SR-100

UK AGRICULTURAL EXPERIMENT STATION
UNIVERSITY OF KENTUCKY — COLLEGE OF AGRICULTURE

# Descriptions and Complete Laboratory Characterization Data for Some Soils in Kentucky

*A.D. Karathanasis, Department of Plant and Soil Sciences*

Kentucky Agricultural Experiment Station • University of Kentucky • College of Agriculture
Department of Plant and Soil Sciences • Lexington, Kentucky 40546

## Introduction

This is the eighth in a series of publications which are planned to be released periodically to compile and preserve the physical, chemical, mineralogical, and morphological data resulting from soil survey and selected research activities in the State of Kentucky. The seven previous publications contained soil characterization data sorted by physiographic region. Starting with this report all future publications will be available in electronic format that will include supplementary soil characterization data for the entire state. Many of these data have been distributed in unpublished form to those immediately concerned. Some of the data and descriptions have appeared in scientific journals, regional bulletins, and text of published soil surveys. However, most of these data have not previously been readily available to all potential users.

While these data were being assembled, some changes were made in laboratory methods. Some were improved and some new ones were devised. Consequently, laboratory data for different soils cannot always be directly compared without allowance for the method. The method used is indicated by a symbol in the column headings of the data table, or as a footnote to the table. These symbols are identified in Table 1. The methods are described in *Soil Survey Laboratory Methods and Procedures for Collecting Soil Samples,* SSIR No. 1, Soil Conservation Service, USDA (1984), and the *Soil Survey Laboratory Methods Manual* (1996). Symbols not shown in Table 1 indicate procedures on file with the Department of Plant and Soil Science and are briefly described in Table 2 on the next page.

The soil descriptions published here were prepared as working documents to meet a specific need at the time the soil samples were collected. The soil scientists who wrote them had no idea they would be published. Editing has been limited, for the most part to that necessary for conformance to *Soil Survey Manual* (1993). Field textural estimates have been retained even though some are at variance with laboratory data. Horizon designations have been adjusted for conformance to the *Soil Survey Manual* (1993).

There were several reasons for sampling these soils. Some were sampled to study soil genesis, some to facilitate classification, and some to obtain data to permit more useful agronomic and engineering interpretations. Partly because of these studies, the concepts of some soil series have been modified. As a consequence, the soil series name assigned to a soil at the time of sampling is not always the name that would be assigned today. After the laboratory determinations were completed, the descriptions and data were reviewed again to determine if the series names were still current. If they were not, they were changed to correspond with the current correlation of the mapping unit.

Although the pedon name corresponds with the *mapping unit* name, the laboratory data may not place the pedon within the limits of the series *taxonomic unit* definition. If the pedon deviated slightly from the taxonomic unit concept, no explanatory notes were made. If one or more diagnostic characteristics of the pedon sampled were outside the series definition, but the interpretations for all common uses of the soil were the same as for that series, a note was made that the pedon was a *taxadjunct.* If the characteristics of the pedon sampled were sufficiently different so that it would qualify for a new series, but the extent of the soil in the county was not great enough to establish a new series, the pedon was called a *variant*. In both cases, the reason for the deviation is noted.

**Table 1.** Code sheet for laboratory methods (SSIR #1, SCS-USDA, 1984).

**1. Sample Collecting and Preparation**
- A. Field Sampling
  - 1. Site Selection
  - 2. Pedon sampling
- B. Laboratory Preparation
  - 1. Standard (air-dry)
    - a. Square-hole 2-mm sieve
    - b. Round-hole 2-mm sieve

**2. Conventions**
- A. Size-fraction base for reporting
  - 1. < 2 mm
  - 2. > 2 mm, specified size
- B. Data sheet symbols
  - tr: Trace, not measurable by quantitative procedure used or less than reportable amount.
  - tr (S): Trace, detectable only by qualitative procedures more sensitive than quantitative procedure used.
  - -: Analysis run, but none detected.
  - -(S): None detected by/ sensitive qualitative test
  - blank: Analysis not run.
  - <: Less than reported amount or none present

**3. Particle-size Analysis**
- A. Particles , 2mm (pipet method)
  - 1. Air-dry samples
- B. Particles > 2 mm
  - 1. Weight estimates
    - a. By field and laboratory weighing
    - b. From column and weight estimates
  - 2. Volume estimates

**5. Ion-exchange Analyses**
- A. Cation-exchange capacity
  - 1. NH4OAc, pH 7.0 Buchner funnel (CEC-7)
    - a. Direct distillation
    - b. Displacement, distillation
  - 3. By summation
    - a. Sum of cations (CEC-8.2)
- B. Extractable bases
  - 1. NH4OAc, pH 7.0 Buchner funnel
    - a. Uncorrected
    - b. Corrected (exchangeable)
- C. Base saturation
  - 1. NH4OAc, pH 7.0
  - 3. Sum of cations, TEA, pH 8.2

**6. Chemical Analyses**
- A. Organic carbon
  - 1. Acid-dichromate digestion
    - a. FeSO4 titration
    - b. CO2 evolution, gravimetric
    - c. FeSO4 titration, automatic titrator
- G. Aluminum
  - 1. KCl extraction 1, 30 min
    - a. Aluminon I
    - b. Aluminon II
    - c. Aluminon III
    - d. Flouride titration
    - e. Atomic absorption
- H. Extractable acidity
  - 1. BaCl2-triethanolamine I
    - a. Back titration with HCl
- N. Calcium
  - 1. Saturation extract
    - a. EDTA titration
    - b. Atomic absorption
  - 2. NH4OAc extraction
    - a. EDTA-alcohol separation
    - b. Oxalate-permanganate I
    - c. Oxalate-permanganate II Fe, Al, and Mn removed
    - d. Oxalate-cerate
    - z. Atomic absorption
- O. Magnesium
  - 1. Saturation extract
    - a. EDTA titration
    - b. Atomic absorption
  - 2. NH4OAc extraction
    - a. EDTA-alcohol separation
    - b. Phosphate titration
    - c. Gravimetric, Mg2P2O7
    - z. Atomic absorption
- P. Sodium
  - 1. Saturation extract
    - a. Flame photometry
    - b. Atomic absorption
  - 2. NH4OAc extraction
    - a. Flame photometry
    - z. Atomic absorption
- Q. Potassium
  - 1. Saturation extract
    - a. Flame photometry
    - b. Atomic absorption
  - 2. NH4OAc extraction
    - z. Atomic absorption
- S. Phosphorus
  - 1. Perchloric acid digestion
    - a. Molybdovanadophosphoric acid colorimetry
  - 2. Adsorption coefficient

**7. Mineralogy**
- A. Instrumental analysis
  - 2. X-ray diffraction

**8. Miscellaneous**
- C. Reaction (pH)
  - 1. Soil suspension
    - a. Water dilution
    - b. Saturated paste
    - c. KCl
    - d. NaF

In some cases, laboratory data and field investigations showed that the soils in a certain mapping unit were dominantly in a series other than that originally used to name it. Then the names of the mapping unit and the pedon representing it were changed. Soil series names in this publication follow 2000 series definitions.

**Table 2.** Additional methods used by the Department of Plant and Soil Science.

**Particle Size Analysis**
3X2 Silt by elutriation, sand by sieving.

**Chemical Analysis**
6N2X. Calcium, Flame Photometer
6N2Y. Calcium, DU Spectrophotometer
7N7. $CaCO_3$ equivalent, Procedure 23b, USDA Handbook 60, U. S. Salinity Lab. 1954.
6O2X. Magnesium, Absorption Spectrophotometer
6O2Y. Magnesium, DU Spectrophotometer
6P2X. Sodium, Absorption Spectrometer
6P2Y. Sodium, DU Spectrometer
6O2X. Potassium, Flame Photometer
6O2Y. Potassium, DU Spectrometer
6S6. Phosphorus. Extractable P, Bray No. 1, Soil Sci. 59:39-45, 1945.

**Miscellaneous**
807. Lime Requirement, SSSA Proc. 25:274-277, 1961.

**Key to mineral symbols not listed under Mineralogy Data Tables.**

| | |
|---|---|
| A | Amorphous |
| C | Chlorite |
| F | Feldspar |
| I | Illite |
| K | Kaolinite |
| M | Montmorillonite |
| Mc | Montmorillonite with Al interlayers |
| M/V | Interstratified Montmorillonite-Vermiculite |
| Q | Quartz |
| V | Vermiculite |
| V/I | Interstratified Vermiculite/Illite |

## Literature Cited


Bailey H. H., R. L. Blevins, and R. I. Barnhisel. 1972. Descriptions and laboratory data for some soils in Kentucky: 1. Purchase Region. University of Kentucky Agric. Exp. Station., pp 57.

Jackson, M. L. 1985. Soil chemical analysis—advanced course. Pub. by the author. Dept. of Soils, University of Wisconsin, Madison, WI.

Karathanasis, A. D. and B. F. Hajek. 1982. Revised methods for rapid quantitative determination of minerals in soil clays. Soil Sci. Soc. Am. J. 46:419-425.

Karathanasis, A. D. , H. H. Bailey, R. I. Barnhisel, and R. L. Blevins. 1986. Descriptions and laboratory data for some soils in Kentucky: 2. Bluegrass Region. Special Report 86-1, University of Kentucky Ag. Exp. Station. pp. 105.

Karathanasis, A. D. , H. H. Bailey, R. I. Barnhisel, and R. L. Blevins. 1988. Descriptions and laboratory data for some soils in Kentucky: 3. Western Coalfields Region. Special Report 88-2, University of Kentucky Ag. Exp. Station. pp. 104.

Karathanasis, A. D. , H. H. Bailey, R. I. Barnhisel, and R. L. Blevins. 1988. Descriptions and laboratory data for some soils in Kentucky: 4. Western Pennyroyal Region. Special Report 88-3, University of Kentucky Ag. Exp. Station. pp. 116.

Karathanasis, A. D. , H. H. Bailey, R. I. Barnhisel, and R. L. Blevins. 1991. Descriptions and laboratory data for some soils in Kentucky: 5. Mountains and Eastern Coalfields Region. Special Report 91-1, University of Kentucky Ag. Exp. Station. pp. 296.

Karathanasis, A. D. 1992. Descriptions and laboratory data for some soils in Kentucky: 6. Knobs Region. Special Report 92-1, University of Kentucky Ag. Exp. Station. pp. 84.

Karathanasis, A. D. 1993. Descriptions and laboratory data for some soils in Kentucky: 7. Eastern Pennyroyal Region. Special Report 93-1. University of Kentucky Ag. Exp Station, pp 78.

Klute, A. (ed.) 1986. Methods of Soil Analysis, Part 1. Physical and Mineralogical Methods (2nd edition), Agronomy Monographs #9, ASA-SSSA.

NRCS. 1995. Soil Survey Laboratory Information Manual. Soil Survey Investigations Report # 45. USDA-NRCS, National Soil Survey Center, Soil Survey Laboratory, Lincoln, NE.

NRCS. 1996. Soil Survey Laboratory Methods Manual. Soil Survey Investigations Report #42, USDA, Washington, D. C.

Soil Survey Division Staff. 1993. Soil Survey Manual. Agr. Handbook # 18. USDA, Washington, D.C.

Soil Survey Staff. 1999. Soil Taxonomy, A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Agric. Handbook 436. USDA-NRCS.

Soil Conservation Service, USDA. 1981. Examination and description of soils in the field. Soil Survey Manual 430-V-SSM. U. S. Government Printing Office, Washington, D. C.

Soil Conservation Service, USDA. 1984. Procedures for collecting soil samples and methods of analysis for soil surveys. Soil Survey Investigations Rep. 1. U. S. Government Printing Office, Washington, D. C.


## Acknowledgments


Appreciation is expressed to Kentucky members of the Natural Resource Conservation Service, U. S. Department of Agriculture, for their valuable assistance in site location, sampling, correlation, and interpretation of data.

In addition, appreciation is extended to the Kentucky Division of Conservation of the Natural Resource and Environmental Protection Cabinet, the U. S. Forest Service and other Agencies involved in the Kentucky Cooperative Soil Survey Program.

Thanks, also, to all laboratory personnel involved in the analyses and tabulation of the characterization data. Finally, special gratitude is extended to Yvonne Thompson for assistance in compiling this data and Bill Craddock (Kentucky NRCS) for helping with the final correlation of the pedons involved.

# Soil Series Index

| Series | Pedon # | Classification | County |
|---|---|---|---|
| Barbourville | | Humic Dystrudepts | Breathitt |
| Bowdre | 99KY-075-02 | Vertic Eutrodepts | Fulton |
| Bowdre | 99KY-075-03 | Vertic Hapludolls | Fulton |
| Brandon | 86KY-139-11 | Ultic Hapludalfs | Livingston |
| Brassfield | 91KY-079-01 | Inceptic Haprendolls | Garrard |
| Calloway | 94KY-035-4-5 | Aquic Fradiudults | Calloway |
| Catalpa | 99KY-075-01 | Fluvaquentic Vertic Epiaquolls | Fulton |
| Chavies | 99KY-015-03 | Typic Hapludults | Boone |
| Cloverlick | 95KY-119-01 | Typic Dystrudepts | Knott |
| Cloverlick | | Umbric Dystrochrepts | Breathitt |
| Colp | 04KY-145-02 | Aquertic Chromic Hapludalfs | McCracken |
| Combs | 98KY-111-03 | Fluventic Hapludolls | Jefferson |
| Combs | 98KY-111-04 | Fluventic Hapludolls | Jefferson |
| Combs | 98KY-111-05 | Fluventic Hapludolls | Jefferson |
| Culleoka | 00KY-001-02 | Ultic Hapludalfs | Adair |
| Culleoka | 00KY-001-04 | Ultic Hapludalfs | Adair |
| Cynthiana | 96KY-015-02 | Lithic Hapludalfs | Boone |
| Cynthiana | 97KY-015-07 | Lithic Hapludalfs | Boone |
| Dubbs | 04KY-007-01 | Oxyaquic Hapludalfs | Ballard |
| Dubbs | 04KY-145-01 | Oxyaquic Hapludalfs | McCracken |
| Eden | 96KY-015-01 | Typic Hapludalfs | Boone |
| Eden | 98KY-015-05 | Typic Hapludalfs | Boone |
| Fairpoint | | Typic Udorthents | Breathitt |
| Faywood | 95KY-015-01 | Typic Hapludalfs | Boone |
| Faywood | 97KY-015-01 | Typic Hapludalfs | Boone |
| Faywood | 97KY-015-05 | Typic Hapludalfs | Boone |
| Faywood | 98KY-015-07 | Typic Hapludalfs | Boone |
| Grenada | 94KY-035-2-7 | Aquic Fradiudults | Calloway |
| Grenada | 94KY-035-4-6 | Aquic Fradiudults | Calloway |
| Henry | 92KY-035-3-1 | Typic Fragiaqualfs | Calloway |
| Henry | 92KY-035-3-2 | Typic Fragiaqualfs | Calloway |
| Henry | 92KY-035-3-3 | Typic Fragiaqualfs | Calloway |
| Henry | 92KY-035-4-1 | Typic Fragiaquults | Calloway |
| Henry | 92KY-035-4-2 | Typic Epiaquults | Calloway |
| Henry | 92KY-035-4-3 | Typic Fragiaquults | Calloway |
| Henry | 92KY-035-5-1 | Typic Epiaquults | Calloway |
| Henry | 92KY-035-5-2 | Typic Epiaquults | Calloway |
| Henry | 92KY-035-5-3 | Typic Fragiaquults | Calloway |
| Henry | 92KY-035-6-1 | Typic Fragiaquults | Calloway |
| Henry | 92KY-035-6-2 | Typic Fragiaqualfs | Calloway |
| Henry | 92KY-035-6-3 | Typic Epiaquults | Calloway |
| Henry | 92KY-035-7-1 | Typic Fragiaquults | Calloway |
| Henry | 92KY-035-8-1 | Typic Fragiaquults | Calloway |
| Henry | 92KY-035-9-1 | Typic Fragiaquults | Calloway |
| Henry | 92KY-035-10-1 | Typic Fragiaquults | Calloway |
| Henry | 92KY-157-1-1 | Typic Fragiaqualfs | Marshall |
| Henry | 92KY-157-1-2 | Typic Fragiaquults | Marshall |
| Henry | 92KY-157-1-3 | Typic Fragiaqualfs | Marshall |
| Henry | 93KY-035-12-1 | Typic Fragiaquults | Calloway |
| Henry | 93KY-035-12-2 | Typic Fragiaquepts | Calloway |
| Henry | 93KY-035-12-3 | Typic Fragiaquults | Calloway |
| Henry | 94KY-035-12-4 | Typic Fragiaquults | Calloway |
| Henry | 94KY-035-2-6 | Fragic Epiaqualfs | Calloway |
| Henry | 94KY-035-4-4 | Typic Fragiaquults | Calloway |
| Huntington | 96KY-015-04 | Fluventic Hapludolls | Boone |
| Huntington | 97KY-015-03 | Fluventic Hapludolls | Boone |
| Jessup | 95KY-015-03 | Typic Hapludults | Boone |
| Jessup | 95KY-015-04 | Typic Hapludalfs | Boone |
| Jessup | 98KY-015-02 | Typic Hapludalfs | Boone |
| Jessup | 98KY-015-04 | Typic Hapludalfs | Boone |
| Kimper | 91KY-153-07 | Typic Dystrudepts | Magoffin |
| Kimper | 95KY-119-02 | Typic Dystrudepts | Knott |
| Licking | 86KY-139-09 | Aquic Hapludalfs | Livingston |
| Lowell | 97KY-015-06 | Typic Hapludalfs | Boone |
| Needmore | 00KY-001-03 | Typic Hapludults | Adair |
| Nicholson | 97KY-015-02 | Oxyaquic Fragiudalfs | Boone |
| Nicholson | 97KY-015-04 | Oxyaquic Fragiudalfs | Boone |
| Nicholson | 98KY-015-06 | Oxyaquic Fragiudalfs | Boone |
| Nolin | 99KY-015-01 | Dystric Fluventic Eutrudepts | Boone |
| Okaw | 04KY-145-03 | Vertic Epiaqualfs | McCracken |
| Okaw | 04Ky-145-04 | Chromic Vertic Epiaqualfs | McCracken |
| Otwood | 00KY-111-04 | Oxyaquic Fragiudalfs | Jefferson |
| Rayne | | Typic Hapludults | Wolfe |
| Rossmoyne | 95KY-015-02 | Aquic Fragiudalfs | Boone |
| Rossmoyne | 95KY-015-05 | Aquic Fragiudalfs | Boone |
| Rossmoyne | 98KY-015-01 | Aquic Fragiudalfs | Boone |
| Rossmoyne | 98KY-015-03 | Aquic Fragiudalfs | Boone |
| Rossmoyne | 98KY-015-08 | Aquic Fragiudalfs | Boone |
| Routon | 92KY-083-11-1 | Typic Epiaquults | Graves |
| Routon | 93KY-083-11-2 | Typic Epiaqualfs | Graves |
| Routon | 94KY-083-11-3 | Typic Fragiaquults | Graves |
| Saffell | 86KY-139-07 | Typic Hapludults | Livingston |
| Saffell | 86KY-139-12 | Typic Hapludults | Livingston |
| Sango | 99KY-001-01 | Glossic Fragiudults | Adair |
| Sango | 99KY-001-02 | Glossic Fragiudults | Adair |
| Sango | 99KY-001-03 | Glossic Fragiudults | Adair |
| Upshur | 93KY-127-01 | Typic Rhodudalfs | Lawrence |
| Waverly | 93KY-035-2-4 | Fluvaquentic Endoaquepts | Calloway |
| Waverly | 94KY-035-2-5 | Fluvaquentic Endoaquepts | Calloway |
| Wernock | | Typic Hapludults | McCreary |
| Wernock | 00KY-001-05 | Typic Hapludults | Adair |
| Westmoreland | 00KY-001-01 | Typic Hapludults | Adair |
| Wheeling | 96KY-015-03 | Typic Hapludalfs | Boone |
| Wheeling | 97KY-015-08 | Ultic Hapludalfs | Boone |
| Wheeling | 98KY-015-09 | Typic Hapludults | Boone |
| Wheeling | | Ultic Hapludalfs | Breathitt |
| Woolper | 90KY-135-19 | Typic Argiudolls | Lewis |
| Zanesville | 86KY-139-10 | Typic Fragiudalfs | Livingston |
| Zanesville | 98KY-111-01 | Fragic Hapludults | Jefferson |
| Zanesville | 98KY-111-02 | Fragic Oxyaquic Hapludalfs | Jefferson |

# Barbourville

**Pedon#:**

**Classification:** Fine-loamy, mixed, active, mesic Humic Dystrudepts

**Location:** Breathitt County, KY, Walnut Grove U. K. Quicksand Experiment Station next to road. Latitude: 37.541 N; Longitude: 83.344 W

**Parent Material:** Breathitt Formation

**Vegetation:** Black walnut plantation

**Aspect:**

**Landscape Position:** Toe slope

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** August 4, 2004

**Permeability:**

**Slope:** 4%

**Described by:** Steve Blanford

Ap—0 to 3 inches; very dark gray (10YR 3/1) silt loam; moderate fine and medium granular structure; friable; common fine, medium and coarse roots; 5% sandstone and siltstone channers; abrupt wavy boundary.

AB—3 to 9 inches; dark grayish brown (10YR 4/2) silt loam; moderate coarse and medium granular structure; friable; few fine, medium and coarse roots; 5% sandstone and siltstone channers, clear wavy boundary.

$Bw/Bt_1$—9 to 31 inches; dark yellowish brown (10YR 4/6) silt loam; moderate coarse and medium subangular blocky structure; friable; common fine roots; 10% sandstone and siltstone channers; few faint clay films; clear wavy boundary.

$Bw/Bt_2$—31 to 49 inches; yellowish brown (10YR 5/6) loam grading to a sandy clay loam; weak coarse and medium subangular blocky structure; friable; very few fine roots; 10% sandstone and siltstone channers; few faint clay films; clear wavy boundary.

Bw—49 to 60 inches; yellowish brown (10YR 5/6) sandy loam; weak coarse and medium subangular blocky structure; friable; 10% sandstone and siltstone channers, 15% pale red (2.5YR 6/2) and 10% strong brown (7.5YR 5/6) redoximorphic features; clear wavy boundary.

$Cg_1$—60 to 72 inches; 60% gray (10YR 6/1) and 40% yellowish red (5YR 4/6) silt loam; massive; very firm; 5% sandstone and siltstone channers; 15% black (10YR 2/1) iron and manganese concretions moderately cemented with diffuse boundary; clear wavy boundary.

$Cg_2$—72 to 80 inches; gray (10YR 6/1) silt loam; massive; very firm; 15% yellowish red (5YR 5/6) redoximorphic features and 15% black (10YR 2/1) iron and manganese stains and concretions moderately cemented with diffuse boundary.

**SOIL TYPE.....BARBOURVILLE** **PEDON #**
**LOCATION .....BREATHITT COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-3 | Ap | 53.8 | 33.5 | 12.7 | 3.5 | 3.7 | 13.6 | 21.6 | 11.4 | | | | | | | sl/l | | | |
| 3-9 | AB | 53.7 | 32.1 | 14.2 | 1.7 | 3.6 | 12.9 | 22.3 | 13.2 | | | | | | | sl/l | | | |
| 9-31 | $Bw/Bt_1$ | 49.9 | 34.0 | 16.1 | 2.4 | 3.3 | 11.2 | 19.6 | 13.4 | | | | | | | l | | | |
| 31-49 | $Bw/Bt_2$ | 56.4 | 30.6 | 13.0 | 1.3 | 2.1 | 12.0 | 24.7 | 16.3 | | | | | | | sl | | | |
| 49-60 | Bw | 59.3 | 26.5 | 14.2 | 1.7 | 3.4 | 14.1 | 25.0 | 16.1 | | | | | | | sl | | | |
| 60-72 | $Cg_1$ | 25.3 | 53.7 | 21.0 | 0.3 | 1.0 | 5.3 | 10.1 | 8.6 | | | | | | | sil | | | |
| 72-80 | $Cg_2$ | 21.5 | 48.5 | 30.0 | 0.1 | 0.5 | 4.5 | 8.3 | 8.1 | | | | | | | cl/sicl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-3 | 6.21 | | 6.70 | 6.30 | 1.80 | 0.69 | 0.01 | 8.80 | 12.34 | 71 | 57 | | 6.53 | 15.33 | | 0.06 | 4.96 | 234 | 35.5 |
| 3-9 | 5.86 | | 6.69 | 2.75 | 0.55 | 0.30 | 0.01 | 3.61 | 6.26 | 58 | 39 | | 5.57 | 9.18 | | 0.03 | 2.22 | 119 | 11.5 |
| 9-31 | 5.53 | | 6.62 | 1.66 | 0.51 | 0.07 | 0.01 | 2.25 | 5.27 | 43 | 29 | | 5.45 | 7.70 | | 0.03 | 0.43 | 29 | 4.5 |
| 31-49 | 5.44 | | 7.04 | 1.29 | 0.86 | 0.05 | 0.02 | 2.22 | 4.54 | 49 | 35 | | 4.15 | 6.37 | | 0.05 | 0.26 | 26 | 5.5 |
| 49-60 | 5.43 | | 6.83 | 0.80 | 1.01 | 0.05 | 0.04 | 1.90 | 4.18 | 45 | 29 | | 4.65 | 6.55 | | 0.04 | 0.20 | 32 | 5.5 |
| 60-72 | 5.58 | | 6.67 | 2.38 | 3.41 | 0.15 | 0.24 | 6.18 | 12.00 | 51 | 50 | | 6.25 | 12.43 | | 0.06 | 0.28 | 60 | 6 |
| 72-80 | 5.42 | | 6.74 | 2.47 | 3.61 | 0.16 | 0.22 | 6.46 | 12.72 | 51 | 55 | | 5.17 | 11.63 | | 0.04 | 0.31 | 65 | 13 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| Bw/Bt1 | 60 | | 18 | 13 | | | 9 | | | | | | | | | | | | |
| Bw/Bt2 | 47 | | 27 | 16 | | | 10 | | | | | | | | | | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Bowdre, silty clay loam (Taxadjunct)

**Pedon #:** S99KY-075-02-(1-7)

**Classification:** Fine loamy, mixed, superactive, thermic Vertic Eutrodepts

**Location:** Fulton County, Kentucky; 7.6 miles west of Hickman along KY Hwy 94 in the Lower Bottom, near Sassafras Ridge; 1,500 feet due south of the junction of KY Hwy 94 and KY 971 at Sassafras Ridge, 75 feet east of the gravel road in a cultivated field; Bondurant 7.5 minute USGS quadrangle; on soil map sheet 21T; east 949,200 feet and north 98,700 feet by the Kentucky coordinate system

**Parent Material:** clayey alluvium over loamy alluvium

**Vegetation:** soybean residue

**Landscape Position:** low-lying stream terrace of the Mississippi River flood plain

**Drainage:** moderately well to well drained

**Moisture when sampled:** moist

**Sampling Date:** 11/18/98

**Permeability:** slow to 22 inches; moderate from 22 inches to 43 inches; moderately rapid to rapid in the substratum

**Slope:** ≤1 percent

**Described by:** J.E. McIntosh and P.G. Gregory

Ap1—0 to 6 inches; very dark gray (10YR 3/1) silty clay loam, dark grayish brown (10YR 4/2) dry; weak coarse granular and weak fine subangular blocky structure; firm; common fine roots; many earthworm casts; neutral (pH 6.8); clear smooth boundary.

Ap2—6 to 14 inches; 50 percent very dark gray (10YR 3/1) and 50 percent very dark grayish brown (10YR 3/2) silty clay, dark grayish brown (10YR 4/2) dry; weak medium subangular blocky structure; firm; common fine roots; neutral (pH 6.8); clear smooth boundary.

AB—14 to 22 inches; 65 percent very dark grayish brown (10YR 3/2) and 35 percent brown (10YR 5/3) silty clay; weak medium subangular blocky parting to moderate fine angular blocky structure; very firm; few fine roots; few fine distinct strong brown (7.5YR 5/6) masses of iron accumulations; few pressure faces; slightly acid (pH 6.5); clear smooth boundary.

2Bw1—22 to 30 inches; brown (10YR 4/3) clay loam/loam; weak medium subangular blocky structure; friable; slightly acid (pH 6.5); clear smooth boundary.

2Bw2—30 to 37 inches; brown (10YR 4/3) fine sandy loam; weak fine and medium subangular blocky structure; very friable; slightly acid (pH 6.5); clear smooth boundary.

2BC—37 to 43 inches; brown (10YR 4/3) fine sandy loam; weak fine subangular blocky structure; very friable; common medium distinct gray (2.5Y 5/1) and grayish brown (2.5Y 5/2) iron depletions; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulations; slightly acid (pH 6.5); clear smooth boundary.

2C—43 to 70 inches; 50 percent yellowish brown (10YR 5/4) and 50 percent light yellowish brown (2.5Y 6/3) loamy sand; single grain; very friable; neutral (pH 6.8).

**SOIL TYPE..... BOWDRE, SILTY CLAY LOAM (TAXADJUNCT)** **PEDON # ..... S99-KY-075-02-(1-7)**
**LOCATION ..... FULTON COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-6 | $Ap_1$ | 11.6 | 58.2 | 30.2 | 0.1 | 0.1 | 0.9 | 4.4 | 6.1 | | | | | | | sicl | | | |
| 6-14 | $Ap_2$ | 9.5 | 55.7 | 34.8 | 0.1 | 0.1 | 0.5 | 2.7 | 6.1 | | | | | | | sicl | | | |
| 14-22 | AB | 13.5 | 46.3 | 40.2 | 0.1 | 0.2 | 0.4 | 2.5 | 10.3 | | | | | | | sic/sicl | | | |
| 22-30 | $2Bw_1$ | 40.8 | 34.0 | 25.2 | 0 | 0.1 | 0.3 | 13.6 | 26.8 | | | | | | | l/cl | | | |
| 30-37 | $2Bw_2$ | 63.0 | 20.3 | 16.7 | 0 | 0.1 | 0.4 | 21.1 | 41.4 | | | | | | | sl | | | |
| 37-43 | 2BC | 48.6 | 34.0 | 17.4 | 0 | 0.2 | 4.0 | 9.3 | 35.1 | | | | | | | l | | | |
| 43-70 | 2C | 96.4 | 2.9 | 0.7 | 0.1 | 3.3 | 37.2 | 54.0 | 1.8 | | | | | | | s | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-6 | 5.8 | | 7.4 | 10.6 | 3.2 | 0.5 | 0.1 | 14.4 | 25.4 | 57 | 77 | | 4.18 | 18.6 | | 0.09 | 2.33 | 179.5 | 31 |
| 6-14 | 5.6 | | 7.3 | 12.2 | 4.3 | 0.4 | 0.1 | 17.0 | 26.9 | 63 | 62 | | 10.47 | 27.5 | | 0.06 | 1.98 | 159 | 19 |
| 14-22 | 5.3 | | 7.3 | 12.4 | 5.1 | 0.5 | 0.1 | 18.1 | 27.4 | 66 | 63 | | 10.42 | 28.5 | | 0.02 | 1.16 | 164.5 | 14 |
| 22-30 | 5.5 | | 7.5 | 8.2 | 3.3 | 0.3 | 0.1 | 11.9 | 19.0 | 63 | 61 | | 7.75 | 19.6 | | 0.01 | 0.75 | 127 | 24 |
| 30-37 | 5.5 | | 7.7 | 5.9 | 2.2 | 0.2 | 0.1 | 8.4 | 13.5 | 62 | 59 | | 5.82 | 14.2 | | 0.02 | 0.51 | 93.5 | 39 |
| 37-43 | 5.5 | | 7.7 | 6.5 | 2.5 | 0.2 | 0.1 | 9.3 | 14.2 | 65 | 60 | | 6.06 | 15.4 | | 0.04 | 0.47 | 83.5 | 38 |
| 43-70 | 5.9 | | 8.2 | 0.9 | 0.3 | 0.1 | 0 | 1.3 | 3.2 | 41 | 30 | | 2.98 | 4.3 | | 0.08 | 0.11 | 17 | 16 |

**Mineralogical Analysis—Estimated Percentages in Various Size Fractions**

| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| 2Bw1 | 50 | 31 | 19 | | | | | | 73 | | | | | 11 | 6 | 5 | | | 5 |
| 2Bw2 | 31 | 69 | | | | | | | | | | | | | | | | | |
| 2BC | 86 | 14 | | | | | | | 72 | | | | | 15 | 3 | 3 | | | 7 |
| 2C | 64 | 36 | | | | | | | | | | | | | | | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Bowdre, silty clay loam (Taxadjunct)

**Pedon #:** S99KY-075-03-(1-8)

**Classification:** Fine-loamy, mixed, superactive, thermic Vertic Hapludolls

**Location:** Fulton County, Kentucky; 10.8 miles southwest of Hickman along KY Hwy 94 in the Lower Bottom, near Tyler; 0.85 miles west of the junction of KY Hwy 94 and Tyler Road, then 800 feet south of Tyler Road in a cultivated field, 0.5 miles north of the Kentucky-Tennessee state line; Bondurant 7.5 minute USGS quadrangle; on soil map sheet 21B; east 937,700 feet and north 84,200 feet by the Kentucky coordinate system.

**Parent Material:** clayey alluvium over loamy alluvium

**Vegetation:** soybean residue

**Landscape Position:** low ridge/old stream terrace of the Mississippi River flood plain

**Drainage:** moderately well drained

**Moisture when sampled:** moist, with ground water @ 56 inches

**Sampling Date:** 05/03/99

**Permeability:** slow to 19 inches; moderate from 19 inches to 42 inches; moderately rapid in the substratum

**Slope:** 1%

**Described by:** J.E. McIntosh and P.G. Gregory

Ap1—0 to 3 inches; very dark grayish brown (10YR 3/2) silty clay loam, dark grayish brown (10YR 4/2 dry); weak coarse granular and moderate fine subangular blocky structure; friable; many fine roots; neutral (pH 6.9); clear smooth boundary.

Ap2—3 to 10 inches; very dark grayish brown (10YR 3/2) silty clay/silty clay loam, dark grayish brown (10YR 4/2 dry); weak medium subangular blocky parting to moderate fine subangular blocky structure; firm; common fine roots; moderately acid (pH 6.0); clear smooth boundary.

AB—10 to 19 inches; dark brown (10YR 3/3) silty clay, dark grayish brown (10YR 4/2 dry); weak medium subangular blocky parting to moderate fine angular blocky structure; very firm; few fine roots; common faint very dark grayish brown (10YR 3/2) coatings on faces of peds; few pressure faces; moderately acid (pH 6.0); clear smooth boundary.

2Bw1—19 to 24 inches; brown (10YR 4/3) clay loam, moderate medium subangular blocky structure; firm, very few fine roots; few medium distinct grayish brown (2.5Y 5/2) iron depletions on surfaces along pores; few fine faint brown (7.5YR 4/3) masses of iron accumulations around depletions; common faint very dark grayish brown (10YR 3/2) coatings on faces of peds; moderately acid (pH 5.9); clear smooth boundary.

2Bw2—24 to 29 inches; brown (10YR 4/3) loam; moderate fine subangular blocky structure; very friable; common medium prominent gray (2.5Y 5/1) iron depletions on surfaces along pores; few fine faint brown (7.5YR 4/3) masses of iron accumulations around depletions; moderately acid (pH 5.7); clear smooth boundary.

2BC—29 to 42 inches; brown (10YR 4/3) fine sandy loam; weak fine subangular blocky parting to weak medium granular structure; very friable; moderately acid (pH 5.9); gradual smooth boundary.

2C1—42 to 65 inches; brown (10YR 4/3) fine sandy loam/loamy fine sand; single grain; very friable; moderately acid (pH 5.9); gradual smooth boundary.

2C2—65 to 80 inches; brown (10YR 4/3) fine sandy loam, massive, very friable; common medium prominent gray (2.5Y 5/1) iron depletions; common medium distinct dark brown (7.5YR 3/3) and common medium prominent strong brown (7.5YR 4/6) masses of iron accumulations in matrix around depletions; moderately acid (pH 5.9).

**SOIL TYPE..... BOWDRE, SILTY CLAY LOAM (TAXADJUNCT)** **PEDON # .....S99KY-075-03-(1-8)**
**LOCATION ..... FULTON COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF | VFS Plus Silt | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | (2-0.1) | (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-3 | $Ap_1$ | 11.1 | 54.9 | 34.0 | 0.2 | 0.7 | 1.6 | 4.5 | 4.1 | | | | | | | sicl | | | |
| 3-10 | $Ap_2$ | 6.6 | 55.2 | 38.2 | 0 | 0.1 | 0.4 | 2.5 | 3.6 | | | | | | | sicl/sic | | | |
| 10-19 | AB | 13.8 | 37.6 | 48.6 | 0.1 | 0.1 | 0.3 | 3.5 | 9.8 | | | | | | | sic/c | | | |
| 19-24 | $2Bw_1$ | 43.8 | 32.7 | 23.5 | 0 | 0.1 | 0.5 | 11.5 | 31.7 | | | | | | | l | | | |
| 24-29 | $2Bw_2$ | 61.8 | 20.7 | 17.5 | 0.1 | 0.1 | 1.0 | 28.0 | 32.6 | | | | | | | sl | | | |
| 29-42 | 2BC | 88.7 | 5.4 | 5.9 | 0 | 0.1 | 3.1 | 75.8 | 9.7 | | | | | | | ls/s | | | |
| 42-65 | $2C_1$ | 93.8 | 2.4 | 3.8 | 0 | 0.1 | 1.0 | 79.5 | 13.2 | | | | | | | s | | | |
| 65-80 | $2C_2$ | 76.6 | 11.3 | 12.1 | 0 | 0 | 0.2 | 39.2 | 37.2 | | | | | | | sl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-3 | 6.5 | | 6.9 | 11.7 | 3.1 | 0.47 | 0.05 | 15.3 | 21.5 | 71 | 78 | | 4.19 | 19.5 | | | 3.07 | 210.5 | 53.5 |
| 3-10 | 5.4 | | 6.5 | 11.6 | 3.7 | 0.47 | 0.09 | 15.9 | 24.9 | 64 | 66 | | 8.22 | 24.1 | | | 1.80 | 183.5 | 29 |
| 10-19 | 5.1 | | 6.6 | 17.3 | 5.0 | 0.62 | 0.17 | 23.1 | 31.6 | 73 | 74 | | 8.20 | 31.3 | | | 1.00 | 209.5 | 34.5 |
| 19-24 | 5.5 | | 6.9 | 9.3 | 3.1 | 0.39 | 0.12 | 12.9 | 18.4 | 70 | 72 | | 5.14 | 18.0 | | | 0.53 | 152.5 | 44 |
| 24-29 | 5.6 | | | 6.6 | 2.2 | 0.26 | 0.09 | 9.2 | 12.5 | 74 | 74 | | 3.34 | 12.5 | | | 0.38 | 121 | 51.5 |
| 29-42 | 5.9 | | 7.3 | 2.4 | 0.9 | 0.11 | 0.05 | 3.5 | 4.4 | 79 | 62 | | 2.12 | 5.6 | | | 0.20 | 58 | 37.5 |
| 42-65 | 6.1 | | 7.3 | 2.5 | 0.9 | 0.10 | 0.04 | 3.5 | 3.7 | 94 | 64 | | 1.96 | 5.5 | | | 0.14 | 49 | 42.5 |
| 65-80 | 5.9 | | 7.2 | 4.5 | 1.7 | 0.19 | 0.12 | 6.5 | 8.1 | 80 | 76 | | 2.11 | 8.6 | | | 0.20 | 94 | 51 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| AB | 26 | 65 | 9 | | | | | | | | | | | | | | | | |
| $2Bw_1$ | 36 | 30 | 14 | 8 | | 12 | | | | | | | | | | | | | |
| $2Bw_2$ | 48 | 39 | 10 | 3 | | | | | | | | | | | | | | | |
| 2BC | 32 | 64 | 4 | | | | | | | | | | | | | | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Brandon, silt loam (Taxadjunct)

**Pedon #:** S86KY-139-11-(1-7)

**Classification:** Fine-silty, mixed, semiactive, thermic Ultic Hapludalfs

**Location:** Livingston County, Kentucky, 450 yards north of a point on the Corinth Road which is .3 mile east of junction of Corinth Road and Kentucky 453; about 1.8 miles northwest of U.S. 62 & 641 at Lake City. Latitude: 37° 03′ 04″N: Longitude: 88° 15′ 50″W. Kentucky coordinate grid values: east-west about 1,266,500 and north-south about 271,050 feet.

**Parent Material:** Loess over coastal plain gravel from Tuscaloosa geological formation

**Vegetation:** fescue sod

**Landscape Position:** Upland

**Drainage:**

**Moisture when sampled:** Dry in upper part, moist below

**Sampling Date:** 5/7/86

**Permeability:**

**Slope:** 12%

**Described by:** J. Robbins, K. Bates, R. Forsythe and Ken Scott

Ap—0 to 5 inches (0 to 13 cm); brown (10YR 5/3) silt loam; weak fine granular structure; very friable; common fine and medium roots; neutral; abrupt smooth boundary.

BE—5 to 10 inches(13 to 25 cm); yellowish brown (10YR 5/6) silt loam; moderate thin platy structure; very friable; common fine and medium roots; dark gray (10YR 4/1) along root channels; slightly acid; clear smooth boundary.

Bt1—10 to 21 inches (25 to 53 cm); strong brown (7.5YR 5/8) silty clay loam; weak coarse subangular blocky structure; friable; common fine and medium roots; light brown (10YR 6/4) streaks along root channels; few discontinuous dark brown (7.5YR 4/4) clay films on ped faces; very strongly acid; gradual wavy boundary.

Bt2—21 to 26 inches (53 to 66 cm); strong brown (7.5YR 5/6) silty clay loam; common fine distinct yellowish brown (10YR 5/6), few fine distinct light gray (10YR 7/1) and common medium distinct grayish brown (10YR 5/2) and brown (7.5YR 5/2) mottles along root channels; moderate medium and coarse subangular blocky structure; firm; common medium and fine roots; few discontinuous brown (7.5YR 5/4) clay films on ped faces; very strongly acid; clear wavy boundary.

2Cl—26 to 36 inches (66 to 92 cm); strong brown (7.5YR 5/6) loam; few fine distinct yellowish brown (10YR 5/8) and common coarse prominent light brownish gray (10YR 6/2) mottles; weak medium prismatic structure; firm; few fine roots; 3 percent quartz gravel; very strongly acid; gradual wavy boundary.

2C2—36 to 55 inches (92 to 140 cm); brown (7.5YR 5/4) very gravelly loam; few medium distinct light brownish gray (10YR 6/2) and few faint distinct yellowish brown (10YR 5/6) mottles; massive; firm; very few and very fine roots; dark brown (7.5YR 4/4) ped faces; about 60 percent quartz gravel; medium acid; clear smooth boundary.

3C—55 to 70 inches (140 to 178 cm); light yellowish brown (10YR 6/4) gravelly clay loam; few fine prominent red (2.5YR 4/8), common medium distinct light brownish gray (10YR 6/2) and few fine distinct yellowish brown (10YR 6/8) mottles; massive; firm; about 20 percent rounded chert gravel; neutral.

**Remarks:** Typical Brandon pedons are Typic Hapludults.

**SOIL TYPE..... BRANDON (TAXADJUNCT)** **PEDON # .....S86KY-139-011-(1-7)**
**LOCATION ..... LIVINGSTON COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-13 | Ap | 13.4 | 73.7 | 12.9 | 0.7 | 1.3 | 1.6 | 6.4 | 3.5 | | | | | 9.9 | 77.2 | sil | | | |
| 13-25 | BE | 4.6 | 79.8 | 15.6 | 0.3 | 0.4 | 0.5 | 1.3 | 2.1 | | | | | 2.5 | 81.9 | sil | | | |
| 25-53 | $Bt_1$ | 4.1 | 66.2 | 29.7 | 0.2 | 0.3 | 0.3 | 1.2 | 2.1 | | | | | 2.0 | 68.3 | sicl | | | |
| 53-66 | $Bt_2$ | 3.2 | 68.1 | 28.7 | 0.5 | 0.6 | 0.5 | 0.8 | 0.8 | | | | | 2.4 | 68.9 | sicl | | | |
| 66-91 | $2C_1$ | 9.7 | 65.4 | 24.9 | 2.7 | 1.4 | 1.1 | 1.9 | 2.6 | | | | | 7.1 | 68.0 | sil | | | |
| 91-140 | $2C_2$ | 18.4 | 59.8 | 21.8 | 6.9 | 3.0 | 1.7 | 3.8 | 3.0 | | | | | 15.4 | 62.8 | sil | | | |
| 140-178 | 3C | 17.6 | 53.2 | 29.2 | 1.0 | 1.8 | 1.6 | 5.8 | 8.4 | | | | | 9.2 | 61.6 | sicl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-13 | 6.4 | | 6.9 | 4.7 | 0.7 | 0.1 | 0.2 | 5.7 | 6.2 | 91 | 54 | | 4.8 | 10.5 | | | 3.5 | 97 | 10 |
| 13-25 | 6.1 | | 6.9 | 3.3 | 0.2 | 0.1 | 0.1 | 3.7 | 7.1 | 52 | 56 | | 2.9 | 6.6 | | | 1.1 | 56 | 7 |
| 25-53 | 5.1 | | 6.1 | 2.2 | 1.9 | 0.2 | 0.2 | 4.5 | 7.9 | 57 | 31 | | 9.8 | 14.3 | | | 0.4 | 111 | 5 |
| 53-66 | 5.2 | | 5.9 | 1.1 | 1.9 | 0.2 | 0.2 | 3.4 | 10.1 | 34 | 32 | | 7.3 | 10.7 | | | 0.3 | 102 | 3 |
| 66-91 | 5.6 | | 6.2 | 1.1 | 2.2 | 0.1 | 0.3 | 3.7 | 11.5 | 33 | 52 | | 3.4 | 7.2 | | | 0.3 | 95 | 5 |
| 91-140 | 5.8 | | 6.8 | 1.7 | 1.9 | 0.2 | 0.3 | 4.1 | 11.5 | 36 | 56 | | 3.2 | 7.3 | | | 0.2 | 56 | 6 |
| 140-178 | 6.4 | | 7.1 | 1.6 | 1.9 | 0.1 | 0.7 | 4.2 | 10.1 | 42 | 80 | | 1.1 | 5.3 | | | 0.2 | 50 | 6 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| c.s. | 76 | 14 | 7 | 3 | | | | | | | | | | | | | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Brassfield, loam

**Pedon #:** S91KY-079-01-(1-2)

**Classification:** Loamy, carbonatic, semiactive, mesic, shallow Inceptic Haprendoll

**Location:** 3.6 miles S.E. of Lancaster, 1600 ft. N. of KY 39 at Gilberts Creek Church, Lancaster Quadrant X2, 357, 300 Y451,200.

**Parent Material:** residuum from shale-siltstone material

**Vegetation:**

**Landscape Position:** Upland slope in hills

**Drainage:** Well drained

**Moisture when sampled:**

**Sampling Date:** 03/91

**Permeability:**

**Slope:** 25%

**Described by:** HSE, JPF, GAR

Ap1—0 to 7 inches; very dark grayish brown (10YR 3/2) loam; weak fine granular structure; friable; common fine roots throughout; very strongly alkaline; clear smooth boundary.

Bw—7 to 18 inches; light yellowish brown (2.5Y 6/4) loam; common medium distinct yellowish brown (10YR 5/6) and common medium distinct light brownish gray (2.5Y 6/2) mottles; moderate medium subangular blocky structure; firm; common fine roots throughout; 1 medium rounded worm casts; 10 percent pebbles; very strongly alkaline; clear smooth boundary.

Cr—18 to 20 inches; greenish gray (5G 6/1) weathered bedrock; very strongly alkaline; mildly effervescent; abrupt smooth boundary.

R—20 to 20 inches; unweathered bedrock.

**SOIL TYPE..... BRASSFIELD** **PEDON # .....S91KY-079-001-(1-2)**
**LOCATION .....GARRARD COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand | VFS Plus | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Coarser Than VF (2-0.1) | Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-18 | Ap | 46.2 | 31.9 | 21.9 | 7.6 | 5.8 | 2.4 | 8.5 | 21.9 | | | | | | | l | | | |
| 18-46 | Bw | 49.5 | 27.0 | 23.5 | 0.4 | 1.0 | 1.0 | 8.5 | 38.6 | | | | | | | l/scl | | | |
| | pH | | | Exchangeable Bases (5A1) | | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-18 | 7.79 | | 7.41 | 8.91 | 6.38 | 0.36 | 0.01 | 15.66 | 21.37 | 73 | 96 | | 0.61 | 16.27 | | 3.53 | 8.84 | 161 | 5 |
| 18-46 | 8.32 | | 7.53 | 5.09 | 3.06 | 0.10 | 0.02 | 8.27 | 6.45 | 128 | 89 | | 1.05 | 9.32 | | 63.5 | 1.84 | 66 | 3.5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| Bw | 5 | | 2 | | | 3 | | 90- | | | | | | | | | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Calloway, silt loam (Taxadjunct)

**Pedon #:** 94KY-035-4-5-(1-6)

**Classification:** Coarse-silty, mixed, active, thermic Aquic Fragiudults

**Location:** Calloway Co., southwest of Murray, KY on the Jones Parker farm at the end of Sage Rd. in the Edgehill community.

**Parent Material:** Loess/coastal plain

**Vegetation:** Upland hardwoods

**Landscape Position:**

**Drainage:** Moderately well

**Moisture when sampled:**

**Sampling Date:** 6/21/1994

**Permeability:** Moderate

**Slope:** 3%

**Described by:** A.D. Karathanasis, R. Forsythe, R. Toor, and J. McIntosh

A—0 to 3 in.; Dark grayish brown (10YR 4/2) silt loam; weak fine granular structure; very friable; clear smooth boundary.

BE—3 to 12 in.; Brown (10YR 5/3) silt loam; weak fine and medium granular structure; very friable; common fine and medium roots; gradual smooth boundary.

Bt1—12 to 22 in.; Yellowish brown (10YR 5/4) silt loam; common medium faint yellowish brown (10YR 5/6) and brown (10YR 5/3) mottles; moderate medium subangular blocky structure; friable; gradual smooth boundary.

Bt2—22 to 34 in.; Brown (10YR 5/3) and grayish brown (10YR 5/2) silt loam; many medium faint light brownish gray (10YR 6/2) and common medium prominent strong brown (7.5YR 5/6) mottles; moderate medium subangular blocky; friable; clear smooth boundary.

Btg—34 to 50 in.; Weak red (2.5YR 5/2) and pale red (2.5YR 6/2) silty clay loam; few medium prominent strong brown (7.5YR 5/6) and common medium prominent light gray (10YR 6/1) mottles; weak coarse subangular blocky structure; friable; gradual wavy boundary.

2Btx—50 to 65+ in.; Dark brown (7.5YR 4/4) and gray (10YR 5/1) clay loam; common medium distinct yellowish brown (10YR 5/8) mottles; strong coarse subangular blocky structure; firm; continuous brown (7.5YR 5/2) clay skins; pockets of light gray (10YR 7/1) silt and gray (2.5YR 5/1) clay skin.

**SOIL TYPE..... CALLOWAY** **PEDON # ..... 94KY-035-04-05-(1-6)**
**LOCATION .....CALLOWAY COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand | VFS Plus | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Coarser Than VF (2-0.1) | Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-3 | A | 35.3 | 55.1 | 9.6 | 2.9 | 6.8 | 13.5 | 9.1 | 3.0 | | | | | | | sil | | | |
| 3-12 | BE | 22.7 | 65.5 | 11.8 | 0.2 | 2.0 | 10.2 | 8.2 | 2.1 | | | | | | | sil | | | |
| 12-22 | $Bt_1$ | 19.2 | 64.2 | 16.6 | 0.1 | 1.4 | 8.3 | 7.5 | 1.9 | | | | | | | sil | | | |
| 23-34 | $Bt_2$ | 18.9 | 62.9 | 18.2 | 0.1 | 1.2 | 8.1 | 7.5 | 2.0 | | | | | | | sil | | | |
| 34-50 | Btg | 15.7 | 57.6 | 26.7 | 0 | 0.9 | 7.0 | 6.4 | 1.4 | | | | | | | sil/sicl | | | |
| 50-65+ | 2Btx | 36.0 | 33.7 | 30.3 | 0 | 2.3 | 15.9 | 15.5 | 2.3 | | | | | | | cl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-3 | 4.74 | | 5.95 | 1.12 | 0.32 | 0.20 | 0.07 | 1.71 | 15.61 | 11 | 8 | | 20.77 | 22.48 | | | 2.66 | 109.5 | 12.5 |
| 3-12 | 4.43 | | 6.03 | 0.05 | 0.04 | 0.05 | 0.05 | 0.19 | 6.86 | 3 | 2 | | 7.61 | 7.80 | | | 6.25 | 33 | 3 |
| 12-22 | 4.40 | | 5.59 | 0.06 | 0.12 | 0.05 | 0.04 | 0.27 | 7.41 | 4 | 3 | | 9.30 | 9.57 | | | 0.72 | 36 | 3 |
| 22-34 | 4.71 | | 5.46 | 0.11 | 0.60 | 0.07 | 0.10 | 0.88 | 13.05 | 7 | 8 | | 10.05 | 10.93 | | | 0.48 | 41 | 2.5 |
| 34-50 | 4.72 | | 4.76 | 0.21 | 1.90 | 0.13 | 0.55 | 2.79 | 18.21 | 15 | 17 | | 13.41 | 16.20 | | | 0.38 | 81.5 | 2 |
| 50-65+ | 4.59 | | 5.18 | 0.40 | 1.97 | 0.07 | 0.79 | 3.23 | 16.59 | 19 | 23 | | 11.02 | 14.25 | | | 0.36 | 83.5 | 3.5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Catalpa, silty clay loam

**Pedon #:** S99KY-075-1

**Classification:** Fine, smectitic, superactive, thermic Fluvaquentic Vertic Epiaquolls

**Location:** Fulton County, Kentucky; 6.4 miles west of Hickman along KY Hwy 94 in the Lower Bottom, ½ mile due west of the junction of KY Hwy 311 and KY 1282, then about 150 feet south of KY 1282 into the cultivated field; Bondurant 7.5 minute USGS quadrangle; on soil map sheet 22B; east 961,600 feet and north 90,000 feet by the Kentucky coordinate system

**Parent Material:** Mississippi River clayey alluvium

**Vegetation:** soybean residue

**Landscape Position:** Mississippi River flood plain

**Drainage:** somewhat poorly drained

**Moisture when sampled:** moist

**Sampling Date:** 11/18/98

**Permeability:** slow

**Slope:** <1 percent

**Described by:** J.E. McIntosh and P.G. Gregory

Ap1—0 to 3 inches; very dark grayish brown (10 YR 3/2) silty clay loam, dark grayish brown (10YR 4/2) dry; weak medium granular structure; friable; many fine roots; many earthworm casts; slightly acid (pH 6.5); clear smooth boundary.

Ap2—3 to 11 inches; very dark grayish brown (10YR 3/2) silty clay, dark grayish brown (10YR 4/2) dry; weak medium prismatic parting to moderate medium subangular blocky structure; firm; common fine roots; common distinct very dark gray (2.5Y 3/1) organic stains; neutral (pH 7.0); abrupt smooth boundary.

A—11 to 20 inches; very dark gray (2.5Y 3/1) silty clay, dark gray (2.5Y 4/1) dry; moderate medium subangular blocky structure; very firm; few fine roots; common fine prominent dark yellowish brown (10YR 4/4) masses of iron accumulations; common pressure faces; neutral (pH 7.0); clear smooth boundary.

Bg1—20 to 28 inches; dark grayish brown (2.5Y 4/2) silty clay; weak medium prismatic parting to moderate medium subangular blocky structure; very firm; few fine roots; common fine distinct dark gray (10YR 4/1) iron depletions; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulations; common pressure faces; slightly acid (pH 6.2); clear smooth boundary.

Bg2—28 to 50 inches; dark grayish brown (2.5Y 4/2) silty clay; dark gray (2.5Y 4/1) ped faces; weak medium prismatic parting to moderate medium subangular blocky structure; very firm; many medium prominent strong brown (7.5YR 5/6) and brown (7.5YR 4/4) masses of iron accumulations; common pressure faces; moderately acid (pH 6.0); gradual smooth boundary.

BCg—50 to 67 inches; 50% olive brown (2.5Y 4/3) and 50 percent dark gray (2.5Y 4/1) silty clay loam; weak medium subangular blocky structure; firm; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulations; slightly acid (pH 6.5); clear smooth boundary.

2Cg—67 to 80 inches; gray (10YR 5/1) sandy loam; massive; very friable; few medium prominent yellowish brown (10YR 5/6) masses of iron accumulations; slightly acid (pH 6.5).

**SOIL TYPE..... CATALPA** **PEDON # ..... S99-KY-075-01-(1-7)**
**LOCATION ..... FULTON COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-3 | $Ap_1$ | 12.3 | 53.7 | 34.0 | 0.1 | 0.3 | 1.8 | 4.6 | 5.5 | | | | | | | sicl | | | |
| 3-11 | $Ap_2$ | 20.6 | 49.5 | 29.9 | 0 | 0.1 | 4.2 | 12.6 | 3.7 | | | | | | | sicl/cl | | | |
| 11-20 | A | 25.2 | 41.6 | 33.2 | 0 | 0.3 | 4.1 | 16.6 | 4.2 | | | | | | | cl | | | |
| 20-28 | $Bg_1$ | 2.5 | 42.9 | 54.6 | 0.1 | 0.1 | 0.3 | 0.7 | 1.3 | | | | | | | sic | | | |
| 28-50 | $Bg_2$ | 12.2 | 45.0 | 42.8 | 0.1 | 0.2 | 0.4 | 0.6 | 10.9 | | | | | | | sic/sicl | | | |
| 50-67 | BCg | 28.7 | 41.3 | 30.0 | 0.1 | 0.3 | 0.6 | 5.1 | 22.6 | | | | | | | cl | | | |
| 67-80 | 2Cg | 65.5 | 15.7 | 18.8 | 0.1 | 0.2 | 0.3 | 24.5 | 40.4 | | | | | | | sl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-3 | 5.7 | | 6.5 | 10.9 | 2.9 | 0.5 | 0.1 | 14.4 | 22.3 | 65 | 67 | | 7.01 | 21.4 | | 0.03 | 3.23 | 178.5 | 52 |
| 3-11 | 6.6 | | 6.9 | 12.3 | 3.0 | 0.4 | 0.1 | 15.8 | 20.3 | 78 | 68 | | 7.37 | 23.2 | | 0.06 | 2.20 | 155 | 32 |
| 11-20 | 6.4 | | 6.8 | 12.1 | 4.0 | 0.4 | 0.1 | 16.6 | 23.3 | 71 | 58 | | 12.21 | 28.8 | | 0.08 | 2.08 | 142.5 | 20 |
| 20-28 | 5.1 | | | 14.4 | 6.9 | 0.6 | 0.1 | 22.0 | 33.9 | 65 | 70 | | 9.35 | 31.3 | | 0.01 | 1.40 | 253 | 21 |
| 28-50 | 5.0 | | 7.1 | 11.7 | 5.9 | 0.5 | 0.1 | 18.2 | 28.5 | 64 | 72 | | 6.93 | 25.1 | | 0.03 | 1.00 | 193.5 | 39 |
| 50-67 | 5.5 | | 7.5 | 10.0 | 4.8 | 0.4 | 0.2 | 15.4 | 22.4 | 69 | 64 | | 8.5 | 23.9 | | 0.04 | 0.47 | 157 | 52 |
| 67-80 | 5.8 | | 7.7 | 6.4 | 3.1 | 0.3 | 0.1 | 9.9 | 15.8 | 63 | 93 | | 0.76 | 10.66 | | 0.04 | 0.43 | 93 | 49 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| A | | | | | | | | | 73 | | | | | 15 | 8 | 4 | | | |
| $Bg_1$ | | | | | | | | | 73 | | | | | 15 | 8 | 4 | | | |
| $Bg_2$ | | | | | | | | | 64 | | | | | 9 | 20 | 7 | | | |
| BCg | | | | | | | | | 68 | | | | | 9 | 18 | 5 | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Chavies, fine sandy loam (Taxadjunct)

**Pedon#:** 99KY-015-03-(1-6)

**Classification:** Coarse-loamy, mixed, mesic Typic Hapludults

**Location:** Boone County, East Bend Power Plant property, approx. 600 feet SE of old dairy barn. Latitude: 38° 54′ 13″; Longitude: 84° 52′ 09″

**Parent Material:** Glacial outwash and sandy alluvium

**Vegetation:** Cornfield (sycamore, water maple, hackberry, and elderberry along field borders)

**Aspect:** Neutral

**Landscape Position:** Terrace

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 4/9/98

**Permeability:**

**Slope:** 4%

**Described by:** SEJ & DHH

Ap—0 to 9 inches: brown (10YR 4/3) fine sandy loam; weak fine and medium granular structure; very friable; common fine roots; moderately acid (pH 6.0); clear smooth boundary.

Bt1—9 to 21 inches; dark yellowish brown (10YR 4/4) loam; weak fine and medium subangular blocky structure; very friable; common fine roots; many very fine charcoal particles; common faint clay films on ped faces; moderately acid (pH 6.0); gradual smooth boundary.

Bt2—21 to 31 inches; dark yellowish brown (10YR 4/4) loam; moderate medium subangular blocky structure; firm; few fine roots; common medium prominent strong brown (7.5YR 5/6) concentrations (lithochromic mottles); 1 percent rounded quartz pebbles; many faint clay films on ped faces; very strongly acid (pH 5.0); clear abrupt boundary at sand lens.

BC1—31 to 38 inches; brown (7.5YR 4/4) loam; weak medium subangular blocky structure; friable; few fine roots; common fine charcoal particles; few faint clay films on ped faces; very strongly acid (pH 5.0); gradual smooth boundary.

BC2—38 to 52 inches; brown (7.5YR 4/4) and yellowish brown (10YR 5/4) loam, weak medium subangular blocky structure; friable; few faint clay films on ped faces; very strongly acid (pH 5.0); gradual smooth boundary.

C—52 to 72 inches; brown (7.5YR 4/4) and yellowish brown (10YR 5/4) loam; massive; firm; many fine charcoal particles; very strongly acid (pH 4.5).

**SOIL TYPE..... CHAVIES (TAXADJUNCT)** **PEDON # .....S99KY-015-003-(1-6)**
**LOCATION .....BOONE COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-9 | Ap | 63.4 | 26.5 | 10.1 | 0.2 | 0.8 | 39.5 | 14.2 | 8.7 | | | | | | | sl | | | |
| 9-21 | $Bt_1$ | 70.7 | 16.7 | 12.6 | 0.2 | 0.4 | 4.3 | 40.6 | 20.3 | | | | | | | sl | | | |
| 21-31 | $Bt_2$ | 63.5 | 21.6 | 14.9 | 0.1 | 0.2 | 6.9 | 39.0 | 17.3 | | | | | | | sl | | | |
| 31-38 | $BC_1$ | 70.2 | 20.0 | 9.8 | 0 | 0.1 | 14.8 | 45.1 | 10.2 | | | | | | | sl | | | |
| 38-52 | $BC_2$ | 59.7 | 30.3 | 10.0 | 0.1 | 0.2 | 6.0 | 34.7 | 18.7 | | | | | | | sl | | | |
| 52-72 | C | 51.0 | 38.6 | 10.4 | 0 | 0.3 | 1.8 | 21.3 | 27.6 | | | | | | | l/sl | | | |
| | | pH | | Exchangeable Bases (5A1) | | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-9 | | | | 2.12 | 0.41 | 0.10 | 0.01 | 2.64 | 3.66 | 72 | 54 | | 2.27 | 4.91 | | | | | |
| 9-21 | | | | 2.41 | 0.26 | 0.07 | 0.01 | 2.75 | 5.12 | 54 | 40 | | 4.16 | 6.91 | | | | | |
| 21-31 | | | | 1.89 | 0.34 | 0.09 | 0.01 | 2.33 | 6.29 | 37 | 28 | | 5.86 | 8.19 | | | | | |
| 31-38 | | | | 1.75 | 0.52 | 0.09 | 0.01 | 2.37 | 6.41 | 37 | 30 | | 5.63 | 8.00 | | | | | |
| 38-52 | | | | 1.43 | 0.80 | 0.09 | 0.02 | 2.34 | 6.45 | 36 | 25 | | 6.99 | 9.33 | | | | | |
| 52-72 | | | | 1.26 | 1.08 | 0.09 | 0.03 | 2.46 | 7.17 | 34 | 26 | | 7.05 | 9.51 | | | | | |
| 79″ | | | | 1.42 | 1.21 | 0.10 | 0.02 | 2.75 | 8.13 | 23 | 23 | | 9.37 | 12.12 | | | | | |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Cloverlick, silt loam (Taxadjunct)

**Pedon #:** 95-KY-119-001-(1-5)

**Classification:** Loamy-skeletal, mixed, semiactive, mesic Typic Dystrudepts

**Location:** Knott County, Carrie topographic quadrant; 50 feet west of Still House Branch; 1 mile northwest of Emmalena. Latitude: 37° 20′ 41″; Longitude: 83° 04′ 52″.

**Parent Material:** Colluvium of Pennsylvanian lower and middle Breathitt sandstones, shales and siltstones

**Vegetation:** Yellow poplar, sawbriars; multiflora rose

**Landscape Position:** Backslope

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 11/6/95

**Permeability:**

**Slope:** 1%

**Described by:** P. S. Aldridge

Oi—0 to 3; partially decomposed leaf litter

A—3 to 12 inches; very dark grayish brown (10YR 3/2) silt loam, brown (10YR 5/3) dry; weak medium granular structure; very friable; many fine, medium and coarse roots; 5 percent sandstone channers; strongly acid; abrupt wavy boundary.

Bw1—12 to 22 inches; strong brown (7.5YR 4/6) very channery silt loam; weak fine subangular blocky structure; friable; common fine and medium roots; 50 percent sandstone channers and 5 percent sandstone flagstones; slightly acid; gradual smooth boundary.

Bw2—22 to 38 inches; yellowish brown (10YR 5/6) very channery silt loam; moderate medium and coarse subangular blocky structure; friable; few fine and medium roots; few fine tubular pores; 45 percent sandstone channers; slightly acid; clear smooth boundary.

Bw3—38 to 47 inches; yellowish brown (10YR 5/4) very flaggy loam; moderate medium subangular blocky structure; friable; few fine roots; 50 percent sandstone flagstones and 10 percent sandstone channers; slightly alkaline; gradual smooth boundary.

Bw4—47 to 58 inches; yellowish brown (10YR 5/6) very channery loam; weak fine subangular blocky structure; friable; few fine roots; 55 percent sandstone channers; slightly acid; gradual smooth boundary.

Bw5—58 to 70 inches; yellowish brown (10YR 5/6) very channery loam; moderate medium and coarse subangular blocky structure; friable; few fine roots; 60 percent sandstone channers; strongly acid; gradual smooth boundary.

CB—70 to 83 inches; yellowish brown (10YR 5/6) very channery loam with few fine distinct strong brown (7.5YR 5/8) mottles; weak medium subangular blocky structure; firm; few fine roots; 50 percent sandstone channers; very strongly acid.

**SOIL TYPE.....CLOVERLICK (TAXADJUNCT)** **PEDON # .....S95KY-119-01-(1-4)**
**LOCATION ..... KNOTT COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 3-12 | A | 40.1 | 47.0 | 12.9 | 6.9 | 6.9 | 9.0 | 10.1 | 7.2 | | | | | | | l | | | |
| 12-22 | Bw1 | 34.9 | 45.7 | 19.4 | 3.7 | 3.7 | 8.0 | 10.1 | 9.4 | | | | | | | l | | | |
| 22-38 | Bw2 | 38.6 | 48.3 | 13.1 | 5.3 | 4.9 | 8.9 | 10.4 | 9.1 | | | | | | | l/sil | | | |
| 38-47 | Bw3 | 41.0 | 45.4 | 13.6 | 6.0 | 5.4 | 8.5 | 10.2 | 10.9 | | | | | | | l | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 3-12 | 5.22 | | | 4.92 | 0.43 | 0.62 | 0.02 | 5.99 | 15.27 | 39 | 29 | | 14.82 | 20.81 | | | | | |
| 12-22 | 5.49 | | | 2.83 | 0.30 | 0.10 | 0.01 | 3.24 | 7.45 | 43 | 36 | | 5.75 | 8.99 | | | | | |
| 22-38 | 5.67 | | | 3.30 | 0.35 | 0.09 | 0.03 | 3.77 | 6.83 | 55 | 48 | | 4.06 | 7.83 | | | | | |
| 38-47 | 5.65 | | | 3.01 | 0.66 | 0.10 | 0.01 | 3.78 | 6.86 | 55 | 48 | | 4.16 | 7.94 | | | | | |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Cloverlick

**Pedon #**:

**Classification:** Loamy-skeletal, mixed, mesic Umbric Dystrochrepts

**Location:** Breathitt County, KY, Robinson Forest, Boardinghouse Branch Latitude: 37.464 N; Longitude: 83.156 W

**Parent Material:** Breathitt Formation (Pennsylvanian)

**Vegetation:** Yellow poplar, white oak, black walnut

**Aspect:** NE, 70° azimuth

**Landscape Position:** Middle 1/3 of slope

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** July 28, 2004

**Permeability:**

**Slope:** 55%

**Described by:** Doug McIntosh

Oe—0 to 1 inches; partially decomposed hardwood leaf litter.

A—1 to 8 inches; dark brown (10YR 3/3 moist, 10YR 5/3 dry) channery loam; weak fine granular structure; very friable; many fine, medium and coarse roots; 20% sandstone and siltstone channers; clear wavy boundary.

BA—8 to 17 inches; brown (10YR 4/3) channery loam; weak medium subangular blocky structure; friable; many fine, medium and coarse roots; 25% sandstone channers; clear smooth boundary.

$Bw_1$—17 to 23 inches; brown (10YR 5/3) very channery sandy loam; weak medium and coarse subangular blocky structure; common fine, medium and coarse roots; 45% sandstone channers and 10% sandstone flagstones; clear smooth boundary.

$Bw_2$—23 to 30 inches; yellowish brown (10YR 5/6) very channery sandy loam; moderate medium subangular blocky structure; friable; common fine and medium roots; 30% sandstone channers and 10% sandstone flagstones; clear smooth boundary.

$Bw_3$—30 to 37 inches; yellowish brown (10YR 5/6) very channery sandy loam; weak coarse and medium subangular blocky structure; friable; few fine and medium roots; 40% sandstone channers and 10% sandstone flagstones; gradual smooth boundary.

$Bw_4$—37 to 53 inches; yellowish brown (10YR 5/6) very channery sandy loam; weak coarse and medium subangular blocky structure; friable; few fine and medium roots; 35% sandstone channers and 5% sandstone flagstones; abrupt smooth boundary.

Cr—52 to 62 inches; partially weathered interbedded siltstone and shale.

**SOIL TYPE**.....**CLOVERLICK** **PEDON #**
**LOCATION**.....**BREATHITT COUNTY, KENTUCKY** **GENERAL METHODS**.....**1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-7 | Ap | 57.9 | 32.0 | 10.1 | 8.3 | 9.0 | 17.7 | 17.2 | 5.7 | | | | | | | sl | | | |
| 7-16 | BA | 62.1 | 26.7 | 11.2 | 12.5 | 9.9 | 16.0 | 17.4 | 6.3 | | | | | | | sl | | | |
| 16-22 | $Bw_1$ | 58.7 | 30.4 | 10.9 | 8.4 | 7.7 | 18.0 | 18.0 | 6.6 | | | | | | | sl | | | |
| 22-29 | $Bw_2$ | 58.3 | 29.9 | 11.8 | 9.8 | 8.1 | 15.5 | 17.8 | 7.1 | | | | | | | sl | | | |
| 29-36 | $Bw_3$ | 56.8 | 35.9 | 7.3 | 8.4 | 7.2 | 16.5 | 17.1 | 7.6 | | | | | | | sl | | | |
| 36-52 | $Bw_4$ | 57.9 | 35.1 | 7.0 | 4.5 | 7.1 | 17.2 | 20.7 | 8.4 | | | | | | | sl | | | |
| | pH | | | Exchangeable Bases (5A1) | | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-7 | 5.99 | | 6.65 | 6.40 | 2.13 | 0.37 | 0.01 | 8.91 | 15.38 | 58 | 46 | | 10.33 | 19.24 | | 0.08 | 6.03 | 117 | 9.5 |
| 7-16 | 6.30 | | 6.80 | 2.96 | 1.06 | 0.33 | 0.01 | 4.36 | 7.12 | 61 | 43 | | 5.83 | 10.19 | | 0.06 | 1.99 | 129 | 4.5 |
| 16-22 | 6.26 | | 6.83 | 2.41 | 0.98 | 0.33 | 0.01 | 3.73 | 6.19 | 60 | 40 | | 5.64 | 9.37 | | 0.05 | 1.41 | 132 | 4 |
| 22-29 | 5.91 | | 6.69 | 1.45 | 0.97 | 0.21 | 0.01 | 2.64 | 5.24 | 50 | 32 | | 5.64 | 8.28 | | 0.81 | 0.03 | 95 | 2.5 |
| 29-36 | 5.81 | | 6.72 | 1.29 | 1.07 | 0.18 | 0.02 | 2.56 | 4.91 | 52 | 33 | | 5.26 | 7.82 | | 0.04 | 0.67 | 83 | 2 |
| 36-52 | 5.72 | | 6.80 | 0.92 | 1.04 | 0.12 | 0.03 | 2.11 | 4.21 | 50 | 31 | | 4.79 | 6.90 | | 0.06 | 0.49 | 59 | 1.5 |

| | Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| Bw1 | 40 | 24 | 23 | 13 | | | | | | | | | | | | | | | |
| Bw2 | 46 | 9 | 28 | 17 | | | | | | | | | | | | | | | |
| Bw3 | 52 | 10 | 30 | 8 | | | | | | | | | | | | | | | |
| Bw4 | 63 | 7 | 20 | 10 | | | | | | | | | | | | | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

## Colp

**Pedon#:** S04-KY-145-02-(1-5)

**Classification:** Fine, smectitic or mixed, thermic Aquertic Chromic Hapludalfs

**Location:** McCracken County, KY; 1/4 mile west of JCT of Interstate 24 and KY Hwy 1420; Paducah West 7.5' USGS Quad. Latitude: 37° 11' 23"N; Longitude: 88° 70' 36"W

**Parent Material:** Lacustrine sediments

**Vegetation:** Fescue

**Aspect:**

**Landscape Position:** Sloping terrace riser occupying the boundary between the present Ohio River flood plain and higher elevation, older lacustrine deposits.

**Drainage:** Moderately well drained

**Moisture when sampled:**

Moist to 3 ft.; dry below 3 ft.

**Sampling Date:** 10/31/03

**Permeability:** Slow

**Slope:** 5 %

**Described by:** J. E. McIntosh & P. G. Gregory

Ap—0 to 5 inches; brown (10YR 4/3) silty clay loam; moderate fine and medium granular structure; friable; many fine roots; moderately acid (pH 5.6); abrupt smooth boundary.

$Bt_1$—5 to 10 inches; yellowish brown (10YR 5/6) silty clay; moderate medium subangular blocky structure; firm; common fine roots; 1% fine faint strong brown (7.5YR 4/6) and 1% medium prominent light yellowish brown (2.5Y 6/3) masses of iron accumulations throughout; 5% distinct brown (10YR 5/3) clay skins in pores and along ped faces; strongly acid (pH 5.3); clear smooth boundary.

$Bt_2$—10 to 24 inches; yellowish brown (10YR 5/6) silty clay/clay; strong medium subangular blocky structure; very firm; common fine roots; 5% fine prominent light brownish gray (10YR 6/2) iron depletions throughout; 15% medium prominent strong brown (7.5YR 5/6) masses of iron accumulations throughout; 10% distinct brown (10YR 5/3) clay skins in pores and along ped faces; 1% prominent black (N 2.5/0) manganese oxide concretions throughout; strongly acid (pH 5.2); gradual smooth boundary.

$Bt_3$—24 to 36 inches; yellowish brown (10YR 5/4) clay; strong medium subangular blocky structure; very firm; few fine roots; 20% medium prominent light brownish gray (10YR 6/2) iron depletions throughout; 25% fine prominent yellowish red (5YR 4/6) masses of iron accumulations throughout; 20% distinct grayish brown (10YR 5/2) clay skins on faces of peds; 5% prominent black (N 2.5/0) manganese oxide stains and concretions throughout; strongly acid (pH 5.3); clear smooth boundary.

Btg—36 to 72 inches; grayish brown (2.5Y 5/2) clay; strong medium angular blocky structure; very firm; few fine roots; common shiny pressure faces; 15% coarse prominent strong brown (7.5YR 5/6) and 20% coarse distinct yellowish brown (10YR 5/4) masses of iron accumulations throughout; 20% distinct faint brown (10YR 5/2) clay skins on faces of peds; 5% prominent black (2.5Y 2.5/1) carbonaceous stains along ped faces; 10% prominent black (N2.5/0) manganese oxide stains and concretions throughout; moderately acid (pH 5.7).

**SOIL .....COLP** **PEDON # .....S04KY-145-02-(1-5)**
**LOCATION .....MCCRACKEN COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-5 | Ap | 12.8 | 60.4 | 26.8 | 0.4 | 1.6 | 2.5 | 3.8 | 4.5 | | | | | | | sil/sicl | | | |
| 5-10 | Bt1 | 9.7 | 41.7 | 48.6 | 0.1 | 0.4 | 0.9 | 3.8 | 4.5 | | | | | | | sic/c | | | |
| 10-24 | Bt2 | 2.9 | 44.2 | 52.9 | 0.1 | 0.1 | 0.4 | 1.1 | 1.2 | | | | | | | sic | | | |
| 24-36 | Bt3 | 4.0 | 45.9 | 50.1 | 0 | 0.1 | 0.4 | 1.4 | 2.1 | | | | | | | sic | | | |
| 36-72 | Btg | 4.9 | 51.4 | 43.7 | 0.1 | 0.2 | 0.7 | 1.8 | 2.1 | | | | | | | sic | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-5 | 5.57 | | 6.36 | 7.29 | 2.26 | 0.26 | 0.07 | 9.88 | 14.65 | 67 | 48 | | 10.71 | | | 0.10 | 2.59 | 109 | 9.5 |
| 5-10 | 4.75 | | 4.72 | 5.47 | 2.97 | 0.31 | 0.16 | 8.91 | 22.36 | 40 | 32 | | 19.01 | | | 0.07 | 0.94 | 148.5 | 4 |
| 10-24 | 4.57 | | 4.33 | 2.55 | 6.88 | 0.35 | 0.45 | 10.23 | 29.49 | 35 | 31 | | 22.86 | | | 0.10 | 0.39 | 171 | 4.5 |
| 24-36 | 4.67 | | 4.86 | 2.45 | 9.26 | 0.34 | 0.94 | 12.99 | 26.43 | 49 | 46 | | 15.40 | | | 0.06 | 0.26 | 176 | 16 |
| 36-72 | 6.51 | | 6.92 | 3.74 | 11.04 | 0.27 | 1.60 | 16.65 | 23.64 | 70 | 75 | | 5.63 | | | 0.08 | 0.21 | 160.5 | 18.5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| $Bt_1$ | | | | | | | | | 23 | 30 | | | | 27 | 10 | 9 | | | 1 |
| $Bt_2$ | | | | | | | | | 42 | 25 | | | | 22 | 7 | 4 | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Combs, fine sandy loam

**Pedon #:** SKY98-111-03-(1-9)

**Classification:** Coarse-loamy, mixed, active, mesic Fluventic Hapludolls

**Location:** Typical pedon of Farnsley Moremen Riverside Landing Park on first bottom. USGS Kosmosdale topographic quadrangle.

**Parent Material:** alluvium

**Vegetation:**

**Landscape Position:** flood plain

**Drainage:**

**Moisture when sampled:**

**Sampling Date:**

**Permeability:**

**Slope:** 1 percent

**Described by:**

Ap—0 to 14 inches; very dark grayish brown (10YR 3/2) fine sandy loam. brown (10YR 5/3) dry; moderate fine and medium granular structure; very friable; common fine roots throughout; many mica flakes; neutral; clear wavy boundary.

Bw1—14 to 22 inches; brown (10 YR 4/3) fine sandy loam; weak fine and medium subangular blocky structure; friable; few fine roots throughout; many mica flakes; neutral; clear wavy boundary.

Bw2—22 to 34 inches; dark yellowish brown (10YR 4/4) sandy loam; weak fine subangular blocky structure; very friable; few fine roots throughout; many mica flakes; neutral; clear wavy boundary.

Bw3—34 to 58 inches; brown (10YR 4/3) fine sandy loam; weak fine and medium subangular blocky structure; friable; few fine roots throughout; many mica flakes; neutral; abrupt wavy boundary.

Bw4—58 to 67 inches; brown (10YR 4/3) fine sandy loam; weak fine and medium subangular bocky structure; friable; many mica flakes; few fine roots throughout; many medium grayish brown (2.5Y 5/2) iron depletions throughout and many medium brown (7.5YR 4/4) iron depletions throughout; neutral; abrupt wavy boundary.

Bg1—67 to 71 inches; grayish brown (2.5Y 5/2) fine sandy loam; weak fine and medium subangular blocky structure; friable; few fine roots throughout; many mica flakes; many medium brown (7.5YR 4/4) masses of iron accumulation throughout; neutral; abrupt smooth boundary.

Bw′—71 to 77 inches; dark yellowish brown (10YR 3/6) silt loam; weak fine and medium subangular blocky structure; friable, few fine roots throughout; many iron-manganese stains; many medium grayish brown (2.5Y 5/2) iron depletions throughout and many medium strong brown (7.5YR 4/6) masses of iron accumulation throughout; many mica flakes; neutral; abrupt wavy boundary.

Cg—77 to 83 inches; grayish brown (2.5Y 5/2) silt loam; massive; friable; few fine roots throughout; many medium brown (7.5YR 4/4) masses of iron accumulation throughout and many medium dark yellowish brown (10YR 4/4) masses of iron accumulation throughout and many medium gray (2.5Y 6/1) iron depletions throughout; many mica flakes; neutral; abrupt wavy boundary.

C—83 to 102 inches; brown (7.5YR 4/4) silt loam; massive, friable; few fine roots throughout; many mica flakes; many medium grayish brown (2.5Y 5/2) iron depletions throughout and many medium gray (10YR 6/1) iron depletions throughout; neutral.

**SOIL TYPE** ..... **COMBS** **PEDON #** ..... **S98KY-111-003-(1-9)**
**LOCATION** ..... **JEFFERSON COUNTY, KENTUCKY** **GENERAL METHODS** ..... **1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand | VFS Plus | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Coarser Than VF (2-0.1) | Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-14 | Ap | 48.9 | 36.6 | 14.5 | 0.2 | 0.5 | 4.0 | 31.9 | 12.3 | | | | | | | l | | | |
| 14-22 | $Bw_1$ | 53.2 | 32.6 | 14.2 | 0.1 | 0.1 | 1.8 | 37.9 | 13.3 | | | | | | | sl/l | | | |
| 22-34 | $Bw_2$ | 64.7 | 25.3 | 10.0 | 0 | 0.1 | 2.3 | 46.8 | 15.5 | | | | | | | sl | | | |
| 34-58 | $Bw_3$ | 42.9 | 40.2 | 16.9 | 0.1 | 0 | 0.2 | 19.4 | 23.2 | | | | | | | l | | | |
| 58-67 | $Bw_4$ | 54.7 | 30.1 | 15.2 | 0 | 0.1 | 0.2 | 25.0 | 29.4 | | | | | | | sl/l | | | |
| 67-71 | $Bg_1$ | 43.1 | 37.0 | 19.9 | 0 | 0.1 | 0.2 | 19.3 | 23.5 | | | | | | | l | | | |
| 71-77 | Bw′ | 19.6 | 54.9 | 25.5 | 0.1 | 0.1 | 0.6 | 4.7 | 14.1 | | | | | | | sil | | | |
| 77-83 | Cg | 25.2 | 49.0 | 25.8 | 0.1 | 0.4 | 0.9 | 7.7 | 16.1 | | | | | | | sil/l | | | |
| 83-102 | C | 20.0 | 51.8 | 28.2 | 0.1 | 0.3 | 0.7 | 5.5 | 13.4 | | | | | | | cl/sicl/sil | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-14 | 7.15 | | | 6.7 | 2.6 | 0.4 | 0.1 | 9.8 | 11.1 | 88 | 95 | | 0.5 | 10.3 | | | 3.91 | | |
| 14-22 | 7.12 | | | 4.8 | 2.6 | 0.2 | 0.1 | 7.7 | 8.5 | 91 | 94 | | 0.5 | 8.2 | | | 1.85 | | |
| 22-34 | 7.16 | | | 4.6 | 1.9 | 0.1 | 0.1 | 6.7 | 8.0 | 84 | 76 | | 2.1 | 8.8 | | | 1.57 | | |
| 34-58 | 7.21 | | | 6.3 | 2.3 | 0.2 | 0.1 | 8.9 | 10.7 | 83 | 88 | | 1.2 | 10.1 | | | 1.4 | | |
| 58-67 | 7.14 | | | 5.6 | 1.3 | 0.1 | 0.1 | 7.1 | 9.2 | 77 | 81 | | 1.7 | 8.8 | | | 0.98 | | |
| 67-71 | 7.07 | | | 6.1 | 1.5 | 0.1 | 0.1 | 7.8 | 9.9 | 79 | 79 | | 2.1 | 9.9 | | | 0.91 | | |
| 71-77 | 7.15 | | | 8.2 | 1.9 | 0.2 | 0.1 | 10.4 | 14.6 | 71 | 71 | | 4.2 | 14.6 | | | 1.11 | | |
| 77-83 | 7.10 | | | 7.7 | 2.0 | 0.2 | 0.1 | 9.7 | 13.3 | 73 | 69 | | 4.3 | 14 | | | 0.99 | | |
| 83-102 | 6.96 | | | 8.4 | 2.5 | 0.2 | 0.1 | 11.2 | 15.6 | 72 | 81 | | 2.6 | 13.8 | | | 0.95 | | |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Combs, loam

**Pedon #:** SKY98-111-04-(1-7)

**Classification:** Coarse-loamy, mixed, active, mesic Fluventic Hapludolls

**Location:** Typical pedon of Farnsley Moremen Riverside Landing Park on first bottom. USGS Kosmosdale topographic quadrangle.

**Parent Material:** alluvium

**Vegetation:**

**Landscape Position:** flood plain

**Drainage:**

**Moisture when sampled:**

**Sampling Date:**

**Permeability:**

**Slope:** 1 percent

**Described by:**

Ap1—0 to 10 inches; very dark grayish brown (10YR 3/2) loam, grayish brown (10YR 5/2) dry; moderate fine and medium granular structure; friable; common fine roots throughout; many mica flakes; neutral; clear wavy boundary.

Ap2—10 to 16 inches; very dark grayish brown (10YR 3/2) fine sandy loam, grayish brown (10YR 5/2) dry; moderate fine and medium granular structure; friable; few fine roots throughout; neutral; many mica flakes; clear wavy boundary.

Bw1—16 to 40 inches; brown (10 YR 4/3) fine sandy loam; weak fine and medium subangular blocky structure; friable; few fine roots throughout; many mica flakes; very few organic coats; neutral; clear wavy boundary.

Bw2—40 to 47 inches; yellowish brown (10YR 5/4) fine sandy loam; weak fine and medium subangular blocky structure; friable; few fine roots throughout; many mica flakes; few organic coats on faces of peds and common manganese or iron-manganese stains; neutral; clear wavy boundary.

C1—47 to 61 inches; brown (10YR 4/3) sandy loam; massive; very friable; few fine roots throughout; many mica flakes; common manganese or iron-manganese stains; neutral; clear wavy boundary.

C2—61 to 67 inches; dark grayish brown (10YR 4/2) silt loam; massive; friable; many mica flakes; few fine roots throughout; common organic coats and common manganese or iron-manganese stains; common medium strong brown (7.5YR 4/6) masses of iron accumulation throughout and few medium gray (2.5Y 5/1) iron depletions throughout; neutral; clear wavy boundary.

Cg—67 to 80 inches; gray (2.5Y 5/1) silt loam; massive; friable; few fine roots throughout; many mica flakes; many medium dark yellowish brown (10YR 4/4) masses of iron accumulation throughout and many medium dark red (2.5YR 3/6) masses of iron accumulation throughout; neutral.

**SOIL TYPE ..... COMBS** **PEDON # ..... S98KY-111-004-(1-7)**
**LOCATION ..... JEFFERSON COUNTY, KENTUCKY** **GENERAL METHODS ..... 1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-10 | $Ap_1$ | 39.7 | 45.8 | 14.5 | 0.2 | 0.6 | 4.0 | 20.8 | 14.1 | | | | | | | l | | | |
| 10-16 | $Ap_2$ | 38.9 | 45.2 | 15.9 | 0 | 0.1 | 2.7 | 21.5 | 14.6 | | | | | | | l | | | |
| 16-40 | $Bw_1$ | 29.5 | 56.5 | 14.0 | 0.1 | 0.1 | 1.5 | 14.3 | 13.5 | | | | | | | sil | | | |
| 40-47 | $Bw_2$ | 35.5 | 51.9 | 12.6 | 0 | 0.1 | 1.0 | 20.2 | 14.2 | | | | | | | sil | | | |
| 47-61 | $C_1$ | 57.2 | 31.8 | 11.0 | 0 | 0.2 | 2.8 | 41.6 | 12.6 | | | | | | | sl | | | |
| 61-67 | $C_2$ | 9.7 | 65.9 | 24.4 | 0 | 0.2 | 0.5 | 3.2 | 5.8 | | | | | | | sil | | | |
| 67-80 | $C_3$ | 7.9 | 61.7 | 30.4 | 0 | 0.1 | 0.2 | 1.4 | 6.2 | | | | | | | sicl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-10 | 7.01 | | | 8.5 | 3.3 | 0.6 | 0.1 | 12.5 | 14.0 | 89 | 86 | | 2.1 | 14.6 | | | 6.57 | | |
| 10-16 | 7.24 | | | 6.6 | 2.7 | 0.3 | 0.1 | 9.7 | 10.8 | 90 | 89 | | 1.2 | 10.9 | | | 4.7 | | |
| 16-40 | 7.34 | | | 8.8 | 2.1 | 0.2 | 0.1 | 11.2 | 11.4 | 98 | 88 | | 1.5 | 12.7 | | | 2.56 | | |
| 40-47 | 7.29 | | | 8.2 | 1.9 | 0.1 | 0.1 | 10.3 | 11.1 | 93 | 93 | | 0.8 | 11.1 | | | 1.79 | | |
| 47-61 | 7.28 | | | 6.7 | 1.3 | 0.1 | 0.1 | 8.2 | 8.6 | 95 | 90 | | 0.9 | 9.1 | | | 1.48 | | |
| 61-67 | 7.15 | | | 10.3 | 2.2 | 0.2 | 0.1 | 12.8 | 16.8 | 76 | 82 | | 2.9 | 15.7 | | | 2.33 | | |
| 67-80 | 7.03 | | | 8.2 | 1.6 | 0.2 | 0.1 | 10.1 | 14.7 | 68 | 82 | | 2.2 | 12.3 | | | 1.27 | | |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Combs, loam

**Pedon #:** SKY98-111-05-(1-7)

**Classification:** Coarse-loamy, mixed, active, mesic Fluventic Hapludolls

**Location:** Riverside Boat Ramp Park near site 2 on transect 20 98KY111045 SKY98-5-(1-7); USGS Lanesville topographic quadrangle.

**Parent Material:** alluvium

**Vegetation:**

**Landscape Position:** flood plain

**Drainage:**

**Moisture when sampled:**

**Sampling Date:**

**Permeability:**

**Slope:** 1 percent

**Described by:**

Ap—0 to 13 inches; very dark grayish brown (10YR 3/2) loam, grayish brown (10YR 5/2) dry; weak fine and medium granular structure; friable; few fine roots throughout; many mica flakes; neutral; clear wavy boundary.

Bw1—13 to 24 inches; brown (7.5 YR 4/4) fine sandy loam; moderate fine and medium subangular blocky structure; firm; few fine roots throughout; many mica flakes; neutral; clear wavy boundary.

Bw2—24 to 45 inches; dark yellowish brown (10YR 4/6) sandy loam; weak fine subangular blocky structure; very friable; few fine roots; many mica flakes; neutral; clear wavy boundary.

Bw3—45 to 73 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak fine and medium subangular blocky structure; friable; few fine roots; many mica flakes; neutral; abrupt wavy boundary.

Bw4—73 to 78 inches; dark yellowish brown (10YR 4/4) loam; moderate fine and medium subangular blocky structure; friable; many mica flakes; neutral; abrupt wavy boundary.

C1—78 to 90 inches; yellowish brown (10YR 5/4) sandy loam; single grain; loose; many mica flakes; neutral; clear wavy boundary.

C2—90 to 100 inches; dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/4) sandy loam; massive; friable; many mica flakes; neutral.

**SOIL TYPE** ..... **COMBS** **PEDON #** ..... **S98KY-111-005-(1-7)**
**LOCATION** ..... **JEFFERSON COUNTY, KENTUCKY** **GENERAL METHODS** ..... **1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand | VFS Plus | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Coarser Than VF (2-0.1) | Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-13 | Ap | 43.0 | 43.2 | 13.8 | 0 | 0.1 | 2.9 | 27.4 | 12.6 | | | | | | | l | | | |
| 13-24 | $Bw_1$ | 52.5 | 35.7 | 11.8 | 0 | 0 | 2.8 | 31.8 | 17.9 | | | | | | | l/sl | | | |
| 24-45 | $Bw_2$ | 89.5 | 8.1 | 2.4 | 0 | 0 | 14.7 | 66.2 | 8.6 | | | | | | | s | | | |
| 45-73 | $Bw_3$ | 70.5 | 18.6 | 10.9 | 0 | 0 | 6.7 | 51.4 | 12.4 | | | | | | | sl | | | |
| 73-78 | $Bw_4$ | 34.1 | 47.3 | 18.6 | 0 | 0 | 2.5 | 21.0 | 10.6 | | | | | | | l | | | |
| 78-90 | $C_1$ | 91.7 | 9.4 | 0.9 | 0 | 0.1 | 18.6 | 66.7 | 6.3 | | | | | | | s/ls | | | |
| 90-100 | $C_2$ | 77.4 | 15.8 | 6.8 | 0 | 0 | 6.6 | 54.9 | 15.9 | | | | | | | sl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-13 | 7.12 | | | 8.7 | 2.4 | 0.2 | 0.1 | 11.4 | 12.0 | 95 | 87 | | 1.6 | 13 | | | 2.68 | | |
| 13-24 | 6.79 | | | 4.9 | 1.8 | 0.2 | 0.1 | 7.0 | 8.9 | 79 | 84 | | 1.3 | 8.3 | | | 0.43 | | |
| 24-45 | 6.47 | | | 1.7 | 0.6 | 0.1 | 0.1 | 2.5 | 3.3 | 76 | 96 | | 0.1 | 2.6 | | | 0.2 | | |
| 45-73 | 6.36 | | | 3.3 | 1.1 | 0.1 | 0.1 | 4.6 | 6.1 | 75 | 96 | | 0.2 | 4.8 | | | 0.3 | | |
| 73-78 | 6.34 | | | 5.4 | 1.6 | 0.2 | 0.1 | 7.3 | 10.6 | 69 | 95 | | 0.4 | 7.7 | | | 0.38 | | |
| 78-90 | 6.24 | | | 1.5 | 0.5 | 0.1 | 0.1 | 2.2 | 3.4 | 64 | 81 | | 0.5 | 2.7 | | | 0.19 | | |
| 90-100 | 6.31 | | | 2.6 | 0.8 | 0.1 | 0.1 | 3.6 | 5.2 | 70 | 86 | | 0.6 | 4.2 | | | 0.24 | | |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Culleoka, silt loam (Taxadjunct)

**Pedon #:** S00KY-001-002-(1-5)

**Classification:** Fine-silty, mixed, semiactive, mesic Ultic Hapludalfs

**Location:** Adair County, Kentucky; pedon of Culleoka shallow silt loam, in a corn field; about 8.5 miles west of Columbia, Kentucky; 1.5 miles west of Milltown; 25 feet north of Mockingbird Lane; on the Junior Brown farm.

**Parent Material:**

**Vegetation:**

**Landscape Position:**

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 11/28/00

**Permeability:**

**Slope:** 2 to 6 percent

**Described by:** Bill Craddock, Bob Eigel, and Jerry Richardson

Ap—0 to 9 inches; light olive brown (2.5Y 5/3) silt loam, weak fine granular structure; very friable; many fine roots throughout; 5 percent fine concretions; slightly acid (6.5); clear irregular boundary.

Bt1—9 to 19 inches; yellowish brown (10YR 5/6) silt loam; 10 percent light yellowish brown (10YR 6/4) mottles; moderate medium subangular blocky structure; friable; 5 percent yellowish red (5YR 5/8) soft siltstone fragments; discontinuous clay films on faces of peds and pores; common fine and medium roots throughout; strongly acid (5.5); clear irregular boundary.

Bt2—19 to 30 inches; 55 percent brownish yellow (10YR 5/6), 10 percent light yellowish brown (10YR 6/4), 5 percent yellowish red (5YR 5/8) and 30 percent light brownish gray (2.5Y 6/2) silty clay loam; moderate medium subangular blocky structure; friable; 30 percent black concretions; 5 percent soft siltstone channers; discontinuous clay films on faces of peds and pores; common light brownish gray skeletans; few medium roots throughout; strongly acid (5.5); clear wavy boundary.

BC—30 to 35 inches; 50 percent light brownish gray (2.5Y 6/2); 30 percent yellowish brown (10YR 5/6), 10 percent light yellowish brown (10YR 6/4), 10 percent yellowish red (5YR 5/8) and 10 percent light yellowish brown (10YR 6/4) channery silty clay loam; moderate medium subangular blocky structure; friable; 10 percent black concretions; 40 percent soft siltstone channers; discontinuous clay films on faces of peds and pores; common light brownish gray skeletans; few medium roots throughout; neutral (6.5); abrupt smooth boundary.

Cr—35 inches; soft siltstone; alkaline (8).

**SOIL TYPE.....CULLEOKA (TAXADJUNCT)** **PEDON # ..... S00-KY-001-02-(1-4)**
**LOCATION ..... ADAIR COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-9 | Ap | 19.2 | 72.2 | 8.6 | 0.8 | 1.3 | 1.7 | 4.8 | 10.6 | | | | | | | sil | | | |
| 9-19 | $Bt_1$ | 12.0 | 62.7 | 25.3 | 0.7 | 0.9 | 0.5 | 1.8 | 6.9 | | | | | | | sil | | | |
| 19-30 | $Bt_2$ | 11.9 | 65.1 | 23.0 | 0.4 | 0.8 | 0.8 | 1.8 | 8.1 | | | | | | | sil | | | |
| 30-35 | BC | 15.0 | 59.9 | 25.1 | 0.7 | 0.8 | 0.9 | 3.8 | 8.8 | | | | | | | sil/sicl | 22 | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-9 | 6.0 | | 6.9 | 2.34 | 0.30 | 0.12 | 0.02 | 2.78 | 5.37 | 52 | 37 | | 4.72 | 7.5 | | 0.06 | 1.59 | 64.5 | 18.5 |
| 9-19 | 4.8 | | 6.2 | 1.72 | 0.27 | 0.07 | 0.06 | 2.12 | 8.40 | 25 | 19 | | 8.74 | 10.86 | | 0.05 | 0.59 | 36.5 | 1.5 |
| 19-30 | 4.7 | | 5.8 | 1.67 | 0.24 | 0.08 | 0.06 | 2.05 | 10.09 | 20 | 16 | | 10.44 | 12.49 | | 0.06 | 0.21 | 42.5 | 0.5 |
| 30-35 | 5.6 | | 6.7 | 6.31 | 0.88 | 0.12 | 0.11 | 7.42 | 13.49 | 55 | 56 | | 5.81 | 13.23 | | 2.32 | 0.28 | 62.5 | 0 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| $Bt_1$ | 78 | 6 | 16 | | | | | | | | | | | | | | | | |
| $Bt_2$ | 88 | 12 | | | | | | | | | | | | | | | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Culleoka, silt loam (Taxadjunct)

**Pedon #:** S00KY-001-004-(1-5)

**Classification:** Fine-loamy, siliceous, active, mesic Ultic Hapludalfs

**Location:** Adair County, Kentucky; pedon of Culleoka silt loam, in a pasture; about 4.25 miles southeast of Columbia, Kentucky; at Joppa: 350 feet north of KY Hwy 92; 50 feet east of farm road; on the Raymond Lawhorn farm.

**Parent Material:**

**Vegetation:**

**Landscape Position:**

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 11/29/00

**Permeability:**

**Slope:** 6 to 12 percent

**Described by:** John Jenkins, Bill Craddock, and Jerry Richardson

Ap—0 to 13 inches; brown (10YR 4/3) silt loam; moderate fine and medium granular structure; friable; many fine roots throughout; 5 percent siltstone channers; neutral (6.6); abrupt wavy boundary.

Bt1—13 to 23 inches; yellowish brown (10YR 5/6) silty clay loam; 10 percent light yellowish brown (10YR 6/4) and 2 percent strong brown mottles; moderate fine and medium subangular blocky structure; friable; 10 percent siltstone fragments; discontinuous clay films on faces of peds and pores; common fine roots throughout; neutral (6.8); abrupt wavy boundary.

Bt2—23 to 30 inches; yellowish brown (10YR 5/6) channery silty clay loam; 15 percent light yellowish brown (2.5Y 6/4), 5 percent strong brown (7.5YR 5/6) and 2 percent yellowish red (5YR 5/8) mottles; moderate medium subangular blocky structure; firm; 20 percent siltstone channers; discontinuous clay films on faces of peds and pores; common fine roots throughout; slightly acid (6.0); clear wavy boundary.

BC—30 to 36 inches; light yellowish brown (2.5Y 6/4) very channery silt loam; 5 percent yellowish red (5YR 5/8) mottles; moderate fine subangular blocky structure; friable; 35 percent siltstone channers; few discontinuous clay films on faces of peds and pores; 10 percent light brownish gray (2.5Y 6/2) skeletans; few very fine roots; slightly acid (6.1); clear wavy boundary.

Cr—36 inches; siltstone.

**SOIL TYPE.....CULLEOKA (TAXADJUNCT)** **PEDON # .....S00KY-001-004-(1-4)**
**LOCATION ..... ADAIR COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-13 | Ap | 28.0 | 58.9 | 13.1 | 5.0 | 6.2 | 5.3 | 6.4 | 5.1 | | | | | | | sil | 19 | | |
| 13-23 | $Bt_1$ | 27.3 | 49.9 | 22.8 | 4.9 | 5.1 | 4.7 | 6.6 | 6.0 | | | | | | | sil | 16 | | |
| 23-30 | $Bt_2$ | 26.5 | 58.1 | 15.4 | 4.7 | 6.1 | 4.8 | 5.5 | 5.4 | | | | | | | sil | 21 | | |
| 30-36 | BC | 20.1 | 58.1 | 21.8 | 2.4 | 3.1 | 3.5 | 5.0 | 6.1 | | | | | | | sil | 13 | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-13 | 6.5 | | 6.9 | 4.41 | 0.43 | 0.07 | 0.02 | 4.93 | 8.52 | 58 | 44 | | 6.13 | 11.06 | | 0.17 | 1.76 | 31 | 6 |
| 13-23 | 5.5 | | 6.7 | 2.81 | 0.42 | 0.08 | 0.02 | 3.33 | 7.63 | 44 | 34 | | 6.38 | 9.71 | | 0.07 | 0.46 | 37.5 | 0.5 |
| 23-30 | 6.3 | | 7.0 | 3.44 | 0.52 | 0.08 | 0.02 | 4.06 | 8.60 | 47 | 48 | | 4.31 | 8.37 | | 0.06 | 0.42 | 39 | 1 |
| 30-36 | 5.4 | | 6.7 | 3.18 | 0.56 | 0.09 | 0.02 | 3.85 | 9.51 | 40 | 42 | | 5.22 | 9.07 | | 0.08 | 0.29 | 42.5 | 0 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| $Bt_1$ | 100 | | | | | | | | | | | | | | | | | | |
| $Bt_2$ | 85 | 5 | 10 | | | | | | | | | | | | | | | | |
| BC | 85 | 5 | 10 | | | | | | | | | | | | | | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Cynthiana, silt loam

**Pedon #:** S96KY-015-002-(1-3)

**Classification:** Clayey, mixed, active, mesic Lithic Hapludalfs

**Location:** Boone County, KY., Flaig farm, Hwy. 536 west of Union.

**Parent Material:** Residuum (limestone inter-bedded with calcareous shale)

**Vegetation:** Pasture

**Landscape Position:** Side slope

**Drainage:** Somewhat excessively drained

**Moisture when sampled:** Moist

**Permeability:** Moderately slow

**Slope:** 12 to 20 %

**Described by:** Jutta Pils

Ap—0 to 14 cm: Very dark grayish brown (10YR 3/2) silt loam; few brownish yellow (10YR 6/6) mottles; weak granular structure; very friable; clear boundary.

Bt—14 to 24 cm. Olive brown (2.5Y 4/4) silty clay; many dark grayish brown (10YR 4/2) mottles; moderate subangular blocky; firm; gradual boundary.

BC—24 to 30 cm: Dark yellowish brown (10YR 4/4) silty clay; few olive brown (2.5Y 4/4) mottles; massive to weak sub-angular blocky; firm.

R—30+ cm.

**SOIL TYPE.....CYNTHIANA** **PEDON # .....S96KY-015-002-(1-3)**
**LOCATION .....BOONE COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-14 | Ap | 13.7 | 62.3 | 24.0 | 2.2 | 2.2 | 2.5 | 2.7 | 4.1 | | | | | | | sil | | | |
| 14-24 | Bt | 5.3 | 50.8 | 43.9 | 0.4 | 0.6 | 0.8 | 1.2 | 2.3 | | | | | | | sic | | | |
| 24-30 | BC | 5.4 | 50.7 | 43.9 | 0.9 | 0.9 | 0.6 | 1.0 | 2.0 | | | | | | | sic | | | |
| | | pH | | Exchangeable Bases (5A1) | | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/ 100gm | 602z Mg meq/ 100gm | 602z K meq/ 100gm | 6P2z Na meq/ 100gm | 5B1a TEB meq/ 100gm | 5A1z CEC meq/ 100gm | 5C1 Pct | 5C3 Pct | H+Al meq/ 100 gm | EA meq/ 100gm | SC meq/ 100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-14 | 5.8 | | 6.5 | 16.69 | 1.03 | 0.29 | 0.08 | 18.09 | 22.06 | 82 | 65 | | 9.58 | 27.67 | | 0.10 | 4.37 | 124.5 | 52.5 |
| 14-24 | 5.9 | | 6.6 | 21.37 | 0.84 | 0.32 | 0.41 | 22.94 | 22.51 | 102 | 72 | | 9.05 | 31.99 | | 0.13 | 1.23 | 158.5 | 88 |
| 24-30 | 6.8 | | 6.9 | 27.77 | 0.69 | 0.29 | 0.11 | 28.86 | 23.54 | 123 | 80 | | 7.14 | 36.00 | | 0.28 | 1.35 | 141.5 | 45.5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Cynthiana, silt loam

**Pedon:** S97KY-015-007-(1-3)

**Classification:** Clayey, mixed, active, mesic Lithic Hapludalfs

**Location:** Boone County, KY. John Tobergte's Farm.

**Parent Material:** Residuum (limestone inter-bedded with calcareous shale)

**Vegetation:** Pasture

**Landscape Position:** Side slope

**Drainage:** Somewhat excessively drained

**Moisture when sampled:** Moist

**Permeability:** Moderately slow

**Slope:** 20 to 30% (27%)

**Described by:** Jutta R.V. Pils

Ap—0 to 8 cm: Dark brown (10YR 3/3) silt loam; weak granular structure; friable; abrupt boundary.

$Bt_1$—8 to 26 cm: Yellowish brown (10YR 5/6) silty clay loam; moderate sub-angular blocky structure; firm; clear boundary.

$Bt_2$—26 to 49 cm: Dark yellowish brown (10YR 4/4) loam; moderate sub-angular blocky structure; firm; abrupt boundary.

R—49+ cm.

**SOIL TYPE.....CYNTHIANA** **PEDON # .....S97KY-015-07-(1-3)**
**LOCATION .....BOONE COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-8 | Ap | 22.3 | 52.3 | 25.4 | 1.4 | 3.7 | 4.3 | 8.4 | 4.5 | | | | | | | sil | | | |
| 8-26 | $Bt_1$ | 12.8 | 57.9 | 29.3 | 0.3 | 0.5 | 1.5 | 6.5 | 4.0 | | | | | | | sicl | | | |
| 26-49 | $Bt_2$ | 30.6 | 46.5 | 22.9 | 0.9 | 1.2 | 2.9 | 16.9 | 8.7 | | | | | | | l | | | |
| | pH | | | Exchangeable Bases (5A1) | | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-8 | 5.6 | | 6.5 | 14.4 | 3.6 | 0.6 | 0.6 | 19.2 | 32.3 | 59.3 | 57.8 | | 14.04 | 33.2 | | 0.15 | 7.26 | 410 | 54 |
| 8-26 | 5.5 | | 6.6 | 13.3 | 3.1 | 0.3 | 0.1 | 16.8 | 25.0 | 67.4 | 63.3 | | 9.66 | 26.5 | | 0.17 | 0.93 | 289 | 53 |
| 26-49 | 6.2 | | 7.0 | 11.6 | 1.2 | 0.2 | 0.1 | 13.0 | 13.8 | 94.1 | 62.2 | | 7.91 | 20.9 | | 0.69 | 1.18 | 172 | 37 |

| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV/HSM | CL | INT | K | MI | Q | GI | GO | F |
| Ap | | | | | | | | | | | 48 | | 19 | 13 | 17 | 2 | | 1 | |
| Bt1 | | | | | | | | | | | 58 | | | 21 | 16 | 3 | | 1 | 1 |
| Bt2 | | | | | | | | | | | 56 | | | 21 | 16 | 4 | | 2 | 1 |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Dubbs silty clay loam

**Pedon #:** S04KY-07-01-(1-8)

**Classification:** Fine-silty, mixed, active, thermic Oxyaquic Hapludalfs

**Location:** Ballard Co., KY; Ballard Wildlife Management Area; 2.5 miles west of Oscar, 1400 ft west of Butler Lake and Lake Slough; Olmstead 7.5' USGS Quad @ 89.0593W longitude and 37.1613N latitude.

**Parent Material:** Loamy alluvium

**Vegetation:** Fescue and weeds

**Aspect:**

**Landscape Position:** Low terrace on Ohio River flood plain

**Drainage:** Moderately well drained

**Moisture when sampled:** Moist throughout, saturated at 56"

**Sampling Date:** 04/15/04

**Permeability:** Moderate

**Described by:** J. E. McIntosh

Ap—0 to 7 in.; Brown (10YR 4/3) silty clay loam; moderate medium granular structure; friable; many fine roots; slightly acid (pH 6.5); abrupt smooth boundary.

Bt1—7 to 11 in.; Dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; friable; common fine roots; 2% faint brown (7.5YR 4/3) clay skins in pores and along ped faces; strongly acid (pH 5.5); clear smooth boundary.

Bt2—11 to 23 in.; Strong brown (7.5YR 4/6) silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; 2 to 5% distinct brown (7.5YR 4/3) clay skins in pores and along ped faces; 1% prominent black (N 2.5/0) manganese oxide stains throughout; very strongly acid (pH 4.8); clear smooth boundary.

Bt3—23 to 33 in.; Dark yellowish brown (10YR 4/6) silty clay loam; moderate medium subangular blocky structure; firm; 5% medium distinct dark brown (7.5YR 3/4) and 1% fine distinct brown (7.5YR 5/6) masses of iron accumulations throughout; 5% distinct brown (7.5YR 4/3) clay skins in pores and along ped faces; 7% distinct pale brown (10YR 6/3) clay depletions (10YR 7/1 dry) along ped faces; 10% prominent black (N 2.5/0) manganese oxide stains and concretions throughout; very strongly acid (pH 5.0); gradual smooth boundary.

Bt4—33 to 43 in.; Yellowish brown (10YR 5/4) silt loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; 10% medium distinct light brownish gray (10YR 6/2) iron depletions; 12% medium distinct dark brown (7.5YR 3/4) and 5% medium distinct strong brown (7.5YR 4/6) masses of iron accumulations throughout; 2% distinct brown (7.5YR 4/3) clay skins along ped faces; 15% prominent black (N 2.5/0) manganese oxide stains and concretions throughout; very strongly acid (pH 5.0); gradual smooth boundary.

Bt5—43 to 60 in.; 35% strong brown (7.5YR 4/6), 35% brown (10YR 5/3), and 30% light brownish gray (10YR 6/2) silt loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; 15% medium distinct dark brown (7.5YR 3/4) and 10% fine distinct strong brown (7.5YR 5/6) masses of iron accumulations throughout; 2% distinct brown (7.5YR 4/3) clay skins along ped faces; 20 to 25% prominent black (N 2.5/0) manganese oxide stains and concretions throughout; very strongly acid (pH 5.0); gradual smooth boundary.

2BC—60 to 74 in.; Brown (10YR 5/3) sandy loam; weak coarse subangular blocky structure; friable; 20% medium faint light brownish gray (10YR 6/2) iron depletions throughout; 25% medium prominent strong brown (7.5YR 4/6) masses of iron accumulations throughout; 10% prominent black (N 2.5/0) manganese oxide stains and concretions throughout; very strongly acid (pH 5.0).

2C—74 to 84 in.; Yellowish brown (10YR 5/4) fine sand; massive; very friable; moderately acid (pH 5.8).

**SOIL TYPE**.....**DUBBS** **PEDON #** .....**S04KY-007-01-(1-8)**
**LOCATION** .....**BALLARD COUNTY, KENTUCKY** **GENERAL METHODS** .....**1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-7 | Ap | 19.4 | 54.7 | 25.9 | 0.8 | 1.6 | 2.8 | 8.6 | 5.6 | | | | | | | sil/sicl | | | |
| 7-11 | $Bt_1$ | 11.9 | 51.3 | 36.8 | 0.9 | 1.1 | 1.6 | 4.7 | 3.6 | | | | | | | sicl | | | |
| 11-23 | $Bt_2$ | 11.8 | 52.9 | 35.3 | 0.2 | 1.2 | 1.6 | 3.5 | 5.3 | | | | | | | sicl | | | |
| 23-33 | $Bt_3$ | 26.7 | 44.1 | 29.2 | 0.7 | 1.7 | 1.6 | 7.3 | 15.4 | | | | | | | cl | | | |
| 33-43 | $Bt_4$ | 26.5 | 46.7 | 26.8 | 1.4 | 2.1 | 1.5 | 6.4 | 15.1 | | | | | | | cl | | | |
| 43-60 | $Bt_5$ | 30.9 | 44.2 | 24.9 | 1.7 | 2.3 | 1.6 | 11.6 | 13.7 | | | | | | | l | | | |
| 60-74 | 2BC | 76.0 | 13.2 | 10.8 | 0.0 | 0.4 | 2.9 | 58.2 | 14.5 | | | | | | | sl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-7 | 5.84 | | 6.50 | 6.57 | 1.58 | 0.14 | 0.04 | 8.33 | 15.61 | 53 | 46 | | 9.95 | 18.28 | | 0.13 | 2.15 | 52.5 | 10 |
| 7-11 | 5.05 | | 5.40 | 3.88 | 1.07 | 0.12 | 0.04 | 5.11 | 17.34 | 29 | 26 | | 14.69 | 19.80 | | 0.32 | 0.84 | 45.5 | 2.5 |
| 11-23 | 5.00 | | 4.92 | 2.66 | 1.09 | 0.15 | 0.04 | 3.94 | 18.03 | 22 | 20 | | 16.06 | 20.00 | | 0.12 | 0.52 | 60 | 1.5 |
| 23-33 | 5.00 | | 5.13 | 1.81 | 0.95 | 0.13 | 0.03 | 2.92 | 13.77 | 21 | 18 | | 13.43 | 16.35 | | 0.09 | 0.34 | 54.5 | 2.5 |
| 33-43 | 4.97 | | 4.95 | 1.05 | 0.80 | 0.12 | 0.03 | 1.81 | 12.86 | 14 | 12 | | 13.57 | 15.38 | | 0.15 | 0.25 | 55 | 3 |
| 43-60 | 4.92 | | 4.93 | 0.87 | 0.79 | 0.12 | 0.03 | 1.81 | 12.86 | 14 | 12 | | 13.20 | 15.01 | | 0.22 | 0.21 | 53.5 | 3 |
| 60-74 | 5.04 | | 6.08 | 0.60 | 0.44 | 0.05 | 0.04 | 1.13 | 4.99 | 23 | 17 | | 5.52 | 6.65 | | 0.11 | 0.19 | 27.5 | 13 |
| | | Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | |
| Horizon | | Sand + Silt | | | | | | | | Clay | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V-HIV | HIV | CL | INT | K | MI | Q | GI | GO | F |
| $Bt_1$ | 65 | 9 | 13 | 13 | | | | | | 36 | | | 11 | 30 | 12 | 6 | | 2 | 3 |
| $Bt_2$ | 63 | 14 | 23 | | | | | | 9 | 31 | | | 13 | 26 | 15 | 3 | | 1 | 2 |
| $Bt_3$ | 61 | 8 | 31 | | | | | | | 40 | | | 10 | 29 | 14 | 4 | | 1 | 2 |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Dubbs

**Pedon #:** S04-KY-145-01-(1-7)

**Classification:** Fine, smectitic or mixed, active, thermic Oxyaquic Hapludalfs

**Location:** McCracken County, KY; 1/4 mile west of JCT of Interstate 24 and KY Hwy 1420; Paducah West 7.5' USGS Quad. Latitude: 37° 11' 35"N; Longitude: 88° 70' 34"W

**Parent Material:** Clayey alluvium

**Vegetation:** Row crop, soybeans in 2003

**Aspect:**

**Landscape Position:** Low terrace on Ohio River floodplain

**Drainage:** Moderately well drained

**Moisture when sampled:** Moist throughout

**Sampling Date:** 10/31/03

**Permeability:** Slow

**Slope:** 1 %

**Described by:** J. E. McIntosh & P. G. Gregory

Ap—0 to 9 inches; 50% brown (10YR 4/3) and 50% dark yellowish brown (10YR 3/4) silty clay loam; moderate medium granular structure; friable; common fine roots; moderately acid (pH 5.6); abrupt smooth boundary.

AB—9 to 13 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; firm; common fine roots; 30% faint brown (10YR 4/3) coatings on faces of peds; very strongly acid (pH 5.0); clear smooth boundary.

$Bt_1$—13 to 32 inches; yellowish brown (10YR 5/6) silty clay; moderate medium subangular blocky structure; firm; few fine roots; 5% distinct brown (10YR 5/3) clay skins in pores and along ped faces; 30% faint brown (10YR 4/3) coatings along ped faces; 1% prominent black (N2.5/0) manganese oxide stains throughout; very strongly acid (pH 4.9); clear smooth boundary.

$Bt_2$—32 to 38 inches; yellowish brown (10YR 5/6) silty clay; moderate medium subangular blocky structure; firm; few fine roots; 1% fine prominent light brownish gray (10YR 6/2) iron depletions throughout; 5% distinct brown (10YR 5/3) clay skins in pores and along ped faces; 5% prominent black (N 2.5/0) manganese oxide stains and concretions throughout; very strongly acid (pH 4.8); gradual smooth boundary.

$Bt_3$—38 to 49 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; firm; 5 fine prominent light brownish gray (10YR 6/2) iron depletions throughout; 2% fine prominent brown (7.5YR 4/3) and strong brown (7.5YR 4/6) masses of iron accumulations throughout; 5% distinct brown (10YR 5/3) clay skins in pores and on faces of peds; 12% distinct light yellowish brown (2.5Y 6/3) clay depletions (10YR 7/1 dry) along ped faces; 5% prominent black (N 2.5/0) manganese oxide stains and concretions throughout; very strongly acid (pH 4.9); gradual smooth boundary.

$2Btx_1$—49 to 78 inches; 55% strong brown (7.5YR 4/6) and 45% light brownish gray (10YR 6/2) silty clay loam; moderate medium platy structure parting to moderate medium subangular blocky structure; firm; 10% medium prominent strong brown (7.5YR 5/6) masses of iron accumulations throughout; 5% distinct grayish brown (10YR 5/2) clay skins on faces of peds; 5% prominent light yellowish brown (2.5Y 6/3) clay depletions (10YR 7/1 dry)along ped faces; 5% prominent black (N2.5/0) manganese oxide stains and concretions throughout; 20% brittle peds throughout; very strongly acid (pH 4.8); gradual smooth boundary.

$2Btx_2$—78 to 92 inches; strong brown (7.5YR 4/6) silty clay loam; moderate medium platy structure parting to moderate medium subangular blocky; firm; 20% medium prominent light brownish gray (10YR 6/2) iron depletions throughout; 5% medium faint strong brown (7.5YR 5/6) masses of iron accumulations throughout; 5% distinct grayish brown (10YR 5/2) clay skins on faces of peds; 5% prominent light yellowish brown (2.5Y 6/3) clay depletions (10YR 7/1 dry) along ped faces; 5% prominent black (N2.5/0) manganese oxide stains and concretions throughout; 15% brittle peds throughout; very strongly acid (pH 4.7).

**SOIL TYPE.....DUBBS** **PEDON # .....S04KY-145-01-(1-7)**
**LOCATION .....MCCRACKEN COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-9 | Ap | 12.7 | 61.6 | 25.7 | 1.1 | 1.9 | 2.4 | 3.1 | 4.2 | | | | | | | sil | | | |
| 9-13 | AB | 8.3 | 54.7 | 37.0 | 1.1 | 1.5 | 1.4 | 1.3 | 3.0 | | | | | | | sicl | | | |
| 13-32 | Bt1 | 6.4 | 55.5 | 38.1 | 0.3 | 0.5 | 0.7 | 1.1 | 3.8 | | | | | | | sicl/sic | | | |
| 32-38 | Bt2 | 5.9 | 57.8 | 36.3 | 0.1 | 0.4 | 0.7 | 1.3 | 3.4 | | | | | | | sicl | | | |
| 38-49 | Bt3 | 6.3 | 63.5 | 30.2 | 0.2 | 0.9 | 1.1 | 1.1 | 3.0 | | | | | | | sicl | | | |
| 49-78 | 2Btx1 | 6.7 | 62.6 | 30.7 | 0.5 | 1.4 | 1.1 | 1.1 | 2.6 | | | | | | | sicl | | | |
| 78-92 | 2Btx2 | 7.4 | 57.8 | 34.8 | 0.2 | 0.8 | 0.8 | 2.2 | 3.4 | | | | | | | sicl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-9 | 6.05 | | 6.66 | 9.15 | 1.06 | 0.36 | 0.03 | 10.60 | 15.53 | 68 | 46 | | 12.39 | | | 0.21 | 2.3 | 112 | 34 |
| 9-13 | 5.25 | | 6.26 | 6.49 | 0.74 | 0.10 | 0.04 | 7.37 | 15.34 | 48 | 36 | | 13.32 | | | 0.14 | 0.93 | 66 | 14.5 |
| 13-32 | 4.92 | | 5.59 | 4.66 | 0.82 | 0.08 | 0.04 | 5.60 | 15.64 | 36 | 28 | | 14.41 | | | 0.12 | 0.47 | 65 | 6 |
| 32-38 | 4.68 | | 5.1 | 2.58 | 0.81 | 0.10 | 0.06 | 3.55 | 15.27 | 23 | 17 | | 17.27 | | | 0.09 | 0.28 | 67 | 6.5 |
| 38-49 | 4.79 | | 5.28 | 2.04 | 0.84 | 0.07 | 0.05 | 3.00 | 14.20 | 21 | 15 | | 17.47 | | | 0.12 | 0.27 | 62.5 | 5 |
| 49-78 | 4.85 | | 5.18 | 1.27 | 2.25 | 0.07 | 0.21 | 3.80 | 15.86 | 24 | 19 | | 15.01 | | | 0.14 | 0.20 | 74 | 5 |
| 78-92 | 4.78 | | 5.21 | 1.88 | 3.37 | 0.11 | 0.37 | 5.73 | 16.95 | 34 | 27 | | 15.54 | | | 0.10 | 0.23 | 81.5 | 12.5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | | Clay | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V-HIV | HIV | CL | INT | K | MI | Q | GI | GO | F |
| $Bt_1$ | | | | | | | | | | 43 | | | 12 | 24 | 8 | 6 | 7 | | |
| $Bt_2$ | | | | | | | | | | 48 | | | 3 | 30 | 12 | 7 | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals.*

# Eden, silt loam

**Pedon #:** S96KY-015-001-(1-6)

**Classification:** Fine, mixed, active, mesic Typic Hapludalfs

**Location:** Boone County, KY., Flaig farm, Hwy. 536 west of Union.

**Parent Material:** Residuum (calcareous shale, limestone, beds of siltstone)

**Vegetation:** Pasture

**Landscape Position:** Side slope

**Drainage:** Well drained

**Moisture when sampled:** Moist

**Permeability:** Slow

**Slope:** 12 to 20%

**Described by:** Jutta Pils

Ap—0 to 17 cm: Dark brown (10YR 3/3) silt loam; weak granular structure; friable; clear smooth boundary.

BA—17 to 26 cm. Brown (10YR 4/3) silty clay loam; moderate granular structure; friable; clear smooth boundary.

$Bt_1$—26 to 51 cm: Dark yellowish brown (10YR 4/4) silty clay; few yellowish brown (10YR 5/6) mottles; weak sub-angular blocky structure; firm; clear smooth boundary.

$Bt_2$—51 to 67 cm: Dark yellowish brown (10YR 4/4) silty clay; few light olive brown (2.5Y 5/4) mottles; moderate sub-angular blocky structure; firm; clear smooth boundary.

BC—67 to 78 cm: Olive brown (2.5Y 4/3) silty clay; many light yellowish brown (2.5Y 6/4) mottles; strong sub-angular blocky structure; firm; abrupt boundary.

Cr—78+ cm.

**SOIL TYPE** ..... **EDEN** **PEDON #** ..... **S96KY-015-001-(1-6)**
**LOCATION** ..... **BOONE COUNTY, KENTUCKY** **GENERAL METHODS** ..... **1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-17 | Ap | 14.0 | 65.0 | 21.0 | 1.4 | 1.5 | 2.8 | 3.4 | 4.9 | | | | | | | sil | | | |
| 17-26 | BA | 8.2 | 61.1 | 30.7 | 0.7 | 0.8 | 1.8 | 2.4 | 2.5 | | | | | | | sicl | | | |
| 26-51 | $Bt_1$ | 5.0 | 51.1 | 43.9 | 0 | 0.3 | 0.8 | 1.4 | 2.5 | | | | | | | sic | | | |
| 51-67 | $Bt_2$ | 4.3 | 49.5 | 46.2 | 0.3 | 0.6 | 0.5 | 1.1 | 1.8 | | | | | | | sic | | | |
| 67-78 | BC | 4.0 | 52.0 | 44.0 | 0.2 | 0.4 | 0.5 | 0.7 | 2.2 | | | | | | | sic | | | |
| 78+ | Cr | | | | | | | | | | | | | | | | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/ 100gm | 602z Mg meq/ 100gm | 602z K meq/ 100gm | 6P2z Na meq/ 100gm | 5B1a TEB meq/ 100gm | 5A1z CEC meq/ 100gm | 5C1 Pct | 5C3 Pct | H+Al meq/ 100 gm | EA meq/ 100gm | SC meq/ 100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-17 | 5.4 | | 6.3 | 11.84 | 1.14 | 0.38 | 0.08 | 13.44 | 20.59 | 65 | 56 | | 10.59 | 24.03 | | 0.06 | 3.89 | 138 | 73.5 |
| 17-26 | 5.7 | | 6.4 | 12.67 | 0.57 | 0.28 | 0.09 | 13.61 | 19.12 | 71 | 56 | | 10.61 | 24.22 | | 0.06 | 2.11 | 116 | 94.5 |
| 26-51 | 5.7 | | 6.4 | 20.67 | 0.81 | 0.34 | 0.12 | 21.94 | 23.83 | 92 | 68 | | 10.35 | 32.29 | | 0.08 | 1.15 | 162 | 106 |
| 51-67 | 6.3 | | 6.8 | 23.54 | 0.66 | 0.35 | 0.10 | 24.65 | 25.01 | 99 | 76 | | 7.96 | 32.61 | | 0.25 | 0.96 | 168 | 71.5 |
| 67-78 | 7.3 | | | 28.7 | 0.43 | 0.21 | 0.1 | 29.44 | 21.33 | 138 | 85 | | 5.06 | 34.5 | | 2.72 | 1.21 | 117 | 25.5 |
| 78+ | | | | | | | | | | | | | | | | | | | |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

## Eden, silty clay loam

**Pedon #:** S98KY-015-005-(1-4)

**Classification:** Fine, mixed, active, mesic Typic Hapludalfs

**Location:** Boone County, KY., Randall farm, Hwy. 20 east of Petersburg.

**Parent Material:** Residuum (calcareous shale, limestone, beds of siltstone)

**Vegetation:** Pasture

**Landscape Position:** Side slope

**Drainage:** Well drained

**Moisture when sampled:** Moist

**Permeability:** Slow

**Slope:** 12 to 20% (15%)

**Described by:** Jutta R.V. Pils

Ap—0 to 17 cm: Very dark grayish brown (10YR 3/2) silty clay loam; weak granular structure; friable; clear smooth boundary.

$Bt_1$—17 to 31 cm: Light olive brown (10YR 5/4) silty clay; few brown (10YR 4/3) mottles; weak sub-angular blocky structure; firm; gradual boundary.

$Bt_2$—31 to 56 cm: Light olive brown (10YR 5/4) clay; many brownish yellow (10YR 6/6) mottles; weak sub-angular blocky structure; firm; gradual boundary.

BC—56 to 77 cm: Light olive brown (10YR 5/4) clay; few very dark grayish brown (10YR 3/2), few dark yellowish brown (10YR 4/6) mottles, and few light brownish gray (2.5YR 6/2) depletions; weak sub-angular blocky structure; firm; gradual boundary.

Cr—77+ cm.

**SOIL TYPE..... EDEN** **PEDON # .....S98KY-015-05-(1-4)**
**LOCATION .....BOONE COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand | VFS Plus | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Coarser Than VF (2-0.1) | Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-11 | Ap | 12.3 | 53.8 | 33.9 | 1.1 | 2.5 | 2.8 | 2.7 | 3.2 | | | | | | | sicl | | | |
| 11-31 | $Bt_1$ | 6.4 | 43.7 | 49.9 | 0.6 | 1.0 | 1.3 | 1.7 | 1.8 | | | | | | | sic | | | |
| 31-56 | $Bt_2$ | 12.7 | 37.3 | 50.0 | 1.6 | 2.2 | 2.5 | 4.0 | 2.4 | | | | | | | c | | | |
| 56-77 | BC | 11.5 | 39.3 | 49.2 | 2.0 | 2.9 | 2.5 | 2.1 | 2.0 | | | | | | | c | | | |
| 77+ | Cr | | | | | | | | | | | | | | | | | | |

| | pH | | | Exchangeable Bases (5A1) | | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/ 100gm | 602z Mg meq/ 100gm | 602z K meq/ 100gm | 6P2z Na meq/ 100gm | 5B1a TEB meq/ 100gm | 5A1z CEC meq/ 100gm | 5C1 Pct | 5C3 Pct | H+Al meq/ 100 gm | EA meq/ 100gm | SC meq/ 100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-11 | 6.4 | | 6.8 | 24.36 | 1.98 | 0.28 | 0.07 | 26.69 | 29.41 | 90.8 | | | 9.4 | | | 0.26 | 5.19 | 210 | 78 |
| 11-31 | 7.6 | | | 39.23 | 1.37 | 0.24 | 0.09 | 40.93 | 29.41 | 139.1 | | | 4.41 | | | 3.98 | 2.42 | 182 | 20 |
| 31-56 | 8.1 | | | 34.23 | 0.50 | 0.17 | 0.09 | 34.99 | 17.65 | 198.3 | | | 1.94 | | | 9.95 | 2.64 | 149 | 19 |
| 56-77 | 8.2 | | | 35.75 | 0.45 | 0.15 | 0.10 | 36.45 | 14.71 | 247.8 | | | 2.2 | | | 11.00 | 3.83 | 121 | 31 |

| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Horizon | Sand + Silt | | | | | | | | | Clay | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| Ap | | | | | | | | | | 89 | | | | 6 | 2 | 3 | | | |
| Bt2 | | | | | | | | | | 66 | | | 13 | 4 | 16 | 1 | | | |
| BC | | | | | | | | | | 84 | | | | 4 | 10 | 2 | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

## Fairpoint

**Pedon#:**

**Classification:** Loamy-skeletal, mixed, nonacid, mesic Typic Udorthents

**Location:** Breathitt County, KY; Robinson Forest, reclaimed strip mine area—Buckhorn Creek. Latitude: 37.420N; Longitude: 83.183W

**Parent Material:** Breathitt Formation (Pennsylvanian). Area has been strip mined for coal.

**Vegetation:** Red clover

**Aspect:**

**Landscape Position:** Upland / ridgetop

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** July 28, 2004

**Permeability:**

**Slope:** 2%

**Described by:** Steve Blanford

Ap—0 to 11 inches; very dark grayish brown (10YR 3/2) channery loam; weak fine and medium subangular blocky structure; very friable; many fine roots; 25% sandstone, siltstone, and shale channers and 5% sandstone flagstones; clear wavy boundary.

$C_1$—11 to 25 inches; very dark gray (10YR 3/1) very channery silt loam; massive; firm; common fine roots; 40% sandstone, siltstone, and shale channers and 10% sandstone flagstones; clear wavy boundary.

$C_2$—25 to 32 inches; 60% dark gray (2.5Y 4/1) and 40% yellowish brown (10YR 5/8) very channery silt loam; massive; very firm; few fine roots; 30% sandstone; siltstone; and shale channers, 10% sandstone flagstones, and 10% channer-size coal fragments; clear wavy boundary.

$C_3$—32 to 41 inches; 60% yellowish brown (10YR 5/8) and 40% dark gray (2.5Y 4/1) extremely channery silt loam; massive; few fine roots; very firm; 30% sandstone, siltstone, and shale channers, 10% sandstone flagstones, and 20% channer-size coal fragments; clear wavy boundary.

$C_4$—41 to 51 inches; dark grayish brown (2.5Y 4/2) extremely flaggy silt loam; massive; very firm; few very fine roots; 20% sandstone, siltstone, and shale channers, 50% sandstone flagstones, and 7% channer-size coal fragments; gradual wavy boundary.

$C_5$—51 to 58 inches; dark grayish brown (2.5Y 4/2) extremely flaggy clay loam; massive; very firm; few very fine roots; 15% sandstone, siltstone, and shale channers, 45% flagstones; and 7% channer-size coal fragments; gradual wavy boundary.

$C_6$—58 to 72+ inches; yellowish brown (10YR 5/8) extremely flaggy loam; common, medium, prominent dark grayish brown (2.5Y 4/2) mottles; very firm; 15% sandstone, siltstone, and shale channers, 45% sandstone flagstones, 7% channer-size coal fragments, and 5% sandstone stones.

**SOIL TYPE**.....**FAIRPOINT** **PEDON #**
**LOCATION**.....**BREATHITT COUNTY, KENTUCKY** **GENERAL METHODS**.....**1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-11 | Ap | 32.3 | 46.1 | 21.6 | 5.1 | 5.6 | 6.9 | 7.3 | 7.4 | | | | | | | l/sil | | | |
| 11-25 | C1 | 28.5 | 48.2 | 23.3 | 4.8 | 5.5 | 4.8 | 6.2 | 7.2 | | | | | | | l/sil | | | |
| 25-32 | C2 | 29.5 | 46.4 | 24.1 | 5.7 | 5.2 | 5.5 | 5.9 | 7.2 | | | | | | | l | | | |
| 32-41 | C3 | 32.9 | 45.3 | 21.8 | 4.9 | 5.9 | 5.9 | 7.2 | 9.0 | | | | | | | l | | | |
| 41-51 | C4 | 27.0 | 48.9 | 24.1 | 4.1 | 5.3 | 5.2 | 5.5 | 6.9 | | | | | | | sil/l | | | |
| 51-58 | C5 | 31.5 | 50.7 | 17.8 | 6.7 | 7.0 | 4.4 | 5.0 | 8.4 | | | | | | | l | | | |
| 58-72 | C6 | 41.8 | 43.5 | 14.7 | 11.4 | 8.5 | 6.5 | 6.4 | 9.0 | | | | | | | l | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/ 100gm | 602z Mg meq/ 100gm | 602z K meq/ 100gm | 6P2z Na meq/ 100gm | 5B1a TEB meq/ 100gm | 5A1z CEC meq/ 100gm | 5C1 Pct | 5C3 Pct | H+Al meq/ 100 gm | EA meq/ 100gm | SC meq/ 100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-11 | 7.13 | | 7.22 | 4.99 | 6.56 | 0.21 | 0.02 | 11.78 | 11.80 | 99 | 78 | | 3.35 | 15.13 | | | | | |
| 11-25 | 7.77 | | 7.43 | 4.43 | 5.46 | 0.24 | 0.02 | 10.15 | 8.75 | 116 | 87 | | 1.51 | 11.66 | | | | | |
| 25-32 | 7.72 | | 7.45 | 4.48 | 5.63 | 0.27 | 0.03 | 10.41 | 9.00 | 94 | 88 | | 1.38 | 11.79 | | | | | |
| 32-41 | 6.93 | | 7.09 | 4.34 | 6.46 | 0.23 | 0.03 | 11.06 | 11.34 | 97 | 70 | | 4.68 | 15.74 | | | | | |
| 41-51 | 7.55 | | 7.47 | 4.20 | 5.48 | 0.25 | 0.04 | 9.97 | 9.50 | 105 | 82 | | 2.12 | 12.09 | | | | | |
| 51-58 | 7.81 | | 7.50 | 4.11 | 5.38 | 0.21 | 0.04 | 9.74 | 7.56 | 129 | 87 | | 1.38 | 11.12 | | | | | |
| 58-72 | 7.95 | | 7.52 | 3.69 | 5.16 | 0.20 | 0.04 | 9.09 | 6.80 | 134 | 94 | | 0.56 | 9.65 | | | | | |
| | | Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | |
| Horizon | | Sand + Silt | | | | | | | | Clay | | | | | | | | | |
| | Q | F | MI | K | V | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| C1 | 22 | 4 | 48 | 15 | 11 | | | | | | | | | | | | | | |
| C2 | 15 | 20 | 43 | 13 | 9 | | | | | | | | | | | | | | |
| C3 | 23 | 9 | 42 | 13 | 13 | | | | | | | | | | | | | | |
| C4 | 28 | 11 | 43 | 18 | | | | | | | | | | | | | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Faywood, silt loam

**Pedon #:** S95KY-015-001-(1-5)

**Classification:** Fine, mixed, active, mesic Typic Hapludalfs

**Location:** Boone County, KY. George Rehkamp's farm, Hwy 237 northwest of US 42.

**Parent Material:** Residuum

**Vegetation:** Pasture

**Landscape Position:** Upland/side slope

**Drainage:** Well drained

**Moisture when sampled:** Moist

**Permeability:** Moderate

**Slope:** 12 to 20%

**Described by:** K. Collins

Ap—0 to 15 cm: Dark brown (10YR 3/3) silt loam; weak granular structure; very friable; clear boundary.

$Bt_1$—15 to 29 cm: Dark yellowish brown (10YR 4/4) silty clay loam; weak sub-angular blocky structure; friable; gradual boundary.

$Bt_2$—29 to 58 cm: Dark yellowish brown (10YR 4/4) silty clay; moderate sub-angular blocky structure; firm; clear boundary.

BC—58 to 78 cm: Yellowish brown (10YR 5/4) silty clay; weak sub-angular blocky structure; firm with concretions; abrupt boundary.

R—78+ cm.

**SOIL TYPE.....FAYWOOD** **PEDON # .....SKY95-015-001-(1-5)**
**LOCATION .....BOONE COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-15 | Ap | 9.9 | 68.6 | 21.5 | 0.4 | 0.8 | 1.2 | 2.9 | 4.6 | | | | | | | sil | | | |
| 15-29 | $Bt_1$ | 4.3 | 66.5 | 29.2 | 0.5 | 0.7 | 0.6 | 0.7 | 1.8 | | | | | | | sicl | | | |
| 29-58 | $Bt_2$ | 4.5 | 51.6 | 43.9 | 0.5 | 0.8 | 0.7 | 0.8 | 1.7 | | | | | | | sic | | | |
| 58-78 | BC | 4.8 | 51.6 | 43.6 | 0.2 | 0.5 | 0.8 | 1.2 | 2.1 | | | | | | | sic | | | |
| 78+ | R | | | | | | | | | | | | | | | | | | |

| | pH | | | Exchangeable Bases (5A1) | | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-15 | 4.8 | | 5.9 | 3.24 | 0.72 | 0.17 | 0.05 | 4.18 | 18.09 | 23.1 | 22.1 | | 14.69 | 18.87 | | 0.09 | 2.78 | 72 | 54 |
| 15-29 | 4.8 | | 5.5 | 2.73 | 0.67 | 0.16 | 0.07 | 3.63 | 19.85 | 18.3 | 16.6 | | 18.24 | 21.87 | | 0.17 | 1.28 | 66.5 | 103 |
| 29-58 | 5.0 | | 5.2 | 9.67 | 0.78 | 0.23 | 0.07 | 10.75 | 27.21 | 39.5 | 31.9 | | 22.98 | 33.73 | | 0.28 | 0.58 | 83.5 | 157 |
| 58-78 | 6.0 | | 6.6 | 22.06 | 0.63 | 0.20 | 0.07 | 22.96 | 26.32 | 87.3 | 71.3 | | 9.25 | 32.21 | | 0.25 | 0.65 | 71 | 106.5 |

| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Horizon | Sand + Silt | | | | | | | | | Clay | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| Ap | 85 | 15 | | | | | | | | 56 | | | 8 | 11 | 15 | 8 | | | 2 |
| $Bt_2$ | 98 | 2 | | | | | | | | 50 | | | 16 | 8 | 20 | 4 | | | 2 |
| BC | 96 | 4 | | | | | | | | 60 | | | 17 | 4 | 18 | | | | 1 |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

## Faywood, silty clay loam

**Pedon #:** S97KY-015-001-(1-4)

**Classification:** Fine, mixed, active, mesic Typic Hapludalfs

**Location:** Boone County, KY. Bob Smith's farm.

**Parent Material:** Residuum (limestone inter-bedded with calcareous shale)

**Vegetation:** Fescue pasture

**Landscape Position:** Side slope

**Drainage:** Well drained

**Moisture when sampled:** Dry

**Permeability:** Moderately slow

**Slope:** 12 to 20% (14%)

**Described by:** Jutta R.V. Pils

Ap—0 to 15 cm; Brown (10YR 4/3) silty clay loam; moderate granular structure; friable; clear boundary.

$Bt_1$—15 to 33 cm; Brown (10YR 4/3) silty clay; moderate subangular blocky structure; firm; gradual boundary.

$Bt_2$—33 to 54 cm; Dark yellowish brown (10YR 3/4) silty clay; moderate angular blocky structure; very firm; clear boundary.

$Bt_3$—54 to 65 cm; Dark yellowish brown (10YR 4/6) silty clay; moderate angular blocky structure; very firm; abrupt boundary.

R—65+ cm.

**SOIL TYPE.....FAYWOOD** **PEDON # .....S97KY-015-01-(1-4)**
**LOCATION .....BOONE COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-15 | Ap | 11.9 | 48.7 | 39.4 | 0.7 | 1.4 | 2.4 | 3.3 | 4.1 | | | | | | | sicl | | | |
| 15-33 | $Bt_1$ | 9.0 | 50.7 | 40.3 | 1.3 | 1.7 | 1.8 | 2.0 | 2.2 | | | | | | | sic | | | |
| 33-54 | $Bt_2$ | 3.4 | 46.8 | 49.8 | 0.2 | 0.3 | 0.5 | 1.2 | 1.2 | | | | | | | sic | | | |
| 54-65+ | $Bt_3$ | 5.0 | 45.0 | 50.0 | 0.7 | 0.7 | 0.9 | 1.4 | 1.3 | | | | | | | sic | | | |
| | | pH | | Exchangeable Bases (5A1) | | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/ 100gm | 602z Mg meq/ 100gm | 602z K meq/ 100gm | 6P2z Na meq/ 100gm | 5B1a TEB meq/ 100gm | 5A1z CEC meq/ 100gm | 5C1 Pct | 5C3 Pct | H+Al meq/ 100 gm | EA meq/ 100gm | SC meq/ 100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-15 | 6.6 | | 6.9 | 1.28 | 2.40 | 0.47 | 0.01 | 24.16 | 33.81 | 71.4 | | | 9.99 | | | 0.11 | 4.37 | 352 | 127 |
| 15-33 | 7.0 | | | 24.42 | 1.75 | 0.31 | 0.07 | 6.55 | 32.34 | 20.3 | | | 8.17 | | | 0.11 | 1.36 | 287 | 94 |
| 33-54 | 7.6 | | | 33.68 | 1.24 | 0.34 | 0.03 | 35.29 | 33.81 | 104.4 | | | 5.79 | | | 2.58 | 1.81 | 287 | 46 |
| 54-65+ | 7.5 | | | 32.44 | 0.81 | 0.33 | 0.04 | 33.6 | 9.40 | 114.4 | | | 5.67 | | | 3.52 | 1.75 | 281 | 75 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | V/SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| Ap | | | | | | | | | 46 | | | | 25 | 7 | 14 | 2 | | 1 | 5 |
| Bt2 | | | | | | | | | 50 | | | | 18 | 6 | 17 | 3 | | 1 | 5 |
| Bt3 | | | | | | | | | 54 | | | | 14 | 7 | 17 | 2 | | 4 | 1 |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Faywood, silt loam

**Pedon #:** S97KY-015-005-(1-4)

**Classification:** Fine, mixed, active, mesic Typic Hapludalfs

**Location:** Boone County, KY. Ron and Greg Vest's farm.

**Parent Material:** Residuum (limestone inter-bedded with calcareous shale)

**Vegetation:** Pasture

**Landscape Position:** Backslope

**Drainage:** Well-drained

**Moisture when sampled:** Moist

**Permeability:** Moderately slow

**Slope:** 12 to 20% (14%)

**Described by:** Jutta R.V. Pils

Ap—0 to 20 cm: Dark yellowish brown (10YR 4/4) silt loam; moderate granular structure; friable; redox concentrations (Mn, Fe); clear boundary.

$Bt_1$—20 to 41 cm: Yellowish brown (10YR 5/6) silt loam; moderate sub-angular blocky structure; friable; redox concentrations (Mn, Fe); clear boundary.

$Bt_2$—41 to 52 cm: Dark yellowish brown (10YR 4/4) silty clay loam; moderate sub-angular blocky structure; firm; 15% SS; clear boundary.

$Bt_3$—52 to 72+ cm: Yellowish brown (10YR 5/6) silty clay loam; moderate sub-angular blocky structure; firm; 5% SS.

R—72+ cm.

**SOIL TYPE.....FAYWOOD** **PEDON # .....S97KY-015-05-(1-4)**
**LOCATION .....BOONE COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-20 | Ap | 11.1 | 79.8 | 9.1 | 1.5 | 2.5 | 2.4 | 2.1 | 2.6 | | | | | | | sil | | | |
| 20-41 | $Bt_1$ | 6.3 | 68.5 | 25.2 | 0.8 | 0.8 | 0.7 | 1.1 | 2.9 | | | | | | | sil | | | |
| 41-52 | $Bt_2$ | 6.5 | 64.7 | 28.8 | 1.0 | 0.6 | 0.6 | 1.1 | 3.1 | | | | | | | sicl | | | |
| 52-72+ | $Bt_3$ | 7.4 | 55.4 | 37.2 | 0.9 | 0.8 | 0.9 | 1.2 | 3.6 | | | | | | | sicl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-20 | 5.1 | | 6.1 | 3.29 | 0.60 | 0.24 | 0.07 | 4.2 | 13.23 | 31.7 | | | 13.95 | | | 0.6 | 1.95 | 196 | 53 |
| 20-41 | 4.9 | | 5.2 | 6.06 | 0.64 | 0.23 | 0.07 | 7.0 | 20.58 | 34.1 | | | 18.91 | | | 0.09 | 0.59 | 192 | 107 |
| 41-52 | 5.2 | | 5.8 | 14.94 | 1.00 | 0.25 | 0.10 | 16.32 | 7.93 | 58.5 | | | 15.93 | | | 0.11 | 0.38 | 220 | 213 |
| 52-72+ | 6.1 | | 6.8 | 19.53 | 0.80 | 0.18 | 0.14 | 20.65 | 11.17 | 127.7 | | | 8.32 | | | 0.17 | 0.36 | 160 | 98 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V/SM | HIV/H | CL | INT | K | MI | Q | GI | GO | F |
| Ap | | | | | | | | | | | 58 | | | 13 | 12 | 10 | | 2 | 4 |
| Bt2 | | | | | | | | | | | 40 | | 19 | 12 | 17 | 6 | | 2 | 4 |
| Bt3 | | | | | | | | | | 69 | | | | 4 | 21 | 2 | | 1 | 3 |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

## Faywood, silty clay loam

**Pedon #:** S98KY-015-007-(1-5)

**Classification:** Fine, mixed, active, mesic Typic Hapludalfs

**Location:** Boone County, KY., Davis farm.

**Parent Material:** Residuum (loess over glacial till)

**Vegetation:** Pasture

**Landscape Position:** Backslope

**Drainage:** Well drained

**Moisture when sampled:** Moist

**Permeability:** Moderate slow to slow

**Slope:** 12 to 20% (14%)

**Described by:** Jutta R.V. Pils

Ap—0 to 11 cm: Dark yellowish brown (10YR 4/4) silty clay loam; weak granular structure; friable; clear boundary.

$Bt_1$—11 to 25 cm: Yellowish brown (10YR 5/4) silty clay; weak subangular blocky structure; firm; gradual boundary.

$Bt_2$—25 to 42 cm: Light olive brown (2.5Y 5/4) silty clay; few dark brown (10YR 3/3) mottles; moderate subangular blocky structure; very firm; gradual boundary.

C—42 to 60 cm: Light olive brown (2.5Y 5/4) silty clay loam; many dark yellowish brown (10YR 4/6) and few light brownish gray (2.5YR 6/2) depletions; moderate subangular blocky structure; very firm; gradual boundary.

R—60+ cm.

**SOIL TYPE.....FAYWOOD** **PEDON # .....S98KY-015-07-(1-4)**
**LOCATION .....BOONE COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-11 | Ap | 13.4 | 57.2 | 29.4 | 0.6 | 3.4 | 3.5 | 3.2 | 2.7 | | | | | | | sicl | | | |
| 11-25 | Bt1 | 5.9 | 43.6 | 50.5 | 0.5 | 0.7 | 1.2 | 1.6 | 1.9 | | | | | | | sic | | | |
| 25-42 | Bt2 | 10.8 | 45.4 | 43.8 | 2.8 | 2.1 | 1.5 | 2.0 | 2.4 | | | | | | | sic | | | |
| 42-60 | C | 15.7 | 43.0 | 41.3 | 4.8 | 3.6 | 2.7 | 2.5 | 2.1 | | | | | | | sicl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-11 | 5.7 | | 6.4 | 14.71 | 1.13 | 0.26 | 0.07 | 16.17 | 25 | 64.7 | | | 12.14 | | | 0.09 | 4.16 | 186 | 75 |
| 11-25 | 6.8 | | 6.9 | 27.29 | 0.86 | 0.25 | 0.07 | 28.41 | 22.06 | 129.1 | | | 6.62 | | | 5.24 | 1.48 | 206 | 69 |
| 25-42 | 7.8 | | | 32.35 | 0.56 | 0.21 | 0.12 | 33.24 | 13.24 | 251.1 | | | 2.74 | | | 7.07 | 2.05 | 186 | 37 |
| 42-60 | 8.2 | | | 27.84 | 0.34 | 0.12 | 0.07 | 28.37 | 9.56 | 296.7 | | | 3.03 | | | 12.86 | 4.44 | 130 | 15 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | | Clay | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV/HSM | CL | INT | K | MI | Q | GI | GO | F |
| Ap | | | | | | | | | | 47 | | | 22 | 8 | 18 | 5 | | | |
| Bt2 | | | | | | | | | | | 58 | | 11 | 5 | 21 | 1 | | | 4 |
| C | | | | | | | | | | 65 | | | | 6 | 25 | 5 | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Grenada, silt loam (Taxadjunct)

**Pedon #:** 94KY-035-2-7-(1-5)

**Classification:** Fine-silty, mixed, active, thermic Aquic Fragiudults

**Location:** Calloway Co., north of Murray, KY and south of Almo Heights on the Howell Bucy farm.

**Parent Material:** Loess

**Vegetation:** Woods

**Landscape Position:** Terrace

**Drainage:**

**Moisture when sampled:** Moist

**Sampling Date:** 6/22/1994

**Permeability:**

**Slope:** 1 to 2%

**Described by:** A.D. Karathanasis, S. Sykes, and R. Forsythe

A—0 to 6 in.; Brown (10YR 4/3) silt loam; weak fine granular structure; very friable; many fine and medium roots; clear smooth boundary.

BE—6 to 19 in.; Brown (7.5 YR 4/4) silt loam; moderate medium subangular blocky structure; firm; few fine roots; few fine black concretions; clear smooth boundary.

Bt—19 to 27 in.; Dark yellowish brown (10YR 4/4) silt loam; few fine faint strong brown (7.5YR 5/6), light brownish gray (10YR 6/2), and pale brown (10YR 6/3) mottles; moderate medium subangular blocky; firm; few fine roots; few black concretions and stains; clear smooth boundary.

Btx1—27 to 48 in.; Dark yellowish brown (10YR 4/4) silt loam; common fine distinct strong brown (7.5YR 5/6) and grayish brown (10YR 5/2) mottles; weak coarse prismatic parting to moderate medium subangular blocky structure; very firm; few fine roots; small black and brown concretions; pockets of grayish brown (10YR 5/2) silty clay loam between prism faces; clear smooth boundary.

Btx2—48 to 60 cm.; Brown (7.5YR 4/3) silt loam; common medium distinct strong brown (7.5YR 5/6), yellowish brown (10YR 5/6), and grayish brown (10YR 5/2) mottles; moderate coarse prismatic structure; very firm; few fine roots; pockets of grayish brown (10YR 5/2) silty clay loam between prism faces.

**SOIL TYPE** ..... **GRENADA (TAXADJUNCT)** **PEDON #** ..... **94KY-035-02-07-(1-5)**
**LOCATION** ..... **CALLOWAY COUNTY, KENTUCKY** **GENERAL METHODS** ..... **1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-6 | A | 14.8 | 71.8 | 13.4 | 0.9 | 2.2 | 3.8 | 3.6 | 4.3 | | | | | | | sil | | | |
| 6-19 | BE | 10.4 | 76.8 | 12.8 | 1.2 | 1.6 | 3.0 | 2.6 | 2.0 | | | | | | | sil | | | |
| 19-27 | Bt | 9.5 | 75.2 | 15.3 | 1.7 | 2.5 | 2.8 | 1.5 | 1.0 | | | | | | | sil | | | |
| 27-48 | Btx1 | 4.3 | 68.5 | 27.2 | 0.3 | 1.0 | 1.2 | 0.7 | 1.1 | | | | | | | sil/sicl | | | |
| 48-60 | Btx2 | 8.3 | 72.2 | 19.5 | 0.2 | 1.1 | 3.2 | 1.8 | 2.0 | | | | | | | sil | | | |
| | pH | | | Exchangeable Bases (5A1) | | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-6 | 5.53 | | 6.39 | 2.42 | 0.26 | 0.08 | 0.07 | 2.83 | 8.65 | 33 | 23 | | 9.51 | 12.34 | | 0.17 | 3.33 | 40 | 5.5 |
| 6-19 | 5.25 | | 6.19 | 1.20 | 0.13 | 0.05 | 0.07 | 1.45 | 7.30 | 20 | 14 | | 8.92 | 10.37 | | 0.20 | 1.88 | 27 | 7.5 |
| 19-27 | 5.11 | | 6.05 | 0.76 | 0.40 | 0.07 | 0.14 | 1.37 | 7.45 | 18 | 15 | | 7.54 | 8.91 | | 0.30 | 0.20 | 39 | 7.5 |
| 27-48 | 4.92 | | 4.72 | 0.70 | 2.19 | 0.13 | 0.78 | 3.80 | 14.39 | 26 | 23 | | 12.80 | 16.60 | | 0.14 | 0.18 | 84 | 4 |
| 48-60 | 5.06 | | 5.82 | 0.66 | 2.39 | 0.09 | 0.87 | 4.01 | 12.61 | 32 | 29 | | 9.80 | 13.81 | | 0.30 | 0.41 | 57 | 17.5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| Bw | 87 | 13 | | | | | | | | | | | | | | | | | |
| Bt | 76 | 24 | | | | | | | | | | | | | | | | | |
| Btx1 | 70 | 30 | | | | | | | | | | | | | | | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Grenada, silt loam (Taxadjunct)

**Pedon #:** 94KY-035-4-6-(1-6)

**Classification:** Fine-silty, mixed, active, thermic Aquic Fragiudults

**Location:** Calloway Co., southwest of Murray, KY on the Jones Parker farm at the end of Sage Rd. in the Edgehill community.

**Parent Material:** Loess/coastal plain

**Vegetation:** Upland hardwoods

**Landscape Position:**

**Drainage:** Moderately well

**Moisture when sampled:**

**Sampling Date:** 6/21/1994

**Permeability:** Moderate

**Slope:** 8%

**Described by:** A.D. Karathanasis, R. Forsythe, R. Toor, and J. McIntosh

A—0 to 7 in.; Dark grayish brown (10YR 4/2) silt loam; weak fine granular structure; very friable; gradual smooth boundary.

Bt1—7 to 19 in.; Dark brown (7.5YR 4/4) silt loam; few fine faint brown (10YR 4/3) mottles; weak subangular blocky structure; friable; few fine roots; worm holes; clear smooth boundary.

Bt2—19 to 32 in.; Dark brown (7.5YR 4/4) silt loam; few fine prominent light yellowish brown (10YR 6/4) mottles; moderate medium subangular blocky; few fine roots; few Mn stains; firm; clear smooth boundary.

Btx—32 to 43 in,; Brown (7.5YR 4/4 ) and strong brown (7.5YR 5/6) silt loam; oxidized rhizosphere; common medium distinct light yellowish brown (10YR 6/4) and light brownish gray (10YR 6/2) mottles; weak coarse prismatic parting to moderate medium subangular blocky structure; firm; weak pan with discontinuous grayish brown (2.5Y 5/2) clay films; gradual wavy boundary.

Btxg—43 to 60 in.; Grayish brown (10YR 5/2) silt loam; many fine prominent strong brown (7.5YR 5/6) and few fine faint light gray (10YR 7/1) mottles; weak coarse prismatic parting to moderate medium subangular blocky structure; very firm; weak pan with discontinuous grayish brown (2.5Y 5/2) clay film; gradual wavy boundary.

2Btx—60 to 65+ in.; Yellowish red (5YR 4/6), brown (10YR 5/3) and strong brown (7.5YR 5/6) loam; common medium distinct yellowish brown (10YR 5/8) mottles; weak coarse prismatic structure; very firm.

**SOIL TYPE..... GRENADA (TAXADJUNCT)** **PEDON # ..... 94KY-035-04-06-(1-6)**
**LOCATION ..... CALLOWAY COUNTY, KENTUCKY** **GENERAL METHODS ..... 1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-7 | A | 16.6 | 71.2 | 12.2 | 0.6 | 3.4 | 6.4 | 4.6 | 1.6 | | | | | | | sil | | | |
| 7-19 | Bt1 | 7.6 | 74.7 | 17.7 | 0.1 | 0.5 | 3.2 | 2.8 | 1.0 | | | | | | | sil | | | |
| 19-32 | Bt2 | 6.5 | 71.3 | 22.2 | 0 | 0.5 | 2.7 | 2.5 | 0.8 | | | | | | | sil | | | |
| 32-43 | Btx | 13.5 | 63.4 | 23.1 | 0.1 | 1.4 | 6.0 | 5.0 | 1.0 | | | | | | | sil | | | |
| 43-60 | Btxg | 19.1 | 55.5 | 25.4 | 0.2 | 1.3 | 8.8 | 7.4 | 1.4 | | | | | | | sil/sicl | | | |
| 60-65+ | 2Btx | 45.8 | 26.4 | 27.8 | 0.1 | 3.2 | 21.1 | 19.1 | 2.3 | | | | | | | cl/scl/l | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-7 | 5.04 | | 6.29 | 1.93 | 0.64 | 0.19 | 0.03 | 2.79 | 15.56 | 18 | 19 | | 11.88 | 14.67 | | | 6.86 | 96.5 | 10 |
| 7-19 | 5.18 | | 6.62 | 1.06 | 0.42 | 0.08 | 0.05 | 1.61 | 11.01 | 15 | 23 | | 5.39 | 7.00 | | | 1.07 | 45.5 | 4.5 |
| 19-32 | 5.07 | | 6.04 | 0.53 | 1.51 | 0.14 | 0.08 | 2.26 | 12.97 | 17 | 20 | | 9.08 | 11.34 | | | 0.68 | 83 | 3 |
| 32-43 | 4.98 | | 5.57 | 0.39 | 1.53 | 0.12 | 0.11 | 2.15 | 15.18 | 14 | 16 | | 11.22 | 13.37 | | | 0.43 | 76.5 | 3.5 |
| 43-60 | 4.87 | | 5.11 | 0.88 | 2.99 | 0.14 | 0.28 | 4.29 | 18.64 | 23 | 26 | | 12.32 | 16.61 | | | 0.41 | 92 | 3.5 |
| 60-65+ | 4.89 | | 5.73 | 5.95 | 2.49 | 0.08 | 0.35 | 8.87 | 16.25 | 55 | 53 | | 7.76 | 16.63 | | | 0.29 | 52.5 | 3.5 |
| | Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals

# Henry, silt loam (Taxadjunct)

**Pedon #:** S92KY-035-3-1-(1-4)

**Classification:** Fine-silty, mixed, acid, superactive, thermic Typic Fragiaqualfs

**Location:** Calloway Co., south of Murray, KY on the Crawford McNeely farm, located due north of Providence Church and west of KY Hwy 893.

**Parent Material:**

**Vegetation:**

**Landscape Position:**

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 4/14/1992

**Permeability:**

**Slope:**

**Described by:** A.D. Karathanasis, R. Forsythe, R. Toor, and A. Seta

A—0 to 12 cm.; Yellowish brown (10YR 5/4) silt loam; weak fine granular structure; common roots.

Btg1—12 to 32 cm.; Light brownish gray (10YR 6/2) silty clay loam; weak fine subangular blocky parting to fine granular structure; few fine roots; clear smooth boundary.

Btg2—32 to 57 cm.; Light brownish gray (2.5Y 6/2) silty clay loam; common medium distinct yellowish brown (10YR 5/6 and 6/4) mottles; weak subangular blocky structure; few fine roots; gradual smooth boundary.

Bxg—57 to 103 cm.; Light brownish gray (10YR 6/2) silt loam; common medium prominent dark brown (7.5YR 4/4) and strong brown (7.5YR 5/8) and common medium distinct yellowish brown (10YR 5/8 and 6/4) mottles; clear smooth boundary.

**SOIL TYPE.....HENRY (TAXADJUNCT)** **PEDON # ..... S92KY-035-03-01-(1-4)**
**LOCATION .....CALLOWAY COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-12 | A | 10.4 | 78.8 | 10.8 | 1.1 | 2.9 | 2.8 | 2.0 | 1.6 | | | | | | | sil/si | | | |
| 12-32 | Btg1 | 3.5 | 67.3 | 29.2 | 0 | 0.1 | 0.5 | 0.6 | 2.3 | | | | | | | sicl | | | |
| 32-57 | Btg2 | 1.7 | 64.5 | 33.8 | 0 | 0.1 | 0.2 | 0.2 | 1.2 | | | | | | | sicl | | | |
| 57-103 | Bxg | 2.8 | 76.0 | 21.2 | 0 | 0.1 | 0.4 | 0.5 | 1.8 | | | | | | | sil | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-12 | 4.63 | | 5.65 | 1.63 | 0.49 | 0.30 | 0.42 | 2.84 | 13.56 | 21 | 16 | | 14.50 | 17.34 | | 0.60 | 6.53 | 127.5 | 18.5 |
| 12-32 | 4.24 | | 4.73 | 0.71 | 0.64 | 0.22 | 0.32 | 1.89 | 14.49 | 13 | 14 | | 11.70 | 13.59 | | 0.63 | 1.68 | 109 | 3 |
| 32-57 | 4.28 | | 4.53 | 1.41 | 3.66 | 0.28 | 0.88 | 6.23 | 22.20 | 28 | 27 | | 17.09 | 23.32 | | 0.63 | 1.19 | 125.5 | 9 |
| 57-103 | 4.59 | | 5.13 | 2.02 | 3.95 | 0.18 | 1.68 | 7.83 | 17.24 | 45 | 41 | | 11.40 | 19.23 | | 0.44 | 1.23 | 91.5 | 74.5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Henry, silt loam (Taxadjunct)

**Pedon #:** S 92KY-035-3-2-(1-4)

**Classification:** Fine-silty, mixed, acid, active, thermic Typic Fragiaqualfs

**Location:** Calloway Co., south of Murray, KY on the Crawford McNeely farm, located due north of Providence Church and west of KY Hwy 893.

**Parent Material:**

**Vegetation:**

**Landscape Position:**

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 4/14/1992

**Permeability:**

**Slope:** 0 to 2%

**Described by:** A.D. Karathanasis, R. Forsythe, R. Toor, and A. Seta

A—0 to 14 cm.; Dark brown (10YR 4/3) silt loam; moderate granular structure; few fine roots.

BE—14 to 32 cm.; Light brownish gray (10YR 6/2) silt loam; weak to moderate subangular blocky structure; few fine roots; clear smooth boundary.

Btg—32 to 57 cm.; Light brownish gray (2.5Y 6/2) silt loam; common medium distinct brownish yellow (10YR 6/6) mottles; weak to moderate subangular blocky structure; few fine roots; gradual smooth boundary.

Btxg—57 to 110 cm.; Grayish brown (10YR 5/2) and light gray (10YR 7/1) silt loam ; common medium prominent strong brown (7.5YR 5/6) and dark brown (7.5YR 4/4) mottles; weak to moderate subangular blocky structure.

**SOIL TYPE.....HENRY (TAXADJUNCT)** **PEDON # ..... S92KY-035-03-02-(1-4)**
**LOCATION .....CALLOWAY COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-14 | A | 8.8 | 78.8 | 12.4 | 0 | 0.7 | 2.6 | 2.9 | 2.6 | | | | | | | si/sil | | | |
| 14-32 | BE | 4.4 | 81.4 | 14.2 | 0 | 0.3 | 1.5 | 1.4 | 1.2 | | | | | | | sil/si | | | |
| 32-57 | Btg | 2.2 | 68.0 | 29.8 | 0 | 0.2 | 0.4 | 0.5 | 1.1 | | | | | | | sicl | | | |
| 57-110 (upper) | Btxg | 2.4 | 70.0 | 27.6 | 0 | 0.1 | 0.4 | 0.5 | 1.4 | | | | | | | sicl/sil | | | |
| 57-110 (lower) | Btxg | 2.8 | 72.0 | 25.2 | 0 | 0.1 | 0.4 | 0.6 | 1.7 | | | | | | | sil | | | |

| | pH | | | Exchangeable Bases (5A1) | | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/ 100gm | 602z Mg meq/ 100gm | 602z K meq/ 100gm | 6P2z Na meq/ 100gm | 5B1a TEB meq/ 100gm | 5A1z CEC meq/ 100gm | 5C1 Pct | 5C3 Pct | H+Al meq/ 100 gm | EA meq/ 100gm | SC meq/ 100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-14 | 4.61 | | 5.82 | 1.20 | 0.43 | 0.22 | 0.30 | 2.15 | 9.67 | 22 | 14 | | 12.96 | 15.11 | | 0.64 | 5.52 | 95 | 18.5 |
| 14-32 | 4.29 | | 5.58 | 0.28 | 0.27 | 0.12 | 0.27 | 0.94 | 7.74 | 12 | 9 | | 9.52 | 10.46 | | 0.38 | 1.47 | 54 | 8.5 |
| 32-57 | 4.24 | | 4.66 | 1.01 | 1.70 | 0.18 | 0.77 | 3.66 | 16.09 | 23 | 21 | | 13.43 | 17.09 | | 0.53 | 1.01 | 76.5 | 2 |
| 57-110 (upper) | 4.49 | | 5.31 | 1.71 | 2.76 | 0.17 | 2.09 | 6.73 | 15.64 | 43 | 39 | | 10.54 | 17.27 | | 0.43 | 1.03 | 68.5 | 11.5 |
| 57-110 (lower) | 4.58 | | 5.74 | 2.06 | 3.07 | 0.19 | 4.00 | 9.32 | 15.22 | 61 | 51 | | 9.03 | 18.35 | | 0.64 | 0.90 | 79 | 38 |

| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Henry, silt loam (Taxadjunct)

**Pedon #:** S92KY-035-3-3-(1-5)

**Classification:** Fine-silty, mixed, active, thermic Typic Fragiaqualfs

**Location:** Calloway Co., south of Murray, KY on the Crawford McNeely farm, located due north of Providence Church and west of KY Hwy 893.

**Parent Material:**

**Vegetation:**

**Landscape Position:**

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 4/14/1992

**Permeability:**

**Slope:**

**Described by:** A.D. Karathanasis, R. Forsythe, R. Toor, and A. Seta

A—0 to 13 cm.; Dark brown (10YR 3/3) and yellowish brown (10YR 5/4) silt loam; few fine roots.

BE—13 to 40 cm.; Light brownish gray (10YR 6/2) silt loam; common medium distinct brownish yellow (10YR 6/6) and yellowish brown (10YR 5/6) mottles; weak fine subangular blocky structure; few fine roots; clear smooth boundary.

Btg1—40 to 58 cm.; Light brownish gray (10YR 6/2) silty clay loam; common medium prominent strong brown (7.5YR 5/6) mottles; weak fine subangular blocky structure; few fine roots; gradual smooth boundary.

Btg2—58 to 77 cm.; Light brownish gray ( 10YR 6/2) silty clay loam; few medium distinct yellowish brown (10YR 5/6) mottles; moderate fine subangular blocky structure; gradual smooth boundary.

Bxg—77 to 110 cm.; Light brownish gray (10YR 6/2) and pale brown (10YR 6/3) silt loam; common medium prominent strong brown (7.5YR 5/6, 5/8) mottles; coarse and medium subangular blocky structure.

**SOIL TYPE.....HENRY (TAXADJUNCT)** **PEDON # ..... S92KY-035-03-03-(1-5)**
**LOCATION .....CALLOWAY COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand | VFS Plus | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Coarser Than VF (2-0.1) | Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-13 | A | 9.5 | 74.9 | 15.6 | 0 | 0.7 | 2.8 | 3.2 | 2.8 | | | | | | | sil | | | |
| 13-40 | BE | 3.5 | 80.7 | 15.8 | 0 | 0.3 | 1.2 | 1.0 | 1.0 | | | | | | | sil | | | |
| 40-58 | Btg1 | 1.7 | 68.5 | 29.8 | 0 | 0.2 | 0.4 | 0.4 | 0.7 | | | | | | | sicl | | | |
| 58-77 | Btg2 | 2.1 | 67.5 | 30.4 | 0 | 0.1 | 0.4 | 0.4 | 1.2 | | | | | | | sicl | | | |
| 77-110 | Bxg | 1.5 | 69.8 | 28.7 | 0 | 0 | 0.2 | 0.3 | 1.0 | | | | | | | sicl/sil | | | |
| | | pH | | Exchangeable Bases (5A1) | | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-13 | 4.46 | | 5.34 | 1.51 | 0.44 | 0.26 | 0.09 | 2.30 | 16.69 | 14 | 14 | | 14.66 | 16.96 | | 0.16 | 9.83 | 86.5 | 48 |
| 13-40 | 4.16 | | 5.15 | 0.16 | 0.13 | 0.11 | 0.05 | 0.45 | 9.30 | 5 | 4 | | 10.74 | 11.19 | | 0.11 | 1.23 | 44 | 7 |
| 40-58 | 4.39 | | 4.59 | 0.43 | 1.09 | 0.17 | 0.55 | 2.24 | 15.95 | 14 | 12 | | 16.58 | 18.82 | | 0.08 | 0.71 | 68.5 | 2.5 |
| 58-77 | 4.47 | | 4.69 | 0.68 | 2.21 | 0.16 | 1.45 | 4.50 | 16.22 | 28 | 23 | | 14.83 | 19.33 | | 0.09 | 0.65 | 71 | 3.5 |
| 77-110 | 4.57 | | 4.83 | 1.54 | 3.46 | 0.25 | 3.38 | 8.63 | 17.97 | 48 | 38 | | 14.07 | 22.70 | | 0.06 | 0.30 | 97 | 31 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Henry, silt loam (Taxadjunct)

**Pedon #:** S92KY-035-4-1-(1-5)

**Classification:** Fine-silty, mixed, superactive, thermic Typic Fragiaquults

**Location:** Calloway Co., southwest of Murray, KY on the Jones Parker farm at the end of Sage Rd. in the Edgehill community.

**Parent Material:**

**Vegetation:**

**Landscape Position:**

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 4/15/1992

**Permeability:**

**Slope:**

**Described by:** A.D. Karathanasis, R. Forsythe, R. Toor, and A. Seta

Ag—0 to 9 cm.; Dark grayish brown (10YR 4/2) and light brownish gray (10YR 6/2) silt loam; common medium distinct yellowish brown (10YR 5/6) mottles; common medium and fine roots.

BE—9 to 34 cm.; Light brownish gray (10YR 6/2) and light gray (10YR 6/1) silt loam; common medium distinct brownish yellow (10YR 6/6) mottles; weak subangular blocky structure; few fine roots.

Btg1—34 to 55 cm.; Light gray (10YR 7/2) silt loam; common medium distinct brownish yellow (10YR 6/6) mottles; weak subangular blocky structure; few fine roots.

Btg2—55 to 93 cm.; Light brownish gray (10YR 6/2) silty clay loam; common medium distinct gray (2.5N N/5) and yellowish brown (10YR 5/6) mottles; weak subangular blocky structure; few fine roots.

Btxg—93 to 120 cm.; Light brownish gray (10YR 6/2) silt loam; common medium prominent reddish yellow (7.5YR 6/6) and light gray (10YR 7/1) mottles; weak prismatic structure.

**SOIL TYPE.....HENRY (TAXADJUNCT)** **PEDON # ..... S92KY-035-04-01-(1-5)**
**LOCATION .....CALLOWAY COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand | VFS Plus | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Coarser Than VF (2-0.1) | Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-9 | Ag | 6.6 | 76.2 | 17.2 | 0 | 0.6 | 2.1 | 2.1 | 1.8 | | | | | | | sil | | | |
| 9-34 | BE | 4.9 | 79.4 | 15.7 | 0 | 0.2 | 1.4 | 1.9 | 1.4 | | | | | | | sil | | | |
| 34-55 | Btg1 | 3.6 | 70.7 | 25.7 | 0 | 0.1 | 0.9 | 1.3 | 1.3 | | | | | | | sil | | | |
| 55-93 | Btg2 | 3.4 | 61.5 | 35.1 | 0 | 0.1 | 0.8 | 1.1 | 1.4 | | | | | | | sicl | | | |
| 93-120 | Btxg | 3.4 | 68.7 | 27.9 | 0 | 0.1 | 0.6 | 1.0 | 1.7 | | | | | | | sicl/sil | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/ 100gm | 602z Mg meq/ 100gm | 602z K meq/ 100gm | 6P2z Na meq/ 100gm | 5B1a TEB meq/ 100gm | 5A1z CEC meq/ 100gm | 5C1 Pct | 5C3 Pct | H+Al meq/ 100 gm | EA meq/ 100gm | SC meq/ 100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-9 | 4.39 | | 5.53 | 0.63 | 0.66 | 0.16 | 0.43 | 1.88 | 11.07 | 17 | 9 | | 19.64 | 21.52 | | 0.14 | 4.60 | 63.5 | 6.5 |
| 9-34 | 4.47 | | 5.45 | 0.33 | 0.73 | 0.09 | 0.39 | 1.54 | 9.55 | 16 | 8 | | 17.08 | 18.62 | | 0.10 | 1.29 | 34.5 | 3 |
| 34-55 | 4.48 | | 4.80 | 1.67 | 2.32 | 0.16 | 0.81 | 4.96 | 15.68 | 32 | 20 | | 19.56 | 24.52 | | 0.13 | 0.65 | 65 | 2 |
| 55-93 | 4.40 | | 4.55 | 2.68 | 3.68 | 0.23 | 1.59 | 8.18 | 21.88 | 38 | 25 | | 23.91 | 32.09 | | 0.17 | 0.41 | 89 | 3 |
| 93-120 | 4.44 | | 4.97 | 2.65 | 4.42 | 0.23 | 2.87 | 10.17 | 19.14 | 53 | 47 | | 11.31 | 21.48 | | 0.20 | 0.63 | 87.5 | 15 |
| | Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Henry, silt loam (Taxadjunct)

**Pedon #:** S92KY-035-4-2-(1-5)

**Classification:** Fine-silty, mixed, active, thermic Typic Epiaquults

**Location:** Calloway Co., southwest of Murray, KY on the Jones Parker farm at the end of Sage Rd. in the Edgehill community.

**Parent Material:**

**Vegetation:**

**Landscape Position:**

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 4/15/1992

**Permeability:**

**Slope:** 0 to 2%

**Described by:** A.D. Karathanasis, R. Forsythe, R. Toor, and A. Seta

A—0 to 10 cm.; Pale brown (10YR 6/3) and grayish brown (10YR 5/2) silt loam; common fine and medium roots; weak granular structure.

BE—10 to 33 cm.; Light brownish gray (10YR 6/2) silt loam; common medium distinct brownish yellow (10YR 6/6) and light gray (2.5Y 7/2) mottles; weak medium subangular blocky structure; few fine and medium roots.

Btg1—33 to 50 cm.; Light brownish gray (10YR 6/2) silty clay loam; common medium distinct yellow (10YR 7/6) and common medium prominent strong brown (7.5YR 5/6) mottles; weak fine subangular blocky structure; few fine roots.

Btg2—50 to 109 cm.; Grayish brown (10YR 5/2) and light gray (10YR 7/2) silty clay loam; common medium distinct yellowish brown (10YR 5/6) mottles; few fine roots; weak fine subangular blocky structure.

Btxg—109 to 120 cm.; Light brownish gray (10YR 6/2) silt loam; common medium distinct brownish yellow (10YR 6/6) mottles; weak fine subangular blocky structure.

**SOIL TYPE.....HENRY (TAXADJUNCT)** **PEDON # ..... S92KY-035-4-2-(1-5)**
**LOCATION .....CALLOWAY COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-10 | A | 12.6 | 75.4 | 12.0 | 0 | 1.3 | 3.7 | 3.4 | 4.2 | | | | | | | sil | | | |
| 10-33 | BE | 5.3 | 81.5 | 13.2 | 0 | 0.2 | 1.2 | 1.8 | 2.1 | | | | | | | sil/si | | | |
| 33-50 | Btg1 | 4.7 | 65.5 | 29.8 | 0 | 0 | 0.6 | 1.1 | 3.0 | | | | | | | sicl | | | |
| 50-109 (upper) | Btg2 | 4.3 | 75.0 | 20.7 | 0 | 0.1 | 1.2 | 1.7 | 1.3 | | | | | | | sil | | | |
| 50-109 (lower) | Btg2 | 1.5 | 59.0 | 39.5 | 0 | 0 | 0.4 | 0.5 | 0.6 | | | | | | | sicl/sic | | | |
| 109-120 | Btxg | 2.2 | 69.1 | 28.7 | 0 | 0 | 0.4 | 0.8 | 1.0 | | | | | | | sicl/sil | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-10 | 4.73 | | 5.64 | 0.51 | 0.36 | 0.21 | 0.88 | 1.96 | 10.40 | 19 | 9 | | 18.95 | 20.91 | | 0.20 | 4.58 | 83 | 5.5 |
| 10-33 | 4.60 | | 5.64 | 0.16 | 0.24 | 0.09 | 0.20 | 0.69 | 8.33 | 8 | 4 | | 16.01 | 16.70 | | 0.18 | 0.91 | 36.5 | 3 |
| 33-50 | 4.49 | | 4.65 | 0.44 | 1.71 | 0.16 | 0.23 | 2.54 | 13.67 | 18 | 11 | | 21.65 | 24.19 | | 0.15 | 0.43 | 66.5 | 2 |
| 50-109 (upper) | 4.58 | | 4.73 | 0.67 | 1.63 | 0.14 | 0.51 | 2.95 | 3.17 | 93 | 13 | | 20.61 | 23.56 | | 0.15 | 0.24 | 62 | 3 |
| 50-109 (lower) | 4.29 | | 4.31 | 1.31 | 4.74 | 0.29 | 0.98 | 7.32 | 24.92 | 29 | 21 | | 27.60 | 34.92 | | 0.16 | 0.58 | 114 | 3 |
| 109-120 | 4.37 | | 4.74 | 2.10 | 4.95 | 0.25 | 1.60 | 8.90 | 20.94 | 42 | 29 | | 21.32 | 30.22 | | 0.17 | 0.21 | 106.5 | 7.5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals

# Henry, silt loam (Taxadjunct)

**Pedon #:** 92KY-035-4-3-(1-4)

**Classification:** Fine-silty, mixed, active, thermic Typic Fragiaquults

**Location:** Calloway Co., southwest of Murray, KY on the Jones Parker farm at the end of Sage Rd. in the Edgehill community.

**Parent Material:**

**Vegetation:**

**Landscape Position:**

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 4/15/1992

**Permeability:**

**Slope:**

**Described by:** A.D. Karathanasis, R. Forsythe, R. Toor, and A. Seta

Ag—0 to 10 cm.; Grayish brown (10YR 5/2) and pale brown (10YR 6/3) silt loam; common fine and medium roots; moderate fine granular structure.

BE—10 to 28 cm.; Light brownish gray (10YR 6/2) and light gray (2.5Y 7/2) silt loam; common medium distinct yellowish brown (10YR 5/6) and common medium prominent strong brown (7.5YR 5/6) mottles; few fine and medium roots; weak subangular blocky structure.

Btg—28 to 79 cm.; Light brownish gray (10YR 6/2) silty clay loam; common medium distinct yellowish brown (10YR 5/6) mottles; few fine roots; weak subangular blocky structure.

Btxg—79 to 110 cm.; Light brownish gray (10YR 6/2) silt loam; common medium distinct yellowish brown (10YR 5/6) mottles; prismatic structure.

**SOIL .....HENRY (TAXADJUNCT)** **PEDON # ..... S92KY-035-04-03-(1-4)**
**LOCATION .....CALLOWAY COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand | VFS Plus | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Coarser Than VF (2-0.1) | Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-10 | Ag | 9.5 | 77.4 | 13.1 | 0.2 | 0.8 | 2.6 | 3.5 | 2.4 | | | | | | | sil | | | |
| 10-28 | BE | 6.3 | 79.9 | 13.8 | 0.1 | 0.7 | 1.9 | 2.3 | 1.3 | | | | | | | sil/si | | | |
| 28-47 | Btg (upper) | 2.9 | 60.5 | 36.6 | 0.1 | 0.2 | 0.6 | 0.8 | 1.2 | | | | | | | sicl | | | |
| 47-79 | Btg (lower) | 2.4 | 67.0 | 30.6 | 0.2 | 0.3 | 0.7 | 0.8 | 0.4 | | | | | | | sicl | | | |
| 79-110 | Btxg | | | | | | | | | | | | | | | | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-10 | 4.64 | | 5.65 | 0.29 | 0.29 | 0.18 | 0.22 | 0.98 | 11.91 | 8 | 8 | | 11.49 | 12.47 | | 0.14 | 3.23 | 75.5 | 3.5 |
| 10-28 | 4.59 | | 5.59 | 0.28 | 0.26 | 0.08 | 0.24 | 0.86 | 10.02 | 9 | 5 | | 16.77 | 17.63 | | 0.12 | 1.59 | 35.5 | 3 |
| 28-47 | 4.33 | | 4.37 | 0.73 | 3.19 | 0.23 | 0.65 | 4.80 | 22.94 | 21 | 16 | | 26.05 | 30.85 | | 0.18 | 0.90 | 92.5 | 1.5 |
| 47-79 | 4.50 | | 4.54 | 1.28 | 3.56 | 0.19 | 2.09 | 7.12 | 19.36 | 37 | 24 | | 22.49 | 29.61 | | 0.01 | 0.51 | 79 | 2.5 |
| 79-110 | 4.56 | | 4.71 | 1.95 | 4.76 | 0.27 | 3.43 | 10.41 | 21.63 | 48 | 42 | | 14.36 | 24.77 | | 0.16 | 0.66 | 110 | 11 |
| | | Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | |
| Horizon | | Sand + Silt | | | | | | | | Clay | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Henry, silt loam (Taxadjunct)

**Pedon #:** S92KY-035-5-1-(1-5)

**Classification:** Fine-silty, mixed, thermic Typic Epiaquults

**Location:** Calloway Co., southwest of Murray, KY on the Grundy Falwell farm on KY Hwy 893 north of New Providence.

**Parent Material:**

**Vegetation:**

**Landscape Position:**

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 5/11/1992

**Permeability:**

**Slope:** <2%

**Described by:** A.D. Karathanasis, R. Forsythe, R. Toor, and P. Prawito

Ap—0 to 8 cm.; Dark brown (10YR 4/3) silt loam; weak fine granular structure; many fine and medium roots; very friable; clear smooth boundary.

BE—8 to 24 cm.; Yellowish brown (10YR 5/4) silt loam; weak fine subangular blocky structure; friable; common fine roots; clear smooth boundary.

Btg1—24 to 52 cm.; Pale brown (10YR 6/3) and light gray (10YR 7/1) silt loam; weak fine to medium subangular blocky; few fine roots; friable; clear smooth boundary.

Btg2—52 to 88 cm.; Gray (10YR 6/1) silty clay loam; common medium distinct strong brown (7.5YR 5/6) and yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky and angular blocky structure; few fine roots; firm; clear smooth boundary.

Btg3—88 to 120+ cm.; Light brownish gray (10YR 6/2) silty clay loam; common medium distinct strong brown (7.5YR 5/6) mottles; few fine roots; moderate medium subangular blocky and angular blocky; firm.

**SOIL TYPE.....HENRY (TAXADJUNCT)** **PEDON # ..... S92KY-035-5-1-(1-5)**
**LOCATION .....CALLOWAY COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand | VFS Plus | | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Coarser Than VF (2-0.1) | Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-8 | Ap | 15.1 | 70.8 | 14.1 | 1.8 | 2.6 | 3.3 | 3.6 | 3.8 | | | | | | | sil | | | |
| 8-24 | BE | 6.5 | 78.3 | 15.2 | 0.2 | 0.6 | 1.5 | 2.2 | 2.0 | | | | | | | sil | | | |
| 24-52 | Btg1 | 4.8 | 76.5 | 18.7 | 0.3 | 0.4 | 0.9 | 1.6 | 1.6 | | | | | | | sil | | | |
| 52-88 | Btg2 | 4.5 | 61.8 | 33.7 | 0.4 | 0.6 | 0.7 | 1.2 | 1.6 | | | | | | | sicl | | | |
| 88-120+ | Btg3 | 3.1 | 63.5 | 33.4 | 0.2 | 0.3 | 0.3 | 0.8 | 1.5 | | | | | | | sicl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-8 | 4.37 | | 5.53 | 1.84 | 0.33 | 0.31 | 0.22 | 2.70 | 14.42 | 19 | 15 | | 15.24 | 17.94 | | 0.16 | 7.93 | 126 | 7 |
| 8-24 | 4.26 | | 5.50 | 0.20 | 0.09 | 0.11 | 0.16 | 0.56 | 7.88 | 7 | 4 | | 12.01 | 12..57 | | 0.13 | 1.66 | 51 | 2.5 |
| 24-52 | 4.27 | | 5.64 | 0.56 | 0.30 | 0.13 | 0.09 | 1.08 | 8.10 | 13 | 9 | | 11.45 | 12.53 | | 0.15 | 0.71 | 58 | 2 |
| 52-88 | 4.38 | | 4.58 | 0.55 | 2.45 | 0.22 | 1.36 | 4.58 | 16.46 | 28 | 22 | | 16.30 | 20.88 | | 0.04 | 0.70 | 91 | 1 |
| 88-120+ | 4.40 | | 4.68 | 0.65 | 3.24 | 0.27 | 2.91 | 7.07 | 17.48 | 40 | 30 | | 16.77 | 23.84 | | 0.47 | 0.52 | 106.5 | 7 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Henry, silt loam (Taxadjunct)

**Pedon #:** S92KY-035-5-2-(1-5)

**Classification:** Coarse-silty, mixed, active, thermic Typic Epiaquults

**Location:** Calloway Co., southwest of Murray, KY on the Grundy Falwell farm on KY Hwy 893 north of New Providence.

**Parent Material:**

**Vegetation:**

**Landscape Position:**

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 5/11/1992

**Permeability:**

**Slope:**

**Described by:** A.D. Karathanasis, R. Forsythe, R. Toor, and P. Prawito

Ap—0 to 6 cm.; Dark brown (10YR 3/3) silt loam; weak fine granular structure; many fine and medium roots; very friable; abrupt boundary.

BE—6 to 24 cm.; Brown (10YR 5/3) silt loam; few medium distinct light brownish gray (10YR 6/2) mottles; common fine and medium roots; weak fine and medium subangular blocky structure; friable; clear smooth boundary.

Btg1—24 to 54 cm.; Light brownish gray (10YR 6/2) silt loam; common medium prominent strong brown (7.5YR 5/6) mottles; few fine roots; weak medium and fine subangular blocky structure; friable; clear smooth boundary.

Btg2—54 to 75 cm.; Light brownish gray (10YR 6/2) silt loam; common medium distinct pale brown (10YR 6/3) and few medium prominent strong brown (7.5YR 5/6) mottles; weak to moderate medium subangular blocky structure; firm; clear smooth boundary.

Btg3—75 to 110+ cm.; Light brownish gray (10YR 6/2) silt loam; common medium distinct yellowish brown (10YR 5/6) and few medium prominent strong brown (7.5YR 5/6) mottles; moderate medium subangular blocky and angular blocky structure; firm.

**SOIL TYPE** ..... **HENRY (TAXADJUNCT)** **PEDON #** ..... **S92KY-035-05-02-(1-5)**
**LOCATION** ..... **CALLOWAY COUNTY, KENTUCKY** **GENERAL METHODS** ..... **1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-6 | Ap | 15.6 | 76.4 | 8.0 | 0.5 | 4.2 | 4.6 | 3.6 | 2.7 | | | | | | | sil | | | |
| 6-24 | BE | 7.8 | 80.6 | 11.6 | 0.2 | 0.7 | 1.2 | 1.7 | 4.0 | | | | | | | si/sil | | | |
| 24-54 | Btg1 | 8.3 | 74.4 | 17.3 | 0.7 | 0.8 | 1.1 | 1.9 | 3.8 | | | | | | | sil | | | |
| 54-75 | Btg2 | 4.6 | 79.3 | 16.1 | 0.2 | 0.5 | 0.6 | 1.6 | 1.7 | | | | | | | sil | | | |
| 75-110+ | Btg3 | 7.0 | 63.2 | 29.8 | 0.6 | 1.8 | 1.4 | 1.5 | 1.7 | | | | | | | sicl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-6 | 4.48 | | 5.71 | 3.54 | 0.57 | 0.35 | 0.15 | 4.61 | 17.87 | 26 | 22 | | 16.81 | 21.42 | | 0.19 | 10.87 | 111 | 9 |
| 6-24 | 4.47 | | 6.08 | 0.20 | 0.07 | 0.11 | 0.06 | 0.44 | 5.78 | 8 | 4 | | 10.0 | 10.44 | | 0.32 | 2.11 | 53.5 | 3.5 |
| 24-54 | 4.31 | | 5.48 | 0.37 | 0.20 | 0.13 | 0.14 | 0.84 | 8.62 | 10 | 7 | | 11.24 | 12.08 | | 0.11 | 1.50 | 59 | 3 |
| 54-75 | 4.42 | | 5.42 | 0.49 | 0.74 | 0.15 | 0.35 | 1.73 | 10.66 | 16 | 14 | | 10.98 | 12.71 | | 0.10 | 0.74 | 65 | 1.5 |
| 75-110+ | 4.65 | | 4.61 | 0.60 | 2.65 | 0.23 | 1.45 | 4.93 | 18.09 | 27 | 23 | | 16.48 | 21.41 | | 0.08 | 0.51 | 99 | 1 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Henry, silt loam (Taxadjunct)

**Pedon #:** S92KY-035-5-3-(1-5)

**Classification:** Fine-silty, mixed, active, acid, thermic Typic Fragiaquults

**Location:** Calloway Co., southwest of Murray, KY on the Grundy Falwell farm on KY Hwy 893 north of New Providence.

**Parent Material:**

**Vegetation:**

**Landscape Position:**

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 5/11/1992

**Permeability:**

**Slope:**

**Described by:** A.D. Karathanasis, R. Forsythe, R. Toor, and P. Prawito

A—0 to 8 cm.; Dark brown (10YR 4/3) silt loam; weak fine granular structure; very friable; clear smooth boundary.

BE—8 to 29 cm.; Pale brown (10YR 6/3) silt loam; few medium faint light brownish gray (10YR 6/2) and few medium distinct dark brown (10YR 4/3) mottles; weak fine subangular blocky parting to weak fine granular structure; friable; clear smooth boundary.

Btg1—29 to 56 cm.; Light brownish gray (10YR 6/2) silt loam; common medium distinct yellowish brown (10YR 6/4, 5/6) mottles; weak to moderate medium subangular blocky structure; firm; clear smooth boundary.

Btg2—56 to 88 cm.; Light brownish gray (10YR 6/2) silty clay loam; few medium prominent strong brown (7.5YR 5/6) mottles; moderate medium subangular blocky structure; firm; clear smooth boundary.

Btxg—88 to 110+ cm.; Light brownish gray (10YR 6/2) silty clay loam; common medium prominent strong brown (7.5YR 5/6) mottles; moderate medium prismatic parting to moderate medium subangular blocky structure; very firm; 30% fragic properties.

**SOIL TYPE.....HENRY (TAXADJUNCT)** **PEDON # ..... S92KY-035-05-03-(1-5)**
**LOCATION .....CALLOWAY COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-8 | Ap | 22.7 | 68.4 | 8.9 | 1.5 | 6.1 | 6.2 | 5.6 | 3.3 | | | | | | | sil | | | |
| 8-29 | BE | 9.5 | 76.9 | 13.6 | 1.2 | 1.6 | 2.0 | 2.6 | 2.1 | | | | | | | sil | | | |
| 29-56 | Btg1 | 8.5 | 75.7 | 15.8 | 1.7 | 0.9 | 1.3 | 2.2 | 2.4 | | | | | | | sil | | | |
| 56-88 | Btg2 | 5.0 | 63.5 | 31.5 | 0.5 | 0.8 | 0.7 | 1.4 | 1.6 | | | | | | | sicl | | | |
| 88-110+ | Btxg | 5.7 | 62.8 | 31.5 | 0.2 | 0.8 | 1.2 | 2.0 | 1.5 | | | | | | | sicl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-8 | 4.29 | | 5.40 | 1.13 | 0.33 | 0.40 | 0.17 | 2.03 | 23.26 | 9 | 9 | | 20.55 | 22.58 | | 0.30 | 18.21 | 115.5 | 10.5 |
| 8-29 | 4.46 | | 5.79 | 0.15 | 0.10 | 0.09 | 0.10 | 0.44 | 6.95 | 6 | 4 | | 11.02 | 11.46 | | 0.10 | 1.68 | 37.5 | 2.5 |
| 29-56 | 4.58 | | 5.66 | 0.16 | 0.45 | 0.08 | 0.28 | 0.97 | 7.47 | 13 | 9 | | 10.22 | 11.19 | | 0.12 | 0.72 | 36 | 1.5 |
| 56-88 | 4.49 | | 4.66 | 0.49 | 2.12 | 0.20 | 2.44 | 5.25 | 17.19 | 30 | 26 | | 14.70 | 19.95 | | 0.07 | 0.57 | 80 | 1 |
| 88-110+ | 4.49 | | 4.74 | 0.59 | 2.64 | 0.20 | 3.70 | 7.13 | 16.55 | 43 | 32 | | 15.46 | 22.59 | | 0.06 | 0.22 | 87.5 | 2 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Henry, silt loam (Taxadjunct)

**Pedon #:** S92KY-035-6-1-(1-5)

**Classification:** Fine-silty, mixed, active, thermic Typic Fragiaquults

**Location:** Calloway Co., south of Murray, KY on the Gaylon Alexander farm, southeast of Green Plains Church and east of White Oak Creek.

**Parent Material:**

**Vegetation:**

**Landscape Position:**

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 5/11/1992

**Permeability:**

**Slope:**

**Described by:** A.D. Karathanasis, R. Forsythe, R. Toor, and P. Prawito

A—0 to 6 cm.; Brown (10YR 5/3) silt loam; few fine distinct yellowish brown (10YR 5/6) mottles; weak fine granular structure; very friable; clear smooth boundary.

BE—6 to 23 cm.; Yellowish brown (10YR 5/4) silt loam; common medium distinct light brownish gray (10YR 6/2) and light yellowish brown (10YR 6/4) mottles; weak medium subangular blocky structure; friable; clear smooth boundary.

Btg1—23 to 54 cm.; Light brownish gray (10YR 6/2) silt loam; common medium distinct yellowish brown (10YR 5/6) mottles; weak to moderate subangular blocky structure; friable; clear smooth boundary.

Btg2—54 to 78 cm.; Gray (10YR 6/1) silt loam; few fine prominent and common medium distinct yellowish brown (10YR 5/6) mottles; moderate medium subangular and angular blocky structure; firm; clear smooth boundary.

Btxg—78 to 110+ cm.; Light brownish gray (10YR 6/2) silt loam; common medium prominent strong brown (7.5YR 5/6) mottles; weak medium prismatic parting to weak medium subangular blocky and angular blocky; firm to very firm; about 30% fragic properties.

**SOIL TYPE.....HENRY (TAXADJUNCT)** **PEDON # ..... S92KY-035-06-01-(1-5)**
**LOCATION .....CALLOWAY COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-6 | Ap | 17.8 | 73.0 | 9.2 | 2.0 | 3.7 | 5.2 | 4.0 | 2.9 | | | | | | | sil | | | |
| 6-23 | BE | 11.2 | 71.6 | 17.2 | 1.8 | 1.8 | 2.1 | 2.4 | 3.1 | | | | | | | sil | | | |
| 23-54 | Btg1 | 9.5 | 72.9 | 17.6 | 1.3 | 2.0 | 2.1 | 2.1 | 2.0 | | | | | | | sil | | | |
| 54-78 | Btg2 | 6.9 | 63.7 | 29.4 | 0.9 | 1.3 | 1.3 | 1.7 | 1.7 | | | | | | | sicl | | | |
| 78-110+ | Btxg | 8.1 | 63.3 | 28.6 | 1.1 | 1.6 | 1.5 | 1.6 | 2.3 | | | | | | | sicl/sil | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-6 | | | | 0.50 | 0.31 | 0.40 | 0.15 | 1.36 | 11.46 | 12 | 8 | | 15.19 | 16.55 | | | | | |
| 6-23 | 4.46 | | 5.65 | 0.16 | 0.11 | 0.08 | 0.37 | 0.72 | 8.30 | 9 | 7 | | 8.95 | 9.67 | | 0.07 | 1.13 | 31 | 1.5 |
| 23-54 | 4.55 | | 5.78 | 0.25 | 0.26 | 0.08 | 0.53 | 1.12 | 7.60 | 15 | 14 | | 7.04 | 8.16 | | 0.07 | 0.57 | 32.5 | 1.5 |
| 54-78 | 4.71 | | 4.87 | 0.39 | 1.44 | 0.15 | 1.68 | 3.66 | 14.57 | 25 | 27 | | 9.93 | 13.59 | | 0.12 | 0.51 | 60 | 1 |
| 78-110+ | 4.66 | | 4.85 | 0.91 | 2.37 | 0.19 | 2.45 | 5.92 | 15.46 | 38 | 32 | | 12.74 | 18.66 | | 0.28 | 0.36 | 80 | 1 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Henry, silt loam

**Pedon #:** S92KY-035-6-2-(1-5)

**Classification:** Coarse-silty, mixed, active, thermic Typic Fragiaqualfs

**Location:** Calloway Co., south of Murray, KY on the Gaylon Alexander farm, southeast of Green Plains Church and east of White Oak Creek.

**Parent Material:**

**Vegetation:**

**Landscape Position:**

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 5/11/1992

**Permeability:**

**Slope:**

**Described by:** A.D. Karathanasis, R. Forsythe, R. Toor, and P. Prawito

A—0 to 9 cm.; Brown (10YR 5/3) silt loam; weak fine granular structure; very friable; clear smooth boundary.

BE—9 to 25 cm.; Yellowish brown (10YR 5/4) silt loam; common fine distinct gray (10YR 6/1) and common fine prominent yellowish brown (10YR 5/6) mottles; weak fine and medium subangular blocky structure; friable; clear smooth boundary.

Btg1—25 to 65 cm.; Light brownish gray (10YR 6/2) silt loam; common fine yellowish brown (10YR 5/6) and pale brown (10YR 6/3) mottles; weak to moderate medium subangular blocky structure; friable; clear smooth boundary.

Btg2—65 to 95 cm.; Gray (10YR 6/1) silt loam; common fine and medium distinct yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; firm; clear smooth boundary .

Btxg—95 to 112+ cm.; Gray (10YR 6/1) and strong brown (7.5YR 5/6) silt loam; weak medium prismatic parting to moderate medium angular blocky structure; very firm. About 40% fragic properties.

**SOIL TYPE.....HENRY** **PEDON # ..... S92KY-035-06-02-(1-5)**
**LOCATION .....CALLOWAY COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand | VFS Plus | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Coarser Than VF (2-0.1) | Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-9 | A | 12.2 | 74.2 | 13.6 | 1.9 | 2.5 | 3.0 | 2.8 | 2.0 | | | | | | | sil | | | |
| 9-25 | BE | 11.4 | 74.7 | 13.9 | 2.1 | 1.7 | 2.2 | 2.6 | 2.8 | | | | | | | sil | | | |
| 25-65 | Btg1 | 9.9 | 74.7 | 15.4 | 1.2 | 2.2 | 2.1 | 2.0 | 2.4 | | | | | | | sil | | | |
| 65-95 | Btg2 | 5.7 | 64.2 | 30.1 | 0.9 | 1.0 | 1.1 | 1.2 | 1.5 | | | | | | | sicl | | | |
| 95-112+ | Btxg | 6.9 | 67.0 | 26.1 | 0.5 | 0.9 | 1.4 | 1.8 | 2.3 | | | | | | | sil/sicl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-9 | 4.45 | | 5.66 | 1.05 | 0.28 | 0.19 | 0.37 | 1.89 | 13.45 | 14 | 12 | | 14.23 | 16.12 | | 0.11 | 5.99 | 83 | 3 |
| 9-25 | 4.51 | | 5.78 | 0.24 | 0.08 | 0.07 | 0.20 | 0.59 | 8.50 | 7 | 7 | | 7.60 | 8.19 | | 0.12 | 1.22 | 34 | 2.5 |
| 25-65 | 4.60 | | 5.81 | 0.17 | 0.30 | 0.08 | 0.46 | 1.01 | 8.32 | 12 | 13 | | 6.69 | 7.70 | | 0.10 | 0.51 | 37 | 1.5 |
| 65-95 | 4.70 | | 4.64 | 0.49 | 1.90 | 0.18 | 2.14 | 4.71 | 18.20 | 26 | 38 | | 12.45 | 17.16 | | 0.19 | 0.76 | 82 | 1.5 |
| 95-112+ | 4.73 | | 4.86 | 0.90 | 2.29 | 0.19 | 2.62 | 6.00 | 17.77 | 34 | 33 | | 12.29 | 18.29 | | 0.11 | 0.64 | 87 | 2.5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Henry, silt loam (Taxadjunct)

**Pedon #:** 92KY-035-6-3-(1-5)

**Classification:** Fine-silty, mixed, thermic Typic Epiaquults

**Location:** Calloway Co., south of Murray, KY on the Gaylon Alexander farm, southeast of Green Plains Church and east of White Oak Creek.

**Parent Material:**

**Vegetation:**

**Landscape Position:**

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 5/11/1992

**Permeability:**

**Slope:**

**Described by:** A.D. Karathanasis, R. Forsythe, R. Toor, and P. Prawito

A—0 to 17 cm.; Brown (10YR 5/3) silt loam; few fine light brownish gray (10YR 6/2) and pale brown (10YR 6/3) mottles; weak fine granular structure; very friable; clear smooth boundary.

BE—17 to 45 cm.; Light brownish gray (10YR 6/2) silt loam; common fine distinct light brownish gray (10YR 6/2), yellowish brown (10YR 5/6), and common fine prominent strong brown (7.5YR 5/6) mottles; few iron concretions; weak fine and medium subangular blocky structure; friable; clear smooth boundary.

Btg1—45 to 75 cm.; Gray (10YR 6/1) silt loam; common medium distinct pale brown (10YR 6/3) and yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; friable; clear smooth boundary.

Btg2—75 to 100 cm.; Gray (10YR 6/1) silty clay loam; common fine prominent yellowish brown (7.5YR 5/6) mottles; moderate medium angular blocky; firm; clear smooth boundary.

Btxg—100 to 110+ cm.; Light brownish gray (10YR 6/2) silty clay loam; common medium prominent strong brown (7.5YR 5/6) mottles; weak prismatic parting to moderate medium angular blocky structure; 31.55% fragic properties; very firm.

**SOIL TYPE**.....**HENRY (TAXADJUNCT)** **PEDON #** ..... **S92KY-035-06-03-(1-5)**
**LOCATION** .....**CALLOWAY COUNTY, KENTUCKY** **GENERAL METHODS** .....**1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF | VFS Plus Silt | | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | (2-0.1) | (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-17 | A | 12.1 | 76.7 | 11.2 | 1.5 | 2.1 | 3.0 | 3.1 | 2.4 | | | | | | | sil | | | |
| 17-45 | BE | 11.1 | 75.2 | 13.7 | 2.7 | 2.5 | 2.0 | 2.1 | 1.8 | | | | | | | sil | | | |
| 45-75 | Btg1 | 11.6 | 72.4 | 16.0 | 2.7 | 3.0 | 2.1 | 2.1 | 1.7 | | | | | | | sil | | | |
| 75-100 | Btg2 | 8.6 | 61.4 | 30.0 | 2.1 | 1.9 | 1.5 | 1.6 | 1.5 | | | | | | | sicl | | | |
| 100-110+ | Btxg | 10.1 | 58.5 | 31.4 | 2.6 | 2.9 | 1.6 | 1.5 | 1.5 | | | | | | | sicl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-17 | 4.71 | | 5.91 | 0.35 | 0.14 | 0.10 | 0.28 | 0.87 | 10.02 | 9 | 5 | | 18.23 | 19.10 | | 0.14 | 2.95 | 39 | 3 |
| 17-45 | 4.55 | | 5.71 | 0.20 | 0.21 | 0.06 | 0.32 | 0.79 | 7.98 | 10 | 10 | | 7.02 | 7.81 | | 0.11 | 0.74 | 29 | 1.5 |
| 45-75 | 4.82 | | 5.42 | 0.22 | 0.60 | 0.08 | 0.73 | 1.63 | 10.34 | 16 | 15 | | 9.12 | 10.75 | | 0.10 | 0.15 | 37.5 | 1.5 |
| 75-100 | 4.59 | | 4.65 | 0.85 | 2.06 | 0.19 | 2.74 | 5.84 | 18.68 | 31 | 31 | | 12.99 | 18.83 | | 0.14 | 0.32 | 87 | 1 |
| 100-110+ | 4.56 | | 4.61 | 1.40 | 2.79 | 0.23 | 3.78 | 8.20 | 21.64 | 38 | 35 | | 15.35 | 23.55 | | 0.15 | 0.57 | 99 | 1.5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Henry, silt loam (Taxadjunct)

**Pedon #:** S92KY-035-7-1-(1-5)

**Classification:** Fine-silty, mixed, active, thermic Typic Fragiaquults

**Location:** Calloway Co., south of Murray, KY on the Darrell Mathis farm on Collins Rd. northwest of New Providence.

**Parent Material:**

**Vegetation:**

**Landscape Position:**

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 5/12/1992

**Permeability:**

**Slope:**

**Described by:** A.D. Karathanasis, R. Forsythe, R. Toor, and P. Prawito

A—0 to 16 cm.; Brown (10YR 5/3) silt loam; few fine faint yellowish brown (10YR 5/6) mottles; weak granular structure; very friable; clear smooth boundary.

BE—10 to 25 cm.; Yellowish brown (10YR 5/4) silt loam; few fine faint light brownish gray (10YR 6/2) mottles; weak fine subangular blocky structure; friable; clear smooth boundary.

Btg1—25 to 65 cm.; Light brownish gray (10YR 6/2) silt loam; common fine and medium distinct yellowish brown (10YR 5/6) and few fine prominent strong brown (7.5YR 5/6) mottles; weak to moderate medium subangular blocky structure; friable; clear smooth boundary.

Btg2—65 to 85 cm.; Gray (10YR 6/1) silt loam; common medium prominent strong brown (7.5YR 5/6) and few medium distinct yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky parting to medium angular blocky structure; firm; clear smooth boundary.

Btx—85 to 105+ cm.; Strong brown (7.5YR 5/6) and gray (10YR 6/1) silt loam; medium prismatic parting to medium angular blocky structure; very firm.

**SOIL TYPE.....HENRY (TAXADJUNCT)** **PEDON # ..... S92KY-035-07-01-(1-5)**
**LOCATION .....CALLOWAY COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand | VFS Plus | | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Coarser Than VF (2-0.1) | Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-10 | A | 13.2 | 74.1 | 12.7 | 1.3 | 2.7 | 3.5 | 3.0 | 2.7 | | | | | | | sil | | | |
| 10-25 | BE | 6.9 | 76.7 | 16.4 | 1.3 | 1.4 | 1.2 | 1.4 | 1.6 | | | | | | | sil | | | |
| 25-65 | Btg1 | 4.7 | 71.4 | 23.9 | 0.9 | 1.0 | 0.7 | 0.6 | 1.5 | | | | | | | sil | | | |
| 65-85 | Btg2 | 5.0 | 49.5 | 45.5 | 0.9 | 1.2 | 0.8 | 0.9 | 1.2 | | | | | | | sic | | | |
| 85-105+ | Btx | 6.7 | 63.7 | 29.6 | 1.1 | 1.1 | 1.0 | 1.8 | 1.7 | | | | | | | sicl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-10 | 4.35 | | 5.68 | 0.71 | 0.29 | 0.30 | 0.44 | 1.74 | 13.88 | 12 | 10 | | 14.99 | 16.73 | | 0.21 | 7.63 | 115.5 | 10.5 |
| 10-25 | 4.35 | | 5.56 | 0.15 | 0.14 | 0.10 | 0.21 | 0.60 | 10.10 | 6 | 6 | | 10.14 | 10.74 | | 0.13 | 1.23 | 47.5 | 3 |
| 25-65 | 4.58 | | 5.11 | 0.40 | 1.14 | 0.16 | 0.44 | 2.14 | 14.12 | 15 | 15 | | 12.03 | 14.17 | | 0.13 | 0.82 | 71 | 1.5 |
| 65-85 | 4.72 | | 4.28 | 0.56 | 3.48 | 0.35 | 1.44 | 5.83 | 27.68 | 21 | 22 | | 20.41 | 26.24 | | 0.13 | 0.55 | 149.5 | 1.5 |
| 85-105+ | 4.80 | | 4.73 | 0.37 | 2.21 | 0.18 | 1.52 | 4.28 | 18.37 | 23 | 23 | | 14.51 | 18.79 | | 0.15 | 0.42 | 83.5 | 2.5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Henry, silt loam (Taxadjunct)

**Pedon #:** S92KY-035-8-1-(1-5)

**Classification:** Coarse-silty, mixed, active, thermic Typic Fragiaquults

**Location:** Calloway Co., southeast of Murray, KY on the Grundy Falwell farm on KY Hwy 893 north of New Providence.

**Parent Material:**

**Vegetation:**

**Landscape Position:**

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 5/12/1992

**Permeability:**

**Slope:**

**Described by:** A.D. Karathanasis, R. Forsythe, R. Toor, and P. Prawito

A—0 to 8 cm.; Dark brown (10YR 3/3) silt loam; few fine faint light brownish gray (10YR 6/2) mottles; distinct oxidized root zones; weak granular structure; very friable; clear smooth boundary.

BE—8 to 34 cm.; Light brownish gray (10YR 6/2) silt loam; common fine distinct yellowish brown (10YR 5/6) and few fine prominent strong brown (7.5YR 5/6) mottles; weak medium subangular blocky structure; friable; clear smooth boundary.

Btg1—34 to 75 cm.; Light brownish gray (10YR 6/2) silt loam; few medium prominent strong brown (7.5YR 5/6) and common medium distinct yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; friable; clear smooth boundary.

Btg2—75 to 90 cm.; Light brownish gray (10YR 6/2) silt loam; common medium prominent strong brown (7.5YR 5/6) mottles; moderate medium subangular blocky structure; firm; clear smooth boundary.

Btxg—90 to 105+cm.; Yellowish brown (10YR 5/6) and light brownish gray (10YR 6/2) silt loam; many fine black concretions; 30% fragic properties; weak prismatic parting to moderate medium angular blocky; very firm.

**SOIL TYPE.....HENRY (TAXADJUNCT)** **PEDON # ..... S92KY-035-08-01-(1-5)**
**LOCATION .....CALLOWAY COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-8 | A | 16.7 | 73.7 | 9.6 | 0.7 | 3.6 | 4.4 | 4.2 | 3.8 | | | | | | | sil | | | |
| 8-34 | BE | 8.8 | 76.8 | 14.4 | 1.5 | 1.4 | 1.7 | 2.3 | 1.9 | | | | | | | sil | | | |
| 34-75 | Btg1 | 9.1 | 74.3 | 16.6 | 1.4 | 2.2 | 1.5 | 1.8 | 2.2 | | | | | | | sil | | | |
| 75-90 | Btg2 | 7.4 | 68.2 | 24.4 | 0.2 | 1.4 | 1.4 | 2.2 | 2.2 | | | | | | | sil | | | |
| 90-105+ | Btxg | 8.2 | 68.7 | 23.1 | 0.5 | 1.1 | 1.5 | 2.8 | 2.3 | | | | | | | sil | | | |
| | | pH | | Exchangeable Bases (5A1) | | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/ 100gm | 602z Mg meq/ 100gm | 602z K meq/ 100gm | 6P2z Na meq/ 100gm | 5B1a TEB meq/ 100gm | 5A1z CEC meq/ 100gm | 5C1 Pct | 5C3 Pct | H+Al meq/ 100 gm | EA meq/ 100gm | SC meq/ 100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-8 | | | | 1.72 | 0.92 | 0.27 | 0.14 | 3.05 | 13.74 | 22 | 14 | | 19.15 | 22.20 | | | | | |
| 8-34 | 4.45 | | 5.69 | 0.51 | 0.38 | 0.12 | 0.19 | 1.20 | 10.36 | 12 | 6 | | 17.11 | 18.31 | | 0.20 | 1.43 | 56.5 | 6 |
| 34-75 | 4.62 | | 5.42 | 0.48 | 1.21 | 0.12 | 0.30 | 2.11 | 12.26 | 17 | 10 | | 18.03 | 20.14 | | 0.11 | 0.57 | 60 | 2 |
| 75-90 | 4.84 | | 4.93 | 0.33 | 2.67 | 0.18 | 1.27 | 4.45 | 17.66 | 25 | 21 | | 16.42 | 20.87 | | 0.60 | 0.82 | 81 | 2 |
| 90-105+ | 5.02 | | 5.19 | 0.32 | 2.29 | 0.14 | 1.36 | 4.11 | 14.48 | 28 | 18 | | 18.56 | 22.67 | | 0.50 | 0.42 | 67 | 3 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Henry, silt loam (Taxadjunct)

**Pedon #:** S92KY-035-9-1-(1-5)

**Classification:** Coarse-silty, mixed, thermic Typic Fragiaquults

**Location:** Calloway Co., southwest of Murray, KY on the Dollie Mae Starks farm along KY Hwy 783 north of South Pleasant Grove Church.

**Parent Material:**

**Vegetation:**

**Landscape Position:**

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 5/12/1992

**Permeability:**

**Slope:**

**Described by:** A.D. Karathanasis, R. Forsythe, R. Toor, and P. Prawito

A—0 to 10 cm.; Yellowish brown (10YR 5/4) silt loam; weak granular structure; very friable; clear smooth boundary.

BE—10 to 35 cm.; Light brownish gray (10YR 6/2) and pale brown (10YR 6/3) silt loam; few fine prominent dark brown (7.5YR 4/4) mottles; weak medium subangular blocky structure; friable; clear smooth boundary.

Btg1—35 to 72 cm.; Light brownish gray (10YR 6/2) and light gray (10YR 7/2) silt loam; few fine prominent strong brown (7.5YR 5/6) and few fine distinct yellowish brown (10YR 5/6) and pale brown (10YR 6/3) mottles; common fine black concretions; weak medium subangular blocky structure; firm; clear smooth boundary.

Btg2—72 to 91 cm.; Gray (10YR 6/1) silt loam; few fine distinct yellowish brown (10YR 5/6) and few fine prominent dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/6) mottles; few fine black concretions; weak medium angular structure; firm; clear smooth boundary.

Btx—91 to 110+ cm.; Yellowish brown (10YR 5/4) and light brownish gray (10YR 6/2) silty clay loam; common medium prominent strong brown (7.5YR 4/6) mottles; few fine black concretions; 10 to 20% fragic properties; weak to moderate medium angular blocky structure; firm.

**SOIL TYPE**.....**HENRY (TAXADJUNCT)** **PEDON #** ..... **S92KY-035-09-01-(1-5)**
**LOCATION** .....**CALLOWAY COUNTY, KENTUCKY** **GENERAL METHODS** .....**1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-10 | A | 19.1 | 72.8 | 8.1 | 2.6 | 3.2 | 4.7 | 5.1 | 3.5 | | | | | | | sil | | | |
| 10-35 | BE | 13.8 | 73.2 | 13.0 | 3.1 | 2.7 | 3.0 | 3.2 | 1.8 | | | | | | | sil | | | |
| 35-72 | Btg1 | 9.8 | 63.2 | 27.0 | 2.7 | 2.3 | 1.6 | 2.0 | 1.2 | | | | | | | sil/sicl | | | |
| 72-91 | Btg2 | 14.2 | 70.3 | 15.5 | 2.6 | 3.5 | 3.0 | 3.1 | 2.0 | | | | | | | sil | | | |
| 91-110+ | Btx | 9.0 | 60.6 | 30.4 | 1.7 | 1.9 | 1.7 | 2.1 | 1.6 | | | | | | | sicl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-10 | 4.86 | | 6.07 | 2.99 | 1.25 | 0.27 | 0.30 | 4.81 | 14.37 | 33 | 39 | | 7.52 | 12.33 | | 0.30 | 7.24 | 99 | 11.5 |
| 10-35 | 4.67 | | 5.85 | 0.28 | 0.40 | 0.09 | 0.22 | 0.99 | 9.55 | 10 | 9 | | 9.42 | 10.41 | | 0.19 | 1.09 | 43.5 | 3.5 |
| 35-72 | 4.73 | | 5.24 | 0.78 | 3.24 | 0.17 | 1.34 | 5.53 | 16.19 | 34 | 32 | | 11.54 | 17.07 | | 0.16 | 0.52 | 77.5 | 2.5 |
| 72-91 | 4.79 | | 5.84 | 0.40 | 0.99 | 0.10 | 0.30 | 1.79 | 9.80 | 18 | 18 | | 7.90 | 9.69 | | 0.25 | 0.36 | 54 | 2.5 |
| 91-110+ | 4.76 | | 5.23 | 1.37 | 5.00 | 0.25 | 1.79 | 8.41 | 18.93 | 44 | 40 | | 12.74 | 21.15 | | 0.21 | 0.33 | 110 | 8.5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Henry, silt loam (Taxadjunct)

**Pedon #:** 92KY-035-10-1-(1-5)

**Classification:** Fine-silty, mixed, active, thermic Typic Fragiaquults

**Location:** Calloway Co., southwest of Murray, KY on the Roger Cooper farm, southwest of Harris Grove at the intersection of Humphrey Rd. with Rayburn Rd.

**Parent Material:**

**Vegetation:**

**Landscape Position:**

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 5/12/1992

**Permeability:**

**Slope:**

**Described by:** A.D. Karathanasis, R. Forsythe, R. Toor, and P. Prawito

A—0 to 7 cm.; Grayish brown (10YR 5/2) silt loam; few fine faint light brownish gray (10YR 6/2) mottles; weak granular structure; very friable; clear smooth boundary.

BE—7 to 19 cm.; Light brownish gray (10YR 6/2) silt loam; few fine distinct light yellowish brown (10YR 6/4, 5/4) and few fine prominent strong brown (7.5YR 4/6) mottles; weak medium subangular blocky structure; friable; clear smooth boundary.

Btg1—19 to 48 cm.; Light brownish gray (10YR 6/2) silt loam; few fine distinct yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; friable; clear smooth boundary.

Btg2—48 to 75 cm.; Light brownish gray (10YR 6/2) silty clay loam; few fine faint light gray (10YR 7/1) mottles; weak medium subangular blocky structure; firm; clear smooth boundary.

Btxg—75 to 102+ cm.; Grayish brown (2.5Y 5/2) silty clay loam; many fine white (10YR 8/1) mottles or siltans; few fine prominent light gray (10YR 7/1) and yellowish brown (10YR 5/6) mottles; weak prismatic parting to weak medium and coarse angular blocky; very fine.

**SOIL TYPE.....HENRY (TAXADJUNCT)** **PEDON # ..... S92KY-035-010-01-(1-5)**
**LOCATION .....CALLOWAY COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-7 | A | 10.5 | 78.8 | 10.7 | 0.6 | 1.8 | 2.9 | 2.8 | 2.4 | | | | | | | sil/si | | | |
| 7-19 | BE | 8.9 | 77.9 | 13.2 | 0.2 | 1.1 | 2.9 | 2.6 | 2.1 | | | | | | | sil/si | | | |
| 19-48 | Btg1 | 5.4 | 68.0 | 26.6 | 0.2 | 0.5 | 1.6 | 1.7 | 1.4 | | | | | | | sil/sicl | | | |
| 48-75 | Btg2 | 3.9 | 63.3 | 32.8 | 0 | 0.2 | 1.1 | 1.3 | 1.3 | | | | | | | sicl | | | |
| 75-102+ | Btxg | 4.5 | 64.0 | 31.5 | 0 | 0.3 | 1.4 | 1.6 | 1.2 | | | | | | | sicl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/ 100gm | 602z Mg meq/ 100gm | 602z K meq/ 100gm | 6P2z Na meq/ 100gm | 5B1a TEB meq/ 100gm | 5A1z CEC meq/ 100gm | 5C1 Pct | 5C3 Pct | H+Al meq/ 100 gm | EA meq/ 100gm | SC meq/ 100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-7 | 4.55 | | 5.66 | 0.27 | 0.16 | 0.16 | 0.25 | 0.84 | 11.37 | 7 | 5 | | 14.62 | 15.46 | | 0.25 | 6.46 | 59 | 5.5 |
| 7-19 | 4.48 | | 5.73 | 0.13 | 0.12 | 0.09 | 0.24 | 0.58 | 8.68 | 6 | 6 | | 9.32 | 9.90 | | 0.40 | 1.90 | 44.5 | 4 |
| 19-48 | 4.57 | | 4.66 | 0.27 | 0.95 | 0.08 | 1.12 | 2.42 | 14.06 | 17 | 13 | | 15.38 | 17.80 | | 0.17 | 0.62 | 39 | 2.5 |
| 48-75 | 4.51 | | 4.55 | 0.78 | 2.23 | 0.14 | 1.68 | 4.83 | 20.03 | 24 | 23 | | 15.72 | 20.55 | | 0.13 | 0.58 | 64 | 2.5 |
| 75-102+ | 4.40 | | 4.69 | 1.40 | 2.94 | 0.21 | 1.73 | 6.28 | 19.41 | 32 | 29 | | 14.99 | 21.27 | | 0.33 | 0.35 | 97 | 7.5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Henry, silt loam (Taxadjunct)

**Pedon #:** 92KY-157-1-1-(1-5)

**Classification:** Fine-silty, mixed, active, thermic Typic Fragiaqualfs

**Location:** Marshall Co., southwest of Benton, KY on the Pat Wilkins farm located southeast of New Bethel Church and east of Hwy. 299.

**Parent Material:** Loess

**Vegetation:**

**Landscape Position:**

**Drainage:**

**Moisture when sampled: Moist**

**Sampling Date:** 4/14/1992

**Permeability:** Very slow

**Slope:** 0 to 2%

**Described by:** A.D. Karathanasis, R. Forsythe, R. Toor, A. Seta

A—0 to 13 cm.; Dark grayish brown (10YR 4/2) silt loam; friable; many fine roots.

Eg—13 to 26 cm, Light brownish gray (10YR 6/2) silt loam; common distinct brownish yellow (10YR 6/6) and yellowish brown (10YR 5/6) mottles; friable; common fine roots; weak subangular blocky structure; clear smooth boundary.

Btg—26 to 53 cm.; Gray (10YR 6/1) silty clay loam; friable; common fine roots; clear smooth boundary.

Btxg1—53 to 70 cm.; Grayish brown (10YR 5/2) silty clay loam; common distinct yellowish brown (10YR 5/6) mottles; clear smooth boundary.

Btxg2—70 to 110 cm.; Grayish brown (10YR 5/2) silty clay loam; common distinct strong brown (7.5YR 5/6) mottles.

**SOIL TYPE.....HENRY (TAXADJUNCT)** **PEDON # ..... S92KY-157-1-4-(1-5)**
**LOCATION .....MARSHALL COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-13 | A | 8.3 | 79.9 | 11.8 | 0.2 | 0.8 | 2.2 | 2.7 | 2.4 | | | | | | | sil/si | | | |
| 13-26 | Eg | 5.1 | 83.1 | 11.8 | 0 | 0.3 | 1.1 | 2.0 | 1.7 | | | | | | | si/sil | | | |
| 26-53 | Btg | 2.2 | 67.0 | 30.8 | 0 | 0.1 | 0.3 | 0.7 | 1.1 | | | | | | | sicl | | | |
| 53-70 | Bxg1 | 1.7 | 61.6 | 36.7 | 0 | 0 | 0.2 | 0.6 | 0.9 | | | | | | | sicl | | | |
| 70-110 | Bxg2 | 1.8 | 67.4 | 30.8 | 0 | 0.1 | 0.2 | 0.6 | 0.9 | | | | | | | sicl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/ 100gm | 602z Mg meq/ 100gm | 602z K meq/ 100gm | 6P2z Na meq/ 100gm | 5B1a TEB meq/ 100gm | 5A1z CEC meq/ 100gm | 5C1 Pct | 5C3 Pct | H+Al meq/ 100 gm | EA meq/ 100gm | SC meq/ 100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-13 | 4.73 | | 6.06 | 1.88 | 0.70 | 0.29 | 0.21 | 3.08 | 11.44 | 27 | 23 | | 10.51 | 13.59 | | 0.76 | 0.77 | 119.5 | 13.5 |
| 13-26 | 4.53 | | 6.01 | 0.38 | 0.19 | 009 | 0.23 | 0.89 | 6.34 | 14 | 11 | | 6.84 | 7.73 | | 0.57 | 1.22 | 36 | 5.5 |
| 26-53 (upper) | 4.44 | | 4.54 | 0.53 | 1.34 | 0.15 | 0.84 | 2.86 | 16.79 | 17 | 17 | | 14.40 | 17.26 | | 0.65 | 0.83 | 62.5 | 2.5 |
| 26-53 (lower) | 4.29 | | 4.37 | 1.07 | 2.95 | 0.22 | 3.00 | 7.24 | 22.58 | 32 | 29 | | 17.30 | 24.54 | | 0.52 | 0.84 | 105.5 | 5.5 |
| 53-70 | 4.33 | | 4.34 | 1.28 | 3.80 | 0.26 | 4.18 | 9.52 | 24.31 | 39 | 33 | | 18.91 | 28.43 | | 0.21 | 1.08 | 108.5 | 3.5 |
| 70-110 | 4.34 | | 4.87 | 1.60 | 3.82 | 0.25 | 5.83 | 11.20 | 18.50 | 60 | 48 | | 12.01 | 23.21 | | 0.41 | 0.64 | 103.5 | 28.5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Henry, silt loam (Taxadjunct)

**Pedon #:** S92KY-157-1-2-(1-5)

**Classification:** Fine-silty, mixed, superactive, thermic Typic Fragiaquults

**Location:** Marshall Co., southwest of Benton, KY on the Pat Wilkins farm located southeast of New Bethel Church and east of Hwy 299.

**Parent Material:** Loess

**Vegetation:**

**Landscape Position:**

**Drainage:**

**Moisture when sampled: Moist**

**Sampling Date:** 4/14/1992

**Permeability:**

**Slope:** 0 to 2%

**Described by:** A.D. Karathanasis, R. Forsythe, R. Toor, A. Seta

A—0 to 15 cm.; Brown (10YR 4/3) silt loam; common faint grayish brown (10YR 5/2) mottles.

Eg—15 to 32 cm.; Light brownish gray (10YR 6/2) silt loam; common medium distinct yellowish brown (10YR 5/6) mottles, clear smooth boundary.

Btg1—32 to 63 cm.; Grayish brown (2.5Y 5/2) silty clay loam; common medium distinct yellowish brown (10YR 5/6) mottles; clear smooth boundary.

Btg2—63 to 95 cm.; Light grayish brown (10YR 6/2) silty clay loam; few medium distinct yellowish brown (10YR 5/6) mottles; clear smooth boundary.

Btxg—95 to 110 cm.; Light brownish gray (10YR 6/2) and light gray (10YR 7/2) silty clay loam; common medium prominent strong brown (7.5 YR 5/8) and yellowish brown (10YR 5/6) mottles.

**SOIL TYPE.....HENRY (TAXADJUNCT)** **PEDON # ..... S92KY-157-01-02-(1-5)**
**LOCATION .....MARSHALL COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-15 | A | | | | | | | | | | | | | | | | | | |
| 15-32 | Eg | 4.7 | 80.3 | 15.0 | 0 | 0.3 | 1.0 | 1.7 | 1.7 | | | | | | | sil | | | |
| 32-63 | Btg1 | 2.5 | 66.2 | 31.3 | 0 | 0 | 0.3 | 0.9 | 1.3 | | | | | | | sicl | | | |
| 63-95 | Btg2 | 2.4 | 63.6 | 34.0 | 0 | 0 | 0.4 | 0.9 | 1.1 | | | | | | | sicl | | | |
| 95-110 | Btxg | 2.0 | 61.1 | 36.9 | 0 | 0 | 0.3 | 0.8 | 0.9 | | | | | | | sicl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/ 100gm | 602z Mg meq/ 100gm | 602z K meq/ 100gm | 6P2z Na meq/ 100gm | 5B1a TEB meq/ 100gm | 5A1z CEC meq/ 100gm | 5C1 Pct | 5C3 Pct | H+Al meq/ 100 gm | EA meq/ 100gm | SC meq/ 100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-15 | | | | | | | | | | | | | | | | | | | |
| 15-32 | | 4.36 | | 5.56 | 0.24 | 0.20 | 0.07 | 0.39 | 0.90 | 8.52 | 11 | 10 | | 8.34 | 9.24 | | 0.26 | 1.19 | 31.5 | 3.5 |
| 32-63 | | 4.44 | | 4.28 | 0.50 | 2.49 | 0.20 | 1.96 | 5.15 | 20.96 | 25 | 24 | | 16.24 | 21.39 | | 0.45 | 0.68 | 95 | 2.5 |
| 63-95 | | 4.45 | | 4.78 | 0.77 | 3.18 | 0.20 | 3.87 | 8.02 | 18.43 | 43 | 34 | | 15.87 | 23.89 | | 0.39 | 0.64 | 91.5 | 4.5 |
| 95-110 | | 4.36 | | 4.31 | 0.51 | 3.11 | 0.23 | 2.74 | 6.59 | 22.46 | 29 | 26 | | 18.99 | 25.58 | | 0.15 | 0.64 | 101.5 | 2 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | | Sand + Silt | | | | | | | | Clay | | | | | | | | | |
| | | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Henry, silt loam (Taxadjunct)

**Pedon #:** S92KY-157-1-3-(1-5)

**Classification:** Fine-silty, mixed, active, acid, thermic Typic Fragiaqualfs

**Location:** Marshall Co., southwest of Benton, KY on the Pat Wilkins farm located southeast of New Bethel Church and east of Hwy 299.

**Parent Material:**

**Vegetation:**

**Landscape Position:**

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 4/14/1992

**Permeability:**

**Slope:** 0 to 2%

**Described by:** A.D. Karathanasis, R. Forsythe, R. Toor, A. Seta

A—0 to 10 cm.; Very dark grayish brown (10YR 3/2) and pale brown (10YR 6/3) silt loam; weak subangular blocky parting to fine granular structure.

Eg—10 to 32 cm.; Light gray (10YR 6/1) and light brownish gray (10YR 6/2) silt loam; common medium distinct brownish yellow (10YR 6/6) mottles; clear smooth boundary.

Btg1—32 to 60 cm.; Grayish brown (2.5Y 5/2) silty clay loam; common medium prominent strong brown (7.5YR 5/8) mottles; clear smooth boundary.

Btg2—60 to 92 cm.; Grayish brown (2.5Y 5/2 and 10YR 5/2) silty clay loam; common medium prominent strong brown (7.5YR 5/6, 4/4) mottles; clear smooth boundary.

Btxg—92 to 110 cm.; Light brownish gray (10YR 6/2) silty clay loam; common medium distinct yellowish brown (10YR 5/6) and dark gray (10YR 4/1) mottles.

**SOIL TYPE.....HENRY (TAXADJUNCT)** **PEDON # ..... S92KY-157-01-03-(1-5)**
**LOCATION .....MARSHALL COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand | VFS Plus | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Coarser Than VF (2-0.1) | Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-10 | A | 19.4 | 69.7 | 10.9 | 0.6 | 2.8 | 4.7 | 6.2 | 5.1 | | | | | | | sil | | | |
| 10-32 | Eg | 4.6 | 75.4 | 20.0 | 0.1 | 0.3 | 1.0 | 1.5 | 1.7 | | | | | | | sil | | | |
| 32-60 | Btg1 | 2.5 | 62.5 | 35.0 | 0 | 0.1 | 0.3 | 0.8 | 1.3 | | | | | | | sicl | | | |
| 60-92 | Btg2 | 2.7 | 67.1 | 30.2 | 0 | 0.1 | 0.3 | 1.0 | 1.3 | | | | | | | sicl | | | |
| 92-110 | Btxg | 3.2 | 65.9 | 30.9 | 0 | 0 | 0.5 | 1.1 | 1.6 | | | | | | | sicl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-10 | 4.69 | | 5.72 | 2.94 | 0.92 | 0.42 | 0.30 | 4.58 | 17.35 | 26 | 18 | | 20.72 | 25.30 | | 0.25 | 9.91 | 165 | 19 |
| 10-32 | 4.46 | | 5.32 | 0.78 | 0.68 | 0.15 | 0.34 | 1.95 | 12.48 | 16 | 15 | | 10.70 | 12.65 | | 0.09 | 0.79 | 69 | 5 |
| 32-60 | 4.49 | | 4.42 | 1.26 | 3.36 | 0.25 | 1.64 | 6.51 | 11.88 | 55 | 28 | | 17.00 | 23.51 | | 0.14 | 0.76 | 96 | 2.5 |
| 60-92 | 4.33 | | 4.46 | 1.89 | 4.98 | 0.29 | 3.70 | 10.86 | 25.29 | 43 | 37 | | 18.82 | 29.68 | | 0.17 | 0.52 | 115 | 12 |
| 92-110 | 4.38 | | 4.90 | 2.53 | 5.29 | 0.26 | 5.05 | 13.13 | 22.62 | 58 | 50 | | 13.21 | 26.34 | | 0.13 | 0.53 | 99.5 | 35 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Henry, silt loam (Taxadjunct)

**Pedon #:** S93KY-035-12-1-(1-8)

**Classification:** Coarse-silty, mixed, active, thermic Typic Fragiaquults

**Location:** Calloway Co., south of Murray, KY and northeast of Hazel, Ky, on Myers Rd. on the Shea Sykes farm.

**Parent Material:** Loess

**Vegetation:** Mixed hardwoods

**Landscape Position:**

**Drainage:**

**Moisture when sampled:** Moist

**Sampling Date:** 5/25/1993

**Permeability:** Very slowly permeable

**Slope:**

**Described by:** A.D. Karathanasis, S. Sykes, R. Toors, M. Zhang and P. Prawito

A—0 to 5 cm.; Dark gray (10YR 4/1) silt loam; many distinct strong brown (7.5YR 5/6) mottles; weak granular and medium subangular blocky structure; friable; many roots; gradual smooth boundary.

Eg—5 to 12 cm.; Gray (10YR 6/1) silt loam; many faint strong brown (7.5YR 4/6) and dark brown (7.5YR 3/3) mottles; weak medium subangular blocky structure; friable; common roots; clear smooth boundary.

Btg1—12 to 25 cm.; Light brownish gray (10YR 6/2) silt loam; many faint dark brown (7.5YR 3/2) mottles; weak subangular blocky; friable; few fine roots; clear smooth boundary.

Btg2—25 to 42 cm.; Gray (10YR 6/1) silt loam; many faint brownish yellow (10YR 6/6) and dark brown (7.5YR 3/2) mottles; subangular blocky; friable; clear smooth boundary.

Btg3—42 to 68 cm.; Light brownish gray (10YR 6/2) silt loam; many yellowish brown (10YR 5/8) mottles; subangular blocky; friable; clear smooth boundary.

Eg/Btx—68 to 90 cm.; Light brownish gray (10YR 6/2) silt loam; many distinct strong brown (7.5YR 4/6) and yellowish brown (10YR 5/8) mottles; subangular blocky structure; friable; few soft black concretions; clear smooth boundary.

Btx1—90 to 100 cm.; Light brownish gray (10YR 6/4) and gray (10YR 6/1) silt loam; many distinct strong brown (7.5YR 5/6) and very dark gray (10YR 3/1) mottles; subangular blocky structure; clear smooth boundary.

Btx2—100 to 140 cm.; Brownish yellow (10YR 6/6) and gray (10YR 6/1) silt loam; common dark brown (7.5YR 4/4) and very dark gray (10YR 3/1) mottles; subangular blocky structure.

**SOIL TYPE.....HENRY (TAXADJUNCT)** **PEDON # ..... S 93KY-035-012-01-(1-8)**
**LOCATION .....CALLOWAY COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-5 | A | 18.1 | 70.9 | 11.0 | 1.0 | 2.6 | 7.1 | 5.1 | 2.3 | | | | | | | sil | | | |
| 5-12 | Eg | 16.9 | 73.3 | 9.8 | 0.4 | 1.2 | 6.7 | 6.6 | 2.0 | | | | | | | sil | | | |
| 12-25 | Btg1 | 17.3 | 70.9 | 11.8 | 0.9 | 1.5 | 6.8 | 6.2 | 1.9 | | | | | | | sil | | | |
| 25-42 | Btg2 | 16.6 | 69.6 | 13.8 | 0.7 | 1.3 | 6.2 | 6.4 | 2.0 | | | | | | | sil | | | |
| 42-68 | Btg3 | 14.3 | 66.9 | 18.8 | 1.3 | 1.2 | 4.9 | 5.1 | 1.8 | | | | | | | sil | | | |
| 68-90 | Eg/Btx | 13.6 | 66.0 | 20.4 | 0.4 | 1.0 | 5.1 | 5.3 | 1.8 | | | | | | | sil | | | |
| 90-100 | Btx1 | 14.4 | 66.5 | 19.1 | 0.5 | 0.6 | 5.3 | 5.8 | 2.2 | | | | | | | sil | | | |
| 100-140 | Btx2 | 25.3 | 58.9 | 15.8 | 0.2 | 0.6 | 10.2 | 11.4 | 2.9 | | | | | | | sil | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-5 | 4.77 | | 5.84 | 0.75 | 0.44 | 0.26 | 0.08 | 1.53 | 11.60 | 13 | 11 | | 12.79 | 13.32 | | 0.04 | 7.69 | 74.5 | 5 |
| 5-12 | 4.64 | | 5.99 | 0.25 | 0.25 | 0.10 | 0.08 | 0.68 | 7.36 | 9 | 7 | | 8.69 | 9..37 | | 0.08 | 2.76 | 42 | 2.5 |
| 12-25 | 4.61 | | 5.98 | 0.31 | 0.26 | 0.05 | 0.10 | 0.72 | 7.45 | 10 | 8 | | 7.85 | 8.57 | | 0.07 | 1.59 | 21 | 7.5 |
| 25-42 | 4.71 | | 5.96 | 0.27 | 0.33 | 0.05 | 0.15 | 0.80 | 7.28 | 11 | 9 | | 8.42 | 9.22 | | 0.06 | 0.87 | 22 | 7.5 |
| 42-68 | 4.97 | | 5.52 | 0.32 | 0.60 | 0.07 | 0.30 | 1.29 | 10.47 | 12 | 12 | | 9.15 | 10.44 | | 0.06 | 0.84 | 17.5 | 6.5 |
| 68-90 | 5.17 | | 5.05 | 0.54 | 1.27 | 0.10 | 0.79 | 2.70 | 13.80 | 19 | 19 | | 11.20 | 13.90 | | 0.07 | 0.38 | 21.5 | 4.5 |
| 90-100 | 5.21 | | 5.23 | 0.62 | 1.33 | 0.10 | 0.82 | 2.87 | 12.92 | 22 | 21 | | 10.76 | 13.63 | | 0.07 | 0.39 | 19 | 9 |
| 100-140 | 5.26 | | 5.86 | 0.88 | 1.63 | 0.07 | 0.91 | 3.49 | 9.44 | 37 | 35 | | 6.44 | 9.93 | | 006 | 0.84 | 13 | 10.5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Henry, silt loam (Taxadjunct)

**Pedon #:** S93KY-035-12-2-(1-7)

**Classification:** Coarse-silty, mixed, active, thermic Typic Fragiaquepts

**Location:** Calloway Co., south of Murray, KY and northeast of Hazel, KY on Meyers Rd. on the Shea Sykes farm.

**Parent Material:** Loess

**Vegetation:** Mixed hardwoods

**Landscape Position:**

**Drainage:**

**Moisture when sampled:** Moist

**Sampling Date:** 5/25/1993

**Permeability:** Very slowly permeable

**Slope:**

**Described by:** A.D. Karathanasis, S. Sykes, R. Toor, M. Zhang and P. Prawito

A—0 to 7 cm.; Dark gray (10YR 4/1) silt loam; many faint dark brown (7.5YR 4/4) mottles; weak granular and medium subangular blocky structure; friable; many roots; gradual smooth boundary.

Bg1—7 to 27 cm.; Gray (10YR 6/1) silt loam; many distinct strong brown (7.5YR 4/6) mottles; medium subangular blocky structure; friable; common roots; few soft black concretions; clear smooth boundary.

Bg2—27 to 43 cm.; Gray (10YR 6/1) silt loam; many faint brownish yellow (10YR 6/8) mottles; subangular blocky structure; friable; few fine roots; clear smooth boundary.

Bg3—43 to 75 cm.; Gray (10YR 6/1) silt loam; common faint yellow (10YR 7/6) mottles; subangular blocky structure; friable; clear smooth boundary.

Eg/Btx—75 to 88 cm.; Gray (10YR 6/1) silty clay loam; many prominent strong brown (7.5YR 5/6) and black (10YR 2/1) mottles; angular blocky structure; firm; clear smooth boundary.

Btx1—88 to 120 cm,; Gray ( 10YR 6/1) silty clay loam; many prominent strong brown (7.5YR 5/6) mottles; angular blocky structure; firm; clear smooth boundary.

Btx2—120 to 140 cm.; Gray (10YR 6/1) silt loam; many prominent strong brown (7.5YR 5/6) mottles; angular blocky structure.

**SOIL TYPE.....HENRY (TAXADJUNCT)** **PEDON # ..... S93KY-035-12-02-(1-7)**
**LOCATION .....CALLOWAY COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-7 | A | 16.6 | 73.5 | 9.9 | 1.7 | 2.5 | 6.4 | 4.4 | 1.6 | | | | | | | sil | | | |
| 7-27 | Bg1 | 16.2 | 71.9 | 11.9 | 0.8 | 1.9 | 6.5 | 5.2 | 1.8 | | | | | | | sil | | | |
| 27-43 | Bg2 | 15.0 | 72.2 | 12.8 | 0.9 | 1.7 | 5.8 | 4.8 | 1.8 | | | | | | | sil | | | |
| 43-75 | Bg3 | 15.2 | 70.5 | 14.3 | 1.1 | 1.7 | 5.0 | 4.6 | 2.8 | | | | | | | sil | | | |
| 75-88 | Eg/Btx | 11.3 | 67.9 | 20.8 | 0.7 | 1.2 | 4.2 | 3.6 | 1.6 | | | | | | | sil | | | |
| 88-120 | Btx1 | 11.3 | 60.3 | 28.4 | 0.3 | 0.9 | 4.2 | 3.9 | 2.0 | | | | | | | sil/sicl | | | |
| 120-40 | Btx2 | 14.6 | 57.8 | 27.6 | 0.4 | 1.1 | 6.1 | 5.1 | 1.9 | | | | | | | sil/sicl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-7 | 4.79 | | 6.09 | 0.85 | 0.42 | 0.18 | 0.13 | 1.58 | 9.08 | 17 | 16 | | 8.01 | 9.59 | | 0.13 | 5.64 | 56.5 | 3 |
| 7-27 | 4.79 | | 6.07 | 0.37 | 0.30 | 0.08 | 0.07 | 0.82 | 6.97 | 12 | 8 | | 9.19 | 10.01 | | 0.06 | 1.12 | 35 | 3.5 |
| 27-43 | 4.70 | | 6.09 | 0.26 | 0.21 | 0.06 | 0.07 | 0.60 | 6.87 | 9 | 8 | | 6.79 | 7.39 | | 0.05 | 0.61 | 19 | 2.5 |
| 43-75 | 5.12 | | 5.85 | 0.19 | 0.46 | 0.06 | 0.37 | 1.08 | 7.92 | 13 | 14 | | 6.56 | 7.64 | | 2.41 | 0.58 | 16.5 | 2.5 |
| 75-88 | 5.07 | | 5.33 | 0.52 | 1.35 | 0.09 | 0.81 | 2.77 | 12.80 | 22 | 20 | | 10.79 | 13.56 | | 0.06 | 0.49 | 24.5 | 2.5 |
| 88-120 | 5.02 | | 5.49 | 0.96 | 2.01 | 0.04 | 1.12 | 4.13 | 13.76 | 30 | 27 | | 10.96 | 15.09 | | 0.03 | 0.51 | 16 | 3.5 |
| 120-140 | 4.85 | | 5.78 | 1.82 | 3.16 | 0.04 | 1.72 | 6.74 | 14.65 | 46 | 45 | | 8.28 | 15.02 | | 0.07 | 0.58 | 18 | 7.5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Henry, silt loam (Taxadjunct)

**Pedon #:** S93KY-035-12-3-(1-7)

**Classification:** Fine-silty, mixed, active, thermic Typic Fragiaquults

**Location:** Calloway Co., south of Murray, KY and northeast of Hazel, KY on Meyers Rd. on the Shea Sykes farm.

**Parent Material:** Loess

**Vegetation:** Mixed hardwoods

**Landscape Position:**

**Drainage:**

**Moisture when sampled:** Moist

**Sampling Date:** 5/25/1993

**Permeability:** Very slowly permeable

**Slope:**

**Described by:** A.D. Karathanasis, S. Sykes, R. Toor, M. Zhang and P. Prawito

A—0 to 5 cm.; Gray (10YR 5/1) silt loam; many prominent strong brown (10YR 4/6) mottles; weak granular and medium subangular blocky structure; friable; many roots; gradual smooth boundary.

Eg—5 to 21 cm.; Light brownish gray (10YR 6/2) silt loam; many faint dark brown (7.5YR 3/4) mottles; medium subangular blocky structure; friable; common roots; clear smooth boundary.

Bg—21 to 37 cm.; Light brownish gray (10YR 6/2) silt loam; many faint brownish yellow (10YR 6/8) mottles; subangular blocky structure; friable; clear smooth boundary.

Btg1—37 to 70 cm.; Light brownish gray (10YR 6/2) silt loam; common faint yellow (10YR 7/6) mottles; subangular blocky structure; friable; clear smooth boundary.

Btg2—79 to 90 cm.; Light brownish gray (10YR 6/2) silt loam; few faint brownish yellow (10YR 6/6) mottles; few soft black concretions; subangular blocky structure; clear smooth boundary.

Btxg—90 to 115 cm.; Gray (10YR 6/1) silt loam; many distinct strong brown (7.5YR 5/6) mottles; subangular blocky structure; firm; clear smooth boundary.

Btx—115 to 140 cm.; Brownish yellow (10YR 6/6) silt loam (80%) and gray (10YR 6/1) silt loam; common faint strong brown (7.5YR 5/6) mottles; few black concretions.

**SOIL TYPE.....HENRY (TAXADJUNCT)** **PEDON # ..... S93KY-035-012-03-(1-7)**
**LOCATION .....CALLOWAY COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-5 | A | 16.1 | 68.3 | 15.6 | 1.1 | 2.6 | 6.1 | 4.6 | 1.7 | | | | | | | sil | | | |
| 5-21 | Eg | 14.5 | 73.9 | 11.6 | 1.1 | 1.4 | 5.5 | 4.9 | 1.6 | | | | | | | sil | | | |
| 21-37 | Bg | 14.0 | 72.4 | 13.6 | 1.6 | 1.5 | 4.8 | 4.4 | 1.7 | | | | | | | sil | | | |
| 37-70 | Btg1 | 13.6 | 61.8 | 24.6 | 2.8 | 2.0 | 3.8 | 3.6 | 1.4 | | | | | | | sil | | | |
| 70-90 | Btg2 | 11.5 | 63.3 | 25.2 | 1.6 | 1.6 | 3.2 | 3.4 | 1.7 | | | | | | | sil | | | |
| 90-115 | Btxg | 13.6 | 63.3 | 23.1 | 0.9 | 1.1 | 4.6 | 5.0 | 2.0 | | | | | | | sil | | | |
| 115-140 | Btx | 18.6 | 65.1 | 16.3 | 0.5 | 0.8 | 6.9 | 7.8 | 2.6 | | | | | | | sil | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-5 | 4.60 | | 5.90 | 0.33 | 0.28 | 0.14 | 1.74 | 2.49 | 10.91 | 23 | 19 | | 10.78 | 13.27 | | 0.16 | 6.41 | 45 | 5.5 |
| 5-21 | 4.69 | | 5.95 | 0.15 | 0.23 | 0.06 | 0.14 | 0.58 | 7.38 | 8 | 8 | | 6.38 | 6.96 | | 0.08 | 1.84 | 29 | 4.5 |
| 21-37 | 4.77 | | 5.82 | 0.12 | 0.26 | 0.05 | 1.91 | 2.34 | 7.76 | 30 | 24 | | 7.43 | 9.77 | | 0.15 | 0.60 | 25 | 2 |
| 37-70 | 5.16 | | 5.27 | 0.27 | 1.14 | 0.04 | 0.83 | 2.28 | 12.95 | 18 | 18 | | 10.56 | 12.84 | | 0.10 | 0.62 | 29.5 | 1 |
| 70-90 | 5.12 | | 4.89 | 0.39 | 1.46 | 0.04 | 0.79 | 2.68 | 13.25 | 20 | 21 | | 9.86 | 12.54 | | 0.06 | 0.46 | 34.5 | 1 |
| 90-115 | 4.86 | | 5.49 | 0.88 | 2.30 | 0.07 | 1.54 | 4.79 | 14.35 | 33 | 31 | | 10.37 | 15.16 | | 0.04 | 0.45 | 38.5 | 8 |
| 115-140 | 5.01 | | 5.91 | 1.22 | 2.38 | 0.07 | 1.77 | 5.44 | 12.10 | 45 | 50 | | 5.54 | 10.98 | | 0.06 | 0.15 | 32 | 12.5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Henry, silt loam (Taxadjunct)

**Pedon #:** S94KY-035-12-4-(1-6)

**Classification:** Coarse-silty, mixed, active, thermic Typic Fragiaquults

**Location:** Calloway Co., south of Murray, KY and northeast of Hazel, KY on Meyers Rd. on the Shea Sykes farm.

**Parent Material:**

**Vegetation:** Bottomland hardwoods

**Landscape Position:**

**Drainage:** Poorly drained

**Moisture when sampled:**

**Sampling Date:** 6/21/1994

**Permeability:** Slow

**Slope:**

**Described by:** A.D. Karathanasis, R. Forsythe, S. Sykes, R. Toor

A—0 to 4 in.; Brown (10YR 5/3) silt loam; many fine prominent strong brown (7.5YR 5/6) and yellowish red (5YR 5/6), and few fine grayish brown (10YR 5/2) mottles; weak granular structure; very friable; common fine and medium roots; gradual smooth boundary.

BE—4 to 11 in.; Light brownish gray (10YR 6/2) silt loam; common medium distinct brown (10YR 5/3), strong brown (7.5YR 5/6), and yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; firm; gradual smooth boundary.

Bg—11 to 24 in.; Grayish brown (10YR 5/2) silt loam; common medium prominent brown (7.5YR 4/4) and strong brown (7.5YR 5/6) mottles; weak medium subangular blocky structure; firm; few coarse and medium Mn concretions; clear smooth boundary.

Btg—24 to 29 in.; Gray (10YR 5/1) silty clay loam; common medium prominent strong brown (7.5YR 5/6) and common medium distinct brown (10YR 5/3) mottles; weak medium subangular blocky structure; firm; few coarse and medium Mn concretions; clear smooth boundary.

Btx1—29 to 36 in.; Yellowish brown (10YR 5/6), grayish brown (10YR 5/2) , and strong brown (7.5YR 5/6) silt loam; mottled matrix; weak medium prismatic parting to moderate medium subangular blocky; common Mn concretions and stains; clay coatings on ped faces; very firm; brittle; clear wavy boundary.

Btx2—36 to 60 in.; Brown (7.5YR 4/4) and strong brown (7.5YR 5/6) silt loam; light brownish gray (10YR 6/2) mottles on ped faces and yellowish brown (10YR 5/6) silty clay streaks; moderate medium prismatic parting to medium subangular blocky; very firm; brittle; few fine roots on prism faces.

**SOIL TYPE..... HENRY (TAXAJUNCT)** **PEDON # ..... S94KY-035-012-04-(1-6)**
**LOCATION .....CALLOWAY COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-4 | A | 21.0 | 70.9 | 8.1 | 1.1 | 2.4 | 8.2 | 7.1 | 2.2 | | | | | | | sil | | | |
| 4-11 | BE | 18.0 | 71.3 | 10.7 | 1.1 | 1.6 | 6.6 | 6.5 | 2.2 | | | | | | | sil | | | |
| 11-24 | Bg | 15.9 | 72.3 | 11.8 | 1.3 | 1.9 | 5.2 | 5.5 | 2.0 | | | | | | | sil | | | |
| 24-29 | Btg | 13.0 | 65.9 | 21.1 | 1.6 | 1.7 | 3.9 | 4.1 | 1.7 | | | | | | | sil | | | |
| 29-36 | Btx1 | 14.5 | 62.9 | 22.6 | 0.7 | 1.8 | 4.8 | 5.0 | 2.2 | | | | | | | sil | | | |
| 36-60 | Btx2 | 20.6 | 62.2 | 17.2 | 0.4 | 1.1 | 7.9 | 8.6 | 2.6 | | | | | | | sil | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-4 | 4.75 | | 6.15 | 0.25 | 0.17 | 0.06 | 0.25 | 0.75 | 7.29 | 10 | 7 | | 9.56 | 10.31 | | 0.05 | 3.09 | 50.5 | 4 |
| 4-11 | 4.77 | | 6.38 | 0.13 | 0.16 | 0.04 | 0.06 | 0.39 | 5.38 | 7 | 5 | | 8.09 | 8.48 | | 0.05 | 0.98 | 27 | 3 |
| 11-24 | 4.78 | | 5.94 | 0.18 | 0.23 | 0.04 | 0.16 | 0.61 | 7.18 | 8 | 7 | | 8.04 | 8.65 | | 0.05 | 0.66 | 26 | 2.5 |
| 24-29 | 4.89 | | 4.94 | 0.40 | 0.74 | 0.09 | 0.28 | 1.51 | 13.11 | 11 | 10 | | 13.61 | 15.12 | | 0.05 | 1.00 | 54.5 | 2.5 |
| 29-36 | 5.07 | | 4.78 | 0.28 | 1.01 | 0.10 | 0.67 | 2.06 | 16.06 | 13 | 11 | | 16.15 | 18.21 | | 0.07 | 0.18 | 59.5 | 3.5 |
| 36-60 | 5.20 | | 5.61 | 0.55 | 1.39 | 0.07 | 1.05 | 3.06 | 10.05 | 30 | 25 | | 9.10 | 12.16 | | 0.05 | 0.50 | 43 | 12 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| Bg | 91 | 9 | | | | | | | | | | | | | | | | | |
| Btg | 83 | 17 | | | | | | | | | | | | | | | | | |
| Btx1 | 82 | 18 | | | | | | | | | | | | | | | | | |
| Btx2 | 69 | 31 | | | | | | | | | | | | | | | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Henry, silt loam (Taxadjunct)

**Pedon #:** S94KY-035-2-6-(1-6)

**Classification:** Coarse-silty, mixed, active, thermic Fragic Epiaqualfs

**Location:** Calloway Co., north of Murray, KY and south of Almo Heights on the Howell Bucy farm.

**Parent Material:** Loess

**Vegetation:** Woods

**Landscape Position:** Terrace

**Drainage:**

**Moisture when sampled:** Moist

**Sampling Date:** 6/22/1994

**Permeability:**

**Slope:** 1 to 2%

**Described by:** A.D. Karathanasis, S. Sykes, and R. Forsythe

A1—0 to 3 in.; Brown (10YR 4/3) silt loam; weak fine granular structure; many fine and medium roots; very friable; clear smooth boundary.

A2—3 to 11 in.; Brown (10YR 4/3) silt loam; few fine distinct strong brown (7.5YR 5/6) and few fine faint light brownish gray (10YR 6/2) mottles; weak fine and medium subangular blocky structure; common fine and medium roots; few black and brown concretions and stains; firm; clear smooth boundary.

E—11 to 21 in.; Light brownish gray (10YR 6/2) silt loam; common fine distinct strong brown (7.5YR 5/6) and common medium distinct brown (7.5 4/4) mottles; weak medium subangular blocky structure; few fine roots; few small black and brown concretions; firm; clear smooth boundary.

Btg1—21 to 38 in.; Light brownish gray (10YR 6/2) silt loam; common fine and medium distinct strong brown (7.5YR 5/6) and brown (7.5YR 4/4) mottles; weak medium subangular blocky structure; few fine roots; few black and brown concretions and stains; firm; clear wavy boundary.

Btg2—38 to 45 in.; Grayish brown (10YR 5/2) silty clay loam; common medium prominent brown (7.5YR 4/4, 5/2) and common medium distinct yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; few fine roots; few medium black concretions and black and brown stains; firm; clear smooth boundary.

Btx—45 to 60 in.; Dark brown (7.5YR 4/3) silt loam; common medium and coarse prominent strong brown (7.5YR 5/6) and grayish brown (10YR 5/2) mottles; weak coarse prismatic parting to moderate medium subangular blocky structure; few fine roots along prism faces; few black and brown concretions; very firm.

**Note:** Coarse size mottles are found between prism faces, medium size mottles are within prisms.

**SOIL TYPE.....HENRY (TAXADJUNCT)** **PEDON # ..... 94KY-035-02-06-(1-6)**
**LOCATION .....CALLOWAY COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-3 | A1 | 15.2 | 73.8 | 11.0 | 2.7 | 2.8 | 4.4 | 3.5 | 1.8 | | | | | | | sil | | | |
| 3-11 | A2 | 13.8 | 74.8 | 11.4 | 1.9 | 2.1 | 3.8 | 3.9 | 2.1 | | | | | | | sil | | | |
| 11-21 | E | 10.9 | 78.4 | 10.7 | 1.8 | 2.1 | 2.6 | 2.8 | 1.6 | | | | | | | sil/si | | | |
| 21-38 | Btg1 | 10.9 | 76.1 | 13.0 | 2.4 | 2.5 | 2.4 | 2.2 | 1.4 | | | | | | | sil | | | |
| 38-45 | Btg2 | 12.3 | 68.5 | 19.2 | 2.9 | 3.0 | 2.7 | 2.2 | 1.5 | | | | | | | sil | | | |
| 45-60 | Btx | 14.1 | 58.3 | 27.6 | 1.8 | 2.3 | 3.7 | 4.2 | 2.1 | | | | | | | sil/sicl | | | |
| | | pH | | Exchangeable Bases (5A1) | | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-3 | 5.13 | | 6.22 | 1.64 | 0.33 | 0.06 | 0.06 | 2.11 | 9.26 | 23 | 18 | | 9.90 | 12.01 | | 0.19 | 3.73 | 42.5 | 4.5 |
| 3-11 | 5.38 | | 6.54 | 1.95 | 0.34 | 0.05 | 0.20 | 2.54 | 6.64 | 38 | 29 | | 6.30 | 8.84 | | 0.14 | 1.37 | 24.5 | 3 |
| 11-21 | 5.23 | | 6.49 | 1.67 | 0.45 | 0.05 | 0.11 | 2.28 | 7.75 | 29 | 23 | | 7.74 | 9.68 | | 0.26 | 1.22 | 28 | 3.5 |
| 21-38 | 5.15 | | 6.22 | 1.02 | 0.68 | 0.05 | 0.18 | 1.93 | 7.72 | 25 | 20 | | 7.80 | 9.73 | | 0.10 | 0.86 | 39.5 | 4 |
| 38-45 | 5.19 | | 5.82 | 0.98 | 1.50 | 0.08 | 0.57 | 3.13 | 11.15 | 28 | 23 | | 10.42 | 13.55 | | 0.14 | 0.41 | 50.5 | 3.5 |
| 45-60 | 5.07 | | 5.75 | 1.75 | 3.13 | 0.11 | 1.04 | 6.03 | 16.61 | 36 | 36 | | 10.64 | 16.67 | | 0.11 | 0.50 | 63 | 4 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| EBg | 77 | 23 | | | | | | | | | | | | | | | | | |
| Btg1 | 100 | | | | | | | | | | | | | | | | | | |
| Btg2 | 77 | 23 | | | | | | | | | | | | | | | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Henry, silt loam (Taxadjunct)

**Pedon #:** S94KY-035-4-4-(1-6)

**Classification:** Fine-silty, mixed, acid, active, thermic Typic Fragiaquults

**Location:** Calloway Co., southwest of Murray, KY on the Jones Parker farm at the end of Sage Rd. in the Edgehill community.

**Parent Material:** Loess

**Vegetation:** Bottomland hardwoods

**Landscape Position:**

**Drainage:** Poorly drained

**Moisture when sampled:**

**Sampling Date:** 6/21/1994

**Permeability:** Very slow

**Slope:** 0 to 1%

**Described by:** A.D. Karathanasis, R. Forsythe, R. Toor, and J. McIntosh

A—0 to 2 in.; Dark grayish brown (10YR 4/2) silt loam; weak fine granular structure; very friable; common fine roots; clear smooth boundary.

BE—2 to 14 in.; Light brownish gray (10YR 6/2) silt loam; few fine prominent yellowish red (5YR 5/8) and common medium prominent yellowish brown (10YR 5/6) mottles; moderate fine and medium subangular blocky structure; friable; few fine roots; clear wavy boundary.

Btg1—14 to 20 in.; Light gray (10YR 6/1) silt loam; few fine distinct yellowish brown (10YR 5/6) mottles; many distinct grayish brown (10YR 5/2) clay skins throughout; moderate fine and medium subangular blocky structure; friable; few fine roots; abrupt smooth boundary.

Btg2—20 to 34 in.; Light gray (10YR 6/1) silty clay loam; few fine distinct yellowish brown (10YR 5/6) mottles; many distinct gray (10YR 5/1) clay skins; moderate coarse subangular blocky structure; firm; gradual smooth boundary.

Btxg1—34 to 49 in.; Weak red (2.5YR 5/2) and pale red (2.5YR 6/2) silt loam; common medium prominent strong brown (7.5YR 5/6) and yellowish brown (10YR 5/6) mottles; weak coarse prismatic parting to strong medium angular blocky structure; very brittle; very firm; few fine roots on ped faces; clear smooth boundary.

Btxg2—49 to 60 in.; Light brownish gray (10YR 6/2) silt loam; common fine prominent brown (7.5YR 4/3) and common fine distinct yellowish brown (10YR 5/6) mottles; weak coarse prismatic parting to strong medium angular blocky structure; very firm; few fine roots on ped faces.

**SOIL TYPE.....HENRY (TAXADJUNCT)** **PEDON # ..... S94KY-035-04-04-(1-6)**
**LOCATION .....CALLOWAY COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-2 | A | 14.2 | 74.4 | 11.4 | 1.6 | 3.9 | 3.5 | 3.0 | 2.2 | | | | | | | sil | | | |
| 2-14 | BE | 6.1 | 78.5 | 15.4 | 0 | 0.4 | 1.6 | 2.1 | 2.0 | | | | | | | sil | | | |
| 14-20 | Btg1 | 4.4 | 79.9 | 15.7 | 0 | 0.2 | 1.1 | 1.6 | 1.5 | | | | | | | sil | | | |
| 20-34 | Btg2 | 2.5 | 61.9 | 35.6 | 0 | 0.1 | 0.6 | 0.8 | 1.0 | | | | | | | sicl | | | |
| 34-49 | Btxg1 | 5.8 | 71.3 | 22.9 | 0 | 0.2 | 1.5 | 2.5 | 1.6 | | | | | | | sil | | | |
| 49-60 | Btxg2 | 11.8 | 69.0 | 19.2 | 0 | 0.2 | 6.3 | 4.0 | 1.3 | | | | | | | sil | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-2 | 4.14 | | 5.87 | 0.36 | 0.21 | 0.11 | 0.10 | 0.78 | 12.02 | 6 | 5 | | 14.71 | 15.49 | | | 5.19 | 66 | 9 |
| 2-14 | 4.28 | | 5.27 | 0.06 | 0.17 | 0.05 | 0.06 | 0.34 | 9.63 | 4 | 4 | | 8.80 | 9.14 | | | 1.12 | 32.5 | 3.5 |
| 14-20 | 4.84 | | 4.97 | 0.16 | 0.44 | 0.06 | 0.14 | 0.80 | 10.15 | 8 | 8 | | 9.36 | 10.16 | | | 0.51 | 39.5 | 4.5 |
| 20-34 | 4.37 | | 4.37 | 0.75 | 1.90 | 0.12 | 0.87 | 3.64 | 25.20 | 14 | 16 | | 19.21 | 22.85 | | | 0.27 | 93.5 | 2.5 |
| 34-49 | 4.71 | | 5.11 | 1.04 | 1.60 | 0.08 | 1.04 | 3.76 | 14.51 | 26 | 25 | | 11.04 | 14.80 | | | 0.232 | 61 | 23.5 |
| 49-60 | 4.73 | | 5.97 | 1.41 | 1.74 | 0.08 | 1.39 | 4.62 | 12.66 | 36 | 42 | | 6.34 | 10.96 | | | 0.39 | 63.5 | 24.5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Huntington, silt loam

**Pedon #:** S96KY-015-004-(1-3)

**Classification:** Fine-silty, mixed, active, mesic Fluventic Hapludolls

**Location:** Boone County, KY., Flaig farm, Hwy. 536 west of Union.

**Parent Material:** Recent alluvium

**Vegetation:** Weeds

**Landscape Position:** Flood plain

**Drainage:** Well drained

**Moisture when sampled:** Moist

**Permeability:** Moderate

**Slope:** 0 to 2%

**Described by:** Jutta Pils

Ap—0 to 22 cm: Dark grayish brown (10YR 3/2) silt loam; weak granular structure; friable; abrupt boundary.

$Bw_1$—22 to 54 cm. Dark brown (10YR 3/3) silt loam; few yellowish brown (10YR 5/4) mottles; weak subangular blocky structure; friable; gradual boundary.

$Bw_2$—54 to 100 cm. Brown (10YR 4/3) silt loam; few light olive brown (2.5Y 5/3) mottles; weak sub-angular blocky structure; friable.

**SOIL TYPE.....HUNTINGTON** **PEDON # .....S96KY-015-004-(1-3)**
**LOCATION .....BOONE COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF | VFS Plus Silt | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | (2-0.1) | (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-22 | Ap | 6.8 | 75.3 | 17.9 | 0.9 | 1.3 | 0.9 | 1.3 | 2.4 | | | | | | | sil | | | |
| 22-54 | Bw1 | 2.3 | 78.4 | 19.3 | 0.1 | 0.1 | 0.3 | 0.5 | 1.3 | | | | | | | sil | | | |
| 54-100+ | Bw2 | 2.2 | 79.6 | 18.2 | 0.0 | 0.0 | 0.1 | 0.3 | 1.8 | | | | | | | sil | | | |
| | | pH | | Exchangeable Bases (5A1) | | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/ 100gm | 602z Mg meq/ 100gm | 602z K meq/ 100gm | 6P2z Na meq/ 100gm | 5B1a TEB meq/ 100gm | 5A1z CEC meq/ 100gm | 5C1 Pct | 5C3 Pct | H+Al meq/ 100 gm | EA meq/ 100gm | SC meq/ 100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-22 | 7.4 | | | 19.49 | 1.25 | 0.32 | 0.15 | 21.21 | 18.09 | 117 | 85 | | 3.62 | 24.8 | | 0.92 | 4.0 | 140.5 | 101 |
| 22-54 | 7.5 | | | 15.23 | 1.02 | 0.20 | 0.09 | 16.54 | 16.18 | 102 | 82 | | 3.52 | 20.1 | | 0.22 | 1.66 | 101 | 61.5 |
| 54-100+ | 7.6 | | | 12.45 | 1.00 | 0.17 | 0.09 | 13.71 | 13.53 | 101 | 84 | | 2.55 | 16.3 | | 0.14 | 1.14 | 84.5 | 50.5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV/HSM | CL | INT | K | MI | Q | GI | GO | F |
| Ap | | | | | | | | | | | 39 | | 13 | 14 | 25 | 6 | | 2 | |
| Bw1 | | | | | | | | | | | 56 | | | 15 | 21 | 6 | | 2 | |
| Bw2 | | | | | | | | | | | 47 | | 14 | 13 | 17 | 7 | | 1 | 1 |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Huntington, silt loam

**Pedon #:** S97KY-015-003-(1-3)

**Classification:** Fine-silty, mixed, active, mesic Fluventic Hapludolls

**Location:** Boone County, KY. Northern KY Aggregates, Hwy 20 near Petersburg.

**Parent Material:** Recent alluvium

**Vegetation:** Weeds

**Landscape Position:** Flood plain

**Drainage:** Well-drained

**Moisture when sampled:** Moist

**Permeability:** Moderate

**Slope:** 0 to 2% (1%)

**Described by:** Jutta R.V. Pils

Ap—0 to 30 cm; Very dark grayish brown (10YR 3/2) silt loam; weak granular structure; very friable; gradual boundary.

$Bw_1$—30 to 105 cm; Very dark grayish brown (10YR 3/2) silt loam; weak sub-angular blocky structure; very friable; gradual boundary.

$Bw_2$—105 to 124+ cm; Brown (10YR 4/3) silt loam; weak sub-angular blocky structure; very friable.

**SOIL TYPE.....HUNTINGTON** **PEDON # .....S97KY-015-03-(1-3)**
**LOCATION .....BOONE COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand | VFS Plus | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Coarser Than VF (2-0.1) | Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-30 | Ap | 48.9 | 36.9 | 14.2 | 0.1 | 0.9 | 2.8 | 23.2 | 21.9 | | | | | | | sil | | | |
| 30-105 | Bw1 | 28.9 | 56.1 | 15.0 | 0.0 | 0.2 | 1.4 | 11.6 | 15.7 | | | | | | | sil | | | |
| 105-124+ | Bw2 | 13.8 | 64.7 | 21.5 | 0.1 | 0.1 | 0.3 | 3.6 | 9.7 | | | | | | | sil | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-30 | 7.4 | | | 14.3 | 2.2 | 0.3 | 0.1 | 16.9 | 16.2 | 104.5 | | | 3.75 | | | 1.24 | 7.04 | 227 | 53 |
| 30-105 | 7.6 | | | 11.2 | 3.6 | 0.2 | 0.1 | 15.1 | 16.2 | 93.3 | | | 4.92 | | | 1.41 | 8.05 | 193 | 19 |
| 105-124+ | 7.1 | | | 11.8 | 3.7 | 0.2 | 0.1 | 15.8 | 20.6 | 76.7 | | | 4.14 | | | 0.55 | 5.16 | 162 | 8 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV/HSM | CL | INT | K | MI | Q | GI | GO | F |
| Ap | | | | | | | | | | | 26 | | | 42 | 26 | 3 | | | 3 |
| Bw1 | | | | | | | | | | | 26 | | 17 | 31 | 22 | 2 | | 1 | 2 |
| Bw2 | | | | | | | | | | | 23 | | | 48 | 22 | 4 | | 1 | 2 |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Jessup, silt loam (Taxadjunct)

**Pedon #:** S95KY-015-003-(1-6)

**Classification:** Fine, vermiculitic, superactive, mesic Typic Hapludults

**Location:** Boone County, Ky. George Rehkamp's farm, Hwy. 237 northwest of US 42.

**Parent Material:** Residuum (loess over glacial till)

**Vegetation:** Pasture

**Landscape Position:** Upland/side slope

**Drainage:** Well drained

**Moisture when sampled:** Moist

**Permeability:** Moderately slow

**Slope:** 12 to 20%

**Described by:** K. Collins

Ap—0 to 14 cm: Dark brown (10YR 3/3) silt loam; weak granular structure; very friable; clear boundary.

$Bt_1$—14 to 34 cm: Dark yellowish brown (10YR 4/4) silty clay loam; weak sub-angular blocky structure; friable with concretions; gradual boundary.

$Bt_2$—34 to 50 cm: Yellowish brown (10YR 5/6) silty clay loam; moderate sub-angular blocky structure; firm with concretions; clear boundary.

$2Bt_3$—50 to 80 cm: Dark yellowish brown (10YR 4/6) silty clay; common, distinct mottles; moderate sub-angular blocky structure; firm; gradual boundary.

$2Bt_4$—80 to 113 cm: Dark yellowish brown (10YR 4/6) clay; common, distinct mottles; moderate sub-angular blocky structure; firm with concretions; gradual boundary.

$2Bt_5$—113 to 145 cm: Yellowish brown (10YR 5/6) clay; common, distinct mottles; moderate sub-angular blocky; firm with concretions.

**SOIL TYPE.....JESSUP (TAXADJUNCT)** **PEDON # .....S95KY-015-003-(1-6)**
**LOCATION .....BOONE COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-14 | Ap | 14.4 | 70.8 | 14.8 | 1.2 | 1.8 | 3.7 | 4.0 | 3.7 | | | | | | | sil | | | |
| 14-34 | Bt1 | 16.0 | 54.3 | 29.7 | 2.9 | 2.4 | 2.7 | 3.3 | 4.7 | | | | | | | sicl | | | |
| 34-50 | Bt2 | 18.4 | 44.8 | 36.8 | 3.5 | 2.3 | 2.6 | 3.8 | 6.2 | | | | | | | sicl/cl | | | |
| 50-80 | 2Bt3 | 12.0 | 40.4 | 47.6 | 0.9 | 1.0 | 1.9 | 3.0 | 5.2 | | | | | | | sic | | | |
| 80-113 | 2Bt4 | 15.7 | 37.6 | 46.7 | 1.4 | 1.7 | 2.8 | 4.0 | 5.8 | | | | | | | c | | | |
| 113-145 | 2Bt5 | 17.6 | 35.8 | 46.6 | 2.4 | 2.4 | 3.0 | 4.1 | 5.7 | | | | | | | c | | | |
| | | pH | | Exchangeable Bases (5A1) | | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/ 100gm | 602z Mg meq/ 100gm | 602z K meq/ 100gm | 6P2z Na meq/ 100gm | 5B1a TEB meq/ 100gm | 5A1z CEC meq/ 100gm | 5C1 Pct | 5C3 Pct | H+Al meq/ 100 gm | EA meq/ 100gm | SC meq/ 100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-14 | 5.4 | | 6.6 | 7.03 | 0.72 | 0.32 | 0.06 | 8.13 | 21.32 | 38.1 | 37.1 | | 13.78 | 21.91 | | 0.50 | 3.04 | 116 | 8.5 |
| 14-34 | 4.9 | | 5.5 | 3.72 | 0.73 | 0.15 | 0.05 | 4.65 | 18.09 | 25.7 | 21.9 | | 16.62 | 21.27 | | 0.26 | 0.81 | 64 | 0.5 |
| 34-50 | 5.0 | | 4.8 | 4.11 | 1.80 | 0.17 | 0.04 | 6.12 | 22.50 | 27.2 | 24.4 | | 19.0 | 25.12 | | 0.20 | 0.44 | 67 | 0.5 |
| 50-80 | 4.8 | | 4.5 | 6.48 | 3.53 | 0.22 | 0.08 | 10.31 | 36.03 | 28.6 | 29.1 | | 25.1 | 35.41 | | 0.25 | 0.44 | 110.5 | 0.5 |
| 80-113 | 4.8 | | 4.7 | 6.60 | 3.29 | 0.21 | 0.10 | 10.20 | 29.41 | 34.7 | 30.8 | | 22.91 | 33.11 | | 0.25 | 0.25 | 97.5 | 0.5 |
| 113-145 | 4.9 | | 4.8 | 5.92 | 2.69 | 0.21 | 0.10 | 8.92 | 25.74 | 34.6 | 30.0 | | 20.84 | 29.76 | | 0.49 | 0.25 | 91.5 | 0.5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | | Clay | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| Ap | 100 | | | | | | | | | 62 | | | 2 | 17 | 16 | 3 | | | |
| Bt2 | 97 | 3 | | | | | | | | 61 | | | 18 | 10 | 8 | 3 | | | |
| 2Bt5 | 100 | | | | | | | | | 62 | | | 2 | 16 | 11 | 6 | | | 3 |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Jessup, silt loam (Taxadjunct)

**Pedon #:** S95KY-015-004-(1-6)

**Classification:** Fine, vermiculitic, active, mesic Typic Hapludalfs

**Location:** Boone County, KY., Kinman's farm, Ky Hwy 18 east of Burlington, KY.

**Parent Material:** Residuum (loess over glacial till)

**Vegetation:** Pasture

**Landscape Position:** Upland/side slope

**Drainage:** Well drained

**Moisture when sampled:** Moist

**Permeability:** Moderately slow

**Slope:** 12 to 20%

**Described by:** K. Collins

Ap—0 to 18 cm: Dark brown (10YR 3/3) silt loam; weak granular structure; very friable; gradual boundary.

BA—18 to 33 cm: Brown (10YR 4/3) silt loam: weak sub-angular blocky structure; friable; clear boundary.

$Bt_1$—33 to 50 cm: Dark yellowish brown (10YR 4/4) silty clay loam; moderate sub-angular blocky structure; friable with concretions; gradual boundary.

$Bt_2$—50 to 70 cm: Yellowish brown (10YR 5/6) silty clay loam; common, distinct mottles; moderate sub-angular blocky structure; firm with concretions; clear boundary.

$2Bt_3$—70 to 108 cm: Red (2.5YR 5/6) silty clay; many prominent mottles; moderate sub-angular blocky structure; firm with concretions; gradual boundary.

$2Bt_4$—108 to 149 cm: Red (2.5YR 5/6) clay; many prominent mottles; moderate sub-angular blocky structure; firm with concretions.

**SOIL TYPE.....JESSUP (TAXADJUNCT)** **PEDON # .....S95KY-015-004-(1-6)**
**LOCATION .....BOONE COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-18 | Ap | 17.4 | 68.7 | 13.9 | 0.6 | 2.7 | 3.4 | 4.6 | 6.1 | | | | | | | sil | | | |
| 18-33 | BA | 11.8 | 62.7 | 25.5 | 1.0 | 1.6 | 1.8 | 2.4 | 5.0 | | | | | | | sil | | | |
| 33-50 | Bt1 | 17.7 | 51.1 | 31.2 | 2.4 | 2.5 | 3.1 | 4.3 | 5.4 | | | | | | | sicl | | | |
| 50-70 | Bt2 | 19.6 | 42.3 | 38.1 | 2.1 | 2.6 | 4.2 | 5.3 | 5.4 | | | | | | | sicl | | | |
| 70-108 | 2Bt3 | 13.3 | 44.5 | 42.2 | 0.8 | 1.5 | 2.5 | 3.6 | 4.9 | | | | | | | sic | | | |
| 108-149 | 2Bt4 | 4.9 | 34.4 | 60.7 | 0.1 | 0.2 | 0.7 | 1.2 | 2.7 | | | | | | | c | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/ 100gm | 602z Mg meq/ 100gm | 602z K meq/ 100gm | 6P2z Na meq/ 100gm | 5B1a TEB meq/ 100gm | 5A1z CEC meq/ 100gm | 5C1 Pct | 5C3 Pct | H+Al meq/ 100 gm | EA meq/ 100gm | SC meq/ 100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-18 | 6.7 | | 7.0 | 11.33 | 1.28 | 0.49 | 0.09 | 13.19 | 20.59 | 64.1 | 62.1 | | 8.06 | 21.25 | | 0.31 | 3.26 | 173.5 | 14 |
| 18-33 | 6.5 | | 6.9 | 7.76 | 1.78 | 0.17 | 1.76 | 11.47 | 16.47 | 69.7 | 59.2 | | 7.89 | 19.36 | | 0.11 | 1.01 | 74.5 | 0.5 |
| 33-50 | 5.3 | | 6.5 | 8.40 | 2.39 | 0.21 | 0.17 | 11.17 | 19.26 | 58.0 | 48.7 | | 11.74 | 22.91 | | 0.08 | 0.65 | 89 | 0.5 |
| 50-70 | 5.2 | | 5.5 | 8.64 | 3.21 | 0.18 | 0.32 | 12.35 | 19.26 | 64.1 | 43.4 | | 16.13 | 28.48 | | 0.09 | 0.38 | 85.5 | 0.5 |
| 70-108 | 5.0 | | 5.6 | 11.52 | 5.32 | 0.26 | 0.20 | 17.30 | 27.94 | 61.9 | 50.6 | | 16.87 | 34.17 | | 0.11 | 0.37 | 113.5 | 26.5 |
| 108-149 | 6.8 | | 7.1 | 28.30 | 8.22 | 0.27 | 3.40 | 40.19 | 31.62 | 127.1 | 85.0 | | 7.11 | 47.3 | | 0.36 | 0.27 | 124 | 6.5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | | Clay | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| Ap | 87 | 13 | | | | | | | | 57 | | | 3 | 16 | 14 | 10 | | | |
| Bt2 | 100 | | | | | | | | | 75 | | | | 11 | 10 | 2 | | | 2 |
| 2Bt4 | 76 | 24 | | | | | | | | 66 | | | 17 | 5 | 8 | 2 | | | 2 |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Jessup, silt loam

**Pedon #:** S98KY-015-002-(1-6)

**Classification:** Fine, mixed, active, mesic Typic Hapludalfs

**Location:** Boone County, KY., Foltz's farm, Hwy. 20 east of Petersburg.

**Parent Material:** Residuum (loess over glacial till)

**Vegetation:** Pasture

**Landscape Position:** Side slope

**Drainage:** Well drained

**Moisture when sampled:** Moist

**Permeability:** Moderately slow

**Slope:** 12 to 20% (14.5%)

**Described by:** Jutta R.V. Pils

Ap—0 to 6 cm: Brown (10YR 4/3) silt loam; weak granular structure, friable, abrupt boundary.

$Bt_1$—6 to 37 cm: Dark yellowish brown (10YR 4/6) silty clay; weak subangular blocky structure; firm with Mn concretions; gradual boundary.

$2Bt_2$—37 to 55 cm: Dark yellowish brown (10YR 4/6) silty clay; many yellowish brown (10YR 5/4) mottles; moderate subangular blocky structure; firm with Mn concretions; gradual boundary.

$2Bt_3$—55 to 80 cm: Yellowish brown (10YR 5/6) silty clay; few light brownish gray (2.5Y 6/2) depletions; moderate subangular blocky structure; firm with Mn concretions; gradual boundary.

$2Bt_4$—80 to 107 cm: Yellowish brown (10YR 5/6) silty clay; many dark yellowish brown (7.5YR 4/6) mottles and few grayish brown (2.5Y 5/2) depletions; weak platy structure; firm; gradual boundary.

2BC—107 to 122+ cm: Light olive brown (2.5Y 5/4) silty clay; many yellowish brown (10YR 5/6) mottles and few light grayish brown (2.5Y 6/2) depletions; weak platy structure; firm.

**SOIL TYPE**.....**JESSUP** **PEDON #** .....**S98KY-015-02-(1-6)**
**LOCATION** .....**BOONE COUNTY, KENTUCKY** **GENERAL METHODS** .....**1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-6 | Ap | 9.2 | 68.7 | 22.1 | 0.4 | 0.4 | 3.3 | 2.6 | 2.5 | | | | | | | sil | | | |
| 6-37 | Bt1 | 12.1 | 35.7 | 52.2 | 0.9 | 1.6 | 2.2 | 3.3 | 4.1 | | | | | | | sic | | | |
| 37-55 | 2Bt2 | 9.6 | 35.3 | 55.1 | 0.1 | 0.4 | 0.9 | 3.0 | 5.2 | | | | | | | sic | | | |
| 55-80 | 2Bt3 | 6.6 | 45.6 | 47.8 | 0.2 | 0.7 | 0.9 | 1.8 | 3.0 | | | | | | | sic | | | |
| 80-107 | 2Bt4 | 6.8 | 51.1 | 42.1 | 0.4 | 0.5 | 0.7 | 1.1 | 4.1 | | | | | | | sic | | | |
| 107-122+ | 2BC | 4.6 | 54.1 | 41.3 | 0.6 | 0.5 | 0.6 | 0.9 | 2.0 | | | | | | | sic | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-6 | 5.7 | | 6.4 | 14.6 | 2.5 | 0.7 | 0.1 | 17.8 | 27.9 | 63.6 | 56.3 | | 13.8 | 31.6 | | 0.19 | 5.80 | 445 | 92 |
| 6-37 | 5.6 | | 6.2 | 24.6 | 1.9 | 0.3 | 0.1 | 26.8 | 33.8 | 79.3 | 61.6 | | 16.7 | 43.5 | | 0.21 | 1.08 | 227 | 244 |
| 37-55 | 6.0 | | 6.7 | 30.9 | 1.6 | 0.2 | 0.1 | 32.9 | 27.9 | 117.8 | 78.1 | | 9.2 | 42.1 | | 0.24 | 0.56 | 184 | 111 |
| 55-80 | 6.7 | | 7.1 | 28.4 | 1.3 | 0.2 | 0.1 | 29.9 | 25.0 | 119.9 | 87.9 | | 4.1 | 34.0 | | 0.18 | 0.45 | 142 | 57 |
| 80-107 | 7.2 | | | 22.1 | 0.9 | 0.1 | 0.1 | 23.2 | 16.2 | 143.6 | 92.1 | | 3.0 | 25.2 | | 0.19 | 0.32 | 136 | 26 |
| 107-122+ | 7.9 | | | 30.7 | 1.0 | 0.1 | 0.1 | 31.9 | 13.2 | 240.8 | 97.6 | | 0.8 | 32.7 | | 10.16 | 2.14 | 138 | 5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | | Clay | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV/HSM | CL | INT | K | MI | Q | GI | GO | F |
| Ap | | | | | | | | | | | 50 | | 23 | 7 | 14 | 6 | | | |
| Bt2 | | | | | | | | | | 66 | | | 17 | 6 | 7 | 2 | | | 2 |
| BC | | | | | | | | | | 59 | | | 13 | 4 | 22 | 2 | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

## Jessup, silt loam

**Pedon #:** S98KY-015-004-(1-6)

**Classification:** Fine, mixed, superactive, mesic Typic Hapludalfs

**Location:** Boone County, KY., Randall's farm, Hwy. 20 east of Petersburg

**Parent Material:** Residuum (loess over glacial till)

**Vegetation:** Pasture

**Landscape Position:** Backslope

**Drainage:** Well drained

**Moisture when sampled:** Moist

**Permeability:** Moderately slow

**Slope:** 6 to 12% (8%)

**Described by:** Jutta R.V. Pils

Ap—0 to 17 cm: Brown (10YR 4/3) silt loam; weak granular structure; friable; abrupt boundary.

$Bt_1$—17 to 42 cm: Dark yellowish brown (10YR 4/6) silty clay loam; weak subangular blocky structure; firm; gradual boundary.

$Bt_2$—42 to 60 cm: Dark yellowish brown (10YR 4/6) silty clay loam; few light yellowish brown (10YR 6/4) mottles; moderate angular blocky structure; firm; clear boundary.

$2Bt_3$—60 to 81 cm: Dark yellowish brown (10YR 4/6) silty clay; many light brownish gray (2.5Y 6/2) depletions; moderate angular blocky structure; firm with Mn concretions; gradual boundary.

$2Bt_4$—81 to 113 cm: Light olive brown (2.5Y 5/4) silty clay; many very dark grayish brown (10YR 3/2) mottles and few light brownish gray (2.5Y 6/2) depletions; moderate angular blocky structure; very firm; gradual boundary.

2BC—113 to 122+ cm: Light olive brown (2.5Y 5/4) clay; many yellowish brown (10YR 5/8) and few very dark grayish brown (10YR 3/2) mottles; moderate angular blocky; very firm.

**SOIL TYPE**.....**JESSUP** **PEDON #** .....**S98KY-015-04-(1-6)**
**LOCATION** .....**BOONE COUNTY, KENTUCKY** **GENERAL METHODS** .....**1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand | VFS Plus | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Coarser Than VF (2-0.1) | Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-17 | Ap | 9.2 | 80.4 | 10.4 | 0.4 | 1.6 | 1.9 | 1.7 | 3.6 | | | | | | | sil | | | |
| 17-42 | Bt1 | 4.1 | 67.3 | 28.6 | 0.4 | 0.2 | 0.3 | 0.4 | 2.7 | | | | | | | sicl | | | |
| 42-60 | Bt2 | 3.0 | 60.9 | 36.1 | 0.1 | 0.2 | 0.4 | 0.7 | 1.8 | | | | | | | sicl | | | |
| 60-81 | 2Bt3 | 4.6 | 44.6 | 50.8 | 0.1 | 0.5 | 1.1 | 1.5 | 1.5 | | | | | | | sic | | | |
| 81-113 | 2Bt4 | 2.4 | 41.9 | 55.6 | 0.1 | 0.2 | 0.3 | 0.8 | 1.2 | | | | | | | sic | | | |
| 113-122+ | 2BC | 6.7 | 36.0 | 57.3 | 4.2 | 0.4 | 0.3 | 0.6 | 1.2 | | | | | | | c | | | |
| | | pH | | Exchangeable Bases (5A1) | | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/ 100gm | 602z Mg meq/ 100gm | 602z K meq/ 100gm | 6P2z Na meq/ 100gm | 5B1a TEB meq/ 100gm | 5A1z CEC meq/ 100gm | 5C1 Pct | 5C3 Pct | H+Al meq/ 100 gm | EA meq/ 100gm | SC meq/ 100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-17 | 5.3 | | 6.3 | 3.86 | 0.65 | 0.14 | 0.16 | 4.81 | 8.82 | 54.5 | | | 10.66 | | | 0.18 | 2.61 | 102 | 32 |
| 17-42 | 5.1 | | 5.9 | 5.90 | 1.03 | 0.15 | 0.10 | 7.18 | 12.50 | 57.4 | | | 11.47 | | | 0.02 | 0.71 | 96 | 10 |
| 42-60 | 5.1 | | 5.6 | 10.02 | 1.59 | 0.20 | 0.10 | 11.91 | 20.59 | 57.8 | | | 13.16 | | | 0.43 | 0.48 | 132 | 9 |
| 60-81 | 5.2 | | 5.7 | 25.09 | 3.26 | 0.29 | 0.20 | 28.84 | 33.82 | 85.2 | | | 13.88 | | | 0.18 | 0.44 | 191 | 40 |
| 81-113 | 5.7 | | 6.5 | 36.53 | 4.37 | 0.32 | 0.23 | 41.45 | 38.24 | 108.4 | | | 5.78 | | | 0.28 | 0.57 | 225 | 40 |
| 113-122+ | 7.6 | | | 41.25 | 2.66 | 0.20 | 0.17 | 44.28 | 26.47 | 167.3 | | | 3.18 | | | 4.12 | 1.12 | 184 | 13 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | | Clay | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV/HSM | CL | INT | K | MI | Q | GI | GO | F |
| Ap | | | | | | | | | | 59 | | | | 18 | 12 | 11 | | | |
| Bt2 | | | | | | | | | | | 80 | | | 10 | 6 | 4 | | | |
| BC | | | | | | | | | | 87 | | | | 3 | 5 | 1 | | | 4 |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Kimper, loam (Taxadjunct)

**Pedon #:** 91-KY-153-07-(1-6)

**Classification:** Coarse-loamy, mixed, semiactive, mesic Typic Dystrudepts

**Location:** Salyersville south topographic quadrant; 2500 feet south west of the Howard-Shepard cemetery; 25 feet west of unimproved road connecting KY highway 1635 in Oakley Creek with KY Highway 7 on the Licking River; 0.9 miles south west of Royalton. X:2,788,500; Y:495,700.

**Parent Material:** Colluvium of Pennsylvanian upper and middle Breathitt sandstones, shales, and siltstones.

**Vegetation:** Yellow Poplar

**Landscape Position:** Sideslope

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 04/12/91

**Permeability:**

**Slope:** 40%

**Described by:** JDM & PSA

A—0 to 6 inches; very dark grayish brown (10YR 3/2) loam; weak fine and medium granular structure; very friable; many fine and medium roots; 12 percent sandstone channers; medium acid; clear wavy boundary.

BA—6 to 13 inches; dark brown (10YR 4/3) channery loam; weak fine and medium subangular blocky structure; friable; common fine and medium roots; 12 percent sandstone channers; strongly acid; clear smooth boundary.

$Bw_1$—13 to 25 inches; yellowish brown (10YR 5/4) channery loam; moderate fine and medium subangular blocky structure; friable; common fine and medium roots; few fine tubular pores; few thin pale brown (10YR 6/3) coatings on faces of peds; 12 percent sandstone channers; strongly acid; clear smooth boundary.

$Bw_2$—25 to 42 inches; yellowish brown (10YR 5/6) channery loam; moderate medium subangular blocky structure; friable; common fine roots; few fine tubular pores; few thin pale brown (10YR 6/3) coatings on faces of peds and on rock surfaces; 20 percent sandstone channers; very strongly acid; clear smooth boundary.

$Bw_3$—42 to 50 inches; yellowish brown (10YR 5/6) channery loam; weak coarse subangular blocky structure; friable; very few fine roots; few thin pale brown (10YR 6/3) coatings on faces of peds and on rock surfaces; 20 percent sandstone channers; very strongly acid; gradual smooth boundary.

BC—50 to 65 inches; mottled yellowish brown (10YR 5/4) and light brownish gray (2.5Y 6/2) channery loam; weak coarse subangular blocky structure; firm; 20 percent sandstone channers; medium acid.

**SOIL TYPE..... KIMPER (TAXADJUNCT)** **PEDON # .....S91KY-153-007-(1-6)**
**LOCATION ..... MAGOFFIN COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-6 | A | 63.9 | 24.0 | 12.1 | 1.6 | 4.3 | 21.0 | 27.4 | 9.6 | | | | | | | sl | | | |
| 6-13 | BA | 58.9 | 28.4 | 12.7 | 1.0 | 4.1 | 20.6 | 24.4 | 8.8 | | | | | | | sl | | | |
| 13-25 | Bw1 | 54.6 | 28.7 | 16.7 | 2.7 | 5.8 | 18.4 | 20.2 | 7.5 | | | | | | | sl | | | |
| 25-42 | Bw2 | 50.7 | 34.0 | 15.3 | 2.4 | 6.2 | 17.6 | 17.4 | 7.1 | | | | | | | l/sl | | | |
| 42-50 | Bw3 | 54.1 | 31.6 | 14.3 | 3.4 | 7.4 | 18.8 | 17.4 | 7.1 | | | | | | | sl/l | | | |
| 50-65 | BC | 63.4 | 20.7 | 15.9 | 2.7 | 9.7 | 28.1 | 16.3 | 6.6 | | | | | | | sl | | | |
| | pH | | | Exchangeable Bases (5A1) | | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-6 | 5.12 | | 6.32 | 1.08 | 0.36 | 0.27 | 0.03 | 1.74 | 8.42 | 21 | 14 | | 10.42 | 12.16 | | 0.09 | 5.56 | 90 | 3.5 |
| 6-13 | 5.07 | | 6.53 | 0.37 | 0.17 | 0.14 | 0.01 | 0.69 | 4.58 | 15 | 9 | | 6.92 | 7.61 | | 0.03 | 2.03 | 56 | 0.5 |
| 13-25 | 5.40 | | 6.88 | 0.87 | 0.29 | 0.10 | 0.02 | 1.28 | 3.65 | 35 | 24 | | 4.10 | 5.38 | | 0.06 | 0.82 | 43 | 0.5 |
| 25-42 | 5.50 | | 6.86 | 0.75 | 0.81 | 0.12 | 0.02 | 1.70 | 4.69 | 36 | 32 | | 3.61 | 5.31 | | 0.04 | 0.42 | 60 | 0.5 |
| 42-50 | 5.20 | | 6.72 | 0.33 | 0.76 | 0.12 | 0.01 | 1.22 | 4.46 | 27 | 18 | | 5.57 | 6.79 | | 0.03 | 0.49 | 55 | 1.5 |
| 50-65 | 5.16 | | 6.73 | 0.30 | 0.66 | 0.11 | 0.01 | 1.08 | 3.99 | 27 | 20 | | 4.32 | 5.40 | | 0.03 | 0.35 | 50 | 1.0 |
| | Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | | Clay | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| BA | 76 | 24 | | | | | | | | | | | | | | | | | |
| Bw1 | 70 | 25 | 2 | 3 | | | | | | | | | | | | | | | |
| Bw2 | 70 | 7 | 11 | 12 | | | | | | | | | | | | | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Kimper, loam (Taxadjunct)

**Pedon #:** 95-KY-119-02-(1-7)

**Classification:** Fine-loamy, mixed, semiactive, mesic Typic Dystrudepts

**Location:** Carrie topographic quadrant; at the head of Beech Branch; 1 mile northwest of Emmalena.

**Parent Material:** Colluvium of Pennsylvanian lower and middle Breathitt sandstones, shales, and siltstones

**Vegetation:** Yellow poplar, red maple

**Landscape Position:** Head slope

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 11/06/95

**Permeability:**

**Slope:** 55%

**Described by:** P.S. Aldridge

Oi—0 to 3 inches; partially decomposed leaf litter.

A—3 to 9 inches; dark brown (10YR 3/3) loam; brown (10YR 5/3) dry; weak fine and medium granular structure; very friable; common fine and medium roots; 5 percent sandstone channers; strongly acid; clear smooth boundary.

BA—9 to 12 inches; brown (10YR 4/3) loam; weak fine subangular blocky structure; very friable; common fine and medium roots; 10 percent sandstone channers; strongly acid; abrupt wavy boundary.

$Bw_1$—12 to 25 inches; dark yellowish brown (10YR 4/4) channery loam; weak fine subangular blocky structure; friable; common fine and medium and few coarse roots; 15 percent sandstone channers; strongly acid; clear wavy boundary.

$Bw_2$—25 to 34 inches; yellowish brown (10YR 5/6) loam; moderate medium subangular blocky structure; friable; few fine medium and coarse roots; 10 percent sandstone channers; strongly acid; gradual smooth boundary.

$Bw_3$—(Upper) 34 to 40 inches; strong brown (7.5YR 5/6) channery silt loam; moderate medium and coarse subangular blocky structure; firm; few fine and medium roots; few faint silt coatings on surfaces of peds; 15 percent sandstone channers; strongly acid; gradual smooth boundary.

$Bw_3$—(Lower) 40 to 52 inches; strong brown (7.5YR 5/6) channery silt loam; moderate medium and coarse subangular blocky structure; firm; few fine and medium roots; few faint silt coatings on surfaces of peds; 15 percent sandstone channers; strongly acid; gradual smooth boundary.

$Bw_4$—52 to 62 inches; strong brown (7.5YR 5/6) very channery silt loam; moderate medium subangular blocky structure; firm; few fine roots; 45 percent sandstone channers and 1 percent carbolithic parachanners; strongly acid; abrupt smooth boundary.

$C_1$—62 to 74 inches; variegated brown (10YR 5/2) and black (2.5Y 2/0) silt loam; massive; firm; very few very fine roots; 10 percent carbolithic parachanners; extremely acid; abrupt smooth boundary.

$C_2$—74 to 90 inches; variegated light brownish gray (10YR 6/2), brownish yellow (10YR 6/6) and reddish yellow (7.5YR 6/8) silty clay loam; massive; firm; very few very fine roots; extremely acid.

**SOIL TYPE..... KIMPER (TAXADJUNCT)** **PEDON # .....S95KY-119-02-(1-6)**
**LOCATION ..... KNOTT COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand | VFS Plus | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Coarser Than VF (2-0.1) | Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 3-9 | A | 47.7 | 30.5 | 21.8 | 6.1 | 8.2 | 18.1 | 11.1 | 4.2 | | | | | | | l | | | |
| 9-12 | BA | 42.1 | 37.5 | 20.4 | 5.0 | 6.7 | 17.3 | 9.6 | 3.5 | | | | | | | l | | | |
| 12-25 | Bw1 | 39.3 | 38.0 | 22.7 | 4.3 | 5.9 | 16.1 | 9.3 | 3.7 | | | | | | | l | | | |
| 25-34 | Bw2 | 30.7 | 45.1 | 24.2 | 4.8 | 5.3 | 10.2 | 5.9 | 4.5 | | | | | | | l | | | |
| 34-40 | Bw3-1 | 29.8 | 43.8 | 26.4 | 6.8 | 5.2 | 8.7 | 4.7 | 4.4 | | | | | | | l/cl | | | |
| 40-52 | Bw3-2 | 26.8 | 48.3 | 24.9 | 5.6 | 5.8 | 7.4 | 4.0 | 4.0 | | | | | | | l/sil | | | |
| 52-62 | Bw4 | 27.0 | 51.4 | 21.6 | 5.5 | 5.4 | 7.9 | 4.5 | 3.7 | | | | | | | sil/l | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 3-9 | 4.85 | | | 2.27 | 0.56 | 0.39 | 0.01 | 3.23 | 13.97 | 23 | 17 | | 15.78 | 19.01 | | | | | |
| 9-12 | 4.82 | | | 0.99 | 0.16 | 0.21 | 0.01 | 1.37 | 9.34 | 15 | 10 | | 11.66 | 13.03 | | | | | |
| 12-25 | 5.19 | | | 1.70 | 0.45 | 0.09 | 0.01 | 2.25 | 8.10 | 28 | 22 | | 8.04 | 10.29 | | | | | |
| 25-34 | 5.01 | | | 1.06 | 1.00 | 0.11 | 0.01 | 2.18 | 7.88 | 28 | 23 | | 7.48 | 9.66 | | | | | |
| 34-40 | 4.78 | | | 0.46 | 0.91 | 0.10 | 0.03 | 1.50 | 7.74 | 19 | 16 | | 8.06 | 9.56 | | | | | |
| 40-52 | 4.59 | | | 0.20 | 0.60 | 0.09 | 0.01 | 0.90 | 7.93 | 11 | 9 | | 9.43 | 10.33 | | | | | |
| 52-62 | 4.54 | | | 0.15 | 0.75 | 0.09 | 0.02 | 1.01 | 8.27 | 12 | 8 | | 11.56 | 12.57 | | | | | |
| | Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Licking, silt loam

**Pedon #:** S86KY-139-09-(1-6)

**Classification:** Fine, mixed, semiactive, mesic Aquic Hapludalfs

**Location:** Livingston County, Kentucky, about 200 yards from farm road; .4 mile southwest of junction of farm road and Lola-Slocum Road; about 5 miles north of junction of Lola Slocum Road and Kentucky 838; about .5 mile northeast of Lola. Latitude: 37° 22′42″N; Longitude: 88° 18′ 45″W. Kentucky coordinate grid values: east-west about 1,255,500 feet and north-south about 390,550 feet.

**Parent Material:** Calcareous lacustrine deposits

**Vegetation:** Fescue and weeds

**Landscape Position:** Terrace

**Drainage:**

**Moisture when sampled:** Dry in upper part, moist below

**Sampling Date:** 5/6/86

**Permeability:**

**Slope:** 1%

**Described by:** J. Robbins, K. Bates, R. Forsythe and Ken Scott

Ap—0 to 7 inches (0 to 18 cm); brown (10YR 5/3) silt loam; moderate fine granular structure; friable; common fine and few medium roots; few brown and black concretions; medium acid; abrupt smooth boundary.

Bt1—7 to 13 inches (18 to 33 cm); yellowish brown (10YR 5/4) silty clay; few fine faint yellowish brown and common fine distinct light brownish gray (10YR 6/2) mottles; moderate medium subangular blocky structure; firm; few fine and medium roots; few discontinuous clay films; extremely acid; clear smooth boundary.

Bt2—13 to 25 inches (33 to 63 cm);yellowish brown (10YR 5/4) and (10YR 5/6) silty clay; common medium distinct grayish brown (10YR 5/2) mottles; moderate coarse subangular blocky structure; very firm; few fine and medium roots; few discontinuous clay films; medium acid; clear smooth boundary.

Bt3—25 to 37 inches (63 to 94 cm); yellowish brown (10YR 5/6) silty clay; moderate medium distinct grayish brown (10YR 5/2) and brown (10YR 5/3) mottles; weak medium subangular blocky structure; very firm; few fine roots; few patchy clay films on ped faces; common black organic stains; neutral; clear smooth boundary.

C—37 to 57 inches (94 to 145 cm); yellowish brown (10YR 5/6) clay; 3 inch wide streaks of moderate coarse distinct grayish brown (10YR 5/2) and brown (10YR 5/3) and moderate coarse prominent greenish gray (5GY 5/1); moderate coarse prismatic parting to moderate medium subangular blocky structure; very firm; few continuous pressure faces; 1 percent carbonates; mildly alkaline; clear smooth boundary.

Ck—57 to 72 inches (145 to 183 cm); brown (10YR 5/3) clay; many medium distinct strong brown (7.5YR 5/6) and light brownish gray (10YR 6/2) mottles; strong coarse prismatic structure; very firm; few fine roots; thick common continuous pressure faces; 7 percent carbonates; moderately alkaline.

**SOIL TYPE** ..... **LICKING** **PEDON #** ..... **S86KY-139-09-(1-7)**
**LOCATION** ..... **LIVINGSTON COUNTY, KENTUCKY** **GENERAL METHODS** ..... **1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-18 | Ap | 8.5 | 67.9 | 23.6 | 1.7 | 1.9 | 0.8 | 1.1 | 3.0 | | | | | 5.5 | 70.9 | sil | | | |
| 18-33 | Bt1 | 2.5 | 49.8 | 47.7 | 0.1 | 0.4 | 0.2 | 0.5 | 1.3 | | | | | 1.2 | 51.1 | sic | | | |
| 33-64 | Bt2 | 2.0 | 47.0 | 51.0 | 0.1 | 0.2 | 0.1 | 0.4 | 1.2 | | | | | 0.8 | 48.2 | sic | | | |
| 64-94 | Bt3 | 2.6 | 51.2 | 46.2 | 0.2 | 0.5 | 0.3 | 0.6 | 1.0 | | | | | 1.6 | 50.2 | sic | | | |
| 94-145 | C | 3.5 | 55.5 | 41.0 | 0 | 0.3 | 0.5 | 1.2 | 1.5 | | | | | 2.0 | 57.0 | sic | | | |
| 145-183 | Ck | 1.5 | 55.5 | 43.0 | 0 | 0 | 0.1 | 0.3 | 1.1 | | | | | 0.4 | 56.6 | sic | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/ 100gm | 602z Mg meq/ 100gm | 602z K meq/ 100gm | 6P2z Na meq/ 100gm | 5B1a TEB meq/ 100gm | 5A1z CEC meq/ 100gm | 5C1 Pct | 5C3 Pct | H+Al meq/ 100 gm | EA meq/ 100gm | SC meq/ 100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-18 | 6.1 | | 6.8 | 4.1 | 1.3 | 0.6 | 0.2 | 6.2 | 8.5 | 73 | 45 | | 7.7 | 13.9 | | | 2.1 | 167 | 18 |
| 18-33 | 5.6 | | 5.6 | 3.4 | 2.8 | 0.8 | 0.3 | 7.3 | 6.9 | 106 | 58 | | 5.2 | 12.5 | | | 0.6 | 217 | 3 |
| 33-64 | 5.2 | | 5.0 | 3.0 | 3.9 | 0.9 | 0.5 | 8.2 | 8.5 | 97 | 48 | | 9.0 | 17.2 | | | 0.5 | 209 | 8 |
| 64-94 | 5.8 | | 6.4 | 4.0 | 6.1 | 0.8 | 0.8 | 11.7 | 9.2 | 127 | 69 | | 5.3 | 17.0 | | | 0.4 | 215 | 8 |
| 94-145 | 6.7 | | 7.1 | 3.8 | 5.7 | 0.5 | 1.1 | 11.1 | 10.9 | 102 | 65 | | 2.6 | 13.7 | | | 0.4 | 127 | 10 |
| 145-183 | 7.9 | | 7.4 | 4.4 | 6.2 | 0.6 | 1.1 | 12.3 | 12.0 | 103 | 100 | | | 12.3 | | 12.5 | 0.4 | 126 | 11 |
| | Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| C.S. | 72 | 25 | 3 | | | | | | | | | | | | | | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

## Lowell, silt loam

**Pedon #:** S97KY-015-006-(1-4)

**Classification:** Fine, mixed, active, mesic Typic Hapludalfs

**Location:** Boone Co., KY, Ron and Greg Vest's farm.

**Parent Material:** Residuum (calcareous shale, layers of limestone, beds of siltstone)

**Vegetation:** Pasture

**Landscape Position:** Shoulder

**Drainage:** Well drained

**Moisture when sampled:** Moist

**Sampling Date:**

**Permeability:** Slow

**Slope:** 12 to 20% (14%)

**Described by:** Jutta R.V. Pils

Ap—0 to 18 cm., Brown (10YR 4/3) silt loam; moderate granular structure; friable; redox concentrations (Mn); clear boundary.

Bt1—18 to 31 cm., Yellowish brown (10YR 5/6) silty clay; moderate sub-angular blocky structure; friable; redox concentrations (Mn); gradual boundary.

Bt2—31 to 54 cm., Strong brown (7.5YR 5/6) clay; weak prismatic; firm; redox concentrations (Mn); gradual boundary.

C—54 to 125 cm., (Strong brown (7.5YR 5/6) clay; massive; very firm; redox concentrations (Mn); abrupt boundary.

Cr—125+ cm.

**SOIL TYPE.....LOWELL** **PEDON # .....S97KY-015-06-(1-4)**
**LOCATION .....BOONE COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-18 | Ap | 13.4 | 66.7 | 19.9 | 0.6 | 1.3 | 3.3 | 4.9 | 3.3 | | | | | | | sil | | | |
| 18-31 | Bt1 | 13.9 | 44.3 | 41.8 | 0.8 | 1.0 | 2.2 | 5.2 | 4.7 | | | | | | | sic | | | |
| 31-54 | Bt2 | 13.4 | 40.7 | 45.9 | 0.5 | 0.1 | 2.3 | 5.8 | 4.7 | | | | | | | sic/c | | | |
| 54-125+ | C | 19.9 | 32.8 | 47.3 | 1.0 | 1.1 | 1.6 | 9.6 | 6.6 | | | | | | | c | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-18 | 5.3 | | 6.5 | 6.35 | 1.42 | 0.37 | 0.07 | 8.21 | 14.70 | 55.8 | 42.3 | | 11.28 | 19.49 | | 0.11 | 2.40 | 314 | 96 |
| 18-31 | 5.1 | | 6.2 | 10.24 | 2.52 | 0.44 | 0.08 | 13.28 | 17.64 | 75.3 | 48.1 | | 14.32 | 27.60 | | 0.56 | 0.56 | 416 | 68 |
| 31-54 | 4.9 | | 6.0 | 14.63 | 3.65 | 0.40 | 0.15 | 18.83 | 30.87 | 61.0 | 54.6 | | 15.68 | 34.51 | | 0.17 | 0.17 | 339 | 73 |
| 54-125+ | 5.7 | | 6.8 | 16.05 | 3.99 | 0.26 | 0.31 | 20.61 | 23.52 | 87.6 | 63.9 | | 11.6 | 32.21 | | 0.19 | 0.19 | 284 | 18 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV/HSM | CL | INT | K | MI | Q | GI | GO | F |
| Ap | | | | | | | | | | | 53 | | 13 | 13 | 12 | 5 | | 2 | 2 |
| Bt2 | | | | | | | | | | | 67 | | 10 | 8 | 8 | 3 | | 3 | 1 |
| C | | | | | | | | | | | 48 | | 22 | 11 | 15 | 2 | | 1 | 2 |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Needmore, silt loam (Taxadjunct)

**Pedon #:** S00KY-001-03-(1-4)

**Classification:** Fine, mixed, active, mesic Typic Hapludults

**Location:** Adair County, Kentucky; pedon of Needmore silt loam, 2 to 6 percent slopes; in an old tobacco patch; about 9 miles west of Columbia, Kentucky; 1.5 miles south of Portland on south side of KY Hwy 768; 50 feet south of farm road; on the Eugene Jane farm.

**Parent Material:**

**Vegetation:**

**Landscape Position:**

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 11/28/00

**Permeability:**

**Slope:**

**Described by:** John Jenkins, Bill Craddock, Harry Evans, Bob Eigel, and Jerry Richardson

Ap—0 to 9 inches; yellowish brown (10YR 5/4) silt loam, moderate fine and medium granular structure; very friable; common fine roots throughout; 5 percent siltstone channers; medium acid (5.6); abrupt wavy boundary.

Bt1—9 to 17 inches; yellowish brown (10YR 5/6) channery silty clay loam; few fine distinct strong brown (7.5YR 5/6) mottles; moderate fine and medium subangular blocky structure; friable; 25 percent soft siltstone fragments; discontinuous clay films on faces of peds and pores; common fine and medium roots throughout; strongly acid (5.2); clear irregular boundary.

BC—17 to 26 inches; strong brown (7.5YR 5/8) very channery silty clay loam; moderate medium subangular blocky structure; friable; 40 percent soft siltstone channers; few discontinuous clay films on faces of peds and pores; strongly acid (5.2); abrupt wavy boundary.

Cr—26 inches; soft siltstone.

**SOIL TYPE..... NEEDMORE (TAXADJUNCT)** **PEDON # ..... S00-KY-001-03-(1-4)**
**LOCATION ..... ADAIR COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-9 | Ap | 18.4 | 58.1 | 23.5 | 1.6 | 2.6 | 3.1 | 5.1 | 6.0 | | | | | | | sil | | | |
| 9-17 | Bt1 | 11.1 | 43.4 | 45.5 | 0.8 | 1.2 | 1.0 | 3.4 | 4.7 | | | | | | | sic | 13 | | |
| 17-26 | BC | 14.4 | 26.8 | 58.8 | 2.1 | 1.7 | 1.4 | 3.8 | 5.4 | | | | | | | c | 42 | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-9 | 5.8 | | 6.7 | 5.98 | 1.63 | 0.39 | 0.06 | 8.06 | 11.93 | 67 | 46 | | 9.49 | 17.55 | | 0.28 | 2.56 | 197 | 143 |
| 9-17 | 4.4 | | 4.8 | 3.16 | 1.13 | 0.34 | 0.05 | 4.68 | 20.49 | 23 | 21 | | 18.06 | 22.74 | | 0.12 | 1.00 | 186 | 6 |
| 17-26 | 4.4 | | 4.4 | 5.17 | 1.75 | 0.34 | 0.08 | 7.34 | 28.43 | 26 | 21 | | 28.01 | 35.35 | | 0.07 | 0.90 | 164 | 1.5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | | Clay | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| Bt1 | | | | | | | | | | 25 | 40 | | | 5 | 5 | 20 | 7 | | |
| BC | | | | | | | | | | 15 | 55 | | | 5 | 5 | 15 | 3 | | 1 |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Nicholson, silt loam

**Pedon #:** S97KY-015-002-(1-6)

**Classification:** Fine-silty, mixed, active, mesic Oxyaquic Fragiudalfs

**Location:** Boone County, Bob Smith's Farm.

**Parent Material:** Residuum (loess above inter bedded limestone and calcareous shale)

**Vegetation:** Pasture

**Landscape Position:** Ridge top

**Drainage:** Well drained to moderately well drained

**Moisture when sampled:** Dry

**Permeability:** Moderate

**Slope:** 2 to 6% (4%)

**Described by:** Jutta R.V. Pils

Ap—0 to 17 cm: Dark brown (10YR 3/3) silt loam; moderate granular structure; very friable; abrupt boundary.

$Bt_1$—17 to 37 cm: Dark yellowish brown (10YR 4/4) silt loam; moderate sub-angular blocky structure; friable; clear boundary.

$Bt_2$—37 to 49 cm: Dark yellowish brown (10YR 4/4) silty clay loam; moderate sub-angular blocky structure; friable; gradual boundary.

$Bt_3$—49 to 57 cm: Dark yellowish brown (10YR 4/4) silty clay loam; moderate sub-angular blocky; friable; clear boundary.

$Btx_1$—57 to 92 cm: Brown (10YR 5/3) silty clay loam; moderate prismatic to sub-angular blocky structure; brittle; gradual boundary.

$Btx_2$—92 to 108+ cm: Yellowish brown (10YR 5/6) silty clay loam; moderate prismatic to sub-angular blocky structure; brittle.

**SOIL TYPE..... NICHOLSON** **PEDON # .....S97KY-015-02-(1-6)**
**LOCATION .....BOONE COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand | VFS Plus | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Coarser Than VF (2-0.1) | Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-17 | Ap | 9.0 | 76.4 | 14.6 | 0.4 | 2.5 | 2.3 | 1.9 | 1.9 | | | | | | | sil | | | |
| 17-37 | Bt1 | 4.2 | 74.2 | 21.6 | 0.1 | 0.9 | 1.1 | 0.8 | 1.3 | | | | | | | sil | | | |
| 37-49 | Bt2 | 5.7 | 66.7 | 27.6 | 0.1 | 0.5 | 1.4 | 1.3 | 2.4 | | | | | | | sicl | | | |
| 49-57 | Bt3 | 7.8 | 52.9 | 39.3 | 0.8 | 1.5 | 1.6 | 1.3 | 2.6 | | | | | | | sicl | | | |
| 57-92 | Btx1 | 12.9 | 57.2 | 29.9 | 1.5 | 3.4 | 3.0 | 2.5 | 2.5 | | | | | | | sicl | | | |
| 92-108+ | Btx2 | 12.6 | 53.2 | 34.2 | 2.5 | 4.0 | 2.8 | 1.6 | 1.7 | | | | | | | sicl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/ 100gm | 602z Mg meq/ 100gm | 602z K meq/ 100gm | 6P2z Na meq/ 100gm | 5B1a TEB meq/ 100gm | 5A1z CEC meq/ 100gm | 5C1 Pct | 5C3 Pct | H+Al meq/ 100 gm | EA meq/ 100gm | SC meq/ 100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-17 | | 7.3 | | | 14.6 | 1.1 | 0.0 | 0.1 | 15.9 | 22.1 | 72.2 | | | 6.18 | | | 0.78 | 3.80 | 139 | 111 |
| 17-37 | | 7.0 | | | 9.9 | 6.9 | 0.2 | 0.2 | 11.1 | 16.2 | 68.6 | | | 6.98 | | | 0.11 | 1.6 | 126 | 11 |
| 37-49 | | 6.2 | | 6.9 | 9.9 | 1.3 | 0.2 | 0.1 | 11.4 | 19.1 | 59.8 | | | 9.9 | | | 0.23 | 0.89 | 153 | 10 |
| 49-57 | | 5.0 | | 6.0 | 6.9 | 1.4 | 0.2 | 0.1 | 8.6 | 23.5 | 36.7 | | | 13.28 | | | 0.23 | 0.48 | 181 | 6 |
| 57-92 | | 4.7 | | 5.1 | 6.5 | 1.7 | 0.2 | 0.1 | 8.5 | 25.0 | 34.1 | | | 16.57 | | | 0.16 | 0.41 | 173 | 7 |
| 92-108+ | | 4.9 | | 5.5 | 11.6 | 2.7 | 0.2 | 0.3 | 14.8 | 29.4 | 50.5 | | | 15.52 | | | 0.12 | 0.32 | 169 | 5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | | Sand + Silt | | | | | | | | Clay | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV/HSM | CL | INT | K | MI | Q | GI | GO | F |
| Ap | | | | | | | | | | | 44 | | | 31 | 5 | 16 | | 2 | 2 |
| Bt3 | | | | | | | | | | | 64 | | | 15 | 11 | 5 | | 1 | 4 |
| Btx2 | | | | | | | | | | | 82 | | | 8 | 3 | 6 | | 1 | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Nicholson, silt loam

**Pedon #:** S97KY-015-004-(1-7)

**Classification:** Fine-silty, mixed, active, mesic Oxyaquic Fragiudalfs

**Location:** Boone County, KY., Ron and Greg Vest's Farm.

**Parent Material:** Loess over residuum (inter-bedded limestone and calcareous shale)

**Vegetation:** Corn field

**Landscape Position:** Backslope

**Drainage:** Well drained to moderately well drained

**Moisture when sampled:** Moist

**Permeability:** Moderate

**Slope:** 2 to 6% (5%)

**Described by:** Jutta R.V. Pils

Ap—0 to 23 cm: Brown (10YR 4/3) silt loam; weak granular structure; friable; abrupt boundary.

Bt—23 to 40 cm: Yellowish brown (10YR 5/6) silt loam; weak sub-angular blocky structure; friable; clear boundary.

BE—40 to 47 cm: Brown (10YR 5/3) silt loam; weak sub-angular blocky structure; firm; redox depletions; clear boundary.

$Btx_1$—47 to 68 cm: Dark yellowish brown (10YR 4/4) silt loam; weak prismatic structure; very firm; redox depletions; clear boundary.

$Btx_2$—68 to 88 cm: Light brownish gray (10YR 6/2) silty clay loam; moderate prismatic structure; very firm; redox concentrations (Fe, Mn); redox depletions; clear boundary.

$2Bt_1$—88 to 109+ cm: Strong brown (7.5YR 5/6) silty clay; moderate sub-angular blocky structure; firm; redox concentrations (Mn, Fe); redox depletions; gradual boundary.

$2Bt_2$—109+ cm: Yellowish brown (7.5YR 5/6) clay; moderate sub-angular blocky structure; firm; redox concentrations (Mn, Fe); redox depletions.

**SOIL TYPE..... NICHOLSON** **PEDON # .....S97KY-015-04-(1-6)**
**LOCATION .....BOONE COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-23 | Ap | 6.2 | 80.6 | 13.2 | 0.5 | 1.4 | 1.5 | 1.3 | 1.5 | | | | | | | sil | | | |
| 23-40 | Bt | 3.3 | 75.3 | 21.4 | 0.2 | 0.6 | 0.7 | 0.6 | 1.2 | | | | | | | sil | | | |
| 40-47 | BE | 3.6 | 82.5 | 13.9 | 0.2 | 1.0 | 0.8 | 0.5 | 1.1 | | | | | | | sil | | | |
| 47-68 | Btx1 | 3.4 | 76.6 | 20.0 | 0.4 | 1.4 | 0.8 | 0.2 | 0.6 | | | | | | | sil | | | |
| 68-88 | Btx2 | 8.1 | 55.1 | 36.8 | 1.4 | 1.7 | 1.3 | 1.2 | 2.5 | | | | | | | sicl | | | |
| 88-109 | 2Bt1 | 3.4 | 48.7 | 47.9 | 0.2 | 0.4 | 0.6 | 0.7 | 1.5 | | | | | | | sic | | | |
| 109+ | 2Bt2 | 3.0 | 38.6 | 58.4 | 0.1 | 0.5 | 0.7 | 0.8 | 0.9 | | | | | | | c | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/ 100gm | 602z Mg meq/ 100gm | 602z K meq/ 100gm | 6P2z Na meq/ 100gm | 5B1a TEB meq/ 100gm | 5A1z CEC meq/ 100gm | 5C1 Pct | 5C3 Pct | H+Al meq/ 100 gm | EA meq/ 100gm | SC meq/ 100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-23 | 7.2 | | | 12.7 | 1.6 | 0.6 | 0.1 | 15.1 | 17.6 | 85.2 | | | 5.4 | | | 0.57 | 2.41 | 449 | 226 |
| 23-40 | 6.8 | | 7.0 | 9.0 | 1.2 | 0.3 | 0.1 | 10.6 | 16.2 | 65.3 | | | 7.6 | | | 0.18 | 1.05 | 192 | 71 |
| 40-47 | 6.0 | | 6.8 | 7.6 | 1.2 | 0.2 | 0.1 | 9.1 | 16.2 | 56.1 | | | 8.5 | | | 0.08 | 0.67 | 178 | 45 |
| 47-68 | 5.2 | | 6.5 | 5.7 | 1.2 | 0.2 | 0.1 | 7.2 | 16.2 | 44.7 | | | 12.9 | | | 0.15 | 0.38 | 147 | 15 |
| 68-88 | 4.7 | | 5.8 | 5.8 | 1.9 | 0.2 | 0.1 | 7.5 | 25.0 | 29.8 | | | 13.8 | | | 0.30 | 0.31 | 126 | 9 |
| 88-109 | 4.7 | | 5.2 | 9.8 | 4.7 | 0.3 | 0.2 | 15.0 | 32.3 | 46.4 | | | 18.0 | | | 0.19 | 0.29 | 206 | 15 |
| 109+ | 4.9 | | 5.4 | 11.9 | 5.9 | 0.1 | 0.2 | 18.1 | 39.7 | 46.1 | | | 18.6 | | | 0.08 | 0.31 | 27 | 67 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV/HSM | CL | INT | K | MI | Q | GI | GO | F |
| Ap | | | | | | | | | | | 51 | | | 27 | 8 | 11 | | 2 | 1 |
| Btx1 | | | | | | | | | | | 63 | | | 13 | 7 | 10 | | 2 | 5 |
| 2Bt2 | | | | | | | | | | | 50 | | 26 | 5 | 14 | 2 | | 1 | 2 |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Nicholson, silt loam

**Pedon #:** S98KY-015-006-(1-6)

**Classification:** Fine-silty, mixed, active, mesic Oxyaquic Fragiudalfs

**Location:** Boone County, KY., Davis' farm.

**Parent Material:** Residuum (loess over glacial till)

**Vegetation:** Pasture

**Landscape Position:** Upland

**Drainage:** Moderately well drained

**Moisture when sampled:** Moist

**Permeability:** Slow

**Slope:** 0 to 2% (2%)

**Described by:** Jutta R.V. Pils

Ap—0 to 19 cm: Dark brown (10YR 4/4) silt loam; weak granular structure; friable; abrupt boundary.

$Bt_1$—19 to 34 cm: Dark yellowish brown (10YR 4/6) silty clay loam; weak subangular blocky structure; firm; gradual boundary.

$Bt_2$—34 to 48 cm: Dark yellowish brown (10YR 4/6) silty clay loam; few strong brown mottles (7.5YR 5/6); moderate subangular blocky structure; firm; gradual boundary.

Btx1—48 to 65 cm: Yellowish brown (10YR 5/4) silty clay loam; few light brownish gray (10YR 6/2) depletions; weak angular blocky structure; firm with Mn concretions; gradual boundary.

$Btx_2$—65 to 91 cm: Yellowish brown (10YR 5/6) silty clay loam; few dark yellowish brown (10YR 4/4) mottles and few light gray (10YR 7/1) depletions; weak angular blocky structure; firm with Mn concretions; gradual boundary.

$Btx_3$—91+ cm: Yellowish brown (10YR 5/6) clay; few pale brown (10YR 6/3) mottles and few reddish gray (2.5YR 6/1) depletions; moderate angular blocky structure; firm with Mn concretions.

**SOIL TYPE..... NICHOLSON** **PEDON # .....S98KY-015-06-(1-6)**
**LOCATION .....BOONE COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-19 | Ap | 6.5 | 70.7 | 22.8 | 0.4 | 1.6 | 1.7 | 1.4 | 1.4 | | | | | | | sil | | | |
| 19-34 | Bt1 | 4.4 | 67.8 | 27.8 | 0.2 | 0.9 | 1.0 | 0.9 | 1.4 | | | | | | | sicl | | | |
| 34-48 | Bt2 | 5.0 | 66.0 | 29.0 | 0.2 | 1.3 | 1.1 | 0.8 | 1.6 | | | | | | | sicl | | | |
| 49-65 | Btx1 | 7.3 | 62.9 | 29.8 | 0.9 | 2.2 | 1.9 | 1.1 | 1.2 | | | | | | | sicl | | | |
| 65-91 | Btx2 | 10.1 | 54.8 | 35.1 | 1.8 | 2.7 | 2.4 | 1.7 | 1.5 | | | | | | | sicl | | | |
| 91+ | Btx3 | 4.6 | 37.3 | 58.1 | 0.2 | 0.5 | 0.7 | 1.8 | 1.4 | | | | | | | c | | | |
| | | pH | | Exchangeable Bases (5A1) | | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/ 100gm | 602z Mg meq/ 100gm | 602z K meq/ 100gm | 6P2z Na meq/ 100gm | 5B1a TEB meq/ 100gm | 5A1z CEC meq/ 100gm | 5C1 Pct | 5C3 Pct | H+Al meq/ 100 gm | EA meq/ 100gm | SC meq/ 100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-19 | 5.9 | | 6.6 | 6.10 | 1.20 | 0.6 | 0.07 | 7.73 | 13.24 | 58.4 | | | 7.83 | | | 0.36 | 1.69 | 283 | 72 |
| 19-34 | 6.2 | | 7.0 | 8.65 | 1.73 | 0.19 | 0.08 | 10.65 | 13.97 | 76.2 | | | 5.94 | | | 0.57 | 0.51 | 143 | 5 |
| 34-48 | 5.5 | | 6.4 | 7.87 | 1.68 | 0.19 | 0.13 | 9.87 | 16.18 | 61.0 | | | 10.28 | | | 0.22 | 0.38 | 140 | 5 |
| 48-65 | 5.0 | | 5.5 | 6.30 | 1.70 | 0.19 | 0.08 | 8.27 | 17.65 | 46.8 | | | 15.03 | | | 0.10 | 0.37 | 139 | 7 |
| 65-91 | 4.9 | | 5.1 | 8.22 | 2.14 | 0.17 | 0.12 | 10.65 | 23.53 | 45.3 | | | 15.00 | | | 0.07 | 0.33 | 117 | 5 |
| 91+ | 6.6 | | 7.0 | 32.64 | 6.30 | 0.24 | 0.57 | 39.75 | 32.35 | 122.9 | | | 6.57 | | | 0.14 | 0.27 | 179 | 48 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | | Clay | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV/HSM | CL | INT | K | MI | Q | GI | GO | F |
| Ap | | | | | | | | | | | 47 | | | 25 | 14 | 10 | | | 4 |
| Btx1 | | | | | | | | | | 75 | | | | 13 | 8 | 4 | | | |
| Btx3 | | | | | | | | | | 88 | | | | 4 | 2 | 3 | | | 3 |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Nolin, silt loam

Pedon# S99KY-015-01-(1-4)

**Classification:** Fine-silty, mixed, active, mesic Dystric Fluventic Eutrudepts

**Location:** Boone County, George Stephens farm on East Bend Bottom. Latitude: 38° 55' 20"; Longitude: 84° 52' 08"

**Parent Material:** Alluvium

**Vegetation:** Wheat cover crop on tobacco field

**Aspect:** Neutral

**Landscape Position:** Flood plain

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 3/25/99

**Permeability:**

**Slope:** <1%

**Described by:** SEJ

Ap—0 to 15 inches; brown (10YR 4/3) silt loam or loam; weak fine granular structure; very friable; common fine roots; neutral (7.0); clear smooth boundary.

$Bw_1$—15 to 28 inches; brown (10YR 4/3) silt loam; weak fine subangular blocky structure; friable; few fine roots; neutral (7.0); gradual smooth boundary.

$Bw_2$—28 to 70 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium subangular blocky structure; friable; few fine roots; one rounded white quartz pebble at 28 inches; neutral (7.0); gradual smooth boundary.

C—70 to 89 inches; dark yellowish brown (10YR 4/4) loam; massive; friable; slightly acid (6.5).

**SOIL TYPE**.....**NOLIN** **PEDON #** .....**S99KY-015-001-(1-4)**
**LOCATION** .....**BOONE COUNTY, KENTUCKY** **GENERAL METHODS** .....**1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand | VFS Plus | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Coarser Than VF (2-0.1) | Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-15 | Ap | 34.0 | 50.9 | 15.1 | 0.1 | 0.2 | 2.0 | 10.9 | 20.8 | | | | | | | sil/l | | | |
| 15-28 | Bw1 | 26.7 | 48.5 | 24.8 | 0.1 | 0.1 | 0.4 | 5.6 | 20.5 | | | | | | | sil/l | | | |
| 28-70 | Bw2 | 13.3 | 61.7 | 25.0 | 0 | 0 | 0.1 | 0.9 | 12.3 | | | | | | | sil/sicl | | | |
| 70-89 | C | 29.6 | 51.1 | 19.3 | 0 | 0 | 0.4 | 8.1 | 21.1 | | | | | | | sil/l | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/ 100gm | 602z Mg meq/ 100gm | 602z K meq/ 100gm | 6P2z Na meq/ 100gm | 5B1a TEB meq/ 100gm | 5A1z CEC meq/ 100gm | 5C1 Pct | 5C3 Pct | H+Al meq/ 100 gm | EA meq/ 100gm | SC meq/ 100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-15 | | | | 6.50 | 1.86 | 0.36 | 0.05 | 8.77 | 10.90 | 80 | 60 | | 5.80 | 14.57 | | | | | |
| 15-28 | | | | 6.99 | 2.51 | 0.17 | 0.04 | 9.71 | 12.27 | 79 | 67 | | 4.77 | 14.48 | | | | | |
| 28-70 | | | | 7.58 | 2.58 | 0.18 | 0.05 | 10.39 | 14.36 | 72 | 70 | | 4.44 | 14.83 | | | | | |
| 70-89 | | | | 5.91 | 2.21 | 0.14 | 0.04 | 8.30 | 10.61 | 78 | 64 | | 4.60 | 12.90 | | | | | |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite;MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Okaw

**Pedon #:** S04-KY-145-03-(1-6)

**Classification:** Fine, smectitic, thermic Vertic Epiaqualfs

**Location:** McCracken County, KY; 1/4 mile west of JCT of Interstate 24 and KY Hwy 1420; Paducah West 7.5′ USGS Quad. Latitude: 37° 10′ 93″N; Longitude: 88° 69′ 62″W

**Parent Material:** Clayey, lacustrine sediments

**Vegetation:** Soybean—2003

**Aspect:**

**Landscape Position:** Nearly level, old lacustrine terrace plain about 15 ft. above the present-day Ohio River flood plain.

**Drainage:** Poorly drained

**Moisture when sampled:** Moist to 3 ft.; dry below 3 ft.

**Sampling Date:** 11/04/03

**Permeability:** Slow

**Slope:** < 1%

**Described by:** J. E. McIntosh & P. G. Gregory

Ap—0 to 8 inches; olive brown (2.5Y 4/3) silty clay loam; moderate fine subangular blocky structure that breaks to moderate coarse granular structure; friable; common fine roots; 2% medium distinct light rownish gray (2.5Y 6/2) iron depletions; 5% fine prominent strong brown (7.5YR 4/6 and 7.5YR 5/6) masses of iron accumulation; 5% prominent black (N 2.5/0) iron-manganese stains; moderately acid (pH 5.9); abrupt smooth boundary.

$Btg_1$—8 to 16 inches; gray (2.5Y 6/1) silty clay loam; moderate fine and medium subangular blocky structure; firm; common fine roots; 15% medium prominent strong brown (7.5YR 5/6) and 30% coarse prominent light olive brown (2.5Y 5/2) masses of iron accumulation; common faint grayish brown (2.5Y 5/2) clay films in pores and along faces of peds; strongly acid (pH 5.1); clear smooth boundary.

$Btg_2$—16 to 30 inches; light brownish gray (2.5Y 6/2) silty clay; moderate medium subangular blocky structure; firm; few fine roots; 15% medium prominent strong brown (7.5YR 5/6) and 20% medium distinct light yellowish brown (2.5Y 6/4) masses of iron accumulation; many faint grayish brown (2.5Y 5/2) clay films in pores and along faces of peds; very strongly acid (pH 4.9); gradual smooth boundary.

$Btg_3$—30 to 47 inches; gray (2.5Y 5/1 and 2.5Y 6/1) silty clay/clay; moderate medium prismatic structure parting to strong medium angular blocky; very firm; very few fine roots; 15% medium prominent strong brown (7.5YR 4/6 and 7.5YR 5/6) and 20% medium distinct light olive brown (2.5Y 5/4) masses of iron accumulation; many faint grayish brown (2.5Y 5/2) clay films in pores and along faces of peds; common pressure faces; very strongly acid (pH 4.8); gradual smooth boundary.

$Btg_4$—47 to 76 inches; gray (2.5Y 5/1) clay/silty clay; moderate medium prismatic structure parting to strong medium and coarse angular blocky; very firm; very few fine roots; 15% medium prominent strong brown (7.5YR 4/6 and 7.5YR 5/6) and 20% medium distinct light olive brown (2.5Y 5/4) masses of iron accumulation; many faint grayish brown (2.5Y 5/2) clay films in pores and along faces of peds; 15% distinct very dark gray (5Y 3/1) carbonaceous stains in pores and along ped faces; common pressure faces; moderately acid (pH 5.8); gradual smooth boundary.

Bt—76 to 84 inches; 60% yellowish brown (10YR 5/60 and 40% gray (2.5R 5/1) clay/silty clay; moderate medium and coarse angular blocky structure that parts to strong fine angular blocky; very firm; 2% medium faint strong brown (7.5YR 5/6) masses of iron accumulation; many distinct gray (10YR 5/1) clay films along faces of peds; 5% distinct very dark gray (5Y 3/1) carbonaceous stains in pores; moderately acid (pH 6.0).

**SOIL TYPE**.....**OKAW** **PEDON #** .....**S04KY-145-03-(1-6)**
**LOCATION** .....**MCCRACKEN COUNTY, KENTUCKY** **GENERAL METHODS** .....**1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF | VFS Plus Silt | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | (2-0.1) | (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-8 | Ap | 6.2 | 73.7 | 20.1 | 0.4 | 0.8 | 1.3 | 1.8 | 1.9 | | | | | | | sil | | | |
| 8-16 | Btg1 | 5.4 | 66.0 | 28.6 | 0.3 | 0.8 | 1.0 | 1.6 | 1.7 | | | | | | | sicl/sil | | | |
| 16-30 | Btg2 | 3.0 | 51.3 | 45.7 | 0.1 | 0.4 | 0.5 | 0.9 | 1.1 | | | | | | | sic | | | |
| 30-47 | Btg3 | 3.2 | 52.8 | 44.0 | 0.1 | 0.2 | 0.4 | 1.0 | 1.5 | | | | | | | sic | | | |
| 47-76 | Btg4 | 5.5 | 53.3 | 41.2 | 0.1 | 0.2 | 0.9 | 2.1 | 2.2 | | | | | | | sic/sicl | | | |
| 76-84 | Bt | 3.0 | 55.6 | 41.4 | 0.1 | 0.1 | 0.7 | 1.9 | 0.2 | | | | | | | sic/sicl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-8 | 6.07 | | 6.89 | 9.91 | 2.57 | 0.26 | 0.05 | 12.79 | 14.68 | 87 | 66 | | 6.51 | | | 0.05 | 1.54 | 131.5 | 27.5 |
| 8-16 | 4.82 | | 5.88 | 5.66 | 2.57 | 0.09 | 0.07 | 8.39 | 14.65 | 57 | 45 | | 10.16 | | | 0.07 | 0.72 | 85 | 10.5 |
| 16-30 | 4.51 | | 4.56 | 3.44 | 4.72 | 0.10 | 0.22 | 8.48 | 23.11 | 37 | 32 | | 18.22 | | | 0.08 | 0.37 | 130 | 4 |
| 30-47 | 4.67 | | 4.83 | 3.90 | 7.49 | 0.19 | 0.76 | 12.34 | 23.51 | 52 | 44 | | 15.40 | | | 0.12 | 0.28 | 153 | 15.5 |
| 47-76 | 6.46 | | 6.89 | 7.35 | 10.04 | 0.29 | 1.34 | 19.02 | 20.41 | 93 | 78 | | 5.43 | | | 0.08 | 0.23 | 161.5 | 18 |
| 76-84 | 7.60 | | 7.46 | 8.31 | 9.38 | 0.32 | 0.99 | 19.0 | 17.43 | 109 | 95 | | 0.93 | | | 1.24 | 0.25 | 172.5 | 17 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| Btg1 | 52 | 17 | 5 | | 12 | 14 | | | 26 | 16 | | | | 31 | 9 | 10 | | | 8 |
| Btg2 | | | | | | | | | 41 | 11 | | | | 31 | 7 | 5 | | | 5 |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Okaw

**Pedon #:** S04-KY-145-04-(1-8)

**Classification:** Fine, smectitic, thermic Chromic Vertic Epiaqualfs

**Location:** McCracken County, KY; 2.3 miles north of Symsonia via KY Hwy 131, ¾ mile north of the Graves-McCracken County line, then 100 feet west of Hwy 131; Symsonia 7.5'USGS Quad. Latitude: 36° 95' 36"N; Longitude: 88° 95' 36"W

**Parent Material:** Lacustrine sediments

**Vegetation:** Fescue meadow

**Aspect:**

**Landscape Position:** Nearly level, broad lacustrine plain.

**Drainage:** Poorly drained

**Moisture when sampled:** Moist to 3.5 ft.; moderately dry below

**Sampling Date:** 08/05/03

**Permeability:** Slow

**Slope:** < 1%

**Described by:** J. E. McIntosh

Ap—0 to 9 inches; grayish brown (10YR 5/2) and light olive brown (2.5Y 5/3) silty clay loam; weak medium granular structure; friable; many fine roots; 7% medium distinct gray (2.5Y 6/1) iron depletions; 10% fine prominent strong brown (7.5YR 5/6) and 10% medium distinct brown (7.5YR 4/4 and 7.5YR 4/2) masses of iron accumulation; 12% prominent black (N 2.5/0) iron-manganese stains; moderately acid (pH 5.9); abrupt smooth boundary.

$Btg_1$—9 to 13.5 inches; gray (2.5Y 6/1) silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; 10% fine prominent strong brown (7.5YR 5/6) and 10% medium prominent brown (7.5YR 4/4 and 7.5YR 4/2) masses of iron accumulation; common faint gray (10YR 6/1) clay films along faces of peds; strongly acid (pH 5.2); clear smooth boundary.

$Btg_2$—13.5 to 24 inches; gray (2.5Y 6/1) silty clay; moderate medium subangular blocky structure; very firm; few fine roots; 15% medium prominent strong brown (7.5YR 5/6) and 20% coarse prominent yellowish brown (10YR 5/6) masses of iron accumulation; common faint gray (10YR 6/1) clay films along faces of peds; strongly acid (pH 5.2); clear smooth boundary.

$Btg_3$—24 to 30 inches; 60% light olive brown (2.5YR 5/3) and 40% gray (2.5YR 6/1) silty clay; moderate medium subangular blocky structure; very firm; very few fine roots; 20% fine prominent strong brown (7.5YR 5/6) masses or iron accumulation ; many faint gray (10YR 6/1) clay films along faces of peds; common pressure faces; very strongly acid (pH 4.8); clear smooth boundary.

$Btg_4$—30 to 44 inches; gray (2.5Y 6/1) silty clay/clay; moderate medium prismatic structure parting to moderate and strong medium subangular blocky; extremely firm; very few fine roots; 25% fine prominent strong brown (7.5YR 5/6) and 5% fine prominent red (2.5YR 4/65) masses of iron accumulation; many faint gray (10YR 6/1) clay films along faces of peds; common pressure faces; very strongly acid (pH 4.9); gradual smooth boundary.

$Btg_5$—44 to 50 inches; gray (2.5Y 6/1) clay; moderate medium prismatic structure parting of strong medium angular blocky; extremely firm; very few fine roots; 30% coarse prominent yellowish red (5YR 5/6) and 15% medium prominent yellowish red (5YR 4/6) masses of iron accumulation; many faint gray (10YR 6/1) clay films along faces of peds; 1% very dark gray (5Y 3/1) discontinuous, carbonaceous stains in pores; common pressure faces; strongly acid (pH 5.1); clear smooth boundary.

$Btg_6$—50 to 66 inches; 55% gray (10YR 6/1) and 45% dark yellowish brown (10YR 4/6) clay; moderate medium prismatic structure parting to strong medium subangular blocky; extremely firm; very few fine roots; 20% medium prominent yellowish red (5YR 5/6) and 15% fine prominent yellowish red (5YR 5/8) masses of iron accumulation; many faint gray (7.5YR 6/1) clay films along faces of peds; 30% very dark gray (5Y 3/1) carbonaceous stains in pores and along ped faces; common pressure faces; moderately acid (pH 5.6); gradual smooth boundary.

2Bt—66 to 80 inches; dark yellowish brown (10YR 4/6) silty clay/silty clay loam; moderate coarse subangular blocky structure; very firm; 5% medium prominent gray (10YR 6/1) iron depletions; 15% medium faint strong brown (7.5YR 5/6) and 2% fine distinct yellowish red (5YR 4/6) masses of iron accumulation; many faint gray (7.5YR 6/1) clay films along faces of peds; 2% very dark gray (5Y 3/1) discontinuous, carbonaceous stains in pores; many mica flakes throughout; slightly acid (pH 6.5).

**SOIL TYPE**.....**OKAW** **PEDON #** .....**S04KY-145-04-(1-8)**
**LOCATION** .....**MCCRACKEN COUNTY, KENTUCKY** **GENERAL METHODS** .....**1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand | VFS Plus | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Coarser Than VF (2-0.1) | Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-9 | Ap | 10.8 | 65.1 | 24.1 | 0.7 | 2.0 | 2.2 | 3.3 | 2.6 | | | | | | | sil | | | |
| 9-13.5 | Btg1 | 7.6 | 57.6 | 34.8 | 0.6 | 1.2 | 1.4 | 2.3 | 2.1 | | | | | | | sicl | | | |
| 13.5-24 | Btg2 | 4.2 | 53.6 | 42.2 | 0.3 | 1.0 | 0.9 | 1.8 | 0.2 | | | | | | | sic/sicl | | | |
| 24-30 | Btg3 | 4.4 | 51.6 | 44.0 | 0.2 | 0.6 | 0.6 | 1.4 | 1.6 | | | | | | | sic | | | |
| 30-44 | Btg4 | 4.9 | 48.9 | 46.2 | 0 | 0.3 | 0.6 | 1.7 | 2.3 | | | | | | | sic | | | |
| 44-50 | Btg5 | 8.5 | 53.3 | 38.2 | 0 | 0.2 | 0.8 | 2.9 | 4.6 | | | | | | | sicl/sic | | | |
| 50-66 | Btg6 | 9.6 | 54.9 | 35.5 | 0.2 | 0.3 | 1.1 | 3.4 | 4.6 | | | | | | | sicl | | | |
| 66-80 | 2 Bt | 6.6 | 55.5 | 37.9 | 0 | 0.3 | 0.7 | 2.4 | 3.2 | | | | | | | sicl/sic | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-9 | 5.36 | | 6.40 | 6.89 | 1.99 | 0.11 | 0.16 | 9.15 | 14.04 | 65 | 48 | | 9.77 | | | 0.03 | 1.33 | 82.5 | 5.5 |
| 9-13.5 | 4.76 | | 4.86 | 3.98 | 2.19 | 0.10 | 0.30 | 6.57 | 17.55 | 37 | 30 | | 15.21 | | | 0.07 | 0.48 | 94 | 2 |
| 13.5-24 | 4.69 | | 4.39 | 1.67 | 3.77 | 0.30 | 0.66 | 6.40 | 21.28 | 30 | 25 | | 19.68 | | | 0.06 | 0.35 | 141 | 2 |
| 24-30 | 4.61 | | 4.35 | 1.39 | 5.69 | 0.31 | 0.97 | 8.36 | 24.87 | 34 | 29 | | 20.19 | | | 0.33 | 0.06 | 148.5 | 2 |
| 30-44 | 4.61 | | 4.64 | 2.02 | 7.53 | 0.32 | 1.39 | 11.26 | 25.80 | 44 | 38 | | 18.19 | | | 0.02 | 0.26 | 139.5 | 5.5 |
| 44-50 | 4.76 | | 5.57 | 2.81 | 8.91 | 0.29 | 1.68 | 13.69 | 22.40 | 61 | 50 | | 13.49 | | | 0.04 | 0.22 | 138 | 14.5 |
| 50-66 | 5.55 | | 6.60 | 3.84 | 9.71 | 0.26 | 2.17 | 15.98 | 20.28 | 79 | 68 | | 7.62 | | | 0.08 | 0.22 | 120.5 | 21.5 |
| 66-80 | 7.01 | | 7.17 | 4.49 | 10.21 | 0.21 | 2.68 | 17.59 | 19.61 | 90 | 78 | | 4.81 | | | 0.08 | 0.22 | 123.5 | 20.5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| Btg1 | | | | | | | | | 22 | 18 | | | | 32 | 11 | 10 | | | 7 |
| Btg2 | | | | | | | | | 35 | 17 | | | | 26 | 10 | 7 | | | 5 |
| Btg3 | | | | | | | | | 34 | 16 | | | | 28 | 5 | 9 | | | 5 |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Otwood, silt loam

**Pedon #:** SKY00-111-04-(1-11)

**Classification:** Fine-silty, mixed, active, mesic Oxyaquic Fragiudalfs

**Location:** Representative soil profile of Farnsley Moremen Riverside Landing Park 98KY111035; USGS Kosmosdale topographic quadrangle.

**Parent Material:** alluvium

**Vegetation:**

**Landscape Position:** Terrace

**Drainage:**

**Moisture when sampled:**

**Sampling Date:**

**Permeability:**

**Slope:** 4%

**Described by:**

Ap—0 to 10 inches; brown (10YR 4/3) silt loam, weak fine and medium granular structure; friable; common fine roots throughout; slightly acid; many mica flakes; clear wavy boundary.

Bt1—10 to 22 inches; yellowish brown (10YR 5/4) silt loam, moderate fine and medium subangular blocky structure; friable; few fine roots throughout; few iron-manganese stains; common distinct clay films; neutral; many mica flakes; clear wavy boundary.

Bt2—22 to 27 inches; yellowish brown (10YR 5/4) silt loam; moderate medium subangular blocky structure; friable; few fine roots throughout; few iron-manganese stains; many distinct clay films; strongly acid; many mica flakes; clear wavy boundary.

2Btx1—27 to 34 inches; brown (7.5YR 4/4) silt loam; moderate very coarse prismatic structure parting to moderate medium subangular blocky; very firm, brittle; few fine roots in cracks; common iron-manganese stains; many distinct clay films; common medium gray (2.5Y 6/1) iron depletions and common medium light yellowish brown (2.5Y 6/3) iron depletions; 2 percent gravel; very strongly acid; many mica flakes; clear wavy boundary.

2Btx2—34 to 42 inches; brown (7.5YR 4/4) silt loam; moderate very coarse prismatic structure parting to moderate medium and coarse subangular blocky; very firm, brittle; common iron-manganese stains; many distinct clay films; many medium light brownish gray (10YR 6/2) iron depletions and many medium reddish brown (5YR 4/4) masses of iron accumulation; very strongly acid; many mica flakes; clear wavy boundary.

2Btx3—42 to 46 inches; brown (7.5YR 4/4) silt loam; moderate very coarse prismatic structure parting to moderate medium subangular blocky; very firm, brittle; common iron-manganese stains; many distinct clay films; many medium light brownish gray (10YR 6/2) iron depletions and many medium reddish brown (5YR 4/4) masses of iron accumulation; 5 percent gravel; very strongly acid; many mica flakes; clear wavy boundary.

2Bt1—46 to 64 inches; brown (7.5YR 4/4) silt loam; moderate medium and coarse subangular blocky structure; firm; common iron-manganese stains; common distinct clay films; common medium light brownish gray (2.5Y 6/2) iron depletions throughout; 5 percent gravel; strongly acid; many mica flakes; clear wavy boundary.

2Bt2—64 to 70 inches; brown (7.5YR 4/4) silt loam; moderate fine and medium subangular blocky structure; friable; common iron-manganese stains; common distinct clay films; common medium gray (2.5Y 6/1) iron depletions and common medium dark red (2.5YR 3/6) masses of iron accumulation; 8 percent gravel; very strongly acid; many mica flakes; clear wavy boundary.

2Bt3—70 to 83 inches; brown (7.5YR 4/4) loam; weak medium subangular blocky structure; friable; common iron-manganese stains; few distinct clay films; common medium gray (2.5Y 5/1) iron depletions throughout and few fine dark red (2.5YR 3/6) masses of iron accumulation throughout; 2 percent gravel; very strongly acid; many mica flakes; abrupt wavy boundary.

2Cl—83 to 87 inches; brown (7.5YR 4/4) loam; massive; friable; common iron-manganese stains; strongly acid; many mica flakes; clear wavy boundary.

2C2—87 to 91 inches; dark yellowish brown (10YR 4/4) sandy loam; massive; friable; few iron-manganese stains; strongly acid; many mica flakes.

**SOIL TYPE** ..... **OTWOOD** **PEDON #** ..... **S00KY-111-04-(1-11)**
**LOCATION** ..... **JEFFERSON COUNTY, KENTUCKY** **GENERAL METHODS** ..... **1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-10 | Ap | 26.4 | 60.5 | 13.1 | 0.4 | 1.0 | 2.3 | 9.5 | 13.2 | | | | | | | sil | | | |
| 10-22 | Bt1 | 20.4 | 57.8 | 21.8 | 0.7 | 1.3 | 1.1 | 4.4 | 12.9 | | | | | | | sil | | | |
| 22-27 | Bt2 | 20.7 | 59.4 | 19.9 | 0.5 | 1.2 | 1.3 | 4.4 | 13.3 | | | | | | | sil | | | |
| 27-34 | 2Btx1 | 12.9 | 61.5 | 25.6 | 0.0 | 0.3 | 0.8 | 2.0 | 9.8 | | | | | | | sil/sicl | | | |
| 34-42 | 2Btx2 | 13.1 | 61.2 | 25.7 | 0.1 | 0.2 | 0.8 | 2.8 | 9.2 | | | | | | | sil/sicl | | | |
| 42-46 | 2Btx3 | 11.6 | 61.0 | 27.4 | 0.0 | 0.1 | 0.7 | 3.2 | 7.6 | | | | | | | sicl/sil | | | |
| 46-64 | 2Bt1 | 17.8 | 56.7 | 25.5 | 0.2 | 0.7 | 3.5 | 4.1 | 9.3 | | | | | | | sil/sicl | | | |
| 64-70 | 2Bt2 | 33.2 | 41.4 | 25.4 | 2.0 | 2.0 | 8.8 | 6.9 | 13.5 | | | | | | | l/cl | | | |
| 70-83 | 2Bt3 | 33.8 | 43.0 | 23.2 | 0.1 | 0.8 | 4.7 | 12.1 | 16.1 | | | | | | | l | | | |
| 83-87 | 2C1 | 40.8 | 39.2 | 20.0 | 0.1 | 0.8 | 4.6 | 20.4 | 14.9 | | | | | | | l | | | |
| 87-91 | 2C2 | 52.5 | 31.5 | 16.0 | 0.0 | 0.5 | 3.8 | 30.3 | 17.9 | | | | | | | sl/l | | | |
| | pH | | | Exchangeable Bases (5A1) | | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-10 | | | | 3.4 | 1.4 | 0.1 | 0.02 | 4.9 | 9.3 | 53 | 36 | | 8. | 13.7 | | | | | |
| 10-22 | | | | 2.8 | 1.6 | 0.1 | 0.02 | 4.5 | 9.6 | 47 | 33 | | 9.3 | 13.9 | | | | | |
| 22-27 | | | | 1.9 | 1.3 | 0.1 | 0.01 | 3.3 | 9.6 | 35 | 27 | | 8.8 | 12.2 | | | | | |
| 27-34 | | | | 1.5 | 1.8 | 0.2 | 0.03 | 3.5 | 13.8 | 25 | 20 | | 13.8 | 17.3 | | | | | |
| 34-42 | | | | 1.4 | 2.6 | 0.2 | 0.06 | 4.2 | 14.5 | 29 | 24 | | 13.7 | 18.0 | | | | | |
| 42-46 | | | | 1.3 | 3.4 | 0.2 | 0.08 | 5.1 | 15.9 | 32 | 27 | | 13.5 | 18.6 | | | | | |
| 46-64 | | | | 1.7 | 4.3 | 0.2 | 0.10 | 6.3 | 16.2 | 39 | 33 | | 12.7 | 19.0 | | | | | |
| 64-70 | | | | 2.2 | 4.7 | 0.2 | 0.1 | 7.2 | 12.8 | 56 | 48 | | 7.8 | 15.0 | | | | | |
| 70-83 | | | | | 5.6 | 0.2 | 0.1 | 9.1 | 14.3 | 63 | 59 | | 6.3 | 15.4 | | | | | |
| 83-87 | | | | 2.9 | 5.1 | 0.1 | 0.1 | 8.4 | 12.5 | 67 | 61 | | 5.3 | 13.7 | | | | | |
| 87-91 | | | | 2.4 | 3.7 | 0.1 | 0.1 | 6.3 | 9.1 | 69 | 57 | | 4.8 | 11.1 | | | | | |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Rayne, silt loam (Taxadjunct)

**Pedon #:**

**Classification:** Fine-loamy, siliceous, semiactive, mesic Typic Hapludults

**Location:** Wolfe Co., KY. Red River Gorge, off Highway 715, 500 feet east of Wildcat Trail.

**Parent Material:** Breathitt shale/siltstone/sandstone

**Vegetation:** Mixed hardwood, white pine, black oak, dogwood

**Landscape Position:** Ridgetop

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 5/11/94

**Permeability:**

**Slope:** 2%

**Described by:** A.D. Karathanasis

Oe—1 to 0 inches; partly decomposed leaf litter.

A—0 to 2 inches; Dark yellowish brown (10YR 4/4) silt loam; weak fine granular structure; many fine and medium roots; very friable; clear smooth boundary.

AB—2 to 7 inches; Yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky; common fine and medium roots; very friable; gradual smooth boundary.

Bt1—7 to 16 inches; Yellowish brown (10YR 5/4) silt loam; moderate medium subangular blocky; common fine and medium roots; friable; gradual smooth boundary.

Bt2—16 to 24 inches; Yellowish brown (10YR 5/6) silt loam; moderate medium subangular blocky; few coarse roots; friable; 5% fragments; gradual smooth boundary.

Bt3—24 to 31 inches; Yellowish brown (10YR 5/4 and 10YR 5/6) silt loam; moderate medium subangular blocky; few fine and medium roots; firm; 25 to 30% fragments; clear smooth boundary.

BC—31 to 44 inches; Yellowish brown (10YR 5/6) and brown (10YR 5/3) silt loam; weak medium subangular blocky; few fine roots; firm; 40% fragments; abrupt wavy boundary.

Cr—44+ inches; Inter-bedded shale and siltstone.

**SOIL TYPE** ..... **RAYNE (TAXADJUNCT)** **PEDON #**
**LOCATION** ..... **WOLFE COUNTY, KENTUCKY** **GENERAL METHODS** ..... **1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-2 | A | 32.3 | 54.3 | 13.4 | 2.2 | 4.0 | 5.9 | 12.2 | 8.0 | | | | | | | sil | | | |
| 2-7 | AB | 34.4 | 51.2 | 14.4 | 1.8 | 3.2 | 5.2 | 13.5 | 10.7 | | | | | | | sil | | | |
| 7-16 | Bt1 | 30.2 | 53.6 | 16.2 | 0.7 | 1.5 | 3.6 | 12.9 | 11.5 | | | | | | | sil | | | |
| 16-24 | Bt2 | 31.6 | 48.9 | 19.5 | 1.0 | 0.7 | 3.2 | 12.9 | 13.8 | | | | | | | l/sil | | | |
| 24-31 | Bt3 | 30.7 | 47.3 | 22.0 | 0.6 | 0.6 | 2.8 | 12.9 | 13.8 | | | | | | | l | | | |
| 31-44 | BC | 29.0 | 45.9 | 25.1 | 0.2 | 0.4 | 2.6 | 11.8 | 14.0 | | | | | | | l | | | |
| 44+ | Cr | 85.5 | 8.9 | 5.6 | 0.1 | 2.9 | 12.9 | 53.8 | 15.8 | | | | | | | ls | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/ 100gm | 602z Mg meq/ 100gm | 602z K meq/ 100gm | 6P2z Na meq/ 100gm | 5B1a TEB meq/ 100gm | 5A1z CEC meq/ 100gm | 5C1 Pct | 5C3 Pct | H+Al meq/ 100 gm | EA meq/ 100gm | SC meq/ 100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-2 | 3.99 | | 5.78 | 0.08 | 0.07 | 0.09 | 0.18 | 0.42 | 13.28 | 3 | 2 | | 17.32 | 17.74 | | | 8.69 | 37.5 | 5.5 |
| 2-7 | 4.69 | | 6.56 | 0.06 | 0.02 | 0.06 | 0.21 | 0.35 | 6.59 | 5 | 4 | | 8.83 | 9.18 | | | 3.40 | 33 | 2 |
| 7-16 | 4.65 | | 6.48 | 0.04 | 0.02 | 0.06 | 0.17 | 0.29 | 4.74 | 6 | 4 | | 6.49 | 6.78 | | | 1.26 | 48 | 1.5 |
| 16-24 | 4.75 | | 5.87 | 0.07 | 0.14 | 0.07 | 0.19 | 0.47 | 6.37 | 7 | 6 | | 7.30 | 7.77 | | | 0.57 | 43 | 0.5 |
| 24-31 | 4.76 | | 5.47 | 0.07 | 0.41 | 0.08 | 0.23 | 0.79 | 7.95 | 10 | 7 | | 9.86 | 10.65 | | | 0.37 | 47.5 | 0.5 |
| 31-44 | 4.83 | | 4.99 | 0.04 | 0.43 | 0.07 | 0.26 | 0.80 | 9.98 | 8 | 7 | | 11.15 | 11.95 | | | 0.24 | 46.5 | 0.5 |
| 44+ | 4.74 | | 6.64 | 0.03 | 0.12 | 0.02 | 0.08 | 0.25 | 3.10 | 8 | 7 | | 3.26 | 3.51 | | | 0.27 | 14.5 | 0.5 |
| **Mineralogical Analysis—Estimated Percentages in Various Size Fractions** | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | | Clay | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | V-HIV | CL | INT | K | MI | Q | GI | GO | F |
| A | 95 | 5 | | | | | | | | | 41 | | - | 28 | 5 | 17 | 4 | | 5 |
| AB | 95 | 5 | | | | | | | | | 36 | | 6 | 28 | 5 | 16 | 5 | | 4 |
| Bt1 | 97 | 3 | | | | | | | | | 32 | | 4 | 30 | 10 | 16 | 5 | | 3 |
| Bt2 | 97 | 3 | | | | | | | | | 30 | | 6 | 39 | 8 | 8 | 6 | | 3 |
| Bt3 | 97 | 3 | | | | | | | | - | 30 | | 5 | 42 | 10 | 6 | 4 | | 3 |
| BC | 90 | 10 | | | | | | | | 5 | 26 | | 4 | 44 | 10 | 6 | 3 | | 2 |
| Cr | 100 | | | | | | | | | 6 | 10 | | | 60 | 15 | 6 | | | 3 |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA =calcite; RE = other resistant minerals*

# Rossmoyne, silt loam (Taxadjunct)

**Pedon #:** S95KY-015-002-(1-7)

**Classification:** Fine-silty, vermiculitic, superactive, mesic Aquic Fragiudalfs

**Location:** Boone County, KY. George Rehkamp's farm, Hwy. 237 northwest of US 42.

**Parent Material:** Residuum (loess over glacial till)

**Vegetation:** Pasture

**Landscape Position:** Upland

**Drainage:** Moderately well drained.

**Moisture when sampled:** Moist

**Permeability:** Moderate

**Slope:** 2 to 6%

**Described by:** K. Collins

Ap—0 to 11 cm: Dark grayish brown (10YR 4/2) silt loam; weak granular structure; very friable; clear boundary.

BA—11 to 23 cm: Dark yellowish brown (10YR 4/4) silt loam; weak sub-angular blocky structure; friable with concretions; clear boundary.

Bt—23 to 48 cm: Yellowish brown (10YR 5/4) silt loam; moderate sub-angular blocky structure; common distinct redox depletions and concentrations; friable; clear boundary.

$Btx_1$—48 to 68 cm: Yellowish brown (10YR 5/6) silty clay loam; common, distinct redox depletions; weak prismatic structure; very firm with concretions; gradual boundary.

$Btx_2$—68 to 84 cm: Yellowish brown (10YR 5/6) silty clay loam; many prominent redox depletions; weak prismatic structure; very firm with concretions; clear boundary.

2Bt—84 to 140 cm: Strong brown (7.5YR 4/6) clay; many prominent redox depletions; moderate sub-angular blocky structure; firm with concretions; clear boundary.

2BC—140 to 199 cm: Dark yellowish brown (10YR 4/6) clay; many prominent redox depletions; weak sub-angular blocky structure; firm.

**SOIL TYPE..... ROSSMOYNE (TAXADJUNCT)** **PEDON # .....S95KY-015-002-(1-7)**
**LOCATION .....BOONE COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-11 | Ap | 14.4 | 66.2 | 19.4 | 0.5 | 1.8 | 2.5 | 4.2 | 5.4 | | | | | | | sil | | | |
| 11-23 | BA | 5.6 | 72.7 | 21.7 | 0.2 | 1.1 | 1.4 | 1.3 | 1.6 | | | | | | | sil | | | |
| 23-48 | Bt | 5.6 | 69.0 | 25.4 | 0.3 | 1.3 | 1.3 | 0.9 | 1.8 | | | | | | | sil | | | |
| 48-68 | Btx1 | 11.8 | 60.6 | 27.6 | 1.4 | 3.4 | 2.6 | 1.9 | 2.5 | | | | | | | sil/sicl | | | |
| 68-84 | Btx2 | 14.0 | 50.5 | 35.5 | 3.0 | 4.1 | 2.4 | 1.8 | 2.7 | | | | | | | sicl | | | |
| 84-140 | 2Bt | 6.4 | 30.9 | 62.7 | 0.7 | 1.1 | 1.2 | 1.3 | 2.1 | | | | | | | c | | | |
| 140-199 | 2BC | 5.8 | 38.4 | 55.8 | 0.1 | 0.1 | 0.3 | 0.9 | 4.4 | | | | | | | c/sic | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-11 | 5.4 | | 6.5 | 4.86 | 1.12 | 1.05 | 0.03 | 7.06 | 18.09 | 39.0 | 40.4 | | 10.4 | 17.46 | | 0.45 | 2.99 | 417 | 12 |
| 11-23 | 5.6 | | 6.7 | 4.84 | 1.05 | 0.43 | 0.05 | 6.37 | 12.06 | 52.7 | 46.5 | | 7.33 | 13.70 | | 0.20 | 1.20 | 192 | 4.5 |
| 23-48 | 5.0 | | 5.7 | 3.73 | 1.02 | 0.14 | 0.07 | 4.96 | 16.18 | 30.7 | 28.6 | | 12.37 | 17.33 | | 0.44 | 0.63 | 62 | 1.5 |
| 48-68 | 4.8 | | 5.5 | 3.65 | 1.26 | 0.13 | 0.08 | 5.12 | 17.65 | 29.0 | 27.0 | | 13.87 | 18.99 | | 0.20 | 0.52 | 63.5 | 6.5 |
| 68-84 | 4.8 | | 5.0 | 6.27 | 2.21 | 0.14 | 0.10 | 8.72 | 23.53 | 37.1 | 33.5 | | 17.34 | 26.06 | | 0.10 | 0.36 | 63 | 3 |
| 84-140 | 5.0 | | 4.9 | 22.98 | 6.91 | 0.36 | 0.45 | 30.7 | 42.50 | 72.2 | 57.4 | | 22.81 | 53.51 | | 0.12 | 0.36 | 138.5 | 36 |
| 140-199 | 7.1 | | | 35.89 | 8.15 | 0.23 | 0.59 | 44.86 | 37.5 | 119.6 | 90.9 | | 4.5 | 49.36 | | 0.33 | 0.24 | 98 | 74.5 |
| | Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | | Clay | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| Ap | 100 | | | | | | | | | 62 | | | | 18 | 11 | 7 | | | 2 |
| Btx1 | 84 | 16 | | | | | | | | 76 | | | | 10 | 8 | 6 | | | |
| 2BC | 59 | 41 | | | | | | | 28 | 61 | | | | 2 | 5 | 4 | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Rossmoyne, silt loam

**Pedon #:** S95KY-015-005-(1-7)

**Classification:** Fine-silty, mixed, superactive, mesic Aquic Fragiudalfs

**Location:** Boone County, KY. Kinman's farm, Ky Hwy 18 east of Burlington, KY.

**Parent Material:** Residuum (loess over calcareous glacial till)

**Vegetation:** Pasture

**Landscape Position:** Upland

**Drainage:** Moderately well drained

**Moisture when sampled:** Moist

**Permeability:** Moderate

**Slope:** 2 to 6%

**Described by:** K. Collins

Ap—0 to 9 cm: Dark grayish brown (10YR 4/2) silt loam; weak granular structure; friable with concretions, gradual boundary.

BA—19 to 32 cm: Brown (10YR 4/3) silt loam; weak sub-angular blocky structure; friable with concretions; gradual boundary.

Bt—32 to 49 cm: Yellowish brown (10YR 5/6) silt loam; moderate sub-angular blocky structure; friable; common faint redox depletions and concentrations; clear boundary.

$Btx_1$—49 to 64 cm: Yellowish brown (10YR 5/4) silt loam; many prominent redox depletions; weak prismatic structure; very firm with concretions; gradual boundary.

$Btx_2$—64 to 98 cm: Yellowish brown (10YR 5/6) silt loam; many prominent redox depletions; weak prismatic; very firm with concretions; clear boundary.

$2Bt_1$—98 to 120 cm: Yellowish brown (10YR 5/6) silt loam; few faint redox depletions; moderate sub-angular blocky structure; firm with concretions; gradual boundary.

$2Bt_2$—120 to 146 cm: Yellowish brown (10YR 5/4) silty clay; common distinct redox depletions; moderate sub-angular blocky structure; firm with concretions.

**SOIL TYPE..... ROSSMOYNE** **PEDON # .....S95KY-015-005-(1-7)**
**LOCATION .....BOONE COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-19 | Ap | 11.8 | 76.4 | 11.8 | 0.9 | 1.2 | 3.0 | 3.8 | 2.9 | | | | | | | sil | | | |
| 19-32 | BA | 8.4 | 72.4 | 19.2 | 1.1 | 1.4 | 1.5 | 1.5 | 2.9 | | | | | | | sil | | | |
| 32-49 | Bt | 5.3 | 67.8 | 26.9 | 0.3 | 1.2 | 1.0 | 0.7 | 2.1 | | | | | | | sil/sicl | | | |
| 49-64 | Btx1 | 4.9 | 67.9 | 27.2 | 0.2 | 0.7 | 0.8 | 0.6 | 2.6 | | | | | | | sil/sicl | | | |
| 64-98 | Btx2 | 7.9 | 66.1 | 26.0 | 0.2 | 1.2 | 1.3 | 1.4 | 3.8 | | | | | | | sil/sicl | | | |
| 98-120 | 2Bt1 | 11.8 | 63.8 | 24.4 | 1.9 | 1.8 | 1.7 | 1.8 | 4.6 | | | | | | | sil | | | |
| 120-146 | 2Bt2 | 5.6 | 50.2 | 44.2 | 0.3 | 0.6 | 0.6 | 0.8 | 3.3 | | | | | | | sic | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-19 | 6.0 | | 6.9 | 8.02 | 1.63 | 1.02 | 0.08 | 10.75 | 19.26 | 56 | 59 | | 7.57 | 18.32 | | 0.31 | 3.38 | 3.54 | 26 |
| 19-32 | 5.6 | | 6.7 | 4.42 | 1.23 | 0.22 | 0.11 | 5.98 | 13.82 | 43 | 47 | | 6.82 | 12.80 | | 0.13 | 1.06 | 89.5 | 0.5 |
| 32-49 | 4.9 | | 6.0 | 4.94 | 1.70 | 0.16 | 1.64 | 8.44 | 16.03 | 53 | 42 | | 11.84 | 20.28 | | 0.09 | 0.48 | 73.5 | 0.5 |
| 49-64 | 4.8 | | 5.1 | 4.40 | 1.96 | 0.16 | 0.13 | 6.65 | 19.26 | 35 | 31 | | 15.01 | 21.66 | | 0.16 | 0.36 | 86.5 | 0.5 |
| 64-98 | 4.8 | | 5.0 | 3.55 | 1.81 | 0.16 | 0.20 | 5.72 | 17.65 | 32 | 29 | | 14.23 | 19.95 | | 0.06 | 0.26 | 75 | 0.5 |
| 98-120 | 4.8 | | 5.4 | 4.41 | 1.97 | 0.11 | 0.22 | 6.71 | 16.03 | 42 | 42 | | 9.38 | 16.09 | | 0.10 | 0.22 | 57.5 | 0.5 |
| 120-146 | 5.0 | | 5.7 | 13.20 | 5.34 | 0.19 | 0.42 | 19.15 | 24.85 | 77 | 68 | | 8.79 | 27.94 | | 0.06 | 0.24 | 88 | 0.5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| Ap | 98 | 2 | | | | | | | | 53 | | | | 25 | 7 | 15 | | | |
| Btx1 | 90 | 10 | | | | | | | 30 | 27 | | | 14 | 12 | 11 | 3 | | | 3 |
| 2Bt2 | 90 | 10 | | | | | | | 40 | 33 | | | 3 | 9 | 7 | 6 | | | 2 |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Rossmoyne, silt loam

**Pedon #:** S98KY-015-001-(1-6)

**Classification:** Fine-silty, mixed, superactive, mesic Aquic Fragiudalfs

**Location:** Boone County, KY., Chip Foltz's farm, Hwy. 20 east of Petersburg.

**Parent Material:** Residuum (loess over glacial till)

**Vegetation:** Pasture

**Landscape Position:** Upland

**Drainage:** Moderately well drained

**Moisture when sampled:** Moist

**Permeability:** Moderate

**Slope:** 0 to 2% (1.5%)

**Described by:** Jutta R.V. Pils

Ap—0 to 22 cm: Dark brown (10YR 3/3) silt loam; weak granular structure; friable; abrupt boundary.

$Bt_1$—22 to 45 cm: Dark yellowish brown (10YR 4/4) silty clay loam; weak subangular blocky structure; firm; gradual boundary.

$Bt_2$—45 to 69 cm: Light olive brown (2.5Y 5/3) silty clay loam; few faint redox depletions; moderate subangular blocky structure; very firm; clear boundary.

E/Bt—69 to 81 cm: Light brownish gray (2.5Y 6/2) silty clay loam; common distinct redox depletions and concentrations; moderate subangular blocky structure; firm; gradual boundary.

$Btx_1$—81 to 94 cm: Brown (10YR 4/3) silty clay loam; few dark yellowish brown (7.5YR 4/6) concentrations and many gray (10YR 6/1) depletions; weak platy structure; firm; gradual boundary.

$Btx_2$—94 to 111+ cm: Yellowish brown (10YR 5/4) silty clay loam; few gray (10YR 5/1) depletions; weak subangular blocky structure; firm with Mn concretions.

**SOIL TYPE..... ROSSMOYNE** **PEDON # .....S98KY-015-01-(1-6)**
**LOCATION .....BOONE COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-22 | Ap | 6.9 | 72.9 | 20.2 | 0.2 | 1.1 | 1.7 | 1.6 | 2.3 | | | | | | | sil | | | |
| 22-45 | Bt1 | 5.1 | 64.7 | 30.2 | 0.1 | 0.8 | 1.0 | 0.9 | 2.3 | | | | | | | sicl | | | |
| 45-69 | Bt2 | 3.7 | 69.5 | 26.8 | 0.1 | 0.5 | 0.5 | 0.5 | 2.2 | | | | | | | sicl | | | |
| 69-81 | E/Bt | 3.0 | 66.5 | 30.5 | 0.2 | 0.7 | 0.5 | 0.3 | 4.7 | | | | | | | sicl | | | |
| 81-94 | Btx1 | 8.2 | 63.5 | 28.2 | 1.0 | 2.7 | 1.8 | 0.9 | 1.8 | | | | | | | sicl | | | |
| 94-111+ | Btx2 | 22.1 | 51.8 | 26.1 | 5.8 | 8.1 | 3.7 | 1.7 | 2.8 | | | | | | | sicl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-22 | 6.8 | | 7.0 | 9.31 | 0.91 | 0.25 | 0.07 | 10.54 | 13.24 | 79.6 | | | 6.7 | | | 0.44 | 2.22 | 192 | 141 |
| 22-45 | 5.7 | | 6.8 | 7.53 | 1.14 | 0.16 | 0.10 | 8.93 | 13.97 | 63.9 | | | 7.7 | | | 0.04 | 0.76 | 127 | 7.0 |
| 45-69 | 4.8 | | 5.8 | 5.92 | 1.29 | 0.19 | 0.09 | 7.49 | 17.65 | 42.4 | | | 12.1 | | | 0.03 | 0.40 | 149 | 6.0 |
| 69-81 | 4.5 | | 5.1 | 4.92 | 1.43 | 0.19 | 0.10 | 6.66 | 19.12 | 34.8 | | | 13.1 | | | 0.03 | 0.36 | 170 | 7.0 |
| 81-94 | 4.5 | | 5.1 | 4.49 | 1.46 | 0.16 | 0.13 | 6.24 | 19.12 | 32.6 | | | 14.6 | | | 0.02 | 0.40 | 128 | 16.0 |
| 94-111+ | 4.8 | | 5.4 | 5.31 | 1.71 | 0.10 | 0.17 | 7.29 | 19.12 | 38.1 | | | 13.6 | | | 0.06 | 0.29 | 93 | 20 |
| | Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | | Clay | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV/HSM | CL | INT | K | MI | Q | GI | GO | F |
| Ap | | | | | | | | | | 49 | | | | 15 | 20 | 11 | | | 5 |
| Bt2 | | | | | | | | | | | 55 | | 18 | 16 | 6 | 5 | | | |
| Btx2 | | | | | | | | | | | 74 | | 10 | 6 | 3 | 7 | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Rossmoyne, silt loam (Taxadjunct)

**Pedon #:** S98KY-015-003-(1-6)

**Classification:** Fine-silty, vermiculitic, superactive, mesic Aquic Fragiudalfs

**Location:** Boone County, KY., Randall's farm, Hwy. 20 east of Petersburg.

**Parent Material:** Residuum (loess over glacial till)

**Vegetation:** Pasture

**Landscape Position:** Upland

**Drainage:** Moderately well drained

**Moisture when sampled:** Moist

**Permeability:** Moderate

**Slope:** 0 to 1%

**Described by:** Jutta R.V. Pils

Ap—0 to 22 cm: Brown (10YR 4/3) silt loam; weak granular structure, friable, abrupt boundary.

$Bt_1$—22 to 43 cm: Dark yellowish brown (10YR 4/6) silty clay loam; weak subangular blocky structure; firm; gradual boundary.

$Bt_2$—43 to 60 cm: Dark yellowish brown (10YR 4/6) silty clay loam; few brown (10YR 4/3) and few grayish brown (10YR 5/2) depletions; moderate subangular blocky structure; firm; gradual boundary.

$Btx_1$—60 to 83 cm: Dark yellowish brown (10YR 4/4) silty clay loam; many yellowish brown (10YR 5/6) concentrations and few grayish brown (2.5Y 5/2) depletions; moderate subangular blocky structure; firm; gradual boundary.

$Btx_2$—83 to 111 cm: Dark yellowish brown (10YR 4/4) silty clay; few dark reddish brown (5YR 3/4) and few yellowish brown (10YR 5/6) concentrations; many grayish brown (2.5Y 5/2) depletions; moderate subangular blocky structure; firm; gradual boundary.

2Bt—111 to 127+ cm: Dark yellowish brown (10YR 4/4) silty clay; few very dusky red (2.5YR 2.5/2) and many grayish brown (2.5Y 5/2) depletions; moderate subangular blocky structure; firm.

**SOIL TYPE..... ROSSMOYNE** **PEDON # .....S98KY-015-03-(1-6)**
**LOCATION .....BOONE COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-22 | Ap | 9.3 | 76.9 | 13.8 | 1.1 | 1.3 | 1.4 | 1.8 | 3.6 | | | | | | | sil | | | |
| 22-43 | Bt1 | 5.0 | 65.7 | 29.3 | 0.1 | 0.4 | 0.4 | 0.6 | 3.5 | | | | | | | sicl | | | |
| 43-60 | Bt2 | 4.7 | 68.3 | 27.0 | 0.1 | 0.4 | 0.2 | 0.4 | 3.5 | | | | | | | sicl | | | |
| 60-83 | Btx1 | 2.6 | 69.0 | 28.4 | 0.1 | 0.3 | 0.2 | 0.3 | 1.8 | | | | | | | sicl | | | |
| 83-111 | Btx2 | 6.2 | 49.7 | 44.1 | 0.3 | 1.1 | 1.6 | 1.6 | 1.6 | | | | | | | sic | | | |
| 111-127+ | 2Bt | 8.8 | 48.5 | 42.7 | 0.6 | 2.0 | 2.4 | 2.0 | 1.8 | | | | | | | sic | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | | Base Saturation | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-22 | 5.7 | | 6.5 | 6.42 | 1.03 | 0.14 | 0.08 | 7.67 | 13.24 | 57.9 | 46.7 | | 8.7 | 16.4 | | 0.05 | 2.81 | 113 | 25 |
| 22-43 | 5.3 | | 6.3 | 7.63 | 1.19 | 0.17 | 0.10 | 9.09 | 16.18 | 56.1 | 51.1 | | 8.7 | 17.8 | | 0.02 | 0.76 | 134 | 9 |
| 43-60 | 4.7 | | 5.3 | 5.73 | 1.00 | 0.20 | 0.10 | 7.03 | 17.65 | 39.8 | 31.4 | | 15.4 | 22.4 | | 0.12 | 0.40 | 173 | 7 |
| 60-83 | 4.7 | | 5.1 | 5.78 | 1.23 | 0.19 | 0.22 | 7.42 | 19.12 | 38.2 | 35.7 | | 13.4 | 20.8 | | 0.03 | 0.51 | 146 | 8 |
| 83-111 | 4.7 | | 4.9 | 9.91 | 2.73 | 0.18 | 0.43 | 13.25 | 25.00 | 52.2 | 42.9 | | 17.7 | 30.9 | | 0.02 | 0.48 | 130 | 60 |
| 111-127+ | 5.1 | | 5.8 | 19.19 | 5.12 | 0.19 | 0.43 | 24.93 | 33.82 | 73.7 | 67.7 | | 11.9 | 36.8 | | 0.03 | 0.44 | 144 | 118 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV/HSM | CL | INT | K | MI | Q | GI | GO | F |
| Ap | | | | | | | | | | 56 | | | | 23 | 14 | 7 | | | |
| Bt2 | | | | | | | | | | 68 | | | | 19 | 11 | 20 | | | |
| 2Bt | | | | | | | | | | 89 | | | | 5 | 4 | 2 | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Rossmoyne, silt loam

**Pedon #:** S98KY-015-008-(1-6)

**Classification:** Fine-silty, mixed, superactive, mesic Aquic Fragiudalfs

**Location:** Boone County, KY., Davis' farm.

**Parent Material:** Residuum (loess over glacial till)

**Vegetation:** Pasture

**Landscape Position:** Upland

**Drainage:** Moderately well drained

**Moisture when sampled:** Moist

**Permeability:** Moderate

**Slope:** 2 to 6% (4%)

**Described by:** Jutta R.V. Pils

Ap—0 to 13 cm: Brown (10YR 4/3) silt loam; weak granular structure; friable; clear boundary.

$Bt_1$—13 to 37 cm: Dark yellowish brown (10YR 4/6) silty clay loam; weak subangular blocky structure; firm; gradual boundary.

$Bt_2$—37 to 48 cm: Dark yellowish brown (10YR 4/6) silty clay loam; few dark grayish brown (10YR 4/2) depletions; moderate subangular blocky structure; firm; gradual boundary.

$Btx_1$—48 to 61 cm: Brown (7.5YR 4/4) silty clay loam; few light brownish gray (10YR 6/2) depletions; weak platy structure; firm with Mn concretions; gradual boundary.

$Btx_2$—61 to 79 cm: Brown (7.5YR 4/4) clay; many light brownish gray (10YR 6/2) depletions; weak platy structure; firm; gradual boundary.

2Bt—79 to 110+ cm: Yellowish brown (10YR 5/4) clay; many very dark grayish brown (10YR 3/2) and few gray (10YR 5/1) depletions; weak subangular blocky structure; firm with Mn concretions.

**SOIL TYPE..... ROSSMOYNE** **PEDON # .....S98KY-015-08-(1-6)**
**LOCATION .....BOONE COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand | VFS Plus | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Coarser Than VF (2-0.1) | Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-13 | Ap | 8.7 | 71.7 | 19.6 | 0.7 | 2.1 | 2.4 | 1.8 | 1.7 | | | | | | | sil | | | |
| 13-37 | Bt1 | 5.0 | 63.8 | 31.2 | 0.6 | 1.2 | 1.1 | 0.8 | 1.3 | | | | | | | sicl | | | |
| 37-48 | Bt2 | 10.5 | 57.2 | 32.3 | 2.1 | 3.3 | 2.6 | 1.3 | 1.2 | | | | | | | sicl | | | |
| 48-61 | Btx1 | 12.7 | 51.3 | 36.0 | 2.8 | 4.2 | 2.9 | 1.5 | 1.3 | | | | | | | sicl | | | |
| 61-79 | Btx2 | 9.2 | 38.7 | 52.1 | 1.6 | 2.6 | 2.1 | 1.6 | 1.3 | | | | | | | c | | | |
| 79-110+ | 2Bt | 3.4 | 31.0 | 65.6 | 0.2 | 0.3 | 0.6 | 0.8 | 1.5 | | | | | | | c | | | |
| | | pH | | Exchangeable Bases (5A1) | | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/ 100gm | 602z Mg meq/ 100gm | 602z K meq/ 100gm | 6P2z Na meq/ 100gm | 5B1a TEB meq/ 100gm | 5A1z CEC meq/ 100gm | 5C1 Pct | 5C3 Pct | H+Al meq/ 100 gm | EA meq/ 100gm | SC meq/ 100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-13 | 5.4 | | 6.3 | 4.65 | 1.07 | 0.22 | 0.09 | 6.03 | 13.24 | 45.4 | | | 11.3 | | | 0.26 | 3.27 | 142 | 35 |
| 13-37 | 4.9 | | 5.7 | 4.90 | 1.18 | 0.19 | 0.08 | 6.35 | 15.44 | 41.1 | | | 13.9 | | | 0.09 | 1.10 | 147 | 27 |
| 37-48 | 5.0 | | 5.8 | | | | | | | | | | 13.9 | | | 0.14 | 0.50 | 133 | 7 |
| 48-61 | 5.0 | | 5.5 | | | | | | | | | | 15.0 | | | 0.18 | 0.36 | 123 | 6 |
| 61-79 | 4.9 | | 5.6 | | | | | | | | | | 16.9 | | | 0.05 | 033 | 172 | 15 |
| 79-110+ | 5.2 | | 6.1 | | | | | | | | | | 10.3 | | | 0.08 | 0.40 | 203 | 17 |

| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Horizon | Sand + Silt | | | | | | | | | Clay | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV/HSM | CL | INT | K | MI | Q | GI | GO | F |
| Ap | | | | | | | | | | 58 | | | | 24 | 6 | 12 | | | |
| Btx1 | | | | | | | | | | | 77 | | | 10 | 6 | 7 | | | |
| 2Bt | | | | | | | | | | 70 | | | 23 | 4 | 3 | 1 | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Routon, silt loam (Taxadjunct)

**Pedon #:** S92KY-083-11-1-(1-5)

**Classification:** Fine-silty, mixed, active, thermic Typic Epiaquults

**Location:** Graves Co., 5.8 miles north of Mayfield, KY and 1.5 miles northeast of Hickory on the John Green farm.

**Parent Material:**

**Vegetation:**

**Landscape Position:**

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 5/12/1992

**Permeability:**

**Slope:**

**Described by:** A.D. Karathanasis, R. Forsythe, R. Toor, and P. Prawito

A—0 to 7 cm.; Dark yellowish brown (10YR 4/4) silt loam; common fine distinct grayish brown (10YR 5/2) mottles; weak fine granular structure; friable; clear smooth boundary.

Eg—7 to 37 cm.; Light brownish gray (10YR 6/2) silt loam; common medium prominent strong brown (7.5YR 5/6, 4/6) and few fine distinct yellowish brown (10YR 5/6) mottles; weak fine and medium subangular blocky structure; friable; clear smooth boundary.

Btg1—37 to 78 cm.; Light brownish gray (10YR 6/2) silt loam; common medium distinct yellowish brown (10YR 5/6) and few fine prominent strong brown (7.5YR 5/6) mottles; weak medium and fine subangular blocky structure; firm; clear smooth boundary.

Btg2—78 to 105 cm.; Light brownish gray (10YR 6/2) silt loam; common fine distinct yellowish brown (10YR 5/6) and few fine prominent strong brown (7.5YR 5/6) mottles; moderate medium and fine subangular blocky structure; firm; clear smooth boundary.

Btx—105 to 120 cm.; Light yellowish brown (10YR 6/4) and light brownish gray (10YR 6/2) silt loam; common medium prominent yellowish brown (10YR 5/6) mottles; weak medium prismatic parting to moderate medium angular blocky structure; very firm; many concretions.

**SOIL TYPE..... ROUTON (TAXADJUNCT)** **PEDON # ..... S92KY-083-011-01-(1-5)**
**LOCATION ..... GRAVES COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand | VFS Plus | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Coarser Than VF (2-0.1) | Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-7 | A | 10.6 | 71.3 | 18.1 | 0.4 | 0.7 | 2.6 | 4.4 | 2.5 | | | | | | | sil | | | |
| 7-37 | Eg | 11.7 | 71.7 | 16.6 | 1.1 | 1.9 | 2.4 | 4.1 | 2.2 | | | | | | | sil | | | |
| 37-78 | Btg1 | 11.6 | 69.0 | 19.4 | 1.5 | 1.4 | 2.1 | 4.2 | 2.4 | | | | | | | sil | | | |
| 78-105 | Btg2 | 10.6 | 64.2 | 25.2 | 3.0 | 1.6 | 1.5 | 3.0 | 1.5 | | | | | | | sil | | | |
| 105-120 | Btx | 11.0 | 63.0 | 26.0 | 1.2 | 1.8 | 2.3 | 3.0 | 2.7 | | | | | | | sil/sicl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-7 | 4.46 | | 5.29 | 2.95 | 1.04 | 0.29 | 0.47 | 4.75 | 15.60 | 30 | 25 | | 14.47 | 19.22 | | 0.29 | 4.77 | 117.5 | 13.5 |
| 7-37 | 4.48 | | 5.68 | 0.80 | 0.46 | 0.09 | 0.23 | 1.58 | 9.44 | 17 | 13 | | 10.70 | 12.28 | | 0.22 | 1.17 | 40.5 | 7 |
| 37-78 | 4.58 | | 5.56 | 1.06 | 0.86 | 0.11 | 0.27 | 2.30 | 10.19 | 22 | 22 | | 8.23 | 10.53 | | 0.30 | 0.87 | 49 | 4.5 |
| 78-105 | 4.61 | | 4.90 | 1..29 | 1.84 | 0.19 | 0.63 | 3.95 | 16.29 | 24 | 24 | | 12.75 | 16.70 | | 0.16 | 0.55 | 85 | 3.5 |
| 105-120 | 4.73 | | 4.77 | 2.39 | 2.81 | 0.26 | 1.56 | 7.02 | 19.53 | 36 | 33 | | 14.05 | 21.07 | | 0.15 | 0.64 | 112 | 4 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Routon, silt loam (Taxadjunct)

**Pedon #:** S93KY-083-11-2-(1-5)

**Classification:** Coarse-silty, mixed, active, thermic Typic Epiaqualfs

**Location:** Graves Co., 5.8 miles north of Mayfield, KY and 1.5 miles northeast of Hickory on the John Green farm.

**Parent Material:** Loess

**Vegetation:** Mixed hardwoods

**Landscape Position:**

**Drainage:**

**Moisture when sampled:** Moist

**Sampling Date:** 5/26/1993

**Permeability:** Very slowly permeable

**Slope:**

**Described by:** A.D. Karathanasis, R. Toor, M. Zhang, J. McIntosh and P. Prawito

A—0 to 10 cm.; Dark gray (10YR 4/1) silt loam; many faint dark brown (7.5YR 3/2) mottles; weak granular and medium subangular blocky structure; friable; many roots; gradual smooth boundary.

Eg—10 to 25 cm.; Gray (10YR 5/1) silt loam; many faint dark brown (7.5YR 3/2) and common distinct strong brown (7.5YR 4/6) mottles; weak medium moderate subangular blocky structure; friable; common roots; clear smooth boundary.

Bg1—25 to 65 cm.; Light brownish gray (10YR 6/2) silt loam; common strong brown (7.5YR 4/6) mottles; medium subangular blocky structure; friable; few fine roots; clear smooth boundary.

Bg2—65 to 120 cm.; Light gray (10YR 6/1) silt loam; few faint strong brown (7.5YR 4/6) and black (7.5YR 2/0) mottles; subangular blocky structure; clear smooth boundary.

Bg3—120 to 145 cm.; Light brownish gray (10YR 6/2) silty clay loam; many distinct strong brown (7.5YR 4/6) and black mottles; subangular blocky structure; common black concretions.

**SOIL TYPE..... ROUTON (TAXADJUNCT)** **PEDON # ..... S93KY-083-011-02-(1-5)**
**LOCATION ..... GRAVES COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-10 | A | 15.8 | 67.0 | 17.2 | 1.1 | 4.0 | 5.1 | 3.7 | 1.9 | | | | | | | sil | | | |
| 10-25 | Eg | 12.8 | 73.1 | 14.1 | 1.2 | 1.2 | 3.8 | 4.4 | 2.2 | | | | | | | sil | | | |
| 25-65 | Bg1 | 10.1 | 73.8 | 16.1 | 0.9 | 0.8 | 2.7 | 3.6 | 2.1 | | | | | | | sil | | | |
| 65-120 | Bg2 | 10.9 | 66.8 | 22.3 | 2.5 | 1.3 | 2.4 | 2.8 | 1.9 | | | | | | | sil | | | |
| 120-145 | Bg3 | 9.4 | 59.6 | 31.0 | 0.6 | 1.1 | 2.5 | 3.0 | 2.2 | | | | | | | sicl | | | |
| | | pH | | Exchangeable Bases (5A1) | | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/ 100gm | 602z Mg meq/ 100gm | 602z K meq/ 100gm | 6P2z Na meq/ 100gm | 5B1a TEB meq/ 100gm | 5A1z CEC meq/ 100gm | 5C1 Pct | 5C3 Pct | H+Al meq/ 100 gm | EA meq/ 100gm | SC meq/ 100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-10 | 4.50 | | 5.92 | 2.49 | 0.95 | 0.28 | 0.09 | 3.81 | 15.39 | 25 | 23 | | 13.06 | 16.87 | | 0.09 | 5.11 | 109 | 12.5 |
| 10-25 | 4.62 | | 5.91 | 0.70 | 0.42 | 0.08 | 0.06 | 1.26 | 8.68 | 14 | 13 | | 8.24 | 9.50 | | 0.06 | 1.70 | 37.5 | 9 |
| 25-65 | 4.81 | | 5.95 | 0.83 | 0.99 | 0.06 | 0.90 | 2.78 | 10.64 | 26 | 26 | | 8.03 | 10.81 | | 0.08 | 0.61 | 29.5 | 6.5 |
| 65-120 | 4.82 | | 5.98 | 1.27 | 1.65 | 0.05 | 0.24 | 3.21 | 10.51 | 30 | 23 | | 10.48 | 13.69 | | 0.07 | 0.68 | 28 | 7 |
| 120-145 | 4.76 | | 5.73 | 4.34 | 4.44 | 0.10 | 0.25 | 9.13 | 19.82 | 46 | 42 | | 12.40 | 21.53 | | 0.06 | 0.63 | 47.5 | 17 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Routon, silt loam (Taxadjunct)

**Pedon #:** S94KY-083-11-3-(1-6)

**Classification:** Fine-silty, mixed, active, thermic Typic Fragiaquults

**Location:** Calloway Co., John Green farm on Mayfield Creek, 5.8 miles north of Mayfield, KY and 1.5 miles northeast of Hickory.

**Parent Material:** Alluvium

**Vegetation:** Woods

**Landscape Position:** Terrace

**Drainage:** Poor

**Moisture when sampled:** Moderate

**Sampling Date:** 6/23/1994

**Permeability:** Slow

**Slope:** 1%

**Described by:** A.D. Karathanasis, J. McIntosh, P. Gregory

A—0 to 4 in.; Dark grayish brown (10YR 4/2) silt loam; moderate fine granular structure; very friable; many fine and common medium roots; clear smooth boundary.

Eg—4 to 17 in.; Light brownish gray (10YR 6/2) silt loam; many medium prominent strong brown (7.5YR 5/6) and few fine prominent dark brown (7.5YR 4/3) mottles; moderate fine and medium subangular blocky structure; friable; many fine and common medium roots; gradual smooth boundary.

Btg1—17 to 33 in.; Light brownish gray (10YR 6/2) silt loam; many medium prominent strong brown (7.5YR 5/6) mottles; few fine grayish brown (10YR 5/2) clay skins; moderate medium subangular blocky structure; friable; common fine and medium roots; few prominent Mn stains and concretions; clear smooth boundary.

Btg2—33 to 42 in.; Light gray (10YR 6/1) silt loam; common prominent brown (7.5YR 5/2) clay skins; many fine prominent dark brown (7.5YR 4/3) and common fine prominent strong brown (7.5YR 5/6) mottles; moderate fine and medium subangular blocky structure; friable; few fine roots; common prominent Mn stains and soft concretions; clear smooth boundary.

Btg3—42 to 52 in.; Light gray (10YR 6/1) silty clay loam; common medium prominent strong brown (7.5YR 5/6) mottles; many prominent gray (10YR 5/1) clay skins; moderate medium subangular blocky structure; firm; very few fine roots; common prominent Mn stains and soft masses; clear wavy boundary.

Btxg—52 to 68 in.; Strong brown (7.5YR 5/6) and light gray (10YR 6/1) silt loam; brown (7.5YR 5/2) and coarse prominent grayish brown (10YR 5/2) clay skins; weak medium prismatic parting to moderate medium angular blocky structure; firm; very few fine roots; common prominent Mn stains; 20% fragic properties.

**SOIL TYPE..... ROUTON (TAXADJUNCT)** **PEDON # ..... S94KY-083-011-03-(1-6)**
**LOCATION ..... GRAVES COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand | VFS Plus | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Coarser Than VF (2-0.1) | Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-4 | A | 16.9 | 62.2 | 20.9 | 2.1 | 3.3 | 4.9 | 4.4 | 2.2 | | | | | | | sil | | | |
| 4-17 | Eg | 11.5 | 72.9 | 15.6 | 1.7 | 1.2 | 3.3 | 3.7 | 1.6 | | | | | | | sil | | | |
| 17-33 | Btg1 | 9.8 | 69.6 | 20.6 | 1.3 | 0.7 | 2.5 | 3.5 | 1.8 | | | | | | | sil | | | |
| 33-42 | Btg2 | 10.9 | 68.8 | 20.3 | 2.4 | 1.5 | 2.4 | 2.9 | 1.7 | | | | | | | sil | | | |
| 42-52 | Btg3 | 10.5 | 57.8 | 31.7 | 3.1 | 1.8 | 1.9 | 2.3 | 1.4 | | | | | | | sicl | | | |
| 52-68 | Btxg | 9.5 | 67.6 | 22.9 | 0.3 | 0.5 | 2.8 | 3.7 | 2.2 | | | | | | | sil | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/ 100gm | 602z Mg meq/ 100gm | 602z K meq/ 100gm | 6P2z Na meq/ 100gm | 5B1a TEB meq/ 100gm | 5A1z CEC meq/ 100gm | 5C1 Pct | 5C3 Pct | H+Al meq/ 100 gm | EA meq/ 100gm | SC meq/ 100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-4 | 4.84 | | 6.01 | 2.71 | 0.89 | 0.31 | 0.04 | 3.95 | 17.05 | 23 | 21 | | 14.45 | 18.40 | | 0.08 | 5.12 | 106 | 23.5 |
| 4-17 | 4.60 | | 5.82 | 0.53 | 0.34 | 0.07 | 0.04 | 0.98 | 12.29 | 8 | 8 | | 10.98 | 11.96 | | 0.26 | 1.04 | 42.5 | 17 |
| 17-33 | 4.69 | | 5.77 | 0.62 | 0.68 | 0.08 | 0.05 | 1.43 | 9.09 | 16 | 11 | | 12.09 | 13.52 | | 0.05 | 0.65 | 47.5 | 15.5 |
| 33-42 | 4.76 | | 5.84 | 0.92 | 1.01 | 0.08 | 0.07 | 2.08 | 10.15 | 20 | 16 | | 10.62 | 12.70 | | 0.05 | 0.95 | 48.5 | 9 |
| 42-52 | 4.63 | | 5.30 | 2.28 | 2.53 | 0.15 | 0.13 | 5.09 | 17.97 | 28 | 26 | | 14.18 | 19.27 | | 0.05 | 0.80 | 94 | 10 |
| 52-68 | 4.89 | | 5.83 | 3.13 | 2.85 | 0.13 | 0.20 | 6.31 | 16.52 | 38 | 37 | | 10.80 | 17.11 | | 0.17 | 0.24 | 84.5 | 24 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| Eg | 88 | 12 | | | | | | | | | | | | | | | | | |
| Btg1 | 81 | 19 | | | | | | | | | | | | | | | | | |
| Btg2 | 84 | 16 | | | | | | | | | | | | | | | | | |
| Btg3 | 75 | 25 | | | | | | | | | | | | | | | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Saffell, gravelly silt loam (Taxadjunct)

**Pedon #:** S86KY-139-07-(1-6)

**Classification:** Loamy-skeletal, mixed, semiactive, thermic Typic Hapludults

**Location:** Livingston County, Kentucky, about 200 yards southeast of Corinth Church; .7 mile northeast of junction of Corinth Road and Kentucky 453; about 1.8 miles northwest of junction 453 and U.S. 62 & 641 at Lake City. Latitude: 37° 02′ 58″N; Longitude: 37° 02′ 58″W. Kentucky coordinate grid values: east-west about 1,269,500 feet and north-south about 270,400 feet.

**Parent Material:** Coastal plain gravel from Tuscaloosa geological formation

**Vegetation:** fescue sod

**Landscape Position:** Upland

**Drainage:**

**Moisture when sampled:** Dry

**Sampling Date:** 5/5/86

**Permeability:**

**Slope:** 12%

**Described by:** B. Craddock, J. Robbins, K. Bates, K. Scott, and R. Forsythe

Ap—0 to 8 inches (0 to 20 cm); brown (10YR 4/3) gravelly silt loam; weak fine granular structure; friable; common fine and medium roots; about 25 percent by volume of pebbles, all under 3 inches; mildly alkaline; clear smooth boundary.

BA—8 to 15 inches (20 to 38 cm); yellowish brown (10YR 5/4) very gravelly silt loam; weak fine subangular blocky structure; friable; common fine and medium roots; about 45 percent by volume of pebbles, all under 3 inches; neutral, clear wavy boundary.

Bt1—15 to 30 inches (38 to 76 cm); strong brown (7.5YR 5/6) extremely gravelly clay loam; moderate medium subangular blocky structure; firm; few fine roots; about 65 percent by volume of pebbles, all under 3 inches; few patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt2—30 to 44 inches (76 to 112 cm);strong brown (7.5YR 5/6) extremely gravelly clay loam; moderate fine subangular blocky structure; firm; about 70 percent by volume of pebbles under 3 inches, and 5 percent by volume of pebbles 3 to 5 inches; few patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.

BC—44 to 54 inches (112 to 137 cm); yellowish red (5YR 5/6) extremely gravelly clay loam; few fine distinct pale brown (10YR6/3) and yellowish red (5YR4/8) mottles; weak, fine subangular blocky structure; firm; about 60 percent by volume of pebbles under 3 inches and 10 percent by volume of pebbles 3 to 5 inches; very strongly acid; clear wavy boundary.

C—54 to 72 inches (137 to 183 cm); yellowish red (5YR 5/8) extremely gravelly sandy loam; massive; firm; about 80 percent by volume of quartz pebbles 3 inches and less; very strongly acid.

**Remarks:** Typical Saffell pedons have siliceous mineralogy.

**SOIL TYPE.....SAFFELL (TAXADJUNCT)** **PEDON # .....S86KY-139-07-(1-5)**
**LOCATION ..... LIVINGSTON COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-20 | Ap | 21.4 | 67.3 | 11.3 | 3.6 | 3.3 | 3.8 | 4.4 | 6.3 | | | | | 15.1 | 73.6 | sil | 55.4 | 34.8 | 20.6 |
| 20-38 | BA | 20.6 | 66.2 | 13.2 | 7.2 | 2.9 | 3.5 | 4.1 | 2.9 | | | | | 17.7 | 69.1 | sil | 82.7 | 47.6 | 35.2 |
| 38-76 | Bt1 | 35.1 | 64.9 | 29.8 | 11.1 | 8.0 | 6.1 | 5.9 | 4.0 | | | | | 31.1 | 68.9 | cl | 86.7 | 49.0 | 37.7 |
| 76-112 | Bt2 | 47.6 | 20.0 | 32.4 | 13.3 | 9.9 | 8.6 | 9.0 | 7.0 | | | | | 40.6 | 27.0 | sil | 87.2 | 37.7 | 49.4 |
| 112-137 | BC | 49.3 | 26.9 | 23.8 | 18.1 | 8.2 | 6.2 | 8.6 | 8.2 | | | | | 41.1 | 35.1 | l | 86.5 | 42.5 | 44.0 |
| 137-183 | C | 65.3 | 18.8 | 15.9 | 34.6 | 12.1 | 8.9 | 7.1 | 2.6 | | | | | 62.7 | 21.4 | sl | 83.9 | 61.8 | 22.1 |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-20 | 6.2 | | 7.2 | 3.6 | 0.1 | 0.7 | 0.2 | 4.6 | 5.3 | 87 | 55 | | 3.8 | 8.4 | | | 2.1 | 266 | 11 |
| 20-38 | 6.4 | | 7.2 | 2.3 | 0.1 | 0.3 | 0.1 | 2.8 | 4.0 | 70 | 38 | | 4.5 | 7.3 | | | 0.9 | 124 | 13 |
| 38-76 | 4.9 | | 5.8 | 0.8 | 0.7 | 0.5 | 0.1 | 2.1 | 10.3 | 20 | 17 | | 15.6 | 12.4 | | | 0.3 | 163 | 3 |
| 76-112 | 4.9 | | 6.1 | 0.5 | 0.7 | 0.4 | 0.1 | 1.7 | 7.4 | 23 | 14 | | 10.0 | 11.7 | | | 0.2 | 152 | 4 |
| 112-137 | 4.9 | | 6.4 | 0.4 | 0.3 | 0.2 | 0.1 | 1.0 | 5.1 | 20 | 10 | | 8.7 | 9.7 | | | 0.1 | 91 | 5 |
| 137-183 | 5.0 | | 6.4 | 0.5 | 0.7 | 0.4 | 0.1 | 1.7 | 6.8 | 25 | 15 | | 9.3 | 11.0 | | | 0.1 | 163 | 7 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| Bt1 | 81 | 9 | 7 | 3 | | | | | | | | | | | | | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

## Saffell, silt loam (Taxadjunct)

**Pedon #:** S86KY-139-12-(1-5)

**Classification:** Loamy-skeletal, mixed, semiactive, thermic Typic Hapludults

**Location:** Livingston County, Kentucky, about 167 yards southeast of Corinth Church; .7 mile northeast of junction of Corinth Road and Kentucky 453 and U.S.62 & 641 at Lake City. Latitude: 37° 02′ 57″N; Longitude: 88° 15′ 16″W. Kentucky coordinate grid values: east-west about 1,269,250 feet and north-south about 270,140 feet.

**Parent Material:** Coastal plain gravel from Tuscaloosa geological formation

**Vegetation:** fescue pasture

**Landscape Position:** Upland

**Drainage:**

**Moisture when sampled:** Dry

**Sampling Date:** 5/7/86

**Permeability:**

**Slope:** 22%

**Described by:** J. Robbins, K. Bates, R. Forsythe, and Ken Scott

Ap—0 to 4 inches (0 to 10 cm); brown (10YR 4/3) silt loam; weak fine granular structure; very friable; common fine and few medium roots; 5 percent rounded pebbles and gravel; slightly acid; clear smooth boundary.

Bt1—4 to 12 inches (10 to 31 cm); strong brown (7.5YR 5/6) clay loam; moderate fine and medium subangular blocky structure; friable; common fine roots; few discontinuous dark brown (7.5YR 4/4) clay films and coatings on ped faces; 5 percent rounded pebbles and gravel; very strongly acid; gradual wavy boundary.

Bt2—12 to 24 inches (31 to 61 cm); dark brown (7.5YR 4/4) very gravelly clay loam; moderate medium subangular blocky structure; firm; few fine roots; few light brownish gray (10YR 6/2) streaks; abut 40 percent rounded and subrounded chert and quartz gravel; few discontinuous clay films around pebbles and gravel; very strongly acid; gradual wavy boundary.

BC—24 to 40 inches (61 to 102 cm); brown (7.5YR 5/4) extremely gravelly loam; moderate fine angular blocky structure; very firm; common fine discontinuous dark brown (7.5YR 4/4) silt coatings on ped faces and around pebbles and gravel; about 70 percent rounded and subrounded chert and quartz gravels; strongly acid; clear smooth boundary.

C—40 to 60 inches (102 to 152 cm); light brown (10YR 6/4) extremely gravelly loam; massive; extremely firm; indurated and cemented; about 80 percent rounded and subrounded chert and quartz pebbles; strongly acid.

**Remarks:** Typical Saffell pedons have siliceous mineralogy.

**SOIL TYPE.....SAFFELL (TAXADJUNCT)** **PEDON # .....S86KY-139-012-(1-5)**
**LOCATION ..... LIVINGSTON COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-10 | Ap | 17.2 | 71.6 | 11.2 | 0.4 | 0.3 | 0.2 | 2.4 | 13.9 | | | | | 3.3 | 85.5 | sil | 17.7 | 15.1 | 2.6 |
| 10-30 | Bt1 | 11.1 | 62.6 | 26.3 | 1.1 | 1.8 | 1.9 | 3.0 | 3.3 | | | | | 7.8 | 65.9 | sil | 8.6 | 2.3 | 6.3 |
| 30-61 | Bt2 | 14.6 | 64.6 | 20.8 | 4.6 | 3.2 | 1.9 | 2.3 | 2.6 | | | | | 12.0 | 67.2 | sil | 70.6 | 38.7 | 31.9 |
| 61-101 | BC | 24.7 | 56.9 | 18.4 | 6.1 | 6.5 | 4.2 | 5.1 | 2.8 | | | | | 21.9 | 59.7 | sil | 83.8 | 48.4 | 35.4 |
| 101-152 | C | 55.0 | 30.6 | 14.4 | 26.8 | 17.6 | 4.8 | 3.9 | 1.9 | | | | | 53.9 | 32.5 | sl | 81.3 | 47.5 | 33.8 |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-10 | 6.1 | | 7.0 | 4.7 | 0.4 | 0.1 | 0.1 | 5.3 | 5.5 | 97 | 62 | | 3.2 | 8.5 | | | 2.9 | 83 | 5 |
| 10-30 | 5.1 | | 6.1 | 2.3 | 1.3 | 0.1 | 0.1 | 3.9 | 6.4 | 61 | 38 | | 6.3 | 10.2 | | | 0.9 | 95 | 3 |
| 30-61 | 5.0 | | 6.2 | 1.0 | 2.1 | 0.1 | 0.2 | 3.4 | 13.0 | 26 | 38 | | 5.7 | 9.2 | | | 0.3 | 47 | 2 |
| 61-101 | 5.2 | | 6.6 | 0.8 | 2.1 | 0.1 | 0.3 | 3.3 | 5.9 | 56 | 40 | | 5.0 | 8.3 | | | 0.1 | 39 | 3 |
| 101-152 | 5.3 | | 6.8 | 0.4 | 0.7 | 0.1 | 0.3 | 1.5 | 5.0 | 30 | 16 | | 7.6 | 9.1 | | | 0.2 | 28 | 4 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| c.s. | 89 | 8 | 3 | | | | | | | | | | | | | | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Sango, silt loam (Taxadjunct)

**Pedon #:** S99KY-001-01-(1-5)

**Classification:** Coarse silty, siliceous, semiactive, mesic Glossic Fragiudults

**Location:** Adair Co., about 12 miles northeast of Columbia, KY; 500 feet west of Millerfield Road on Robert Gentry farm; Latitude: 32° 08′ 40.35″N; Longitude: 085° 06′ 23.47″W.

**Parent Material:**

**Vegetation:** cultivated field

**Landscape Position:**

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 10/04/99

**Permeability:**

**Slope:** 2 to 6%

**Described by:** Harry Evans, John Jenkins, Bill Craddock

Ap—0 to 28 cm; brown (10YR 5/3) silt loam; weak very fine granular structure; very friable; common fine roots; extremely acid; abrupt smooth boundary.

Bw—28 to 53 cm; light yellowish brown (10YR 6/4) silt loam; weak medium subangular blocky structure; friable; few fine and medium roots; 3 percent medium distinct strong brown (7.5YR 5/8) iron-manganese nodules, 2 percent medium distinct black (10YR 2/1) manganese nodules, spherical in the matrix; slightly acid; clear wavy boundary.

B/E—53 to 72 cm; 75 percent olive yellow (2.5Y 6/6), 20 percent light gray (2.5Y 6/1) and 5 percent strong brown (7.5YR 5/8) silt loam; weak medium subangular blocky structure; firm; few fine roots; light gray (2.5Y 7/1) silt coats between peds; 3 percent medium distinct strong brown (7.5YR 5/8) iron-manganese nodules, 2 percent medium distinct black (10YR 2/1) manganese nodules, spherical in the matrix; 2 percent siltstone fragments; very strongly acid; clear wavy boundary.

Btx1—72 to 120 cm; 40 percent yellowish brown (10YR 5/6), 40 percent light gray (10YR 7/2) and 20 percent strong brown (7.5YR 5/6) silt loam matrix; very pale brown (10YR 7/3) silt seams; moderate coarse prismatic structure in matrix, moderate medium subangular blocky structure in seams; very firm, brittle matrix, friable seams; few fine and very fine roots between prisms; 2 percent faint thin clay films on faces of peds; thick distinct light gray (2.5Y 7/2) silt coats on prism faces; 3 percent medium distinct red (2.5YR 5/8) iron-manganese nodules, 2 percent medium distinct black (10YR 2/1) manganese nodules, 2 percent siltstone and sandstone fragments; very strongly acid; gradual irregular boundary.

2Btx2—120 to 205 cm; 80 percent brownish yellow (10YR 6/8) silty clay loam, 20 percent light gray (2.5Y 7/2) silt seams; moderate very coarse prismatic structure in matrix, moderate medium subangular blocky structure parting to weak fine subangular blocky in seams; very firm, brittle matrix, friable seams; 2 percent thin faint clay films on faces of peds; 5 percent sandstone, siltstone and ironstone fragments; 5 percent red (2.5YR 5/8) iron-manganese nodules in prisms; 3 percent black (10YR 2/1) manganese nodules in silt coats; red (2.5YR 5/8) firm ironstone rinds on outside of prisms; yellowish brown (10YR 5/4) silt coats on ped faces; very strongly acid.

**SOIL TYPE** ..... **SANGO (TAXADJUNCT)** **PEDON #** ..... **S99KY-001-001-(1-5)**
**LOCATION** ..... **ADAIR COUNTY, KENTUCKY** **GENERAL METHODS** ..... **1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-28 | Ap | 29.9 | 58.2 | 11.9 | 4.0 | 2.2 | 2.5 | 5.7 | 15.5 | | | | | | | sil | | | |
| 28-53 | Bw | 28.4 | 57.6 | 14.0 | 2.4 | 2.9 | 2.4 | 5.4 | 15.3 | | | | | | | sil | | | |
| 53-72 | B/E | 24.3 | 60.7 | 15.0 | 0.8 | 1.7 | 2.3 | 5.1 | 14.4 | | | | | | | sil | | | |
| 72-120 | Btx1 | 26.8 | 55.9 | 17.3 | 4.3 | 3.0 | 2.1 | 4.2 | 13.2 | | | | | | | sil | | | |
| 120-205 | 2Btx2 | 27.3 | 51.8 | 20.9 | 0.8 | 1.8 | 3.2 | 6.3 | 15.2 | | | | | | | sil | | | |
| | pH | | | Exchangeable Bases (5A1) | | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-28 | 4.0 | | 6.2 | 0.22 | 0.04 | 0.51 | 0.01 | 0.78 | 4.99 | 16 | 9 | | 7.54 | 8.32 | | 0.13 | 1.98 | 236.5 | 191.5 |
| 28-53 | 5.0 | | 7.1 | 1.68 | 0.14 | 0.22 | 0.01 | 2.05 | 3.51 | 58 | 42 | | 2.84 | 4.89 | | 0.07 | 0.33 | 116 | 2.5 |
| 53-72 | 4.9 | | 6.8 | 1.34 | 0.14 | 0.09 | 0.01 | 1.58 | 4.74 | 33 | 28 | | 4.09 | 5.67 | | 0.04 | 0.17 | 45.5 | 0.5 |
| 72-120 | 4.7 | | 6.4 | 0.99 | 0.11 | 0.10 | 0.01 | 1.21 | 5.51 | 22 | 19 | | 5.24 | 6.45 | | 0.04 | 0.12 | 41.5 | 0.5 |
| 120-205 | 4.4 | | 6.0 | 0.66 | 0.12 | 0.10 | 0.02 | 0.90 | 6.90 | 13 | 11 | | 7.38 | 8.28 | | 0.15 | 0.16 | 42 | 0.5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| B/E | 95 | 1 | 4 | | | | | | | | | | | | | | | | |
| Btx1 | 91 | | 9 | | | | | | | | | | | | | | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

## Sango, silt loam (Taxadjunct)

**Pedon #:** S99KY-001-02-(1-6)

**Classification:** Fine-silty, mixed, semiactive, mesic Glossic Fragiudults

**Location:** Adair Co., about 11 miles east of Columbia, KY; 350 feet northeast of Camel Ridge Road, on Fonso Stanley farm; Latitude: 37° 06′ 39.39″N; Longitude: 085° 07′ 46.67″W.

**Parent Material:**

**Vegetation:** hay field

**Landscape Position:**

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 10/04/99

**Permeability:**

**Slope:** 2 to 6%

**Described by:** John Jenkins, Bill Craddock, Harry Evans, Terry Shell Brown

Ap—0 to 20 cm; light olive brown (2.5Y 5/4) silt loam; weak very fine granular structure; friable; many fine roots; slightly acid; abrupt smooth boundary.

Bt—20 to 57 cm; light yellowish brown (2.5Y 6/4) silt loam; weak fine subangular blocky structure; friable; common fine roots; 5 percent clay films on faces of peds; 1 percent medium distinct strong brown (7.5YR 5/8) iron-manganese nodules, spherical in the matrix; medium acid; clear wavy boundary.

Bt2/E—57 to 83 cm; 70 percent yellowish brown (2.5Y 6/4) silt loam matrix; 30 percent white (7.5YR 8/1) silt seams; moderate medium subangular blocky structure; firm; few fine roots; 5 percent clay films on ped faces; white (7.5YR 8/1) silt coats between peds; 5 percent medium distinct strong brown (7.5YR 5/8) and yellowish red (5YR 4/6) iron-manganese nodules, spherical in the matrix; very strongly acid; gradual irregular boundary.

Btx1—83 to 116 cm; yellowish brown (10YR 5/6) silty clay loam matrix; strong very coarse prismatic structure in matrix, moderate medium subangular blocky structure in seams; very firm, brittle matrix, friable seams; few fine roots between prisms; 5 percent gray (10YR 5/1) clay films on ped faces; 30 percent light gray (10YR 7/2) silt coats between prisms; 5 percent medium distinct yellowish red (5YR 4/6) iron-manganese nodules; very strongly acid; gradual irregular boundary.

2Btx2—116 to 180 cm; 70 percent yellowish brown (10YR 5/8) 30 percent strong brown (7.5YR 5/6) silty clay loam matrix; weak very coarse prismatic structure parting to moderate medium subangular blocky; very firm, brittle matrix; 5 percent thick light brownish gray (10YR 6/2) clay films; 4 percent sandstone and siltstone fragments; 20 percent fine and medium red (2.5YR 5/8) iron-manganese masses; 5 percent white (10YR 8/1) clay depletions; 15 percent thick light gray (10YR 7/2) silt coats between prisms; very strongly acid; gradual wavy boundary.

2Btx3—180 to 200 cm; 60 percent yellowish brown (10YR 5/8), 25 percent strong brown (7.5YR 5/8) and 15 percent light yellowish brown (10YR 6/4) silty clay loam; weak coarse prismatic structure parting to moderate medium angular and subangular blocky; very firm, brittle; 4 percent siltstone and sandstone fragments; 5 percent fine red (2.5YR 5/8) iron and manganese masses; 5 percent thick light gray (10YR 7/2) silt coats between prisms; very strongly acid.

**SOIL TYPE.....SANGO (TAXADJUNCT)** **PEDON # .....S99KY-001-002-(1-6)**
**LOCATION ..... ADAIR COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-20 | Ap | 30.4 | 58.9 | 10.7 | 1.8 | 1.5 | 2.2 | 7.9 | 17.0 | | | | | | | sil | | | |
| 20-57 | Bt | 22.6 | 59.4 | 18.0 | 1.7 | 1.3 | 1.7 | 5.6 | 12.3 | | | | | | | sil | | | |
| 57-83 | Bt2/E | 21.7 | 55.0 | 23.3 | 2.2 | 1.2 | 1.7 | 4.9 | 11.7 | | | | | | | sil | | | |
| 83-116 | Btx1 | 21.9 | 47.1 | 31.0 | 1.8 | 1.3 | 1.6 | 5.4 | 11.8 | | | | | | | sicl/cl | | | |
| 116-180 | 2Btx2 | 27.6 | 45.3 | 27.1 | 0.9 | 1.2 | 2.1 | 6.3 | 17.1 | | | | | | | cl/l | | | |
| 180-200 | 2Btx3 | 26.0 | 49.5 | 24.5 | 1.8 | 1.2 | 1.9 | 6.6 | 14.5 | | | | | | | sil/l | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-20 | 5.8 | | 6.9 | 2.45 | 0.32 | 0.09 | 0.01 | 2.87 | 5.63 | 51 | 51 | | 2.75 | 5.62 | | 0.04 | 1.79 | 45.5 | 33 |
| 20-57 | 6.2 | | 7.1 | 3.45 | 0.39 | 0.09 | 0.02 | 3.95 | 6.47 | 61 | 54 | | 3.33 | 7.28 | | 0.05 | 0.46 | 43.5 | 1.5 |
| 57-83 | 5.0 | | 5.9 | 1.22 | 0.22 | 0.11 | 0.01 | 1.56 | 9.16 | 17 | 15 | | 9.15 | 10.71 | | 0.05 | 0.21 | 54.5 | 0.5 |
| 83-116 | 5.0 | | 5.3 | 0.88 | 0.50 | 0.13 | 0.02 | 1.53 | 11.76 | 13 | 11 | | 11.80 | 13.33 | | 0.06 | 0.19 | 54.5 | 0.5 |
| 116-180 | 4.8 | | 5.3 | 0.28 | 0.49 | 0.09 | 0.01 | 0.87 | 10.41 | 8 | 8 | | 9.90 | 10.77 | | 0.10 | 0.22 | 37.5 | 0.5 |
| 180-200 | 5.0 | | 5.2 | 0.18 | 0.44 | 0.07 | 0.09 | 0.78 | 9.87 | 8 | 8 | | 9.30 | 10.08 | | 0.02 | 0.19 | 37.5 | 0.5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| Bt | 89 | 7 | 4 | | | | | | | | | | | | | | | | |
| Bt2/E | 80 | 2 | 11 | | | 7 | | | | | | | | | | | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

## Sango, silt loam (Taxadjunct)

**Pedon #:** S99KY-001-03-(1-6)

**Classification:** Coarse-loamy, siliceous, active, mesic Glossic Fragiudults

**Location:** Adair Co., about 11 miles east of Columbia, KY; 1000 feet southwest of Camel Ridge Road, on Fonso Stanley farm; Latitude: 37° 06′ 40.14″N; Longitude: 085° 07′ 45.42″W.

**Parent Material:**

**Vegetation:** pasture

**Landscape Position:**

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 10/05/99

**Permeability:**

**Slope:** 2 to 6%

**Described by:** Bill Craddock, Harry Evans, John Jenkins, Jerry Richardson and Terry Shell Brown

Ap—0 to 24 cm; yellowish brown (10YR 5/4) silt loam; few medium strong brown (7.5YR 5/8) mottles; weak fine granular structure; friable; common fine and medium roots; medium acid; abrupt smooth boundary.

Bw—24 to 57 cm; light yellowish brown (10YR 6/6) silt loam; few fine pale brown (10YR 6/3) and strong brown (7.5YR 5/6) mottles; moderate medium subangular blocky structure; friable; common fine roots; 2 percent rounded gravel; 1 percent medium distinct strong brown (7.5YR 5/8) iron-manganese nodules, spherical in the matrix; strongly acid; abrupt wavy boundary.

B/E—57 to 66 cm; 70 percent brownish yellow (10YR 6/6) and 30 percent light gray (10YR 7/2) silt loam; weak medium subangular blocky structure; firm; common fine roots; 3 percent rounded gravel; 5 percent medium distinct yellowish red (5YR 5/8), yellowish brown (10YR 5/8) and brownish yellow (10YR 6/6) iron-manganese nodules, spherical in the matrix; thick light gray (10YR 7/2) silt coats between peds; very strongly acid; abrupt wavy boundary.

Btx—66 to 90 cm; 40 percent brownish yellow (10YR 6/8), 30 percent light yellowish brown (10YR 6/4) and 30 percent light gray (10YR 7/2) silty clay loam; weak coarse prismatic structure; very firm, brittle; few fine roots between prisms; 5 percent rounded gravel; 5 percent brown (7.5YR 4/4) clay films on ped faces; thick light gray (10YR 7/2) silt coats between prisms; 20 percent medium distinct yellowish red (5YR 5/8) iron-manganese nodules, spherical in the matrix; very strongly acid; clear irregular boundary.

2Bt1—90 to 135 cm; 50 percent yellowish brown (10YR 5/6) 30 percent light gray (10YR 7/2) and 20 percent strong brown (7.5YR 5/8) extremely gravelly silty clay loam; weak fine subangular and angular blocky structure; very firm; few fine roots; 5 percent thick distinct brown (7.5YR 4/4) clay films on faces of peds and fragments; 70 percent sandstone fragments; very strongly acid; clear irregular boundary.

2Bt2—135 to 173 cm; 70 percent brownish yellow (10YR 6/8) and 30 percent light gray (10YR 7/1) silty clay loam; weak medium subangular and angular blocky structure; very firm; 10 percent sandstone fragments; 5 percent thick distinct strong brown (7.5YR 4/4) clay films on faces of peds and fragments; very strongly acid.

**SOIL TYPE.....SANGO (TAXADJUNCT)** **PEDON # .....S99KY-001-003-(1-6)**
**LOCATION ..... ADAIR COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-24 | Ap | 30.9 | 61.1 | 8.0 | 1.1 | 1.7 | 4.1 | 11.5 | 12.5 | | | | | | | sil | | | |
| 24-57 | Bw | 28.2 | 59.1 | 12.7 | 3.2 | 2.3 | 2.6 | 6.4 | 13.7 | | | | | | | sil | | | |
| 57-66 | B/E | 23.1 | 64.0 | 12.9 | 0.3 | 0.8 | 1.8 | 6.5 | 13.7 | | | | | | | sil | | | |
| 66-90 | Btx | 27.6 | 51.9 | 20.5 | 1.5 | 2.3 | 3.3 | 6.6 | 13.9 | | | | | | | sil | | 5.3 | |
| 90-135 | 2Bt1 | 28.7 | 49.1 | 22.2 | 3.9 | 3.0 | 3.2 | 6.6 | 12.0 | | | | | | | sil/l | | | |
| 135-173 | 2Bt2 | 18.1 | 55.8 | 26.1 | 0.7 | 0.8 | 1.8 | 4.8 | 10.0 | | | | | | | sil/sicl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-24 | 5.7 | | 6.8 | 2.62 | 0.21 | 0.21 | 0.10 | 3.14 | 5.33 | 59 | 42 | | 4.31 | 7.45 | | 0.03 | 2.57 | 101 | 29.5 |
| 24-57 | 5.3 | | 6.9 | 1.25 | 0.04 | 0.04 | 0.01 | 1.34 | 4.49 | 30 | 24 | | 4.18 | 5.52 | | 0.09 | 0.41 | 20 | 1.5 |
| 57-66 | 5.1 | | 6.4 | 0.46 | 0.06 | 0.05 | 0.02 | 0.59 | 5.07 | 12 | 10 | | 5.56 | 6.15 | | 0.05 | 0.17 | 27.5 | 0.5 |
| 66-90 | 4.9 | | 5.9 | 0.24 | 0.10 | 0.06 | 0.02 | 0.42 | 7.61 | 6 | 5 | | 8.01 | 8.43 | | 0.07 | 0.15 | 30 | 0 |
| 90-135 | 5.0 | | 5.7 | 0.24 | 0.07 | 0.06 | 0.02 | 0.39 | 7.17 | 5 | 4 | | 8.82 | 9.21 | | 0.19 | 0.19 | 30.5 | 0.5 |
| 135-173 | 4.9 | | 5.5 | 0.47 | 0.15 | 0.08 | 0.03 | 0.73 | 8.94 | 8 | 7 | | 9.29 | 10.02 | | 0.05 | 0.19 | 37.5 | 0 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | GO | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| Bw | 98 | 2 | | | | | | | | | | | | | | | | | |
| B/E | 97 | 1 | 2 | | | | | | | | | | | | | | | | |
| Btx | 90 | | 4 | | 6 | | | | | | | | | | | | | | |
| 2Bt1 | 93 | 2 | 5 | | | | | | | | | | | | | | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Upshur, silt loam (Taxadjunct)

**Pedon #:** 93-KY-127-01-(1-7)

**Classification:** Fine, mixed, active, mesic Typic Rhodudalfs

**Location:** In Lawrence County, 7 miles north of Louisa on U.S. Highway 23; along a gravel road on the west side of U.S. 23 which runs along side of a hollow fill, to the ridgetop; Prichard quadrangle.

**Parent Material:** Residuum from clay shale and interbedded siltstone.

**Vegetation:**

**Landscape Position:** Ridgetop

**Drainage:**

**Moisture when sampled:**

**Sampling Date:**

**Permeability:** Slow

**Slope:** 6 to 60 percent

**Described by:**

Oi—0 to 1 inches; partially decomposed hardwood leaf litter.

A—0 to 2 inches; dark brown (10YR 4/3) silt loam; moderate fine and medium subangular blocky structure; friable; many fine and medium roots; strongly acid; abrupt wavy boundary.

$Bt_1$—2 to 6 inches; dark red (2.5YR 3/6) silty clay; strong fine and medium subangular blocky structure; firm; common fine and medium roots; many distinct clay films on ped faces and in pores; strongly acid; gradual smooth boundary.

$Bt_2$—6 to 17 inches; dark reddish brown (2.5YR 3/4) silty clay; moderate medium prismatic structure parting to strong medium subangular blocky structure; very firm; common fine and medium roots; many distinct clay films on ped faces and in pores; strongly acid; gradual smooth boundary.

$Bt_3$—17 to 29 inches; dark reddish brown (2.5YR 3/4) silty clay; many medium prominent olive (5Y 5/4) redox concentrations; moderate fine and medium granular structure; very firm; common fine roots; common distinct clay films on ped faces and in pores; few, fine, rounded, hard carbonate nodules in the upper part of the horizon; 5 percent siltstone channers; moderately alkaline; clear wavy boundary.

BC—29 to 41 inches; dusky red (10R 3/3) very channery silty clay loam; many medium prominent olive (5Y 5/4) redox concentrations; weak fine and medium subangular blocky structure; firm; fine roots; few distinct clay films on ped faces and in pores; common, fine, rounded hard carbonate nodules in upper part of the horizon; 40 percent siltstone channers; moderately alkaline; clear wavy boundary.

C—41 to 51 inches; dusky red (10R 3/3) extremely channery silty clay loam; many medium prominent olive (5Y 5/4) redox concentrations; massive structure; firm; very few fine roots; 90 percent siltstone channers; moderately alkaline; abrupt wavy boundary.

Cr—51 to 52 inches; siltstone bedrock.

**SOIL TYPE.....UPSHUR (TAXADJUNCT)** **PEDON # .....S93KY-127-001-(1-6)**
**LOCATION .....LAWRENCE COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-2 | A | 15.0 | 52.4 | 32.6 | 2.0 | 5.1 | 3.8 | 2.6 | 1.5 | | | | | | | sicl | | | |
| 2-6 | Bt1 | 4.4 | 36.9 | 58.7 | 0.4 | 1.4 | 1.1 | 0.9 | 0.6 | | | | | | | c | | | |
| 6-17 | Bt2 | 5.4 | 51.4 | 43.2 | 0.9 | 1.1 | 0.9 | 1.3 | 1.2 | | | | | | | sic | | | |
| 17-29 | Bt3 | 6.7 | 52.3 | 41.0 | 0.8 | 1.7 | 1.3 | 1.5 | 1.4 | | | | | | | sic/sicl | | | |
| 29-41 | BC | 8.9 | 61.7 | 29.4 | 1.2 | 1.8 | 1.7 | 2.0 | 2.2 | | | | | | | sicl | | | |
| 41-51 | C | 7.9 | 65.8 | 26.3 | 0.3 | 0.2 | 0.8 | 3.2 | 3.4 | | | | | | | sil/sicl | | | |
| | | pH | | Exchangeable Bases (5A1) | | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-2 | 4.55 | | 5.24 | 4.42 | 1.39 | 0.45 | 0.02 | 6.28 | 19.25 | 33 | 18 | | 28.24 | 34.52 | | 0.15 | 16.32 | 167 | 13.5 |
| 2-6 | 4.43 | | 4.52 | 5.37 | 2.89 | 0.61 | 0.04 | 8.91 | 19.89 | 45 | 27 | | 24.21 | 33.12 | | 0.07 | 1.87 | 250+ | 6.5 |
| 6-17 | 7.12 | | 7.01 | 22.27 | 6.16 | 0.48 | 0.06 | 28.97 | 19.91 | 145 | 80 | | 7.14 | 36.11 | | 3.66 | 1.22 | 222 | 8 |
| 17-29 | 7.35 | | 7.28 | 21.11 | 5.79 | 0.46 | 0.05 | 27.41 | 18.94 | 145 | 80 | | 6.72 | 34.13 | | 4.87 | 0.98 | 220 | 5.5 |
| 29-41 | 7.82 | | 7.42 | 20.99 | 7.24 | 0.51 | 0.08 | 28.82 | 16.99 | 170 | 83 | | 5.69 | 34.51 | | 5.42 | 0.27 | 250+ | 3.5 |
| 41-51 | 7.82 | | 7.43 | 17.92 | 7.84 | 0.63 | 0.13 | 26.52 | 19.04 | 139 | 81 | | 6.22 | 32.74 | | 1.93 | 0.21 | 250+ | 9 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | | Clay | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| Bt1 | | | | | | | | | | 3 | | | 45 | 19 | 31 | 2 | | | |
| Bt2 | | | | | | | | | | 2 | | | 46 | 13 | 37 | 2 | | | |
| Bt3 | | | | | | | | | | 4 | | | 39 | 22 | 33 | 2 | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Waverly, silt loam (Taxadjunct)

**Pedon #:** 93KY-035-2-4-(1-6)

**Classification:** Coarse-silty, mixed, active, thermic Fluvaquentic Endoaquepts

**Location:** Calloway Co., north of Murray, KY and south of Almo Heights on the Howell Bucy farm.

**Parent Material:** Loess

**Vegetation:** Mixed hardwoods

**Landscape Position:**

**Drainage:**

**Moisture when sampled:** Moist

**Sampling Date:** 5/25/1993

**Permeability:** Very slowly permeable

**Slope:** 0 to 2%

**Described by:** A.D. Karathanasis, S. Sykes, R. Toor, M. Zhang, and P. Priyono

A—0 to 5 cm.; Gray (10YR 5/1) silt loam; many prominent strong brown (7.5 YR 4/6) mottles; weak medium subangular blocky structure; friable; many roots; gradual smooth boundary.

BE—5 to 16 cm.; Gray (10YR 5/1) silt loam; many distinct dark brown (7.5YR 4/4) mottles; weak medium subangular blocky structure; friable; common roots; clear smooth boundary.

Bg1—16 to 55 cm.; Light brownish gray (10YR 6/2) silt loam; many faint dark brown (7.5YR 4/2) and common very dark gray (7.5YR 3/0) mottles; weak subangular blocky structure; friable; few fine roots; clear smooth boundary.

Bg2—55 to 92 cm.; Light brownish gray (10YR 6/2) silt loam; common faint dark brownish yellow (10YR 6/6) mottles; friable; clear smooth boundary.

Bg3—92 to 120 cm.; Light brownish gray (10YR 6/2) silt loam; common faint reddish yellow (7.5YR 6/6) and few distinct strong brown (7.5YR 5/6) mottles; medium subangular blocky structure; clear smooth boundary.

Bg4—120 to 135 cm.; Light brownish gray (10YR 6/2) silt loam; common distinct reddish yellow (7.5YR 6/8) mottles; subangular blocky structure.

**SOIL TYPE..... WAVERLY (TAXADJUNCT)** **PEDON # ..... 93KY-035-02-04-(1-6)**
**LOCATION .....CALLOWAY COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-5 | A | 9.0 | 74.9 | 16.1 | 1.1 | 2.3 | 2.7 | 1.6 | 1.3 | | | | | | | sil | | | |
| 5-16 | BE | 6.3 | 74.7 | 19.0 | 0.8 | 1.2 | 2.0 | 1.3 | 1.0 | | | | | | | sil | | | |
| 16-55 | Bg1 | 11.3 | 73.2 | 15.5 | 0.4 | 1.2 | 3.7 | 4.0 | 2.0 | | | | | | | sil | | | |
| 55-92 | Bg2 | 7.5 | 74.0 | 18.5 | 1.0 | 1.4 | 2.3 | 1.6 | 1.2 | | | | | | | sil | | | |
| 92-120 | Bg3 | 8.2 | 74.0 | 17.8 | 0.7 | 1.6 | 2.4 | 1.7 | 1.8 | | | | | | | sil | | | |
| 120-135 | Bg4 | 8.3 | 70.4 | 21.3 | 1.6 | 1.5 | 2.2 | 1.5 | 1.5 | | | | | | | sil | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/ 100gm | 602z Mg meq/ 100gm | 602z K meq/ 100gm | 6P2z Na meq/ 100gm | 5B1a TEB meq/ 100gm | 5A1z CEC meq/ 100gm | 5C1 Pct | 5C3 Pct | H+Al meq/ 100 gm | EA meq/ 100gm | SC meq/ 100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-5 | 4.75 | | 6.44 | 1.95 | 0.74 | 0.20 | 0.21 | 3.10 | 10.46 | 30 | 25 | | 9.22 | 12.32 | | 0.08 | 3.84 | 81.5 | 9.5 |
| 5-16 | 4.98 | | 6.48 | 2.07 | 1.05 | 0.09 | 0.11 | 3.32 | 9.26 | 36 | 31 | | 7.21 | 10.53 | | 0.04 | 2.83 | 39.5 | 8.5 |
| 16-55 | 5.18 | | 6.73 | 2.00 | 0.86 | 0.07 | 0.11 | 3.04 | 6.46 | 47 | 39 | | 4.77 | 7.81 | | 0.13 | 1.55 | 31 | 3.5 |
| 55-92 | 5.10 | | 6.38 | 1.28 | 0.83 | 0.08 | 0.13 | 2.32 | 8.35 | 28 | 26 | | 6.72 | 9.04 | | 0.15 | 0.85 | 34.5 | 2.5 |
| 92-120 | 5.06 | | 6.04 | 1.04 | 0.83 | 0.09 | 0.17 | 2.13 | 8.78 | 24 | 21 | | 8.08 | 10.21 | | 0.05 | 0.47 | 40.5 | 2.5 |
| 120-135 | 4.93 | | 5.97 | 0.88 | 0.86 | 0.07 | 0.23 | 2.04 | 9.07 | 22 | 20 | | 7.95 | 999 | | 0.07 | 0.64 | 36 | 2.6 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Waverly, silt loam (Taxadjunct)

**Pedon #:** 94KY-035-2-5-(1-5)

**Classification:** Fine-silty, mixed, acid, active, thermic Fluvaquentic Endoaquepts

**Location:** Calloway Co., north of Murray, KY and south of Almo Heights on the Howell Bucy farm.

**Parent Material:** Alluvium

**Vegetation:** Woods

**Landscape Position:**

**Drainage:**

**Moisture when sampled:** Moist

**Sampling Date:** 6/22/1994

**Permeability:**

**Slope:** 1%

**Described by:** A.D. Karathanasis, S. Sykes, and R. Forsythe

A—0 to 2 in.; Brown (10YR 5/3) silt loam; few fine faint yellowish brown (10YR 5/6) and light gray (10YR 7/2) mottles; weak fine granular structure; common fine and medium roots; friable; clear smooth boundary.

Bg1—2 to 10 in.; Grayish brown (10YR 5/2) silt loam; common medium distinct yellowish brown (10YR 5/6) and brown (7.5YR 4/4) mottles; weak fine subangular blocky structure; common fine and medium roots; few fine black concretions; firm; clear smooth boundary.

Bg2—10 to 25 in.; Grayish brown (10YR 5/2) silt loam; common medium distinct yellowish brown (10YR 5/6) and brown (7.5YR4/4) mottles; weak to moderate medium subangular blocky structure; few fine and medium roots; common and Fe and Mn stains with few black and brown concretions; firm; clear smooth boundary.

Bg3—25 to 40 in.; Light gray (10YR 6/1) silt loam; common fine distinct strong brown (7.5 YR 5/6) and common medium faint yellowish brown (10YR 5/6) mottles; weak to moderate medium subangular blocky structure; firm; clear smooth boundary.

Bg4—40 to 66 in.; Light brownish gray (10YR 6/2) silt loam; common medium distinct strong brown (7.5YR 5/6) and common medium prominent reddish brown (2.5YR 4/4) mottles; weak medium subangular blocky structure; few fine roots; pockets of grayish brown (10YR 5/2) silty clay loam; firm.

**SOIL TYPE..... WAVERLY (TAXADJUNCT)** **PEDON # ..... S94KY-035-02-05-(1-5)**
**LOCATION ..... CALLOWAY COUNTY, KENTUCKY** **GENERAL METHODS ..... 1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand | VFS Plus | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Coarser Than VF (2-0.1) | Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-2 | A | 14.1 | 65.7 | 20.2 | 2.0 | 4.5 | 4.3 | 2.2 | 1.1 | | | | | | | sil | | | |
| 2-10 | Bg1 | 5.5 | 74.8 | 19.7 | 0.2 | 0.8 | 2.3 | 1.3 | 0.9 | | | | | | | sil | | | |
| 10-25 | Bg2 | 4.3 | 79.4 | 16.3 | 0.1 | 0.4 | 1.4 | 1.2 | 1.2 | | | | | | | sil | | | |
| 25-40 | Bg3 | 8.8 | 71.0 | 20.2 | 0.3 | 1.1 | 3.8 | 2.3 | 1.3 | | | | | | | sil | | | |
| 40-66 | Bg4 | 7.5 | 64.9 | 27.6 | 0.2 | 0.8 | 3.4 | 1.9 | 1.2 | | | | | | | sil/sicl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-2 | 4.51 | | 5.80 | 1.28 | 0.67 | 0.21 | 0.10 | 2.26 | 15.98 | 14 | 12 | | 16.85 | 19.11 | | 0.09 | 8.17 | 90.5 | 29.5 |
| 2-10 | 4.98 | | 6.39 | 1.72 | 0.68 | 0.07 | 0.09 | 2.56 | 8.42 | 30 | 25 | | 7.77 | 10.33 | | 0.04 | 1.70 | 37.5 | 8.5 |
| 10-25 | 5.27 | | 6.60 | 2.17 | 0.62 | 0.05 | 0.11 | 2.95 | 7.33 | 40 | 33 | | 5.94 | 8.89 | | 0.10 | 1.46 | 32 | 7.5 |
| 25-40 | 4.98 | | 6.13 | 1.55 | 0.57 | 0.05 | 0.28 | 2.45 | 8.17 | 30 | 24 | | 7.88 | 10.33 | | 0.11 | 0.99 | 31 | 14 |
| 40-66 | 5.04 | | 5.36 | 1.86 | 1.13 | 0.08 | 1.48 | 4.55 | 14.02 | 32 | 31 | | 10.27 | 14.82 | | 0.10 | 0.66 | 43 | 6.5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | | Clay | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| Bg2 | 89 | 11 | | | | | | | | | | | | | | | | | |
| Bg3 | 89 | 11 | | | | | | | | | | | | | | | | | |
| Bg4 | 90 | 10 | | | | | | | | | | | | | | | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Wernock, silt loam (Taxadjunct)

**Pedon #:**

**Classification:** Fine-loamy, siliceous, semiactive, mesic Typic Hapludults

**Location:** McCreary Co., KY. Plot A. Daniel Boone National Forest, Bowmans Ridge, Forest Road 51. Two miles on 51 then 100 yards south off road.

**Parent Material:** Residuum from acid siltstones, shales and sandstone

**Vegetation:** Hardwood pine stand: (overstory) Virginia Pine, Black Oak, Red Maple; (understory) Sassafras, Blueberry, Green briar; Basal area: 70 pine 20 hardwood

**Landscape Position:** Ridgetop 100 ft. diameter

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 9/22/93

**Permeability:** Moderate

**Slope:** 2%

**Described by:** Karathanasis

Oi—1 to 0 inches; undecomposed hardwood leaf litter.

A—0 to 2 inches; brown (10YR 5/3) silt loam; weak granular and subangular blocky to fine subangular blocky structure; many fine and medium roots; clear boundary.

BA—2 to 11 inches; light yellowish brown (10YR 6/4) silt loam; weak fine and medium subangular blocky structure; 2 to 5% sandstone fragments of < 1 cm diameter; many fine and medium roots; clear wavy boundary.

Bt1—11 to 17 inches; brownish yellow (10YR 6/6) silty clay loam; weak to moderate medium subangular blocky structure; 10 to 15% sandstone fragments of 1 to 10 cm diameter; common fine and medium roots; clear smooth boundary.

Bt2—17 to 25 inches; yellowish brown (10YR 5/6) silty clay loam; weak to moderate, medium to coarse subangular blocky structure; 2 to 5% sandstone fragments of < 1 cm diameter; few fine roots; clear smooth boundary.

C—25 to 34 inches; brownish yellow (10YR 6/8) loam; massive; few medium roots on top of Cr; abrupt boundary.

Cr—34 to 50+ inches; weathered inter-bedded (7.5YR 4/3) brown and reddish brown (5YR 5/4) sandstone and gray (10YR 5/1) soft clay shale; very strongly acid.

**SOIL TYPE.....WERNOCK (TAXADJUNCT)** **PEDON #**
**LOCATION .....MCCREARY COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-2 | A | 58.8 | 28.7 | 12.5 | 1.0 | 3.6 | 7.3 | 36.4 | 10.5 | | | | | | | sl | | | |
| 2-11 | BA | 52.5 | 31.6 | 15.9 | 0.4 | 0.8 | 2.8 | 37.4 | 11.1 | | | | | | | sl/l | | | |
| 11-17 | Bt1 | 43.5 | 32.3 | 24.2 | 0.9 | 0.8 | 1.8 | 30.9 | 9.1 | | | | | | | l | | | |
| 17-25 | Bt2 | 62.3 | 16.6 | 21.1 | 0.7 | 0.3 | 0.6 | 49.6 | 11.1 | | | | | | | scl/sl | | | |
| 25-34 | C | 78.9 | 7.8 | 13.3 | 0.1 | 0 | 0.2 | 66.6 | 12.0 | | | | | | | sl | | | |
| 34-50 | Cr | 58.3 | 18.8 | 22.9 | 0 | 0.1 | 0.9 | 46.4 | 10.9 | | | | | | | scl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-2 | 3.85 | | 5.85 | 1.28 | 0.05 | 0.07 | 0.02 | 1.42 | 7.36 | 19 | 10 | | 12.31 | 13.73 | | | 5.25 | 38 | 5 |
| 2-11 | 4.62 | | 6.54 | 0.63 | 0.01 | 0.06 | 0.02 | 0.72 | 3.72 | 19 | 10 | | 6.19 | 6.91 | | | 2.21 | 24 | 3.5 |
| 11-17 | 4.65 | | 6.24 | 0.53 | 0.02 | 0.08 | 0.02 | 0.65 | 5.35 | 12 | 8 | | 7.20 | 7.85 | | | 0.99 | 33 | 3.5 |
| 17-25 | 4.66 | | 6.08 | 0.50 | 0.05 | 0.08 | 0.02 | 0.65 | 4.94 | 13 | 9 | | 6.76 | 7.41 | | | 0.80 | 37 | 2.5 |
| 25-34 | 4.77 | | 6.60 | 0.42 | 0.14 | 0.05 | 0.02 | 0.63 | 2.91 | 22 | 12 | | 4.45 | 5.08 | | | 0.23 | 25.5 | 2.5 |
| 34-50 | 4.79 | | 5.95 | 0.32 | 0.06 | 0.06 | 0.02 | 0.46 | 6.90 | 7 | 5 | | 9.27 | 9.73 | | | 0.36 | 26 | 2.5 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | | | | | | Clay | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | V-HIV | CL | INT | K | MI | Q | GI | GO | F |
| A | 98 | 2 | | | | | | | | | 38 | | | 40 | 3 | 12 | 5 | | 2 |
| BA | 100 | | | | | | | | | | 32 | | 3 | 42 | 7 | 8 | 6 | | 2 |
| Bt1Bt2 | 100100 | | | | | | | | | | 3026 | | 5 | 4557 | 53 | 66 | 66 | | 32 |
| CCr | 97100 | 3- | | | | | | | | | 2520 | | | 6060 | 510 | 33 | 57 | | 2- |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Wernock, silt loam

**Pedon #:** S00KY-001-05-(1-4)

**Classification:** Fine-silty, mixed, semiactive, mesic Typic Hapludults

**Location:** Adair County, Kentucky; about 5 miles southeast of Columbia, Kentucky; 0.5 miles east of KY Hwy 55 and 0.25 miles north of Morrison Road; on the Fletcher (older) farm, in a pasture, 200 feet east of farm road, 100 feet west of old house.

**Parent Material:**

**Vegetation:**

**Landscape Position:**

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 11/29/00

**Permeability:**

**Slope:** 2 to 6%

**Described by:** John Jenkins, Bill Craddock, Harry Evans, and Jerry Richardson

Ap—0 to 4 inches; brown (10YR 4/3) silt loam, weak fine granular structure; very friable; many fine and medium roots throughout; neutral (6.8); abrupt smooth boundary.

Bt1—4 to 15 inches; yellowish brown (10YR 5/6) silt loam; moderate fine and medium subangular blocky structure; friable; 5 percent siltstone fragments; common faint clay films on faces of peds and pores; common fine roots throughout; strongly acid (5.4); clear wavy boundary.

Bt2—15 to 24 inches; yellowish brown (10YR 5/6) channery silty clay loam; 15 percent light yellowish brown (2.5Y 6/4) and 5 percent strong brown (7.5YR 5/8) mottles; moderate medium subangular blocky structure; friable; 20 percent siltstone channers; common faint clay films on faces of peds and pores; common fine and few coarse roots throughout; strongly acid (5.4); clear wavy boundary.

Cr—24 to 29 inches; soft weathered siltstone; strongly acid (5.4).

R—29 inches.

**SOIL TYPE.....WERNOCK** **PEDON # .....S00KY-001-005-(1-4)**
**LOCATION ..... ADAIR COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-4 | Ap | 14.2 | 77.1 | 8.7 | 2.3 | 1.5 | 4.4 | 3.5 | 2.5 | | | | | | | sil | | | |
| 4-15 | Bt1 | 10.4 | 66.7 | 22.9 | .3 | 2.4 | 1.2 | 1.7 | 1.8 | | | | | | | sil | | | |
| 15-24 | Bt2 | 7.6 | 66.7 | 25.7 | 0.1 | 0.8 | 1.2 | 2.4 | 3.1 | | | | | | | sil/sicl | 20 | | |
| 24-29 | Cr | 16.2 | 59.0 | 24.8 | 1.4 | 2.7 | 2.3 | 4.2 | 5.6 | | | | | | | sil | 36 | | |
| | | pH | | Exchangeable Bases (5A1) | | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-4 | 6.7 | | 7.0 | 5.62 | 1.95 | 0.41 | 0.01 | 8.0 | 11.5 | 70 | 61 | | 5.0 | 13.0 | | 0.28 | 4.78 | 176 | 117 |
| 4-15 | 5.2 | | 6.3 | 2.11 | 0.17 | 0.12 | 0.04 | 2.4 | 9.6 | 25 | 22 | | 8.5 | 10.9 | | 0.05 | 0.86 | 57 | 2.5 |
| 15-24 | 4.8 | | 5.8 | 1.11 | 0.15 | 0.15 | 0.02 | 1.4 | 10.5 | 13 | 10 | | 13.1 | 14.5 | | 0.10 | 1.11 | 67 | 2.5 |
| 24-29 | 4.7 | | 5.8 | 0.88 | 0.16 | 0.17 | 0.01 | 1.2 | 9.4 | 13 | 10 | | 11.2 | 12.4 | | 0.10 | 0.74 | 81.5 | 3 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| Bt1 | 95 | 5 | | | | | | | | | | | | | | | | | |
| Bt2 | 80 | 10 | 10 | | | | | | | | | | | | | | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Westmoreland, silt loam (Taxadjunct)

**Pedon #:** S00KY-001-01-(1-4)

**Classification:** Fine-silty, mixed, active, mesic Typic Hapludults

**Location:** Adair County, Kentucky; about 9 miles west of Columbia, Ky; 1320 feet west of Portland and 150 feet north of Hwy 1702; in a hayfield on the Huston Finn farm.

**Parent Material:**

**Vegetation:**

**Landscape Position:**

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** 11/28/00

**Permeability:**

**Slope:** 2 to 6%

**Described by:** John Jenkins, Harry Evans, and Terry Shell Brown

Ap—0 to 3 inches; dark yellowish brown (10YR 4/4) silt loam, weak fine granular structure; friable; 10 percent fine roots throughout; neutral (6.8); abrupt smooth boundary.

Bt1—3 to 8 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable; 5 percent faint yellowish brown (10YR 5/4) clay films on faces of peds; 5 percent medium roots throughout; neutral (6.6) clear wavy boundary.

Bt2—8 to 15 inches; brownish yellow (10YR 6/6) silty clay loam; moderate medium subangular blocky structure; friable; 5 percent soft siltstone channers; 10 percent distinct (10YR 5/4) clay films on faces of peds; 5 percent medium roots throughout; medium acid (5.8); clear wavy boundary.

Cr—15 to 24 inches; soft dark olive brown (2.5Y 3/3) weathered siltstone; 50 percent light brownish gray (10YR 6/2) and pale brown (10YR 3/3) silt coats on siltstone fragments; 5 percent fine roots in cracks; medium acid (6.0).

R—24 inches; hard siltstone; compact in place, foliated when broken.

**SOIL TYPE..... WESTMORELAND (TAXADJUNCT)** **PEDON # .....S00KY-001-01-(1-4)**
**LOCATION ..... ADAIR COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand | VFS Plus | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Coarser Than VF (2-0.1) | Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-3 | Ap | 13.0 | 73.8 | 13.2 | 1.9 | 2.5 | 2.8 | 2.6 | 3.8 | | | | | | | sil | | | |
| 3-8 | Bt1 | 4.3 | 69.5 | 26.2 | 1.6 | 0.8 | 0.1 | 0.3 | 1.5 | | | | | | | sil/sicl | | | |
| 8-15 | Bt2 | 10.8 | 55.4 | 33.8 | 1.5 | 1.8 | 1.5 | 1.9 | 4.1 | | | | | | | sicl | | | |
| 15-24 | Cr | 24.1 | 40.9 | 35.0 | 5.2 | 5.3 | 3.6 | 4.2 | 5.8 | | | | | | | cl | 36 | | |
| | | pH | | Exchangeable Bases (5A1) | | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-3 | 7.0 | | | 7.46 | 1.50 | 0.22 | 0.02 | 9.20 | 13.23 | 69 | 61 | | 5.74 | 14.94 | | 0.12 | 4.40 | 95 | 33 |
| 3-8 | 5.2 | | 6.3 | 3.63 | 0.49 | 0.10 | 0.02 | 4.24 | 11.62 | 36 | 29 | | 10.54 | 14.78 | | 0.10 | 1.06 | 52 | 7 |
| 8-15 | 4.9 | | 5.5 | 3.45 | 0.51 | 0.13 | 0.03 | 4.12 | 16.74 | 25 | 23 | | 14.06 | 18.18 | | 0.06 | 0.69 | 54 | 1.5 |
| 15-24 | 4.9 | | 5.7 | 6.53 | 1.30 | 0.20 | 0.07 | 8.10 | 21.30 | 38 | 36 | | 14.43 | 22.53 | | 0.03 | 0.74 | 90.5 | 2 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | | Clay | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| Bt1 | 90 | 10 | | | | | | | | | | | | | | | | | |
| Bt2 | 69 | 8 | 23 | | | | | | | 40 | 20 | | | 10 | 5 | 20 | | | 5 |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Wheeling, silt loam (Taxadjunct)

**Pedon #:** S96KY-015-003-(1-6)

**Classification:** Fine-silty, mixed, active, mesic Typic Hapludalfs

**Location:** Boone County, KY., Flaig farm, Hwy. 536 west of Union.

**Parent Material:** Alluvium

**Vegetation:** Weeds

**Landscape Position:** Stream terrace

**Drainage:** Well-drained

**Moisture when sampled:** Moist

**Permeability:** Moderate

**Slope:** 0 to 2%

**Described by:** Jutta Pils

Ap—0 to 17 cm: Very dark grayish brown (10YR 3/2) silt loam; weak granular structure; friable; clear boundary.

BA—17 to 35 cm. Dark grayish brown (10YR 4/2) silt loam; weak subangular blocky structure; friable; clear boundary.

$Bt_1$—35 to 67 cm. Very dark grayish brown (10YR 3/2) silty clay loam; few dark gray (10YR 4/1) depletions; weak sub-angular blocky structure; firm; gradual boundary.

$Bt_2$—67 to 95 cm. Very dark grayish brown (10YR 3/2) silty clay loam; many dark gray (10YR 4/1) depletions; moderate sub-angular blocky structure; very firm; gradual boundary.

$Bt_3$—95 to 125 cm. Brown (10YR 4/3) silty clay loam; few dark gray (10YR 4/1) and yellowish brown (10YR 5/6) mottles; moderate sub-angular blocky; very firm; gradual boundary.

BC—125 to 165+ cm. Brown (10YR 4/3) silty clay loam; few yellowish red (5YR 4/6), yellowish brown (10YR 5/6) concentrations and dark gray (10 YR 4/1) depletions; platy structure; very firm.

**SOIL TYPE.....WHEELING (TAXADJUNCT)** **PEDON # .....S96KY-015-003-(1-6)**
**LOCATION .....BOONE COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand | VFS Plus | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Coarser Than VF (2-0.1) | Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-17 | Ap | 10.3 | 68.1 | 21.6 | 0.7 | 1.6 | 1.7 | 2.2 | 4.1 | | | | | | | sil | | | |
| 17-35 | BA | 3.6 | 77.2 | 19.2 | 0.1 | 0.4 | 0.6 | 1.1 | 1.4 | | | | | | | sil | | | |
| 35-67 | Bt1 | 4.9 | 64.8 | 30.3 | 0.3 | 0.3 | 0.4 | 0.8 | 3.1 | | | | | | | sicl | | | |
| 67-95 | Bt2 | 4.2 | 59.3 | 36.5 | 0.5 | 0.6 | 0.5 | 0.8 | 1.8 | | | | | | | sicl | | | |
| 95-125 | Bt3 | 10.6 | 55 | 34.4 | 3.3 | 2.0 | 1.5 | 1.4 | 2.4 | | | | | | | sicl | | | |
| 125-165+ | BC | 7.9 | 61 | 31.1 | 1.8 | 1.4 | 1.0 | 1.5 | 2.2 | | | | | | | sicl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/ 100gm | 602z Mg meq/ 100gm | 602z K meq/ 100gm | 6P2z Na meq/ 100gm | 5B1a TEB meq/ 100gm | 5A1z CEC meq/ 100gm | 5C1 Pct | 5C3 Pct | H+Al meq/ 100 gm | EA meq/ 100gm | SC meq/ 100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-17 | 7.3 | | | 19.89 | 1.42 | 0.32 | 0.08 | 21.71 | 23.54 | 92 | 80 | | 5.4 | 27.1 | | 0.32 | 4.81 | 145 | 85 |
| 17-35 | 7.4 | | | 15.27 | 1.15 | 0.24 | 0.07 | 16.73 | 19.12 | 87 | 78 | | 4.6 | 21.3 | | 0.32 | 2.20 | 116 | 41 |
| 35-67 | 7.3 | | | 19.6 | 1.57 | 0.32 | 0.09 | 21.58 | 23.54 | 92 | 80 | | 5.3 | 26.8 | | 0.17 | 2.59 | 143 | 26 |
| 67-95 | 7.3 | | | 19.42 | 1.70 | 0.32 | 0.28 | 21.72 | 22.8 | 95 | 83 | | 4.5 | 26.2 | | 0.20 | 2.06 | 147 | 31.5 |
| 95-125 | 7.6 | | | 20.18 | 1.71 | 0.31 | 0.12 | 22.32 | 19.42 | 115 | 85 | | 3.9 | 26.2 | | 0.69 | 1.20 | 151.5 | 11 |
| 125-165+ | 7.5 | | | 17.39 | 1.59 | 0.31 | 0.11 | 19.4 | 18.68 | 104 | 84 | | 3.6 | 23.0 | | 0.29 | 0.98 | 145 | 24.5 |
| | Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

## Wheeling, sandy loam

**Pedon #:** S97KY-015-008-(1-4)

**Classification:** Fine-loamy, mixed, active, mesic Ultic Hapludalfs

**Location:** Boone County, KY. River Road (KY Hwy 8).

**Parent Material:** Alluvium

**Vegetation:** Corn field

**Landscape Position:** Stream terrace

**Drainage:** Well drained

**Moisture when sampled:** Moist

**Permeability:** Moderate

**Slope:** 2 to 6% (3%)

**Described by:** Jutta R.V. Pils

Ap—0 to 35 cm: Dark brown (10YR 3/3) sandy loam; weak granular structure; friable; clear boundary.

$Bt_1$—35 to 50 cm: Strong brown (7.5YR 4/6) loam; moderate sub-angular blocky structure; friable; gradual boundary.

$Bt_2$—50 to 80 cm: Strong brown (7.5YR 4/6) loam; moderate sub-angular blocky structure; friable; gradual boundary.

$Bt_3$—80 to 122+ cm: Brown (7.5YR 4/4) silt loam; moderate sub-angular blocky structure; friable.

**SOIL TYPE.....WHEELING** **PEDON # .....S97KY-015-08-(1-4)**
**LOCATION .....BOONE COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-35 | Ap | 49.7 | 44.7 | 5.6 | 0.2 | 1.3 | 14.9 | 19.7 | 13.6 | | | | | | | sl | | | |
| 35-50 | Bt1 | 38.8 | 45.1 | 16.1 | 0.1 | 0.6 | 8.5 | 14.6 | 15.0 | | | | | | | l | | | |
| 50-80 | Bt2 | 34.9 | 45.6 | 19.5 | 0.1 | 0.5 | 7.2 | 12.2 | 14.9 | | | | | | | l | | | |
| 80-122+ | Bt3 | 26.7 | 54.8 | 18.5 | 0 | 0.3 | 3.6 | 7.7 | 15.1 | | | | | | | sil | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-35 | 5.4 | | 6.6 | 1.60 | 0.23 | 0.13 | 0.03 | 1.99 | 8.82 | 22.5 | | | 7.5 | | | 0.36 | 1.25 | 137 | 76 |
| 35-50 | 5.6 | | 6.9 | 3.26 | 0.66 | 0.09 | 0.07 | 4.08 | 10.29 | 39.5 | | | 8.7 | | | 0.88 | 0.38 | 97 | 15 |
| 50-80 | 5.2 | | 6.8 | 4.22 | 0.74 | 0.13 | 0.06 | 5.15 | 10.88 | 47.3 | | | 6.7 | | | 0.70 | 0.26 | 138 | 9 |
| 80-122+ | 4.8 | | 6.3 | 3.97 | 0.73 | 0.14 | 0.05 | 4.89 | 11.76 | 41.6 | | | 10.7 | | | 0.72 | 0.22 | 151 | 7 |

| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV/HSM | CL | INT | K | MI | Q | GI | GO | F |
| Ap | | | | | | | | | | | 37 | | | 31 | 7 | 16 | | 4 | 5 |
| Bt1 | | | | | | | | | | | 41 | | 11 | 26 | 12 | 6 | | 1 | 3 |
| Bt3 | | | | | | | | | | | 45 | | 15 | 18 | 15 | 3 | | 1 | 3 |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Wheeling, silty clay loam (Taxadjunct)

**Pedon #:** S98KY-015-009-(1-6)

**Classification:** Fine, mixed, active, mesic Typic Hapludults

**Location:** Boone County, KY., Boh's farm.

**Parent Material:** Alluvium

**Vegetation:** Pasture-corn field

**Landscape Position:** Stream terrace

**Drainage:** Well drained

**Moisture when sampled:** Moist

**Permeability:** Moderate

**Slope:** 0 to 2% (1.5%)

**Described by:** Jutta R.V. Pils

Ap—0 to 27 cm: Dark grayish brown (10YR 4/2) silty clay loam; weak granular structure; friable; clear boundary.

$Bt_1$—27 to 50 cm: Dark grayish brown (10YR 4/2) silty clay loam; few dark yellowish brown (10YR 4/6) mottles; weak subangular blocky structure; firm; gradual boundary.

$Bt_2$—50 to 63 cm: Dark grayish brown (10YR 4/2) silty clay loam; many strong brown (7.5YR 4/6) mottles; moderate subangular blocky structure; firm; gradual boundary.

$Bt_3$—63 to 82 cm: Light brownish gray (7.5YR 4/4) silty clay loam; many gray (10YR 5/1) depletions; moderate subangular blocky structure; very firm with Mn concretions; gradual boundary.

$Bt_4$—82 to 104 cm: Grayish brown (10YR 5/2) silty clay loam; many dark brown (7.5YR 3/4) mottles; moderate subangular blocky structure; very firm with Mn concretions; gradual boundary.

BC—104 to 123+ cm: Grayish brown (10YR 5/2) silty clay loam; many brown (10YR 4/3) and many dark brown (7.5YR 3/4) mottles; moderate subangular blocky structure; very firm with Mn concretions.

**SOIL TYPE.....WHEELING (TAXADJUNCT)** **PEDON # .....S98KY-015-09-(1-6)**
**LOCATION .....BOONE COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | Coarse Fragments | | |
| Depth cm | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-27 | Ap | 18.4 | 49.1 | 32.5 | 6.2 | 1.3 | 1.9 | 4.3 | 4.7 | | | | | | | sicl | | | |
| 27-50 | Bt1 | 9.1 | 52.7 | 38.2 | 0.2 | 0.5 | 0.8 | 3.2 | 4.4 | | | | | | | sicl | | | |
| 50-63 | Bt2 | 10.8 | 49.9 | 39.4 | 0.4 | 0.9 | 1.0 | 3.0 | 5.4 | | | | | | | sicl | | | |
| 63-82 | Bt3 | 9.4 | 52.6 | 38.0 | 0.3 | 0.9 | 1.4 | 2.5 | 4.3 | | | | | | | sicl | | | |
| 82-104 | Bt4 | 11.8 | 49.3 | 38.9 | 0.4 | 1.2 | 1.3 | 2.9 | 6.0 | | | | | | | sicl | | | |
| 104-123+ | BC | 16.2 | 45.4 | 38.4 | 0.4 | 1.5 | 1.5 | 4.1 | 8.7 | | | | | | | sicl | | | |
| | | pH | | Exchangeable Bases (5A1) | | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth cm | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-27 | 5.6 | | 6.4 | 9.02 | 1.80 | 0.36 | 0.07 | 11.25 | 19.12 | 58.8 | | | 10.86 | | | 0.06 | 3.30 | 263 | 20 |
| 27-50 | 6.0 | | 6.6 | 10.87 | 1.61 | 0.25 | 0.09 | 12.82 | 16.18 | 79.2 | | | 8.84 | | | 0.08 | 2.11 | 186 | 6 |
| 50-63 | 5.8 | | 6.5 | 9.11 | 1.42 | 0.22 | 0.08 | 10.83 | 13.97 | 77.4 | | | 8.62 | | | 0.11 | 1.33 | 184 | 8 |
| 63-82 | 5.4 | | 6.3 | 6.93 | 1.33 | 0.22 | 0.11 | 8.59 | 15.44 | 55.6 | | | 8.04 | | | 0.50 | 0.96 | 160 | 12 |
| 82-104 | 4.9 | | 5.6 | 3.87 | 1.05 | 0.22 | 0.10 | 5.24 | 15.44 | 34.0 | | | 11.56 | | | 0.14 | 0.90 | 179 | 14 |
| 104-123+ | 4.8 | | 5.4 | 2.86 | 1.06 | 0.21 | 0.09 | 4.22 | 15.44 | 27.3 | | | 14.71 | | | 0.09 | 1.01 | 173 | 7 |

| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV/HSM | CL | INT | K | MI | Q | GI | GO | F |
| Ap | | | | | | | | | | 21 | | | | 16 | 57 | 6 | | | |
| Bt2 | | | | | | | | | | | 29 | | | 14 | 49 | 9 | | | |
| BC | | | | | | | | | | | 26 | | 22 | 12 | 31 | 4 | | | 5 |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

## Wheeling

**Pedon #:**

**Classification:** Fine-loamy, mixed, active, mesic Ultic Hapludalfs

**Location:** Breathitt County, KY, Walnut Grove, U. K. Quicksand Experiment Station next to creek. Latitude: 37.540N; Longitude: 83.342W

**Parent Material:** Breathitt Formation

**Vegetation:** Black walnut plantation

**Aspect:**

**Landscape Position:** Terrace

**Drainage:**

**Moisture when sampled:**

**Sampling Date:** August 4, 2004

**Permeability:**

**Slope:** 2%

**Described by:** Doug McIntosh

Ap—0 to 3 inches; dark brown (10YR 3/3) silt loam; moderate medium and coarse granular structure; very friable; many fine, medium roots; 5% sandstone and siltstone channers; abrupt smooth boundary.

AB—3 to 11 inches; brown (10YR 4/3) silt loam; moderate medium and coarse subangular blocky structure; friable; common fine, medium and coarse roots; 2% sandstone and siltstone channers; many coarse dark grayish brown (10YR 4/2) organic stains; abrupt smooth boundary.

$Bt_1$—11 to 22 inches; dark yellowish brown (10YR 4/4) silt loam; moderate medium and coarse subangular blocky structure; firm; few fine roots; 5% sandstone and siltstone channers; many coarse brown (10YR 4/3) clay films on ped faces; clear smooth boundary.

$Bt_2$—22 to 30 inches; dark yellowish brown (10YR 4/6) silt loam; weak medium prismatic structure parting to moderate medium and coarse subangular blocky structure; firm; few fine roots; 5% sandstone and siltstone channers; common distinct brown (10YR 4/3) clay films on ped faces; clear smooth boundary.

$Bt_3$—30 to 41 inches; dark yellowish brown (10YR 4/6) silt loam; weak medium prismatic structure parting to moderate medium and coarse subangular blocky structure; very firm; very few fine roots; 2% sandstone and siltstone channers; common distinct brown (10YR 4/3) clay films on ped faces; clear smooth boundary.

2BC—41 to 63 inches; yellowish brown (10YR 5/4) very channery loam; weak coarse subangular blocky structure; extremely firm; very few very fine roots; 55% sandstone and siltstone channers; few medium brown (10YR 4/3) clay films on ped faces; gradual wavy boundary.

2C—63 to 80 inches; dark yellowish brown (10YR 4/6) sandy loam; single grain; friable; 89% sandstone and siltstone channers, 10% shale fragments; 5% light brownish gray (10YR 6/2) iron depletions.

**SOIL TYPE.....WHEELING** **PEDON #**
**LOCATION .....BREATHITT COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand | VFS Plus | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Coarser Than VF (2-0.1) | Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-3 | Ap | 17.8 | 63.6 | 18.6 | 1.8 | 4.2 | 4.1 | 4.7 | 3.0 | | | | | | | sil | | | |
| 3-11 | AB | 13.4 | 60.2 | 26.4 | 0.6 | 1.1 | 3.3 | 5.2 | 3.2 | | | | | | | sil/sicl | | | |
| 11-22 | Bt1 | 8.6 | 59.8 | 31.6 | 0.3 | 0.5 | 2.0 | 3.1 | 2.7 | | | | | | | sicl | | | |
| 22-30 | Bt2 | 11.3 | 58.4 | 30.3 | 0.2 | 0.8 | 2.6 | 4.3 | 3.4 | | | | | | | sicl | | | |
| 30-41 | Bt3 | 19.3 | 54.5 | 26.2 | 0.6 | 1.6 | 4.6 | 7.6 | 4.9 | | | | | | | sil/sicl | | | |
| 41-63 | 2BC | 54.9 | 27.2 | 17.9 | 4.7 | 5.3 | 13.1 | 20.4 | 11.4 | | | | | | | sl/l | | | |
| 63-80 | 2C | 65.5 | 19.7 | 14.8 | 4.3 | 6.8 | 18.1 | 25.0 | 11.3 | | | | | | | sl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-3 | 5.82 | | 6.58 | 5.97 | 2.02 | 0.64 | 0.03 | 8.66 | 21.25 | 41 | 45 | | 10.45 | 19.11 | | 0.05 | 5.74 | 174 | 8.5 |
| 3-11 | 5.66 | | 6.34 | 4.50 | 0.98 | 0.14 | 0.03 | 5.65 | 15.82 | 36 | 40 | | 8.55 | 14.20 | | 0.05 | 2.68 | 50 | 4.5 |
| 11-22 | 5.45 | | 6.29 | 2.36 | 1.16 | 0.10 | 0.06 | 3.68 | 10.24 | 36 | 29 | | 9.03 | 12.71 | | 0.08 | 0.87 | 36 | 2 |
| 22-30 | 5.28 | | 6.46 | 1.83 | 1.26 | 0.08 | 0.06 | 3.23 | 10.35 | 31 | 28 | | 8.30 | 11.53 | | 0.04 | 0.68 | 30 | 2.5 |
| 30-41 | 5.22 | | 6.22 | 1.37 | 1.15 | 0.07 | 0.05 | 2.64 | 9.40 | 28 | 26 | | 7.33 | 9.97 | | 0.06 | 0.53 | 29 | 2 |
| 41-63 | 5.47 | | 6.57 | 1.15 | 0.93 | 0.07 | 0.04 | 2.19 | 5.54 | 40 | 30 | | 5.20 | 7.39 | | 0.05 | 0.32 | 32 | 6 |
| 63-80 | 5.83 | | 6.91 | 1.77 | 1.11 | 0.10 | 0.04 | 3.02 | 5.33 | 57 | 69 | | 1.37 | 4.39 | | 0.07 | 0.30 | 48 | 10 |
| | Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | | Clay | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V/HIV | HIV | CL | INT | K | MI | Q | GI | GO | F |
| Bt1 | 40 | 10 | 36 | 9 | 5 | | | | | 12 | | | | 64 | 22 | | | | 2 |
| Bt2 | 41 | 8 | 43 | 8 | | | | | | 12 | | | | 62 | 22 | 2 | | | 2 |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

## Woolper, silt loam

**Pedon #:** S-90-KY-135-19(1-5)

**Classification:** Fine, mixed, active, mesic, Typic Argiudolls

**Location:** Lewis County, Kentucky; Atlas sheet 7A; about 4.6 miles north of Tollesboro, about 0.4 mile west of Fearisville, about 0.9 miles northeast of the confluence of Cabin Creek and East Fork Cabin Creek, and about 50 feet north of KY-984. Tollesboro quadrangle—x: 2,181,950 feet, y: 408,000 feet; Latitude: 38° 37′ 09″; Longitude: 83° 37′ 05″.

**Parent Material:** Clayey alluvium over limestone bedrock of the Bullfork Formation, Ordovician Geologic System

**Vegetation:** orchard grass, hayfield

**Landscape Position:** alluvial fan

**Drainage:**

**Moisture when sampled:** moist

**Sampling Date:** 6-28-90

**Permeability:**

**Slope:** 1 percent

**Described by:** S. Jacobs and D. Dotson

Ap—0 to 10 inches (0 to 25cm); very dark grayish brown (10YR 3/2) silt loam; moderate medium subangular blocky structure parting to moderate medium granular; friable; common fine roots; 10% limestone channers; mildly alkaline; clear wavy boundary.

Bt1—10 to 14 inches (25 to 36cm); dark brown (10YR 3/3) silt loam; moderate medium subangular and angular blocky structure; firm; few fine roots; 5% limestone channers; common faint clay films on ped surfaces; mildly alkaline; clear smooth boundary.

Bt2—14 to 23 inches (36 to 58cm); dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular and angular blocky structure; firm; few fine roots; 5% limestone channers; many distinct clay films on ped surfaces; mildly alkaline; clear smooth boundary.

Bt3—23 to 35 inches (58 to 89cm); dark yellowish brown (10YR 4/4) channery silty clay; strong fine and medium subangular blocky structure; firm; 15% limestone channers; many distinct clay films on ped surfaces; mildly alkaline; clear smooth boundary.

BC—35 to 45 inches (89 to 114cm); dark yellowish brown (10YR 4/4 and 4/6) very channery clay; few medium faint dark grayish brown (10YR 4/2) mottles; firm; 35% limestone channers; mildly alkaline.

**SOIL TYPE** ..... **WOOLPER** **PEDON #** ..... **S90KY-135-019-(1-5)**
**LOCATION** ..... **LEWIS COUNTY, KENTUCKY** **GENERAL METHODS** ..... **1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-10 | Ap | 14.7 | 54.1 | 31.2 | 1.3 | 2.0 | 2.7 | 4.0 | 4.7 | | | | | | | sicl | | | |
| 10-14 | Bt1 | 8.6 | 57.0 | 34.4 | 0.6 | 0.7 | 1.2 | 2.1 | 4.0 | | | | | | | sicl | | | |
| 14-23 | Bt2 | 6.2 | 54.3 | 39.5 | 0.4 | 0.3 | 0.8 | 1.5 | 3.2 | | | | | | | sicl/sic | | | |
| 23-35 | Bt3 | 7.5 | 51.1 | 41.4 | 0.2 | 0.6 | 1.1 | 2.0 | 3.6 | | | | | | | sic | | | |
| 35-45 | BC | 19.9 | 33.9 | 46.2 | 3.2 | 4.2 | 4.1 | 4.7 | 3.7 | | | | | | | c | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-10 | | | | 18.01 | 0.89 | 0.95 | 0.02 | 19.87 | 14.61 | 136 | 81 | | 4.55 | 24.42 | | | | | |
| 10-14 | | | | 17.49 | 0.78 | 0.77 | 0.02 | 19.06 | 14.66 | 130 | 81 | | 4.33 | 23.39 | | | | | |
| 14-23 | | | | 13.69 | 0.68 | 0.60 | 0.04 | 15.01 | 14.15 | 106 | 75 | | 5.05 | 20.06 | | | | | |
| 23-35 | | | | 13.38 | 0.79 | 0.63 | 0.12 | 14.92 | 16.79 | 89 | 72 | | 5.91 | 20.83 | | | | | |
| 35-45 | | | | 22.50 | 1.04 | 0.67 | 0.04 | 24.25 | 15.71 | 154 | 86 | | 3.90 | 28.15 | | | | | |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Zanesville, silt loam (Taxadjunct)

**Pedon #:** S86KY-139-10-(1-7)

**Classification:** Fine-silty, mixed, semiactive, mesic Typic Fragiudalfs

**Location:** Livingston County, Kentucky; 433 yards due south of a point on KY 133 that is about 773 yards east of junction of Kentucky 133 and Cave Spring-Carrsville Road; about 3.4 miles northwest of Joy. Latitude: 37° 21" 53"N. Longitude: 86° 26' 23"W. Kentucky coordinate grid values: east-west about 1,218,400 feet and north-south about 386,500 feet.

**Parent Material:** Loess over sandstone residuum from Bethel sandstone geological formation

**Vegetation:** Cockle burs and weeds

**Landscape Position:** Upland-upper side slope

**Drainage:**

**Moisture when sampled:** Dry in upper part, moist below

**Sampling Date:** 5/6/86

**Permeability:**

**Slope:** 13 percent

**Described by:** J. Robbins, K. Bates, R. Forsythe, and Ken Scott

Ap—0 to 6 inches (0 to 15 cm); dark yellowish brown (10YR 4/4) silt loam; moderate fine and medium granular structure; friable; few fine roots; medium acid; abrupt smooth boundary.

Bt—6 to 18 inches (15 to 46 cm); strong brown (7.5YR 5/6) and yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; thin discontinuous dark brown (7.5YR 4/4) clay films on ped faces; strongly acid; clear smooth boundary.

Bx/E—18 to 22 inches (46 to 56 cm); yellowish brown (10YR 5/4) and dark brown (7.5YR 4/4) silt loam; many medium distinct light brownish gray (10YR 6/2) mottles; moderate medium subangular blocky structure; firm; few discontinuous clay films; few fine roots; very strongly acid; clear smooth boundary.

Btx—22 to 35 inches (56 to 89 cm); dark brown (7.5YR 4/4) silt loam; many medium distinct light brownish gray (10YR 6/2) mottles; moderate very coarse prismatic structure; firm and brittle; few fine roots along prism faces; few discontinuous yellowish brown (10YR 5/4) clay films on faces of peds; few black stains; very strongly acid; gradual wavy boundary.

2Cl—35 to 49 inches (89 to 124 cm); yellowish brown (10YR 5/6) silt loam; moderate very coarse prismatic structure; firm; few fine roots along faces of peds; few medium distinct grayish brown (10YR 5/2) streaks; slightly acid; gradual wavy boundary.

2C2—49 to 68 inches (124 to 172 cm); strong brown (7.5YR 5/6) silt loam; moderate very coarse prismatic structure; firm; few fine roots along faces of peds; few medium distinct grayish brown (10YR 5/2) streaks; neutral; gradual wavy boundary.

2C3—68 to 78 inches (172 to 198 cm); yellowish brown (10YR 5/6) very channery silt loam; massive; firm; 70 percent sandstone channers; neutral.

**SOIL TYPE**.....**ZANESVILLE (TAXADJUNCT)** **PEDON #** .....**S86KY-139-10-(1-7)**
**LOCATION** ..... **LIVINGSTON COUNTY, KENTUCKY** **GENERAL METHODS** .....**1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | | | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-15 | Ap | 6.2 | 77.8 | 16.0 | 0.6 | 0.5 | 0.4 | 1.1 | 3.6 | | | | | 2.6 | 81.4 | sil | | | |
| 15-46 | Bt | 2.7 | 70.3 | 27.0 | 0 | 0.1 | 0.1 | 0.6 | 1.9 | | | | | 0.8 | 72.2 | sil/sicl | | | |
| 46-56 | Bx/E | 4.4 | 69.4 | 26.2 | 0 | 0.3 | 0.3 | 0.8 | 3.0 | | | | | 1.4 | 72.4 | sil | | | |
| 56-89 | Btx | 3.9 | 70.6 | 25.9 | 0.1 | 0.1 | 0.7 | 1.4 | 1.6 | | | | | 1.3 | 72.2 | sil | | | |
| 89-124 | 2C1 | 12.4 | 64.4 | 23.2 | 0.1 | 0.4 | 0.9 | 8.2 | 2.8 | | | | | 9.6 | 67.2 | sil | | | |
| 124-172 | 2C2 | 22.6 | 56.3 | 21.1 | 0.2 | 0.6 | 1.4 | 16.7 | 3.7 | | | | | 18.9 | 60.0 | sil | | | |
| 172-198 | 2C3 | 48.3 | 27.5 | 24.2 | 10.4 | 4.2 | 3.8 | 25.4 | 4.5 | | | | | 43.8 | 32.0 | l/scl | | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-15 | 6.1 | | 7.0 | 5.3 | 0.9 | 0.2 | 0.3 | 6.7 | 6.9 | 96 | 42 | | 9.1 | 15.8 | | | 1.9 | 95 | 9 |
| 15-46 | 5.6 | | 6.3 | 4.2 | 2.1 | 0.3 | 0.2 | 6.8 | 7.7 | 87 | 49 | | 7.1 | 13.9 | | | 0.6 | 101 | 3 |
| 46-56 | 5.0 | | 6.2 | 2.1 | 2.3 | 0.2 | 0.3 | 4.9 | 8.0 | 61 | 26 | | 14.1 | 19.0 | | | 0.3 | 94 | 5 |
| 56-89 | 5.5 | | 6.5 | 2.1 | 2.7 | 0.2 | 0.5 | 5.5 | 9.4 | 58 | 32 | | 11.6 | 17.1 | | | 0.2 | 93 | 5 |
| 89-124 | 6.1 | | 6.9 | 2.6 | 2.8 | 0.1 | 0.7 | 6.2 | 7.3 | 85 | 63 | | 3.7 | 9.9 | | | 0.2 | 62 | 5 |
| 124-172 | 6.8 | | 7.0 | 3.2 | 3.2 | 0.1 | 0.7 | 7.2 | 8.0 | 90 | 89 | | 0.9 | 8.1 | | | 0.6 | 73 | 8 |
| 172-198 | 6.4 | | 6.9 | 2.4 | 2.0 | 0.1 | 0.6 | 5.1 | 8.1 | 63 | 80 | | 1.2 | 6.3 | | | 0.2 | 77 | 7 |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |
| Bt | 82 | 8 | 7 | | 3 | | | | | | | | | | | | | | |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Zanesville, silt loam (Taxadjunct)

**Pedon #:** SKY98-111-01-(1-7)

**Classification:** Fine-silty, mixed, semiactive, mesic Fragic Hapludults

**Location:** Jefferson Co., KY; typical pedon of Jefferson Hill Road area in the Jefferson Memorial Forest, about 300' south of parking spot, then 250' up the footslope after crossing branch; USGS Valley Station topographic quadrangle.

**Parent Material:** Moderately weathered local colluvium

**Vegetation:**

**Landscape Position:** Knob on upland

**Drainage:**

**Moisture when sampled:**

**Sampling Date:**

**Permeability:**

**Slope:** 15 percent

**Described by:**

Oe—1 to 0 inches.

A—0 to 4 inches; dark grayish brown (10YR 4/2) silt loam; moderate fine and medium granular structure; very friable; many fine to coarse roots throughout; very strongly acid; abrupt wavy boundary.

BE—4 to 11 inches; yellowish brown (10YR 5/4) silt loam; moderate fine and medium subangular blocky structure, very friable; common fine to coarse roots throughout; very strongly acid; clear wavy boundary.

Bt1—11 to 26 inches; 60 percent strong brown (7.5YR 4/6) and 40 percent yellowish brown (10YR 5/4) silt loam; moderate medium subangular blocky structure; friable; few fine to coarse roots throughout; common distinct clay films; very strongly acid; clear wavy boundary.

Bt2—26 to 32 inches; strong brown (7.5YR 4/6) silt loam; moderate medium subangular blocky structure; friable; few fine to coarse roots throughout; many distinct clay films; many medium yellowish brown (10YR 5/4) iron depletions and common medium light brownish gray (10YR 6/2) iron depletions; very strongly acid; clear wavy boundary.

2Btx1—32 to 40 inches; strong brown (7.5YR 4/6) silt loam; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; firm; few fine roots between peds; many distinct clay films and silt coats on faces of peds and sand coats on faces of peds; many medium gray (10YR 6/1) iron depletions and many medium light brownish gray (10YR 6/2) iron depletions; very strongly acid; clear wavy boundary.

2Btx2—40 to 53 inches; strong brown (7.5YR 4/6) silt loam; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; firm; few fine roots between peds; common distinct clay films and silt coats on faces of peds and sand coats on faces of peds; many medium light brownish gray (2.5Y 6/2) iron depletions and many medium gray (10YR 6/1) iron depletions; 5 percent siltstone channers; very strongly acid; clear wavy boundary.

2Bt—53 to 63 inches; strong brown (7.5YR 5/6) silt loam; weak fine and medium subangular blocky structure; friable; few distinct clay films and silt coats on faces of peds and sand coats on faces of peds; many medium gray (10YR 6/1)iron depletions; 5 percent siltstone channers; very strongly acid.

**SOIL TYPE.....ZANESVILLE (TAXADJUNCT)** **PEDON # .....S98KY-111-001-(1-7)**
**LOCATION .....JEFFERSON__ _ COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | | | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | Sand Coarser Than VF (2-0.1) | VFS Plus Silt (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-4 | A | 10.0 | 81.8 | 8.2 | 1.4 | 2.4 | 1.8 | 1.5 | 2.9 | | | | | | | sil | 2.2 | | |
| 4-11 | BE | 8.6 | 79.8 | 11.6 | 1.5 | 1.3 | 1.1 | 1.3 | 3.4 | | | | | | | sil | 0.2 | | |
| 11-26 | Bt1 | 6.4 | 74.6 | 19.0 | 0.3 | 1.0 | 1.2 | 0.5 | 3.4 | | | | | | | sil | 0.2 | | |
| 26-32 | Bt2 | 6.5 | 66.3 | 27.2 | 0.1 | 0.5 | 0.5 | 2.0 | 3.4 | | | | | | | sil | 0.4 | | |
| 32-40 | 2Btx1 | 6.8 | 68.1 | 25.1 | 0.2 | 0.9 | 1.1 | 1.0 | 3.6 | | | | | | | sil | 0.3 | | |
| 40-53 | 2Btx2 | 11.0 | 63.4 | 25.6 | 0.5 | 1.6 | 1.2 | 1.2 | 6.5 | | | | | | | sil/sicl | 8.1 | | |
| 53-63 | 2Bt | 15.9 | 56.2 | 27.9 | 1.3 | 1.9 | 1.3 | 1.6 | 9.8 | | | | | | | sil/sicl | 3.3 | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-4 | | | | 0.3 | 0.3 | 0.2 | 0.1 | 0.9 | 8.1 | 11 | 7 | | 11.6 | 12.5 | | | | | |
| 4-11 | | | | 0.1 | 0.1 | 0.1 | 0.1 | 0.4 | 5.1 | 8 | 5 | | 6.9 | 7.3 | | | | | |
| 11-26 | | | | 0.3 | 0.8 | 0.2 | 0.1 | 1.4 | 6.6 | 21 | 12 | | 10.6 | 12.0 | | | | | |
| 26-32 | | | | 0.4 | 2.8 | 0.2 | 0.1 | 3.5 | 13.2 | 26 | 22 | | 12.2 | 15.7 | | | | | |
| 32-40 | | | | 0.3 | 3.5 | 0.2 | 0.1 | 4.1 | 14.7 | 28 | 23 | | 13.9 | 18.0 | | | | | |
| 40-53 | | | | 0.3 | 4.0 | 0.2 | 0.1 | 4.6 | 14.7 | 31 | 25 | | 14.1 | 18.7 | | | | | |
| 53-63 | | | | 0.6 | 4.0 | 0.1 | 0.2 | 4.9 | 14.7 | 33 | 28 | | 12.5 | 17.4 | | | | | |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

# Zanesville, silt loam

**Pedon #:** SKY98-111-02-(1-8)

**Classification:** Fine-silty, mixed, semiactive, mesic Fragic Oxyaquic Hapludalfs

**Location:** Jefferson Co., Ky; typical pedon of Bearcamp Road section of the Jefferson Memorial Forest; USGS Valley Station topographic quadrangle.

**Parent Material:** Moderately weathered local colluvium

**Vegetation:**

**Landscape Position:** Knob on upland

**Drainage:**

**Moisture when sampled:**

**Sampling Date:**

**Permeability:**

**Slope:** 17 percent

**Described by:**

Oe—1 to 0 inches.

A—0 to 4 inches; brown (10YR 4/3) silt loam; moderate fine and medium granular structure; very friable; many fine to coarse roots throughout; very strongly acid; abrupt wavy boundary.

BE—4 to 9 inches; yellowish brown (10YR 5/4) silt loam; moderate fine and medium subangular blocky structure, friable; common fine to coarse roots throughout; very strongly acid; abrupt wavy boundary.

Bt1—9 to 16 inches; 60 percent strong brown (7.5YR 4/6) and 40 percent yellowish brown (10YR 5/6) silt loam; moderate medium subangular blocky structure; friable; few fine to coarse roots throughout; common distinct clay films; very strongly acid; clear wavy boundary.

Bt2—16 to 28 inches; strong brown (7.5YR 4/6) silt loam; moderate medium subangular blocky structure; friable; few fine to coarse roots throughout; many distinct clay films; very strongly acid; clear wavy boundary.

Bt3—28 to 34 inches; strong brown (7.5YR 5/6) silt loam; moderate medium subangular blocky structure; friable; few fine and medium roots throughout; many distinct clay films; common medium yellowish brown (10YR 5/4) iron depletions; very strongly acid; clear wavy boundary.

2Btx1—34 to 44 inches; strong brown (7.5YR 4/6) silt loam; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; firm; few fine roots between peds; many distinct clay films; many medium light brownish gray (2.5Y 6/2) iron depletions and many medium light yellowish brown (10YR 6/4) iron depletions; 2 percent siltstone channers; very strongly acid; clear wavy boundary.

2Btx2—44 to 50 inches; strong brown (7.5YR 5/6) silt loam; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; firm; few fine roots between peds; many distinct clay films; many medium light brownish gray (10YR 6/2)iron depletions; 8 percent siltstone channers; very strongly acid; clear wavy boundary.

2Bt—50 to 63 inches; strong brown (7.5YR 5/6) and light brownish gray (10YR 6/2) and yellowish brown (10YR 5/4) silt loam; moderate fine and medium subangular blocky structure; firm; few fine roots between peds; many distinct clay films; very strongly acid.

**SOIL TYPE..... ZANESVILLE** **PEDON # .....S98KY-111-002-(1-8)**
**LOCATION ..... JEFFERSON COUNTY, KENTUCKY** **GENERAL METHODS .....1A1 1A2 1B1B 2A1**

| | | Particle Size Class and Particle Diameter (mm) | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3A1 | | | | | | | | | | | | | | | | 2A2 | | 3B1a |
| | | Total | | | Sand | | | | | Silt | | | | Sand Coarser Than VF | VFS Plus Silt | | | Coarse Fragments | | |
| Depth in | Horizon | Sand (2-0.05) | Silt (0.05-0.002) | Int. IV Clay <0.002 | Very Coarse (2-1) | Coarse (1-0.5) | Medium (0.5-0.25) | Fine (0.25-.01) | Very Fine (0.1-0.05) | (0.05-0.02) | Int. III (.02-.002) | Int. II (0.2-0.02) | Int. I (2-0.2) | (2-0.1) | (0.1-0.002) | Textural Class | >2 Pct | 2-19 Pct of <76mm | 19-76 Pct of <76mm |
| 0-4 | A | 18.6 | 74.3 | 7.1 | 2.4 | 3.0 | 2.5 | 3.0 | 7.7 | | | | | | | sil | 0.4 | | |
| 4-9 | BE | 14.2 | 75.1 | 10.7 | 0.8 | 1.2 | 1.2 | 1.9 | 9.1 | | | | | | | sil | 0 | | |
| 9-16 | Bt1 | 8.2 | 69.4 | 22.4 | 0.1 | 0.4 | 0.7 | 1.2 | 5.8 | | | | | | | sil | 1.0 | | |
| 16-28 | Bt2 | 6.3 | 66.6 | 27.1 | 0.1 | 0.2 | 0.4 | 0.7 | 4.9 | | | | | | | sil | 0 | | |
| 28-34 | Bt3 | 5.5 | 73.3 | 21.2 | 0.1 | 0.3 | 0.4 | 0.6 | 4.1 | | | | | | | sil | 0 | | |
| 34-44 | 2Btx1 | 4.7 | 76.6 | 18.7 | 0.1 | 0.3 | 0.4 | 0.3 | 3.6 | | | | | | | sil | 0.4 | | |
| 44-50 | 2Btx2 | 4.8 | 73.3 | 21.9 | 0.6 | 0.7 | 0.7 | 0.5 | 2.3 | | | | | | | sil | 2.6 | | |
| 50-63 | 2Bt | 2.5 | 60.3 | 37.2 | 0.2 | 0.4 | 0.2 | 0.5 | 1.2 | | | | | | | sicl | 1.6 | | |
| | | pH | | | Exchangeable Bases (5A1) | | | | | Base Saturation | | 6G1x | 6H1a | 5A3a | | 6N7 | 6A1a | 60sz | 6S6 |
| Depth in | 8C1a (1:1) $H_2O$ | 8C1c (1:1) KCl | 8D7 SMP Buff. | 6N2z Ca meq/100gm | 602z Mg meq/100gm | 602z K meq/100gm | 6P2z Na meq/100gm | 5B1a TEB meq/100gm | 5A1z CEC meq/100gm | 5C1 Pct | 5C3 Pct | H+Al meq/100 gm | EA meq/100gm | SC meq/100gm | $Fe_2O_3$ Pct | $CaCO_3$ Eq. Pct | Organic Matter Pct | K ppm | P Bray No.1 ppm |
| 0-4 | | | | 0.8 | 0.2 | 0.2 | 0.1 | 1.3 | 9.6 | 14 | 9 | | 13.4 | 14.7 | | | | | |
| 4-9 | | | | 0.3 | 0.1 | 0.1 | 0.1 | 0.6 | 5.9 | 10 | 6 | | 8.7 | 9.3 | | | | | |
| 9-16 | | | | 0.4 | 0.3 | 0.2 | 0.1 | 1.0 | 9.6 | 11 | 7 | | 12.9 | 13.9 | | | | | |
| 16-28 | | | | 1.0 | 1.2 | 0.2 | 0.1 | 2.5 | 10.3 | 24 | 15 | | 13.8 | 16.3 | | | | | |
| 28-34 | | | | 0.7 | 2.0 | 0.2 | 0.1 | 3.0 | 10.3 | 29 | 19 | | 12.9 | 15.9 | | | | | |
| 34-44 | | | | 0.6 | 3.0 | 0.1 | 0.1 | 3.8 | 10.3 | 37 | 25 | | 11.7 | 15.5 | | | | | |
| 44-50 | | | | 1.1 | 4.9 | 0.1 | 0.2 | 6.3 | 13.2 | 48 | 34 | | 12.1 | 18.4 | | | | | |
| 50-63 | | | | 3.7 | 9.9 | 0.2 | 0.8 | 14.6 | 19.1 | 76 | 59 | | 10.0 | 24.6 | | | | | |
| Mineralogical Analysis—Estimated Percentages in Various Size Fractions | | | | | | | | | | | | | | | | | | | |
| Horizon | Sand + Silt | | | | | | | | Clay | | | | | | | | | | |
| | Q | F | MI | K | CL | INT | RE | CA | SM | V | HIV | CL | INT | K | MI | Q | GI | GO | F |

*Minerals: SM = smectite; V = vermiculite; HIV = hydroxyinterlayered vermiculite; CL = chlorite; INT = interstratified; K= kaolinite; MI = mica; Q = quartz; GO = goethite; GI = gibbsite; F = feldspars; CA = calcite; RE = other resistant minerals*

*Mention or display of a trademark, proprietary product, or firm in text or figures does not constitute an endorsement and does not imply approval to the exclusion of other suitable products or firms.*

UNIVERSITY
OF KENTUCKY
College of Agriculture

The College of Agriculture is an Equal Opportunity Organization
Issued 1-2006