Soil Map—Bitterroot Valley Area, Montana
(Ravalli County TEDD)

Map Scale: 1:13,900 if printed on B portrait (11" x 17") sheet.

N

Meters: 0 200 400 800 1200

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Bitterroot Valley Area, Montana
Survey Area Data: Version 13, Sep 3, 2014

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

Date(s) aerial images were photographed: Jul 10, 2011—Jul 24, 2011

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

Map Unit Legend

Bitterroot Valley Area, Montana (MT645)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
16E	Riverside-Tiechute-Curlew, rarely flooded complex, 0 to 40 percent slopes	5.3	1.1%
102B	Losttrail-Wimper complex, 0 to 4 percent slopes	17.1	3.7%
105B	Wimper sandy loam, 0 to 4 percent slopes	35.5	7.7%
105C	Riverside-Losttrail complex, 4 to 8 percent slopes	20.8	4.5%
105D	Riverside-Losttrail complex, 8 to 15 percent slopes	1.3	0.3%
120B	Holloron loam, 0 to 4 percent slopes	32.9	7.2%
122B	Holloron-Tiechute complex, 0 to 4 percent slopes	13.3	2.9%
130B	Hamilton silt loam, 0 to 4 percent slopes	32.2	7.0%
135C	Quast silt loam, 4 to 8 percent slopes	7.9	1.7%
144A	McCalla-Blossberg complex, 0 to 2 percent slopes	0.5	0.1%
145A	Fairway, sodic-Overwhich complex, 0 to 2 percent slopes	109.1	23.7%
150A	Riverrun complex, 0 to 2 percent slopes, rarely flooded	4.9	1.1%
153A	Gash, occasionally flooded-Riverrun, rarely flooded complex, 0 to 2 percent slopes	17.1	3.7%
154A	Overwhich-Bandy complex, 0 to 2 percent slopes, rarely flooded	38.2	8.3%
155A	Overwhich-Holloron, sodic complex, 0 to 2 percent slopes	96.5	21.0%
156A	Overwhich loam, 0 to 2 percent slopes	20.5	4.5%
900	Pits, gravel	5.8	1.3%
W	Water	1.1	0.2%
Totals for Area of Interest		**459.9**	**100.0%**

Bitterroot Valley Area, Montana

16E—Riverside-Tiechute-Curlew, rarely flooded complex, 0 to 40 percent slopes

Map Unit Setting

National map unit symbol: p834
Elevation: 3,180 to 3,740 feet
Mean annual precipitation: 12 to 15 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 115 days
Farmland classification: Not prime farmland

Map Unit Composition

Tiechute and similar soils: 40 percent
Riverside and similar soils: 40 percent
Curlew and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tiechute

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 7 inches: cobbly sandy loam
AC - 7 to 10 inches: very cobbly sandy loam
C - 10 to 60 inches: extremely cobbly loamy sand

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 3 percent
Available water storage in profile: Very low (about 2.0 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Ecological site: Gravelly (gr) lru 44a-a (R044AA020MT)

Description of Riverside

Setting

Landform: Escarpments
Landform position (two-dimensional): Backslope, shoulder
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Colluvium

Typical profile

A - 0 to 7 inches: cobbly sandy loam
BC - 7 to 12 inches: gravelly sandy loam
C1 - 12 to 25 inches: very gravelly loamy sand
C2 - 25 to 60 inches: extremely gravelly coarse sand

Properties and qualities

Slope: 15 to 40 percent
Percent of area covered with surface fragments: 0.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline (0.0 to 0.5 mmhos/cm)
Available water storage in profile: Very low (about 2.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: Gravelly (gr) lru 44a-a (R044AA020MT)

Description of Curlew

Setting

Landform: Abandoned channels on flood plains
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium

Typical profile

Oe - 0 to 3 inches: mucky peat
A - 3 to 15 inches: silt loam
C1 - 15 to 29 inches: gravelly sandy loam
C2 - 29 to 60 inches: very gravelly sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 0 to 12 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)
Available water storage in profile: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): 5w
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: Riparian meadow (rm) lru 44a-y (R044AY080MT)

Data Source Information

Soil Survey Area: Bitterroot Valley Area, Montana
Survey Area Data: Version 13, Sep 3, 2014

Bitterroot Valley Area, Montana

120B—Holloron loam, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: p892
Elevation: 3,250 to 3,770 feet
Mean annual precipitation: 12 to 15 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 115 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Holloron and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Holloron

Setting

Landform: Stream terraces, inset fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 13 inches: loam
Bw - 13 to 22 inches: sandy loam
C - 22 to 60 inches: very gravelly sandy loam

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: Loamy (lo) lru 44a-a (R044AA032MT)

Minor Components

Tiechute

Percent of map unit: 10 percent
Landform: Inset fans, stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Gravelly (gr) lru 44a-a (R044AA020MT)

Overwhich

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Subirrigated (sb) lru 44a-y (R044AY150MT)

Data Source Information

Soil Survey Area: Bitterroot Valley Area, Montana
Survey Area Data: Version 13, Sep 3, 2014

Bitterroot Valley Area, Montana

102B—Losttrail-Wimper complex, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: p85g
Elevation: 3,430 to 3,990 feet
Mean annual precipitation: 13 to 17 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 95 to 120 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Losttrail and similar soils: 50 percent
Wimper and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Losttrail

Setting

Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 8 inches: loam
Bw - 8 to 20 inches: sandy loam
Bk - 20 to 31 inches: sandy loam
C1 - 31 to 49 inches: very gravelly loamy sand
C2 - 49 to 60 inches: very gravelly sand

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water storage in profile: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: Loamy (lo) lru 44a-a (R044AA032MT)

Description of Wimper

Setting

Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 7 inches: gravelly loam
Bw - 7 to 13 inches: gravelly loam
Bk - 13 to 41 inches: very gravelly sandy loam
C - 41 to 60 inches: extremely gravelly loamy sand

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water storage in profile: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: Droughty (dr) lru 44a-a (R044AA036MT)

Minor Components

Riverside

Percent of map unit: 10 percent
Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Gravelly (gr) lru 44a-a (R044AA020MT)

Farnuf

Percent of map unit: 5 percent
Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Linear

Ecological site: Loamy (lo) lru 44a-a (R044AA032MT)

Data Source Information

Soil Survey Area: Bitterroot Valley Area, Montana
Survey Area Data: Version 13, Sep 3, 2014

Bitterroot Valley Area, Montana

105B—Wimper sandy loam, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: p85j
Elevation: 3,480 to 4,560 feet
Mean annual precipitation: 13 to 17 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 95 to 120 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Wimper and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wimper

Setting

Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 7 inches: sandy loam
Bw - 7 to 13 inches: gravelly loam
Bk - 13 to 41 inches: very gravelly sandy loam
C - 41 to 60 inches: extremely gravelly loamy sand

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water storage in profile: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: Droughty (dr) lru 44a-a (R044AA036MT)

Minor Components

Burnt fork

Percent of map unit: 10 percent
Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Loamy (lo) lru 44a-a (R044AA032MT)

Riverside

Percent of map unit: 5 percent
Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Gravelly (gr) lru 44a-a (R044AA020MT)

Data Source Information

Soil Survey Area: Bitterroot Valley Area, Montana
Survey Area Data: Version 13, Sep 3, 2014

Bitterroot Valley Area, Montana

105C—Riverside-Losttrail complex, 4 to 8 percent slopes

Map Unit Setting

National map unit symbol: 59yn
Elevation: 3,300 to 4,150 feet
Mean annual precipitation: 13 to 17 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 95 to 120 days
Farmland classification: Farmland of local importance

Map Unit Composition

Riverside and similar soils: 50 percent
Losttrail and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Riverside

Setting

Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 7 inches: cobbly sandy loam
BC - 7 to 12 inches: gravelly sandy loam
C1 - 12 to 25 inches: very gravelly loamy sand
C2 - 25 to 60 inches: extremely gravelly coarse sand

Properties and qualities

Slope: 4 to 8 percent
Percent of area covered with surface fragments: 0.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline (0.0 to 0.5 mmhos/cm)
Available water storage in profile: Very low (about 2.3 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Ecological site: Gravelly (gr) lru 44a-a (R044AA020MT)

Description of Losttrail

Setting

Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 8 inches: sandy loam
Bw - 8 to 20 inches: sandy loam
Bk - 20 to 31 inches: sandy loam
C1 - 31 to 49 inches: very gravelly loamy sand
C2 - 49 to 60 inches: very gravelly sand

Properties and qualities

Slope: 4 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water storage in profile: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: Loamy (lo) lru 44a-a (R044AA032MT)

Minor Components

Burnt fork

Percent of map unit: 10 percent
Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: Loamy (lo) lru 44a-a (R044AA032MT)

Wimper

Percent of map unit: 10 percent
Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Linear

Ecological site: Droughty (dr) lru 44a-a (R044AA036MT)

Data Source Information

Soil Survey Area: Bitterroot Valley Area, Montana
Survey Area Data: Version 13, Sep 3, 2014

Bitterroot Valley Area, Montana

105D—Riverside-Losttrail complex, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 59yr
Elevation: 3,260 to 4,000 feet
Mean annual precipitation: 13 to 17 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 95 to 120 days
Farmland classification: Farmland of local importance

Map Unit Composition

Riverside and similar soils: 50 percent
Losttrail and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Riverside

Setting

Landform: Eroded fan remnants
Landform position (two-dimensional): Shoulder, backslope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Alluvium

Typical profile

A - 0 to 7 inches: cobbly sandy loam
BC - 7 to 12 inches: gravelly sandy loam
C1 - 12 to 25 inches: very gravelly loamy sand
C2 - 25 to 60 inches: extremely gravelly coarse sand

Properties and qualities

Slope: 8 to 15 percent
Percent of area covered with surface fragments: 0.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline (0.0 to 0.5 mmhos/cm)
Available water storage in profile: Very low (about 2.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A

Ecological site: Gravelly (gr) lru 44a-a (R044AA020MT)

Description of Losttrail

Setting

Landform: Eroded fan remnants
Landform position (two-dimensional): Footslope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Alluvium

Typical profile

A - 0 to 8 inches: sandy loam
Bw - 8 to 20 inches: sandy loam
Bk - 20 to 31 inches: sandy loam
C1 - 31 to 49 inches: very gravelly loamy sand
C2 - 49 to 60 inches: very gravelly sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water storage in profile: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: Loamy (lo) lru 44a-a (R044AA032MT)

Minor Components

Wimper

Percent of map unit: 10 percent
Landform: Eroded fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Droughty (dr) lru 44a-a (R044AA036MT)

Burnt fork

Percent of map unit: 10 percent
Landform: Eroded fan remnants
Landform position (two-dimensional): Footslope
Down-slope shape: Linear
Across-slope shape: Convex

Ecological site: Loamy (lo) lru 44a-a (R044AA032MT)

Data Source Information

Soil Survey Area: Bitterroot Valley Area, Montana
Survey Area Data: Version 13, Sep 3, 2014

Bitterroot Valley Area, Montana

122B—Holloron-Tiechute complex, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: p895
Elevation: 3,410 to 3,890 feet
Mean annual precipitation: 12 to 15 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 115 days
Farmland classification: Farmland of local importance

Map Unit Composition

Holloron and similar soils: 50 percent
Tiechute and similar soils: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Holloron

Setting

Landform: Stream terraces, inset fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 13 inches: cobbly loam
Bw - 13 to 22 inches: sandy loam
C - 22 to 60 inches: very gravelly sandy loam

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: Loamy (lo) lru 44a-a (R044AA032MT)

Description of Tiechute

Setting

Landform: Stream terraces, inset fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 7 inches: cobbly loam
AC - 7 to 10 inches: very cobbly sandy loam
C - 10 to 60 inches: extremely cobbly loamy sand

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 3 percent
Available water storage in profile: Very low (about 2.3 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: Gravelly (gr) lru 44a-a (R044AA020MT)

Minor Components

Owenfort

Percent of map unit: 10 percent
Landform: Inset fans, stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Droughty (dr) lru 44a-a (R044AA036MT)

Data Source Information

Soil Survey Area: Bitterroot Valley Area, Montana
Survey Area Data: Version 13, Sep 3, 2014

Bitterroot Valley Area, Montana

130B—Hamilton silt loam, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: p89f
Elevation: 3,200 to 4,490 feet
Mean annual precipitation: 12 to 15 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 115 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Hamilton and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hamilton

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 10 inches: silt loam
Bw - 10 to 19 inches: silt loam
Bk1 - 19 to 32 inches: silt loam
Bk2 - 32 to 54 inches: silt loam
2C - 54 to 60 inches: gravelly loamy fine sand

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
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 10.8 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: B
Ecological site: Loamy (lo) lru 44a-a (R044AA032MT)

Minor Components

Overwhich
Percent of map unit: 10 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Subirrigated (sb) lru 44a-y (R044AY150MT)

Data Source Information

Soil Survey Area: Bitterroot Valley Area, Montana
Survey Area Data: Version 13, Sep 3, 2014

Bitterroot Valley Area, Montana

135C—Quast silt loam, 4 to 8 percent slopes

Map Unit Setting

National map unit symbol: 59yv
Elevation: 3,590 to 4,740 feet
Mean annual precipitation: 13 to 17 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 95 to 120 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Quast and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Quast

Setting

Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits over alluvium

Typical profile

A - 0 to 12 inches: silt loam
Bw1 - 12 to 25 inches: silt loam
Bw2 - 25 to 35 inches: very fine sandy loam
Bk - 35 to 60 inches: very fine sandy loam

Properties and qualities

Slope: 4 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water storage in profile: High (about 10.1 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: Loamy (lo) lru 44a-a (R044AA032MT)

Minor Components

Quigley

Percent of map unit: 10 percent
Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Loamy (lo) lru 44a-a (R044AA032MT)

Farnuf

Percent of map unit: 10 percent
Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Loamy (lo) lru 44a-a (R044AA032MT)

Data Source Information

Soil Survey Area: Bitterroot Valley Area, Montana
Survey Area Data: Version 13, Sep 3, 2014

Bitterroot Valley Area, Montana

145A—Fairway, sodic-Overwhich complex, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 59ys
Elevation: 3,350 to 4,100 feet
Mean annual precipitation: 12 to 14 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 115 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Fairway, sodic overwash, and similar soils: 55 percent
Overwhich and similar soils: 30 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fairway, Sodic Overwash

Setting

Landform: Inset fans, stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sodium affected alluvium over alluvium

Typical profile

A - 0 to 8 inches: loam
Bw - 8 to 13 inches: loam
Bk - 13 to 21 inches: loam
C1 - 21 to 40 inches: loam
2C2 - 40 to 60 inches: extremely gravelly sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 24 to 39 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 19.0
Available water storage in profile: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): 6s
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: Saline subirrigated (ssb) lru 44a-y (R044AY092MT)

Description of Overwhich

Setting

Landform: Inset fans, stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 11 inches: loam
Bw - 11 to 17 inches: loam
C1 - 17 to 33 inches: fine sandy loam
2C2 - 33 to 60 inches: extremely gravelly loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 24 to 39 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 7 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C
Ecological site: Subirrigated (sb) lru 44a-y (R044AY150MT)

Minor Components

Fairway

Percent of map unit: 10 percent
Landform: Inset fans, stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Subirrigated (sb) lru 44a-y (R044AY150MT)

Capiron

Percent of map unit: 5 percent
Landform: Inset fans, stream terraces

Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: Subirrigated (sb) lru 44a-y (R044AY150MT)

Data Source Information

Soil Survey Area: Bitterroot Valley Area, Montana
Survey Area Data: Version 13, Sep 3, 2014

Bitterroot Valley Area, Montana

150A—Riverrun complex, 0 to 2 percent slopes, rarely flooded

Map Unit Setting

National map unit symbol: 59zt
Elevation: 3,170 to 4,200 feet
Mean annual precipitation: 12 to 14 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 115 days
Farmland classification: Not prime farmland

Map Unit Composition

Riverrun and similar soils: 65 percent
Riverrun, very gravelly loamy sand, and similar soils: 20 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Riverrun

Setting

Landform: Flood-plain steps
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 6 inches: fine sandy loam
C1 - 6 to 16 inches: gravelly loamy sand
C2 - 16 to 60 inches: very gravelly loamy coarse sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 24 to 43 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 3 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 2.8 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Ecological site: Subirrigated (sb) lru 44a-y (R044AY150MT)

Description of Riverrun, Very Gravelly Loamy Sand

Setting

Landform: Flood-plain steps
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 4 inches: very gravelly loamy sand
C - 4 to 60 inches: extremely gravelly sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 24 to 43 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)
Available water storage in profile: Very low (about 0.8 inches)

Interpretive groups

Land capability classification (irrigated): 7s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Ecological site: Subirrigated (sb) lru 44a-y (R044AY150MT)

Minor Components

Gash

Percent of map unit: 10 percent
Landform: Drainageways
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: Loamy (lo) lru 44a-a (R044AA032MT)

Canarway

Percent of map unit: 5 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Riparian meadow (rm) lru 44a-y (R044AY080MT)

Data Source Information

Soil Survey Area: Bitterroot Valley Area, Montana
Survey Area Data: Version 13, Sep 3, 2014

Bitterroot Valley Area, Montana

153A—Gash, occasionally flooded-Riverrun, rarely flooded complex, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 59zq
Elevation: 3,200 to 4,460 feet
Mean annual precipitation: 12 to 14 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 115 days
Farmland classification: Farmland of local importance

Map Unit Composition

Gash and similar soils: 60 percent
Riverrun and similar soils: 25 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gash

Setting

Landform: Drainageways
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium

Typical profile

A - 0 to 6 inches: fine sandy loam
C1 - 6 to 26 inches: sandy loam
C2 - 26 to 60 inches: very gravelly sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 42 to 60 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): 4w
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A
Ecological site: Loamy (lo) lru 44a-a (R044AA032MT)

Description of Riverrun

Setting

Landform: Flood-plain steps
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 6 inches: sandy loam
C1 - 6 to 16 inches: gravelly loamy sand
C2 - 16 to 60 inches: very gravelly loamy coarse sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 24 to 43 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 3 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water storage in profile: Very low (about 2.8 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Ecological site: Subirrigated (sb) lru 44a-y (R044AY150MT)

Minor Components

Fredburr

Percent of map unit: 10 percent
Landform: Flood-plain steps
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Subirrigated (sb) lru 44a-y (R044AY150MT)

Canarway

Percent of map unit: 5 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Riparian meadow (rm) lru 44a-y (R044AY080MT)

Data Source Information

Soil Survey Area: Bitterroot Valley Area, Montana
Survey Area Data: Version 13, Sep 3, 2014

Bitterroot Valley Area, Montana

154A—Overwhich-Bandy complex, 0 to 2 percent slopes, rarely flooded

Map Unit Setting

National map unit symbol: 59zp
Elevation: 3,200 to 4,230 feet
Mean annual precipitation: 12 to 14 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 115 days
Farmland classification: Farmland of local importance

Map Unit Composition

Overwhich and similar soils: 80 percent
Bandy and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Overwhich

Setting

Landform: Flood-plain steps
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 11 inches: loam
Bw - 11 to 17 inches: loam
C1 - 17 to 33 inches: fine sandy loam
2C2 - 33 to 60 inches: extremely gravelly loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 24 to 39 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 7 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 6.1 inches)

Interpretive groups

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

Ecological site: Subirrigated (sb) lru 44a-y (R044AY150MT)

Description of Bandy

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

Oe - 0 to 3 inches: mucky peat
A1 - 3 to 7 inches: loam
A2 - 7 to 15 inches: gravelly sandy loam
C1 - 15 to 18 inches: very gravelly sandy loam
C2 - 18 to 60 inches: extremely gravelly sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): 4w
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: B/D
Ecological site: Riparian meadow (rm) lru 44a-y (R044AY080MT)

Data Source Information

Soil Survey Area: Bitterroot Valley Area, Montana
Survey Area Data: Version 13, Sep 3, 2014

Bitterroot Valley Area, Montana

155A—Overwhich-Holloron, sodic complex, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 59zn
Elevation: 3,210 to 3,920 feet
Mean annual precipitation: 12 to 14 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 115 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Overwhich and similar soils: 55 percent
Holloron, sodic overwash, and similar soils: 35 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Overwhich

Setting

Landform: Inset fans, stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 11 inches: loam
Bw - 11 to 17 inches: loam
C1 - 17 to 33 inches: fine sandy loam
2C2 - 33 to 60 inches: extremely gravelly loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 24 to 39 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 7 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: C
Ecological site: Subirrigated (sb) lru 44a-y (R044AY150MT)

Description of Holloron, Sodic Overwash

Setting

Landform: Inset fans, stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sodium affected alluvium over alluvium

Typical profile

A - 0 to 11 inches: gravelly loam
Bw - 11 to 19 inches: loam
C1 - 19 to 32 inches: sandy loam
C2 - 32 to 60 inches: very gravelly loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 48 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 6.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 12.0
Available water storage in profile: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: B
Ecological site: Loamy (lo) lru 44a-a (R044AA032MT)

Minor Components

Tiechute

Percent of map unit: 10 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Gravelly (gr) lru 44a-a (R044AA020MT)

Data Source Information

Soil Survey Area: Bitterroot Valley Area, Montana
Survey Area Data: Version 13, Sep 3, 2014

Bitterroot Valley Area, Montana

156A—Overwhich loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: w0gk
Elevation: 3,390 to 4,330 feet
Mean annual precipitation: 12 to 14 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 115 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Overwhich and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Overwhich

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 11 inches: loam
Bw - 11 to 17 inches: loam
C1 - 17 to 33 inches: fine sandy loam
2C2 - 33 to 60 inches: extremely gravelly loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 24 to 39 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 7 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C
Ecological site: Subirrigated (sb) lru 44a-y (R044AY150MT)

Minor Components

Nirling

Percent of map unit: 10 percent
Landform: Drainageways on stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Subirrigated (sb) lru 44a-y (R044AY150MT)

Capiron

Percent of map unit: 10 percent
Landform: Drainageways
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Subirrigated (sb) lru 44a-y (R044AY150MT)

Data Source Information

Soil Survey Area: Bitterroot Valley Area, Montana
Survey Area Data: Version 13, Sep 3, 2014

Bitterroot Valley Area, Montana

900—Pits, gravel

Map Unit Composition

Pits, gravel: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pits, Gravel

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Data Source Information

Soil Survey Area: Bitterroot Valley Area, Montana
Survey Area Data: Version 13, Sep 3, 2014

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Montana State Plane Zone (FIPS zone 2500). The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov

Base map Information shown on this FIRM was derived from NAIP orthophotography produced with a one meter ground resolution from photography dated 2005.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations and improved topographic data. The profile baselines depicted on this map represent the hydraulic modeling baselines that match the flood profiles and Floodway Data Tables if applicable, in the FIS report. As a result, the profile baselines may deviate significantly from the new base map channel representation and may appear outside of the floodplain.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information on available products associated with this FIRM visit the **Map Service Center (MSC)** website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have **questions about this map,** how to order products, or the National Flood Insurance Program in general, please call the **FEMA Map Information eXchange (FMIX)** at **1-877-FEMA-MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/.

Ravalli County Vertical Datum Offset Table

Flooding Source	Vertical Datum Offset (ft)	Flooding Source	Vertical Datum Offset (ft)
Bitterroot River	3.6	Left Branch of Bitterroot River	3.5

Example: To convert Alkali Creek elevations to NAVD 88, 2.5 feet were added to the NGVD 29 elevations.

NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 6 NORTH.

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	1% Annual Chance Floodplain Boundary
	0.2% Annual Chance Floodplain Boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

A — A	Cross section line
23 - - - - - 23	Transect line
45° 02' 08", 93° 02' 12"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
4989000 M	1000-meter ticks: Montana State Plane Zone (FIPS Zone 2500), Lambert Conformal Conic projection
4989000mN	1000-meter Universal Transverse Mercator grid values, zone 12N
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
•M1.5	River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
September 7, 1998

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
January 16, 2015 - to update corporate limits, to add Base Flood Elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to update map format, to add roads and road names and to reflect updated topographic information.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

150 0 150 300 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0494D

FIRM

FLOOD INSURANCE RATE MAP

RAVALLI COUNTY, MONTANA
AND INCORPORATED AREAS

PANEL 494 OF 1725

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
HAMILTON, CITY OF	300186	0494	D
RAVALLI COUNTY	300061	0494	D

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
30081C0494D

MAP REVISED
JANUARY 16, 2015

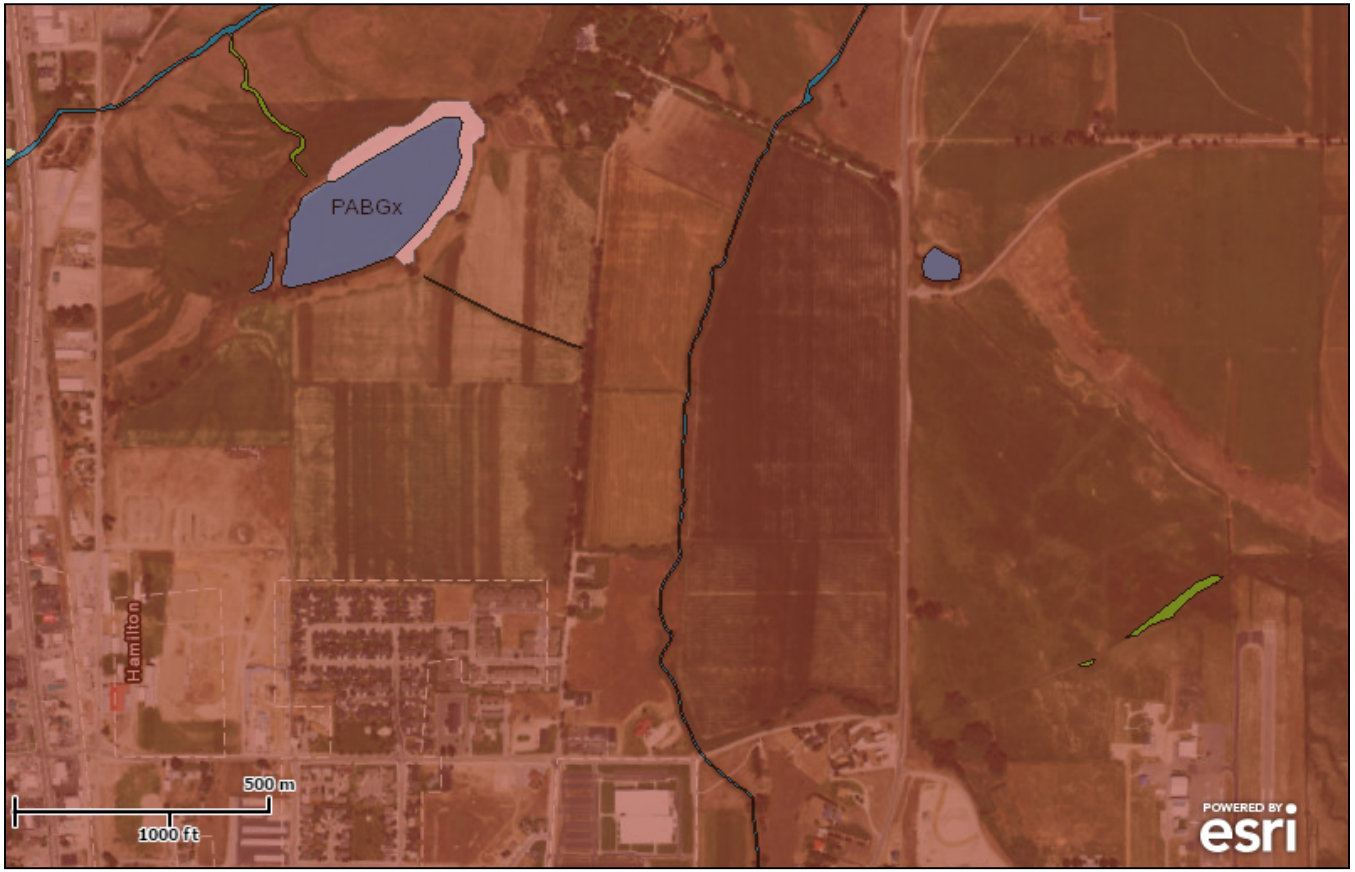
Federal Emergency Management Agency

U.S. Fish and Wildlife Service

National Wetlands Inventory

Ravalli County
TEDD PER

May 15, 2015



Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

Riparian

- Herbaceous
- Forested/Shrub

Riparian Status

- Digital Data

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

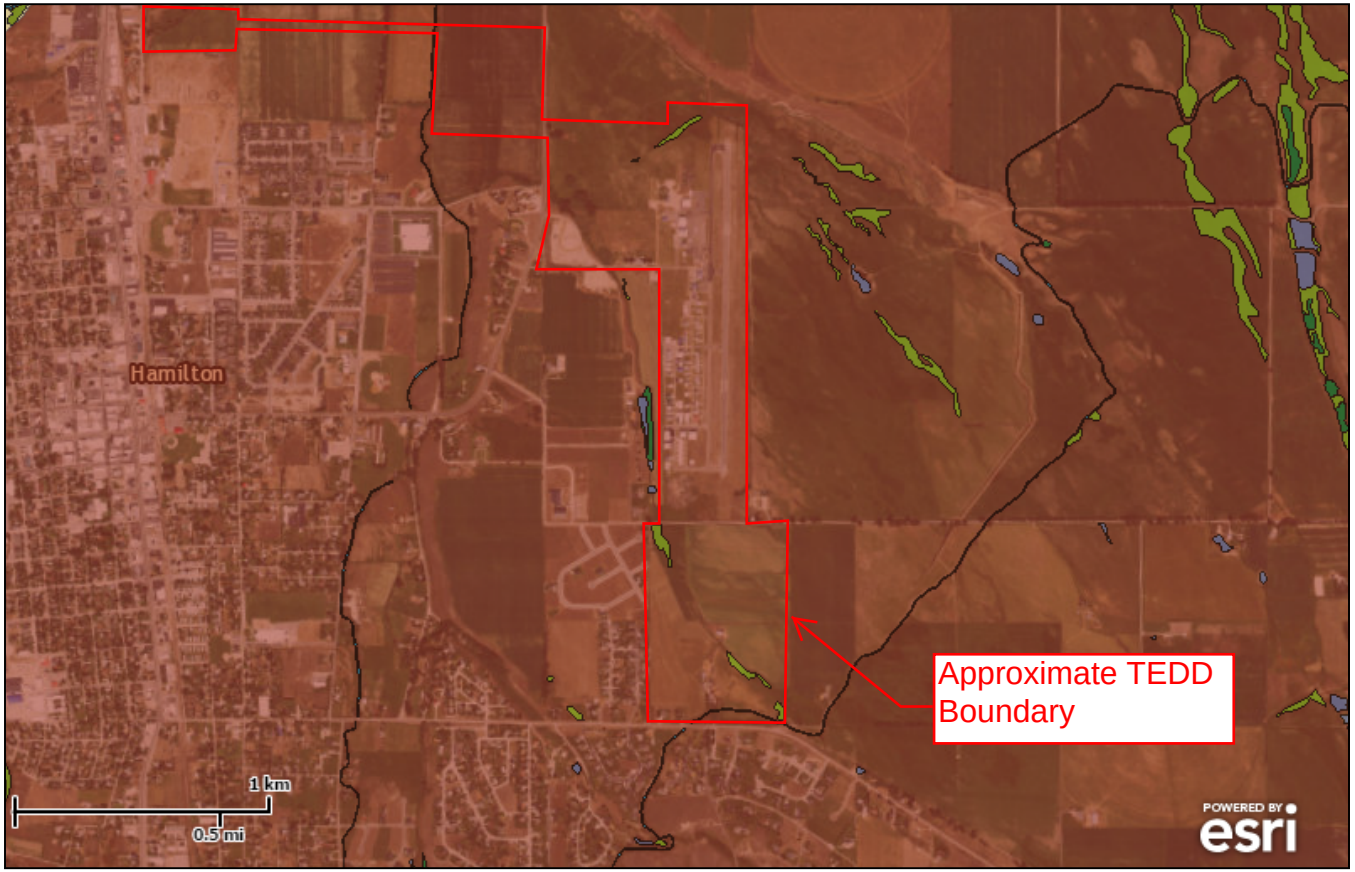
User Remarks:

U.S. Fish and Wildlife Service

National Wetlands Inventory

Ravalli County
TEDD PER

May 15, 2015



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User Remarks: