Petition for Tualatin Hills AVA

OVERVIEW

The proposed Tualatin Hills AVA is located in the northwest corner of the State of Oregon and entirely within the Willamette Valley AVA. Included in this application is a map of the proposed AVA (exhibit "A-1") including boundaries, locations of bonded wineries and areas of predominant soil type. It is a roughly "U" shaped area, opening to the east, defined by the Tualatin River Watershed, with elevations ranging from 200 ft. to 1000 ft. Exhibit "A-2" is the detailed proposed AVA boundary definition that corresponds with map Exhibit "A-1" The total acreage of the proposed AVA is 144,000. Within that acreage there are 860.5 acres of commercial vineyards held by 32 independent growers and wineries dispersed throughout the AVA (see exhibit "B"). Within the AVA are 21 bonded wineries. Exhibit "C" is a list of bonded wineries with corresponding ownership and location.

NARRATIVE

NAME EVIDENCE

The Proposed Tualatin Hills AVA is comprised of the upland areas of the Tualatin River Watershed. This area is known locally as the Tualatin Hills. Exhibits "D 1-3" submitted with this petition is a Google search of the name Tualatin Hills and clearly demonstrates that the name is regularly used by many entities including a Park and Recreation District, many sports leagues and teams, a church, hotel, charitable foundation, nature park, skate park and tennis center as well as others. The name is unique to this area and as it implies, describes the upland areas of the watershed separate from the low lying areas closer to the Tualatin River.

BOUNDARY EVIDENCE

The Proposed Tualatin Hills AVA is entirely within the Willamette Valley AVA and would become a sub-appellation of that large and well known AVA. The proposed boundary of the Tualatin Hills AVA includes the upland hills of the Tualatin River Watershed above 200' elevation and below 1000' elevation. The areas below 200' are generally believed to be unsuitable for quality viticulture and, in fact, almost all grape growing in the area occurs above 200' elevation. There are very few significant commercial vineyards below 200' elevation in the proposed AVA. This is due to several factors. The soils below 200' are alluvial rather than loess. These soils are higher in fertility and result in excess vigor in

grapevine growth which is undesirable for quality wine production. The areas below 200' are also less well drained. Good soil drainage is an important factor for healthy vine growth. Additionally, the areas below 200' experience less air movement than the surrounding hillsides. Grapevines need air movement during the growing season to dry moisture from the leaves and fruit thus avoiding mold and mildew. In the spring, air movement down the hillside slopes can and do reduce the risk of frost. This does not occur on the relatively flat areas below 200'.

The 1000' elevation upper limit is consistent with the established upper elevation limit of the Willamette Valley AVA which was established due to a general belief that above 1000' there is a danger of early and late frosts as well as a diminished number of growing degree days rendering these areas unsuitable for quality commercial viticulture. There are very few vineyards above 1000' in the area surrounding the Willamette Valley AVA for these reasons.

The lowland boundaries roughly follow the 200' elevation gradient but when a roadway is close to that grade in the boundary area the roadway is used as the boundary for clarity in physically identifying the AVA boundary as is seen in the use of portions of State Routes 6 and 47 (see Exhibit "A-1").

There is an area east of the proposed AVA that is located between the northeast corner and the southeast corner of the Tualatin Hills that does meet the soil and elevation criteria and is in the Tualatin River watershed that is not included in the AVA. This is due to the fact that most of that area is in the urban development zone of metro Portland and is currently used for commercial, residential and public park uses. There are no commercial vineyards in this area.

The southeast boundary ends at the boundary of the Chehalem Mountain AVA. Chehalem Mountain, although in the Tualatin River watershed is a separate, distinct landform east and south of the proposed Tualatin Hills AVA. It includes areas of higher elevation (Bald Peak 1633' above sea level) and has more rainfall than the Tualatin Hills with up to 60" per year at the higher elevations. While this area does have some Laurelwood type soils (Missoula Flood loess) typical of the Tualatin Hills they also have areas with volcanic basalt, sedimentary and alluvial soils. This is not the case in the Tualatin Hills. For these reasons we have excluded the Chehalem Mountain region from the Tualatin Hills AVA even though parts of it fall within the Tualatin River watershed.

DISTINGUISHING FEATURES

SOIL

The proposed AVA is roughly a “U” shaped area of elevated ridges with the lowland opening facing to the east. The geological history of the area was strongly influenced by events that originated to the east of the area and moved westward, namely the spread of the Columbia River volcanic basalt and the effects of the great Missoula Floods which occurred and deposited the surface material of our soils relatively recently in geological terms, 17,000 to 23,000 years ago. The Tualatin Hills is uniquely situated to combine the effects of these influences, along with the parent rock materials deposited by earlier tectonic movements, to create a soil type that is unique to the northwestern Willamette and dominant in the Tualatin Hills, namely the Laurelwood soils and similar associated types. The only other area that has these same soil types is the northeast facing portions of the Chehalem Mountains and even there it is mixed with older volcanic soils.

Due to the unique makeup of the Laurelwood soils, they are heavily riddled with iron manganese structures ranging from sand to pea size, called piezolytes, which influence the character and quality of the wines produced there. A large percentage of the Laurelwood type soils in the State of Oregon are located in the proposed Tualatin Hills AVA and they are a defining feature of the AVA. Below is a quote from Scott Burns, Professor of Geology, Portland State University:

“Through the millions of years since the rock was formed, the rock was weathered to an old soil that is classified as the Laurelwood soil series. It has been modified by Mother Nature over the past two million years by a large influx of windblown silt called loess. The weathered soil from the basalt has combined with the loess to form an old soil. (As seen in its red color - noting it's age). Formed in the soil are iron concentrations geologists call Pisolites - little rounded balls of iron oxides and hydroxides that are sand and gravel size.

Found only in Laurelwood soil types, pisolites help define the terroir in the Northern Willamette Valley and contribute to the Pinot Noir's complexity and rose petal aromas.”

The soils to the north of the proposed AVA are formed primarily from Columbia River Basalt and are very different from the Laurelwood series soils in chemistry and structure. They were formed 6 million to 17 million years ago and originated from volcanic eruptions near the Oregon, Idaho and Washington border area and do not have significant amounts of loess and no Laurelwood series soils.

To the west of the Tualatin Hills lies the Coastal mountain range. There the soils are primarily Coastal sedimentary soils originating from volcanic rock and marine uplift soils where the formation began 50 million years ago.

To the south of the Tualatin Hills is an area with a great deal of viticultural activity including the Yamhill/Carlton, Ribbon Ridge and McMinnville AVAs. The soils in these areas are very different from the Laurelwood soils in that they are primarily formed of marine sedimentary materials sometimes striated with older decomposing basalt and the volcanic material.

To the east of the Tualatin Hills the soils are primarily formed from Columbia River Basalt and Cascade volcanic material along with the corresponding sedimentary material. These soils also greatly differ from the Laurelwood series. The Chehalem Mountain AVA to the east has Laurelwood soil but also volcanic, sedimentary and alluvoial.

Even though a part of the make up of the Laurelwood soils is old material, namely Columbia River Basalt, the final composite material did not appear until 17,000 to 23,000 years ago when soils were brought west by the Missoula Floods. The loess was moved and deposited by wind in the Tualatin Hill mixing with the base material there to form the unique Laurelwood type soils. Some of the most prominent similar loess soils in the Tualatin Hills are Cornelius, Helvetia and Kinton. Because much of the soil material is wind blown loess it is a fine silty soil with no rocks, generally lower organic material, moderate to high clay component and of only moderate fertility. This contrasts to the more fertile decomposed basalt to the east and the marine sedimentary soils to the south. The lower fertility of the Laurelwood soils result in less vigorous vine growth. The deep soil deposits (up to 100') and the higher clay content eliminate the need for irrigation in established vineyards

The type of soils we find in the northern Willamette Valley impact the character of the wines made from them especially Pinot Noir which is the dominant variety grown and produced. Below is an excerpt from the "Oregon Pinot Camp" educational materials Section 4, "Soil into Wine", page 4, written by winemakers and winery owners, edited over the past 25 years, that describes the characteristics of Pinot Noir grown in varying soils of the Willamette Valley.

"Pinot Noir from Volcanic Soils –
Usually exhibiting a style that accents high-toned aromatics, red/blue fruits, baking spices and softer, succulent tannins from volcanic soil. Can retain good acidity even in warm years

Pinot Noir Noir wines from Marine Sedimentary soils –
Usually exhibiting a style showing the voluptuous blue/black fruit. Earth tones and bigger, heavier tannins that come from sedimentary soil.

Pinot Noir wines from Windblown (loess) soils –
Usually exhibiting a style that shows mixed berry fruits, exotic spices, licorice, cedar, and briary components. Can show a round, voluptuous tannin structure."

CLIMATE

The proposed AVA is bordered to the west by the coastal mountain range with the highest elevations of the range in this proximity. This creates a unique buffer to the maritime influences of the Pacific Ocean, approximately 45 miles to the west, carried by the prevailing winds from the northwest during the summer months. As a result the rainfall patterns are effected and different from the surrounding areas. For example the areas surrounding the city of Forest Grove in roughly the center of the western portion of the Tualatin Hills has on an average an annual rainfall of 43.67". The areas to the north (Columbia River basin) and the west (Tillamook State Forest) have significantly more annual rainfall, 50" and 87.99" respectively . This is due to the "rain shadow" effect of the Coastal Range. In the absence of irrigation, adequate rainfall is essential for growing grapes but too much rainfall and moisture allow for the development of molds and mildews which can seriously damage grapes. If not for the rain shadow effect of the coastal range the Tualatin Hills would have the same rainfall as the coastal range which is too high for quality commercial grape growing and would create problems with mold, mildew and excessively wet soils.

This "rain shadow" effects temperature as well by buffering cool air flows from the ocean that not only carry moisture but also are of a lower temperature than the warm air of the valley to the east of the coastal range. During the growing and ripening season the sunshine warms the valley floor raising the air temperature and the warm air rises into the surrounding hills. After sunset the air cools allowing cooler air from the ocean to flow over the mountains and cool the adjacent hills and valley floor. The closer an area is to the coastal mountains and the ocean, the greater the variation between daytime high temperatures and nighttime lows thus creating greater diurnal variation. While season high temperatures are almost identical between Forest Grove in the Tualatin Hills and Portland 30 miles to the east, the low temperature average for Forest Grove is over 4 degrees F lower than Portland during the growing and ripening season resulting in a greater diurnal variation (+3.6 F/day) which is favorable to the production of quality grapes and wine.

Greater diurnal variation has the greatest effect on wine quality during the ripening period. As grapes ripen the grape sugars increase with photosynthetic activity which is greater at higher temperatures. During this same period the grape acids, which start out high, are reduced by ambient heat in the vineyard. Also during this period phenolic compounds develop effecting color and the tannic structure of the wine as well as compounds that influence aroma and flavor. Pinot Noir, which is the most widely planted variety in the Tualatin Hills, needs a long ripening period to develop desirable flavor and aroma compounds as well as desirable phenolic compounds. If ripening progresses too rapidly, desired sugar and acid levels will be reached before phenolic and flavor/aroma compounds are fully developed. When a vineyard site experiences greater

diurnal variation the daytime temperatures are warm enough to allow for sugar production and acid reduction but the cool temperatures at night stop this process thus increasing the amount of time needed for desired sugar acid balance but at the same time extending the ripening period long enough to allow for full development of flavor/aroma and phenolic compounds. This is one of the reasons the Tualatin Hills area is well suited for the production of high quality Pinot Noir and other similar cool climate grape varieties. See Exhibit “E-1”

The area to the north of the Tualatin Hills is the Columbia River Valley with a decidedly maritime climate heavily influenced by air and moisture moving from the Pacific Ocean. This area receives more rainfall than the Tualatin Hills (50” vs 43.67” annually) and has less seasonal growing degree days with a daily degree average of .5F/day below the Tualatin Hills average and has a lower diurnal variation by 3F per day. Climate data for this area is measured at St Helens Oregon.

The area to the west is the coastal range which is also heavily influenced by maritime conditions as well as elevation (up to 4100’). It experiences significantly more average annual rainfall (87.99” vs 43.67”), up to 100 inches per year in some areas, and the average daily temperature during the growing season is 4F lower than the Tualatin Hills. This area has a much lower diurnal variation than the Tualatin Hills with an average 4.6F lower variation per day. The Climate data for this area is measured at Tillamook State Forest.

In adjacent areas to the south the growing degree days are the same as the Tualatin Hills but as one goes further south the coastal range lowers in elevation allowing for more maritime influence. The McMinnville AVA 20 miles to the south is heavily influenced by the Van Duzer corridor which allows airflows from the ocean to move freely to the Willamette valley there. While the average overall temperatures are the same as the Tualatin Hills the evenings are cooler and the daytimes warmer crating a daily diurnal variation during the growing season of 1.9F higher for these areas. The climate data for this area is measured in McMinnville Oregon.

OVERLAPPING AVA

The proposed Tualatin Hills AVA is entirely within the Willamette Valley AVA. The Tualatin Hills shares many of the same characteristics of the Willamette Valley AVA specifically, proximity to the Pacific Ocean and it’s influences, Cool Climate Zone 1 growing degree days and ample rainfall for agricultural purposes throughout the year with dry conditions from July through mid September. The Tualatin Hills are unique for several reasons. Unlike surrounding areas which

have multiple soil types, the hillsides and benches suitable for viticulture in the Tualatin Hills are comprised mainly of Laurelwood soils and related series with almost no exposed volcanic or marine sedimentary soil types. Climatically the AVA is in the rain shadow of the highest portion of the Coastal Range allowing for lower than average rainfall during the growing season and cooler night time temperatures than most of the surrounding areas.

The proposed Tualatin Hills AVA is similar enough to the Willamette Valley AVA that the use of that AVA for labeling purposes should be allowed but is distinct enough to justify the independent Tualatin Hills AVA.

Ribbon Ridge AVA has also not been included because it is not in the Tualatin River watershed and does not have Laurelwood soils.