

Memorandum

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SEP 08 2005
IDWR/North



To: Greg Taylor, Idaho Department of Water Resources
From: Don Kerby, Cherrylane Ranches Inc
Date: September 8, 2005
RE: Soil Maps Water Right 85-2173A, 2173B, 04486, 15326

Greg,

I printed the soil map for our property as you requested and copied the data out of the soil survey. Unfortunately, the soil map and description is pretty generic. The soil survey indicates the entire Cherrylane flat is soil 138 – Uhlig Silt Loam and the description for that soil only resembles the back portion of the flat. The rest of the flat is much more sandy, riverwash type soils. The soils that resemble at least half of the field are similar to one the soils referenced as Contrasting Inclusions. This soil is Bridgewater and I have also included this description for you.

I work with soils quite a lot because I do real estate appraisals on farms and ranches. If I were describing the soils on this flat in an appraisal report, I would say that they are primarily sandy loams with areas of gravelly sandy loam and silt loams. The fields parallel hwy 12 and the Clearwater River and the front 1/3 of the fields are clearly sandy loams with excessive drainage. There is a rise and old river channel behind it in the middle of the field where the soils transition from sandy loams to more of a silt loam soil. Within this rise there are areas where there is a lot of old floating river rock, most of it golf ball to softball sized. The back 1/3 of the field is mostly very productive silt loam which overlays sandy/gravelly soils.

Hopefully, this information is of some assistance to you. If you are down this way, I would be happy to show you the property and the pump station to help you understand how we have operated it. It would take us 20 minutes to get there from Lewiston and perhaps 30 minutes to go over the land.

Please get in touch with me after you have had time to review this information and the information you plan to get from Boise.

1014 Main Street
Lewiston, Idaho 83501

(208) 746-9891
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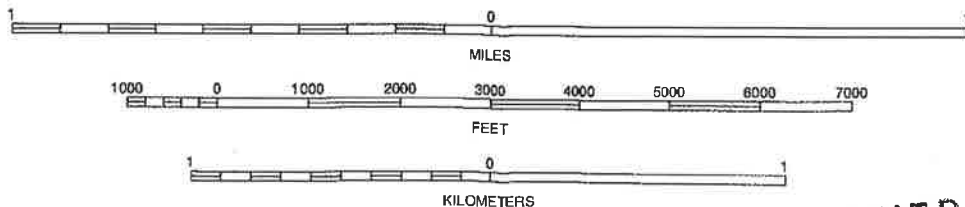


116° 42' 30"

116° 40' 00"

SCALE 1:24000

NORTH



QUADRANGLE LOCA

LEWIS AND NEZ PERCE COUNTIES, IDAHO NO. 7

RECEIVED
SEP 08 2005
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1	2	3	1 TROY
			2 LITTLE BEAR RIDGE
			3 TEXAS RIDGE
4		5	4 GREEN KNOB
			5 LENORE
			6 LAPWAI
6	7	8	7 CULDESAC NORTH
			8 GIFFORD

INDEX TO ADJOINING 7.5 MAPS

Cropland

Commonly grown crops: Wheat, barley, peas, lentils

General management considerations:

- Because of the moderate erodibility of the soil and the steepness of slope, the hazard of erosion is a primary concern.
- In many years, drifting snow collects on the concave slopes. Runoff from melting snow can increase the risk of erosion in spring.
- The abrupt silty clay subsoil of the Tilma soil restricts the growth of deep-rooted crops and results in droughtiness in dry years.

Capability Classification

4e, nonirrigated

137—Tombeall silt loam, 0 to 4 percent slopes

Composition

Tombeall soil and similar inclusions: 95 percent

Contrasting inclusions: 5 percent

Setting

Landform: Low terraces and flood plains

Slope range: 0 to 4 percent

Elevation: 800 to 1,200 feet

Average annual precipitation: About 18 inches

Frost-free season (32 degrees F): About 170 days

Characteristics of the Tombeall Soil

Typical profile:

0 to 7 inches—dark grayish brown silt loam

7 to 17 inches—dark grayish brown silt loam

17 to 28 inches—dark grayish brown, mottled sandy loam

28 to 35 inches—brown, mottled very gravelly sandy loam

35 to 60 inches—grayish brown extremely gravelly sandy loam

Depth class: Very deep

Drainage class: Somewhat poorly drained

Permeability: Moderate

Available water capacity: Low

Potential rooting depth: More than 60 inches

Restriction to rooting depth: Seasonal high water table at a depth of 12 to 30 inches

Runoff: Slow

Hazard of water erosion: Slight

Depth to seasonal high water table (apparent): 12 to 30 inches in February through April

Frequency of flooding: Rare

Contrasting Inclusions

- Joseph soils on gravel bars and low rises (5 percent)

Major Uses

Pastureland, hayland, cropland, rangeland

Pastureland and Hayland

General management considerations:

- Periodic flooding and the seasonal high water table limit the choice of plants that are suitable for maximum production of forage.
- Because of wetness in spring, this unit is susceptible to soil compaction and plant damage caused by livestock trampling.

Cropland

Commonly grown crops: Wheat, barley

General management considerations:

- Wetness limits the production of crops in some years.

Rangeland

Natural potential plant community: Tufted hairgrass-sedge

General management considerations:

- Because of the seasonal high water table, this unit is susceptible to soil compaction during wet periods.

Capability Classification

3w, nonirrigated

138—Uhlig silt loam, 2 to 8 percent slopes

Composition

Uhlig soil and similar inclusions: 85 percent

Contrasting inclusions: 15 percent

Setting

Landform: Dissected alluvial terraces

Position on landform: Broad ridges and low terraces

Slope range: 2 to 8 percent

Elevation: 800 to 1,300 feet

Average annual precipitation: About 18 inches

Frost-free season (32 degrees F): About 160 days

Characteristics of the Uhlig Soil

Typical profile:

0 to 15 inches—dark grayish brown and grayish brown silt loam

15 to 25 inches—brown loam

25 to 39 inches—pale brown very fine sandy loam
 39 to 68 inches—pale brown and light yellowish
 brown very fine sandy loam

Depth class: Very deep

Drainage class: Well drained

Permeability: Moderate

Available water capacity: High

Potential rooting depth: More than 60 inches

Runoff: Slow

Hazard of water erosion: Moderate

Contrasting Inclusions

- Lapwai soils on low terraces and flood plains (10 percent)
- Bridgewater soils on flood plains (5 percent)

Major Uses

Cropland, building site development

Cropland

Commonly grown crops: Wheat, barley, peas

General management considerations:

- Because of the moderate erodibility of the soil, the hazard of erosion is a primary concern.

Building Site Development

General management considerations:

- Excavation can expose soil material that is highly susceptible to erosion by water and wind.

Capability Classification

2e, nonirrigated

139—Uhlig silt loam, 8 to 20 percent slopes

Composition

Uhlig soil and similar inclusions: 85 percent

Contrasting inclusions: 15 percent

Setting

Landform: Dissected alluvial terraces

Slope range: 8 to 20 percent

Elevation: 800 to 1,300 feet

Average annual precipitation: About 18 inches

Frost-free season (32 degrees F): About 160 days

Characteristics of the Uhlig Soil

Typical profile:

- 0 to 15 inches—dark grayish brown and grayish brown silt loam
- 15 to 25 inches—brown loam
- 25 to 39 inches—pale brown very fine sandy loam

39 to 68 inches—pale brown and light yellowish brown very fine sandy loam

Depth class: Very deep

Drainage class: Well drained

Permeability: Moderate

Available water capacity: High

Potential rooting depth: More than 60 inches

Runoff: Rapid

Hazard of water erosion: Severe

Contrasting Inclusions

- Bridgewater soils on flood plains (5 percent)
- Chard soils on convex, south- and west-facing slopes (5 percent)
- Waha soils on steep slopes of drainageways (5 percent)

Major Uses

Cropland, rangeland

Cropland

Commonly grown crops: Wheat, barley, peas

General management considerations:

- Because of the moderate erodibility of the soil and the steepness of slope, the hazard of erosion is a primary concern.

Rangeland

Natural potential plant community: Idaho fescue/forbs

General management considerations:

- This unit has few limitations for use as rangeland.

Capability Classification

3e, nonirrigated

140—Uhlig silt loam, 20 to 35 percent slopes

Composition

Uhlig soil and similar inclusions: 90 percent

Contrasting inclusions: 10 percent

Setting

Landform: Dissected alluvial terraces

Slope range: 20 to 35 percent

Elevation: 800 to 1,300 feet

Average annual precipitation: About 18 inches

Frost-free season (32 degrees F): About 160 days

Characteristics of the Uhlig Soil

Typical profile:

- 0 to 15 inches—dark grayish brown and grayish brown silt loam

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Medium
Hazard of water erosion: Slight or moderate

Contrasting Inclusions

- Wilkins soils in and near drainageways (10 percent)
- Taney soils on convex, north- and west-facing side slopes and toeslopes (5 percent)

Major Uses

Cropland, pastureland and hayland, woodland, grazeable woodland

Cropland

Commonly grown crops: Wheat, barley
General management considerations:

- The short growing season limits the production of some crops.
- The abrupt silty clay subsoil of the Boles soil restricts the growth of deep-rooted crops and results in droughtiness in dry years.
- Wetness of the Boles soil in spring increases the risk of compaction if farm equipment is used.

Pastureland and Hayland

General management considerations:

- The cold temperatures limit plant growth in spring and late in fall. The grazing season is limited to summer and early in fall.
- Because of wetness of the Boles soil in spring, trampling by livestock can cause compaction of the soil and can damage plants.

Woodland

Natural potential plant community: Boles soil—ponderosa pine/common snowberry; Joel soil—Douglas fir/mallow ninebark
Estimated average annual production of timber on the Boles soil (CMAI): Ponderosa pine—118 cubic feet per acre at 40 years of age
Estimated average annual production of timber on the Joel soil (CMAI): Ponderosa pine—122 cubic feet per acre at 40 years of age; Douglas fir—71 cubic feet per acre at 100 years of age
General management considerations:

- The seasonal perched water table in the Boles soil limits the survival rate of planted seedlings.
- Because of the seasonal perched water table, the Boles soil is susceptible to compaction.

- Because of the abrupt silty clay subsoil and the seasonal perched water table, trees on the Boles soil are susceptible to windthrow.

Grazeable Woodland

Natural potential plant community: Boles soil—ponderosa pine/common snowberry; Joel soil—Douglas fir/mallow ninebark

General management considerations:

- The surface layer of the Boles soil is susceptible to compaction in wet seasons because of the seasonal perched water table.

Capability Classification

3e, nonirrigated

13—Bridgewater-Joseph complex, 1 to 3 percent slopes

Composition

Bridgewater soil and similar inclusions: 50 percent
Joseph soil and similar inclusions: 35 percent
Contrasting inclusions: 15 percent

Setting

Landform: Stream terraces and flood plains
Elevation: 750 to 2,300 feet
Average annual precipitation: About 18 inches
Frost-free season (32 degrees F): About 160 days

Characteristics of the Bridgewater Soil

Position on landform: Low stream terraces

Slope range: 1 to 3 percent

Typical profile:

- 0 to 16 inches—dark brown extremely gravelly sandy loam
- 16 to 22 inches—brown extremely gravelly loam
- 22 to 34 inches—brown extremely cobbly sandy loam
- 34 to 60 inches—dark grayish brown extremely gravelly loamy coarse sand

Depth class: Very deep

Drainage class: Well drained

Permeability: Moderate in the upper part, very rapid in the lower part

Available water capacity: Very low

Potential rooting depth: More than 60 inches

Runoff: Very slow

Hazard of water erosion: Slight

Frequency of flooding: Rare

Characteristics of the Joseph Soil

Position on landform: Flood plains

Slope range: 1 to 2 percent

Typical profile:

- 0 to 10 inches—grayish brown extremely cobbly loamy coarse sand
- 10 to 26 inches—grayish brown extremely cobbly loamy coarse sand
- 26 to 36 inches—grayish brown extremely cobbly sand
- 36 to 60 inches—grayish brown extremely gravelly coarse sand

Depth class: Very deep

Drainage class: Moderately well drained

Permeability: Very rapid

Available water capacity: Very low

Potential rooting depth: More than 60 inches

Restriction to rooting depth: Seasonal high water table at a depth of 36 to 60 inches

Runoff: Very slow

Hazard of water erosion: Slight

Depth to seasonal high water table (apparent): 36 to 60 inches in December through June

Frequency of flooding: Frequent in December through June

Contrasting Inclusions

- Lapwai soils on terraces (10 percent)
- Tombeall soils in sloughs and stream channels (5 percent)

Major Uses

Pastureland, hayland, rangeland

Pastureland and Hayland

General management considerations:

- Periodic flooding and the seasonal high water table in the Joseph soil limit the choice of plants suitable for maximum production of forage.
- Because of wetness of the Joseph soil in spring, trampling by livestock can result in compaction and can damage plants.
- The high content of coarse fragments in the surface layer of the soils limits some tillage and seeding operations.
- The very low available water capacity limits the production of forage and the choice of suitable plants. Irrigation may be needed for maximum production of forage.

Rangeland

Natural potential plant community: Bridgewater soil—common snowberry/bluebunch wheatgrass; Joseph soil—alder/wildrye

General management considerations:

- Because of the seasonal high water table in the Joseph soil, this unit is susceptible to compaction.

- Flooding in spring may prevent access by livestock.

Capability Classification

Bridgewater soil—6s, nonirrigated; Joseph soil—6w, nonirrigated

14—Broadax silt loam, 2 to 8 percent slopes

Composition

Broadax soil and similar inclusions: 85 percent

Contrasting inclusions: 15 percent

Setting

Landform: Hills on plateaus and benches

Slope range: 2 to 8 percent

Elevation: 1,900 to 2,500 feet

Average annual precipitation: About 17 inches

Frost-free season (32 degrees F): About 155 days

Characteristics of the Broadax Soil

Typical profile:

- 0 to 16 inches—dark grayish brown silt loam
- 16 to 33 inches—brown and light yellowish brown silt loam
- 33 to 37 inches—pale brown silt loam
- 37 to 65 inches—light yellowish brown, calcareous silt loam

Depth class: Very deep

Drainage class: Well drained

Permeability: Moderately slow

Available water capacity: High

Potential rooting depth: More than 60 inches

Runoff: Slow

Hazard of water erosion: Moderate

Sodicity: Slight

Contrasting Inclusions

- Hatwai soils that occur as circular slick spots and commonly are on convex, west-facing slopes (10 percent)
- Slickpoo soils on south- and west-facing slopes of 5 to 15 percent (5 percent)

Major Use

Cropland

Cropland

Commonly grown crops: Wheat, barley, peas

General management considerations:

- The hazard of erosion is a concern.
- The sodicity of the subsoil causes some nutrients to become unavailable to plants.

70—Lapwai-Bridgewater complex, 1 to 4 percent slopes

Composition

Lapwai soil and similar inclusions: 60 percent

Bridgewater soil and similar inclusions: 25 percent

Contrasting inclusions: 15 percent

Setting

Landform: Stream terraces (fig. 9)

Elevation: 750 to 1,200 feet

Average annual precipitation: About 18 inches

Frost-free season (32 degrees F): About 165 days

Characteristics of the Lapwai Soil

Slope range: 1 to 4 percent

Typical profile:

- 0 to 9 inches—dark grayish brown silt loam
- 9 to 28 inches—grayish brown and brown silt loam
- 28 to 35 inches—pale brown loam
- 35 to 60 inches—brown, calcareous very gravelly sandy loam

Depth class: Very deep

Drainage class: Well drained

Permeability: Moderate

Available water capacity: Moderate

Potential rooting depth: More than 60 inches

Runoff: Slow

Hazard of water erosion: Slight

Frequency of flooding: Rare

Characteristics of the Bridgewater Soil

Position on landform: Commonly in slightly higher, convex areas

Slope range: 1 to 4 percent

Typical profile:

- 0 to 16 inches—dark brown extremely gravelly sandy loam
- 16 to 22 inches—brown extremely gravelly loam
- 22 to 34 inches—brown extremely cobbly sandy loam
- 34 to 60 inches—dark grayish brown extremely gravelly loamy coarse sand

Depth class: Very deep

Drainage class: Well drained

Permeability: Moderate in the upper part, very rapid in the lower part

Available water capacity: Very low

Potential rooting depth: More than 60 inches

Runoff: Slow

Hazard of water erosion: Slight

Frequency of flooding: Rare

Contrasting Inclusions

- Tombeall soils on lower stream terraces and flood plains (5 percent)
- Wistona soils along the Clearwater River (5 percent)
- Aqueuts on flood plains and at the edge of stream channels (3 percent)
- Very deep, sandy soils along the Snake and Clearwater Rivers (2 percent)

Major Uses

Cropland, pastureland, hayland, building site development

Cropland

Commonly grown crops: Wheat, barley

General management considerations:

- The coarse fragments in the surface layer of the Bridgewater soil interfere with some tillage operations.
- The high content of coarse fragments restricts the available water capacity of the Bridgewater soil.

Pastureland and Hayland

General management considerations:

- The high content of gravel in the surface layer of the Bridgewater soil limits some tillage and seeding operations.
- The restricted available water capacity of the Bridgewater soil limits the production of forage and the choice of suitable plant species. Irrigation may be needed for maximum production of forage.

Building Site Development

General management considerations:

- Excavation can expose soil material that is highly susceptible to erosion by water and wind.
- The sandy substratum of the Bridgewater soil may result in unstable cutbanks.
- Septic systems in the Bridgewater soil may function poorly because of the very rapid permeability of the substratum.

Capability Classification

Lapwai soil—2w, nonirrigated; Bridgewater soil—6s, nonirrigated

71—Larabee loam, 4 to 20 percent slopes

Composition

Larabee soil and similar inclusions: 85 percent