# EXHIBIT 1

Vineyards and Wineries in the proposed *Lower Long Tom AVA*

| | Acres | Winery |
|---|---|---|
| 1 Stroda Vy | 5 | |
| 2 Benton Lane | 150 | yes |
| 3 Sunny Mount Vy | 15 | |
| 4 Brigadoon Vy | 15 | yes |
| 5 Bellpine Vy | 15 | yes |
| 6 Bradshaw Vy | 20 | |
| 7 Evans Vy | 5 | |
| 8 Pfeiffer Vineyards | 70 | yes |
| 9 Walnut Ridge Vy | 30 | yes |
| 10 Antiquium | 21 | yes |
| 11 Union School Vy | 17 | |
| 12 Moriahs Vy | 15 | |
| 13 Rambling Rose Vy | 30 | |
| 14 High Pass Vy | 23 | yes |
| 15 Priddy Vy | 7 | |
| 16 Grace Hill | 6 | |
| 17 Chardonnay Way | 4 | |
| 18 Gelardi | 2 | yes |
| 19 Bennett | 21 | yes |
| 20 Kliewers weinberg | 8 | |
| 21 Rainsong | 8 | yes |
| 22 Davis Reid Vy | 5 | |
| | 492 | |

984

The numbers on the red dots of the map reference to the number on this list.

# EXHIBIT 2

Exhibit 2

Growing degree days (50F) Mahlon sweet Airport, Eugene

| | April | May | June | July | August | Sep | Oct | sum |
|---|---|---|---|---|---|---|---|---|
| 2009 | | | | | | | | |
| 2010 | 36 | 113 | 267 | 512 | 504 | 384 | 116 | 1932 |
| 2011 | 10 | 55 | 256 | 438 | 555 | 472 | 150 | 1936 |
| 2012 | 104 | 153 | 288 | 499 | 562 | 388 | 166 | 2160 |
| 2013 | 86 | 239 | 394 | 599 | 602 | 412 | 37 | 2369 |
| 2014 | 86 | 255 | 345 | 643 | 663 | 467 | 287 | 2746 |
| 2015 | 51 | 258 | 523 | 661 | 610 | 365 | 263 | 2731 |
| 2016 | 168 | 270 | 411 | 533 | 597 | 357 | 180 | 2516 |
| | seven year average | | 2341 degree days | | | | | 16390 |

Growing degree days (50F) Corvallis Municipal Airport

| | April | May | June | July | August | Sep | Oct | sum |
|---|---|---|---|---|---|---|---|---|
| 2007 | | | | | | | | |
| 2008 | | | | | | | | |
| 2009 | 59 | 252 | 398 | 614 | 499 | 391 | 110 | 2323 |
| 2010 | 75 | 180 | 341 | 545 | 453 | 411 | 144 | 2149 |
| 2011 | | | | | | | | |
| 2012 | 101 | 190 | 268 | 498 | 510 | 384 | 152 | 2103 |
| 2013 | 95 | 236 | 396 | 610 | 574 | 398 | 59 | 2368 |
| 2014 | 79 | 278 | 366 | 638 | 632 | 437 | 278 | 2708 |
| 2015 | 74 | 290 | 539 | 648 | 594 | 328 | 249 | 2722 |
| 2016 | 189 | 297 | 416 | 548 | 592 | 346 | 176 | 2564 |
| | seven year average | | 2420 degree days | | | | | 16937 |

# EXHIBIT 3

Exhibit 3

First Harvest date for Pinot Noir grapes destined for red still wine from mature vines for selected vineyards within and outside the Lower Long Tom AVA (LLT)

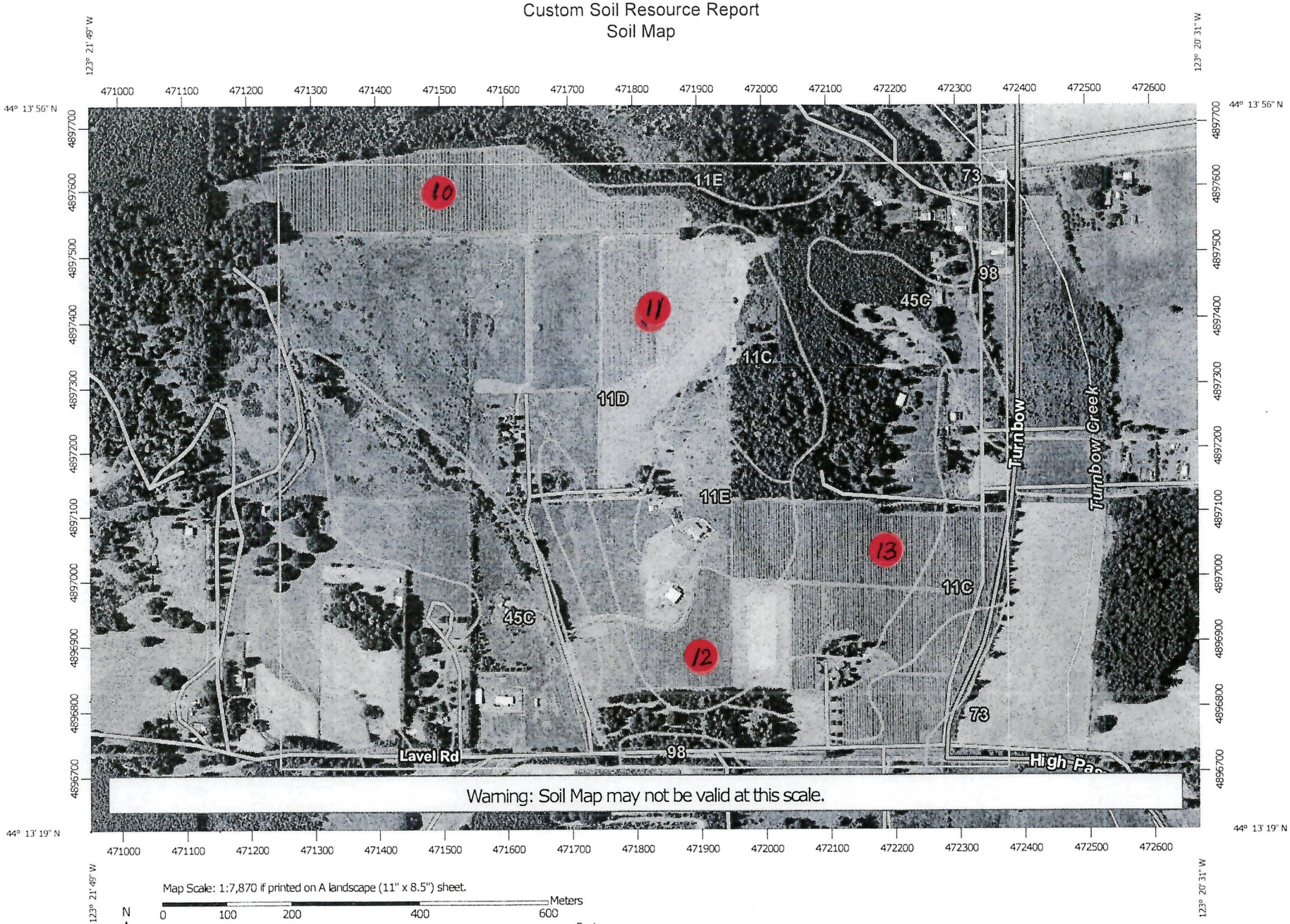
| vintage | Union School Vineyard LLT | | High Pass Vineyard LLT | | Walnut Ridge Vineyard LLT | | Benton Lane LLT | | Pfeiffer Vineyard LLT | |
|---|---|---|---|---|---|---|---|---|---|---|
| 2012 | 10/02 | 25 | 10/06 | 20 | 10/08 | 26 | 10/07 | 37 | 10/02 | 30 |
| 2013 | 09/19 | 12 | 10/04 | 18 | 10/03 | 21 | 09/16 | 16 | 09/16 | 14 |
| 2014 | 09/15 | 8 | 09/23 | 7 | 09/28 | 16 | 09/10 | 10 | 09/16 | 14 |
| 2015 | 09/13 | 6 | 09/18 | 2 | 09/14 | 2 | 09/01 | 0 | 09/04 | 2 |
| 2016 | 09/07 | 0 | 09/16 | 0 | 09/12 | 0 | 09/01 | 0 | 09/02 | 0 |
| 5 year average | 09/20 | | 09/26 | | 09/25 | | 09/18 | | 09/17 | |
| Method 1 | | | | | | | | | | |
| middle between earliest date and latest date | | | | | | | LLT | | 09/22 | |
| sum of positive deviations | 51 | | 47 | | 65 | | 63 | | 60 | |
| average deviation from earliest date | 10.2 | | 9.4 | | 13 | | 12.6 | | 12 | |
| 5 year average | 09/18 | 4 | 09/26 | 12 | 09/25 | 11 | 09/14 | 0 | 09/14 | 0 |
| Method 2 | | | | | | | | | | |
| sum of positive deviations from the earliest date divided by number of samples and added to the earliest date | | | | | | | LLT | | 09/20 | |

| King Estate WV south | | Lavell Vineyards WV south | |
|---|---|---|---|
| 10/08 | 21 | 10/09 | 25 |
| 10/04 | 17 | 09/20 | 6 |
| 09/23 | 6 | 09/22 | 10 |
| 09/23 | 6 | 09/25 | 11 |
| 09/17 | 0 | 09/14 | 0 |
| 09/28 | | 09/27 | |
| WV South average | | 09/27 | |
| | 50 | | 52 |
| | 10 | | 10.4 |
| 09/27 | 2 | 09/25 | 0 |
| WV South average | | 09/26 | |

| Croft Vineyard WV north | | Elton Vineyard WV north | | WV Estate Vy WV north | | Chapleton Hills WV north | | Broadley Vineyards WV north | |
|---|---|---|---|---|---|---|---|---|---|
| 10/14 | 25 | 10/04 | 19 | 10/10 | 19 | 10/11 | 21 | 10/09 | 30 |
| 10/04 | 15 | 09/27 | 12 | 10/10 | 19 | 10/10 | 20 | 09/19 | 10 |
| 09/20 | 1 | 09/23 | 8 | 10/05 | 14 | 09/20 | 0 | 09/16 | 7 |
| 09/24 | 5 | 09/15 | 0 | 09/25 | 4 | 09/26 | 6 | 09/09 | 0 |
| 09/19 | 0 | 09/19 | 4 | 09/21 | 0 | 10/02 | 12 | 09/13 | 4 |
| 10/02 | | 09/25 | | 10/01 | | 10/01 | | 09/24 | |
| WV North average | | 09/28 | | | | | | | |
| | 46 | | 43 | | 56 | | 59 | | 51 |
| | 9.2 | | 8.6 | | 11.2 | | 11.8 | | 10.2 |
| 09/28 | 8 | 09/24 | 4 | 10/03 | 13 | 10/02 | 12 | 09/20 | 0 |
| WV North average | | 09/28 | | | | | | | |

# EXHIBIT 4

# Custom Soil Resource Report
## Soil Map



# Map Unit Legend

| Lane County Area, Oregon (OR637) | | | |
|---|---|---|---|
| **Map Unit Symbol** | **Map Unit Name** | **Acres in AOI** | **Percent of AOI** |
| 11C | Bellpine silty clay loam, 3 to 12 percent slopes | 27.4 | 10.5% |
| 11D | Bellpine silty clay loam, 12 to 20 percent slopes | 141.7 | 54.5% |
| 11E | Bellpine silty clay loam, 20 to 30 percent slopes | 17.7 | 6.8% |
| 45C | Dupee silt loam, 3 to 20 percent slopes | 62.5 | 24.0% |
| 73 | Linslaw loam | 5.1 | 2.0% |
| 98 | Noti loam | 5.9 | 2.2% |
| **Totals for Area of Interest** | | **260.2** | **100.0%** |

# Map Unit Descriptions

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, 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.

# Lane County Area, Oregon

## 11C—Bellpine silty clay loam, 3 to 12 percent slopes

### Map Unit Setting

*National map unit symbol:* 2342
*Elevation:* 400 to 1,400 feet
*Mean annual precipitation:* 40 to 60 inches
*Mean annual air temperature:* 50 to 52 degrees F
*Frost-free period:* 165 to 210 days
*Farmland classification:* All areas are prime farmland

### Map Unit Composition

*Bellpine and similar soils:* 85 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Bellpine

#### Setting

*Landform:* Hillslopes
*Landform position (two-dimensional):* Shoulder, summit
*Landform position (three-dimensional):* Nose slope, interfluve, crest
*Down-slope shape:* Linear, convex
*Across-slope shape:* Linear, convex
*Parent material:* Colluvium and residuum derived from sandstone, siltstone, and tuff breccia

#### Typical profile

*H1 - 0 to 13 inches:* silty clay loam
*H2 - 13 to 34 inches:* silty clay
*H3 - 34 to 44 inches:* weathered bedrock

#### Properties and qualities

*Slope:* 3 to 12 percent
*Depth to restrictive feature:* 20 to 40 inches to paralithic bedrock
*Natural drainage class:* Well drained
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.57 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water storage in profile:* Low (about 5.7 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 3e
*Hydrologic Soil Group:* C
*Other vegetative classification:* Well drained < 15% Slopes (G002XY002OR)
*Hydric soil rating:* No

## 11D—Bellpine silty clay loam, 12 to 20 percent slopes

### Map Unit Setting

*National map unit symbol:* 2343
*Elevation:* 400 to 1,400 feet
*Mean annual precipitation:* 40 to 60 inches
*Mean annual air temperature:* 50 to 52 degrees F
*Frost-free period:* 165 to 210 days
*Farmland classification:* Farmland of statewide importance

### Map Unit Composition

*Bellpine and similar soils:* 85 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Bellpine

#### Setting

*Landform:* Hillslopes
*Landform position (two-dimensional):* Summit, shoulder
*Landform position (three-dimensional):* Crest, interfluve, nose slope
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Colluvium and residuum derived from sandstone, siltstone, and tuff breccia

#### Typical profile

*H1 - 0 to 13 inches:* silty clay loam
*H2 - 13 to 34 inches:* silty clay
*H3 - 34 to 44 inches:* weathered bedrock

#### Properties and qualities

*Slope:* 12 to 20 percent
*Depth to restrictive feature:* 20 to 40 inches to paralithic bedrock
*Natural drainage class:* Well drained
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.57 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water storage in profile:* Low (about 5.7 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 3e
*Hydrologic Soil Group:* C
*Other vegetative classification:* Well Drained > 15% Slopes (G002XY001OR)
*Hydric soil rating:* No

## 11E—Bellpine silty clay loam, 20 to 30 percent slopes

### Map Unit Setting

*National map unit symbol:* 2344
*Elevation:* 400 to 1,400 feet
*Mean annual precipitation:* 40 to 60 inches
*Mean annual air temperature:* 50 to 52 degrees F
*Frost-free period:* 165 to 210 days
*Farmland classification:* Farmland of statewide importance

### Map Unit Composition

*Bellpine and similar soils:* 85 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Bellpine

#### Setting

*Landform:* Hillslopes
*Landform position (two-dimensional):* Summit, shoulder
*Landform position (three-dimensional):* Crest, interfluve, nose slope
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Colluvium and residuum derived from sandstone, siltstone, and tuff breccia

#### Typical profile

*H1 - 0 to 13 inches:* silty clay loam
*H2 - 13 to 34 inches:* silty clay
*H3 - 34 to 44 inches:* weathered bedrock

#### Properties and qualities

*Slope:* 20 to 30 percent
*Depth to restrictive feature:* 20 to 40 inches to paralithic bedrock
*Natural drainage class:* Well drained
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.57 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water storage in profile:* Low (about 5.7 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 4e
*Hydrologic Soil Group:* C
*Other vegetative classification:* Well Drained > 15% Slopes (G002XY001OR)
*Hydric soil rating:* No

## 45C—Dupee silt loam, 3 to 20 percent slopes

### Map Unit Setting

*National map unit symbol:* 2370
*Elevation:* 200 to 2,000 feet
*Mean annual precipitation:* 30 to 60 inches
*Mean annual air temperature:* 50 to 55 degrees F
*Frost-free period:* 160 to 235 days
*Farmland classification:* Farmland of statewide importance

### Map Unit Composition

*Dupee and similar soils:* 85 percent
*Minor components:* 4 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Dupee

#### Setting

*Landform:* Depressions on hills, drainageways on hills
*Landform position (two-dimensional):* Toeslope, footslope
*Landform position (three-dimensional):* Base slope
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Colluvium derived from sandstone

#### Typical profile

*H1 - 0 to 12 inches:* silt loam
*H2 - 12 to 55 inches:* silty clay
*H3 - 55 to 65 inches:* weathered bedrock

#### Properties and qualities

*Slope:* 3 to 20 percent
*Depth to restrictive feature:* 40 to 60 inches to paralithic bedrock
*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 18 to 36 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water storage in profile:* High (about 11.1 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 3e
*Hydrologic Soil Group:* C
*Other vegetative classification:* Poorly Drained (G002XY006OR)
*Hydric soil rating:* No

### Minor Components

#### Panther

*Percent of map unit:* 4 percent

*Land capability classification (nonirrigated):* 4w
*Hydrologic Soil Group:* B/D
*Other vegetative classification:* Poorly Drained (G002XY006OR)
*Hydric soil rating:* Yes

**Minor Components**

**Dayton**
*Percent of map unit:* 3 percent
*Landform:* Terraces
*Hydric soil rating:* Yes

**Natroy**
*Percent of map unit:* 3 percent
*Landform:* Terraces
*Hydric soil rating:* Yes

**Wapato**
*Percent of map unit:* 3 percent
*Landform:* Flood plains
*Hydric soil rating:* Yes

*Landform:* Swales
*Hydric soil rating:* Yes

## 73—Linslaw loam

### Map Unit Setting

*National map unit symbol:* 238m
*Elevation:* 300 to 800 feet
*Mean annual precipitation:* 40 to 60 inches
*Mean annual air temperature:* 52 to 54 degrees F
*Frost-free period:* 165 to 210 days
*Farmland classification:* Prime farmland if drained

### Map Unit Composition

*Linslaw and similar soils:* 85 percent
*Minor components:* 8 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Linslaw

#### Setting

*Landform:* Terraces, fans
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Old mixed alluvium

#### Typical profile

*H1 - 0 to 16 inches:* loam
*H2 - 16 to 42 inches:* clay loam
*H3 - 42 to 56 inches:* clay
*H4 - 56 to 60 inches:* sandy clay loam

#### Properties and qualities

*Slope:* 0 to 3 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 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
*Available water storage in profile:* High (about 9.9 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 3w
*Land capability classification (nonirrigated):* 3w
*Hydrologic Soil Group:* D
*Other vegetative classification:* Somewhat Poorly Drained (G002XY005OR)
*Hydric soil rating:* No

### Minor Components

#### Noti

*Percent of map unit:* 8 percent
*Landform:* Depressions
*Hydric soil rating:* Yes

## 98—Noti loam

### Map Unit Setting

*National map unit symbol:* 239y
*Elevation:* 100 to 2,500 feet
*Mean annual precipitation:* 30 to 60 inches
*Mean annual air temperature:* 50 to 55 degrees F
*Frost-free period:* 150 to 235 days
*Farmland classification:* Farmland of statewide importance

### Map Unit Composition

*Noti and similar soils:* 85 percent
*Minor components:* 9 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Noti

#### Setting

*Landform:* Swales on terraces, drainageways on terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Mixed alluvium

#### Typical profile

*H1 - 0 to 9 inches:* loam
*H2 - 9 to 34 inches:* fine sandy loam
*H3 - 34 to 44 inches:* loamy sand
*H4 - 44 to 60 inches:* very gravelly loamy sand

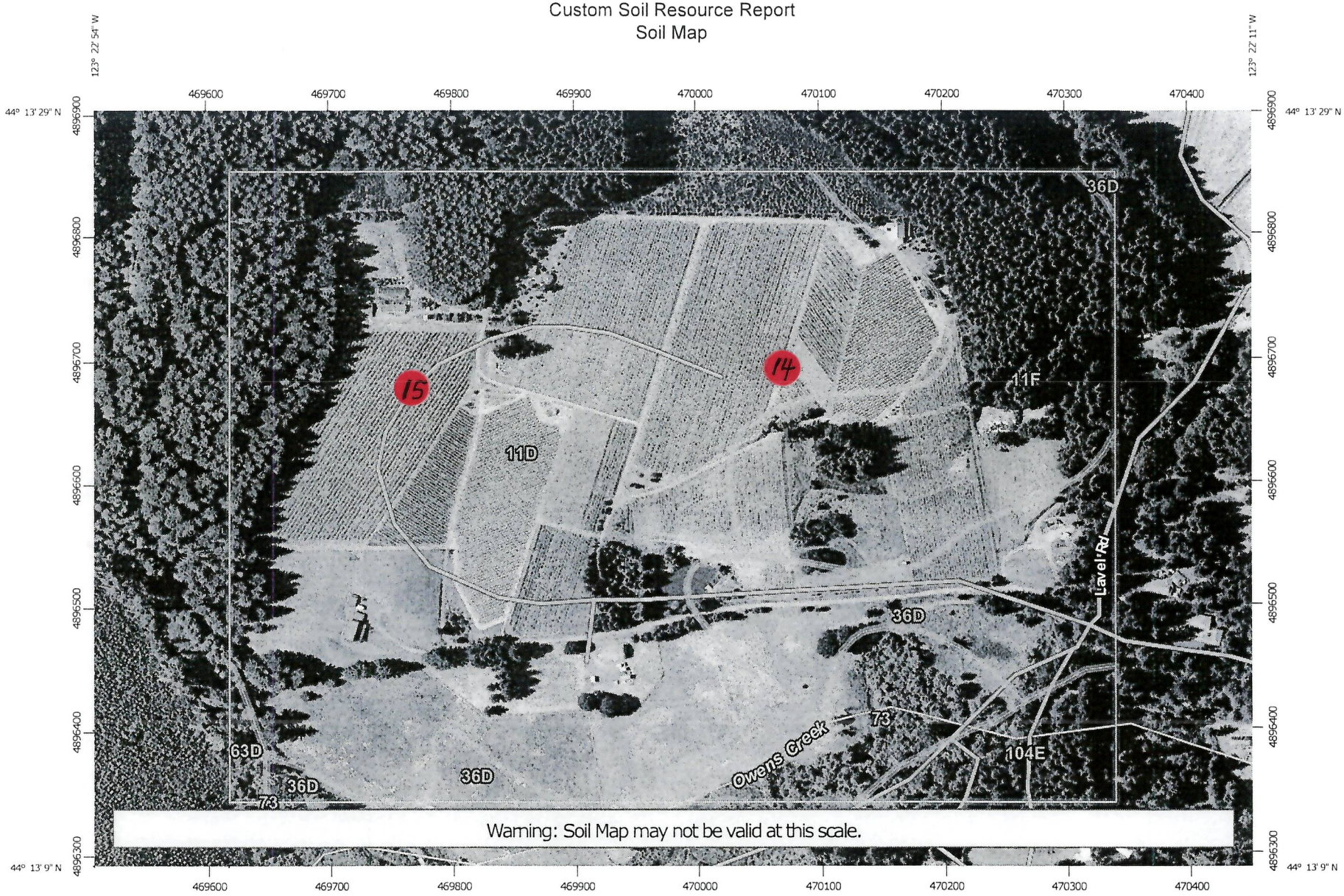
#### Properties and qualities

*Slope:* 0 to 3 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 low to moderately high (0.06 to 0.20 in/hr)
*Depth to water table:* About 0 to 12 inches
*Frequency of flooding:* Frequent
*Frequency of ponding:* None
*Available water storage in profile:* Moderate (about 7.3 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 4w

# Custom Soil Resource Report
## Soil Map




Map Scale: 1:4,310 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

# Map Unit Legend

| Lane County Area, Oregon (OR637) | | | |
|---|---|---|---|
| **Map Unit Symbol** | **Map Unit Name** | **Acres in AOI** | **Percent of AOI** |
| 11D | Bellpine silty clay loam, 12 to 20 percent slopes | 55.7 | 61.1% |
| 11F | Bellpine silty clay loam, 30 to 50 percent slopes | 16.1 | 17.7% |
| 36D | Cumley silty clay loam, 2 to 20 percent slopes | 11.3 | 12.4% |
| 63D | Jory silty clay loam, 12 to 20 percent slopes | 0.6 | 0.6% |
| 73 | Linslaw loam | 4.2 | 4.6% |
| 104E | Peavine silty clay loam, 3 to 30 percent slopes | 3.3 | 3.6% |
| **Totals for Area of Interest** | | **91.2** | **100.0%** |

# Map Unit Descriptions

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, 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.

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# Custom Soil Resource Report
## Soil Map


Map Scale: 1:4,670 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 50 100 200 300

Feet
0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

# Map Unit Legend

| Lane County Area, Oregon (OR637) | | | |
|---|---|---|---|
| **Map Unit Symbol** | **Map Unit Name** | **Acres in AOI** | **Percent of AOI** |
| 11C | Bellpine silty clay loam, 3 to 12 percent slopes | 34.8 | 30.0% |
| 11D | Bellpine silty clay loam, 12 to 20 percent slopes | 47.8 | 41.3% |
| 11F | Bellpine silty clay loam, 30 to 50 percent slopes | 31.2 | 27.0% |
| 63C | Jory silty clay loam, 2 to 12 percent slopes | 1.9 | 1.6% |
| 98 | Noti loam | 0.2 | 0.1% |
| **Totals for Area of Interest** | | **115.9** | **100.0%** |

# Map Unit Descriptions

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# Custom Soil Resource Report
## Soil Map

# Map Unit Legend

| Lane County Area, Oregon (OR637) | | | |
|---|---|---|---|
| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
| 11C | Bellpine silty clay loam, 3 to 12 percent slopes | 24.3 | 9.9% |
| 11D | Bellpine silty clay loam, 12 to 20 percent slopes | 88.6 | 36.0% |
| 11E | Bellpine silty clay loam, 20 to 30 percent slopes | 27.9 | 11.4% |
| 45C | Dupee silt loam, 3 to 20 percent slopes | 62.7 | 25.5% |
| 104E | Peavine silty clay loam, 3 to 30 percent slopes | 15.0 | 6.1% |
| 104G | Peavine silty clay loam, 30 to 60 percent slopes | 23.6 | 9.6% |
| W | Water | 3.8 | 1.5% |
| **Totals for Area of Interest** | | **246.0** | **100.0%** |

# Map Unit Descriptions

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, 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.

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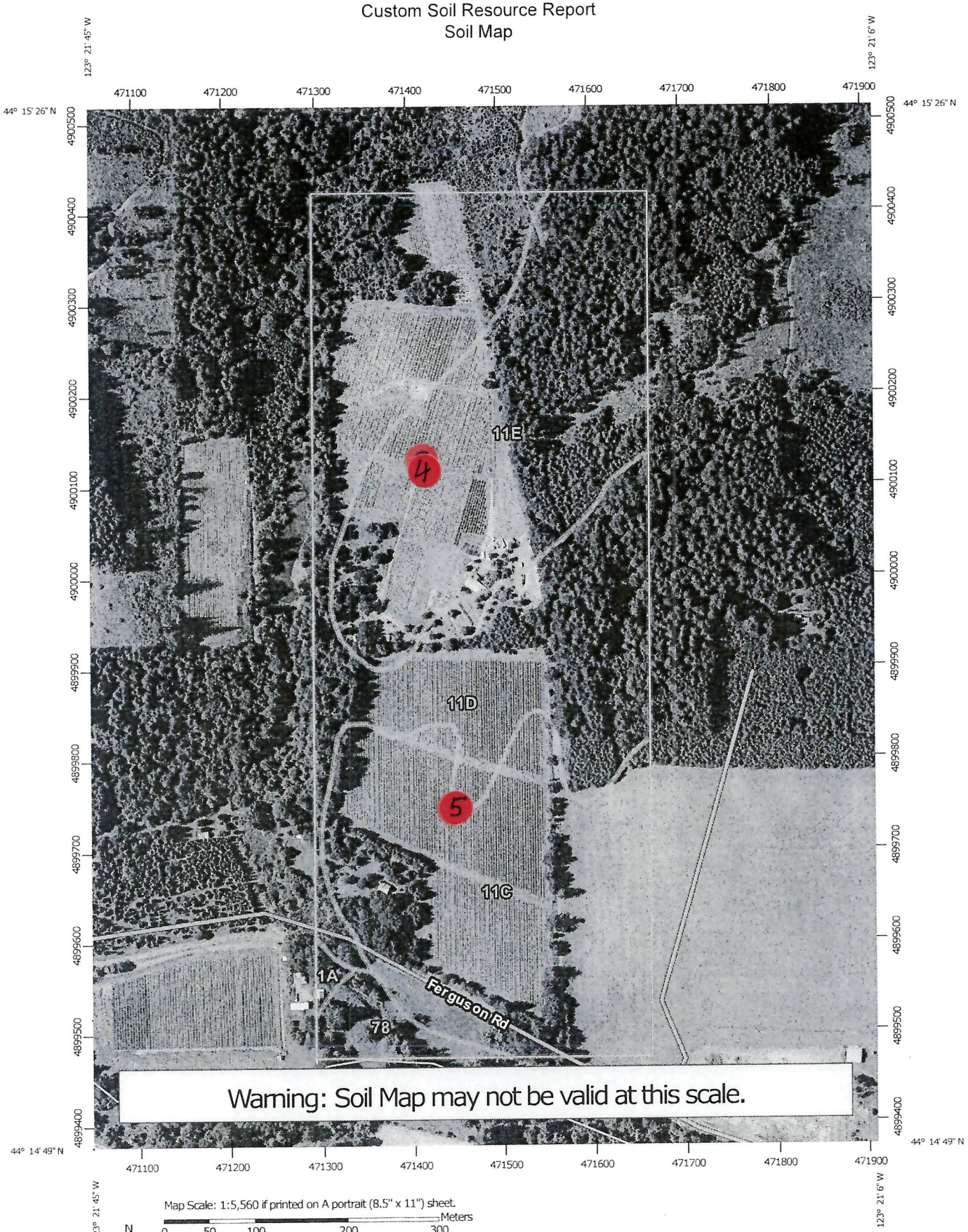


Map Scale: 1:5,560 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 250 500 1000 1500

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

# Map Unit Legend

| Lane County Area, Oregon (OR637) | | | |
|---|---|---|---|
| **Map Unit Symbol** | **Map Unit Name** | **Acres in AOI** | **Percent of AOI** |
| 1A | Abiqua silty clay loam, 0 to 3 percent slopes | 0.4 | 0.4% |
| 11C | Bellpine silty clay loam, 3 to 12 percent slopes | 26.8 | 30.7% |
| 11D | Bellpine silty clay loam, 12 to 20 percent slopes | 32.8 | 37.6% |
| 11E | Bellpine silty clay loam, 20 to 30 percent slopes | 24.8 | 28.4% |
| 78 | McAlpin silty clay loam | 2.5 | 2.8% |
| **Totals for Area of Interest** | | **87.2** | **100.0%** |

# Map Unit Descriptions

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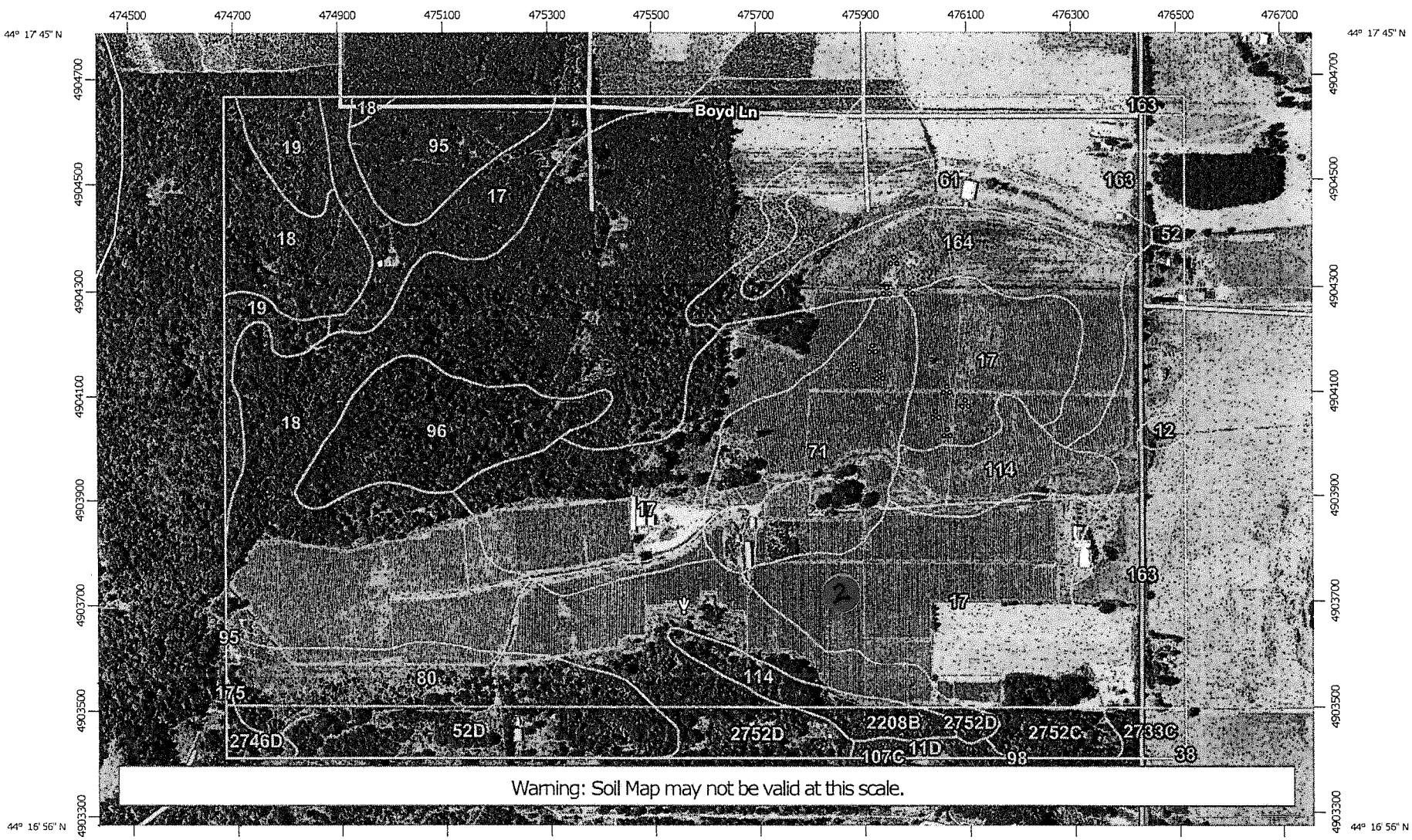
# Custom Soil Resource Report
## Soil Map



# Map Unit Legend

| Benton County, Oregon (OR003) | | | |
|---|---|---|---|
| **Map Unit Symbol** | **Map Unit Name** | **Acres in AOI** | **Percent of AOI** |
| 12 | Awbrig silty clay loam, 0 to 2 percent slopes | 1.3 | 0.2% |
| 17 | Bellpine-Jory complex, 2 to 12 percent slopes | 125.1 | 21.9% |
| 18 | Bellpine-Jory complex, 12 to 20 percent slopes | 170.6 | 29.9% |
| 19 | Bellpine-Jory complex, 20 to 30 percent slopes | 12.4 | 2.2% |
| 52 | Conser silty clay loam, 0 to 3 percent slopes | 0.7 | 0.1% |
| 61 | Dupee silt loam, 3 to 12 percent slopes | 16.0 | 2.8% |
| 71 | Gelderman-Jory complex, 2 to 12 percent slopes | 32.6 | 5.7% |
| 80 | Hazelair silty clay loam, 7 to 20 percent slopes | 19.8 | 3.5% |
| 95 | Jory silty clay loam, sedimentary bedrock, 12 to 20 percent slopes | 14.6 | 2.6% |
| 96 | Jory silty clay loam, sedimentary bedrock, 20 to 30 percent slopes | 22.9 | 4.0% |
| 114 | McAlpin silty clay loam, 3 to 6 percent slopes | 18.1 | 3.2% |
| 163 | Willakenzie loam, 2 to 12 percent slopes | 41.1 | 7.2% |
| 164 | Willakenzie loam, 12 to 20 percent slopes | 51.6 | 9.0% |
| 175 | Witzel-Ritner complex, 12 to 30 percent slopes | 0.1 | 0.0% |
| **Subtotals for Soil Survey Area** | | **526.9** | **92.3%** |
| **Totals for Area of Interest** | | **570.9** | **100.0%** |

| Lane County Area, Oregon (OR637) | | | |
|---|---|---|---|
| **Map Unit Symbol** | **Map Unit Name** | **Acres in AOI** | **Percent of AOI** |
| 11D | Bellpine silty clay loam, 12 to 20 percent slopes | 2.3 | 0.4% |
| 38 | Dayton silt loam, clay substratum | 0.0 | 0.0% |
| 52D | Hazelair silty clay loam, 7 to 20 percent slopes | 18.8 | 3.3% |
| 98 | Noti loam | 0.0 | 0.0% |

| Lane County Area, Oregon (OR637) | | | |
|---|---|---|---|
| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
| 107C | Philomath silty clay, 3 to 12 percent slopes | 0.1 | 0.0% |
| 2208B | McAlpin silty clay loam, 3 to 6 percent slopes | 3.4 | 0.6% |
| 2733C | Willakenzie loam, 2 to 12 percent slopes | 3.2 | 0.6% |
| 2746D | Witzel-Ritner complex, 12 to 30 percent slopes | 1.9 | 0.3% |
| 2752C | Bellpine-Jory complex, 2 to 12 percent slopes | 5.5 | 1.0% |
| 2752D | Bellpine-Jory complex, 12 to 20 percent slopes | 8.8 | 1.5% |
| **Subtotals for Soil Survey Area** | | **43.9** | **7.7%** |
| **Totals for Area of Interest** | | **570.9** | **100.0%** |

# Map Unit Descriptions

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, along with the maps, can be used to determine the composition and properties of a unit.

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**Minor Components**

**Courtney**

*Percent of map unit:* 2 percent
*Landform:* Terraces
*Hydric soil rating:* Yes

**Bashaw**

*Percent of map unit:* 2 percent
*Landform:* Flood plains
*Hydric soil rating:* Yes

## 17—Bellpine-Jory complex, 2 to 12 percent slopes

**Map Unit Setting**

*National map unit symbol:* 2vs3
*Elevation:* 300 to 1,400 feet
*Mean annual precipitation:* 40 to 60 inches
*Mean annual air temperature:* 50 to 54 degrees F
*Frost-free period:* 165 to 210 days
*Farmland classification:* All areas are prime farmland

**Map Unit Composition**

*Bellpine and similar soils:* 68 percent
*Jory, sedimentary bedrock, and similar soils:* 24 percent
*Minor components:* 1 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Bellpine**

**Setting**

*Landform:* Hillslopes
*Landform position (two-dimensional):* Summit, toeslope
*Landform position (three-dimensional):* Interfluve, base slope
*Down-slope shape:* Linear, convex
*Across-slope shape:* Convex, linear
*Parent material:* Clayey colluvium and residuum derived from sandstone and siltstone

**Typical profile**

*Ap - 0 to 6 inches:* silty clay loam
*BA - 6 to 10 inches:* silty clay loam
*Bt1 - 10 to 20 inches:* silty clay
*Bt2 - 20 to 26 inches:* paragravelly clay
*Cr - 26 to 36 inches:* weathered bedrock

**Properties and qualities**

*Slope:* 2 to 12 percent
*Depth to restrictive feature:* 20 to 40 inches to paralithic bedrock
*Natural drainage class:* Well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.57 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*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:* C
*Other vegetative classification:* Well drained < 15% Slopes (G002XY002OR)
*Hydric soil rating:* No

### Description of Jory, Sedimentary Bedrock

**Setting**

*Landform:* Hillslopes
*Landform position (two-dimensional):* Toeslope, summit
*Landform position (three-dimensional):* Interfluve, base slope
*Down-slope shape:* Linear
*Across-slope shape:* Linear, concave, convex
*Parent material:* Clayey colluvium and residuum derived from sandstone and siltstone

**Typical profile**

*A - 0 to 7 inches:* silty clay loam
*AB - 7 to 15 inches:* silty clay loam
*BA - 15 to 23 inches:* silty clay
*Bt1 - 23 to 35 inches:* clay
*Bt2 - 35 to 51 inches:* clay
*Bt3 - 51 to 60 inches:* paragravelly silty clay

**Properties and qualities**

*Slope:* 2 to 12 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 (0.20 to 0.57 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water storage in profile:* High (about 10.7 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 2e
*Land capability classification (nonirrigated):* 2e
*Hydrologic Soil Group:* C
*Other vegetative classification:* Well drained < 15% Slopes (G002XY002OR)
*Hydric soil rating:* No

### Minor Components

**Panther**

*Percent of map unit:* 1 percent
*Landform:* Slumps
*Hydric soil rating:* Yes

## 18—Bellpine-Jory complex, 12 to 20 percent slopes

### Map Unit Setting

*National map unit symbol:* 2vs4
*Elevation:* 300 to 1,400 feet
*Mean annual precipitation:* 40 to 60 inches
*Mean annual air temperature:* 50 to 54 degrees F
*Frost-free period:* 165 to 210 days
*Farmland classification:* Farmland of statewide importance

### Map Unit Composition

*Bellpine and similar soils:* 51 percent
*Jory, sedimentary bedrock, and similar soils:* 42 percent
*Minor components:* 1 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Bellpine

#### Setting

*Landform:* Hillslopes
*Landform position (two-dimensional):* Footslope, backslope, shoulder
*Landform position (three-dimensional):* Nose slope, side slope, base slope
*Down-slope shape:* Concave, linear, convex
*Across-slope shape:* Convex, linear
*Parent material:* Clayey colluvium and residuum derived from sandstone and siltstone

#### Typical profile

*Ap - 0 to 6 inches:* silty clay loam
*BA - 6 to 10 inches:* silty clay loam
*Bt1 - 10 to 20 inches:* silty clay
*Bt2 - 20 to 26 inches:* paragravelly clay
*Cr - 26 to 36 inches:* weathered bedrock

#### Properties and qualities

*Slope:* 12 to 20 percent
*Depth to restrictive feature:* 20 to 40 inches to paralithic bedrock
*Natural drainage class:* Well drained
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.57 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water storage in profile:* Low (about 4.7 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 3e
*Hydrologic Soil Group:* C

*Other vegetative classification:* Well Drained > 15% Slopes (G002XY001OR)
*Hydric soil rating:* No

### Description of Jory, Sedimentary Bedrock

#### Setting

*Landform:* Hillslopes
*Landform position (two-dimensional):* Toeslope, summit
*Landform position (three-dimensional):* Interfluve, base slope
*Down-slope shape:* Linear
*Across-slope shape:* Linear, concave, convex
*Parent material:* Clayey colluvium and residuum derived from sandstone and siltstone

#### Typical profile

*A - 0 to 7 inches:* silty clay loam
*AB - 7 to 15 inches:* silty clay loam
*BA - 15 to 23 inches:* silty clay
*Bt1 - 23 to 35 inches:* clay
*Bt2 - 35 to 51 inches:* clay
*Bt3 - 51 to 60 inches:* paragravelly silty clay

#### Properties and qualities

*Slope:* 12 to 20 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 (0.20 to 0.57 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water storage in profile:* High (about 10.7 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 3e
*Hydrologic Soil Group:* C
*Other vegetative classification:* Well Drained > 15% Slopes (G002XY001OR)
*Hydric soil rating:* No

### Minor Components

#### Panther

*Percent of map unit:* 1 percent
*Landform:* Slumps
*Hydric soil rating:* Yes

# Custom Soil Resource Report
## Soil Map


Map Scale: 1:3,790 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

# Map Unit Legend

| Lane County Area, Oregon (OR637) | | | |
|---|---|---|---|
| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
| 11C | Bellpine silty clay loam, 3 to 12 percent slopes | 18.6 | 24.0% |
| 11D | Bellpine silty clay loam, 12 to 20 percent slopes | 1.9 | 2.5% |
| 11E | Bellpine silty clay loam, 20 to 30 percent slopes | 14.8 | 19.0% |
| 11F | Bellpine silty clay loam, 30 to 50 percent slopes | 0.0 | 0.0% |
| 45C | Dupee silt loam, 3 to 20 percent slopes | 2.7 | 3.4% |
| 52B | Hazelair silty clay loam, 2 to 7 percent slopes | 21.1 | 27.3% |
| 52D | Hazelair silty clay loam, 7 to 20 percent slopes | 2.6 | 3.3% |
| 73 | Linslaw loam | 6.3 | 8.2% |
| 85 | Natroy silty clay loam | 9.4 | 12.2% |
| 98 | Noti loam | 0.1 | 0.1% |
| **Totals for Area of Interest** | | **77.5** | **100.0%** |

# Map Unit Descriptions

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*Landform:* Swales
*Hydric soil rating:* Yes

## 52B—Hazelair silty clay loam, 2 to 7 percent slopes

### Map Unit Setting

*National map unit symbol:* 237b
*Elevation:* 200 to 2,000 feet
*Mean annual precipitation:* 30 to 60 inches
*Mean annual air temperature:* 50 to 55 degrees F
*Frost-free period:* 160 to 235 days
*Farmland classification:* Farmland of statewide importance

### Map Unit Composition

*Hazelair and similar soils:* 85 percent
*Minor components:* 4 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Hazelair

#### Setting

*Landform:* Mountains, mountains
*Landform position (two-dimensional):* Footslope
*Landform position (three-dimensional):* Mountainbase
*Down-slope shape:* Linear, convex
*Across-slope shape:* Linear, convex
*Parent material:* Colluvium derived from sedimentary rock

#### Typical profile

*H1 - 0 to 11 inches:* silty clay loam
*H2 - 11 to 15 inches:* silty clay
*H3 - 15 to 36 inches:* clay
*H4 - 36 to 46 inches:* weathered bedrock

#### Properties and qualities

*Slope:* 2 to 7 percent
*Depth to restrictive feature:* 20 to 40 inches to paralithic bedrock
*Natural drainage class:* Moderately well drained
*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 12 to 24 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water storage in profile:* Low (about 4.8 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 3e
*Hydrologic Soil Group:* D
*Other vegetative classification:* Moderately Well Drained < 15% Slopes (G002XY004OR)

*Hydric soil rating:* No

**Minor Components**

**Panther**

*Percent of map unit:* 4 percent
*Landform:* Swales
*Hydric soil rating:* Yes

## 52D—Hazelair silty clay loam, 7 to 20 percent slopes

**Map Unit Setting**

*National map unit symbol:* 237c
*Elevation:* 200 to 2,000 feet
*Mean annual precipitation:* 30 to 60 inches
*Mean annual air temperature:* 50 to 55 degrees F
*Frost-free period:* 160 to 235 days
*Farmland classification:* Farmland of statewide importance

**Map Unit Composition**

*Hazelair and similar soils:* 85 percent
*Minor components:* 3 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Hazelair**

**Setting**

*Landform:* Mountains, mountains
*Landform position (two-dimensional):* Footslope
*Landform position (three-dimensional):* Mountainbase
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Colluvium derived from sedimentary rock

**Typical profile**

*H1 - 0 to 11 inches:* silty clay loam
*H2 - 11 to 15 inches:* silty clay
*H3 - 15 to 36 inches:* clay
*H4 - 36 to 46 inches:* weathered bedrock

**Properties and qualities**

*Slope:* 7 to 20 percent
*Depth to restrictive feature:* 20 to 40 inches to paralithic bedrock
*Natural drainage class:* Moderately well drained
*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 12 to 24 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water storage in profile:* Low (about 4.8 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 4e
*Hydrologic Soil Group:* D
*Other vegetative classification:* Moderately Well Drained < 15% Slopes (G002XY004OR)
*Hydric soil rating:* No

**Minor Components**

**Panther**

*Percent of map unit:* 3 percent
*Landform:* Swales
*Hydric soil rating:* Yes

## 73—Linslaw loam

**Map Unit Setting**

*National map unit symbol:* 238m
*Elevation:* 300 to 800 feet
*Mean annual precipitation:* 40 to 60 inches
*Mean annual air temperature:* 52 to 54 degrees F
*Frost-free period:* 165 to 210 days
*Farmland classification:* Prime farmland if drained

**Map Unit Composition**

*Linslaw and similar soils:* 85 percent
*Minor components:* 8 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Linslaw**

**Setting**

*Landform:* Terraces, fans
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Old mixed alluvium

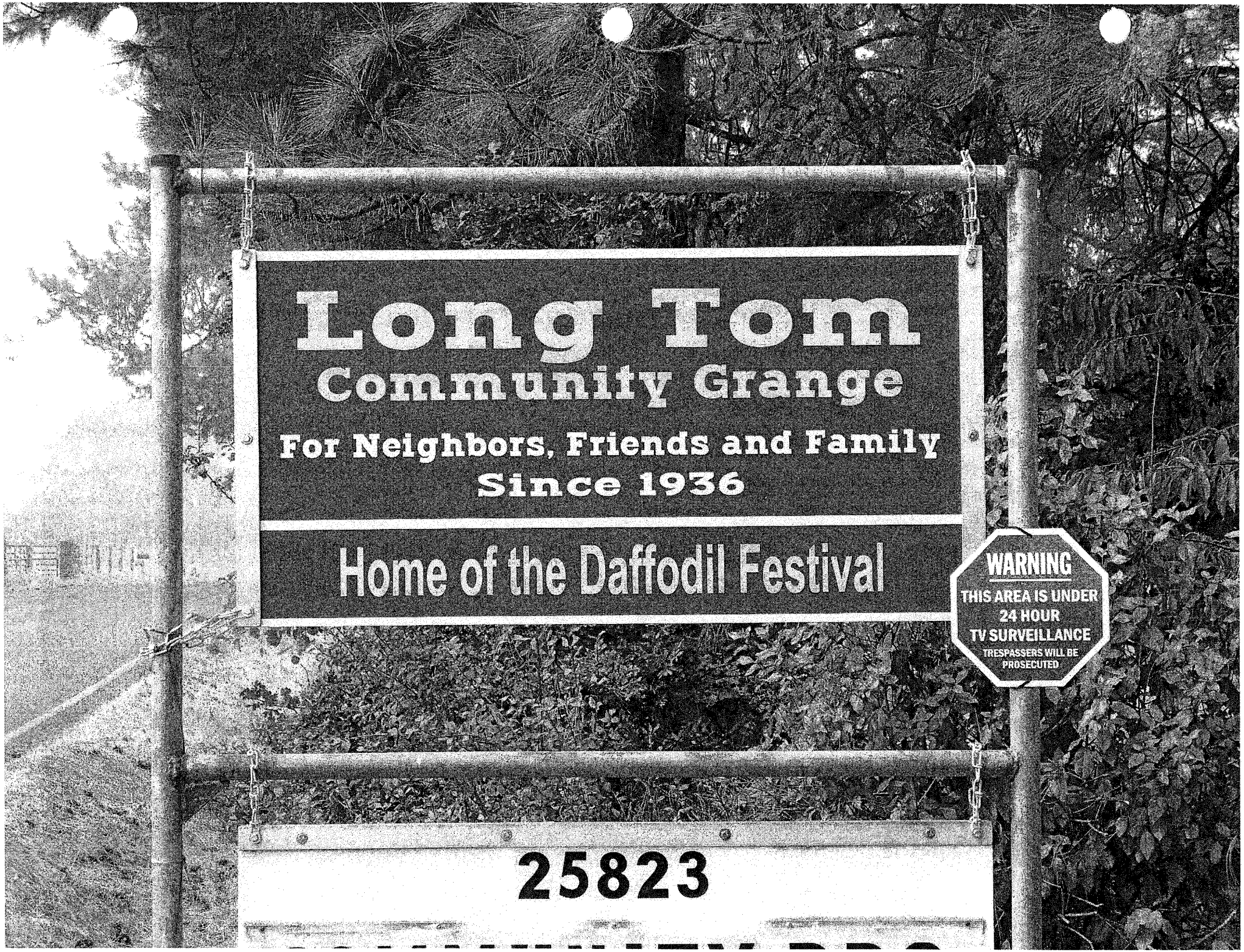
**Typical profile**

*H1 - 0 to 16 inches:* loam
*H2 - 16 to 42 inches:* clay loam
*H3 - 42 to 56 inches:* clay
*H4 - 56 to 60 inches:* sandy clay loam

**Properties and qualities**

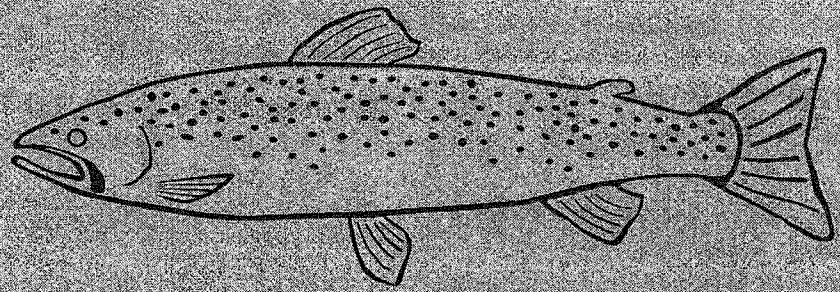
*Slope:* 0 to 3 percent
*Depth to restrictive feature:* More than 80 inches
*Natural drainage class:* Somewhat poorly drained

# EXHIBIT 5


Long Tom
Community Grange
For Neighbors, Friends and Family
Since 1936
Home of the Daffodil Festival
WARNING
THIS AREA IS UNDER
24 HOUR
TV SURVEILLANCE
TRESPASSERS WILL BE
PROSECUTED
25823

# OWENS CREEK FISH PASSAGE ENHANCEMENT PROJECT

## Improving Migration Corridors for Native Fish and Wildlife



### Partners and Funding:

Long Tom Watershed Council and Volunteers
Lane County Public Works
Neighboring Private Landowners
Oregon Watershed Enhancement Board
Oregon Dept. of Fish and Wildlife R & E Program
Eugene BLM Resource Advisory Committee

**TTB Notes: (1)** Due to its size, the map in Exhibit 6 was not scanned. Contact TTB for more information.
(2) Due to its size, only the pages of Exhibit 7 that are referred to in the rulemaking document have been scanned. Contact TTB for more information.

# Along the Long Tom River

## Observations from the Past and Present

David Turner

Exhibit # 7

s a diverse
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he waters
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Irish Bend.
Long Tom wa-
e are managed
owth ever-
ees, sprawl-
ains, grapes,
as well Fern
created in
the most heav-
in Oregon.
n Creek—one
Long Tom Riv-
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populous cit-
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unction City,
re, and Noti.
ecosystems in
as the well-
rails running


To best monitor the Long Tom River, its watershed has been divided into ten sub-basins based on drainage patterns, from its headwaters up above Noti, to its confluence with the Willamette River below Norwood Island. This confluence was moved upstream to a point right at Norwood Island after the channelization of the river in the 1960s.

along the main stem of the Long Tom, one can see the many ways this landscape has been explored, settled, developed and preserved. Yet it is not always easy for the interests of these seemingly dissimilar users to intersect and share common visions about how the land and water can best be used.

Something remarkable seems to have happened in Long Tom River watershed over the past several centuries. Residents have developed a deep commitment to sensitive stewardship of our land and water.

How did such stewardship become so entrenched here? We can look backward and see the early Kalapuya residents who practiced field-burning to rejuvenate the land and improve hunting conditions. Currently, the success of local farms provides a solid economic base for those living here and the flexibility to experiment with new crops and agricultural strategies. Finally, the preservation and restoration work of groups, like the Long Tom Watershed Council and others, have brought about great improvements in watershed habitat—insuring the continuation of the area's natural riches for generations to come.

All of these, and many more ideas, have played a role enabling the

Chapter 5

# Communities Downstream:

## *Franklin, Cheshire, Ferguson Creek, and Monroe*

In the Lower Long Tom area, downstream from the confluences of Spencer and Coyote Creeks, the flat river bottomland attracted early settlers who could successfully farm their fields. The General Land Office maps document the many families who secured land claims. Many of them then banded together to form small towns to handle their growing need for easy access to supplies, a post office, and transportation routes. Each community depended on dominant citizens who could organize the setting up of businesses and community granges. These small rural centers still function as gathering places for local neighbors.

The small settlement of Franklin was one of the several "commercial centers" along old Territorial Highway, the western route of the

Community of Franklin, Territorial Road, 1913.

From collection of Lane County Historical Museum, GN6299.

Pfeiffer Vineyards, Jaeg Road, 2016

and slope, and studied soil testing and rainfall records and began pinpointing lands in the Willamette Valley where the French might invest growing their grapes. The Pfeiffer land seemed perfect for a vineyard.

Soon, in the high school lunch room where Robin was asking if anyone knew someone knowledgeable about growing grapes, another teacher said his son was studying viticulture at University of California, Davis, noted world-wide for innovation in grape growing and wine making. During that Christmas break, Robin showed the student his land and the verdict was that "on a scale of 1-10, this land is a 15."

Robin immediately started thinking about growing grapes instead of lambs. His father acquiesced to this new idea, albeit reluctantly, and in 1984 planted their first grapes. And they all became firmly committed to growing grapes after seeing the first big check that came in after the harvest of the mature grapes. As they say, the rest is history.

The Pfeiffers are not only a leader in wine production of the highest quality, but have also worked hard to stimulate interest in the local community by helping rejuvenate the activities of the Long Tom Grange, noted for hosting the annual Daffodil Festival, and organizing the Long Tom Country Trail where visitors can discover the beauty and the bounty of the Long Tom River watershed.

Information gathered in conversation with Robin Pfeiffer, September 28, 2016