PEDON DESCRIPTION -- NEON Site LAJA

Print Date: Apr 16 2018
Description Date: Aug 9 2017
Describer: Samuel Rios
NEON Plot ID: LAJA_001
Site ID: S2017PR079001
Pedon ID: S2017PR079001
Site Note:
Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 18N0519
Soil Name as Described/Sampled: Cartagena
Classification: Fine, mixed, superactive, isohyperthermic Sodic Haplusterts
Soil Name as Correlated:
Classification:
Pedon Type:
Pedon Purpose:
Taxon Kind: series
Associated Soils: Aguirre, Fe, Fraternidad, Guanica, Paso Seco, Santa Isabel
Physiographic Division: Caribbean Basin
Physiographic Province: Caribbean Islands Province
Physiographic Section: Greater Antilles (Puerto Rico)
State Physiographic Area:
Local Physiographic Area: Lajas
Geomorphic Setting: on talf coastal plain
on talf basin floor
Upslope Shape: linear
Cross Slope Shape: linear
Particle Size Control Section: 29 to 100 cm.
Description origin: NASIS
Diagnostic Features: slickensides 45 to 100 cm.

Country: Puerto Rico
State: Puerto Rico
County: Lajas
MLRA: 273 -- Semiarid Coastal Plains
Soil Survey Area: PR787 -- San German Area, Southwestern Puerto Rico
Map Unit: CeA -- Cartagena clay, 0 to 2 percent slopes
Pit Location:
Quad Name:
Std Latitude: 18.0243800
Std Longitude: -67.0770000
Latitude:
Longitude:
Datum: WGS84
UTM Zone:
UTM Easting:
UTM Northing:
Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover:
Existing Vegetation:
Parent Material: clayey marine deposits derived from igneous, metamorphic and sedimentary rock
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2017PR079001 **Pedon ID:** S2017PR079001

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
1.0			25.2	26.7	23.3	1,175	365	somewhat poorly		

Ap--0 to 29 centimeters (0.0 to 11.4 inches); clay, very dark grayish brown (10YR 3/2) broken face, moist; moderate coarse subangular blocky structure; extremely hard, very firm, slightly sticky, very plastic; very fine roots throughout and fine roots throughout; very fine tubular and fine tubular pores; 30 percent faint pressure faces; 1 percent very fine 10YR 4/6) masses of oxidized iron On faces of peds and 1 percent fine 10YR 4/6) masses of oxidized iron On faces of peds and 1 percent medium 10YR 2/1) iron-manganese masses; 10 percent nonflat rounded very strongly cemented 2 to 20-millimeter Mixed rock fragments; noneffervescent; neutral, pH 7.0; abrupt wavy boundary. Lab sample # 18N02652

2BA--29 to 45 centimeters (11.4 to 17.7 inches); sandy clay, 50 percent dark grayish brown (10YR 4/2) broken face and 50 percent very dark gray (10YR 3/1) broken face, moist; moderate coarse subangular blocky structure; extremely hard, very firm, moderately sticky, very plastic; very fine roots throughout and fine roots throughout; fine irregular and fine tubular pores; 20 percent medium 10YR 4/6) masses of oxidized iron On faces of peds and 20 percent fine 10YR 4/6) masses of oxidized iron On faces of peds; 10 percent nonflat rounded very strongly cemented 2 to 20-millimeter Mixed rock fragments; noneffervescent; moderately alkaline, pH 8.0; abrupt wavy boundary. Lab sample # 18N02653

3Bss--45 to 100 centimeters (17.7 to 39.4 inches); clay, very dark gray (10YR 3/1) broken face, moist; strong coarse wedge, and strong very coarse wedge structure; extremely hard, very firm, moderately sticky, very plastic; fine roots throughout; very fine vesicular and medium irregular and fine vesicular and fine irregular pores; 60 percent prominent slickensides (pedogenic); 5 percent medium 7.5YR 5/8) and 10YR 5/8) masses of oxidized iron On faces of peds and 5 percent fine 7.5YR 5/8) and 10YR 5/8) masses of oxidized iron On faces of peds; 10 percent nonflat rounded very strongly cemented 2 to 20-millimeter Mixed rock fragments; noneffervescent; moderately alkaline, pH 8.0. Lab sample # 18N02654

PEDON DESCRIPTION -- NEON Site LAJA

Print Date: Apr 16 2018
Description Date: Aug 8 2017
Describer: Manuel Matos
NEON Plot ID: LAJA_002
Site ID: S2017PR079002

Pedon ID: S2017PR079002

Site Note:
Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 18N0520
Soil Name as Described/Sampled: Santa Isabel
Classification: Fine, smectitic, isohyperthermic Typic Haplusterts
Soil Name as Correlated:
Classification:
Pedon Type:
Pedon Purpose:
Taxon Kind: series
Associated Soils: Aguirre, Fraternidad, San Anton
Physiographic Division: Caribbean Basin
Physiographic Province: Caribbean Islands Province
Physiographic Section: Greater Antilles (Puerto Rico)
State Physiographic Area:

Local Physiographic Area: Lajas
Geomorphic Setting: on talf coastal plain
on talf basin floor
Upslope Shape: linear
Cross Slope Shape: linear
Particle Size Control Section: 25 to 100 cm.
Description origin: NASIS
Diagnostic Features: slickensides 18 to 100 cm.

Country: Puerto Rico
State: Puerto Rico
County: Lajas
MLRA: 273 -- Semiarid Coastal Plains
Soil Survey Area: PR787 -- San German Area, Southwestern Puerto Rico
Map Unit: SiA -- Santa Isabel clay, 0 to 2 percent slopes
Pit Location:
Quad Name:
Std Latitude: 18.0352400
Std Longitude: -67.0735200

Latitude:
Longitude:
Datum: WGS84
UTM Zone:
UTM Easting:
UTM Northing:

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover:
Existing Vegetation:
Parent Material: clayey marine deposits derived from igneous, metamorphic and sedimentary rock
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2017PR079002 **Pedon ID:** S2017PR079002

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
1.0			25.2	26.7	23.3	1,175	365	moderately well		

Ap--0 to 18 centimeters (0.0 to 7.1 inches); very dark gray (10YR 3/1) broken face clay, very dark brown (10YR 2/2) broken face, moist; moderate medium angular blocky, and moderate fine angular blocky structure; extremely hard, extremely firm, moderately sticky, very plastic; very fine roots throughout and fine roots throughout; very fine tubular and fine vesicular and fine tubular pores; 0 percent unspecified fragments; clear smooth boundary. Lab sample # 18N02655

ABss1--18 to 44 centimeters (7.1 to 17.3 inches); clay, very dark gray (10YR 3/1) broken face, moist; strong very coarse prismatic parts to strong very coarse subangular blocky, and strong very coarse prismatic parts to strong coarse subangular blocky structure; extremely hard, extremely firm, moderately sticky, very plastic; very fine roots throughout and fine roots throughout; very fine tubular and fine vesicular and fine tubular pores; 15 percent prominent 10YR 3/1), moist, slickensides (pedogenic) on all faces of peds; 0 percent unspecified fragments; gradual wavy boundary. Lab sample # 18N02656

ABss2--44 to 75 centimeters (17.3 to 29.5 inches); clay, black (10YR 2/1) broken face, moist; strong very coarse prismatic parts to strong very coarse subangular blocky, and strong very coarse prismatic parts to strong coarse subangular blocky structure; extremely hard, extremely firm, moderately sticky, very plastic; fine roots throughout; very fine tubular and very fine irregular pores; 25 percent prominent 10YR 2/1), moist, slickensides (pedogenic) on all faces of peds; 1 percent fine prominent irregular 10YR 5/6) masses of oxidized iron On faces of peds and 1 percent medium prominent irregular 10YR 5/6) masses of oxidized iron On faces of peds; 0 percent unspecified fragments; gradual wavy boundary. Lab sample # 18N02657

Bss--75 to 100 centimeters (29.5 to 39.4 inches); clay, very dark gray (10YR 3/1) broken face, moist; weak very coarse prismatic parts to strong very coarse subangular blocky, and weak very coarse prismatic parts to strong coarse subangular blocky structure; extremely hard, extremely firm, moderately sticky, very plastic; very fine roots throughout; very fine tubular and very fine irregular pores; 25 percent prominent 10YR 3/1), moist, slickensides (pedogenic) on all faces of peds; 5 percent fine prominent irregular 10YR 5/6) masses of oxidized iron Throughout; 0 percent unspecified fragments. Lab sample # 18N02658

PEDON DESCRIPTION -- NEON Site LAJA

Print Date: Apr 16 2018
Description Date: Aug 10 2017
Describer: Samuel Rios
NEON Plot ID: LAJA_004
Site ID: S2017PR079004
Pedon ID: S2017PR079004
Site Note:
Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 18N0521
Soil Name as Described/Sampled: Cartagena
Classification: Fine, mixed, superactive, isohyperthermic Sodic Haplusterts
Soil Name as Correlated:
Classification:
Pedon Type:
Pedon Purpose:
Taxon Kind: series
Associated Soils: Aguirre, Fe, Fraternidad, Guanica, Paso Seco, Santa Isabel
Physiographic Division: Caribbean Basin
Physiographic Province: Caribbean Islands Province
Physiographic Section: Greater Antilles (Puerto Rico)
State Physiographic Area:
Local Physiographic Area: Lajas
Geomorphic Setting: on talf coastal plain
on talf basin floor
Upslope Shape: linear
Cross Slope Shape: linear
Particle Size Control Section: 35 to 100 cm.
Description origin: NASIS
Diagnostic Features: slickensides 35 to 100 cm.

Country: Puerto Rico
State: Puerto Rico
County: Lajas
MLRA: 273 -- Semiarid Coastal Plains
Soil Survey Area: PR787 -- San German Area, Southwestern Puerto Rico
Map Unit: CeA -- Cartagena clay, 0 to 2 percent slopes
Pit Location:
Quad Name:
Std Latitude: 18.0175900
Std Longitude: -67.0811200
Latitude:
Longitude:
Datum: WGS84
UTM Zone:
UTM Easting:
UTM Northing:
Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover:
Existing Vegetation:
Parent Material: clayey marine deposits derived from igneous, metamorphic and sedimentary rock
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2017PR079004 **Pedon ID:** S2017PR079004

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
1.0			25.2	26.7	23.3	1,175	365	somewhat poorly		

Ap--0 to 35 centimeters (0.0 to 13.8 inches); clay, black (10YR 2/1) broken face, moist; strong medium subangular blocky, and strong coarse subangular blocky structure; extremely hard, very firm, moderately sticky, very plastic; very fine roots throughout and fine roots throughout; fine irregular and fine tubular pores; 5 percent nonflat rounded very strongly cemented 2 to 20-millimeter Mixed rock fragments; noneffervescent; neutral, pH 7.0; clear wavy boundary. Lab sample # 18N02659

Bss--35 to 58 centimeters (13.8 to 22.8 inches); clay; strong very coarse subangular blocky, and strong coarse subangular blocky structure; extremely hard, very firm, moderately sticky, very plastic; very fine roots throughout and fine roots throughout; medium irregular and fine tubular and fine irregular pores; 30 percent prominent slickensides (pedogenic); 5 percent nonflat rounded very strongly cemented 2 to 20-millimeter Mixed rock fragments; noneffervescent; moderately alkaline, pH 8.0; clear wavy boundary. Lab sample # 18N02660

Bkssz--58 to 100 centimeters (22.8 to 39.4 inches); clay, black (10YR 2/1) broken face, moist; strong very coarse wedge, and strong coarse wedge structure; extremely hard, very firm, moderately sticky, very plastic; very fine roots throughout and fine roots throughout; medium irregular and fine irregular pores; 30 percent slickensides (pedogenic); 1 percent fine 10YR 5/8) masses of oxidized iron On faces of peds; 1 percent fine 10YR 6/4), moist, carbonate masses on faces of peds and 10 percent fine 10YR 8/1), dry, salt crystals and 10 percent medium 10YR 8/1), dry, salt crystals; 5 percent nonflat rounded very strongly cemented 2 to 20-millimeter Mixed rock fragments; noneffervescent; moderately alkaline, pH 8.0. Lab sample # 18N02661

PEDON DESCRIPTION -- NEON Site LAJA

Print Date: Apr 16 2018
Description Date: Aug 10 2017
Describer: Greg Taylor
NEON Plot ID: LAJA_005
Site ID: S2017PR079005

Pedon ID: S2017PR079005

Site Note:
Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 18N0522
Soil Name as Described/Sampled: Cartagena
Classification: Fine, mixed, superactive, isohyperthermic Sodic Haplusterts
Soil Name as Correlated:
Classification:
Pedon Type:
Pedon Purpose:
Taxon Kind: series
Associated Soils: Aguirre, Fe, Fraternidad, Guanica, Paso Seco, Santa Isabel

Physiographic Division: Caribbean Basin
Physiographic Province: Caribbean Islands Province
Physiographic Section: Greater Antilles (Puerto Rico)
State Physiographic Area:

Local Physiographic Area: Lajas
Geomorphic Setting: on talf coastal plain
on talf basin floor
Upslope Shape: linear
Cross Slope Shape: linear
Particle Size Control Section: 25 to 100 cm.
Description origin: NASIS

Diagnostic Features: slickensides 45 to 82 cm.
lithologic discontinuity 82 to 100 cm.

Country: Puerto Rico
State: Puerto Rico
County: Lajas
MLRA: 273 -- Semiarid Coastal Plains
Soil Survey Area: PR787 -- San German Area, Southwestern Puerto Rico
Map Unit: CeA -- Cartagena clay, 0 to 2 percent slopes
Pit Location:
Quad Name:
Std Latitude: 18.0255200
Std Longitude: -67.0849500

Latitude:
Longitude:
Datum: WGS84
UTM Zone:
UTM Easting:
UTM Northing:

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover:
Existing Vegetation:
Parent Material: clayey marine deposits derived from igneous, metamorphic and sedimentary rock
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2017PR079005 **Pedon ID:** S2017PR079005

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
0.0			25.2	26.7	23.3	1,175	365	somewhat poorly		

Ap--0 to 22 centimeters (0.0 to 8.7 inches); clay, very dark brown (10YR 2/2) broken face, moist; moderate medium subangular blocky parts to moderate medium granular, and moderate medium subangular blocky parts to moderate coarse granular, and moderate coarse subangular blocky parts to moderate medium granular, and moderate coarse subangular blocky parts to moderate coarse granular structure; firm, moderately sticky, very plastic; very fine roots throughout and fine roots throughout; very fine tubular and very fine irregular and fine vesicular pores; 0 percent unspecified fragments; noneffervescent; clear smooth boundary. Lab sample # 18N02662

AB--22 to 45 centimeters (8.7 to 17.7 inches); clay, very dark grayish brown (10YR 3/2) broken face, moist; moderate medium subangular blocky parts to moderate medium granular, and moderate medium subangular blocky parts to moderate coarse granular, and moderate coarse subangular blocky parts to moderate medium granular, and moderate coarse subangular blocky parts to moderate coarse granular structure; firm, moderately sticky, very plastic; very fine roots throughout and medium roots throughout and fine roots throughout; very fine vesicular pores; 0 percent unspecified fragments; noneffervescent; clear wavy boundary. Lab sample # 18N02663

ABss--45 to 82 centimeters (17.7 to 32.3 inches); clay, black (10YR 2/1) broken face, moist; strong medium angular blocky, and strong coarse angular blocky structure; friable, moderately sticky, very plastic; very fine roots throughout and fine roots throughout; very fine tubular and very fine vesicular pores; 0 percent unspecified fragments; noneffervescent; clear wavy boundary. Lab sample # 18N02664. 1/16" - 1/2" cracks

2C--82 to 100 centimeters (32.3 to 39.4 inches); sandy clay loam, dark yellowish brown (10YR 4/4) broken face, moist; massive; firm, moderately sticky, very plastic; very fine roots throughout and very fine roots throughout and fine roots throughout and fine roots throughout; very fine vesicular and very fine tubular pores; 0 percent unspecified fragments; noneffervescent. Lab sample # 18N02665. pockets of >15% gravel

PEDON DESCRIPTION -- NEON Site LAJA

Print Date: Apr 16 2018
Description Date: Aug 8 2017
Describer: Manuel Matos
NEON Plot ID: LAJA_009
Site ID: S2017PR079009

Pedon ID: S2017PR079009

Site Note:
Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 18N0523
Soil Name as Described/Sampled: Fraternidad
Classification: Fine, smectitic, isohyperthermic Typic Haplusterts
Soil Name as Correlated:
Classification:
Pedon Type:
Pedon Purpose:
Taxon Kind: series
Associated Soils: Aguirre, Fe, Guanica, Jacana, Paso Seco, San Anton, Santa Isabel
Physiographic Division: Caribbean Basin
Physiographic Province: Caribbean Islands Province
Physiographic Section: Greater Antilles (Puerto Rico)
State Physiographic Area:

Local Physiographic Area: Lajas
Geomorphic Setting: on talf coastal plain
on talf basin floor
Upslope Shape: convex
Cross Slope Shape: convex
Particle Size Control Section: 25 to 100 cm.
Description origin: NASIS
Diagnostic Features: slickensides 29 to 100 cm.

Country: Puerto Rico
State: Puerto Rico
County: Lajas
MLRA: 273 -- Semiarid Coastal Plains
Soil Survey Area: PR787 -- San German Area, Southwestern Puerto Rico
Map Unit: FrA -- Fraternidad clay, 0 to 2 percent slopes
Pit Location:
Quad Name:
Std Latitude: 18.0321400
Std Longitude: -67.0693300

Latitude:
Longitude:
Datum: WGS84
UTM Zone:
UTM Easting:
UTM Northing:

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover:
Existing Vegetation:
Parent Material: clayey marine deposits derived from igneous, metamorphic and sedimentary rock
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2017PR079009 **Pedon ID:** S2017PR079009

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
2.0			25.2	26.7	23.3	1,175	365	moderately well		

Ap--0 to 12 centimeters (0.0 to 4.7 inches); clay, dark brown (10YR 3/3) broken face, moist; weak fine granular structure; firm, moderately sticky, very plastic; very fine roots throughout and fine roots throughout; 2 percent nonflat rounded very strongly cemented 2 to 5-millimeter Mixed rock fragments; noneffervescent; neutral, pH 7.0, pH indicator solutions; abrupt smooth boundary. Lab sample # 18N02666

AB--12 to 29 centimeters (4.7 to 11.4 inches); clay, 60 percent very dark grayish brown (10YR 3/2) broken face and 40 percent dark yellowish brown (10YR 4/6) broken face, moist; moderate medium prismatic structure; firm, moderately sticky, very plastic; very fine roots throughout and medium roots throughout; very fine tubular pores; 2 percent nonflat rounded very strongly cemented 5 to 10-millimeter Mixed rock fragments and 3 percent nonflat rounded very strongly cemented 2 to 5-millimeter Mixed rock fragments; noneffervescent; slightly alkaline, pH 7.5, pH indicator solutions; clear wavy boundary. Lab sample # 18N02667

Bss1--29 to 61 centimeters (11.4 to 24.0 inches); clay, very dark grayish brown (10YR 3/2) broken face, moist; moderate medium prismatic, and moderate coarse prismatic structure; very firm, moderately sticky, very plastic; very fine roots throughout; medium tubular pores; 15 percent faint 10YR 3/2), moist, slickensides (pedogenic); 2 percent medium prominent 2.5YR 3/6), moist, masses of oxidized iron with clear boundaries Throughout and 3 percent fine prominent 2.5YR 3/6), moist, masses of oxidized iron with clear boundaries Throughout; 2 percent flat rounded very strongly cemented 2 to 5-millimeter Mixed rock fragments; noneffervescent; neutral, pH 7.0, pH indicator solutions; clear wavy boundary. Lab sample # 18N02668

Bss2--61 to 83 centimeters (24.0 to 32.7 inches); clay, olive brown (2.5Y 4/4) broken face, moist; moderate coarse subangular blocky structure; firm, moderately sticky, very plastic; fine roots throughout; fine tubular pores; 20 percent faint 2.5Y 4/4), moist, slickensides (pedogenic); 1 percent fine prominent 7.5YR 5/6), moist, masses of oxidized iron with clear boundaries Throughout; 1 percent nonflat rounded very strongly cemented 2 to 5-millimeter Mixed rock fragments; noneffervescent; moderately alkaline, pH 8.0, pH indicator solutions; gradual irregular boundary. Lab sample # 18N02669. Carbonates in pockets

Bkss--83 to 100 centimeters (32.7 to 39.4 inches); clay, dark yellowish brown (10YR 4/4) broken face, moist; weak medium subangular blocky, and weak coarse subangular blocky structure; firm, moderately sticky, very plastic; very fine roots throughout; 20 percent faint 10YR 4/4), moist, slickensides (pedogenic); 1 percent fine prominent 7.5YR 5/6), moist, masses of oxidized iron with clear boundaries Throughout; 5 percent coarse prominent irregular 10YR 7/6), moist, carbonate masses and 5 percent medium prominent irregular 10YR 7/6), moist, carbonate masses; 3 percent nonflat rounded very strongly cemented 2 to 5-millimeter Mixed rock fragments; noneffervescent; moderately alkaline, pH 8.0, pH indicator solutions. Lab sample # 18N02670

PEDON DESCRIPTION -- NEON Site LAJA

Print Date: Apr 16 2018
Description Date: Aug 9 2017
Describer: Manuel Matos
NEON Plot ID: LAJA_010
Site ID: S2017PR079010

Pedon ID: S2017PR079010

Site Note:
Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 18N0524
Soil Name as Described/Sampled: Fraternidad
Classification: Fine, smectitic, isohyperthermic Typic Haplusterts
Soil Name as Correlated:
Classification:
Pedon Type:
Pedon Purpose:
Taxon Kind: series
Associated Soils: Aguirre, Fe, Guanica, Jacana, Paso Seco, San Anton, Santa Isabel
Physiographic Division: Caribbean Basin
Physiographic Province: Caribbean Islands Province
Physiographic Section: Greater Antilles (Puerto Rico)
State Physiographic Area:

Local Physiographic Area: Lajas
Geomorphic Setting: on talf coastal plain
on talf basin floor
Upslope Shape: concave
Cross Slope Shape: concave
Particle Size Control Section: 25 to 100 cm.
Description origin: NASIS
Diagnostic Features: to cm.
slickensides 19 to 100 cm.
calcic horizon 82 to 100 cm.

Country: Puerto Rico
State: Puerto Rico
County: Lajas
MLRA: 273 -- Semiarid Coastal Plains
Soil Survey Area: PR787 -- San German Area, Southwestern Puerto Rico
Map Unit: CeA -- Cartagena clay, 0 to 2 percent slopes
Pit Location:
Quad Name:
Std Latitude: 18.0263800
Std Longitude: -67.0828700

Latitude:
Longitude:
Datum: WGS84
UTM Zone:
UTM Easting:
UTM Northing:

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover:
Existing Vegetation:
Parent Material: clayey marine deposits derived from igneous, metamorphic and sedimentary rock
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2017PR079010 **Pedon ID:** S2017PR079010

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
0.0			25.2	26.7	23.3	1,175	365	moderately well		

Ap--0 to 19 centimeters (0.0 to 7.5 inches); clay, very dark grayish brown (10YR 3/2) broken face, moist; strong medium angular blocky, and strong coarse angular blocky structure; extremely hard, extremely firm, moderately sticky, very plastic; very fine roots throughout; very fine irregular and fine vesicular pores; 0 percent unspecified fragments; noneffervescent; moderately acid, pH 6.0; abrupt smooth boundary. Lab sample # 18N02671

ABss--19 to 48 centimeters (7.5 to 18.9 inches); clay, very dark gray (10YR 3/1) broken face, moist; strong medium angular blocky, and strong coarse angular blocky structure; extremely hard, extremely firm, moderately sticky, very plastic; very fine roots throughout and fine roots throughout; very fine irregular and fine vesicular pores; 0 percent unspecified fragments; noneffervescent; slightly acid, pH 6.5; gradual wavy boundary. Lab sample # 18N02672

Bss1--48 to 55 centimeters (18.9 to 21.7 inches); clay, dark yellowish brown (10YR 3/4) broken face, moist; 4 percent medium prominent (10YR 2/1) and 4 percent coarse prominent (10YR 2/1) mottles; strong very coarse angular blocky, and strong coarse angular blocky structure; extremely hard, extremely firm, moderately sticky, very plastic; very fine roots throughout; very fine irregular and very fine tubular pores; 60 percent prominent 10YR 4/4), moist, slickensides (pedogenic); 5 percent fine 10YR 5/6), moist, masses of oxidized iron Throughout and 5 percent medium 10YR 5/6), moist, masses of oxidized iron Throughout; 0 percent unspecified fragments; noneffervescent; slightly acid, pH 6.5; gradual wavy boundary. Lab sample # 18N02673

Bss2--55 to 82 centimeters (21.7 to 32.3 inches); clay, dark yellowish brown (10YR 4/4) broken face, moist; strong medium angular blocky, and strong coarse angular blocky structure; extremely hard, extremely firm, moderately sticky, very plastic; very fine roots throughout; very fine irregular pores; 50 percent prominent 10YR 4/4), moist, slickensides (pedogenic); 12 percent medium 10YR 5/6), moist, masses of oxidized iron Throughout and 13 percent fine 10YR 5/6), moist, masses of oxidized iron Throughout; 0 percent unspecified fragments; noneffervescent; neutral, pH 7.0; clear wavy boundary. Lab sample # 18N02674

Bkss--82 to 100 centimeters (32.3 to 39.4 inches); clay, strong brown (7.5YR 5/8) broken face, moist; moderate coarse angular blocky structure; extremely hard, extremely firm, moderately sticky, very plastic; very fine roots throughout; very fine vesicular and very fine tubular pores; 20 percent prominent 10YR 4/4), moist, slickensides (pedogenic); 4 percent fine spherical moderately cemented 5YR 2.5/1), moist, iron-manganese nodules Throughout and 4 percent medium spherical moderately cemented 5YR 2.5/1), moist, iron-manganese nodules Throughout; 7 percent coarse prominent carbonate masses and 8 percent medium prominent carbonate masses; 0 percent unspecified fragments; noneffervescent; slightly alkaline, pH 7.5. Lab sample # 18N02675

PEDON DESCRIPTION -- NEON Site LAJA

Print Date: Apr 16 2018
Description Date: Aug 10 2017
Describer: Samuel Rios
NEON Plot ID: LAJA_011
Site ID: S2017PR079011

Pedon ID: S2017PR079011

Site Note:
Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 18N0525
Soil Name as Described/Sampled: Cartagena
Classification: Fine, mixed, superactive, isohyperthermic Sodic Haplusterts
Soil Name as Correlated:
Classification:
Pedon Type:
Pedon Purpose:
Taxon Kind: series
Associated Soils: Aguirre, Fe, Fraternidad, Guanica, Paso Seco, Santa Isabel
Physiographic Division: Caribbean Basin
Physiographic Province: Caribbean Islands Province
Physiographic Section: Greater Antilles (Puerto Rico)
State Physiographic Area:
Local Physiographic Area: Lajas
Geomorphic Setting: on talf coastal plain
on talf basin floor
Upslope Shape: linear
Cross Slope Shape: convex
Particle Size Control Section: 28 to 100 cm.
Description origin: NASIS
Diagnostic Features: slickensides 28 to 100 cm.
gypsum accumulations 60 to 100 cm.

Country: Puerto Rico
State: Puerto Rico
County: Lajas
MLRA: 273 -- Semiarid Coastal Plains
Soil Survey Area: PR787 -- San German Area, Southwestern Puerto Rico
Map Unit: CeA -- Cartagena clay, 0 to 2 percent slopes
Pit Location:
Quad Name:
Std Latitude: 18.0178700
Std Longitude: -67.0845200
Latitude:
Longitude:
Datum: WGS84
UTM Zone:
UTM Easting:
UTM Northing:
Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover:
Existing Vegetation:
Parent Material: clayey marine deposits derived from igneous, metamorphic and sedimentary rock
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2017PR079011 **Pedon ID:** S2017PR079011

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
1.0			25.2	26.7	23.3	1,175	365	somewhat poorly		

Ap--0 to 28 centimeters (0.0 to 11.0 inches); clay, very dark gray (10YR 3/1) broken face, moist; strong medium subangular blocky, and strong coarse subangular blocky structure; extremely hard, very firm, moderately sticky, very plastic; very fine roots throughout and fine roots throughout; very fine irregular and fine irregular pores; 60 percent distinct pressure faces; 1 percent very fine 7.5YR 4/6), moist, masses of oxidized iron On faces of peds; 0 percent unspecified fragments; noneffervescent, by HCl, 1 normal; neutral, pH 7.0; clear smooth boundary. Lab sample # 18N02676

ABss--28 to 60 centimeters (11.0 to 23.6 inches); clay, very dark gray (2.5Y 3/1) broken face, moist; moderate medium subangular blocky, and moderate coarse subangular blocky structure; extremely hard, very firm, moderately sticky, very plastic; very fine roots throughout and fine roots throughout; very fine irregular and very fine vesicular and fine irregular pores; 10 percent distinct slickensides (pedogenic); 1 percent very fine 7.5YR 4/6), moist, masses of oxidized iron On faces of peds; 10 percent fine 10YR 8/1), dry, carbonate masses on faces of peds; 0 percent unspecified fragments; noneffervescent, by HCl, 1 normal; moderately alkaline, pH 8.0; abrupt wavy boundary. Lab sample # 18N02677

Bkssy--60 to 88 centimeters (23.6 to 34.6 inches); clay, reddish brown (2.5YR 5/3) broken face, moist; weak medium subangular blocky, and weak coarse subangular blocky structure; extremely hard, very firm, moderately sticky, very plastic; very fine roots throughout; very fine vesicular and medium irregular and fine vesicular and fine irregular pores; 10 percent distinct slickensides (pedogenic); 5 percent medium 10YR 2/1), moist, iron-manganese masses and 5 percent fine 10YR 2/1), moist, iron-manganese masses and 5 percent medium 10YR 2/1), moist, iron-manganese nodules and 5 percent fine 10YR 2/1), moist, iron-manganese nodules; 5 percent fine 2.5Y 5/4), moist, gypsum crystals, unspecified and 5 percent medium 2.5Y 5/4), moist, gypsum crystals, unspecified; 0 percent unspecified fragments; slight effervescence, by HCl, 1 normal; moderately alkaline, pH 8.0; clear smooth boundary. Lab sample # 18N02678. Material with color from above in cracks

Bssy--88 to 100 centimeters (34.6 to 39.4 inches); clay, reddish brown (2.5YR 5/3) broken face, moist; weak medium subangular blocky, and weak coarse subangular blocky structure; extremely hard, very firm, moderately sticky, very plastic; medium irregular and medium vesicular and fine vesicular and fine irregular pores; 30 percent distinct slickensides (pedogenic); 5 percent medium 10YR 2/1), moist, iron-manganese masses and 5 percent fine 10YR 2/1), moist, iron-manganese masses and 5 percent medium 10YR 2/1), moist, iron-manganese nodules and 5 percent fine 10YR 2/1), moist, iron-manganese nodules and 5 percent medium 10YR 4/6), moist, masses of oxidized iron and 5 percent fine 10YR 4/6), moist, masses of oxidized iron; 15 percent fine 2.5Y 5/4), moist, gypsum crystals, unspecified and 15 percent medium 2.5Y 5/4), moist, gypsum crystals, unspecified; 0 percent unspecified fragments; noneffervescent, by HCl, 1 normal; moderately alkaline, pH 8.0. Lab sample # 18N02679

PEDON DESCRIPTION -- NEON Site LAJA

Print Date: Apr 16 2018
Description Date: Aug 10 2017
Describer: Manuel Matos
NEON Plot ID: LAJA_012
Site ID: S2017PR079012

Pedon ID: S2017PR079012

Site Note:
Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 18N0526
Soil Name as Described/Sampled: Fraternidad
Classification: Fine, smectitic, isohyperthermic Typic Haplusterts
Soil Name as Correlated:
Classification:
Pedon Type:
Pedon Purpose:
Taxon Kind: series
Associated Soils: Aguirre, Fe, Guanica, Jacana, Paso Seco, San Anton, Santa Isabel
Physiographic Division: Caribbean Basin
Physiographic Province: Caribbean Islands Province
Physiographic Section: Greater Antilles (Puerto Rico)
State Physiographic Area:

Local Physiographic Area: Lajas
Geomorphic Setting: on talf coastal plain
on talf basin floor
Upslope Shape: linear
Cross Slope Shape: convex
Particle Size Control Section: 25 to 100 cm.
Description origin: NASIS
Diagnostic Features: slickensides 16 to 84 cm.
calcic horizon 57 to 84 cm.

Country: Puerto Rico
State: Puerto Rico
County: Lajas
MLRA: 273 -- Semiarid Coastal Plains
Soil Survey Area: PR787 -- San German Area, Southwestern Puerto Rico
Map Unit: FrA -- Fraternidad clay, 0 to 2 percent slopes
CeA -- Cartagena clay, 0 to 2 percent slopes
Pit Location:
Quad Name:
Std Latitude: 18.0225000
Std Longitude: -67.0838800

Latitude:
Longitude:
Datum: WGS84
UTM Zone:
UTM Easting:
UTM Northing:

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover:
Existing Vegetation:
Parent Material: clayey marine deposits derived from igneous, metamorphic and sedimentary rock
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2017PR079012 **Pedon ID:** S2017PR079012

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
0.0			25.2	26.7	23.3	1,175	365	moderately well		

Ap--0 to 16 centimeters (0.0 to 6.3 inches); clay, black (10YR 2/1) broken face, moist; moderate medium subangular blocky, and moderate coarse subangular blocky structure; extremely hard, extremely firm, very sticky, very plastic; very fine roots throughout and fine roots throughout; very fine tubular pores; 0 percent unspecified fragments; clear smooth boundary. Lab sample # 18N02680

ABss--16 to 36 centimeters (6.3 to 14.2 inches); clay, black (10YR 2/1) broken face, moist; moderate medium prismatic parts to moderate medium subangular blocky, and moderate medium prismatic parts to moderate coarse subangular blocky structure; extremely hard, extremely firm, moderately sticky, very plastic; very fine roots throughout and fine roots throughout; very fine vesicular pores; 0 percent unspecified fragments; clear wavy boundary. Lab sample # 18N02681

BAss--36 to 57 centimeters (14.2 to 22.4 inches); clay, dark yellowish brown (10YR 3/4) broken face, moist; moderate medium prismatic parts to moderate medium subangular blocky, and moderate medium prismatic parts to moderate coarse subangular blocky structure; extremely hard, extremely firm, moderately sticky, very plastic; very fine roots throughout; very fine vesicular pores; 1 percent fine 5YR 2.5/1), moist, iron-manganese masses with clear boundaries Throughout and 1 percent fine 10YR 5/6), moist, masses of oxidized iron with clear boundaries Throughout; 0 percent unspecified fragments; clear wavy boundary. Lab sample # 18N02682

Bkss--57 to 84 centimeters (22.4 to 33.1 inches); clay, brown (10YR 4/3) broken face, moist; strong coarse angular blocky, and strong very coarse angular blocky structure; extremely hard, extremely firm, moderately sticky, very plastic; very fine roots throughout; very fine vesicular and fine tubular pores; 10 percent prominent 10YR 4/3), moist, slickensides (pedogenic) on all faces of peds; 5 percent very fine 5YR 2.5/1), moist, iron-manganese masses and 25 percent fine 10YR 5/6), moist, masses of oxidized iron with clear boundaries Throughout; 1 percent fine 10YR 7/3), moist, carbonate masses; 5 percent nonflat rounded very strongly cemented 2 to 5-millimeter Mixed rock fragments; clear wavy boundary. Lab sample # 18N02683. Not diagnostic on ss

2C--84 to 100 centimeters (33.1 to 39.4 inches); gravelly sandy clay loam, dark yellowish brown (10YR 4/4) broken face, moist; structureless massive; extremely hard, extremely firm, moderately sticky, moderately plastic; very fine roots throughout; very fine vesicular and fine tubular pores; 5 percent fine 5YR 2.5/1), moist, iron-manganese masses and 15 percent medium 10YR 5/6), moist, and 10YR 4/6), moist, masses of oxidized iron with clear boundaries Throughout and 15 percent fine 10YR 5/6), moist, and 10YR 4/6), moist, masses of oxidized iron with clear boundaries Throughout; 20 percent nonflat rounded very strongly cemented 2 to 5-millimeter Mixed rock fragments. Lab sample # 18N02684

PEDON DESCRIPTION -- NEON Site LAJA

Print Date: Apr 16 2018
Description Date: Aug 10 2017
Describer: Samuel Rios
NEON Plot ID: LAJA_014
Site ID: S2017PR079014

Pedon ID: S2017PR079014

Site Note:
Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 18N0527
Soil Name as Described/Sampled: Cartagena
Classification: Fine, mixed, superactive, isohyperthermic Sodic Haplusterts
Soil Name as Correlated:
Classification:
Pedon Type:
Pedon Purpose:
Taxon Kind: series
Associated Soils: Aguirre, Fe, Fraternidad, Guanica, Paso Seco, Santa Isabel
Physiographic Division: Caribbean Basin
Physiographic Province: Caribbean Islands Province
Physiographic Section: Greater Antilles (Puerto Rico)
State Physiographic Area:
Local Physiographic Area: Lajas
Geomorphic Setting: on talf coastal plain
on talf basin floor
Upslope Shape: linear
Cross Slope Shape: linear
Particle Size Control Section: 28 to 100 cm.
Description origin: NASIS
Diagnostic Features: slickensides 28 to 80 cm.
salt accumulations 51 to 80 cm.

Country: Puerto Rico
State: Puerto Rico
County: Lajas
MLRA: 273 -- Semiarid Coastal Plains
Soil Survey Area: PR787 -- San German Area, Southwestern Puerto Rico
Map Unit: FrA -- Fraternidad clay, 0 to 2 percent slopes
CeA -- Cartagena clay, 0 to 2 percent slopes
Pit Location:
Quad Name:
Std Latitude: 18.0232900
Std Longitude: -67.0804400
Latitude:
Longitude:
Datum: WGS84
UTM Zone:
UTM Easting:
UTM Northing:
Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover:
Existing Vegetation:
Parent Material: clayey marine deposits derived from igneous, metamorphic and sedimentary rock
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2017PR079014 **Pedon ID:** S2017PR079014

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
0.0			25.2	26.7	23.3	1,175	365	somewhat poorly		

Ap--0 to 28 centimeters (0.0 to 11.0 inches); clay, very dark grayish brown (10YR 3/2) broken face, moist; strong medium subangular blocky, and strong coarse subangular blocky structure; extremely hard, very firm, moderately sticky, very plastic; very fine roots throughout and fine roots throughout; very fine interstitial and fine tubular and fine interstitial pores; 60 percent prominent pressure faces; 0 percent unspecified fragments; noneffervescent, by HCl, 1 normal; neutral, pH 7.0, pH indicator solutions; clear smooth boundary. Lab sample # 18N02685

ABss--28 to 51 centimeters (11.0 to 20.1 inches); clay, very dark grayish brown (10YR 3/2) broken face, moist; moderate medium subangular blocky, and moderate coarse subangular blocky structure; extremely hard, very firm, moderately sticky, very plastic; very fine roots throughout and fine roots throughout; very fine irregular and very fine tubular and medium vesicular and fine tubular and fine vesicular and fine irregular pores; 30 percent prominent slickensides (pedogenic); 0 percent unspecified fragments; noneffervescent, by HCl, 1 normal; moderately alkaline, pH 8.0, pH indicator solutions; clear wavy boundary. Lab sample # 18N02686

Bssz--51 to 80 centimeters (20.1 to 31.5 inches); clay, very dark grayish brown (10YR 3/2) broken face, moist; moderate medium subangular blocky, and moderate coarse subangular blocky structure; extremely hard, very firm, moderately sticky, very plastic; very fine roots throughout; very fine vesicular and very fine irregular and medium irregular and fine irregular pores; 30 percent prominent slickensides (pedogenic); 1 percent fine 10YR 5/8), moist, masses of oxidized iron; 1 percent coarse faint 10YR 8/1), dry, salt crystals; 0 percent unspecified fragments; noneffervescent, by HCl, 1 normal; moderately alkaline, pH 8.0, pH indicator solutions; abrupt wavy boundary. Lab sample # 18N02687

2C--80 to 100 centimeters (31.5 to 39.4 inches); sandy clay, yellowish brown (10YR 5/6) broken face, moist; massive; extremely hard, very firm, moderately sticky, very plastic; very fine roots throughout and fine roots throughout; medium interstitial pores; 1 percent medium 10YR 2/1), moist, iron-manganese masses and 10 percent medium 10YR 2/1), moist, iron-manganese nodules and 10 percent fine 10YR 2/1), moist, iron-manganese nodules and 30 percent fine 10YR 6/8), moist, masses of oxidized iron; 5 percent nonflat rounded very strongly cemented 2 to 20-millimeter Limestone fragments; noneffervescent, by HCl, 1 normal; moderately alkaline, pH 8.0, pH indicator solutions. Lab sample # 18N02688. Material with color from above horizons in cracks

PEDON DESCRIPTION -- NEON Site LAJA

Print Date: Apr 16 2018
Description Date: Aug 8 2017
Describer: Greg Taylor
NEON Plot ID: LAJA_015
Site ID: S2017PR079015

Pedon ID: S2017PR079015

Site Note:
Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 18N0528
Soil Name as Described/Sampled: Mariana
Classification: Fine, mixed, active, isohyperthermic Typic Haplohumults
Soil Name as Correlated:
Classification:
Pedon Type:
Pedon Purpose:
Taxon Kind: series
Associated Soils: Descalabrado, Jacana, Palmarejo
Physiographic Division: Caribbean Basin
Physiographic Province: Caribbean Islands Province
Physiographic Section: Greater Antilles (Puerto Rico)
State Physiographic Area:

Local Physiographic Area: Lajas
Geomorphic Setting: on backslope of side slope of hill
on backslope of side slope of hills
Upslope Shape: convex
Cross Slope Shape: convex
Particle Size Control Section: 16 to 41 cm.
Description origin: NASIS
Diagnostic Features: argillic horizon 16 to 41 cm.

Country: Puerto Rico
State: Puerto Rico
County: Lajas
MLRA: 273 -- Semiarid Coastal Plains
Soil Survey Area: PR787 -- San German Area, Southwestern Puerto Rico
Map Unit: MiD -- Mariana gravelly clay loam, 12 to 20 percent slopes
MiE -- Mariana gravelly clay loam, 20 to 40 percent slopes
Pit Location:
Quad Name:
Std Latitude: 18.0342900
Std Longitude: -67.0670700

Latitude:
Longitude:
Datum: WGS84
UTM Zone:
UTM Easting:
UTM Northing:

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover:
Existing Vegetation:
Parent Material: colluvium derived from volcanic rock over residuum weathered from volcanic rock
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2017PR079015 **Pedon ID:** S2017PR079015

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
4.0			25.2	26.7	23.3	1,175	365	well		

Ap--0 to 16 centimeters (0.0 to 6.3 inches); very dark brown (7.5YR 2.5/2) broken face clay loam, brown (7.5YR 5/4) broken face, dry; weak medium subangular blocky parts to weak fine granular, and weak medium subangular blocky parts to weak medium granular structure; firm; very fine roots throughout; very fine irregular and very fine interstitial pores; 5 percent nonflat rounded very strongly cemented 5 to 20-millimeter Mixed rock fragments; clear smooth boundary. Lab sample # 18N02689. Surface graded for road bed material

Bt--16 to 41 centimeters (6.3 to 16.1 inches); strong brown (7.5YR 5/6) broken face clay, strong brown (7.5YR 5/6) broken face, dry; weak medium subangular blocky structure; firm; very fine roots throughout; very fine vesicular and very fine tubular pores; 10 percent distinct 7.5YR 4/3), moist, pressure faces; 10 percent nonflat rounded very strongly cemented 5 to 20-millimeter Mixed rock fragments; clear wavy boundary. Lab sample # 18N02690

BC--41 to 64 centimeters (16.1 to 25.2 inches); 70 percent strong brown (7.5YR 4/6) broken face and 30 percent yellow (10YR 7/6) broken face clay; weak medium subangular blocky structure; firm; very fine roots throughout; very fine irregular and very fine tubular pores; 10 percent prominent 7.5YR 4/3), moist, pressure faces; 10 percent nonflat rounded weakly cemented 5 to 30-millimeter Mixed rock fragments; clear wavy boundary. Lab sample # 18N02691

C--64 to 80 centimeters (25.2 to 31.5 inches); clay; 20 percent (10YR 8/1) and 20 percent (10YR 7/6) and 60 percent (7.5YR 6/8) mottles; massive; very firm; very fine roots throughout; very fine irregular and very fine tubular pores; 10 percent nonflat rounded weakly cemented 5 to 15-millimeter Mixed rock fragments; clear wavy boundary. Lab sample # 18N02692

Cr--80 to 100 centimeters (31.5 to 39.4 inches); 0 percent unspecified fragments.

PEDON DESCRIPTION -- NEON Site LAJA

Print Date: Apr 16 2018
Description Date: Aug 8 2017
Describer: Samuel Rios
NEON Plot ID: LAJA_016
Site ID: S2017PR079016

Pedon ID: S2017PR079016

Site Note:
Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 18N0529
Soil Name as Described/Sampled: Fraternidad
Classification: Fine, smectitic, isohyperthermic Typic Haplusterts
Soil Name as Correlated:
Classification:
Pedon Type:
Pedon Purpose:
Taxon Kind: series
Associated Soils: Aguirre, Fe, Guanica, Jacana, Paso Seco, San Anton, Santa Isabel
Physiographic Division: Caribbean Basin
Physiographic Province: Caribbean Islands Province
Physiographic Section: Greater Antilles (Puerto Rico)
State Physiographic Area:

Local Physiographic Area: Lajas
Geomorphic Setting: on talf coastal plain
on talf basin floor
Upslope Shape: linear
Cross Slope Shape: linear
Particle Size Control Section: 25 to 100 cm.
Description origin: NASIS
Diagnostic Features: calcic horizon 35 to 64 cm.
slickensides 38 to 64 cm.

Country: Puerto Rico
State: Puerto Rico
County: Lajas
MLRA: 273 -- Semiarid Coastal Plains
Soil Survey Area: PR787 -- San German Area, Southwestern Puerto Rico
Map Unit: FrA -- Fraternidad clay, 0 to 2 percent slopes
Pit Location:
Quad Name:
Std Latitude: 18.0302600
Std Longitude: -67.0710600

Latitude:
Longitude:
Datum: WGS84
UTM Zone:
UTM Easting:
UTM Northing:

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover:
Existing Vegetation:
Parent Material: clayey marine deposits derived from igneous, metamorphic and sedimentary rock
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2017PR079016 **Pedon ID:** S2017PR079016

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
1.0			25.2	26.7	23.3	1,175	365	moderately well		

Ap--0 to 11 centimeters (0.0 to 4.3 inches); clay, dark grayish brown (10YR 4/2) broken face, moist; strong coarse granular, and strong medium granular structure; very hard, very firm, moderately sticky, very plastic; throughout; medium interstitial and fine interstitial and coarse interstitial pores; 0 percent unspecified fragments; noneffervescent, by HCl, 1 normal; neutral, pH 7.0, pH indicator solutions; clear smooth boundary. Lab sample # 18N02693

AB--11 to 38 centimeters (4.3 to 15.0 inches); clay, 80 percent very dark grayish brown (10YR 3/2) broken face and 20 percent dark yellowish brown (10YR 4/4) broken face, moist; moderate fine subangular blocky, and moderate medium subangular blocky structure; very hard, very firm, moderately sticky, very plastic; very fine roots throughout and fine roots throughout; medium irregular and fine irregular pores; 2 percent nonflat rounded very strongly cemented 2 to 20-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; neutral, pH 7.0, pH indicator solutions; clear wavy boundary. Lab sample # 18N02694

Bkss--38 to 64 centimeters (15.0 to 25.2 inches); clay, dark yellowish brown (10YR 4/4) broken face, moist; weak fine wedge, and weak medium wedge structure; slightly hard, firm, moderately sticky, very plastic; very fine roots throughout and fine roots throughout; very fine irregular and fine irregular pores; 10 percent distinct slickensides (pedogenic); 1 percent very fine 10YR 5/8), moist, masses of oxidized iron On faces of peds and 10 percent medium 10YR 2/1), moist, iron-manganese nodules; 10 percent medium carbonate masses on faces of peds; 5 percent nonflat subangular very strongly cemented 2 to 20-millimeter Limestone fragments; slight effervescence, by HCl, 1 normal; neutral, pH 7.0, pH indicator solutions; abrupt wavy boundary. Lab sample # 18N02695

BC--64 to 77 centimeters (25.2 to 30.3 inches); clay, dark yellowish brown (10YR 4/4) broken face, moist; weak medium subangular blocky, and weak fine subangular blocky structure; slightly hard, firm, moderately sticky, very plastic; fine roots throughout; very fine tubular and fine tubular and fine irregular pores; 1 percent fine 10YR 5/2), moist, masses of reduced iron Lining pores and 5 percent medium 10YR 5/8), moist, masses of oxidized iron On faces of peds and 5 percent fine 10YR 5/8), moist, masses of oxidized iron On faces of peds and 10 percent medium 10YR 2/1), moist, iron-manganese nodules; 2 percent nonflat rounded very strongly cemented 2 to 20-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; neutral, pH 7.0, pH indicator solutions; clear wavy boundary. Lab sample # 18N02696

C--77 to 100 centimeters (30.3 to 39.4 inches); sandy clay loam, brown (10YR 4/3) broken face, moist; massive; slightly hard, friable, moderately sticky, slightly plastic; medium irregular and fine irregular pores; 1 percent fine 10YR 5/2), moist, masses of reduced iron On faces of peds and 1 percent very fine 10YR 5/2), moist, masses of reduced iron On faces of peds and 15 percent medium 7.5YR 5/8), moist, masses of oxidized iron On faces of peds and 15 percent fine 7.5YR 5/8), moist, masses of oxidized iron On faces of peds; 0 percent unspecified fragments; noneffervescent, by HCl, 1 normal; neutral, pH 7.0, pH indicator solutions. Lab sample # 18N02697

PEDON DESCRIPTION -- NEON Site LAJA

Print Date: Apr 16 2018
Description Date: Aug 9 2017
Describer: Abdiel Santana
NEON Plot ID: LAJA_017
Site ID: S2017PR079017

Pedon ID: S2017PR079017

Site Note:
Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 18N0530
Soil Name as Described/Sampled: Cartagena
Classification: Fine, mixed, superactive, isohyperthermic Sodic Haplusterts
Soil Name as Correlated:
Classification:
Pedon Type:
Pedon Purpose:
Taxon Kind: series
Associated Soils: Aguirre, Fe, Fraternidad, Guanica, Paso Seco, Santa Isabel
Physiographic Division: Caribbean Basin
Physiographic Province: Caribbean Islands Province
Physiographic Section: Greater Antilles (Puerto Rico)
State Physiographic Area:
Local Physiographic Area: Lajas
Geomorphic Setting: on talf coastal plain
on talf basin floor
Upslope Shape: linear
Cross Slope Shape: linear
Particle Size Control Section: 25 to 100 cm.
Description origin: NASIS
Diagnostic Features: slickensides 10 to 100 cm.
gypsum accumulations 64 to 100 cm.

Country: Puerto Rico
State: Puerto Rico
County: Lajas
MLRA: 273 -- Semiarid Coastal Plains
Soil Survey Area: PR787 -- San German Area, Southwestern Puerto Rico
Map Unit: FrA -- Fraternidad clay, 0 to 2 percent slopes
CeA -- Cartagena clay, 0 to 2 percent slopes
Pit Location:
Quad Name:
Std Latitude: 18.0175100
Std Longitude: -67.0750800
Latitude:
Longitude:
Datum: WGS84
UTM Zone:
UTM Easting:
UTM Northing:
Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover:
Existing Vegetation:
Parent Material: clayey marine deposits derived from igneous, metamorphic and sedimentary rock
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2017PR079017 **Pedon ID:** S2017PR079017

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
1.0			25.2	26.7	23.3	1,175	365	moderately well		

Ap--0 to 10 centimeters (0.0 to 3.9 inches); clay, very dark grayish brown (10YR 3/2) broken face, moist; moderate fine subangular blocky, and moderate medium subangular blocky structure; extremely hard, extremely firm, moderately sticky, very plastic; very fine roots throughout and fine roots throughout; fine irregular and fine tubular pores; 5 percent medium 10YR 4/6), moist, masses of oxidized iron and 5 percent fine 10YR 4/6), moist, masses of oxidized iron and 5 percent fine 5YR 4/6), moist, masses of oxidized iron and 5 percent medium 5YR 4/6), moist, masses of oxidized iron; 0 percent unspecified fragments; noneffervescent, by HCl, 1 normal; moderately alkaline, pH 8.0, pH indicator solutions; gradual wavy boundary. Lab sample # 18N02698

Bss1--10 to 34 centimeters (3.9 to 13.4 inches); clay, very dark grayish brown (10YR 3/2) broken face, moist; moderate medium subangular blocky, and moderate coarse subangular blocky structure; extremely hard, extremely firm, moderately sticky, very plastic; very fine roots throughout and fine roots throughout; medium vesicular and medium irregular and fine vesicular pores; 10 percent prominent slickensides (pedogenic); 1 percent fine 10YR 2/1), moist, iron-manganese nodules and 5 percent medium 10YR 4/6), moist, masses of oxidized iron and 5 percent fine 10YR 4/6), moist, masses of oxidized iron; 0 percent unspecified fragments; noneffervescent, by HCl, 1 normal; moderately alkaline, pH 8.0, pH indicator solutions; gradual wavy boundary. Lab sample # 18N02699

Bss2--34 to 64 centimeters (13.4 to 25.2 inches); clay, dark grayish brown (10YR 4/2) broken face, moist; strong coarse wedge, and strong very coarse wedge structure; extremely hard, extremely firm, moderately sticky, very plastic; fine roots throughout; fine irregular pores; 30 percent prominent slickensides (pedogenic); 10 percent fine 10YR 4/6), moist, masses of oxidized iron; 0 percent unspecified fragments; noneffervescent, by HCl, 1 normal; neutral, pH 7.0, pH indicator solutions; gradual wavy boundary. Lab sample # 18N02700

Bssy--64 to 100 centimeters (25.2 to 39.4 inches); clay, light olive brown (2.5Y 5/4) broken face, moist; moderate medium wedge structure; extremely hard, extremely firm, moderately sticky, very plastic; fine roots throughout; medium interstitial and fine tubular and fine irregular pores; 10 percent prominent slickensides (pedogenic); 5 percent medium 10YR 2/1), moist, iron-manganese nodules and 5 percent fine 10YR 2/1), moist, iron-manganese nodules and 10 percent fine 10YR 4/6), moist, masses of oxidized iron On faces of peds; 5 percent fine 2.5Y 6/4), moist, gypsum crystals, unspecified and 5 percent fine 2.5Y 6/4), moist, gypsum crystal clusters and 5 percent medium 2.5Y 6/4), moist, gypsum crystals, unspecified and 5 percent medium 2.5Y 6/4), moist, gypsum crystal clusters; 2 percent nonflat rounded very strongly cemented 2 to 20-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; slightly acid, pH 6.5, pH indicator solutions. Lab sample # 18N02701

PEDON DESCRIPTION -- NEON Site LAJA

Print Date: Apr 16 2018
Description Date: Aug 7 2017
Describer: Manuel Matos
NEON Plot ID: LAJA_020
Site ID: S2017PR079020

Pedon ID: S2017PR079020

Site Note:
Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 18N0531
Soil Name as Described/Sampled: Fraternidad
Classification: Fine, smectitic, isohyperthermic Typic Haplusterts
Soil Name as Correlated:
Classification:
Pedon Type:
Pedon Purpose:
Taxon Kind: series
Associated Soils: Aguirre, Fe, Guanica, Jacana, Paso Seco, San Anton, Santa Isabel
Physiographic Division: Caribbean Basin
Physiographic Province: Caribbean Islands Province
Physiographic Section: Greater Antilles (Puerto Rico)
State Physiographic Area:

Local Physiographic Area: Lajas
Geomorphic Setting: on talf coastal plain
on talf basin floor
Upslope Shape: linear
Cross Slope Shape: linear
Particle Size Control Section: 26 to 100 cm.
Description origin: NASIS
Diagnostic Features: slickensides 49 to 100 cm.
calcic horizon 65 to 100 cm.

Country: Puerto Rico
State: Puerto Rico
County: Lajas
MLRA: 273 -- Semiarid Coastal Plains
Soil Survey Area: PR787 -- San German Area, Southwestern Puerto Rico
Map Unit: FrA -- Fraternidad clay, 0 to 2 percent slopes
Pit Location:
Quad Name:
Std Latitude: 18.0309100
Std Longitude: -67.0761000

Latitude:
Longitude:
Datum: WGS84
UTM Zone:
UTM Easting:
UTM Northing:

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover:
Existing Vegetation:
Parent Material: clayey marine deposits derived from igneous, metamorphic and sedimentary rock
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2017PR079020 **Pedon ID:** S2017PR079020

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
1.0			25.2	26.7	23.3	1,175	365	moderately well		

Ap--0 to 26 centimeters (0.0 to 10.2 inches); clay, very dark grayish brown (10YR 3/2) broken face, moist; weak medium subangular blocky structure; extremely hard, slightly rigid, moderately sticky, very plastic; very fine roots throughout; medium irregular and fine irregular pores; 2 percent nonflat angular very strongly cemented 2 to 20-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; neutral, pH 7.0, pH indicator solutions; clear wavy boundary. Lab sample # 18N02702

BA--26 to 49 centimeters (10.2 to 19.3 inches); clay, brown (10YR 4/3) broken face, moist; 40 percent (10YR 3/2) mottles; weak medium subangular blocky, and weak coarse subangular blocky, and weak very coarse subangular blocky structure; extremely hard, slightly rigid, moderately sticky, very plastic; very fine roots throughout; fine vesicular pores; 30 percent prominent pressure faces; 2 percent nonflat angular very strongly cemented 2 to 20-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; neutral, pH 7.0, pH indicator solutions; clear smooth boundary. Lab sample # 18N02703

Bss--49 to 65 centimeters (19.3 to 25.6 inches); clay, dark yellowish brown (10YR 4/4) broken face, moist; weak very coarse wedge structure; extremely hard, slightly rigid, moderately sticky, very plastic; very fine roots throughout; medium irregular and fine vesicular and fine irregular pores; 30 percent prominent 10YR 4/4), moist, slickensides (pedogenic); 1 percent fine carbonate masses; 2 percent nonflat angular very strongly cemented 2 to 20-millimeter Mixed rock fragments; slight effervescence, by HCl, 1 normal; moderately alkaline, pH 8.0, pH indicator solutions; gradual wavy boundary. Lab sample # 18N02704

Bkss1--65 to 80 centimeters (25.6 to 31.5 inches); clay, yellowish brown (10YR 5/6) broken face, moist; weak very coarse wedge structure; extremely hard, slightly rigid, moderately sticky, very plastic; very fine roots throughout; medium irregular and fine vesicular and fine irregular pores; 60 percent prominent 10YR 5/6), moist, slickensides (pedogenic); 1 percent fine 10YR 2/1), moist, iron-manganese nodules; 1 percent fine carbonate masses; 2 percent nonflat angular very strongly cemented 2 to 20-millimeter Mixed rock fragments; slight effervescence, by HCl, 1 normal; moderately alkaline, pH 8.0, pH indicator solutions; clear wavy boundary. Lab sample # 18N02705

Bkss2--80 to 100 centimeters (31.5 to 39.4 inches); clay, dark yellowish brown (10YR 3/6) broken face, moist; weak medium subangular blocky, and weak coarse subangular blocky structure; extremely hard, slightly rigid, moderately sticky, very plastic; very fine roots throughout; medium irregular and fine tubular and fine irregular pores; 60 percent prominent 10YR 3/6), moist, slickensides (pedogenic); 5 percent fine 10YR 2/1), moist, iron-manganese nodules and 5 percent medium 10YR 2/1), moist, iron-manganese nodules and 5 percent medium 7.5YR 5/8), moist, masses of oxidized iron and 5 percent fine 7.5YR 5/8), moist, masses of oxidized iron; 5 percent fine carbonate masses and 5 percent medium carbonate masses; 2 percent nonflat angular very strongly cemented 2 to 20-millimeter Mixed rock fragments; slight effervescence, by HCl, 1 normal; moderately alkaline, pH 8.0, pH indicator solutions. Lab sample # 18N02706

PEDON DESCRIPTION -- NEON Site LAJA

Print Date: Apr 16 2018
Description Date: Aug 7 2017
Describer: Manuel Matos
NEON Plot ID: LAJA_022
Site ID: S2017PR079022

Pedon ID: S2017PR079022

Site Note:
Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 18N0532
Soil Name as Described/Sampled: Fraternidad
Classification: Fine, smectitic, isohyperthermic Typic Haplusterts
Soil Name as Correlated:
Classification:
Pedon Type:
Pedon Purpose:
Taxon Kind: series
Associated Soils: Aguirre, Fe, Guanica, Jacana, Paso Seco, San Anton, Santa Isabel
Physiographic Division: Caribbean Basin
Physiographic Province: Caribbean Islands Province
Physiographic Section: Greater Antilles (Puerto Rico)
State Physiographic Area:

Local Physiographic Area: Lajas
Geomorphic Setting: on talf coastal plain
on talf basin floor
Upslope Shape: linear
Cross Slope Shape: concave
Particle Size Control Section: 25 to 100 cm.
Description origin: NASIS
Diagnostic Features: slickensides 35 to 81 cm.

Country: Puerto Rico
State: Puerto Rico
County: Lajas
MLRA: 273 -- Semiarid Coastal Plains
Soil Survey Area: PR787 -- San German Area, Southwestern Puerto Rico
Map Unit: FrA -- Fraternidad clay, 0 to 2 percent slopes
Pit Location:
Quad Name:
Std Latitude: 18.0294700
Std Longitude: -67.0735700

Latitude:
Longitude:
Datum: WGS84
UTM Zone:
UTM Easting:
UTM Northing:

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover:
Existing Vegetation:
Parent Material: clayey marine deposits derived from igneous, metamorphic and sedimentary rock
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2017PR079022 **Pedon ID:** S2017PR079022

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
1.0			25.2	26.7	23.3	1,175	365	moderately well		

Ap--0 to 11 centimeters (0.0 to 4.3 inches); clay, very dark grayish brown (10YR 3/2) broken face, moist; weak medium subangular blocky parts to weak fine granular, and weak medium subangular blocky parts to weak medium granular structure; soft, loose, moderately sticky, very plastic; very fine roots throughout and fine roots throughout; 0 percent unspecified fragments; noneffervescent, by HCl, 1 normal; neutral, pH 7.0, pH indicator solutions; abrupt smooth boundary. Lab sample # 18N02707. No Ap bulk density clods, very small

AB--11 to 35 centimeters (4.3 to 13.8 inches); clay, black (10YR 2/1) broken face, moist; moderate medium subangular blocky, and moderate coarse subangular blocky structure; hard, firm, moderately sticky, very plastic; very fine roots throughout and medium roots throughout and fine roots throughout; very fine irregular and very fine tubular pores; distinct pressure faces; 0 percent unspecified fragments; noneffervescent, by HCl, 1 normal; slightly acid, pH 6.5, pH indicator solutions; clear smooth boundary. Lab sample # 18N02708

Bss1--35 to 54 centimeters (13.8 to 21.3 inches); clay, black (10YR 2/1) broken face, moist; weak medium prismatic parts to moderate medium subangular blocky structure; extremely hard, extremely firm, moderately sticky, very plastic; very fine roots throughout; very fine irregular and very fine tubular pores; 10 percent distinct slickensides (pedogenic); 0 percent unspecified fragments; noneffervescent, by HCl, 1 normal; slightly acid, pH 6.5, pH indicator solutions; clear wavy boundary.

Bss2--54 to 81 centimeters (21.3 to 31.9 inches); clay, brown (10YR 4/3) broken face, moist; moderate medium subangular blocky structure; moderately hard, firm, moderately sticky, very plastic; very fine roots throughout; very fine irregular pores; prominent pressure faces; 0 percent unspecified fragments; noneffervescent, by HCl, 1 normal; slightly acid, pH 6.5, pH indicator solutions; abrupt smooth boundary. Not much evidence of vertic properties, has mixing

2C--81 to 100 centimeters (31.9 to 39.4 inches); clay, brown (10YR 4/3) broken face, moist; 5 percent medium mottles; massive; moderately hard, firm, moderately sticky, very plastic; very fine roots throughout; very fine irregular and very fine tubular pores; 1 percent fine 10YR 5/6), moist, masses of oxidized iron On faces of peds and 1 percent fine 10YR 6/2), moist, iron depletions On faces of peds; 10 percent nonflat rounded very strongly cemented 2 to 10-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; moderately alkaline, pH 8.0, pH indicator solutions. Lab sample # 18N02711

PEDON DESCRIPTION -- NEON Site LAJA

Print Date: Apr 16 2018
Description Date: Aug 8 2017
Describer: Samuel Rios
NEON Plot ID: LAJA_025
Site ID: S2017PR079025

Pedon ID: S2017PR079025

Site Note:

Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 18N0533
Soil Name as Described/Sampled: Cartagena
Classification: Fine, mixed, superactive, isohyperthermic Sodic Haplusterts
Soil Name as Correlated:
Classification:
Pedon Type:
Pedon Purpose:
Taxon Kind: series
Associated Soils: Aguirre, Fe, Fraternidad, Guanica, Paso Seco, Santa Isabel

Physiographic Division: Caribbean Basin
Physiographic Province: Caribbean Islands Province
Physiographic Section: Greater Antilles (Puerto Rico)
State Physiographic Area:

Local Physiographic Area: Lajas
Geomorphic Setting: on dip coastal plain
on dip basin floor
Upslope Shape: linear
Cross Slope Shape: concave
Particle Size Control Section: 25 to 100 cm.
Description origin: NASIS
Diagnostic Features: slickensides 54 to 87 cm.

Country: Puerto Rico
State: Puerto Rico
County: Lajas
MLRA: 273 -- Semiarid Coastal Plains
Soil Survey Area: PR787 -- San German Area, Southwestern Puerto Rico
Map Unit: FrA -- Fraternidad clay, 0 to 2 percent slopes
CeA -- Cartagena clay, 0 to 2 percent slopes

Pit Location: Due to most plots being located in open fields, the teams were consistently able to place the pits 2 meters from the SW corner. However, on this plot the pit was located 4 meters from the SW corner due to a small drainage way being at 2 meters.

Quad Name:
Std Latitude: 18.0346100
Std Longitude: -67.0648000
Latitude:
Longitude:
Datum: WGS84
UTM Zone:
UTM Easting:
UTM Northing:

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover:
Existing Vegetation:
Parent Material: clayey marine deposits derived from igneous, metamorphic and sedimentary rock
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2017PR079025 **Pedon ID:** S2017PR079025

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
1.0			25.2	26.7	23.3	1,175	365	somewhat poorly		

A--0 to 24 centimeters (0.0 to 9.4 inches); clay, very dark gray (10YR 3/1) broken face, moist; moderate medium granular, and moderate coarse granular, and moderate very coarse granular structure; extremely hard, very firm, slightly sticky, very plastic; very fine roots throughout and fine roots throughout and coarse roots throughout; medium interstitial and coarse interstitial pores; 5 percent nonflat rounded very strongly cemented 2 to 20-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; moderately alkaline, pH 8.0, pH indicator solutions; clear smooth boundary. Lab sample # 18N02712

AB--24 to 54 centimeters (9.4 to 21.3 inches); clay, very dark gray (10YR 3/1) broken face, moist; moderate coarse subangular blocky, and moderate medium subangular blocky structure; extremely hard, very firm, slightly sticky, very plastic; very fine roots throughout and fine roots throughout; medium irregular and fine irregular pores; 60 percent distinct pressure faces; 1 percent fine 10YR 4/6), moist, masses of oxidized iron Lining pores and 1 percent very fine 10YR 4/6), moist, masses of oxidized iron Lining pores; 5 percent nonflat rounded very strongly cemented 2 to 20-millimeter Mixed rock fragments; slight effervescence, by HCl, 1 normal; moderately alkaline, pH 8.0, pH indicator solutions; clear smooth boundary. Lab sample # 18N02713

Bss--54 to 87 centimeters (21.3 to 34.3 inches); clay, very dark gray (10YR 3/1) broken face, moist; strong very coarse wedge structure; extremely hard, very firm, slightly sticky, very plastic; very fine roots throughout and fine roots throughout; medium irregular and fine irregular and coarse irregular pores; 30 percent prominent slickensides (pedogenic); 5 percent fine 10YR 4/6), moist, masses of oxidized iron Lining pores and 5 percent medium 10YR 4/6), moist, masses of oxidized iron Lining pores and 5 percent fine 10YR 4/6), moist, masses of oxidized iron On faces of peds and 5 percent medium 10YR 4/6), moist, masses of oxidized iron On faces of peds; 5 percent nonflat rounded very strongly cemented 2 to 20-millimeter Mixed rock fragments; slight effervescence, by HCl, 1 normal; neutral, pH 7.0, pH indicator solutions; abrupt smooth boundary. Lab sample # 18N02714

C--87 to 100 centimeters (34.3 to 39.4 inches); clay, very dark grayish brown (10YR 3/2) broken face, moist; strong coarse subangular blocky, and strong medium subangular blocky structure; hard, firm, slightly sticky, very plastic; very fine roots throughout and fine roots throughout; medium irregular and fine vesicular and fine irregular pores; 5 percent very coarse 5YR 4/6), moist, masses of oxidized iron Lining pores and 5 percent coarse 5YR 4/6), moist, masses of oxidized iron Lining pores and 5 percent medium 5YR 4/6), moist, masses of oxidized iron Lining pores and 5 percent fine 5YR 4/6), moist, masses of oxidized iron Lining pores and 5 percent very coarse 5YR 4/6), moist, masses of oxidized iron On faces of peds and 5 percent coarse 5YR 4/6), moist, masses of oxidized iron On faces of peds and 5 percent medium 5YR 4/6), moist, masses of oxidized iron On faces of peds and 5 percent fine 5YR 4/6), moist, masses of oxidized iron On faces of peds; 5 percent nonflat rounded very strongly cemented 2 to 20-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; neutral, pH 7.0, pH indicator solutions. Lab sample # 18N02715

PEDON DESCRIPTION -- NEON Site LAJA

Print Date: Apr 16 2018
Description Date: Aug 8 2017
Describer: Samuel Rios
NEON Plot ID: LAJA_027
Site ID: S2017PR079027

Pedon ID: S2017PR079027

Site Note:
Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 18N0534
Soil Name as Described/Sampled: Fraternidad
Classification: Fine, smectitic, isohyperthermic Typic Haplusterts
Soil Name as Correlated:
Classification:
Pedon Type:
Pedon Purpose:
Taxon Kind: series
Associated Soils: Aguirre, Fe, Guanica, Jacana, Paso Seco, San Anton, Santa Isabel
Physiographic Division: Caribbean Basin
Physiographic Province: Caribbean Islands Province
Physiographic Section: Greater Antilles (Puerto Rico)
State Physiographic Area:

Local Physiographic Area: Lajas
Geomorphic Setting: on talf coastal plain
on talf basin floor
Upslope Shape: linear
Cross Slope Shape: concave
Particle Size Control Section: 25 to 100 cm.
Description origin: NASIS
Diagnostic Features: slickensides 20 to 100 cm.
calcic horizon 38 to 100 cm.

Country: Puerto Rico
State: Puerto Rico
County: Lajas
MLRA: 273 -- Semiarid Coastal Plains
Soil Survey Area: PR787 -- San German Area, Southwestern Puerto Rico
Map Unit: FrA -- Fraternidad clay, 0 to 2 percent slopes
Pit Location:
Quad Name:
Std Latitude: 18.0351200
Std Longitude: -67.0706800

Latitude:
Longitude:
Datum: WGS84
UTM Zone:
UTM Easting:
UTM Northing:

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover:
Existing Vegetation:
Parent Material: clayey marine deposits derived from igneous, metamorphic and sedimentary rock
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2017PR079027 **Pedon ID:** S2017PR079027

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
1.0			25.2	26.7	23.3	1,175	365	moderately well		

Ap--0 to 20 centimeters (0.0 to 7.9 inches); clay, very dark grayish brown (10YR 3/2) broken face, moist; strong medium granular, and strong coarse granular structure; extremely hard, very firm, slightly sticky, very plastic; very fine roots throughout and medium roots throughout and fine roots throughout; medium interstitial and fine interstitial pores; 5 percent nonflat rounded very strongly cemented 2 to 20-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; slightly acid, pH 6.5, pH indicator solutions; abrupt smooth boundary. Lab sample # 18N02716

ABss--20 to 38 centimeters (7.9 to 15.0 inches); clay, 70 percent brown (10YR 4/3) broken face and 30 percent very dark grayish brown (10YR 3/2) broken face, moist; moderate coarse subangular blocky, and moderate medium subangular blocky structure; extremely hard, very firm, slightly sticky, very plastic; very fine roots throughout and fine roots throughout; very fine irregular and very fine vesicular and medium irregular and fine irregular and fine vesicular pores; 30 percent prominent slickensides (pedogenic); 5 percent nonflat rounded very strongly cemented 2 to 20-millimeter Mixed rock fragments; slight effervescence, by HCl, 1 normal; moderately alkaline, pH 8.0, pH indicator solutions; clear smooth boundary. Lab sample # 18N02717

Bkss1--38 to 60 centimeters (15.0 to 23.6 inches); clay, brown (10YR 4/3) broken face, moist; moderate coarse subangular blocky, and moderate medium subangular blocky structure; extremely hard, very firm, slightly sticky, very plastic; very fine roots throughout and fine roots throughout; very fine vesicular and very fine irregular and fine irregular and fine vesicular pores; 30 percent prominent slickensides (pedogenic); 10 percent fine 10YR 5/6), moist, masses of oxidized iron On faces of peds; 1 percent coarse carbonate masses on faces of peds and 1 percent medium 10YR 7/4), moist, carbonate masses on faces of peds; 5 percent nonflat rounded very strongly cemented 2 to 20-millimeter Mixed rock fragments; slight effervescence, by HCl, 1 normal; moderately alkaline, pH 8.0, pH indicator solutions; clear wavy boundary. Lab sample # 18N02718. Has some color from horizon above in cracks, 10YR 3/2

Bkss2--60 to 100 centimeters (23.6 to 39.4 inches); clay, brown (10YR 4/3) broken face, moist; strong medium wedge, and strong coarse wedge, and strong very coarse wedge structure; extremely hard, very firm, slightly sticky, very plastic; very fine roots throughout and fine roots throughout; very fine vesicular and very fine irregular and fine irregular and fine vesicular pores; 30 percent prominent slickensides (pedogenic); 10 percent fine 10YR 4/6), moist, masses of oxidized iron On faces of peds and 10 percent fine 10YR 2/1), moist, iron-manganese nodules On faces of peds; 5 percent coarse carbonate masses on faces of peds and 5 percent medium 10YR 7/4), moist, carbonate masses on faces of peds; 5 percent nonflat rounded very strongly cemented 2 to 20-millimeter Mixed rock fragments; slight effervescence, by HCl, 1 normal; moderately alkaline, pH 8.0, pH indicator solutions. Lab sample # 18N02719

PEDON DESCRIPTION -- NEON Site LAJA

Print Date: Apr 16 2018
Description Date: Aug 8 2017
Describer: Samuel Rios
NEON Plot ID: LAJA_028
Site ID: S2017PR079028

Pedon ID: S2017PR079028

Site Note:
Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 18N0535
Soil Name as Described/Sampled: Jacana
Classification: Fine, mixed, superactive, isohyperthermic Vertic Haplustolls
Soil Name as Correlated:
Classification:
Pedon Type:
Pedon Purpose:
Taxon Kind: series
Associated Soils: Annaberg, Callabo, Coamo, Descalabrado, Duey, Fraternidad, Juana Diaz, Llanos, Pozo Blanco, San German
Physiographic Division: Caribbean Basin
Physiographic Province: Caribbean Islands Province
Physiographic Section: Greater Antilles (Puerto Rico)
State Physiographic Area:

Local Physiographic Area: Lajas
Geomorphic Setting: alluvial plain
alluvial fan
Upslope Shape: linear
Cross Slope Shape: concave
Particle Size Control Section: 25 to 100 cm.
Description origin: NASIS
Diagnostic Features: cambic horizon 23 to 49 cm.

Country: Puerto Rico
State: Puerto Rico
County: Lajas
MLRA: 273 -- Semiarid Coastal Plains
Soil Survey Area: PR787 -- San German Area, Southwestern Puerto Rico
Map Unit: FrA -- Fraternidad clay, 0 to 2 percent slopes
JaB -- Jacana clay, 0 to 5 percent slopes
Pit Location:
Quad Name:
Std Latitude: 18.0376200
Std Longitude: -67.0717800

Latitude:
Longitude:
Datum: WGS84
UTM Zone:
UTM Easting:
UTM Northing:

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover:
Existing Vegetation:
Parent Material: fine texture alluvium derived from igneous, metamorphic and sedimentary rock
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2017PR079028 **Pedon ID:** S2017PR079028

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
1.0			25.2	26.7	23.3	1,175	365	well		

Ap--0 to 23 centimeters (0.0 to 9.1 inches); clay, very dark grayish brown (10YR 3/2) broken face, moist; strong medium granular, and strong coarse granular structure; very hard, firm, slightly sticky, very plastic; very fine roots throughout and fine roots throughout; medium interstitial and fine interstitial pores; 5 percent nonflat rounded very strongly cemented 2 to 20-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; slightly acid, pH 6.5, pH indicator solutions; clear smooth boundary. Lab sample # 18N02720

Bw--23 to 49 centimeters (9.1 to 19.3 inches); clay, very dark grayish brown (10YR 3/2) broken face, moist; weak medium subangular blocky structure; very hard, firm, slightly sticky, very plastic; very fine roots throughout and fine roots throughout; very fine irregular and medium irregular and medium tubular and fine irregular pores; 30 percent distinct slickensides (pedogenic) on all faces of peds; 5 percent nonflat rounded very strongly cemented 2 to 20-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; slightly acid, pH 6.5, pH indicator solutions; abrupt smooth boundary. Lab sample # 18N02721

2C--49 to 100 centimeters (19.3 to 39.4 inches); gravelly sandy clay, brown (10YR 4/3) broken face, moist; massive; very hard, firm, slightly sticky, moderately plastic; very fine roots throughout; medium irregular and fine irregular pores; 30 percent faint clay bridges between sand grains; 10 percent fine 10YR 2/1), moist, iron-manganese concretions On faces of peds and 15 percent fine 10YR 5/8), moist, masses of oxidized iron On faces of peds and 15 percent medium 10YR 5/8), moist, masses of oxidized iron On faces of peds; 20 percent nonflat rounded very strongly cemented 2 to 20-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; neutral, pH 7.0, pH indicator solutions. Lab sample # 18N02722

PEDON DESCRIPTION -- NEON Site LAJA

Print Date: Apr 16 2018
Description Date: Aug 9 2017
Describer: Rob Tunstead
NEON Plot ID: LAJA_029
Site ID: S2017PR079029

Pedon ID: S2017PR079029

Site Note:

Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 18N0536
Soil Name as Described/Sampled: Jacana
Classification: Fine, mixed, superactive, isohyperthermic Vertic Haplustolls
Soil Name as Correlated:
Classification:
Pedon Type:
Pedon Purpose:
Taxon Kind: series
Associated Soils: Annaberg, Callabo, Coamo, Descalabrado, Duey, Fraternidad, Juana Diaz, Llanos, Pozo Blanco, San German
Physiographic Division: Caribbean Basin
Physiographic Province: Caribbean Islands Province
Physiographic Section: Greater Antilles (Puerto Rico)
State Physiographic Area:

Local Physiographic Area: Lajas
Geomorphic Setting: on backslope of side slope of alluvial plain on backslope of side slope of alluvial fan
Upslope Shape: linear
Cross Slope Shape: concave
Particle Size Control Section: 25 to 73 cm.
Description origin: NASIS
Diagnostic Features: slickensides 33 to 73 cm.

Country: Puerto Rico
State: Puerto Rico
County: Lajas
MLRA: 273 -- Semiarid Coastal Plains
Soil Survey Area: PR787 -- San German Area, Southwestern Puerto Rico
Map Unit: JaB -- Jacana clay, 0 to 5 percent slopes
CeA -- Cartagena clay, 0 to 2 percent slopes

Pit Location: Due to most plots being located in open fields, the teams were consistently able to place the pits 2 meters from the SW corner. However, on this plot the pit had to be located 5 meters from the SW corner due to an access road that intersected the area.

Quad Name:
Std Latitude: 18.0397500
Std Longitude: -67.0694300

Latitude:
Longitude:
Datum: WGS84
UTM Zone:
UTM Easting:
UTM Northing:

Primary Earth Cover: Tree cover
Secondary Earth Cover:
Existing Vegetation:
Parent Material: fine texture alluvium derived from igneous, metamorphic and sedimentary rock
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2017PR079029 **Pedon ID:** S2017PR079029

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
3.0			25.2	26.7	23.3	1,175	365	well		

A1--0 to 19 centimeters (0.0 to 7.5 inches); silty clay, very dark grayish brown (10YR 3/2) broken face, moist; moderate fine granular, and moderate medium granular structure; firm, moderately sticky, very plastic; very fine roots throughout and medium roots throughout and fine roots throughout; very fine vesicular pores; 2 percent nonflat rounded very strongly cemented 50 to 75-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; neutral, pH 7.0, pH indicator solutions; clear smooth boundary. Lab sample # 18N02723

A2--19 to 33 centimeters (7.5 to 13.0 inches); silty clay, very dark gray (10YR 3/1) broken face, moist; weak medium subangular blocky parts to moderate medium granular structure; firm, moderately sticky, very plastic; very fine roots throughout and very coarse roots throughout and fine roots throughout and coarse roots throughout; fine tubular pores; 0 percent unspecified fragments; noneffervescent, by HCl, 1 normal; neutral, pH 7.0, pH indicator solutions; clear wavy boundary. Lab sample # 18N02724. 3 CLODS PLUS 1 COMPLIANT CAVITY WERE TAKEN FOR COMPARRISON

ABss--33 to 51 centimeters (13.0 to 20.1 inches); clay, very dark brown (10YR 2/2) broken face, moist; moderate medium subangular blocky structure; firm, moderately sticky, very plastic; very fine roots throughout and medium roots throughout and coarse roots throughout; very fine vesicular and fine tubular pores; 35 percent prominent slickensides (pedogenic); 2 percent nonflat rounded very strongly cemented 50 to 75-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; neutral, pH 7.0, pH indicator solutions; clear irregular boundary. Lab sample # 18N02725

Btss--51 to 73 centimeters (20.1 to 28.7 inches); clay, dark yellowish brown (10YR 3/6) broken face, moist; (10YR 3/2) mottles; moderate medium subangular blocky structure; very firm, moderately sticky, very plastic; very fine roots throughout and medium roots throughout and fine roots throughout; very fine vesicular pores; 25 percent prominent 10YR 3/6), moist, clay films and 60 percent prominent slickensides (pedogenic); 2 percent nonflat rounded very strongly cemented 50 to 75-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; slightly alkaline, pH 7.5, pH indicator solutions; clear wavy boundary. Lab sample # 18N02726

R--73 to 100 centimeters (28.7 to 39.4 inches); .

PEDON DESCRIPTION -- NEON Site LAJA

Print Date: Apr 16 2018
Description Date: Aug 9 2017
Describer: Abdiel Santana
NEON Plot ID: LAJA_030
Site ID: S2017PR079030

Pedon ID: S2017PR079030

Site Note:
Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 18N0537
Soil Name as Described/Sampled: San German
Classification: Clayey-skeletal, mixed, superactive, isohyperthermic Lithic Haplustolls
Soil Name as Correlated:
Classification:
Pedon Type:
Pedon Purpose:
Taxon Kind: series
Associated Soils: Aguilita, Duey, Limestone outcrop, Pozo Blanco, Seboruco, Tuque
Physiographic Division: Caribbean Basin
Physiographic Province: Caribbean Islands Province
Physiographic Section: Greater Antilles (Puerto Rico)
State Physiographic Area:

Local Physiographic Area: Lajas
Geomorphic Setting: on shoulder of side slope of hills
on shoulder of side slope of hill
Upslope Shape: linear
Cross Slope Shape: concave
Particle Size Control Section: 0 to 22 cm.
Description origin: NASIS
Diagnostic Features: mollic epipedon 0 to 22 cm.

Country: Puerto Rico
State: Puerto Rico
County: Lajas
MLRA: 273 -- Semiarid Coastal Plains
Soil Survey Area: PR787 -- San German Area, Southwestern Puerto Rico
Map Unit: SdD -- San German cobbly clay loam, 5 to 20 percent slopes
SgD -- San German-Duey complex, 5 to 20 percent slopes
Pit Location:
Quad Name:
Std Latitude: 18.0395700
Std Longitude: -67.0704200

Latitude:
Longitude:
Datum: WGS84
UTM Zone:
UTM Easting:
UTM Northing:

Primary Earth Cover: Tree cover
Secondary Earth Cover:
Existing Vegetation:
Parent Material: residuum weathered from limestone
Bedrock Kind: Limestone
Bedrock Depth: 22 centimeters
Bedrock Hardness: indurated
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2017PR079030 **Pedon ID:** S2017PR079030

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
22.0			25.2	26.7	23.3	1,175	365	well		

A--0 to 9 centimeters (0.0 to 3.5 inches); cobbly clay, very dark gray (10YR 3/1) broken face, moist; moderate fine granular, and moderate medium granular, and moderate coarse granular structure; moderately hard, firm, slightly sticky, moderately plastic; very fine roots throughout and medium roots throughout and fine roots throughout and coarse roots throughout; medium tubular and fine tubular pores; 10 percent nonflat subangular very strongly cemented 2 to 75-millimeter Limestone fragments and 25 percent nonflat subangular very strongly cemented 76 to 250-millimeter Limestone fragments; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.0, pH indicator solutions; clear wavy boundary. Lab sample # 18N02727

AC--9 to 22 centimeters (3.5 to 8.7 inches); gravelly clay, very dark grayish brown (10YR 3/2) broken face, moist; moderate very fine granular parts to structureless massive; slightly hard, friable, slightly sticky, moderately plastic; very fine roots throughout and medium roots throughout and fine roots throughout; fine interstitial pores; 5 percent nonflat subangular very strongly cemented 76 to 250-millimeter Limestone fragments and 60 percent nonflat subangular very strongly cemented 2 to 75-millimeter Limestone fragments; strong effervescence, by HCl, 1 normal; moderately alkaline, pH 8.0, pH indicator solutions; abrupt wavy boundary. Lab sample # 18N02728

R--22 to 100 centimeters (8.7 to 39.4 inches); violent effervescence, by HCl, 1 normal.