tilled

Field Name: **Field 2 / Hydrant 6**
Total Acres: 4.25 Usable Acres: 4.25
FSA Number: 1050
Tract: 2050
Location: Sussex
Slope Class: B Hydrologic Group: C

Riparian buffer width: 100 ft
Distance to stream: 1574 ft

Conservation Practices:
Pasture (>75% cover)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation

P-Index value = 21.03

%slope: 0.0	Slope Len: 0.	R factor: 0.0	K factor: 0.0
T factor: 0.0	P factor: 1.0	Cmax: 0.000	Erosion: 4.19 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	6.2	VH(281 P lbs/acre)	VH(1105 K lbs/acre)	Virginia Tech
Fa-2012	7.0	H-(55 P lbs/acre)	VH(558 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
90	9B	Craven
10	33A	Myatt Yemassee

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2013-Sp	0.9 tons	Bermudagrass (hay), maint. - No Till
2014-Sp	0.9 tons	Bermudagrass (hay), maint. - No Till
2015-Sp	0.9 tons	Bermudagrass (hay), maint. - No Till

Field Name:	**Field 2 / Hydrant 7**		
Total Acres:	2.73	Usable Acres:	2.73
FSA Number:	1050		
Tract:	2050		
Location:		Sussex	
Slope Class:	A	Hydrologic Group:	C

Riparian buffer width: 100 ft
Distance to stream: 1857 ft

Conservation Practices:
Pasture (>75% cover)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 13.35

%slope: 0.0	Slope Len: 0.	R factor: 0.0	K factor: 0.0
T factor: 0.0	P factor: 1.0	Cmax: 0.000	Erosion: 0.11 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	6.2	VH(167 P lbs/acre)	VH(958 K lbs/acre)	Virginia Tech
Fa-2012	7.0	VH(131 P lbs/acre)	VH(594 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
100	33A	Myatt Yemassee

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2013-Sp	4.0 * tons	Fescue grass (hay), maint. - No Till
2014-Sp	4.0 * tons	Fescue grass (hay), maint. - Tilled
2015-Sp	4.0 * tons	Fescue grass (hay), maint. - Tilled

Field Name:	**Field 2 / Hydrant 8**		
Total Acres:	4.16	Usable Acres:	4.16
FSA Number:	1050		
Tract:	2050		
Location:		Sussex	
Slope Class:	A	Hydrologic Group:	C

Riparian buffer width: 100 ft
Distance to stream: 1857 ft

Conservation Practices:

Pasture (>75% cover)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 22.71

%slope: 0.0	Slope Len: 0.	R factor: 0.0	K factor: 0.0
T factor: 0.0	P factor: 1.0	Cmax: 0.000	Erosion: 1.78 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	6.2	VH(281 P lbs/acre)	VH(1105 K lbs/acre)	Virginia Tech
Fa-2012	7.0	VH(131 P lbs/acre)	VH(594 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
60	33A	Myatt Yemassee
40	25A	Slagle

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2013-Sp	3.2 * tons	Bermudagrass (hay), maint. - No Till
2014-Sp	3.2 * tons	Bermudagrass (hay), maint. - No Till
2015-Sp	3.2 * tons	Bermudagrass (hay), maint. - No Till

Field Name:	**Field 2 / Hydrant 9**		
Total Acres:	4.07	Usable Acres:	4.07
FSA Number:	1050		
Tract:	2050		
Location:		Sussex	
Slope Class:	A	Hydrologic Group:	C

Riparian buffer width: 100 ft

Distance to stream: 2134 ft

Conservation Practices:
Pasture (>75% cover)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 21.18

%slope: 0.0	Slope Len: 0.	R factor: 0.0	K factor: 0.0
T factor: 0.0	P factor: 1.0	Cmax: 0.000	Erosion: 1.68 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	7.0	VH(184 P lbs/acre)	VH(923 K lbs/acre)	Virginia Tech
Fa-2012	7.0	H-(55 P lbs/acre)	VH(558 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
100	33A	Myatt Yemassee

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2013-Sp	2.9 * tons	Bermudagrass (hay), maint. - No Till
2014-Sp	2.9 * tons	Bermudagrass (hay), maint. - No Till
2015-Sp	2.9 * tons	Bermudagrass (hay), maint. - No Till

Field Name:	**Field 2 / Hydrant 10**		
Total Acres:	4.07	Usable Acres:	4.07
FSA Number:	1050		
Tract:	2050		
Location:		Sussex	
Slope Class:	A	Hydrologic Group:	C

Riparian buffer width: 100 ft
Distance to stream: 2134 ft

Conservation Practices:
Pasture (50%-75% cover)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 22.71

%slope: 0.0	Slope Len: 0.	R factor: 0.0	K factor: 0.0
T factor: 0.0	P factor: 1.0	Cmax: 0.000	Erosion: 1.78 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	6.2	VH(281 P lbs/acre)	VH(1105 K lbs/acre)	Virginia Tech
Fa-2012	7.0	VH(131 P lbs/acre)	VH(594 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
60	33A	Myatt Yemassee
40	25A	Slagle

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2013-Sp	2.6 tons	Bermudagrass (hay), maint. - No Till
2014-Sp	2.6 tons	Bermudagrass (hay), maint. - No Till
2015-Sp	2.6 tons	Bermudagrass (hay), maint. - No Till

Field Name: **Field 2 / Hydrant 11**
Total Acres: 4.08 Usable Acres: 4.08
FSA Number: 1050
Tract: 2050

Location: Sussex
Slope Class: A Hydrologic Group: C

Riparian buffer width: 100 ft
Distance to stream: 2414 ft

Conservation Practices:
Pasture (50%-75% cover)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 21.19

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 1.68 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	7.0	VH(184 P lbs/acre)	VH(923 K lbs/acre)	Virginia Tech
Fa-2012	6.6	H-(55 P lbs/acre)	VH(558 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
100	33A	Myatt Yemassee

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2013-Sp	2.9 * tons	Bermudagrass (hay), maint. - No Till
2014-Sp	2.9 * tons	Bermudagrass (hay), maint. - No Till
2015-Sp	2.9 * tons	Bermudagrass (hay), maint. - No Till

Field Name: Field 2 / Hydrant 12
Total Acres: 3.92 Usable Acres: 3.92

FSA Number:	1050		
Tract:	2050		
Location:		Sussex	
Slope Class:	A	Hydrologic Group:	C

Riparian buffer width: 100 ft
Distance to stream: 2414 ft

Conservation Practices:
Pasture (50%-75% cover)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 22.7

%slope: 0.0	Slope Len: 0.	R factor: 0.0	K factor: 0.0
T factor: 0.0	P factor: 1.0	Cmax: 0.000	Erosion: 1.78 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	6.2	VH(281 P lbs/acre)	VH(1105 K lbs/acre)	Virginia Tech
Fa-2012	7.0	VH(131 P lbs/acre)	VH(594 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
60	33A	Myatt Yemassee
40	25A	Slagle

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2013-Sp	2.6 tons	Bermudagrass (hay), maint. - No Till
2014-Sp	2.6 tons	Bermudagrass (hay), maint. - No Till
2015-Sp	2.6 tons	Bermudagrass (hay), maint. - No Till

Field Name: **Field 2 / Hydrant 13**
Total Acres: 4.37 Usable Acres: 4.37
FSA Number: 1050
Tract: 2050
Location: Sussex
Slope Class: A Hydrologic Group: C

Riparian buffer width: 100 ft
Distance to stream: 2694 ft

Conservation Practices:
Pasture (>75% cover)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 21.19

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 1.68 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	7.0	VH(184 P lbs/acre)	VH(923 K lbs/acre)	Virginia Tech
Fa-2012	6.6	H-(55 P lbs/acre)	VH(558 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
100	33A	Myatt Yemassee

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2013-Sp	2.9 * tons	Bermudagrass (hay), maint. - No Till

2014-Sp	2.9 * tons	Bermudagrass (hay), maint. - No Till
2015-Sp	2.9 * tons	Bermudagrass (hay), maint. - No Till

Field Name: **Field 2 / Hydrant 14**

Total Acres:	0.91	Usable Acres:	0.91
FSA Number:	1050		
Tract:	2050		
Location:		Sussex	
Slope Class:	A	Hydrologic Group:	C

Riparian buffer width: 100 ft
Distance to stream: 2694 ft

Conservation Practices:
Pasture (>75% cover)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 20.68

%slope: 0.0	Slope Len: 0.	R factor: 0.0	K factor: 0.0
T factor: 0.0	P factor: 1.0	Cmax: 0.000	Erosion: 1.92 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	6.2	VH(281 P lbs/acre)	VH(1105 K lbs/acre)	Virginia Tech
Fa-2012	7.0	VH(131 P lbs/acre)	VH(594 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
100	25A	Slagle

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2013-Sp	6.5 tons	Bermudagrass (hay), maint. - No Till
2014-Sp	6.5 tons	Bermudagrass (hay), maint. - No Till
2015-Sp	6.5 tons	Bermudagrass (hay), maint. - No Till

Field Name: **Field 3 / Hydrant 15**
Total Acres: 3.50 Usable Acres: 3.50
FSA Number: 1050
Tract: 2050
Location: Sussex
Slope Class: A Hydrologic Group: C

Riparian buffer width: 534 ft
Distance to stream: 789 ft

Conservation Practices:
Pasture (>75% cover)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 19.34

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 1.92 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	7.7	H(70 P lbs/acre)	VH(519 K lbs/acre)	Virginia Tech
Fa-2012	7.0	H(68 P lbs/acre)	VH(701 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
100	25A	Slagle

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2013-Sp	6.5 tons	Bermudagrass (hay), maint. - No Till
2014-Sp	6.5 tons	Bermudagrass (hay), maint. - No Till
2015-Sp	6.5 tons	Bermudagrass (hay), maint. - No Till

Field Name: **Field 3 / Hydrant 16**
Total Acres: 7.09 Usable Acres: 7.09
FSA Number: 1050
Tract: 2050
Location: Sussex
Slope Class: A Hydrologic Group: C

Riparian buffer width: 534 ft
Distance to stream: 789 ft

Conservation Practices:
Pasture (>75% cover)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 19.13

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 1.82 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	7.4	H(60 P lbs/acre)	VH(669 K lbs/acre)	Virginia Tech
Fa-2012	7.0	H(68 P lbs/acre)	VH(701 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
60	25A	Slagle

40 33A Myatt Yemassee

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2013-Sp	3.9 tons	Bermudagrass (hay), maint. - No Till
2014-Sp	3.9 tons	Bermudagrass (hay), maint. - No Till
2015-Sp	3.9 tons	Bermudagrass (hay), maint. - No Till

Tract Name: **25223**
FSA Number: 3894
Location: Sussex

Field Name: **Field 4 / Hydrant 17**
Total Acres: 3.73 Usable Acres: 3.73
FSA Number: 3894
Tract: 25223
Location: Sussex
Slope Class: A Hydrologic Group: C

Riparian buffer width: 300 ft
Distance to stream: 500 ft

Conservation Practices:
Contour planting
Conservation tillage (>30% residue)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 11.95

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 0.62 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	6.9	VH(215 P lbs/acre)	VH(778 K lbs/acre)	Virginia Tech
Fa-2012	6.8	M+(32 P lbs/acre)	VH(403 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
80	25A	Slagle
20	33A	Myatt Yemassee

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2013-Sp	136.0 bushel(s)	Corn (grain) - No Till
2013-Fa	56.0 bushel(s)	Wheat (grain) - No Till
2014-Su	104.0 bushel(s)	Sorghum (grain) - No Till
2014-Fa	0.0	Rye (cover) - No Till
2015-Sp	136.0 bushel(s)	Corn (grain) - No Till
2015-Fa	56.0 bushel(s)	Wheat (grain) - No Till
2016-Su	104.0 bushel(s)	Sorghum (grain) - No Till

Field Name: **Field 4 / Hydrant 18**
Total Acres: 5.42 Usable Acres: 5.42
FSA Number: 3894
Tract: 25223
Location: Sussex
Slope Class: A Hydrologic Group: C

Riparian buffer width: 500 ft
Distance to stream: 500 ft

Conservation Practices:
Contour planting
Conservation tillage (>30% residue)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation

P-Index value = 11.79

%slope: 0.0	Slope Len: 0.	R factor: 0.0	K factor: 0.0
T factor: 0.0	P factor: 1.0	Cmax: 0.000	Erosion: 0.63 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	6.9	VH(215 P lbs/acre)	VH(778 K lbs/acre)	Virginia Tech
Fa-2012	6.9	M+(32 P lbs/acre)	VH(403 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
100	25A	Slagle

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2013-Sp	150.0 bushel(s)	Corn (grain) - No Till
2013-Fa	64.0 bushel(s)	Wheat (grain) - No Till
2014-Su	110.0 bushel(s)	Sorghum (grain) - No Till
2014-Fa	0.0	Rye (cover) - No Till
2015-Sp	150.0 bushel(s)	Corn (grain) - No Till
2015-Fa	64.0 bushel(s)	Wheat (grain) - No Till
2016-Su	110.0 bushel(s)	Sorghum (grain) - No Till

Field Name:	**Field 4 / Hydrant 19**		
Total Acres:	6.63	Usable Acres:	6.63
FSA Number:	3894		
Tract:	25223		
Location:		Sussex	
Slope Class:	A	Hydrologic Group:	C

Riparian buffer width: 814 ft
Distance to stream: 1165 ft

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 12.24

%slope: 0.0	Slope Len: 0.	R factor: 0.0	K factor: 0.0
T factor: 0.0	P factor: 1.0	Cmax: 0.000	Erosion: 0.6 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	6.2	VH(215 P lbs/acre)	VH(778 K lbs/acre)	Virginia Tech
Fa-2012	6.8	M+(32 P lbs/acre)	VH(403 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
60	25A	Slagle
40	33A	Myatt Yemassee

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2013-Sp	122.0 bushel(s)	Corn (grain) - No Till
2013-Fa	48.0 bushel(s)	Wheat (grain) - No Till
2014-Su	98.0 bushel(s)	Sorghum (grain) - No Till
2014-Fa	0.0	Rye (cover) - No Till
2015-Sp	122.0 bushel(s)	Corn (grain) - No Till
2015-Fa	48.0 bushel(s)	Wheat (grain) - No Till
2016-Su	98.0 bushel(s)	Sorghum (grain) - No Till

Field Name:	**Field 4 / Hydrant 20**		
Total Acres:	4.89	Usable Acres:	4.89
FSA Number:	3894		
Tract:	25223		
Location:		Sussex	
Slope Class:	B	Hydrologic Group:	C

Riparian buffer width: 814 ft
Distance to stream: 1165 ft

Conservation Practices:
Contour planting
Conservation tillage (>30% residue)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 12.51

%slope: 0.0	Slope Len: 0.	R factor: 0.0	K factor: 0.0
T factor: 0.0	P factor: 1.0	Cmax: 0.000	Erosion: 1.87 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	7.3	VH(206 P lbs/acre)	VH(1241 K lbs/acre)	Virginia Tech
Fa-2012	6.7	M+(32 P lbs/acre)	VH(470 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
60	25B	Slagle
10	10C3	Craven
30	9B	Craven

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2013-Sp	130.0 bushel(s)	Corn (grain) - No Till
2013-Fa	57.6 * bushel(s)	Wheat (grain) - No Till
2014-Su	102.0 bushel(s)	Sorghum (grain) - No Till
2014-Fa	0.0	Rye (cover) - No Till
2015-Sp	130.0 bushel(s)	Corn (grain) - No Till
2015-Fa	57.6 * bushel(s)	Wheat (grain) - No Till

Field Name: **Field 4 / Hydrant 21**
Total Acres: 5.37 Usable Acres: 5.37
FSA Number: 3894
Tract: 25223
Location: Sussex
Slope Class: B Hydrologic Group: C

Riparian buffer width: 573 ft
Distance to stream: 573 ft

Conservation Practices:
Contour planting
Conservation tillage (>30% residue)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 13.37

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 1.78 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	6.2	VH(206 P lbs/acre)	VH(1241 K lbs/acre)	Virginia Tech
Fa-2012	6.7	M+(32 P lbs/acre)	VH(470 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
100	25B	Slagle

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME

2013-Sp	150.0 bushel(s)	Corn (grain) - No Till
2013-Fa	64.0 bushel(s)	Wheat (grain) - No Till
2014-Su	110.0 bushel(s)	Sorghum (grain) - No Till
2014-Fa	0.0	Rye (cover) - No Till
2015-Sp	150.0 bushel(s)	Corn (grain) - No Till
2015-Fa	64.0 bushel(s)	Wheat (grain) - No Till
2016-Su	110.0 bushel(s)	Sorghum (grain) - No Till

Field Name: **Field 4 / Hydrant 22**
Total Acres: 5.76 Usable Acres: 5.76
FSA Number: 3894
Tract: 25223
Location: Sussex
Slope Class: B Hydrologic Group: C

Riparian buffer width: 500 ft
Distance to stream: 500 ft

Conservation Practices:
Contour planting
Conservation tillage (>30% residue)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 13.37

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 1.78 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	6.2	VH(206 P lbs/acre)	VH(1241 K lbs/acre)	Virginia Tech
Fa-2012	6.7	M+(32 P lbs/acre)	VH(470 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
100	25B	Slagle

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2013-Sp	150.0 bushel(s)	Corn (grain) - No Till
2013-Fa	64.0 bushel(s)	Wheat (grain) - No Till
2014-Su	110.0 bushel(s)	Sorghum (grain) - No Till
2014-Fa	0.0	Rye (cover) - No Till
2015-Sp	150.0 bushel(s)	Corn (grain) - No Till
2015-Fa	64.0 bushel(s)	Wheat (grain) - No Till
2016-Su	110.0 bushel(s)	Sorghum (grain) - No Till

Manure Spreading Summary

Season	Manure	Rate/ac	Tract	Field	Acres	Crop	Total in Field	Running Total
2013Sp	Swine Effluent	58.1 kgals	2050	Field 1	5	Bermudagrass (hay), maint	266 kgals	266 kgals
		13.6 kgals	2050	Field 2 / Hydrant 3	3	Fescue grass (hay), maint	41 kgals	308 kgals
		53.5 kgals	2050	Field 2 / Hydrant 4	5	Bermudagrass (hay), maint	284 kgals	592 kgals
		10.6 kgals	2050	Field 2 / Hydrant 5	3	Fescue grass (hay), maint	28 kgals	620 kgals
		53.5 kgals	2050	Field 2 / Hydrant 6	4	Bermudagrass (hay), maint	227 kgals	847 kgals
		13.6 kgals	2050	Field 2 / Hydrant 7	3	Fescue grass (hay), maint	37 kgals	884 kgals
		53.5 kgals	2050	Field 2 / Hydrant 8	4	Bermudagrass (hay), maint	223 kgals	1107 kgals
		53.5 kgals	2050	Field 2 / Hydrant 9	4	Bermudagrass (hay), maint	218 kgals	1325 kgals
		53.5 kgals	2050	Field 2 / Hydrant 10	4	Bermudagrass (hay), maint	218 kgals	1542 kgals
		53.5 kgals	2050	Field 2 / Hydrant 11	4	Bermudagrass (hay), maint	218 kgals	1761 kgals
		53.5 kgals	2050	Field 2 / Hydrant 12	4	Bermudagrass (hay), maint	210 kgals	1971 kgals
		53.5 kgals	2050	Field 2 / Hydrant 13	4	Bermudagrass (hay), maint	234 kgals	2204 kgals
		61.5 kgals	2050	Field 2 / Hydrant 14	1	Bermudagrass (hay), maint	56 kgals	2260 kgals
		63.2 kgals	2050	Field 3 / Hydrant 15	4	Bermudagrass (hay), maint	221 kgals	2482 kgals
		53.5 kgals	2050	Field 3 / Hydrant 16	7	Bermudagrass (hay), maint	380 kgals	2861 kgals
		29.6 kgals	25223	Field 4 / Hydrant 17	4	Corn (grain)	110 kgals	2971 kgals
		30.7 kgals	25223	Field 4 / Hydrant 18	5	Corn (grain)	167 kgals	3138 kgals
		27.3 kgals	25223	Field 4 / Hydrant 19	7	Corn (grain)	181 kgals	3319 kgals
		26.2 kgals	25223	Field 4 / Hydrant 20	5	Corn (grain)	128 kgals	3447 kgals
		30.7 kgals	25223	Field 4 / Hydrant 21	5	Corn (grain)	165 kgals	3612 kgals
		30.7 kgals	25223	Field 4 / Hydrant 22	6	Corn (grain)	177 kgals	3789 kgals
2013Su	Swine Effluent	48.9 kgals	2050	Field 1	5	Bermudagrass (hay), maint	224 kgals	224 kgals
		13.6 kgals	2050	Field 2 / Hydrant 3	3	Fescue grass (hay), maint	41 kgals	265 kgals
		53.5 kgals	2050	Field 2 / Hydrant 4	5	Bermudagrass (hay), maint	284 kgals	550 kgals
		10.6 kgals	2050	Field 2 / Hydrant 5	3	Fescue grass (hay), maint	28 kgals	577 kgals
		53.5 kgals	2050	Field 2 / Hydrant 6	4	Bermudagrass (hay), maint	227 kgals	805 kgals
		13.6 kgals	2050	Field 2 / Hydrant 7	3	Fescue grass (hay), maint	37 kgals	842 kgals
		53.5 kgals	2050	Field 2 / Hydrant 8	4	Bermudagrass (hay), maint	223 kgals	1064 kgals
		53.5 kgals	2050	Field 2 / Hydrant 9	4	Bermudagrass (hay), maint	218 kgals	1282 kgals
		53.5 kgals	2050	Field 2 / Hydrant 10	4	Bermudagrass (hay), maint	218 kgals	1500 kgals
		53.5 kgals	2050	Field 2 / Hydrant 11	4	Bermudagrass (hay), maint	218 kgals	1719 kgals
		53.5 kgals	2050	Field 2 / Hydrant 12	4	Bermudagrass (hay), maint	210 kgals	1928 kgals
		53.6 kgals	2050	Field 2 / Hydrant 13	4	Bermudagrass (hay), maint	234 kgals	2162 kgals
		61.5 kgals	2050	Field 2 / Hydrant 14	1	Bermudagrass (hay), maint	56 kgals	2218 kgals
		59.8 kgals	2050	Field 3 / Hydrant 15	4	Bermudagrass (hay), maint	209 kgals	2428 kgals
		53.5 kgals	2050	Field 3 / Hydrant 16	7	Bermudagrass (hay), maint	380 kgals	2807 kgals
		34.2 kgals	25223	Field 4 / Hydrant 17	4	Corn (grain)	128 kgals	2935 kgals
		37.6 kgals	25223	Field 4 / Hydrant 18	5	Corn (grain)	204 kgals	3139 kgals
		27.4 kgals	25223	Field 4 / Hydrant 19	7	Corn (grain)	181 kgals	3320 kgals
		33.0 kgals	25223	Field 4 / Hydrant 20	5	Corn (grain)	161 kgals	3482 kgals
		37.6 kgals	25223	Field 4 / Hydrant 21	5	Corn (grain)	202 kgals	3683 kgals
		37.6 kgals	25223	Field 4 / Hydrant 22	6	Corn (grain)	217 kgals	3900 kgals
2013Fa	Swine Effluent	13.8 kgals	2050	Field 2 / Hydrant 3	3	Fescue grass (hay), maint	42 kgals	42 kgals
		10.6 kgals	2050	Field 2 / Hydrant 5	3	Fescue grass (hay), maint	28 kgals	70 kgals
		13.6 kgals	2050	Field 2 / Hydrant 7	3	Fescue grass (hay), maint	37 kgals	107 kgals

	12.7 kgals	25223	Field 4 / Hydrant 17	4	Wheat (grain)	47 kgals	154 kgals
	14.0 kgals	25223	Field 4 / Hydrant 18	5	Wheat (grain)	76 kgals	230 kgals
	13.7 kgals	25223	Field 4 / Hydrant 19	7	Wheat (grain)	91 kgals	321 kgals
	13.7 kgals	25223	Field 4 / Hydrant 20	5	Wheat (grain)	67 kgals	388 kgals
	13.7 kgals	25223	Field 4 / Hydrant 21	5	Wheat (grain)	74 kgals	461 kgals
	13.7 kgals	25223	Field 4 / Hydrant 22	6	Wheat (grain)	79 kgals	540 kgals

Season	Manure	Rate/ac	Tract	Field	Acres	Crop	Total In Field	Running Total
2014Sp	Swine Effluent	50.9 kgals	2050	Field 1	5	Bermudagrass (hay), maint	233 kgals	233 kgals
		12.9 kgals	2050	Field 2 / Hydrant 3	3	Fescue grass (hay), maint	39 kgals	272 kgals
		50.9 kgals	2050	Field 2 / Hydrant 4	5	Bermudagrass (hay), maint	270 kgals	542 kgals
		10.1 kgals	2050	Field 2 / Hydrant 5	3	Fescue grass (hay), maint	26 kgals	569 kgals
		50.9 kgals	2050	Field 2 / Hydrant 6	4	Bermudagrass (hay), maint	216 kgals	785 kgals
		13.0 kgals	2050	Field 2 / Hydrant 7	3	Fescue grass (hay), maint	35 kgals	820 kgals
		50.9 kgals	2050	Field 2 / Hydrant 8	4	Bermudagrass (hay), maint	212 kgals	1032 kgals
		50.9 kgals	2050	Field 2 / Hydrant 9	4	Bermudagrass (hay), maint	207 kgals	1239 kgals
		50.9 kgals	2050	Field 2 / Hydrant 10	4	Bermudagrass (hay), maint	207 kgals	1446 kgals
		50.9 kgals	2050	Field 2 / Hydrant 11	4	Bermudagrass (hay), maint	208 kgals	1653 kgals
		50.9 kgals	2050	Field 2 / Hydrant 12	4	Bermudagrass (hay), maint	199 kgals	1853 kgals
		50.9 kgals	2050	Field 2 / Hydrant 13	4	Bermudagrass (hay), maint	222 kgals	2075 kgals
		58.4 kgals	2050	Field 2 / Hydrant 14	1	Bermudagrass (hay), maint	53 kgals	2128 kgals
		58.4 kgals	2050	Field 3 / Hydrant 15	4	Bermudagrass (hay), maint	205 kgals	2333 kgals
		50.9 kgals	2050	Field 3 / Hydrant 16	7	Bermudagrass (hay), maint	361 kgals	2694 kgals
		29.3 kgals	25223	Field 4 / Hydrant 17	4	Wheat (grain)	109 kgals	2803 kgals
		27.7 kgals	25223	Field 4 / Hydrant 18	5	Wheat (grain)	150 kgals	2953 kgals
		29.3 kgals	25223	Field 4 / Hydrant 19	7	Wheat (grain)	194 kgals	3147 kgals
		28.5 kgals	25223	Field 4 / Hydrant 20	5	Wheat (grain)	139 kgals	3286 kgals
		28.0 kgals	25223	Field 4 / Hydrant 21	5	Wheat (grain)	150 kgals	3437 kgals
		28.0 kgals	25223	Field 4 / Hydrant 22	6	Wheat (grain)	161 kgals	3598 kgals
2014Su	Swine Effluent	50.9 kgals	2050	Field 1	5	Bermudagrass (hay), maint	233 kgals	233 kgals
		12.9 kgals	2050	Field 2 / Hydrant 3	3	Fescue grass (hay), maint	39 kgals	272 kgals
		50.9 kgals	2050	Field 2 / Hydrant 4	5	Bermudagrass (hay), maint	270 kgals	542 kgals
		10.1 kgals	2050	Field 2 / Hydrant 5	3	Fescue grass (hay), maint	26 kgals	568 kgals
		50.8 kgals	2050	Field 2 / Hydrant 6	4	Bermudagrass (hay), maint	216 kgals	784 kgals
		13.0 kgals	2050	Field 2 / Hydrant 7	3	Fescue grass (hay), maint	35 kgals	820 kgals
		50.8 kgals	2050	Field 2 / Hydrant 8	4	Bermudagrass (hay), maint	211 kgals	1031 kgals
		50.8 kgals	2050	Field 2 / Hydrant 9	4	Bermudagrass (hay), maint	207 kgals	1238 kgals
		50.8 kgals	2050	Field 2 / Hydrant 10	4	Bermudagrass (hay), maint	207 kgals	1445 kgals
		50.8 kgals	2050	Field 2 / Hydrant 11	4	Bermudagrass (hay), maint	207 kgals	1652 kgals
		50.9 kgals	2050	Field 2 / Hydrant 12	4	Bermudagrass (hay), maint	199 kgals	1851 kgals
		50.8 kgals	2050	Field 2 / Hydrant 13	4	Bermudagrass (hay), maint	222 kgals	2073 kgals
		58.4 kgals	2050	Field 2 / Hydrant 14	1	Bermudagrass (hay), maint	53 kgals	2126 kgals
		58.4 kgals	2050	Field 3 / Hydrant 15	4	Bermudagrass (hay), maint	204 kgals	2331 kgals
		50.8 kgals	2050	Field 3 / Hydrant 16	7	Bermudagrass (hay), maint	360 kgals	2691 kgals
		45.6 kgals	25223	Field 4 / Hydrant 17	4	Sorghum (grain)	170 kgals	2861 kgals
		50.1 kgals	25223	Field 4 / Hydrant 18	5	Sorghum (grain)	272 kgals	3133 kgals
		45.6 kgals	25223	Field 4 / Hydrant 19	7	Sorghum (grain)	302 kgals	3435 kgals
		45.6 kgals	25223	Field 4 / Hydrant 20	5	Sorghum (grain)	223 kgals	3657 kgals

		50.1 kgals	25223	Field 4 / Hydrant 21	5	Sorghum (grain)	269 kgals	3926 kgals
		50.1 kgals	25223	Field 4 / Hydrant 22	6	Sorghum (grain)	289 kgals	4215 kgals
2014Fa	Swine Effluent	13.2 kgals	2050	Field 2 / Hydrant 3	3	Fescue grass (hay), maint	40 kgals	40 kgals
		10.1 kgals	2050	Field 2 / Hydrant 5	3	Fescue grass (hay), maint	26 kgals	66 kgals
		13.0 kgals	2050	Field 2 / Hydrant 7	3	Fescue grass (hay), maint	35 kgals	102 kgals

Season	Manure	Rate/ac	Tract	Field	Acres	Crop	Total in Field	Running Total
2015Sp	Swine Effluent	49.9 kgals	2050	Field 1	5	Bermudagrass (hay), maint	228 kgals	228 kgals
		12.7 kgals	2050	Field 2 / Hydrant 3	3	Fescue grass (hay), maint	39 kgals	267 kgals
		49.9 kgals	2050	Field 2 / Hydrant 4	5	Bermudagrass (hay), maint	265 kgals	532 kgals
		9.9 kgals	2050	Field 2 / Hydrant 5	3	Fescue grass (hay), maint	26 kgals	558 kgals
		49.8 kgals	2050	Field 2 / Hydrant 6	4	Bermudagrass (hay), maint	212 kgals	769 kgals
		12.7 kgals	2050	Field 2 / Hydrant 7	3	Fescue grass (hay), maint	35 kgals	804 kgals
		49.9 kgals	2050	Field 2 / Hydrant 8	4	Bermudagrass (hay), maint	208 kgals	1012 kgals
		49.9 kgals	2050	Field 2 / Hydrant 9	4	Bermudagrass (hay), maint	203 kgals	1215 kgals
		49.9 kgals	2050	Field 2 / Hydrant 10	4	Bermudagrass (hay), maint	203 kgals	1418 kgals
		49.9 kgals	2050	Field 2 / Hydrant 11	4	Bermudagrass (hay), maint	204 kgals	1621 kgals
		49.9 kgals	2050	Field 2 / Hydrant 12	4	Bermudagrass (hay), maint	196 kgals	1817 kgals
		49.9 kgals	2050	Field 2 / Hydrant 13	4	Bermudagrass (hay), maint	218 kgals	2035 kgals
		57.3 kgals	2050	Field 2 / Hydrant 14	1	Bermudagrass (hay), maint	52 kgals	2087 kgals
		57.3 kgals	2050	Field 3 / Hydrant 15	4	Bermudagrass (hay), maint	201 kgals	2288 kgals
		49.9 kgals	2050	Field 3 / Hydrant 16	7	Bermudagrass (hay), maint	354 kgals	2641 kgals
		22.1 kgals	25223	Field 4 / Hydrant 17	4	Corn (grain)	82 kgals	2724 kgals
		27.9 kgals	25223	Field 4 / Hydrant 18	5	Corn (grain)	151 kgals	2875 kgals
		18.6 kgals	25223	Field 4 / Hydrant 19	7	Corn (grain)	123 kgals	2998 kgals
		23.5 kgals	25223	Field 4 / Hydrant 20	5	Corn (grain)	115 kgals	3113 kgals
		28.1 kgals	25223	Field 4 / Hydrant 21	5	Corn (grain)	151 kgals	3264 kgals
		28.0 kgals	25223	Field 4 / Hydrant 22	6	Corn (grain)	161 kgals	3425 kgals
2015Su	Swine Effluent	49.9 kgals	2050	Field 1	5	Bermudagrass (hay), maint	228 kgals	228 kgals
		12.7 kgals	2050	Field 2 / Hydrant 3	3	Fescue grass (hay), maint	39 kgals	267 kgals
		49.9 kgals	2050	Field 2 / Hydrant 4	5	Bermudagrass (hay), maint	265 kgals	532 kgals
		9.9 kgals	2050	Field 2 / Hydrant 5	3	Fescue grass (hay), maint	26 kgals	558 kgals
		49.9 kgals	2050	Field 2 / Hydrant 6	4	Bermudagrass (hay), maint	212 kgals	770 kgals
		12.7 kgals	2050	Field 2 / Hydrant 7	3	Fescue grass (hay), maint	35 kgals	805 kgals
		49.9 kgals	2050	Field 2 / Hydrant 8	4	Bermudagrass (hay), maint	208 kgals	1012 kgals
		49.8 kgals	2050	Field 2 / Hydrant 9	4	Bermudagrass (hay), maint	203 kgals	1215 kgals
		49.9 kgals	2050	Field 2 / Hydrant 10	4	Bermudagrass (hay), maint	203 kgals	1418 kgals
		49.9 kgals	2050	Field 2 / Hydrant 11	4	Bermudagrass (hay), maint	204 kgals	1621 kgals
		49.9 kgals	2050	Field 2 / Hydrant 12	4	Bermudagrass (hay), maint	196 kgals	1817 kgals
		49.9 kgals	2050	Field 2 / Hydrant 13	4	Bermudagrass (hay), maint	218 kgals	2035 kgals
		57.3 kgals	2050	Field 2 / Hydrant 14	1	Bermudagrass (hay), maint	52 kgals	2087 kgals
		57.3 kgals	2050	Field 3 / Hydrant 15	4	Bermudagrass (hay), maint	201 kgals	2288 kgals
		49.9 kgals	2050	Field 3 / Hydrant 16	7	Bermudagrass (hay), maint	354 kgals	2641 kgals
		31.8 kgals	25223	Field 4 / Hydrant 17	4	Corn (grain)	119 kgals	2760 kgals
		34.9 kgals	25223	Field 4 / Hydrant 18	5	Corn (grain)	189 kgals	2949 kgals
		31.0 kgals	25223	Field 4 / Hydrant 19	7	Corn (grain)	205 kgals	3154 kgals
		30.5 kgals	25223	Field 4 / Hydrant 20	5	Corn (grain)	149 kgals	3304 kgals
		34.7 kgals	25223	Field 4 / Hydrant 21	5	Corn (grain)	186 kgals	3490 kgals

		34.8 kgals	25223	Field 4 / Hydrant 22	6	Corn (grain)	200 kgals	3690 kgals
2015Fa	Swine Effluent	12.7 kgals	2050	Field 2 / Hydrant 3	3	Fescue grass (hay), maint	39 kgals	39 kgals
		9.9 kgals	2050	Field 2 / Hydrant 5	3	Fescue grass (hay), maint	26 kgals	64 kgals
		12.8 kgals	2050	Field 2 / Hydrant 7	3	Fescue grass (hay), maint	35 kgals	99 kgals
		13.6 kgals	25223	Field 4 / Hydrant 17	4	Wheat (grain)	51 kgals	150 kgals
		13.5 kgals	25223	Field 4 / Hydrant 18	5	Wheat (grain)	73 kgals	223 kgals
		13.7 kgals	25223	Field 4 / Hydrant 19	7	Wheat (grain)	91 kgals	314 kgals
		13.7 kgals	25223	Field 4 / Hydrant 20	5	Wheat (grain)	67 kgals	381 kgals
		13.7 kgals	25223	Field 4 / Hydrant 21	5	Wheat (grain)	74 kgals	454 kgals
		13.7 kgals	25223	Field 4 / Hydrant 22	6	Wheat (grain)	79 kgals	533 kgals

Application Summary Report

2013: Bermudagrass (hay), maint.

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2050	Field 1	4.6	58.1k Swine(Sp) 48.9k Swine(Su)				
	Field 2 / Hydr	5.3	53.5k Swine(Sp) 53.5k Swine(Su)				
	Field 2 / Hydr	4.3	53.5k Swine(Sp) 53.5k Swine(Su)				
	Field 2 / Hydr	4.2	53.5k Swine(Sp) 53.5k Swine(Su)				
	Field 2 / Hydr	4.1	53.5k Swine(Sp) 53.5k Swine(Su)				
	Field 2 / Hydr	4.1	53.5k Swine(Sp) 53.5k Swine(Su)				
	Field 2 / Hydr	4.1	53.5k Swine(Sp) 53.5k Swine(Su)				
	Field 2 / Hydr	3.9	53.5k Swine(Sp) 53.5k Swine(Su)				
	Field 2 / Hydr	4.4	53.5k Swine(Sp) 53.6k Swine(Su)				
	Field 2 / Hydr	.9	61.5k Swine(Sp) 61.5k Swine(Su)				
	Field 3 / Hydr	3.5	63.2k Swine(Sp) 59.8k Swine(Su)				
	Field 3 / Hydr	7.1	53.5k Swine(Sp) 53.5k Swine(Su)				

2013: Fescue grass (hay), maint.

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2050	Field 2 / Hydr	3.0	13.6k Swine(Sp) 13.6k Swine(Su) 13.8k Swine(Fa)				

	Field 2 / Hydr	2.6	10.6k Swine(Sp) 10.6k Swine(Su) 10.6k Swine(Fa)				
	Field 2 / Hydr	2.7	13.6k Swine(Sp) 13.6k Swine(Su) 13.6k Swine(Fa)				

2013: Corn (grain)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
25223	Field 4 / Hydr	3.7	29.6k Swine(Sp) 34.2k Swine(Su)				
	Field 4 / Hydr	5.4	30.7k Swine(Sp) 37.6k Swine(Su)				
	Field 4 / Hydr	6.6	27.3k Swine(Sp) 27.4k Swine(Su)				
	Field 4 / Hydr	4.9	26.2k Swine(Sp) 33.0k Swine(Su)				
	Field 4 / Hydr	5.4	30.7k Swine(Sp) 37.6k Swine(Su)				
	Field 4 / Hydr	5.8	30.7k Swine(Sp) 37.6k Swine(Su)				

2013: Wheat (grain)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
25223	Field 4 / Hydr	3.7	12.7k Swine(Fa) 29.3k Swine(Sp)				
	Field 4 / Hydr	5.4	14.0k Swine(Fa) 27.7k Swine(Sp)				
	Field 4 / Hydr	6.6	13.7k Swine(Fa) 29.3k Swine(Sp)				
	Field 4 / Hydr	4.9	13.7k Swine(Fa) 28.5k Swine(Sp)				
	Field 4 / Hydr	5.4	13.7k Swine(Fa)				

			28.0k Swine(Sp)
	Field 4 / Hydr	5.8	13.7k Swine(Fa) 28.0k Swine(Sp)

2014: Bermudagrass (hay), maint.

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2050	Field 1	4.6	50.9k Swine(Sp) 50.9k Swine(Su)				
	Field 2 / Hydr	5.3	50.9k Swine(Sp) 50.9k Swine(Su)				
	Field 2 / Hydr	4.3	50.9k Swine(Sp) 50.8k Swine(Su)				
	Field 2 / Hydr	4.2	50.9k Swine(Sp) 50.8k Swine(Su)				
	Field 2 / Hydr	4.1	50.9k Swine(Sp) 50.8k Swine(Su)				
	Field 2 / Hydr	4.1	50.9k Swine(Sp) 50.8k Swine(Su)				
	Field 2 / Hydr	4.1	50.9k Swine(Sp) 50.8k Swine(Su)				
	Field 2 / Hydr	3.9	50.9k Swine(Sp) 50.9k Swine(Su)				
	Field 2 / Hydr	4.4	50.9k Swine(Sp) 50.8k Swine(Su)				
	Field 2 / Hydr	.9	58.4k Swine(Sp) 58.4k Swine(Su)				
	Field 3 / Hydr	3.5	58.4k Swine(Sp) 58.4k Swine(Su)				
	Field 3 / Hydr	7.1	50.9k Swine(Sp) 50.8k Swine(Su)				

2014: Fescue grass (hay), maint.

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)

2050	Field 2 / Hydr	3.0	12.9k Swine(Sp) 12.9k Swine(Su) 13.2k Swine(Fa)				
	Field 2 / Hydr	2.6	10.1k Swine(Sp) 10.1k Swine(Su) 10.1k Swine(Fa)				
	Field 2 / Hydr	2.7	13.0k Swine(Sp) 13.0k Swine(Su) 13.0k Swine(Fa)				

2014: Sorghum (grain)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
25223	Field 4 / Hydr	3.7	45.6k Swine(Su)				
	Field 4 / Hydr	5.4	50.1k Swine(Su)				
	Field 4 / Hydr	6.6	45.6k Swine(Su)				
	Field 4 / Hydr	4.9	45.6k Swine(Su)				
	Field 4 / Hydr	5.4	50.1k Swine(Su)				
	Field 4 / Hydr	5.8	50.1k Swine(Su)				

2015: Bermudagrass (hay), maint.

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2050	Field 1	4.6	49.9k Swine(Sp) 49.9k Swine(Su)				
	Field 2 / Hydr	5.3	49.9k Swine(Sp) 49.9k Swine(Su)				
	Field 2 / Hydr	4.3	49.8k Swine(Sp) 49.9k Swine(Su)				
	Field 2 / Hydr	4.2	49.9k Swine(Sp) 49.9k Swine(Su)				
	Field 2 / Hydr	4.1	49.9k Swine(Sp) 49.8k Swine(Su)				
	Field 2 / Hydr	4.1	49.9k Swine(Sp) 49.9k Swine(Su)				

	Field 2 / Hydr	4.1	49.9k Swine(Sp) 49.9k Swine(Su)				
	Field 2 / Hydr	3.9	49.9k Swine(Sp) 49.9k Swine(Su)				
	Field 2 / Hydr	4.4	49.9k Swine(Sp) 49.9k Swine(Su)				
	Field 2 / Hydr	.9	57.3k Swine(Sp) 57.3k Swine(Su)				
	Field 3 / Hydr	3.5	57.3k Swine(Sp) 57.3k Swine(Su)				
	Field 3 / Hydr	7.1	49.9k Swine(Sp) 49.9k Swine(Su)				

2015: Fescue grass (hay), maint.

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2050	Field 2 / Hydr	3.0	12.7k Swine(Sp) 12.7k Swine(Su) 12.7k Swine(Fa)				
	Field 2 / Hydr	2.6	9.9k Swine(Sp) 9.9k Swine(Su) 9.9k Swine(Fa)				
	Field 2 / Hydr	2.7	12.7k Swine(Sp) 12.7k Swine(Su) 12.8k Swine(Fa)				

2015: Corn (grain)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
25223	Field 4 / Hydr	3.7	22.1k Swine(Sp) 31.8k Swine(Su)		10-0-0(Sp)		
	Field 4 / Hydr	5.4	27.9k Swine(Sp) 34.9k Swine(Su)				
	Field 4 / Hydr	6.6	18.6k Swine(Sp) 31.0k Swine(Su)				

	Field 4 / Hydr	4.9	23.5k Swine(Sp) 30.5k Swine(Su)				
	Field 4 / Hydr	5.4	28.1k Swine(Sp) 34.7k Swine(Su)				
	Field 4 / Hydr	5.8	28.0k Swine(Sp) 34.8k Swine(Su)				

2015: Wheat (grain)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
25223	Field 4 / Hydr	3.7	13.6k Swine(Fa)				
	Field 4 / Hydr	5.4	13.5k Swine(Fa)				
	Field 4 / Hydr	6.6	13.7k Swine(Fa)				
	Field 4 / Hydr	4.9	13.7k Swine(Fa)				
	Field 4 / Hydr	5.4	13.7k Swine(Fa)				
	Field 4 / Hydr	5.8	13.7k Swine(Fa)				