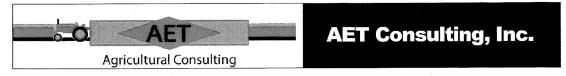
# EXHIBIT "D"



# **Agricultural Erosion and Sediment Control Plan**

For:

**Owner: Spring City Acres, LLC** 

**Operator: Proland Properties, LP** 

Farm Address:

851 Bethel Church Road Spring City, PA 19475

Mailing Address:

1250 Lincoln Road Lititz, PA 17543

717-733-7226

Developed By:
William J. Rogers
AET Consulting, Inc.

PO Box 299 Lititz, PA 17543-0299 717-625-2218 AET Consulting, Inc. Bill Rogers PO Box 299 Lititz, PA 17543 717-625-2218



William J Rogers



# Agricultural Erosion & Sediment Control Plan

Operator:

Proland Properties, LP 1250 Lincoln Road Lititz, PA 17543

Owner:

Spring City Acres, LLC 851 Bethel Church Road Spring City, PA 19475

### **OBJECTIVES**

The Agricultural Erosion and Sediment Control Plan addresses best management practices for sustaining and improving the natural resource base on this farm. It is the responsibility of the land user to obtain all necessary or appropriate permits. All practices are to be maintained to ensure that their intended purposes are achieved. The following practices will improve or enhance soil conditions and reduce soil erosion while at the same time improving water quality on this farm. This holistic farm plan will meet the PA Clean Streams Law requirements.

State Erosion and Sedimentation (E&S) regulations require that all crop fields within 100 feet of a of a river or perennial or intermittent stream have 25% plant cover or residue throughout the year or implement additional BMPs to minimize accelerated erosion and sedimentation. The operator is satisfying the nearstream requirements through the use of buffers and reduced tillage.

#### Crop

Tract: NA

### Conservation Crop Rotation (328)

Grow crops in a planned rotation for biodiversity and to provide adequate amounts of organic material for erosion reduction, nutrient balance and sustained soil organic matter.

The following rotation(s) are planned for the designated fields:

- The basic crop rotation on this operation will be corn grain soybean wheat; it will take a few years to fully implement this rotation.
- The planned tillage practices will mainly be the injection of Food Processing Waste Residual (FPR) using injectors. Prior to establishing crops a disk and cultivator will follow to level the fields.
- FPR applications are planned for all the crops in the rotation. All FPR applications should be made in accordance with the FPR management manual.
- Reductions in tillage or more applications of FPR over what is listed in this plan but not greater than allowed by the FPR management manual will reduce the overall 'C' - value.
- Residue values after each tillage, harvest, or manure application are listed following this section.

Field	Planned Amount	Month	Year	Applied Amount	Date
BC1 - BC3	30.6 ac.	10	2023	ac.	
BC4	11.2 ac.	10	2023	ac.	
BC5	11.8 ac.	10	2023	ac.	
BC6	9.8 ac.	10	2023	ac.	
BC7	10.7 ac.	10	2023	ac.	
Total:	74.1 ac.			0.0 ac.	

Tract: NA

#### Forage Harvest Management (511) - New, General

Harvest the pastures at a frequency and height that optimizes the desired forage stand, plant community, and stand life. Ensure that forages are harvested at the appropriate stage of maturity and moisture content. Maintain 3 inches of stubble height to promote the health and vigor of the desired species while providing some erosion control. Manage diseases, insects, and weeds with appropriately timed harvest or methods recommended by Penn State Cooperative Extension Service.

Operation and Maintenance consists of maintaining soil fertility by conducting soil tests every 3 years and applying nutrients according to soil test recommendations, maintaining records of all nutrient and chemical applications, following manufacturer's safety measure when operating equipment and storing harvested forage in a way that minimized spoilage.

Field	Amount		Year	Applied Amount	Date
BC - Pasture	6.2 ac.	10	2021	ac.	
Total:	6.2 ac.			0.0 ac.	

### Prescribed Grazing (528) - New, Vegetation Management/Exercise

Use the dairy animals to harvest the forage from the fields indicated on the conservation plan map. This area will be used as a turn out area for livestock and will be maintained in a permanent grass and clover so that surface and subsurface water quality can be maintained and erosion will be minimized. This area can only be used for turnout throughout the year if they are moved around and the pastures are maintained. When not on the pasture for exercise or when weather is such that they should not be on the pastures keep the animals in the barn.

Graze the pastures until the grass is at a height of 3 inches. When the grass is grazed to 3 inches the livestock must be removed from the area until the grass regrows to at least 6 inches in height.

Due to the frequent use of this area, soil tests should be taken at least once every 3 years to ensure that the phosphorus levels are not too high. If vegetation becomes degraded or bare areas develop, animals will be removed immediately and a perennial grass will be re-established. Keep livestock out of the area until the grass is re-established, at least 8 weeks.

Field	Planned Amount	Month	Year	Applied Amount	Date
BC - Pasture	6.2 ac.	10	2021	ac.	
Total:	6.2 ac.			0.0 ac.	

#### Structure for Water Control (587)

A structure for water control is a structure in a water management system that controls the stage, discharge and distribution, conveys water, and determines delivery or direction of water flow. Install a drop box to collect the runoff from the neighboring property prior to crossing the driveway or entering the pasture. The purpose of this practice is to control the rate and direction of water flow, decreasing erosion and improving water quality.

The structure for water control will be installed based on an engineering standards. The drop box must be checked and repaired, including removal of debris, following all major storm events or at least twice a year.

Field	Planned Amount	Month	Year	Applied Amount	Date
BC-Pasture	1 ea.	10	2021	ea.	
Total:	1 ea.			0 ea.	

### Subsurface Drain (606) - New

Develop a conduit installed beneath the ground surface to collect and convey excess water to the property line through the pasture in the location indicated on the conservation plan map. Installation of this practice will result in:

- Improved health, vigor, productivity of plants/crops
- Improved field trafficability
- Reduction in wet soil conditions around the pasture
- Increased stability of the pasture and field lane

Structures must be checked and repaired, including removal of debris, following all major storm events or at least twice a year. The operation and maintenance plan will provide specific instructions for the periodic inspection of the drain and prompt repair of system components, including how to repair blowouts.

Field	Field Planned Amount		Year	Applied Amount	Date
BC-Pasture	900 ft.	10	2021	ft.	
Total:	900 ft.			0 ft.	

### Underground Outlet (620) - New

Install subsurface pipe(s) to convey surface water from the drop box through the pasture to a suitable and stable outlet at the southern part of the pasture at the property line. The outlet is protected from erosion or flooding away from any location that could be damaged by erosion or flooding. Inspect following all major storm events and repair immediately if needed, ensure animal guard is in place and is functioning properly, and repair any eroded areas and reseed with permanent vegetation.

Field	Field Planned Amount		Year	Applied Amount	Date
BC-Pasture	900 ft.	10	2021	ft.	
Total:	900 ft.			0 ft.	

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### Underground Outlet (620) - New

Install subsurface pipe(s) to convey sub-surface water from the footer of the new Waste Storage Facility to a suitable and stable outlet at the southern part of the pasture at the property line. The outlet is protected from erosion or flooding away from any location that could be damaged by erosion or flooding. Inspect following all major storm events and repair immediately if needed, ensure animal guard is in place and is functioning properly, and repair any eroded areas and reseed with permanent vegetation.

Field	Planned Amount	Month	Year	Applied Amount	Date
BC-Pasture	ft.			ft.	
Total:	0 ft.			0 ft.	

### Waste Storage Facility (313) - New, General

Construct a round concrete facility with six months of storage for the imported food processing residual.

Refer to the conservation plan map for the proposed location of the storage facility. All wastes will be utilized in accordance with a current manure management plan. The storage facility, as well as all supporting practices, will be installed based on an engineering design that is developed and certified as meeting current NRCS standards and specifications. Since this storage will also store Food Processing Residual a final engineer certification is required. Guidance on required safety measures must be included in the design package. In order to comply with all local, state and federal laws and regulations, the operator shall obtain all necessary permits prior to construction.

#### Operation and Maintenance:

- Check backfill areas around structure monthly for excessive settlement. Determine if the settlement is caused by backfill consolidation, piping, or failure of the structure walls or floor. Necessary repairs must be made.
- Check walls and floors at least 2 times a year, when facility is empty, for cracks and/or separations. Make needed repairs immediately.
- Outlets of foundations and leek detection system should be checked weekly for signs of leakage and kept open.
- Fences should be inspected and maintained in order to unauthorized entry by people.
- Examine and repair all warning and hazard signs as needed.
- Install and maintain a marking gauge at the one foot from full mark.

Field	Planned Amount	Month	Year	Applied Amount	Date
HQ	1 ea.	10	2021	ea.	
Total:	1 ea.			0 ea.	7 800

### **SOILS INFORMATION**

Operator's Name: Proland Properties, LP TRACT:

Assisted by:

William J. Rogers, AET Consulting, Inc.

**Soil Loss Data:** 

### **Soils Data**

FSA Field#	Farmer Field #	Map Unit	Soil Name	Slope %	Slope Length
	metricile verification of the control of the contro	JoC	Joanna loam		
des Vasco de La que de Promoto de La que de La q	BC1 – BC3	PeB, PeC	Penn silt loam	4.0	200
	the second secon	ReA, ReB	Readington silt loam	1	
		СуА	Croton silt loam		
	BC4	PeB, PeC	Penn silt loam	6.5	75
	Sept. Treat-off free	ReB	Readington silt loam		
	The state of the s	СуА	Croton silt loam		
	BC5	PeB	Penn silt loam	3.0	150
	The Control of the Co	ReA	Readington silt loam		
marks the control of	BC6	PeB	Penn silt loam	2.5	100
Pennyogapatan S.	DC0	ReA	Readington silt loam	2.0	100
	The second secon	СуА	Croton silt loam		
n or	BC7	PeB	Penn silt loam	4.0	150
	On common and the com	ReA	Readington silt loam		
	BC – Pasture	СуА	Croton silt loam	3.5	100
	DO – Fasiure	ReA	Readington silt loam	3.5	100

# Predicted Soil Loss (Erosion) - Planned System

FSA Field #	Farmer Field #	T Value (T/A/Yr)	Soil Loss (T/A/Yr) *	SCI
	BC1 – BC3	2	2.47	0.35
	BC4	3	3.09	0.44
ordinaria i ultimaria decimalizati mengripi ad biboli montro qerbibo ur ilmeni dim Aming	BC5	3	1.67	0.51
uuurin miniminin makka ka marka ka mar	BC6	3	1.28	0.56
	BC7	2	2.25	0.46
merronia de la companya da mandra da mandra de la companya de la companya de la companya de la companya de la c	BC - Pasture	3	1.36	0.53

All fields have soil losses within the tolerable 'T'; therefore they are in compliance with soil loss regulations. Since the soil loss calculations are variable, it is acceptable to have a soil less rate that is no more than 10% or 0.5 ton over the listed 'T' value for that soil.

### **RUSLE II – Related Attributes**

Soil Map Unit	Acres	R	K adjusted	L	S	LS	C	Rock Fragments %	P	Soil Loss Rate	Т
FIELD # BC	C1 – BC3										
PeB	30.6	180	0.38	200	4.0	0.60	0.067	10	0.90	2.47	2
FIELD # BC	24										
ReB	11.2	180	0.38	75	6.5	0.74	0.067	10	0.91	3.09	3
FIELD # BC	25										
ReA	11.8	180	0.38	150	3.0	0.40	0.067	10	0.91	1.67	3
FIELD # BC	<b>26</b>										
ReA	9.8	180	0.38	100	2.5	0.31	0.067	10	0.90	1.28	3
FIELD # BC	7									e e	ĺ
PeB	10.7	180	0.38	150	4.0	0.54	0.067	10	0.91	2.25	2
FIELD # BC	FIELD # BC - Pasture										
CyA	6.2	160	0.45	100	3.5	0.43	0.044	0	1.00	1.36	3

# Summary of RUSLE II Evaluations

Alternative #1: Corn Grain - Soybean - Wheat

Month/ Year	Operation	Crop	Yield	Type of Cover Material	Cover Material add/remove (lb/ac)	Cover from addition (%)	Surface Residue after Practice (%)
	FPR injector, liquid low disturbance 15"			FPR, liquid	1000	1	39
	Disk, tandem secondary operation						25
05/01/0	Roller, corrugated packer						25
05/05/0	Planter, double disk opener w/fluted coulter	Corn, grain	210 bu.				22
10/10/0	Harvest, killing crop 70% standing stubble				3400	72	55
11/10/0	FPR injector, liquid low disturbance 15"			FPR, liquid	1000	1	72
	Disk, tandem secondary operation						68
	Roller, corrugated packer						51
05/20/1	Planter, double disk opener w/fluted coulter	Soybean, 30" rows	60 bu.				51
09/10/1	Harvest, killing crop 30% standing stubble				2500	77	45
10/01/1	FPR injector, liquid low disturbance 15"			FPR, liquid	1000	1	69
10/15/1	Disk, tandem secondary operation			•			56
10/15/1	Roller, corrugated packer						36
10/24/1	Drill, double disk, w/ fluted coulters	Wheat, 7" rows	90 bu.				20
07/11/2	Harvest, killing crop 60% standing stubble				3300	86	20
07/15/2	Bale straw						17
08/15/2	FPR injector, liquid low disturbance 15"			FPR, liquid	1000	1	52

C = 0.085 (0.067 w/10% Rock Fragments)

Alternative #2: (Pasture – 30-40% Cover – 365 Day Grazing)

Month/ Year	Operation	Сгор	Yield	Type of Cover Material	Cover Material add/remove (lb./ac)	Cover from addition (%)	Surface Residue after Practice (%)
04/15/1	Graze, continuous	Grass, slow regrowth after grazing	0.50		5.9	0.33	11
05/08/1	Graze, continuous	Grass, slow regrowth after grazing	0.50		5.1	0.28	11
06/01/1	Graze, continuous	Grass, slow regrowth after grazing	0.50		5.2	0.29	11
06/21/1	Graze, continuous	Grass, slow regrowth after grazing	0.50		4.7	0.26	11
07/08/1	Graze, continuous	Grass, slow regrowth after grazing	0.50		4.4	0.25	10
08/01/1	Graze, continuous	Grass, slow regrowth after grazing	0.50		5.2	0.29	10
08/21/1	Graze, continuous	Grass, slow regrowth after grazing	0.50		4.7	0.26	10
	Graze, continuous	Grass, slow regrowth after grazing	0.50		5.2	0.29	10
10/15/1	Graze, continuous	Grass, slow regrowth after grazing	0.50		5.9	0.33	11
11/01/1	Graze, continuous	Grass, slow regrowth after grazing	0.25		4.4	0.25	11
12/01/1	Graze, continuous	Grass, slow regrowth after grazing	0.15		2.9	0.16	10
01/05/2	Graze, continuous	Grass, slow regrowth after grazing	0.15		1.8	0.10	9
02/10/2	Graze, continuous	Grass, slow regrowth after grazing	0.25		1.9	0.10	9
03/15/2	Graze, continuous	Grass, slow regrowth after grazing	0.50		3.0	0.17	9

C = 0.044

# **CONSERVATION PLAN – FARM MAP** Operator: Proland Properties, LP Spring City Acres, LLC Owner: Approximate Acres: 80.3 1" = 600 County: Chester 04/23/2021 9 BC1 10.7 BC2 8.0 BC3 9.8 BC6 11.2 BC4 <u>10.7</u>BC7 Legend Fields - Farming Pond Proposed Storage - Road Structure for Water Control - Drop Box → Subsurface Drain = = Underground Outlet East Coventry & East Vincent Township: FSA Farm Number: FSA Tract Number: Agricultural Consulting USGS Quadrangle: Phoenixville, PA

### Soil Map

Owner: Spring City Acres, LLC

County: Chester

Soil survey sheet (s) or code #: PA 029

Approximate Acres: 80.3

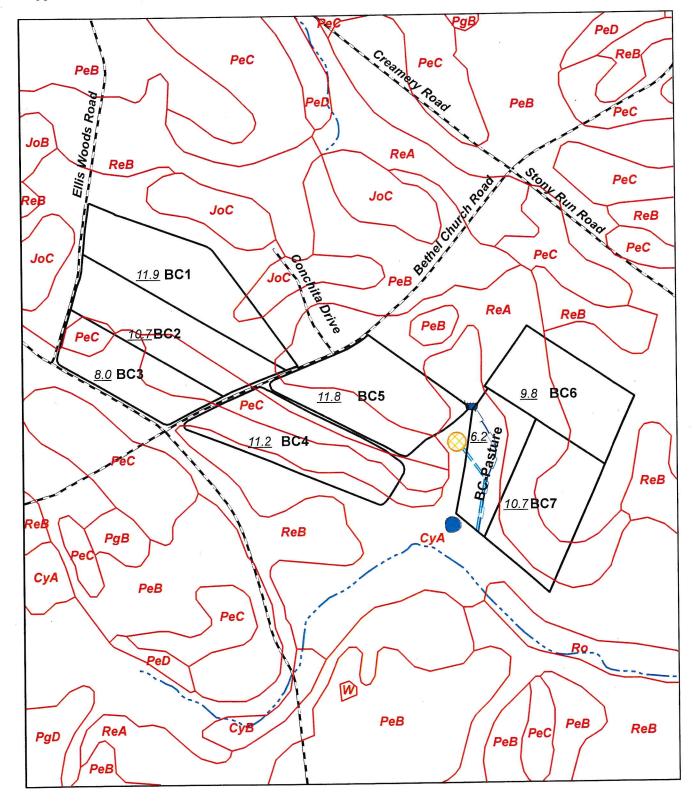
Operator: Proland Properties, LP

State: Pennsylvania

Scale: 1" = 600

Township: East Coventry & East Vincent





### Map Unit Description

### Map unit: CyA - Croton silt loam, 0 to 3 percent slopes

Croton soils make up 90 percent of the map unit. This soil is on a depression on piedmont, valley on piedmont. Not classified as Prime or Statewide Important Farmland. The parent material consists of brunswick residuum weathered from shale and siltstone. The runoff class is very high. The depth to a restrictive feature is 15 to 25 inches to fragipan; 42 to 60 inches to bedrock (lithic). It is poorly drained. The slowest permeability within 60 inches is slow. Available water capacity is moderate. The T-Factor is 3, the Rock Free K Factor Kf = 0.43, and the Whole Soil K Factor Kw= 0.43. The Soil Hydrologic Group is D and shrink swell potential is moderate. The soil has a flood frequency of not flooded and is occasional ponded. The top of the seasonal high water table ranges from 0 to 40 inches. Major component is a hydric soil. Land capability class 4w.

### Map unit: JoC - Joanna loam, 8 to 15 percent slopes

Joanna soils make up 90 percent of the map unit. This soil is on a hill on piedmont. Not classified as Prime or Statewide Important Farmland. The parent material consists of hammer creek residuum weathered from sandstone and siltstone or brunswick residuum weathered from shale and siltstone or new oxford comglomerate residuum weathered from conglomerate. The runoff class is medium. The depth to a restrictive feature is greater than 60 inches to bedrock. It is well drained. The slowest permeability within 60 inches is moderate. Available water capacity is high. The T-Factor is 5, the Rock Free K Factor Kf = 0.37, and the Whole Soil K Factor Kw = 0.37. The Soil Hydrologic Group is B and shrink swell potential is low. The soil has a flood frequency of not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. Major component is not a hydric soil. Land capability class 3e.

### Map unit: PeB - Penn silt loam, 3 to 8 percent slopes

Penn soils make up 100 percent of the map unit. This soil is on a hill on piedmont. This map unit is Prime Farmland. The parent material consists of brunswick residuum weathered from shale and siltstone or stockton residuum weathered from sandstone and siltstone and/or of lockatong residuum weathered from calcareous siltstone. The runoff class is low. The depth to a restrictive feature is 20 to 40 inches to bedrock (lithic). It is well drained. The slowest permeability within 60 inches is moderate. Available water capacity is low. The T-Factor is 3, the Rock Free K Factor Kf = 0.32, and the Whole Soil K Factor Kw = 0.32. The Soil Hydrologic Group is C and shrink swell potential is low. The soil has a flood frequency of not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. Major component is not a hydric soil. Land capability class 2e.

### Map unit: PeC - Penn silt loam, 8 to 15 percent slopes

Penn soils make up 100 percent of the map unit. This soil is on a hill on piedmont. Not classified as Prime or Statewide Important Farmland. The parent material consists of brunswick residuum weathered from shale and siltstone or stockton residuum weathered from sandstone and siltstone and/or of lockatong residuum weathered from calcareous siltstone. The runoff class is low. The depth to a restrictive feature is 20 to 40 inches to bedrock (lithic). It is well drained. The slowest permeability within 60 inches is moderate. Available water capacity is low. The T-Factor is 3, the Rock Free K Factor Kf = 0.32, and the Whole Soil K Factor Kw = 0.32. The Soil Hydrologic Group is C and shrink swell potential is low. The soil has a flood frequency of not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. Major component is not a hydric soil. Land capability class 3e.

### Map unit: ReA - Readington silt loam, 0 to 3 percent slopes

Readington soils make up 90 percent of the map unit. This soil is on a drainageway on piedmont. This map unit is Prime Farmland. The parent material consists of brunswick residuum weathered from shale and siltstone. The runoff class is low. The depth to a restrictive feature is 40 to 70 inches to bedrock (lithic). It is moderately well drained. The slowest permeability within 60 inches is moderately slow. Available water capacity is moderate. The T-Factor is 4, the Rock Free K Factor Kf = 0.43, and the Whole Soil K Factor Kw = 0.43. The Soil Hydrologic Group is C and shrink swell potential is low. The soil has a flood frequency of not flooded and is not ponded. The top of the seasonal high water table ranges from 18 to 36 inches. Major component is not a hydric soil. Land capability class 2w.

### Map unit: ReB - Readington silt loam, 3 to 8 percent slopes

Readington soils make up 90 percent of the map unit. This soil is on a drainageway on piedmont. This map unit is Farmland of Statewide Importance. The parent material consists of brunswick residuum weathered from shale and siltstone. The runoff class is medium. The depth to a restrictive feature is 40 to 70 inches to bedrock (lithic). It is moderately well drained. The slowest permeability within 60 inches is moderately slow. Available water capacity is moderate. The T-Factor is 4, the Rock Free K Factor Kf = 0.43, and the Whole Soil K Factor Kw = 0.43. The Soil Hydrologic Group is C and shrink swell potential is low. The soil has a flood frequency of not flooded and is not ponded. The top of the seasonal high water table ranges from 18 to 36 inches. Major component is not a hydric soil. Land capability class 2e.

# Topographic Map

Owner: Spring City Acres, LLC

County: Chester

Soil survey sheet (s) or code #: PA 029

Approximate Acres: 80.3

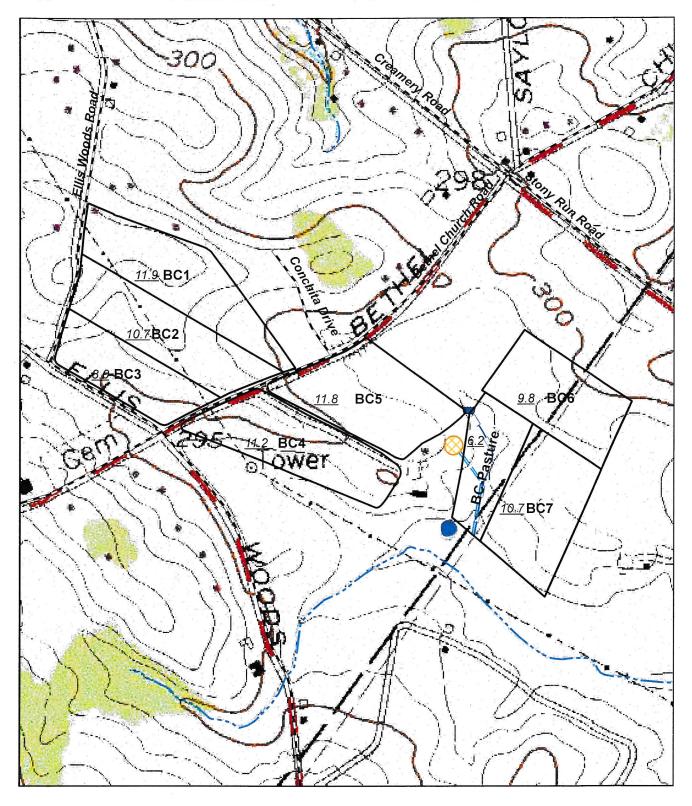
Operator: Proland Properties, LP

State: Pennsylvania

1"= 600 Scale:

Township: East Coventry & East Vincent





### Topographic Map

Owner: Spring City Acres, LLC Operator: Proland Properties, LP

County: Chester State: Pennsylvania

Soil survey sheet (s) or code #: PA 029 Scale: 1" = 600"

Approximate Acres: 80.3 Township: East Coventry & East Vincent



