

# Nutrient Management Plan

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Virginia Western Community College

Prepared For:

Kevin Witter  
PO Box 14007  
Roanoke, VA 24038  
540-857-6481

Prepared By:

Christy F. Smith  
3160 Jacobia Lane  
Cape Charles, VA 23310  
757-678-6129

Certification Code: 297

Total Acreage: 22.8 acres

The purpose of this Nutrient Management Plan is to ensure minimum movement of nitrogen and phosphorus from the specified area of application to surface and groundwaters where they can potentially have a detrimental effect on water quality as well as ensuring that plants have optimum soil nutrient availability for good productivity and quality. By following this soil test based plan you are helping to protect local waters and the Chesapeake Bay.

If you have questions, please contact your plan writer, local Virginia Cooperative Extension



# Nutrient Management Plan for:

## Virginia Western Community College

### Landowner Information

Company Name	Virginia Western Community College
Customer Name	Kevin Witter
Mailing Address	PO Box 14007
City State Zip	Roanoke, VA 24038
Phone	540-857-6481
Email	kwitter@viriniawestern.edu

### Planners Informaiton

Planner Name	Christy F. Smith
Mailing Address	3160 Jacobia Lane
City State Zip	Cape Charles, VA 23310
Phone	757-678-6129
Fax	757-331-3957
Email	christy@smithagronomic.com
Certification Code	297

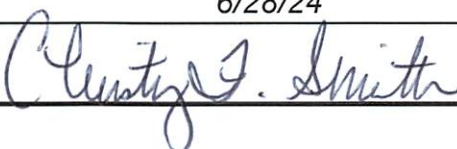
### Location Information

Physical Address	3094 Colonial Avenue
City State Zip	Roanoke, VA 24015
<a href="#">Coordinates</a>	37°15'51"
Please Use NAD 83 Deg Min Sec	-79°58'21"
<a href="#">VAHU6 Watershed Code</a>	RU14
County	City of Roanoke

### Square Footage

Total	22.8 acres/993,875 sq ft
Area 1	401,875 sq ft
Area 2	221,000 sq ft
Area 3	203,500 sq ft
Area 4	127,500 sq ft

Plan Start Date	6/28/21
Plan End Date	6/28/24

Planner Signature	
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Matthew J. Strickler  
*Secretary of Natural and Historic  
Resources and Chief Resilience Officer*

Clyde E. Cristman  
*Director*



Rochelle Altholz  
*Deputy Director of  
Administration and Finance*

Nathan Burrell  
*Deputy Director of  
Government and Community Relations*

Darryl M. Glover  
*Deputy Director of  
Dam Safety & Floodplain  
Management and Soil & Water  
Conservation*

Thomas L. Smith  
*Deputy Director of  
Operations*

**COMMONWEALTH of VIRGINIA**  
**DEPARTMENT OF CONSERVATION AND RECREATION**

August 24, 2021

Kevin Witter  
Virginia Western Community College  
PO Box 14007  
Roanoke VA 24038

Your nutrient management plan (NMP) dated 6/28/2021 for Virginia Western Community College located in City of Roanoke has been approved by the Virginia Department of Conservation and Recreation (DCR). The approved plan is for 22.80 acres. Only nutrient recommendations for applications to be made after the date of this letter are approved by this letter. Your NMP was written by a nutrient management planner certified by the Virginia Department of Conservation and Recreation.

This site has not been inspected by DCR and this approval is contingent upon field conditions being as stated in the NMP. Any revisions to this plan must be approved by DCR. Please note that this letter should be kept with the NMP and supporting documentation including nutrient application records. This plan expires on 6/28/2024. Please feel free to contact me with any questions or concerns regarding this approval.

Best regards,

A handwritten signature in cursive script, appearing to read "Anita Tuttle".

Anita Tuttle  
Urban Nutrient Management Coordinator  
Division of Soil and Water Conservation  
600 East Main Street, 24<sup>th</sup> Floor  
Richmond VA 23219  
(804) 513-5958

## ***Narrative***

Virginia Western Community College consists of a 70-acre parcel located on the north and south sides of Colonial Avenue off HWY 220 in Roanoke, Virginia.

There are approximately 22.8 acres of turfgrass, landscaped areas, and a 2-acre arboretum. Turfgrass varieties include tall fescue, perennial rye grass, and bluegrass. The arboretum is an educational garden which consists of nice separate gardens, including water gardens, and a plant collection with approximately 700 labeled plants. The arboretum is maintained by the professors and students. Management Area 5 is the turf surrounding the arboretum.

This NMP contains a biannual fertilizer program. Yearly nitrogen applications are recommended at 1.5#/1,000 sq ft to 3.5#/1,000 sq ft and must contain at least 15% slow-release form of nitrogen.

Virginia Western Community College agrees to comply with all requirements set forth in the Nutrient Management Training and Certification Regulations, 4VAC5-15-10 et seq, and to follow recommendations for turf fertilization and management as described in the attached Virginia Nutrient Management Standards and Criteria, Revised July 2014. This includes implementing the Department of Conservation and Recreation's approved Nutrient Management Plan and maintaining fertilization records. This plan is effective for 3 years, expiring 6/28/2024 or until any major renovation or major changes to maintenance practices occur which effects the fertilized/lime areas.

Nutrient applications are prohibited on frozen/snow covered ground.

No environmentally sensitive sites were found on campus although slope should always be considered when fertilizing.

With implementation of this plan, the user will help avoid economic, agronomic, and environmental problems that may be due to soil fertility levels.

### **Additional Considerations:**

Maintain agronomic pH levels for maximum plant utilization of applied nutrients.

Control erosion in fields receiving fertilizer applications. Do not apply on frozen ground.

Use proper timings and splits of nitrogen applications to reduce leaching and runoff. These techniques maximize plant uptake.

Make sure application equipment is properly calibrated and all parts are in good working order (nozzles, screens, hoses, etc.).

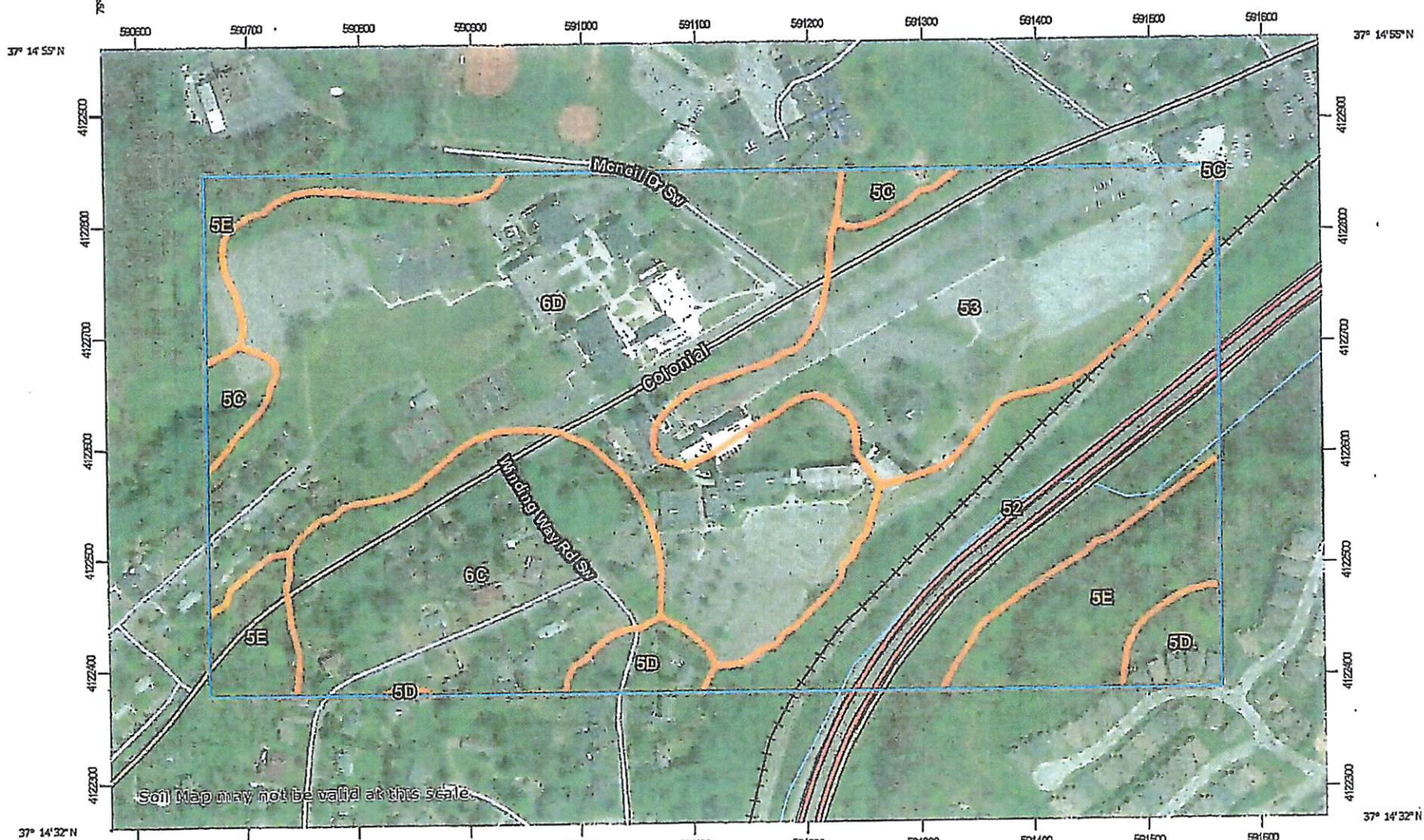
***This plan is effective for a maximum period of three (3) years. Modifications to this plan will be needed if changes occur in cropping systems, soil tests or fields.***





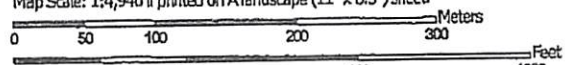


Soil Map—Roanoke County and the Cities of Roanoke and Salem, Virginia  
(Virginia Western Community College)



Soil Map may not be valid at this scale.

Map Scale: 1:4,940 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84



Natural Resources  
Conservation Service

Web Soil Survey  
National Cooperative Soil Survey

5/4/2018  
Page 1 of 3

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
5C	Chiswell-Litz complex, 7 to 15 percent slopes	1.9	1.8%
5D	Chiswell-Litz complex, 15 to 25 percent slopes	3.2	3.0%
5E	Chiswell-Litz complex, 25 to 50 percent slopes	10.0	9.5%
6C	Chiswell-Litz-Urban land complex, 2 to 15 percent slopes	15.2	14.6%
6D	Chiswell-Litz-Urban land complex, 15 to 35 percent slopes	40.2	38.5%
52	Udorthents-Urban land complex	15.9	15.2%
53	Urban land	18.1	17.3%
Totals for Area of Interest		104.5	100.0%





## Nutrient Application Worksheet

<b>NAME:</b>	Kevin Ritter						<b>Management Area:</b>			2			
<b>Prepared:</b>	6/28/21						<b>Area (sq ft):</b>	221000	<b>Species:</b>	mixed cool season			
<b>Expires:</b>	6/28/24												
Total Nutrient Needs	Application Month/Day	Analysis	# of Apps	Application Interval	Fertilizer Type	Fertilizer Description	Rate per 1000ft <sup>2</sup>	lbs or oz	%Slow Release N	Total NPK lbs/1000ft <sup>2</sup>	Gypsum	Lime	Total Product per App. (lbs or oz)
Nitrogen		N - P - K								N - P <sub>2</sub> O <sub>5</sub> - K <sub>2</sub> O			
3.5	10/1	15 - 8 - 8	1	>30 days	blend	granular	6.00	#	≥15%	0.90 - 0.48 - 0.48			1326
Phosphorus	3/1	15 - 8 - 8	1	>30 days	blend	granular	6.00	#	≥15%	0.90 - 0.48 - 0.48			1326
1		- -								0.00 - 0.00 - 0.00			0
Potassium		- -								0.00 - 0.00 - 0.00			0
1		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
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							<b>Total</b>		#####	1.80 - 0.96 - 0.96			
<b>N Recommendation Range and Soil Test Ratings</b>										3.5	1	1	
<b>Notes:</b>													



## Nutrient Application Worksheet

<b>NAME:</b>	Kevin Ritter						<b>Management Area:</b>			3			
<b>Prepared:</b>	6/28/21						<b>Area</b>	203500		<b>Species:</b>	mixed cool season		
<b>Expires:</b>	6/28/24						<b>(sq ft):</b>						
Total Nutrient Needs	Application Month/Day	Analysis	# of Apps	Application Interval	Fertilizer Type	Fertilizer Description	Rate per 1000ft <sup>2</sup>	lbs or oz	%Slow Release N	Total NPK lbs/1000ft <sup>2</sup>	Gypsum	Lime	Total Product per App. (lbs or oz)
Nitrogen		N - P - K								N - P <sub>2</sub> O <sub>5</sub> - K <sub>2</sub> O			
3.5	10/1	15 - 8 - 8	1	>30 days	blend	granular	6.00	#	≥15%	0.90 - 0.48 - 0.48			1221
Phosphorus	3/1	15 - 8 - 8	1	>30 days	blend	granular	6.00	#	≥15%	0.90 - 0.48 - 0.48			1221
1		- - -								0.00 - 0.00 - 0.00			0
Potassium		- - -								0.00 - 0.00 - 0.00			0
1		- - -								0.00 - 0.00 - 0.00			0
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							<b>Total</b>		#####	1.80 - 0.96 - 0.96			
<b>Notes:</b>	<b>N Recommendation Range and Soil Test Ratings</b>										3.5	1	1



## Nutrient Application Worksheet

<b>NAME:</b>	Kevin Witter						<b>Management Area:</b>			4			
<b>Prepared:</b>	6/28/21						<b>Area</b> (sq ft):	127500		<b>Species:</b>	mixed cool season		
<b>Expires:</b>	6/28/24												
Total Nutrient Needs	Application Month/Day	Analysis	# of Apps	Application Interval	Fertilizer Type	Fertilizer Description	Rate per 1000ft <sup>2</sup>	lbs or oz	%Slow Release N	Total NPK lbs/1000ft <sup>2</sup>	Gypsum	Lime	Total Product per App. (lbs or oz)
Nitrogen		N - P - K								N - P <sub>2</sub> O <sub>5</sub> - K <sub>2</sub> O			
3.5	10/1	15 - 12 - 8	1	>30 days	blend	granular	6.00	#	≥15%	0.90 - 0.72 - 0.48			765
Phosphorus	3/1	15 - 12 - 8	1	>30 days	blend	granular	6.00	#	≥15%	0.90 - 0.72 - 0.48			765
1.5		- - -								0.00 - 0.00 - 0.00			0
Potassium		- - -								0.00 - 0.00 - 0.00			0
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							<b>Total</b>		#####	1.80 - 1.44 - 0.96			
<b>Notes:</b>	<b>N Recommendation Range and Soil Test Ratings</b>										3.5	1.5	1

# Nutrient Application Worksheet

Nutrient Application Worksheet																									
NAME:		Kevin Witter			Management Area:		5																		
Prepared:		6/28/21			Area (sq ft):		40000																		
Expires:		6/28/24			Rate per 1000ft <sup>2</sup>		Species:																		
Total Nutrient Needs		Application Month/Day		Analysis		# of Apps		Application Interval		Fertilizer Type		Fertilizer Description		lbs or oz		%Slow Release N		Total NPK lbs/1000ft <sup>2</sup>		Gypsum		Lime		Total Product per App. (lbs or oz)	
Nitrogen				N - P - K																					
3.5	10/1	15 - 12 - 8	1	>30 days	blend	granular	6.00	#	≥15%	0.90 - 0.72 - 0.48															240
Phosphorus	3/1	15 - 12 - 8	1	>30 days	blend	granular	6.00	#	≥15%	0.90 - 0.72 - 0.48															240
1.5		- - -								0.00 - 0.00 - 0.00															0
Potassium		- - -								0.00 - 0.00 - 0.00															0
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## Soil Test Summary

Customer Name:	Kevin Witter
Testing Lab:	Virginia Tech
Sample Date:	6/23/2021
Planner Name	Christy F. Smith
Certification Number	297

[illegible]

**Notes:**

**No lime needed at this time.**



# Virginia Cooperative Extension

## Soil Test Report

**Questions? Contact:**

Roanoke Office  
3738 Brambleton Ave., S.W.  
Roanoke, VA 24018-3639  
540-772-7524

## Virginia Tech Soil Testing Laboratory

145 Smyth Hall (0465)  
185 Ag Quad Ln  
Blacksburg, VA 24061  
www.soiltest.vt.edu

## SEE NOTES:

**1 3**at [www.soiltest.vt.edu](http://www.soiltest.vt.edu) under Report NotesO  
W  
N  
E  
R

SMITHAG  
3160 JACOBIA LN

C F  
O O  
P R  
Y

CAPE CHARLES, VA 23310

## SAMPLE HISTORY

Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
VWCC	VAWESTERN									III

## LAB TEST RESULTS (see Note 1)

Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	S.Salts (ppm)
Result	12	277	6802	521	3.6	18.2	0.2	3.4	0.9	
Rating	M-	H	VH	VH	SUFF	SUFF	SUFF	SUFF	SUFF	

Analysis	Soil pH	Buffer Index	Est.-CEC (meq/100g)	Acidity (%)	Base Sat. (%)	Ca Sat. (%)	Mg Sat. (%)	K Sat. (%)	Organic Matter (%)
Result	7.4	6.60	19.5	0.0	100.0	87.2	11.0	1.8	

## FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: Native or Unimproved Pasture (42)

Lime, TONS/AC	
Amount	Type
0	

Fertilizer, lb/A		
N	P2O5	K2O
See Comment	90	0

825. If stand contains less than 25 percent clover, apply 40-60 lbs N/A.

131. If additional production is needed later on, apply 40 to 60 lbs/A of N during the grazing season. If you are planning to overseed a legume into the stand, omit the N recommendation.

123. P2O5 and K2O recommendations are for single applications made every 3 to 4 years. After this time, soils should be re-tested.

991. "Explanation of Soil Tests, Note 1" and other referenced notes are viewable at [www.soiltest.vt.edu](http://www.soiltest.vt.edu) under Report Notes.

# Virginia Cooperative Extension

## Soil Test Report

**Questions? Contact:**

Roanoke Office  
3738 Brambleton Ave., S.W.  
Roanoke, VA 24018-3639  
540-772-7524

## Virginia Tech Soil Testing Laboratory

145 Smyth Hall (0465)  
185 Ag Quad Ln  
Blacksburg, VA 24061  
www.soiltest.vt.edu

## SEE NOTES:

**1 3**at [www.soiltest.vt.edu](http://www.soiltest.vt.edu) under Report NotesO  
W  
N  
E  
R

SMITHAG  
3160 JACOBIA LN

C F  
O O  
P R  
Y

CAPE CHARLES, VA 23310

## SAMPLE HISTORY

Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
VWCC2	VAWESTERN									III

## LAB TEST RESULTS (see Note 1)

Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	S.Salts (ppm)
Result	58	267	3504	851	4.5	21.3	0.3	6.1	0.9	
Rating	H	H	VH	VH	SUFF	SUFF	SUFF	SUFF	SUFF	

Analysis	Soil pH	Buffer Index	Est.-CEC (meq/100g)	Acidity (%)	Base Sat. (%)	Ca Sat. (%)	Mg Sat. (%)	K Sat. (%)	Organic Matter (%)
Result	7.1	6.60	12.6	0.0	100.0	69.5	27.8	2.7	

## FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: Native or Unimproved Pasture (42)

Lime, TONS/AC	
Amount	Type
0	

Fertilizer, lb/A		
N	P2O5	K2O
See Comment	0	0

825. If stand contains less than 25 percent clover, apply 40-60 lbs N/A.

131. If additional production is needed later on, apply 40 to 60 lbs/A of N during the grazing season. If you are planning to overseed a legume into the stand, omit the N recommendation.

123. P2O5 and K2O recommendations are for single applications made every 3 to 4 years. After this time, soils should be re-tested.

991. "Explanation of Soil Tests, Note 1" and other referenced notes are viewable at [www.soiltest.vt.edu](http://www.soiltest.vt.edu) under Report Notes.

# Virginia Cooperative Extension

## Soil Test Report

**Questions? Contact:**

Roanoke Office  
3738 Brambleton Ave., S.W.  
Roanoke, VA 24018-3639  
540-772-7524

**Virginia Tech Soil Testing Laboratory**

145 Smyth Hall (0465)  
185 Ag Quad Ln  
Blacksburg, VA 24061  
www.soiltest.vt.edu

**SEE NOTES:****1 3**at [www.soiltest.vt.edu](http://www.soiltest.vt.edu) under Report NotesO  
W  
N  
E  
R

**SMITHAG**  
**3160 JACOBIA LN**

C F  
O O  
P R  
Y**CAPE CHARLES, VA 23310****SAMPLE HISTORY**

Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
VWCC3	VAWESTERN									III

**LAB TEST RESULTS (see Note 1)**

Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	S.Salts (ppm)
Result	57	249	7345	850	5.2	30.6	0.4	4.7	0.4	
Rating	H	H	VH	VH	SUFF	SUFF	SUFF	SUFF	SUFF	

Analysis	Soil pH	Buffer Index	Est.-CEC (meq/100g)	Acidity (%)	Base Sat. (%)	Ca Sat. (%)	Mg Sat. (%)	K Sat. (%)	Organic Matter (%)
Result	7.5	6.60	22.1	0.0	100.0	82.8	15.8	1.4	

**FERTILIZER AND LIMESTONE RECOMMENDATIONS**

Crop: Native or Unimproved Pasture (42)

Lime, TONS/AC	
Amount	Type
0	

Fertilizer, lb/A		
N	P2O5	K2O
See Comment	0	0

825. If stand contains less than 25 percent clover, apply 40-60 lbs N/A.

131. If additional production is needed later on, apply 40 to 60 lbs/A of N during the grazing season. If you are planning to overseed a legume into the stand, omit the N recommendation.

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**SMITHAG**  
**3160 JACOBIA LN**

C F  
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Y

**CAPE CHARLES, VA 23310**

**SAMPLE HISTORY**

Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
VWCC4	VAWESTERN									III

**LAB TEST RESULTS (see Note 1)**

Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	S.Salts (ppm)
Result	12	205	1553	397	3.0	17.8	0.4	8.1	0.3	
Rating	M-	H-	H-	VH	SUFF	SUFF	SUFF	SUFF	SUFF	

Analysis	Soil pH	Buffer Index	Est.-CEC (meq/100g)	Acidity (%)	Base Sat. (%)	Ca Sat. (%)	Mg Sat. (%)	K Sat. (%)	Organic Matter (%)
Result	6.0	6.14	7.3	21.1	78.9	53.0	22.4	3.6	

**FERTILIZER AND LIMESTONE RECOMMENDATIONS**

Crop: Native or Unimproved Pasture (42)

Lime, TONS/AC	
Amount	Type
1.75	AG

Fertilizer, lb/A		
N	P205	K20
See Comment	90	0

825. If stand contains less than 25 percent clover, apply 40-60 lbs N/A.

131. If additional production is needed later on, apply 40 to 60 lbs/A of N during the grazing season. If you are planning to overseed a legume into the stand, omit the N recommendation.

123. P2O5 and K2O recommendations are for single applications made every 3 to 4 years. After this time, soils should be re-tested.

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SMITHAG  
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CAPE CHARLES, VA 23310

## SAMPLE HISTORY

Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
VWCC5	VAWESTERN									III

## LAB TEST RESULTS (see Note 1)

Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	S.Salts (ppm)
Result	16	240	2216	499	2.5	14.8	0.4	10.1	0.5	
Rating	M-	H	VH	VH	SUFF	SUFF	SUFF	SUFF	SUFF	

Analysis	Soil pH	Buffer Index	Est.-CEC (meq/100g)	Acidity (%)	Base Sat. (%)	Ca Sat. (%)	Mg Sat. (%)	K Sat. (%)	Organic Matter (%)
Result	6.4	6.29	8.5	7.7	92.4	64.7	24.1	3.6	

## FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: Native or Unimproved Pasture (42)

Lime, TONS/AC	
Amount	Type
0	

Fertilizer, lb/A		
N	P2O5	K2O
See Comment	90	0

825. If stand contains less than 25 percent clover, apply 40-60 lbs N/A.

131. If additional production is needed later on, apply 40 to 60 lbs/A of N during the grazing season. If you are planning to overseed a legume into the stand, omit the N recommendation.

123. P2O5 and K2O recommendations are for single applications made every 3 to 4 years. After this time, soils should be re-tested.

991. "Explanation of Soil Tests, Note 1" and other referenced notes are viewable at [www.soiltest.vt.edu](http://www.soiltest.vt.edu) under Report Notes.

## Standards and Criteria

### **Section VI. Turfgrass Nutrient Recommendations for Home Lawns, Office Parks, Public Lands and Other Similar Residential/Commercial Grounds**

#### **Definitions**

For the purposes of this section, the following definitions, as presented by the Association of American Plant Food Control Officials (AAPFCO), apply:

“Enhanced efficiency fertilizer” describes fertilizer products with characteristics that allow increased plant nutrient availability and reduce the potential of nutrient losses to the environment when compared to an appropriate reference product.

“Slow or controlled release fertilizer” means a fertilizer containing a plant nutrient in a form which delays its availability for plant uptake and use after application, or which extends its availability to the plant significantly longer than a reference “rapidly available nutrient fertilizer” such as ammonium nitrate, urea, ammonium phosphate or potassium chloride. A slow or controlled release fertilizer must contain a minimum of 15 percent slowly available forms of nitrogen.

“Water soluble nitrogen”, “WSN” and “readily available nitrogen” means: Water soluble nitrogen in either ammonical, urea, or nitrate form that does not have a controlled release, or slow response.

#### **Recommended Season of Application For Nitrogen Fertilizers - Applies to all Turf**

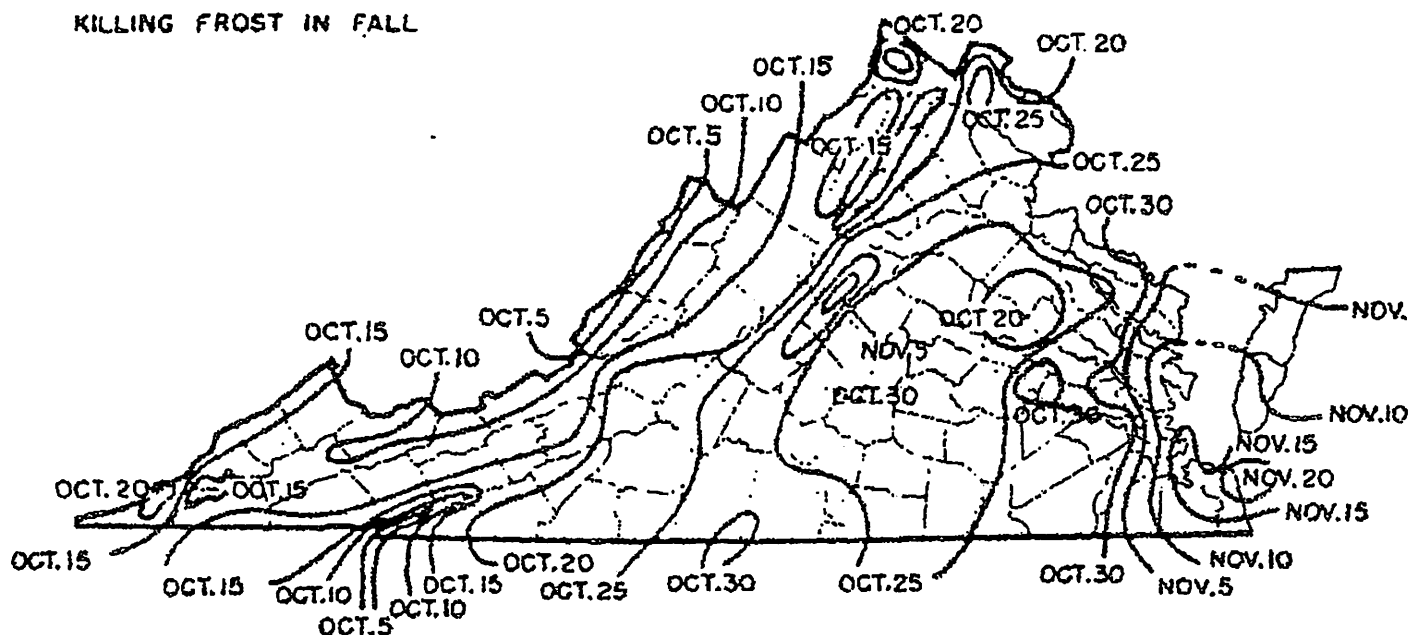
nitrogen fertilization schedule weighted toward fall application is recommended and preferred for agronomic quality and persistence of cool season turfgrass; however, the acceptable window of applications is much wider than this for nutrient management. The nutrient management recommended application season for nitrogen fertilizers to cool season turfgrasses begins six weeks prior to the last spring average killing frost date and ends six weeks past the first fall average killing frost date (see Figures 6-1 & 6-2). Applications of nitrogen during the intervening late fall and winter period should be avoided due to higher potential leaching or runoff risk, but where necessary, apply no more than 0.5 pounds per 1,000 ft<sup>2</sup> of water soluble nitrogen within a 30 day period. Higher application rates may be used during this late fall and winter period by using materials containing slowly available sources of nitrogen, if the water soluble nitrogen contained in the fertilizer does not exceed the recommended maximum of 0.5 pounds per 1,000 ft<sup>2</sup> rate. Do not apply nitrogen or phosphorus fertilizers when the ground is frozen.

The acceptable nitrogen fertilizer application season for non-overseeded warm season turfgrass begins no earlier than the last spring average killing frost date and ends no later than one month prior to the first fall average killing frost date (see Figures 6-1 & 6-2).



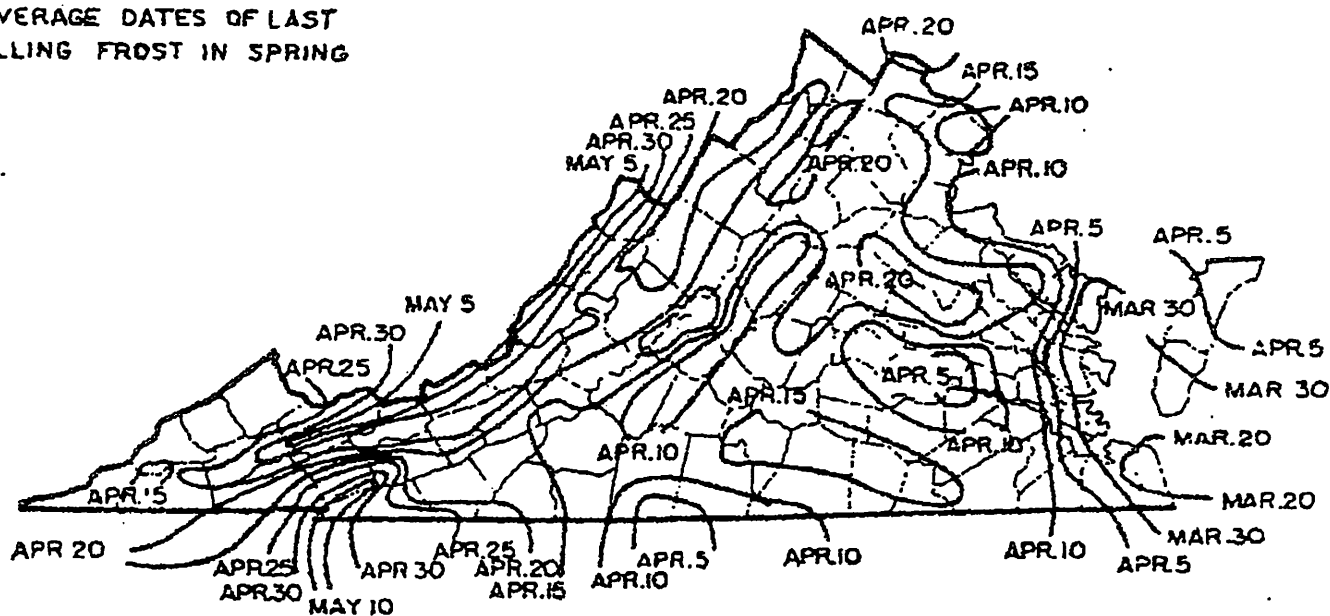
# VIRGINIA

AVERAGE DATES OF FIRST  
KILLING FROST IN FALL



# VIRGINIA

AVERAGE DATES OF LAST  
KILLING FROST IN SPRING



### **er Application Rates**

Do not apply more than 0.7 pounds of water soluble nitrogen per 1,000 ft<sup>2</sup> within a 30 day period. For cool season grasses, do not apply more than 0.9 pounds of total nitrogen per 1,000 ft<sup>2</sup> within a 30 day period. For warm season grasses, do not apply more than 1.0 pounds of total nitrogen per 1,000 ft<sup>2</sup> within a 30 day period. Lower per application rates of water soluble nitrogen sources or use of slowly available nitrogen sources should be utilized on very permeable sandy soils, shallow soils over fractured bedrock, or areas near water wells.

### **Annual Application Rates for Home Lawns and Commercial Turf**

Up to 3.5 pounds per 1,000 ft<sup>2</sup> of nitrogen may be applied annually to cool season grass species or up to 4 pounds per 1,000 ft<sup>2</sup> may be applied annually to warm season grass species using 100 percent water soluble nitrogen sources. Lower rates of nitrogen application may be desirable on those mature stands of grasses that require less nitrogen for long-term quality. As a result, lower application rates will probably be more suited to the fine leaf fescues (hard fescue, chewings fescue, creeping red fescue, and sheep fescue) and non-overseeded zoysiagrass. Lower rates should also be used on less intensively managed areas.

### **Use of Slowly Available Forms of Nitrogen**

For slow or controlled release fertilizer sources, or enhanced efficiency fertilizer sources, no more than 0.9 pounds of nitrogen per 1,000 ft<sup>2</sup> may be applied to cool season grasses within a 30 day period and no more than 1.0 pounds of nitrogen per 1,000 ft<sup>2</sup> may be applied to warm season grasses within a 30 day period. Provided the fertilizer label guarantees that the product can be used in such a way that it will not release more than 0.7 pounds of nitrogen per 1,000 ft<sup>2</sup> in a 30 day period, no more than 2.5 pounds of nitrogen per 1,000 ft<sup>2</sup> may be applied in a single application. Additionally, total annual applications shall not exceed 80 percent of the annual nitrogen rates for cool or warm season grasses.

### **Phosphorus and Potassium Nutrient Needs (Established Turf)**

Apply phosphorus (P<sub>2</sub>O<sub>5</sub>) and potassium (K<sub>2</sub>O) fertilizers as indicated necessary by a soil test using the following guidelines:

<u>Soil Test Level</u>	<u>Nutrient Needs (lbs /1000 ft<sup>2</sup>) *</u>	
	<u>P<sub>2</sub>O<sub>5</sub></u>	<u>K<sub>2</sub>O</u>
L	2-3	2-3
M	1-2	1-2
H	0.5-1	0.5-1
VH	0	0

\* For the lower soil test level within a rating, use the higher side of the range and for higher soil test level within a rating use the lower side of the recommendation range. (For example the recommendation for a P<sub>2</sub>O<sub>5</sub> soil test level of L- would be 3 pounds per 1,000 ft<sup>2</sup>.)

Do not use high phosphorus ratio fertilizers such as 10-10-10 or 5-10-10, unless soil tests indicate phosphorus availability below the M+ level.

### Recommendations for Establishment of Turf

These recommendations are for timely planted turfgrass, that is, the seed or vegetative material (sod, plugs, and /or sprigs), are planted at a time of the year when temperatures and moisture are adequate to maximize turfgrass establishment. These recommended establishment periods would be late summer to early fall for cool-season turfgrasses and late spring through mid-summer for warm-season turfgrasses.

### Nitrogen Applications

At the time of establishment, apply no more than 0.9 pounds per 1,000 ft<sup>2</sup> of total nitrogen for cool season grasses or 1.0 pounds per 1,000 ft<sup>2</sup> of total nitrogen for warm season grasses, using a material containing slowly available forms of nitrogen, followed by one or two applications beginning 30 days after planting, not to exceed a total of 1.8 pounds per 1,000 ft<sup>2</sup> total for cool season grasses and 2.0 pounds per 1,000 ft<sup>2</sup> for warm season grasses for the establishment period. Applications of WSN cannot exceed more than 0.7 pounds per 1,000 ft<sup>2</sup> within a 30 day period.

### Phosphorus and Potassium Recommendations for Establishment

<u>Soil Test Level</u>	<u>Nutrient Needs (lbs /1000 ft<sup>2</sup>) *</u>	
	<u>P<sub>2</sub>O<sub>5</sub></u>	<u>K<sub>2</sub>O</u>
L	3-4	2-3
M	2-3	1-2
H	2-1	0.5-1
VH	0	0

\* For the lower soil test level within a rating, use the higher side of the range and for higher soil test level within a rating use the lower side of the recommendation range.

## Fertilizer Application Records

Customer Information					Management Area Information			
Name:	Kevin Witter				Management Area ID:			
Address:	3099 Colonial Avenue				Management Area Size:			
	Roanoke, VA 24015				Plant Species:			
					Notes:			
Phone #:	540-857-6481							
Date (M/D/Y)	Supervisor/Applicator	Weather Conditions			Fertilizer Analysis	Rate	Amount Fertilizer Used	Application Equipment Used
		Temp	Wind Speed	Precip				

When was the last time your fertilizer equipment was calibrated???  
 For information on calibration see Chapter 10 of the "Urban Nutrient Management Handbook".  
 Available for download at <http://pubs.ext.vt.edu/430/430-350/430-350.html>