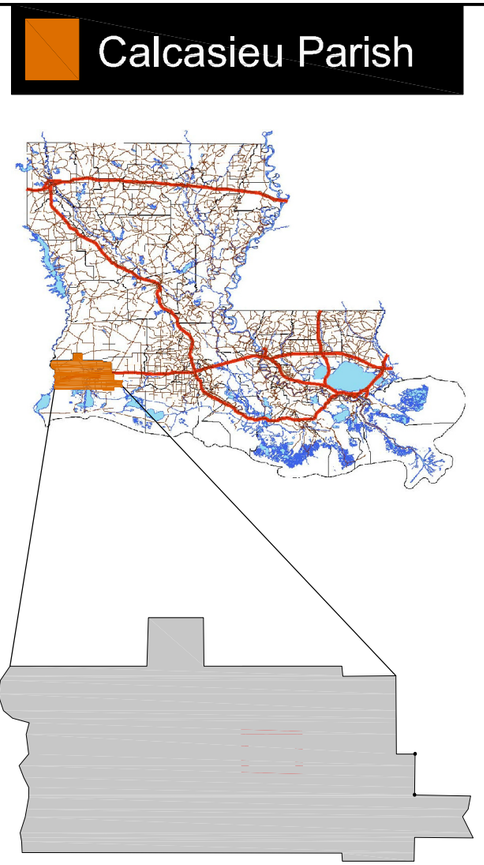
Exhibit P - Soils Conservation Map



Available Site Data

- Chennault Site 5
- Development Tract

W - Water

Mt - Mowata-Vidrine complex

Mr - Edgerly loam

Source:
- Aerial Photo: 2014 Google Earth
- Site Boundaries are Approximate
- 12/10/2014

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N

GRAPHIC SCALE

1000 0 500 1000 2000 4000

(IN FEET)
1 INCH = 1000 ft.

Map Unit Description

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. Soils of a given series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Additional information about the map units described in this report is available in other soil reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the soil reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description

Calcasieu Parish, Louisiana

Mr—Edgerly loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2qrt8
Elevation: 0 to 20 feet
Mean annual precipitation: 52 to 66 inches
Mean annual air temperature: 57 to 79 degrees F
Frost-free period: 245 to 304 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Edgerly and similar soils: 82 percent
Minor components: 18 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Edgerly

Setting

Landform: Flats
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy fluviomarine deposits of pleistocene age

Typical profile

Ap - 0 to 7 inches: loam
Bt - 7 to 31 inches: loam
Btg - 31 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: Rare
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: High (about 12.0 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D

Minor Components

Leton

Percent of map unit: 6 percent
Landform: Flats, drainageways

Kaplan

Percent of map unit: 4 percent
Landform: Ridges

Vidrine

Percent of map unit: 3 percent
Landform: Ridges, flats
Microfeatures of landform position: Mounds

Midland
Percent of map unit: 2 percent
Landform: Depressions, flats

Crowley
Percent of map unit: 2 percent
Landform: Ridges

Mowata
Percent of map unit: 1 percent
Landform: Flats, drainageways

Mt—Mowata-Vidrine complex, 0 to 1 percent slopes

Map Unit Setting
National map unit symbol: 2thq6
Elevation: 10 to 80 feet
Mean annual precipitation: 59 to 66 inches
Mean annual air temperature: 67 to 72 degrees F
Frost-free period: 240 to 304 days
Farmland classification: All areas are prime farmland

Map Unit Composition
Mowata and similar soils: 60 percent
Vidrine and similar soils: 30 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mowata

Setting
Landform: Drainageways
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Late pleistocene age loamy fluviomarine deposits derived from igneous, metamorphic and sedimentary rock

Typical profile
Ap - 0 to 8 inches: silt loam
Eg - 8 to 18 inches: silt loam
Btg/E - 18 to 34 inches: clay loam
Btg - 34 to 80 inches: silty clay

Properties and qualities
Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 0 to 24 inches

Frequency of flooding: Rare
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: High (about 11.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D

Description of Vidrine

Setting

Landform: Flats
Landform position (three-dimensional): Rise
Microfeatures of landform position: Mounds
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy eolian deposits over clayey fluviomarine deposits of pleistocene age

Typical profile

A - 0 to 6 inches: silt loam
E - 6 to 19 inches: silt loam
Bt/E - 19 to 22 inches: silt loam
Btg - 22 to 60 inches: silty clay
BCtg - 60 to 80 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.01 in/hr)
Depth to water table: About 14 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: High (about 10.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: D

Minor Components

Crowley

Percent of map unit: 3 percent
Landform: Terraces

Landform position (three-dimensional): Riser
Microfeatures of landform position: Bars
Down-slope shape: Convex
Across-slope shape: Linear

Leton

Percent of map unit: 3 percent
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave

Edgerly

Percent of map unit: 2 percent
Landform: Flats
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave

Midland

Percent of map unit: 2 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Microfeatures of landform position: Open depressions
Down-slope shape: Linear
Across-slope shape: Concave

W—Water

Map Unit Setting

National map unit symbol: 1jg2b
Mean annual precipitation: 43 to 61 inches
Mean annual air temperature: 59 to 77 degrees F
Frost-free period: 259 to 313 days
Farmland classification: Not prime farmland

Map Unit Composition

Water, large: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Data Source Information

Soil Survey Area: Calcasieu Parish, Louisiana
Survey Area Data: Version 10, Sep 25, 2014

Soil Features

This table gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage, or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, saturated hydraulic conductivity (Ksat), content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low*, *moderate*, or *high.* It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Report—Soil Features

Soil Features–Calcasieu Parish, Louisiana									
Map symbol and soil name	Restrictive Layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		Low-RV-High	*Range*		*Low-High*	*Low-High*			
		In	*In*		*In*	*In*			
Mr—Edgerly loam, 0 to 1 percent slopes									
Edgerly		—	—		—	—		High	Moderate
Leton		—	—		—	—			
Kaplan		—	—		—	—			
Vidrine		—	—		—	—			
Crowley		—	—		—	—			
Midland		—	—		—	—			
Mowata		—	—		—	—			
Mt—Mowata-Vidrine complex, 0 to 1 percent slopes									
Mowata		—	—		0	0	None	High	Moderate
Vidrine		—	—		0	0	None	High	High
Crowley		—	—		—	—			
Leton		—	—		—	—			
Edgerly		—	—		—	—			
Midland		—	—		—	—			
W—Water									
Water, large		—	—		—	—			

Data Source Information

Soil Survey Area: Calcasieu Parish, Louisiana
Survey Area Data: Version 10, Sep 25, 2014

Engineering Properties

This table gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Hydrologic soil group is a group of soils having similar runoff potential under similar storm and cover conditions. The criteria for determining Hydrologic soil group is found in the National Engineering Handbook, Chapter 7 issued May 2007(http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba). Listing HSGs by soil map unit component and not by soil series is a new concept for the engineers. Past engineering references contained lists of HSGs by soil series. Soil series are continually being defined and redefined, and the list of soil series names changes so frequently as to make the task of maintaining a single national list virtually impossible. Therefore, the criteria is now used to calculate the HSG using the component soil properties and no such national series lists will be maintained. All such references are obsolete and their use should be discontinued. Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to a seasonal high water table, saturated hydraulic conductivity after prolonged wetting, and depth to a layer with a very slow water transmission rate. Changes in soil properties caused by land management or climate changes also cause the hydrologic soil group to change. The influence of ground cover is treated independently. There are four hydrologic soil groups, A, B, C, and D, and three dual groups, A/D, B/D, and C/D. In the dual groups, the first letter is for drained areas and the second letter is for undrained areas.

The four hydrologic soil groups are described in the following paragraphs:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

References:

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Report—Engineering Properties

Absence of an entry indicates that the data were not estimated. The asterisk '*' denotes the representative texture; other possible textures follow the dash. The criteria for determining the hydrologic soil group for individual soil components is found in the National Engineering Handbook, Chapter 7 issued May 2007(http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba).

Engineering Properties–Calcasieu Parish, Louisiana														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*Pct*	*Pct*					*Pct*	
Mr—Edgerly loam, 0 to 1 percent slopes														
Edgerly	82	D	0-7	Loam, silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0- 0- 0	0- 0- 0	100-100-100	95-100-100	90-100-100	65-72-95	23-27-49	4-5 -21
			7-31	Silty clay loam, silt loam, loam, clay loam	CL, CH	A-6, A-7	0- 0- 0	0- 0- 0	100-100-100	95-100-100	90-100-100	75-78-95	31-33-47	13-16-25
			31-80	Silty clay, clay, clay loam, silty clay loam	CH, CL	A-6, A-7-6	0- 0- 0	0- 0- 0	98-100-100	95-100-100	90-100-100	75-79-95	30-42-56	13-24-33

Engineering Properties–Calcasieu Parish, Louisiana														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*Pct*	*Pct*					*Pct*	
Mt—Mowata-Vidrine complex, 0 to 1 percent slopes														
Mowata	60	D	0-8	Silt loam	ML, CL-ML, CL	A-4	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	90-95-100	20-31-42	4-10-16
			8-18	Silt loam	CL-ML, CL, ML	A-4	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	90-95-100	20-31-42	4-10-16
			18-34	Silty clay loam, clay loam, silty clay	CH, CL	A-7-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	75-85-95	46-50-62	25-27-37
			34-80	Silty clay loam, silty clay, clay loam	CH, CL	A-6, A-7-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	75-85-95	37-41-50	18-24-29
Vidrine	30	D	0-6	Silt loam	CL, CL-ML, ML	A-4	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-99-100	80-87-95	21-25-31	3-4 -9
			6-19	Silt loam	CL-ML, ML, CL	A-4	0- 0- 0	0- 0- 0	100-100-100	99-99-100	95-97-100	80-84-95	19-22-26	3-6 -9
			19-22	Silty clay loam, silt loam, silty clay	CL, CH	A-6, A-7-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-100-100	85-91-97	35-36-56	17-18-33
			22-60	Silty clay, silty clay loam	CL, CH	A-7-6, A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-100-100	85-91-97	35-52-56	17-30-33
			60-80	Silt loam, silty clay loam, silty clay, clay loam	CH, CL	A-6, A-7-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-100-100	80-90-97	35-45-60	17-25-37

Data Source Information

Soil Survey Area: Calcasieu Parish, Louisiana
Survey Area Data: Version 10, Sep 25, 2014

Chemical Soil Properties

This table shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable cations plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. It is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil.

Gypsum is expressed as a percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Sodium adsorption ratio (SAR) is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced saturated hydraulic conductivity and aeration, and a general degradation of soil structure.

Report—Chemical Soil Properties

Chemical Soil Properties–Calcasieu Parish, Louisiana								
Map symbol and soil name	**Depth**	**Cation-exchange capacity**	**Effective cation-exchange capacity**	**Soil reaction**	**Calcium carbonate**	**Gypsum**	**Salinity**	**Sodium adsorption ratio**
	In	*meq/100g*	*meq/100g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
Mr—Edgerly loam, 0 to 1 percent slopes								
Edgerly	0-7	8.9-25	—	5.1-7.3	—	—	0.0-4.0	0-4
	7-31	10-28	—	5.6-7.8	—	—	0.0-4.0	0-4
	31-80	14-34	—	5.6-8.4	—	—	0.0-4.0	0-4
Leton	—	—	—	—	—	—	—	—
Kaplan	—	—	—	—	—	—	—	—
Vidrine	—	—	—	—	—	—	—	—
Crowley	—	—	—	—	—	—	—	—
Midland	—	—	—	—	—	—	—	—
Mowata	—	—	—	—	—	—	—	—

Chemical Soil Properties–Calcasieu Parish, Louisiana								
Map symbol and soil name	**Depth**	**Cation-exchange capacity**	**Effective cation-exchange capacity**	**Soil reaction**	**Calcium carbonate**	**Gypsum**	**Salinity**	**Sodium adsorption ratio**
	In	*meq/100g*	*meq/100g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
Mt—Mowata-Vidrine complex, 0 to 1 percent slopes								
Mowata	0-8	7.4-20	—	5.1-7.3	0	0	0.0-2.0	0-2
	8-18	7.4-20	—	5.1-7.3	0	0	0.0-2.0	0-2
	18-34	26-37	—	4.5-6.0	0	0	0.0-2.0	0-2
	34-80	21-36	—	5.6-8.4	0	0	0.0-2.0	0-2
Vidrine	0-6	—	3.7-9.5	4.5-6.0	0	0	0.0-0.5	0
	6-19	—	4.2-13	4.5-6.0	0	0	0.0-0.5	0
	19-22	—	13-29	4.5-6.0	0	0	0.0-1.0	0-2
	22-60	19-32	—	5.1-8.4	0	0	0.0-1.0	0-4
	60-80	18-35	—	5.1-8.4	0	0	0.0-1.0	2-8
Crowley	—	—	—	—	—	—	—	—
Leton	—	—	—	—	—	—	—	—
Edgerly	—	—	—	—	—	—	—	—
Midland	—	—	—	—	—	—	—	—
W—Water								
Water, large	—	—	—	—	—	—	—	—

Data Source Information

Soil Survey Area: Calcasieu Parish, Louisiana
Survey Area Data: Version 10, Sep 25, 2014