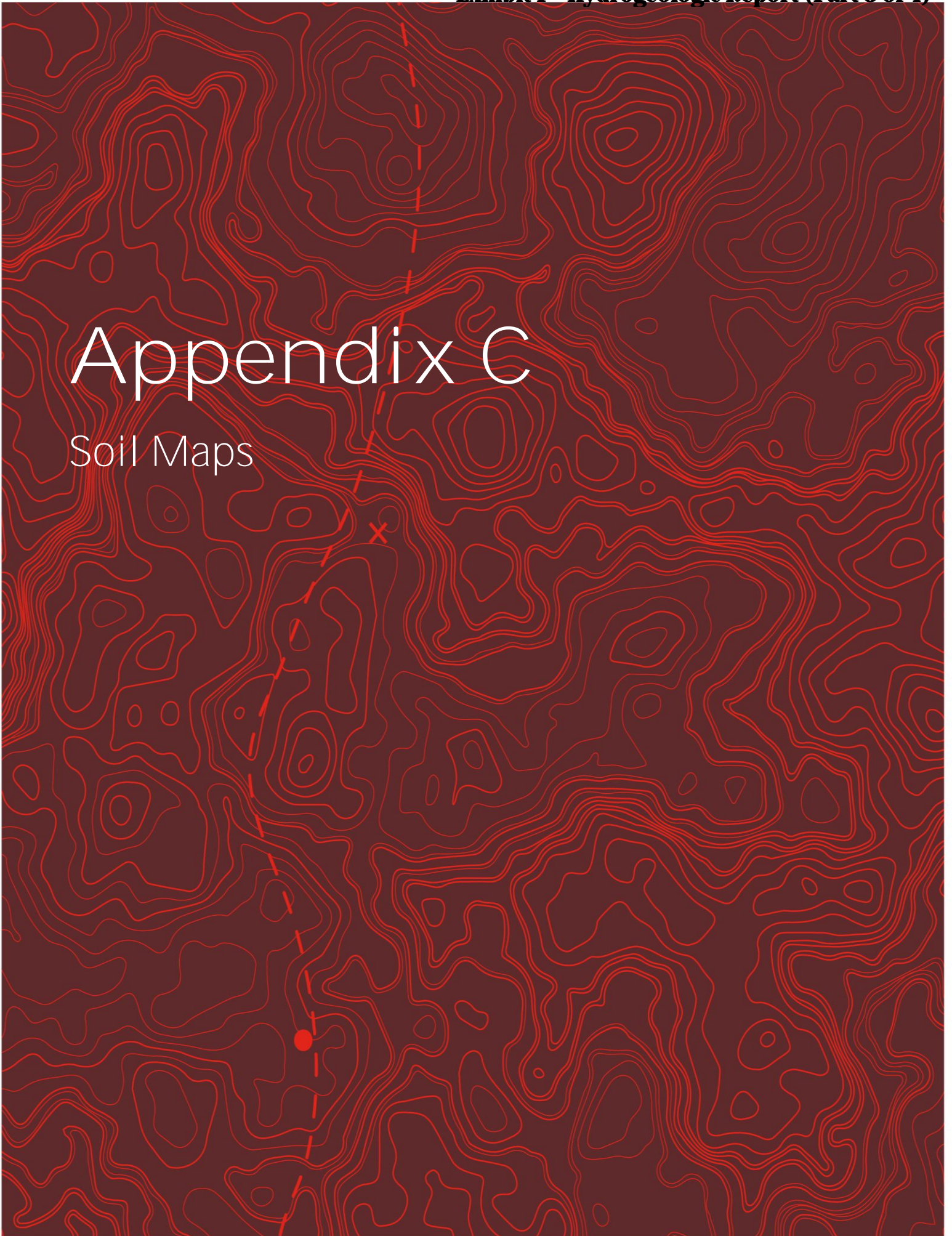
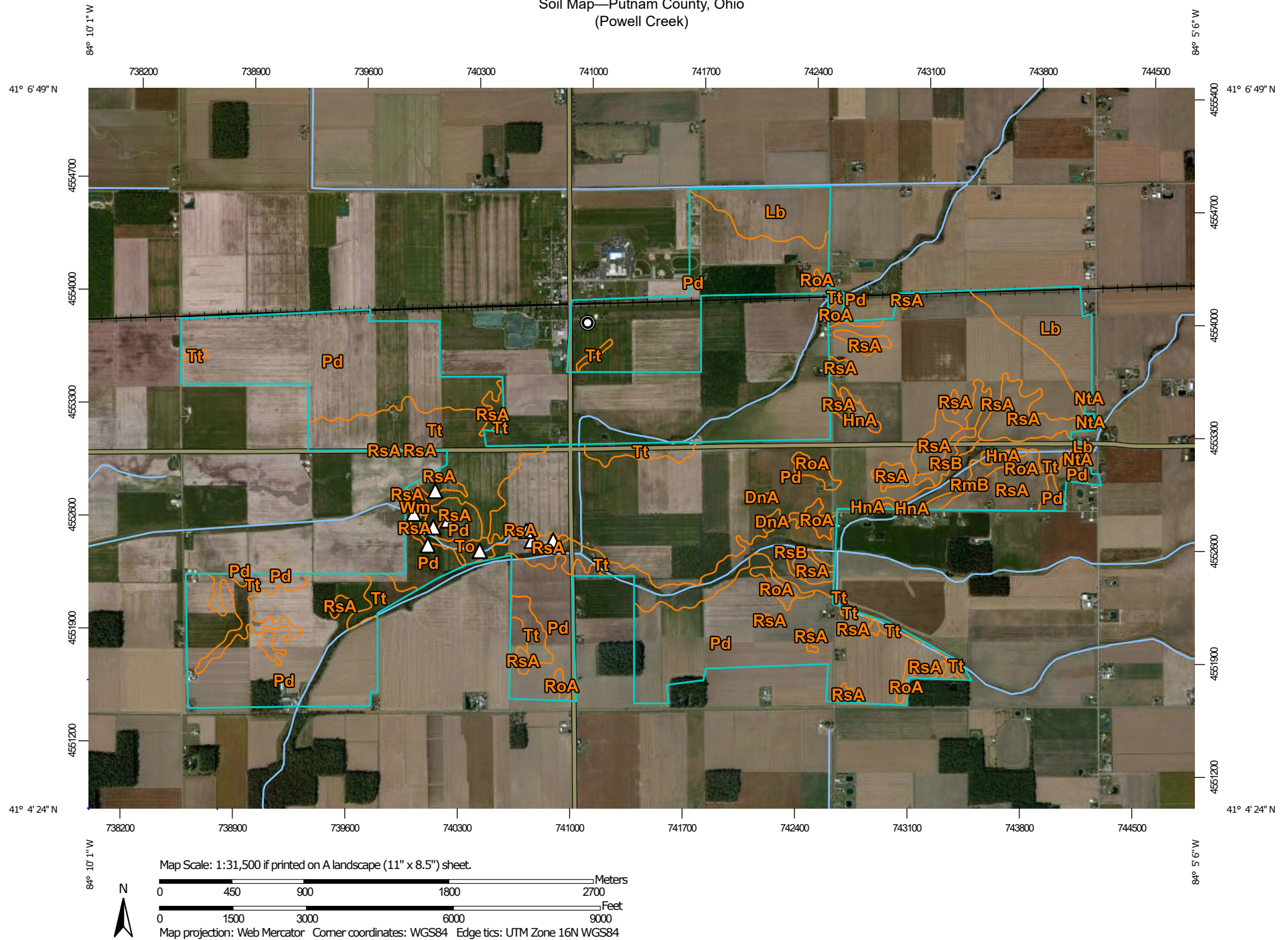


Appendix C

Soil Maps



Soil Map—Putnam County, Ohio
(Powell Creek)



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Putnam County, Ohio

Survey Area Data: Version 18, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 11, 2010—Jun 1, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
DnA	Digby loam, 0 to 2 percent slopes	3.3	0.2%
HnA	Haskins loam, 0 to 2 percent slopes	10.4	0.5%
HnB	Haskins loam, 2 to 6 percent slopes	2.7	0.1%
Lb	Latty silty clay, till substratum, 0 to 1 percent slopes	119.8	5.5%
NtA	Nappanee silty clay loam, 0 to 2 percent slopes	6.7	0.3%
Pd	Paulding clay, 0 to 1 percent slopes	1,496.6	68.7%
RmB	Rawson loam, 2 to 6 percent slopes	9.1	0.4%
RoA	Roselms silt loam, 0 to 2 percent slopes	36.4	1.7%
RsA	Roselms silty clay loam, 0 to 2 percent slopes	151.1	6.9%
RsB	Roselms silty clay loam, 2 to 6 percent slopes	12.3	0.6%
To	Toledo silty clay loam	14.7	0.7%
Tt	Toledo silty clay, 0 to 1 percent slopes	312.1	14.3%
Wm	Willette muck	2.4	0.1%
Totals for Area of Interest		2,177.6	100.0%

Map Scale: 1:31,500 if printed on A landscape (11" x 8.5") sheet.

0 450 900 1800 2700 Meters


0 1500 3000 6000 9000 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge ticks: UTM Zone 16N WGS84

Depth to Water Table—Putnam County, Ohio
(Powell Creek)








MAP LEGEND

Area of Interest (AOI)


 Area of Interest (AOI)

Soils







Soil Rating Polygons


-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200
-  Not rated or not available

Soil Rating Lines


-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200
-  Not rated or not available

Soil Rating Points






-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200

 Not rated or not available


Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Putnam County, Ohio

Survey Area Data: Version 18, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 11, 2010—Jun 1, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Depth to Water Table

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
DnA	Digby loam, 0 to 2 percent slopes	31	3.3	0.2%
HnA	Haskins loam, 0 to 2 percent slopes	30	10.4	0.5%
HnB	Haskins loam, 2 to 6 percent slopes	30	2.7	0.1%
Lb	Latty silty clay, till substratum, 0 to 1 percent slopes	0	119.8	5.5%
NtA	Nappanee silty clay loam, 0 to 2 percent slopes	30	6.7	0.3%
Pd	Paulding clay, 0 to 1 percent slopes	0	1,496.6	68.7%
RmB	Rawson loam, 2 to 6 percent slopes	61	9.1	0.4%
RoA	Roselms silt loam, 0 to 2 percent slopes	31	36.4	1.7%
RsA	Roselms silty clay loam, 0 to 2 percent slopes	31	151.1	6.9%
RsB	Roselms silty clay loam, 2 to 6 percent slopes	31	12.3	0.6%
To	Toledo silty clay loam	8	14.7	0.7%
Tt	Toledo silty clay, 0 to 1 percent slopes	0	312.1	14.3%
Wm	Willette muck	8	2.4	0.1%
Totals for Area of Interest			2,177.6	100.0%

Description

"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Rating Options

Units of Measure: centimeters

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Interpret Nulls as Zero: No

Beginning Month: January

Ending Month: December

The background of the entire page is a dark red color with a complex pattern of lighter red, wavy contour lines, resembling a topographic map. A dashed red line runs diagonally from the top left towards the bottom center. An 'x' mark is located in the upper middle section, and a solid red dot is positioned in the lower left section.

Appendix D

Well Logs



Water Well Log and Drilling Report

Ohio Department of Natural Resources
Division of Soil and Water
Phone: 614-265-6740 Fax: 614-265-6767

Well Log Number: **39896**

[View Image of Original Well Log](#)

ORIGINAL OWNER AND LOCATION

Original Owner Name: *PETE WAINAMENT*

County: *PUTNAM*

Township: *PALMER*

Address:

City:

State: *OH*

Location Number: *60*

Location Map Year: *1945*

Latitude: *41.090511*

Longitude: *-84.130564*

Section Number: *36*

Lot Number:

Zip Code:

Location Area:

CONSTRUCTION DETAILS

Borehole Diameter: 1:

Borehole Depth: 1: *55 ft.*

Depth to Bedrock:

2:

2:

Casing Diameter: 1: *4.25 in.*

Casing Length: 1: *47 ft.*

Casing Thickness: 1:

2:

2:

2:

Casing Height Above Ground:

Aquifer Type: *LIMESTONE*

Date of Completion: *12/3/1948*

Total Depth: *55 ft.*

Well Use:

Driller's Name: *STOEPFEL DRILLING, LLC*

Screen Diameter:

Slot Size:

Screen Length:

Type:

Material:

Set Between:

Gravel Pack Material/Size:

Vol/Wt Used:

Method of Installation:

Placed:

Grout Material/Size:

Vol/Wt Used:

Method of Installation:

Placed

WELL TEST DETAILS

Static Water Level: *40 ft.*

Test Rate:

Associated Reports

Drawdown:

Test Duration:

COMMENTS:

WELL LOG

Formations	From	To
CLAY	0	41
SAND	41	46
LIMESTONE	46	55
WATER AT		53

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Water Well Log and Drilling Report

Ohio Department of Natural Resources
Division of Soil and Water
Phone: 614-265-6740 Fax: 614-265-6767

Well Log Number: **101288**

[View Image of Original Well Log](#)

ORIGINAL OWNER AND LOCATION

Original Owner Name: *ONBROTH*

County: *PUTNAM*

Address: *SR 108*

City:

Location Number: *47*

Latitude: *41.085156*

Township: *PALMER*

State: *OH*

Location Map Year: *1986*

Longitude: *-84.124377*

Section Number: *36*

Lot Number:

Zip Code:

Location Area:

CONSTRUCTION DETAILS

Borehole Diameter: 1:

2:

Borehole Depth: 1: *90 ft.*

2:

Depth to Bedrock:

Casing Diameter: 1: *4.25 in.*

2:

Casing Length: 1: *40 ft.*

2:

Casing Thickness: 1:

2:

Casing Height Above Ground:

Date of Completion: *9/17/1953*

Driller's Name: *STOEPFEL DRILLING, LLC*

Aquifer Type: *LIMESTONE*

Total Depth: *90 ft.*

Well Use:

Screen Diameter:

Slot Size:

Screen Length:

Type:

Material:

Set Between:

Gravel Pack Material/Size:

Vol/Wt Used:

Method of Installation:

Placed:

Grout Material/Size:

Vol/Wt Used:

Method of Installation:

Placed

WELL TEST DETAILS

Static Water Level:

Test Rate:

Associated Reports

Drawdown:

Test Duration:

COMMENTS:

WELL LOG

Formations

From

To

CLAY

0

40

LIMESTONE

40

90

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Water Well Log and Drilling Report

Ohio Department of Natural Resources
Division of Soil and Water
Phone: 614-265-6740 Fax: 614-265-6767

Well Log Number: **240565**

[View Image of Original Well Log](#)

ORIGINAL OWNER AND LOCATION

Original Owner Name: *WILLIAM HERMILLER*

County: *PUTNAM*

Township: *PALMER*

Address: *G CR*

City:

State: *OH*

Location Number: *71*

Location Map Year: *1968*

Latitude: *41.079086*

Longitude: *-84.151548*

Section Number: *33*

Lot Number:

Zip Code:

Location Area:

CONSTRUCTION DETAILS

Borehole Diameter: 1:

Borehole Depth: 1: *73 ft.*

Depth to Bedrock:

2:

2:

Casing Diameter: 1: *5.63 in.*

Casing Length: 1: *48 ft.*

Casing Thickness: 1:

2:

2:

2:

Casing Height Above Ground:

Aquifer Type: *LIMESTONE*

Date of Completion: *7/17/1961*

Total Depth: *73 ft.*

Well Use:

Driller's Name: *STOEPFEL DRILLING, LLC*

Screen Diameter:

Slot Size:

Screen Length:

Type:

Material:

Set Between:

Gravel Pack Material/Size:

Vol/Wt Used:

Method of Installation:

Placed:

Grout Material/Size:

Vol/Wt Used:

Method of Installation:

Placed

WELL TEST DETAILS

Static Water Level: *32 ft.*

Test Rate: *12 gpm*

[Associated Reports](#)

Drawdown:

Test Duration:

COMMENTS:

WELL LOG

Formations

From

To

CLAY

0

45

LIMESTONE

45

73

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Water Well Log and Drilling Report

Ohio Department of Natural Resources
Division of Soil and Water
Phone: 614-265-6740 Fax: 614-265-6767

Well Log Number: **347019**

[View Image of Original Well Log](#)

ORIGINAL OWNER AND LOCATION

Original Owner Name: *PETE WARMEMENT*

County: *PUTNAM*

Township: *PALMER*

Address: *SR 113*

City:

State: *OH*

Location Number: *59*

Location Map Year: *1968*

Latitude: *41.095388*

Longitude: *-84.144674*

Section Number: *27*

Lot Number:

Zip Code:

Location Area:

CONSTRUCTION DETAILS

Borehole Diameter: 1:

Borehole Depth: 1: *225 ft.*

Depth to Bedrock:

2:

2:

Casing Diameter: 1: *5.63 in.*

Casing Length: 1: *57 ft.*

Casing Thickness: 1:

2:

2:

2:

Casing Height Above Ground:

Aquifer Type: *LIMESTONE*

Date of Completion: *3/22/1966*

Total Depth: *225 ft.*

Well Use:

Driller's Name: *STOEPFEL DRILLING, LLC*

Screen Diameter:

Slot Size:

Screen Length:

Type:

Material:

Set Between:

Gravel Pack Material/Size:

Vol/Wt Used:

Method of Installation:

Placed:

Grout Material/Size:

Vol/Wt Used:

Method of Installation:

Placed

WELL TEST DETAILS

Static Water Level: *20 ft.*

Test Rate: *30 gpm*

[Associated Reports](#)

Drawdown:

Test Duration: *2 hrs.*

COMMENTS:

WELL LOG

Formations

CLAY

LIMESTONE

From

42

57

To

57

225

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Water Well Log and Drilling Report

Ohio Department of Natural Resources
Division of Soil and Water
Phone: 614-265-6740 Fax: 614-265-6767

Well Log Number: **537881**

[View Image of Original Well Log](#)

ORIGINAL OWNER AND LOCATION

Original Owner Name: *GARY WESTRICK*

County: *PUTNAM*

Address: *RD 13*

City:

Location Number: *34*

Latitude: *41.098125*

Township: *LIBERTY*

State: *OH*

Location Map Year: *1986*

Longitude: *-84.111698*

Section Number: *30*

Lot Number:

Zip Code:

Location Area:

CONSTRUCTION DETAILS

Borehole Diameter: 1:
2:

Borehole Depth: 1: *61 ft.*
2:

Depth to Bedrock:

Casing Diameter: 1: *5.63 in.*
2:

Casing Length: 1: *57 ft.*
2:

Casing Thickness: 1:
2:

Casing Height Above Ground:

Date of Completion: *5/9/1980*

Driller's Name: *SPITNALE WELL DRILLING*

Aquifer Type: *LIMESTONE*

Total Depth: *61 ft.*

Well Use:

Screen Diameter:

Slot Size:

Screen Length:

Type:

Material:

Set Between:

Gravel Pack Material/Size:

Vol/Wt Used:

Method of Installation:

Placed:

Grout Material/Size:

Vol/Wt Used:

Method of Installation:

Placed

WELL TEST DETAILS

Static Water Level: *30 ft.*

Test Rate: *25 gpm*

Associated Reports

Drawdown: *5 ft.*

Test Duration: *2 hrs.*

COMMENTS:

WELL LOG

Formations	From	To
YELLOW CLAY	0	20
GRAY CLAY	20	50
HARDPAN	50	56
DOLOMITE	56	57
LIMESTONE	57	61
WATER AT		57

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Commission of Ohio Docketing Information System on

10/7/2020 10:22:54 AM

in

Case No(s). 20-1084-EL-BGN

Summary: Application Exhibit F - Hydrogeologic Report (Part 3 of 4) electronically filed by
Teresa Orahood on behalf of Dylan F. Borchers