

P Index Workshop Exercise

PART A: SCREENING TOOL

	CMU/Field ID				
Is the CMU in a Special Protection Watershed?	If the answer is Yes to <u>any</u> of these questions Part B must be used.				
Is there a significant farm management change as defined by Act 38?					
Is the Soil Test Mehlich 3 P greater than 200 ppm P?					
Is the Contributing Distance from this CMU to receiving water less than 150 ft.?					

PART B: SOURCE FACTORS

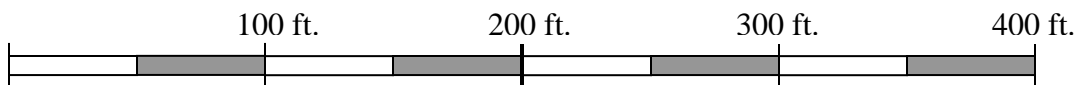
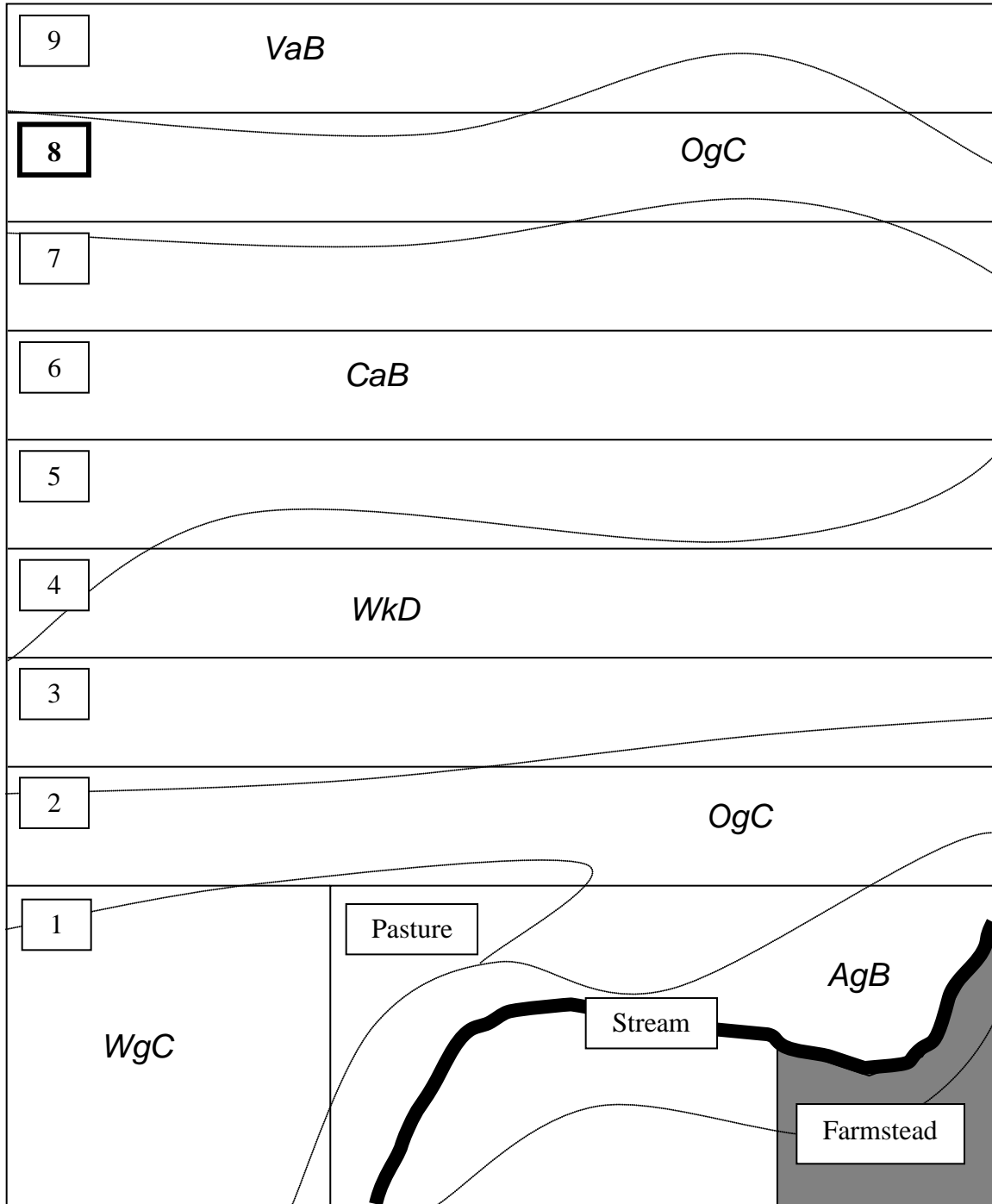
	CMU/Field ID							
SOIL TEST	Mehlich 3 Soil Test P (ppm P)							
Soil Test Rating = 0.20 * Mehlich 3 Soil Test P (ppm P)								
FERTILIZER P RATE	Fertilizer P (lb P ₂ O ₅ /acre)							
FERTILIZER APPLICATION METHOD	0.2 Placed or injected 2" or more deep	0.4 Incorporated <1 week following application	0.6 Incorporated > 1 week or not incorporated following application in April - October	0.8 Incorporated >1 week or not incorporated following application in Nov. - March	1.0 Surface applied to frozen or snow covered soil			
Fertilizer Rating = Fertilizer Rate x Fertilizer Application Method								
MANURE P RATE	Manure P (lb P ₂ O ₅ /acre)							
MANURE APPLICATION METHOD	0.2 Placed or injected 2" or more deep	0.4 Incorporated <1 week following application	0.6 Incorporated > 1 week or not incorporated following application in April - October	0.8 Incorporated >1 week or not incorporated following application in November - March	1.0 Surface applied to frozen or snow covered soil			
P SOURCE COEFFICIENT	Refer to: Test results for P Source Coefficient OR Book values from P Index Fact Sheet Table 1							
Manure Rating = Manure Rate x Manure Application Method x P Source Coefficient								
Source Factor Sum								

PART B: TRANSPORT FACTORS

	CMU/Field ID							
EROSION	Soil Loss (ton/acre/yr)							
RUNOFF POTENTIAL	0 <i>Drainage Class is Excessively</i>	2 <i>Drainage Class is Somewhat Excessively</i>	4 <i>Drainage Class is Well/Moderately Well</i>	6 <i>Drainage Class is Somewhat Poorly</i>	8 <i>Drainage Class is Poorly/Very Poorly</i>			
SUBSURFACE DRAINAGE	0 None		1 Random		2* Patterned			
CONTRIBUTING DISTANCE	0 > 500 ft.	2 350 to 500 ft.	4 200 to 349 ft.	6 100 to 199 ft. OR <100 ft. with 35 ft. buffer	9 [‡] < 100 ft.			
Transport Sum = Erosion + Runoff Potential + Subsurface Drainage + Contributing Distance								
MODIFIED CONNECTIVITY	0.85 50 ft. Riparian Buffer APPLIES TO DIST < 100 FT		1.0 Grassed Waterway OR None		1.1 Direct Connection APPLIES TO DIST > 100 FT			
Transport Sum x Modified Connectivity/24								
P Index Value = 2 x Source x Transport								

* OR rapidly permeable soil near a stream
 ‡ "9" factor does not apply to fields with a 35 ft. buffer receiving manure.

Field Boundaries and Soil Map





SOIL TEST REPORT FOR:				ADDITIONAL COPY TO:			
JOHN R. FARMER RD # 1 TOWANDA PA 18848							
DATE	LAB #	SERIAL #	COUNTY	ACRES	ASCS ID	FIELD ID	SOIL
	S02-02636		Bradford	10		8	Oquaga

SOIL NUTRIENT LEVELS		Below Optimum	Optimum	Above Optimum
¹ Soil pH	6.2			
² Phosphorus (P)	260 ppm			
² Potassium (K)	160 ppm			
² Magnesium (Mg)	70 ppm			

RECOMMENDATIONS: *(See back messages for important information)*

Limestone*: 2000 lb/A for a target pH of 6.5. **Magnesium (Mg):** NONE
**Calcium Carbonate equivalent*

Plant Nutrients: *(If manure will be applied, adjust these recommendations accordingly. See back of report.)*

Year	Crop	Expected Yield	Nitrogen (lb N/A)	Phosphate (lb P ₂ O ₅ /A)	Potash (lb K ₂ O/A)	
1	Corn for Grain	130 Bu/A	130	0	0	<i>See ST2 for other crop recommendations</i>

A starter fertilizer is probably not necessary. (See Back)

2	Corn for Silage	21 T/A	150	0	90	<i>See ST2 for other crop recommendations</i>
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A starter fertilizer is probably not necessary. (See Back)

3	Corn for Grain	130 Bu/A	130	0	0	<i>See ST2 for other crop recommendations</i>
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A starter fertilizer is probably not necessary. (See Back)

ADDITIONAL RESULTS:						Optional Tests:		
² Calcium (Ca) (ppm)	³ Acidity (meq/100 g)	⁴ CEC (meq/100 g)	% Saturation of the CEC			Organic Matter %	Nitrate-N ppm	Soluble salts mmhos/cm
			K	Mg	Ca			
1410	2.7	10.7	3.8	5.4	65.6			

Test Methods: ¹1:1 soil:water pH, ²Mehlich 3 Extractant, ³SMP Buffer pH, ⁴Summation of Cations

Appendix 4 Crop & Manure Management Information

CMU/Field ID	8											
Acres	10											
Soil Test Report Date	3/18/08											
Laboratory Name	<i>Penn State AASL</i>											
Soil Test Levels (Mehlich-3 P & K) (If soil test results are not in ppm show conversions in Appendix 10)	ppm P	ppm K	pH	ppm P	ppm K	pH	ppm P	ppm K	pH	ppm P	ppm K	pH
	260	160	6.2									
P Index Part A <ul style="list-style-type: none"> • No P Applied • N-Based ("No" to all Part A Questions) • Part B ("Yes" to any Part A Question) 												
Crop	<i>Corn</i>											
Planned Yield	<i>130 bu/A</i>											
Soil Test Recommendation (lb/Acre)	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O
	130	0	0									
Other Nutrients (lb/A) (Nutrients applied regardless of manure)	15	15	15									
Manure History Description	<i>Frequently</i>											
Residual Manure N (lb/A)	20											
Legume History Description	<i>None</i>											
Residual Legume N (lb/A)	0											
Net Nutrients Required (lb/A)	95	(15)	(15)									
Manure Group & Application Season	<i>Dairy</i>	<i>Spring</i>										
Application Management (Incorporation, cover crops, etc.)	<i>Incorp. w/ 1 day</i>											
Availability Factors (Total N or NH ₄ -N & Organic N)	Total N	NH ₄ -N	Org. N	Total N	NH ₄ -N	Org. N	Total N	NH ₄ -N	Org. N	Total N	NH ₄ -N	Org. N
	0.40											
N Balanced Manure Rate (ton or gal/A)	<i>7,197 gal/A</i>											
P Removal Balance Manure Rate (ton or gal/A) if required by P Index	Net Crop P Removal (lb/A)	P Removal Manure Rate		Net Crop P Removal (lb/A)	P Removal Manure Rate		Net Crop P Removal (lb/A)	P Removal Manure Rate		Net Crop P Removal (lb/A)	P Removal Manure Rate	
Planned Manure Rate (ton or gal/A)	<i>7000 gal/A</i>											
Manure Nutrients Applied at Planned Rate (lb/A)												
Nutrient Balance After Manure (lb/A)												
Supplemental Fertilizer (lb/A)												
Final Nutrient Balance (lb/A)												
Manure Utilized on This CMU												

Manure Analysis: : 33 lb N/1000 gal, 13 lb P₂O₅/1000 gal, 29 lb K₂O/1000 gal

Soil Loss Calculations

Summary of RUSLE Evaluations - Adapted from the Farm Conservation Plan

Field	R	K	L	Slope %	LS	C	P	Soil Loss (A)	T
1	125	0.28	250	10	2.16	0.158	0.38	4	2
2	125	0.37	150	4	0.6	0.158	0.5	2	3
3	125	0.28	200	12	2.55	0.158	0.38	5	2
4	125	0.37	150	6	1.00	0.158	0.31	3	3
5	125	0.37	350	6	1.26	0.158	0.31	3	3
6	125	0.37	350	6	1.26	0.100	0.31	2	3
7	125	0.37	250	5	0.85	0.158	0.5	3	3
8	125	0.37	250	11	2.5	0.158	0.38	7	3
9	125	0.37	250	5	0.85	0.158	0.5	2	3

Report: Index Surface Runoff Classes
USDA-NRCS Soil Survey Database

Bradford and Sullivan Counties, Pennsylvania

MAP UNIT SYMBOL	MAP UNIT NAME	COMPONENT NAME	DRAINAGE	SURFACE RUNOFF
MaB	MARDIN CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES	MARDIN	moderately well	High
MaC	MARDIN CHANNERY SILT LOAM, 8 TO 15 PERCENT SLOPES	MARDIN	moderately well	High
MaD	MARDIN CHANNERY SILT LOAM, 15 TO 25 PERCENT SLOPES	MARDIN	moderately well	High
MbB	MARDIN VERY STONY SILT LOAM, 3 TO 8 PERCENT SLOPES	MARDIN	moderately well	High
MbD	MARDIN VERY STONY SILT LOAM, 8 TO 25 PERCENT SLOPES	MARDIN	moderately well	High
Md	MEDISAPRISTS, PONDED	MEDISAPRISTS	very poorly	Very low
MoB	MORRIS CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES	MORRIS	somewhat poorly	Very high
MoC	MORRIS CHANNERY SILT LOAM, 8 TO 15 PERCENT SLOPES	MORRIS	somewhat poorly	Very high
MsB	MORRIS VERY STONY SILT LOAM, 3 TO 8 PERCENT SLOPES	MORRIS	somewhat poorly	Very high
MsD	MORRIS VERY STONY SILT LOAM, 8 TO 25 PERCENT SLOPES	MORRIS	somewhat poorly	Very high
NoB	NORWICH VERY STONY SILT LOAM, 0 TO 8 PERCENT SLOPES	NORWICH	very poorly	Very high
OcF	OCHREPTS-ROCK OUTCROP COMPLEX, STEEP	OCHREPTS	excessively	---
OcF	OCHREPTS-ROCK OUTCROP COMPLEX, STEEP	ROCK OUTCROP	excessively	---
OgB	OQUAGA CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES	OQUAGA	well	Medium
OgC	OQUAGA CHANNERY SILT LOAM, 8 TO 15 PERCENT SLOPES	OQUAGA	well	Medium
OgD	OQUAGA CHANNERY SILT LOAM, 15 TO 25 PERCENT SLOPES	OQUAGA	well	High
OsB	OQUAGA EXTREMELY STONY SILT LOAM, 3 TO 8 PERCENT SLOPES	OQUAGA	well	Medium
OsD	OQUAGA EXTREMELY STONY SILT LOAM, 8 TO 25 PERCENT SLOPES	OQUAGA	well	Medium
Po	POPE SOILS	POPE	well	Low
ReA	REXFORD SILT LOAM, 0 TO 3 PERCENT SLOPES	REXFORD	somewhat poorly	Very high
ReA	REXFORD SILT LOAM, 0 TO 3 PERCENT SLOPES	REXFORD - poorly drained	poorly	Very high
ReB	REXFORD SILT LOAM, 3 TO 8 PERCENT SLOPES	REXFORD	somewhat poorly	Very high