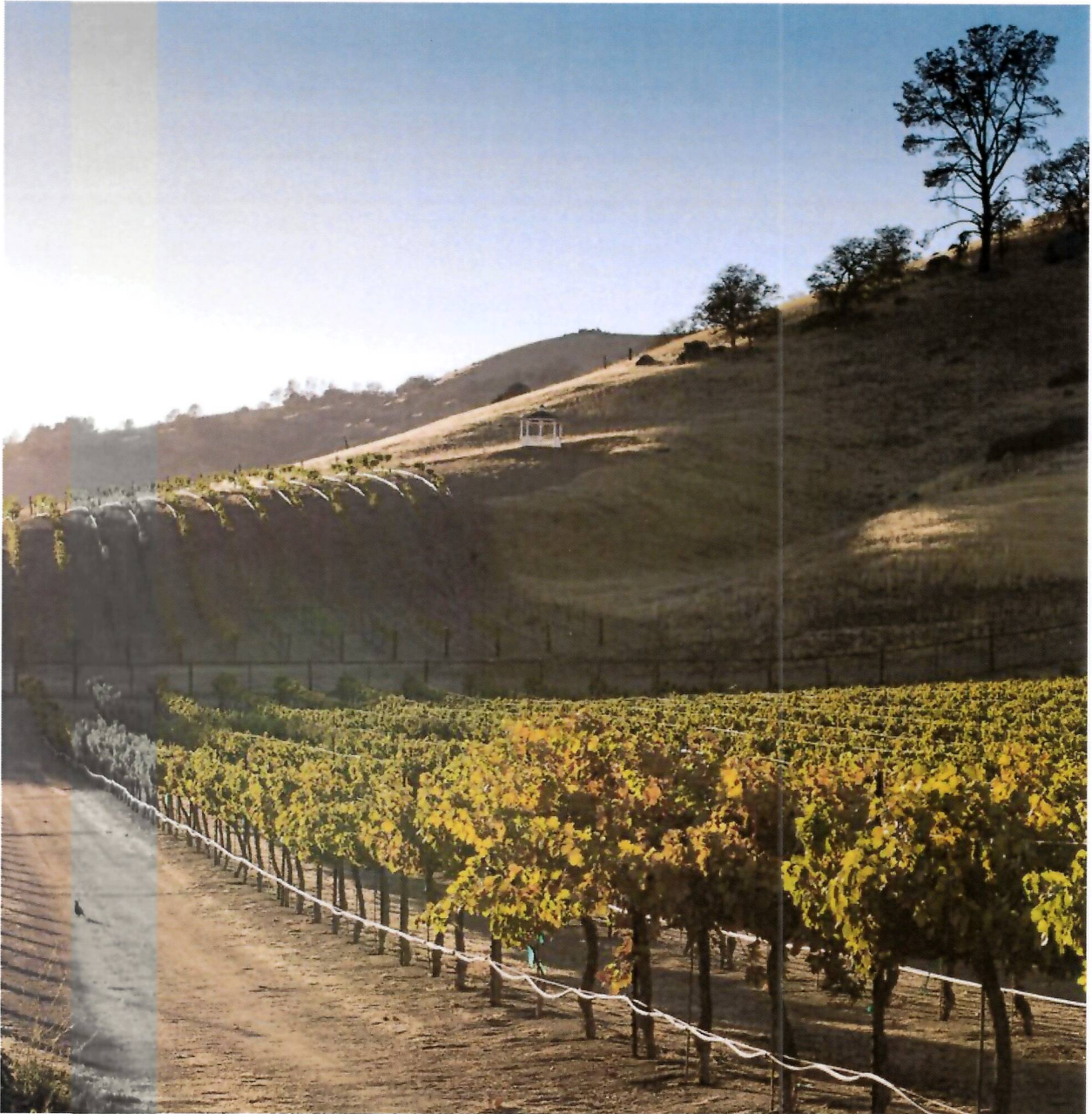


Petition to Establish Tehachapi American Viticultural Area



Prepared by:
Julie L. S. Bell, Ph.D.
Per la Vita, LLC

May 31, 2018

OVERVIEW

The proposed Tehachapi American Viticultural Area (AVA) occupies the general area of the pass between the Tehachapi Mountains and the southern Sierra Nevada Mountains in Kern County, California. The pass is located 75 miles inland from the Pacific Ocean and 120 miles north of Los Angeles (See Exhibit 1). The elevation of the pass summit is 4,031 feet. The proposed AVA lies between 3,600 and 5,400 feet in elevation. The proposed AVA covers approximately 91 square miles (58,000 acres) and is bounded by steeply rising terrain to the north and south and steeply falling terrain to the east and west. The area within the proposed AVA is comprised of several broad valleys separated by rolling hills. (See Exhibits 2, 3, 4 and 5).

Agriculture has been the primary industry in the Tehachapi area for over 150 years. Current agricultural production includes fruit orchards, sod farms and row cropped vegetables. Farming practices that allow produce to be labeled as “organic” predominate. The moderate climate of the Tehachapi area provides optimal conditions for greenhouse operations in that heating and cooling costs are minimized. There are two large-scale (over 20 acre) commercial greenhouses operating in the Tehachapi area that produce organic vegetables. A third is currently under construction.

The first successful commercial vineyard in the Tehachapi area was planted in 2001 by Bob and Patti Souza and is comprised of 6 acres primitivo (Italian variant of zinfandel) and sauvignon blanc vines. There are currently 6 commercial vineyards, which cover approximately 25 acres, distributed across the proposed AVA (See Exhibits 4 and 6). The proposed AVA has 4 tasting room/event facilities and 1 bonded winery. Wines from the proposed Tehachapi AVA area have received awards at competitions including the San Francisco Chronicle Wine Competition and the Los Angeles International Wine Competition (See Exhibit 6).

No existing AVAs abut the proposed Tehachapi viticultural area and none exist within a 75 mile radius. Table, raisin and wine grapes are grown in the much lower elevation (below 500 ft), significantly hotter (over 5,500 Growing Degree Days¹) San Joaquin valley to the west; however, no AVA exists for this area and the terroir differs significantly from that of the proposed AVA.

NAME EVIDENCE

The proposed Tehachapi AVA derives its name from the pass of the same name and from the City of Tehachapi, CA. The City of Tehachapi was founded when Southern Pacific Railroad (now Union Pacific Railroad) chose the Tehachapi Pass as the route through the Sierra Nevada Mountains for the railroad line between Sacramento and Los Angeles. The California High-Speed Rail project is planned to pass through the City of Tehachapi and the proposed AVA.

The name Tehachapi is unique to the region of the AVA. The origin of the name Tehachapi is uncertain but is thought to derive from the Native American name for the area of the pass and the creek draining

¹ Growing Degree Days or GDD are an approximate measure of heat accumulation during the growing season. GDD in this petition were calculated as the average of the daily maximum and minimum temperatures compared to 50°F summed over the period April 1 to October 31.

from it as recorded in 1853 by Lt. R. S. Williamson² and in 1877 by S. Powers³. A single US Post Office, Zip Code 93561 serves the entire Tehachapi AVA area. Unincorporated areas outside the City of Tehachapi use Tehachapi in their addresses. Federal, State and private entities use the word “Tehachapi” in reference to the area and its topographic features, for example:

- USGS 7.5-Minute Series Topographic Maps published 2015: Tehachapi, CA; Tehachapi NE, CA; and Tehachapi South, CA (See the maps provided for the Boundary Description of the proposed AVA)
- USGS 30 x 60 Minute Series Topographic Map, Tehachapi, CA, Published 1978 (see Exhibit 7)
- US Department of Agriculture, Forest Services, Pacific Crest National Scenic Trail Map, California Series – Southern Sierra, Tehachapi Pass to Le Conte Canyon, Published 2012 (See Exhibit 8)
- State of California Department of Transportation and BNSF Railway/UPRR Mojave Substation, Tehachapi Rail Improvement Project, Draft Environmental Impact Report, Project ID 0000000526, SCH# 2010071076 (See Exhibit 9)
- Tehachapi Valley Healthcare District (www.tvhd.org)
- City of Tehachapi (www.liveuptehachapi.com)
- Tehachapi Unified School District (www.teh.k12.ca.us)
- Greater Tehachapi Chamber of Commerce (www.tehachapi.com)
- Tehachapi Mountain Festival (www.tehachapimountainfestival.com)
- Tehachapi Municipal Airport (www.airnav.com/airport/ktsp)
- Tehachapi Depot Railroad Museum (www.tehachapidepot.com)
- Tehachapi Village Marketplace (See Exhibit 10)

A search of the USGS Geographic Names Information System (GNIS) for the name Tehachapi demonstrates that the use of the name is confined to Kern County California in the immediate vicinity of the proposed viticultural area (See Exhibit 11).

BOUNDARY EVIDENCE

The proposed Tehachapi AVA is located in the general area of the summit of the Tehachapi Pass and the City of Tehachapi in southern Kern County, California and has a total area of approximately 58,000 acres. The summit of the Tehachapi Pass lies within the proposed AVA boundary and is marked by California Department of Transportation signage on California State Route 58 (See Exhibit 12) and with the word “Summit” on the USGS 7.5 Minute Series Topographic Map, Tehachapi North, CA, Published 2015. The proposed Tehachapi AVA encompasses the incorporated town of Tehachapi and several small valleys separated by low hills including the Tehachapi, Brite and Cummings Valleys as well as Oak Flat. Bear Valley is not included within the boundaries of the proposed AVA because the gated community of Bear Valley Springs has a covenant against commercial enterprise, so commercial viticulture cannot take place within that community.

Important distinguishing features of the AVA include topography and altitude. For this reason, the boundaries of the AVA are largely set by elevation contours between 3,600 and 5,400 feet on USGS 1:24,000 topographic maps listed and described in detail in the Boundary Description section of this

² http://www.tehachapinews.com/visitor-guide/about-tehachapi/what-does-tehachapi-mean/article_647ae38c-9611-5ebc-aaff-f37f5c57c80a.html

³ Stephen Powers (1977) *The Tribes of California*, US Geological Survey.

petition. Easting and Northing lines are used where elevation contours are not well suited to delineating the AVA boundary.

DISTINGUISHING FEATURES

The distinguishing features of the proposed Tehachapi AVA are its geographic placement, topography, elevation and their beneficial effects on the local climate for growing wine grapes.

Geographic Placement

The proposed Tehachapi AVA is located at 35.13 degrees North latitude between the Piute Mountains to the north, the Mojave Desert to the east, the Tehachapi Mountains to the south and the San Joaquin Valley to the west (See Exhibits 1, 2 and 3). The placement of the proposed viticultural area at the summit of the southernmost pass in the Sierra Nevada mountain range is such that the prevailing west wind off the San Joaquin Valley and east wind off the Mojave Desert provide weather conditions sufficiently warm for grapes to be grown at elevations over 4,000 feet.

Importance to Viticulture – Geographic Placement

The geographic placement of the proposed Tehachapi AVA in the southern end of the Sierra Nevada is unique. The American Viticultural Areas (AVAs) nearest the proposed Tehachapi AVA are those of Santa Barbara and San Luis Obispo counties, approximately 75 to 150 miles west southwest and due west, respectively. The Tehachapi area is separated from these coastal AVAs by the San Joaquin Valley and the Temblor and Caliente mountain ranges. The AVAs of Santa Barbara and San Luis Obispo counties differ from the proposed viticultural area in that they lie at significantly lower elevation and experience the maritime effects on climate of the nearby Pacific Ocean.

Topography

The topography of the Tehachapi Pass area is approximately a broad saddle shape with several interconnected bowl-shaped valleys separated by low hills. The saddle approximation is complicated by the fact that the low sides of the saddle on the east and west rise to rugged hills before the elevation falls away. The proposed AVA area consists primarily of mountain foot slopes, valleys and rolling hills. (See Exhibits 2, 13, 14, 15 and 16).

Within the proposed AVA, slope angles average between 3 and 11 degrees. Slope angles near 0 degrees are found in the valley bottoms while slope angles over 30 degrees occur in some locations near the boundaries of the AVA (See Exhibit 17). Steep locations near the AVA boundaries were included to err on the side of inclusion and as a matter of necessity where the boundary crosses drainages out of the Tehachapi Pass. Some steep areas within the AVA are likely unsuitable for agriculture.

The mountainous, rugged upland terrain immediately outside the proposed AVA on all sides is steep and unsuitable for vineyards due to limited soil profiles and concerns related to erosion (See Exhibit 17). To the north and south, slope angles rise to over 30 degrees with Cummings Mountain and Bear Mountain reaching summits of 7,725 and 6,913 feet, respectively. To the west, the land falls away at slope angles over 30 degrees to the generally flat terrain at elevation below 500 feet in the San Joaquin Valley near Bakersfield, CA (See Exhibit 18). To the east, the land falls away at slope angles over 30 degrees to elevations of 2,600 feet in the Mojave Desert near Edwards Airforce Base.

Importance to Viticulture – Topography

The broad saddle shaped topography of the proposed AVA is important because, although the area sits at relatively high elevation within a mountain pass, there exists a considerable acreage of arable land suitable for vineyards. Additionally, the rolling hills separating the small valleys at the pass summit and the foot slopes of the mountains provide gently sloped terrain that drains cold air and has reduced frost potential.

Elevation

The elevation of the proposed AVA varies between 3,600 and 5,400 feet with the majority of the area of the AVA situated between 3,800 and 4,600 feet. Worldwide, with the exception of vineyards in Argentina, Chile and a few other less well-known locations, wine grapes are generally grown below elevations of 3,000 feet. Vineyards considered high altitude in other California AVAs such as those in the Sierra Foothills and Lake County lie at elevations mostly well below 3,000 feet and are considerably farther north (200 and 350 miles, respectively).

Importance to Viticulture - Elevation

The intensity of sunlight, especially in the short ultra violet (UV) wavelengths, increases with altitude. Exposure to higher intensity UV light is thought to increase quality because it stimulates synthesis of phenolic molecules^{4,5} and causes grapes to develop deeper color and thicker skins resulting in more concentrated, tannic wines. The lower nighttime temperatures and lower high temperatures found at higher elevations are thought to improve quality by lengthening the ripening period⁶ and allowing secondary metabolic pathways to accumulate aromatic compounds⁷.

Climate

The altitude at which wine grapes can successfully be grown is limited by spring and fall frost events and low winter temperatures that can permanently damage or kill vines⁸. The proposed Tehachapi AVA has well defined seasons but without severe winter cold (See Exhibits 19 and 20). Warm winds from the San Joaquin Valley to the west and the Mojave Desert to the east mean that typical winter lows range from 35°F to 26°F. *Vitis vinifera* vines suffer permanent damage at temperatures below about 0 to -5°F. Minimum temperatures below 10°F have occurred at the Tehachapi weather stations on only 6 days between 1980 and 2016. On four of the days the low temperature was 8°F while on two days the low temperature was 9°F.

Localized cold pockets may form in topographic low spots during stagnant air events. Frost damage in such locations is a concern as minimum low temperatures in topographic lows can deviate significantly from those discussed above and found in the tables in Exhibits 19 and 20. It is recommended that low

⁴ The Oxford Companion to Wine, 2006, Jancis Robinson editor, Oxford University Press, New York, pg. 18.

⁵ Wine Science – Principals and Applications, 2014, Ronald S. Jackson, Elsevier Academic Press, San Diego, CA, pg. 89.

⁶ Sorrel Mosely Williams, “High-Altitude Vineyards that are Changing Wine.” Wine Enthusiast, 2018. www.winemag.com/2018/04/05/high-altitude-vineyards-changing-wine/#

⁷ Wine Science – Principals and Applications, 2014, Ronald S. Jackson, Elsevier Academic Press, San Diego, CA, pg. 129.

⁸ Grape Grower’s Handbook, 2013, Ted Goldammer, Apex Publishers, Centerville, Virginia, pgs. 49-50.

lying areas such as valley bottoms and draws be assessed for frost potential prior to vineyard establishment.

Daily low temperatures generally occur in the early morning hours between 4 and 6 AM when wind speeds are at a minimum. Temperatures rise rapidly as wind speeds increase after dawn and time near the daily maximum temperature normally exceeds time near the minimum (See exhibit 21). Though classified as Winkler Zone II⁹ based on Growing Degree Days, the fact that more time is spent near the daily high temperature than the low means that vineyards in the proposed AVA have been able to fully ripen late season varietals such as zinfandel, primitivo, syrah, and cabernet sauvignon.

The average length of the growing season in the proposed AVA area is 201 days (See Exhibit 22) The date past which the chance of a late spring frost (base 30°F) is below 10% is May 2nd. The date before which the chance of an early fall frost (base 30°F) is below 10% is October 12th. Days during the growing season in which the difference between the minimum and maximum temperature is greater than 30°F are not uncommon and nighttime lows during peak of the growing season in July and August average 58 and 56°F, respectively. Anthocyanin content in wine affects color stability and flavor. The synthesis of anthocyanins is favored by warm days and nighttime temperatures below 60°F¹⁰.

Precipitation is seasonal and occurs mainly during the winter and spring seasons. Fog and cloud cover during the growing season is minimal and exposure of grapevines to sunlight is direct and intense putting grapes at risk of sunburn. Vineyards within the proposed AVA area manage grapevine canopies to minimize sunburn. The dry growing season means that all commercial agriculture within the area of the AVA requires irrigation.

The climate of the proposed Tehachapi AVA is cooler than the lower elevation areas to the east represented by the weather station at the Edwards Air Force Base North Auxiliary Airfield in the Mojave Desert and to the west represented by the weather station at the Bakersfield Airport (a.k.a. Meadows Field) in the San Joaquin Valley (See Exhibits 3 and 23). The area of the proposed AVA is warmer than the area outside the AVA to the north as represented by the weather station located in the Sierra Nevada mountains at Johnsondale California. To the south of the proposed AVA, the Tehachapi Mountains rise to 7,725 feet. No public weather station is located within the Tehachapi Mountains but the high alpine climate above 6,000 feet can reasonably be expected to be significantly cooler than that of the proposed AVA.

Elevation and geographic placement are important factors affecting climate in subregions within the southern Sierra Nevada mountains. Elevation alone does not explain the differences in temperature and heat summation between locations well within the Sierra Nevada compared with those on the

⁹ The Winkler index divides California into five viticultural climatic regions based on heat summation represented by Growing Degree Days and relates the Regions to ripening capability: Region I - 2500 GDD or fewer; Region II - 2501 to 3000 GDD; Region III – 3001 to 3500 GDD; Region IV – 3501 to 4000 GDD; Region V – more than 4000 GDD. Amerine, M.A. and Winkler, A.J. "Composition and quality of musts and wines of California grapes." *Hilgardia* 15, 1944, pgs. 493-675. *Wine Science – Principals and Applications*, 2014, Ronald S. Jackson, Elsevier Academic Press, San Diego, CA, pgs. 323-325.

¹⁰ *Wine Science – Principals and Applications*, 2014, Ronald S. Jackson, Elsevier Academic Press, San Diego, CA, pg. 128.

mountain's steep eastern and western flanks. Exhibit 3 shows the locations of weather stations whose data are tabulated together with the Tehachapi weather station data in Exhibit 23.

Proximity to warm air from the Mojave Desert can be shown to have a profound effect on temperature and heat summation for locations in the southern Sierra Nevada. For example, the weather station located in the Walker Pass on the eastern flank of the Sierra Nevada 40 miles NNE of Tehachapi sees temperatures as high as 106°F and heat summation of 3,834 GDD though the elevation is considerably higher than either the Tehachapi or Johnsondale weather stations (See Exhibit 3 and 23). Similarly, the Five Mile weather station located directly on the steep eastern slope of the Sierra Nevada 30 miles NNE and at a very similar elevation to Tehachapi has a heat summation index (5,522 GDD) double that of the Tehachapi area (2,762 GDD).

The effect that warm air from the San Joaquin Valley has on the temperatures in Tehachapi can't be as clearly demonstrated because no weather station at similar or higher elevation than Tehachapi exists on the eastern slope of the Sierra Nevada near Tehachapi. The effect can be seen, but weakly, by comparing the UHL Hot Spring and Johnsondale weather stations. The UHL Hot Spring station is located 60 miles NNW of Tehachapi on the eastern slope of the Sierra Nevada. The Johnsondale station is located near the UHL Hot Springs station but about 10 miles ENE deeper into the mountains and therefore presumably further from the warm air of the San Joaquin Valley. The UHL Hot Springs temperatures and heat summation data are indeed higher than that of the Johnsondale station; however, the UHL Hot Springs station sits almost 1,000 ft lower in elevation and thus would be expected to be warmer.

A rule of thumb for the relationship between elevation and temperature is that, other things being equal, the temperature falls 1.1 °F for every 330 ft rise in elevation¹¹. Given the differences in elevation between the Johnsondale and UHL Hot Springs weather stations this rule of thumb would indicate a 3.3°F difference could be expected. The difference in both the minimum and high temperatures exceed this amount and thus it may be concluded that the UHL Hot Springs station likely is affected by warm air from the San Joaquin.

The Johnsondale station represents a location relatively sheltered from warm winds from either the San Joaquin Valley or the Mojave Desert and at an elevation near to that of the proposed AVA. Note the minimum temperature for the decade at Johnsondale of -5°F would make successful viticulture unlikely at that location. Clearly, Tehachapi experiences a beneficial, but not extreme, warming due to proximity to both the San Joaquin Valley and the Mojave Desert.

Importance to Viticulture – Climate

The proposed Tehachapi AVA area experiences sufficient heat during the growing season to fully ripen varieties of grapes recommended for Winkler Zones II and III yet it does not experience the high temperatures (generally over 100°F) believed to be unfavorable for quality wine production¹². Although located at elevations higher than most wine grape growing areas, the proximity of the proposed viticultural area to warm air from the San Joaquin Valley and Mojave Desert means that winter temperatures are well above vine killing temperatures. Though spring and fall frosts do occur, the 201

¹¹ The Oxford Companion to Wine, 2006, Jancis Robinson editor, Oxford University Press, New York, pg. 251.

¹² The Oxford Companion to Wine, 2006, Jancis Robinson editor, Oxford University Press, New York, pg. 182.

day growing season where minimum temperatures exceed 30°F means that the season is sufficiently long to ripen late season varieties such as cabernet sauvignon, syrah and zinfandel/primitivo. Cool nights during the growing season mean that wine grapes can develop the color and flavor compounds necessary for quality red wine. The lack of meaningful precipitation and cloud cover during the growing season means that ample sunlight is available to produce quality wine grapes¹³.

BOUNDARY DESCRIPTION

The Tehachapi viticultural area is located entirely within Kern County, California. Eight United States Geological Survey (USGS) 1:24,000 scale 7.5 minute topographic maps were used to determine the boundary of the Tehachapi viticultural area:

- (1) Bear Mountain, CA '15
- (2) Tejon Ranch, CA '15
- (3) Keene, CA '15
- (4) Cummings Mountain, CA '15
- (5) Tehachapi South, CA '15
- (6) Tehachapi North, CA '15
- (7) Tehachapi NE, CA '15
- (8) Monolith, CA '15

The boundary of the Tehachapi viticultural area is described below:

- (1) The beginning point is on the Bear Mountain, California map at the intersection of the 348 Universal Transverse (UTM) Easting line and the 35°07'30" latitude line. From the beginning point proceed north to the 389000mN line; then
- (2) Proceed east to the point at which the line crosses the 4800 contour; then
- (3) Proceed along the 4800 contour north to the 3890 Northing line; then
- (4) Proceed east to the 4800 contour line; then
- (5) Proceed along the 4800 contour line east, crossing onto the Keene, California map and continuing to the 352 Easting line; then
- (6) Proceed south to the 4600 contour line; then
- (7) Proceed east and north along the 4600 contour line to the 3890 Northing line; then
- (8) Proceed east to the 4400 contour; then
- (9) Proceed east and north along the 4400 contour line to the 356 Easting line; then
- (10) Proceed north to the 3891 Northing line; then
- (11) Proceed east to the 4600 contour line; then
- (12) Proceed south and east along the 4600 contour line to the 3888000mN line; then
- (13) Proceed east to the 4600 contour line; then
- (14) Proceed north to the 3893 Northing line; then
- (15) Proceed east to the 362 Easting line; then
- (16) Proceed north to the 3894 Northing line; then
- (17) Proceed east, crossing onto the Tehachapi North, California map and continuing to the 4400 contour line; then

¹³ Wine Science – Principals and Applications, 2014, Ronald S. Jackson, Elsevier Academic Press, San Diego, CA, pg 338.

- (18) Proceed east along the 4400 contour line, crossing onto the Tehachapi NE, California map and continuing south and east to the 3888 Northing line; then
- (19) Proceed east to the 379 Easting line; then
- (20) Proceed south, crossing onto the Monolith, California map and continuing to the 4200 contour; then
- (21) Proceed west to the 378 Easting line; then
- (22) Proceed south to the 4400 contour line; then
- (23) Proceed west along the 4400 contour line, crossing onto the Tehachapi South, California map and continuing to the 373 Easting line; then
- (24) Proceed south to the 3882 Northing line; then
- (25) Proceed west to the 370 Easting line; then
- (26) Proceed north to the 4800 contour; then
- (27) Proceed west, crossing onto the Cummings Mountain, California map and continuing to the 362 Easting line; then
- (28) Proceed south to the 5200 contour; then
- (29) Proceed south to the 3883 Northing line; then
- (30) Proceed east, crossing onto the Tehachapi South, California map and continuing to the 364000mE line; then
- (31) Proceed south to the 3882 Northing line; then
- (32) Proceed west, crossing onto the Cummings Mountain, California map and continuing to the 5400 contour; then
- (33) Proceed along the 5400 contour west and north to the 3883 Northing line; then
- (34) Proceed west to the 4600 contour; then
- (35) Proceed west to the 353000mE line; then
- (36) Proceed south to the 3881 Northing line; then
- (37) Proceed west, crossing onto the Tejon Ranch, California map and continuing to the 351000mE line; then
- (38) Proceed north to the 3882 Northing line; then
- (39) Proceed west to the 350 Easting line; then
- (40) Proceed north to the 3883 Northing line; then
- (41) Proceed west to the 3600 contour; then
- (42) Proceed along the 3600 contour west and north to the 347 Easting line north of the 3885 Northing line; then
- (43) Proceed north to the 3887 Northing line; then
- (44) Proceed east to the 348 Easting line; then
- (45) Proceed north, crossing onto the Bear Mountain, California map

APPENDIX OF EXHIBITS

List of Exhibits

Exhibit 1 Relief Map of California

Showing select locations and geographic features mentioned in the petition

Exhibit 2 Portion of the USGS 30x60 Minute Quadrangle, Tehachapi, CA Map

Having the approximate location of the proposed AVA indicated

Exhibit 3 Google Earth satellite image of the Tehachapi Pass area

Showing the saddle shape of the pass area and the locations of the National Climate Data Center weather stations used in the petition

Exhibit 4 Portion of a DeLorme Gazeteer topographic map for the Tehachapi area

Showing the approximate location of the proposed Tehachapi AVA boundary, vineyards, tasting rooms and winery.

Exhibit 5 Photo taken from the Cummings Valley looking south

Showing the low hills dividing the Cummings and Brite Valleys

Exhibit 6 Table of Vineyards, Acreage, Grape Varieties Grown and Awards Received

Exhibit 7 Cover of the Cover of the USGS 30 x 60 Minute Series Topographic Map, Tehachapi, CA

Demonstrating US Geological Survey use of the name Tehachapi

Exhibit 8 Cover of the Pacific Crest Trail Map – Tehachapi to LeConte Canyon

Demonstrating US Department of Agriculture Forest Service use of the name Tehachapi

Exhibit 9 Title page of the State of California Department of Transportation and BNSF Railway/UPRR

Mojave Substation, Tehachapi Rail Improvement Project, Draft Environmental Impact Report

Demonstrating State of California Department of Transportation use of the name Tehachapi

Exhibit 10 Photo of the Tehachapi Village Marketplace and street sign for W. Tehachapi Blvd.

Demonstrating local use of the name Tehachapi

Exhibit 11 Table of results for a search of the USGS Geographical Name Information System for

“Tehachapi”

Demonstrates that all appearances of the word “Tehachapi” occur in Kern County, CA near the area of the proposed AVA

Exhibit 12 Photo of the CalTrans sign marking the summit of the Tehachapi Pass on Highway 58

Exhibit 13 Photo of the Cummings Valley

Showing the valley floor, low hills, foot slopes, and Tehachapi Mountains

Exhibit 14 Photo of the Souza Family Vineyard

Showing the vineyard’s location on the steepening foot slope near the AVA boundary

Exhibit 15 Photo of the Stray Leaves Vineyard

Showing the foothills of the Tehachapi Mountains behind the vineyard

Exhibit 16 Cover of a marketing trifold for the Triassic Vineyard
Showing their location on steepening foot slopes near the AVA boundary

Exhibit 17 Portion of the Kern Master Environmental Assessment Resource – Fault Zones and Steep Slopes map
Showing the approximate location of the AVA boundary and areas having slopes over 30% shaded grey

Exhibit 18 Photo of the SW edge of the AVA looking west into the San Joaquin Valley
Showing the steep drop-off of the terrain outside the AVA boundary

Exhibit 19 Tehachapi AVA Average Climate Data by Month (2007-2016)

Exhibit 20 Tehachapi Climate Data by Year (2007-2016)

Exhibit 21 Graph of Tehachapi KTSP weather station temperature for the first week of July 2017
Showing length of time near minimum and maximum temperatures

Exhibit 22 Tehachapi AVA Average Climate Data (1980-2016)

Exhibit 23 Average Climate Data for Tehachapi, CA and Surrounding Areas (2007-2016)

Exhibit 1 Relief map of California showing select geographic features and locations relevant to the proposed Tehachapi AVA petition. Map graphic was obtained from the U.S. Geological Survey.



Exhibit 2 Portion of the USGS 30 x 60 Minute Series Topographic Map, Tehachapi, CA showing the approximate location of the proposed Tehachapi AVA boundary (see attached 7.5 minute topographic maps for the exact boundary location). Note the low hills separating Oak Flat, Cummings Valley, Brite Valley and the Tehachapi Valley.



Exhibit 3 Google Earth satellite image of the Tehachapi Pass area showing the approximate locations of the National Climate Data Center (NCDC) weather stations used in this AVA petition as red feature pins. Note that the City of Tehachapi sits in a roughly saddle shaped pass with low sides facing the Mojave Desert to the east and the San Joaquin Valley to the west.

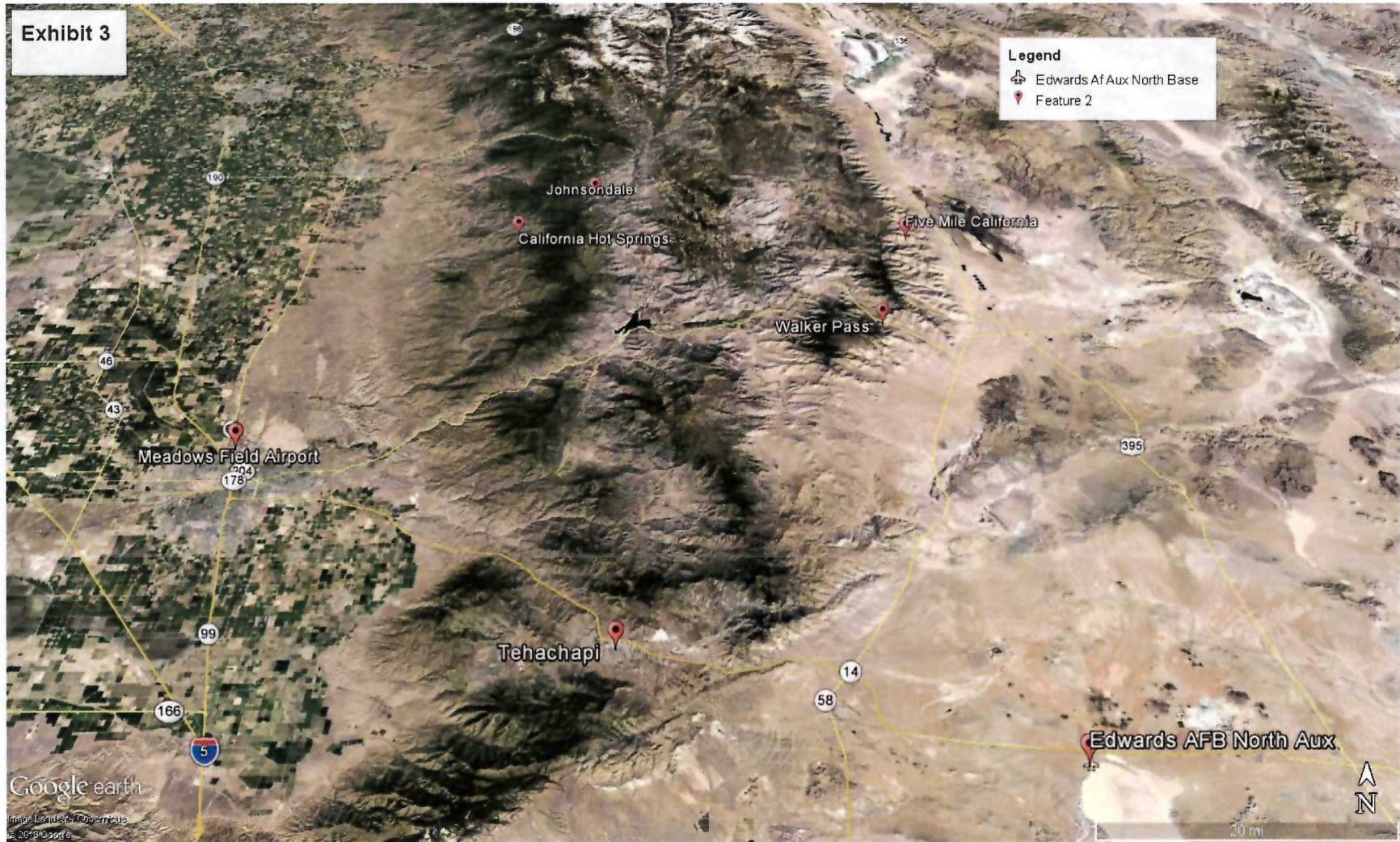


Exhibit 4 Portion of a DeLorme Gazetteer topographic map for the Tehachapi area showing the approximate location of the proposed Tehachapi AVA boundary (see attached 7.5 minute topographic maps for the exact boundary location), vineyards, tasting rooms and winery (see Exhibit 6 for specific information regarding the numbered and lettered locations).

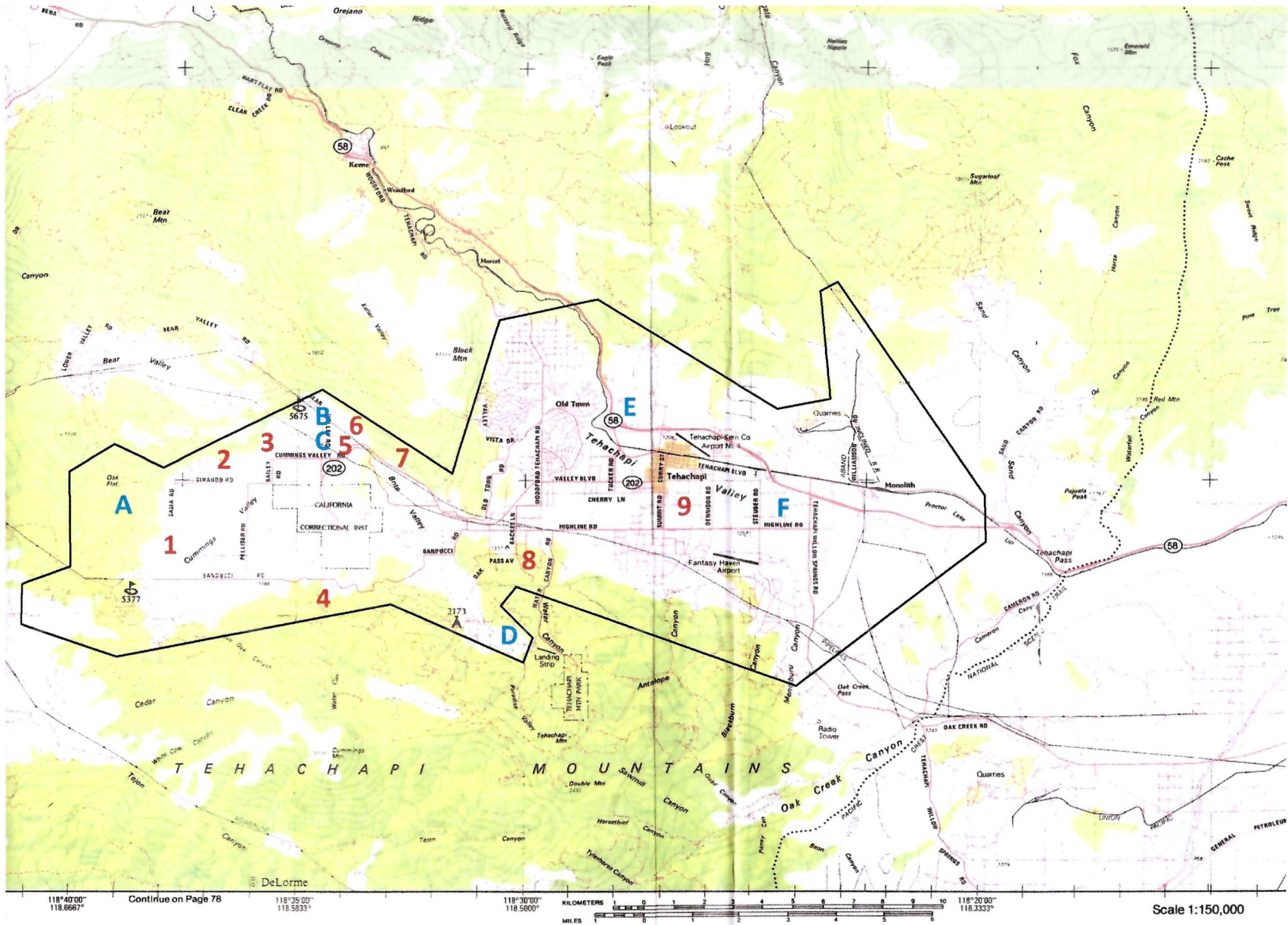


Exhibit 5 Photo taken from the northeast corner of the Cummings Valley looking south toward the Tehachapi Mountains. Note the low hills dividing the Cummings and Brite Valleys in the middle ground of the photo. Triassic Vineyard is in the center of the photo.



Exhibit 6

SUMMARY OF CURRENTLY PLANTED, PLANNED AND HISTORIC VINEYARDS IN THE PROPOSED TEHACHAPI AVA BOUNDARY (See Figure 4 for Map Locations)

Map Location	Vineyard Name/Owner	Location	Acreage			Tasting Room	Grape Variety	Awards
			Planted	Planned	Historic			
1	Bell Family Living Trust	Pegasus Rd.	2	9		No	Cabernet Sauvignon	
							Pinot Gris	
							Pinot Noir	
							Chardonnay	
2	Souza Family Vineyard	26877 Cummings Valley Rd.	6			Yes	Primitivo	2007 SFCWC ^a Silver, 2008 SFCWC Bronze, 2009 SFCWC Gold, 2012 LBGCCW ^b Bronze, 2013 SFCWC Bronze, 2015 LAIWC ^c Bronze, 2016 LAIWC Silver, 2017 LAIWC Silver, 2017 SJACWC ^d Silver
							Sauvignon Blanc	
3	Mike Chan	Bailey Rd.	10	18		No	Cabernet Sauvignon	
4	Dorner Family Vineyard & Winery	18274 Old Ranch Rd.	0.5			Yes	Reisling	2014 WMIAWC ^e Silver, 2015 WMIAWC Gold
							Zinfandel	2015 WMIAWC Bronze
							Sauvignon Blanc	2015 WMIAWC Bronze
5	Triassic Vineyard	24627 Cummings Valley Rd.	7	28		Yes	Zinfandel	2015 LAIWC Silver, 2015 SFCWC Double Gold, 2017 SFCWC Silver, 2018 SFCWC Silver
							Syrah	2015 SFCWC Gold, 2018 SFCWC Silver
							Viognier	2015 SFCWC Bronze, 2017 SFCWC Silver, 2018 SFCWC Silver
							Tempranillo	
6	Monahan	Cummings Valley Rd.	0.5			No	Red Blend	2015 SFCWC Silver, 2016 SFCWC Silver, 2017 SFCWC Silver, 2017 SFCWC Gold, 2017 LAIWC Silver
							Cabernet Sauvignon	
7	Rancho de Vajas	Cummings Valley Rd.	1	2		No	Pinot Noir	
							Chardonnay	
8	Stray Leaves Vineyard, LLC	21300 Highline Rd.	4.7			Yes	Malbec	
							Reisling	2017 SFCWC Double Gold (dry), 2017 SFCWC Bronze (sweet)
							Cabernet Sauvignon	2017 SFCWC Silver
							Syrah	2017 SFCWC Bronze
							Primitivo	2017 SFCWC Gold
9	Stray Leaves Tasting Room	23 S. Green St.				Yes	Red Blend	2017 SFCWC Bronze
A	Sutton Family	Hidden Oaks Dr.		TBD				
B	Martini Family	Bear Valley Rd.			~2			
C	Martini Family	Cummings Valley Rd.			~3			
D	Norbertine Sisters	Water Canyon		TBD				
E	City of Tehachapi	Challenger Dr.		TBD				
F	Ha Family	Stuber Rd.			~5			

- a San Francisco Chronicle Wine Competition
b Long Beach Grand Cru Wine Competition
c Los Angeles International Wine Competition

- d San Joaquin All California Wine Competition
e WineMaker Magazine International Amateur Wine Competition

Exhibit 7 Cover of the USGS 30 x 60 Minute Series Quadrangle Topographic Map, Tehachapi, CA demonstrating federal government use of the name Tehachapi.



Exhibit 8 Cover of the United States Department of Agriculture Forest Service , Pacific Crest National Scenic Trail Map, California Series -- Southern Sierra, Tehachapi Pass to Le Conte Canyon demonstrating federal government use of the name Tehachapi.

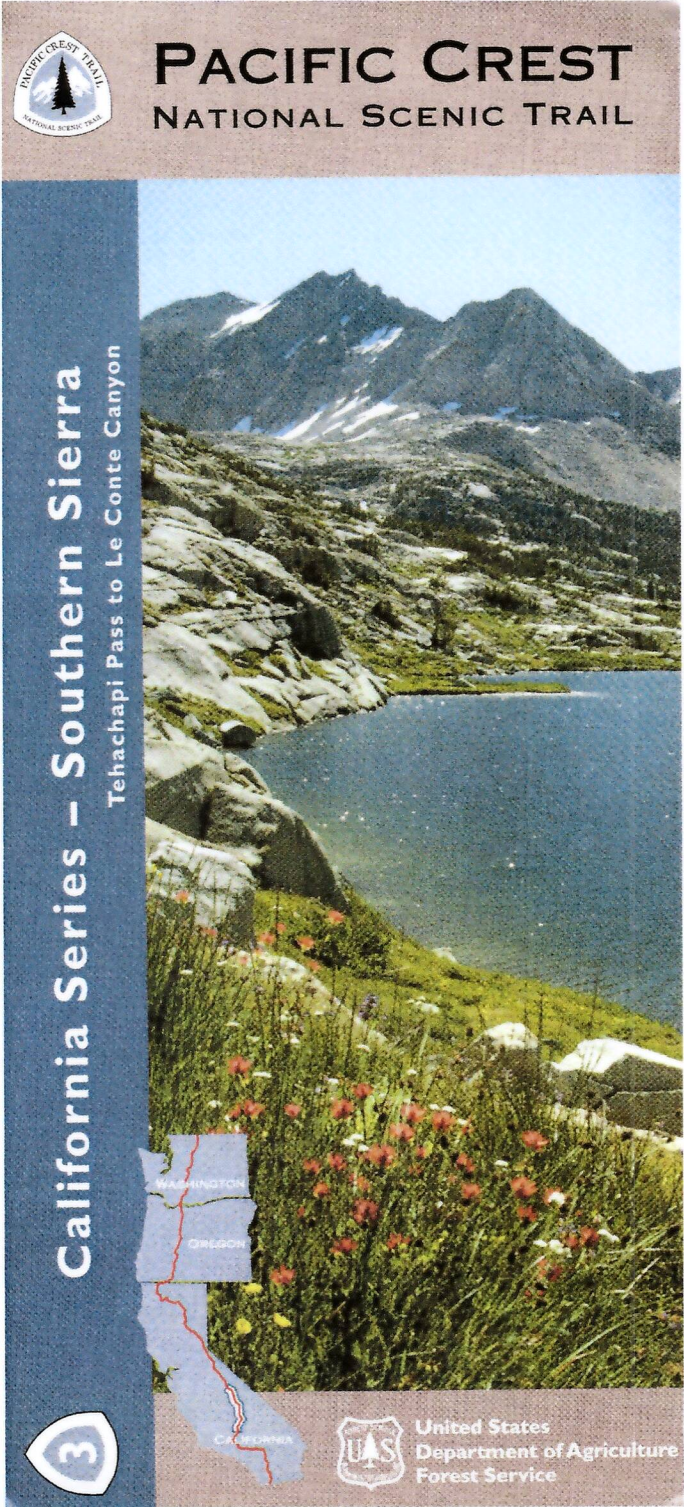


Exhibit 9 Title page from the State of California Department of Transportation, BNSF Railway/UPRR Mojave Substation, Tehachapi Rail Improvement Project, Draft Environmental Report demonstrating California state government use of the name Tehachapi.

BNSF Railway/UPRR Mojave Subdivision Tehachapi Rail Improvement Project

Kern County, California

District 6-Kern-UPRR-Mojave Subdivision-MP327.85 to MP353.08

Project ID 0000000526

SCH# 2010071076

Draft Environmental Impact Report



Prepared by the
State of California Department of Transportation

August 2012



Exhibit 10 Photo of the Tehachapi Village Marketplace demonstrating local use of the name Tehachapi. Note also the street sign showing W. Tehachapi Blvd.



Exhibit 11 Table showing the results of a nationwide search of the Geographical Name Information System for the word Tehachapi. Note that all results are in Kern County, CA demonstrating that the name Tehachapi is unique to the area of the AVA.

Feature Name	ID	Class	County	State ▲	Latitude	Longitude	Ele(ft)*	Map**	BGN Date	Entry Date
Cache Creek	239965	Stream	Kern	CA	351620N	1175638W	2008	Cantil	-	19-JAN-1981
City of Tehachapi	2412041	Civil	Kern	CA	350755N	1182629W	3986	Tehachapi North	-	11-MAR-2008
College of the Tehachapis	1839402	School	Kern	CA	350802N	1182657W	3966	Tehachapi North	-	12-MAY-1999
Horned Toad Hills	243640	Range	Kern	CA	350530N	1181303W	3419	Mojave	01-JAN-1957	19-JAN-1981
KTPI-FM (Tehachapi)	1663109	Tower	Kern	CA	350430N	1182211W	5013	Monolith	-	01-JUL-1994
Kern County Fire Department Station 12 Tehachapi	2665355	Building	Kern	CA	350726N	1182658W	4022	Tehachapi South	-	03-MAR-2011
Kern County Sheriff's Office Tehachapi Station	2756532	Building	Kern	CA	350834N	1182943W	3829	Tehachapi North	-	20-AUG-2014
Oak Creek Pass	246716	Gap	Kern	CA	350338N	1182317W	4842	Tehachapi South	-	19-JAN-1981
Proctor Lake	247795	Lake	Kern	CA	350656N	1182054W	3898	Monolith	-	19-JAN-1981
Tehachapi	1652798	Populated Place	Kern	CA	350756N	1182656W	3970	Tehachapi North	01-JAN-1891	19-JAN-1981
Tehachapi Afterbay	274052	Bay	Kern	CA	344944N	1184231W	3130	La Liebre Ranch	-	19-JAN-1981
Tehachapi Branch Kern County Library	1839413	Building	Kern	CA	350753N	1182710W	3966	Tehachapi North	-	12-MAY-1999
Tehachapi City Hall	1839414	Building	Kern	CA	350752N	1182646W	3983	Tehachapi North	-	12-MAY-1999
Tehachapi City Park	1839415	Park	Kern	CA	350743N	1182638W	4003	Tehachapi North	-	12-MAY-1999
Tehachapi Creek	250298	Stream	Kern	CA	351719N	1183741W	1312	Bena	-	19-JAN-1981
Tehachapi Division	1935337	Civil	Kern	CA	350705N	1183102W	4301	Cummings Mountain	-	26-SEP-2001
Tehachapi High School	1839416	School	Kern	CA	350737N	1182607W	4022	Tehachapi North	-	12-MAY-1999
Tehachapi Hospital	2660946	Hospital	Kern	CA	350749N	1182656W	3980	Tehachapi North	-	11-FEB-2011
Tehachapi Lighthouse United Pentecostal Church	1839465	Church	Kern	CA	350728N	1182804W	3999	Tehachapi South	-	12-MAY-1999
Tehachapi Mountain	1661554	Summit	Kern	CA	350248N	1182905W	7933	Tehachapi South	-	19-JAN-1981
Tehachapi Mountain Park	250299	Park	Kern	CA	350407N	1182900W	5853	Tehachapi South	-	19-JAN-1981
Tehachapi Mountains	254385	Range	Kern	CA	345500N	1184003W	4984	Winters Ridge	-	19-JAN-1981
Tehachapi Municipal Airport	1654044	Airport	Kern	CA	350806N	1182621W	3983	Tehachapi North	-	01-MAR-1994
Tehachapi Pass	254326	Gap	Kern	CA	350608N	1181701W	3799	Monolith	01-JAN-1891	19-JAN-1981
Tehachapi Police Department	2756233	Building	Kern	CA	350752N	1182647W	3983	Tehachapi North	-	20-AUG-2014
Tehachapi Post Office	1839417	Post Office	Kern	CA	350842N	1182710W	3960	Tehachapi North	-	12-MAY-1999
Tehachapi Seventh Day Adventist Church	1839418	Church	Kern	CA	350752N	1182650W	3980	Tehachapi North	-	12-MAY-1999
Tehachapi Valley	250300	Valley	Kern	CA	350640N	1182116W	3917	Monolith	-	19-JAN-1981
Tehachapi Valley United Methodist Church	1839419	Church	Kern	CA	350742N	1182658W	3989	Tehachapi North	-	12-MAY-1999

[View & Print all](#)

Note: If data are returned and the column headings display but no data appear, click any column heading.

*Elevations are from the [National Elevation Dataset](#)

**The map name is not necessarily the name of the community containing the feature. See [FAQs](#) for details.

Exhibit 12 Photo of the CalTrans sign marking the summit of the Tehachapi Pass on California State Route 58.



Exhibit 13 Photo of the Cummings Valley taken from the northwest looking southeast showing the valley floor; the low hills separating the Cummings and Brite Valleys; the foot slopes of the Tehachapi Mountains; and the Tehachapi Mountains. Note that the Dorner Family Vineyard and the Bell Family Vineyard are in the field of view.



Exhibit 14 Photo of the Souza Family Vineyard showing its location on the steepening foot slope near the northern AVA boundary.



Exhibit 15 Photo of the Stray Leaves Vineyard showing the foothills of the Tehachapi Mountains behind the vineyard.

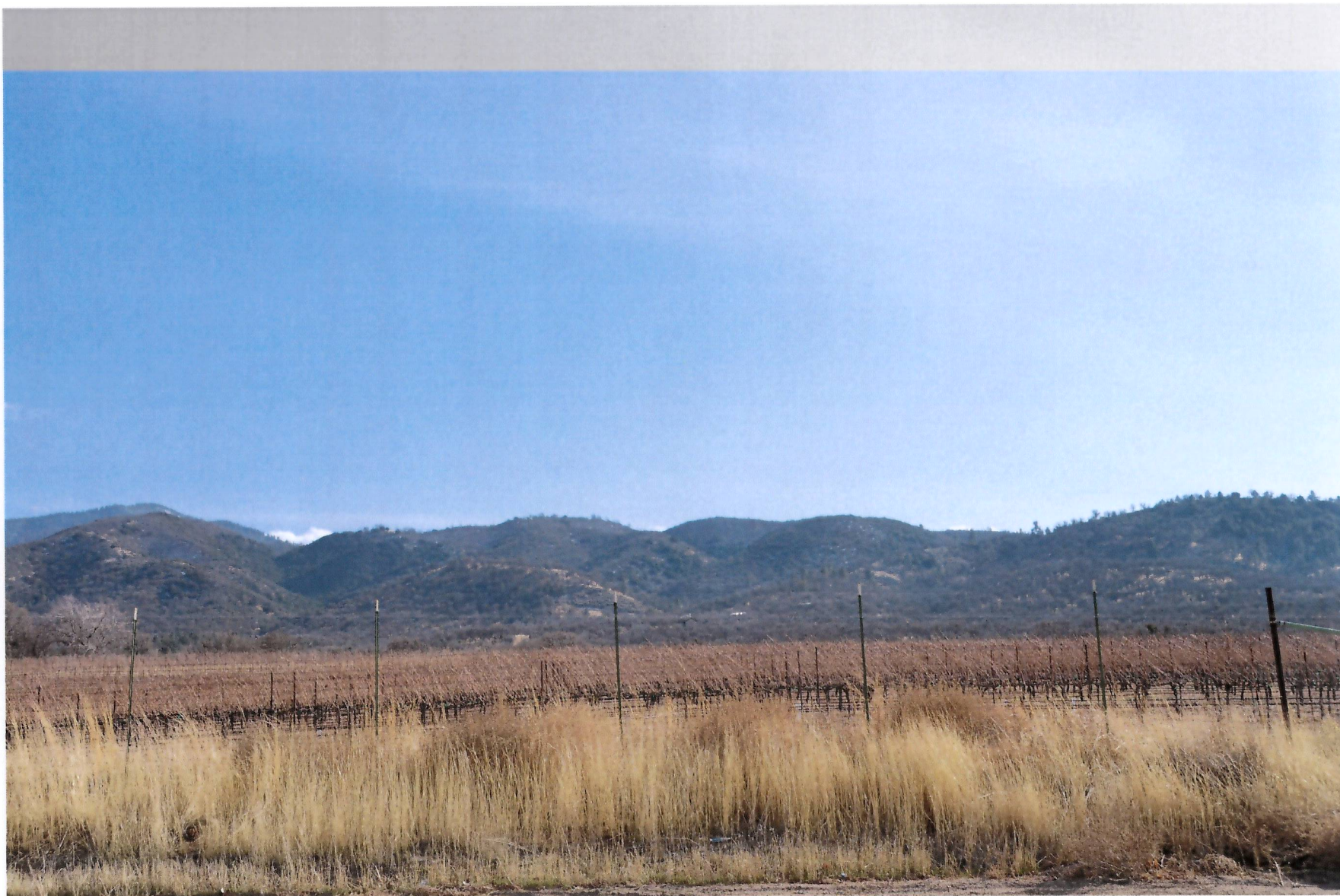


Exhibit 16 Cover of a marketing trifold for Triassic Vineyard showing the vineyard's position on a gentle slope within the AVA boundary. Note the Tehachapi mountains in the background.

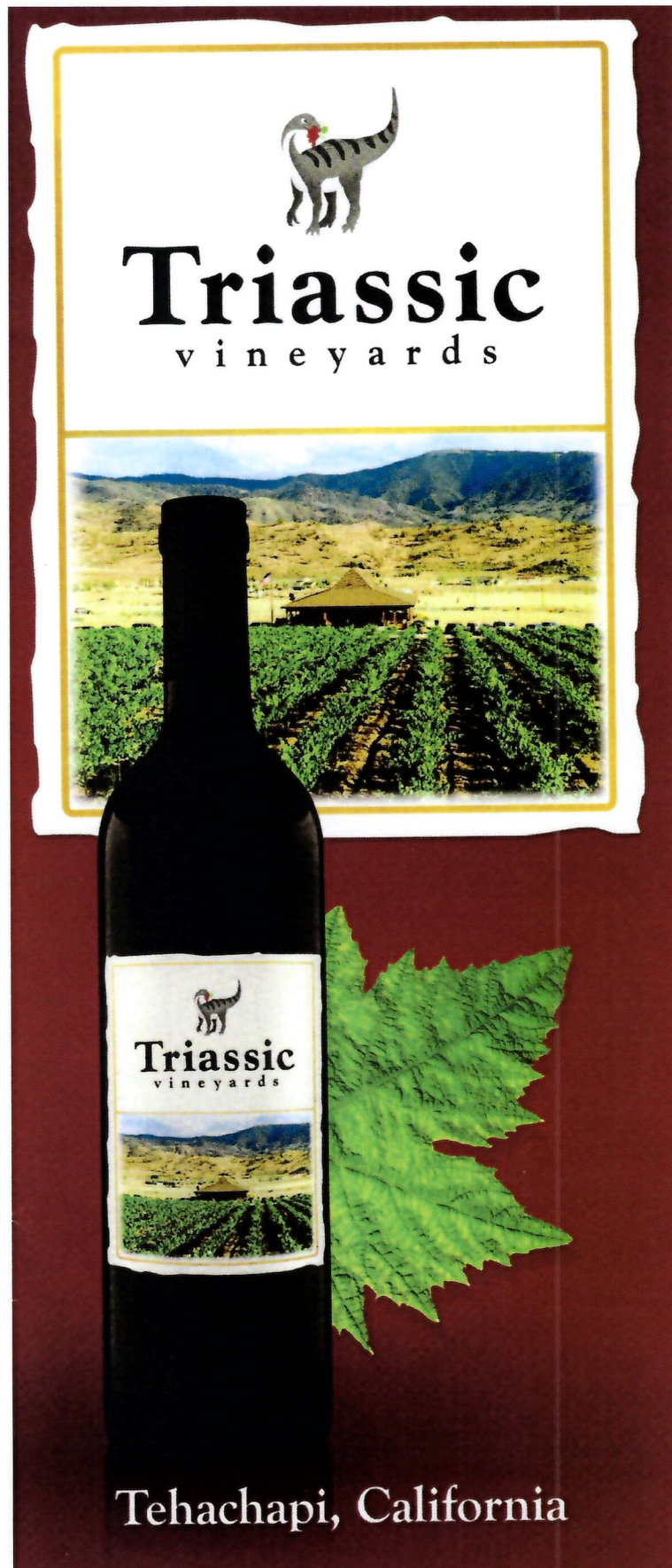
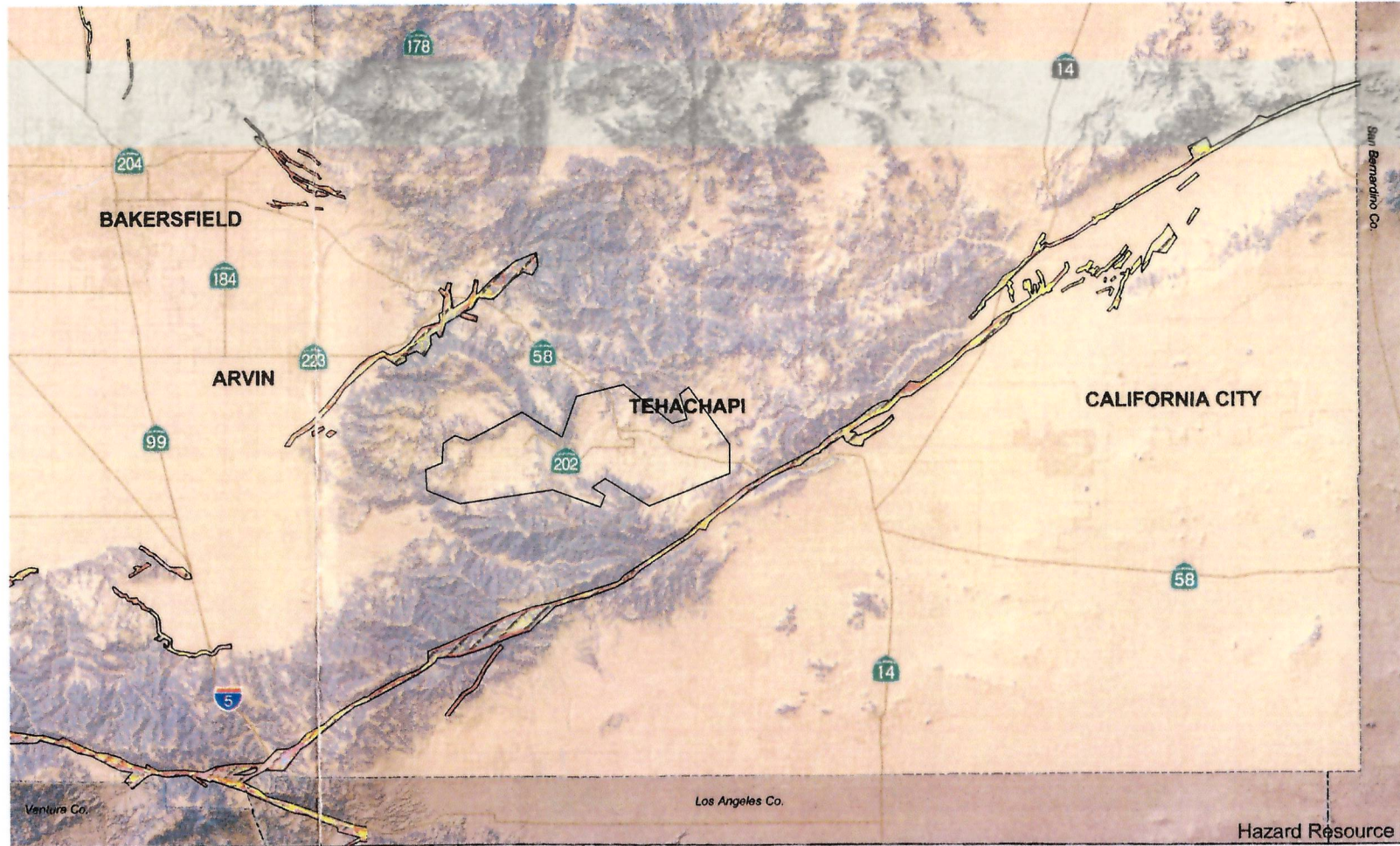


Exhibit 17 Section of the Kern Master Environmental Assessment Resource -- Fault Zones and Steep Slopes showing the approximate location of the Tehachapi AVA boundary. Areas having slopes over 30% are shaded grey.



- Located Fault Traces
- Approximate Fault Traces
- Inferred Fault Traces
- Concealed Fault Traces
- Alquist Priolo Fault Zones
- Slope greater than 30 %

Fault Zones & Steep Slopes

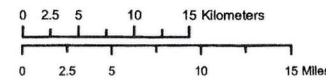


Exhibit 18 Photo taken from the southwestern edge of the proposed AVA looking west into the San Joaquin Valley. Note the steep drop off of the terrain outside the AVA boundary.

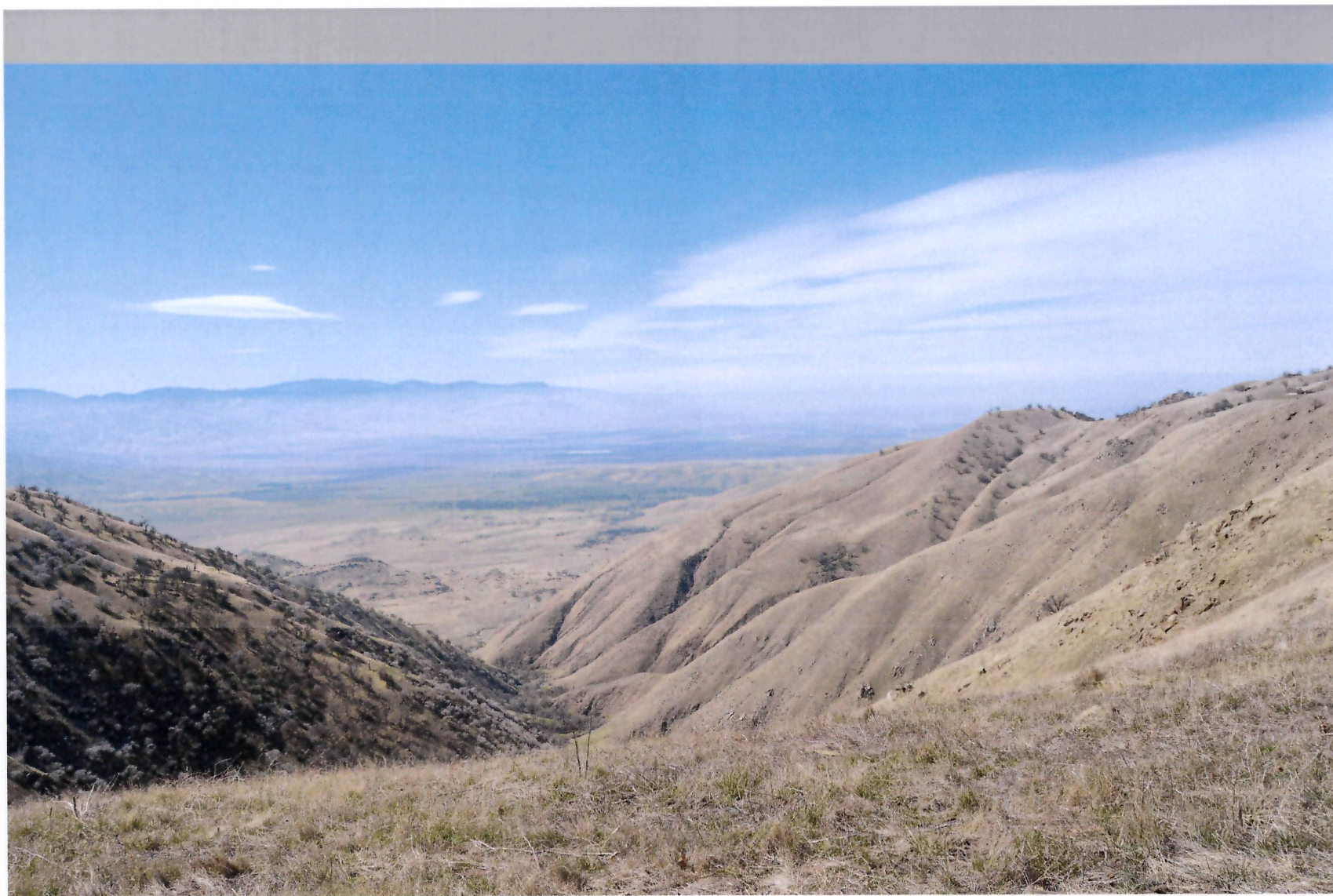


Exhibit 19

TEHACHAPI AVA AVERAGE CLIMATE DATA BY MONTH (2007-2016)¹⁴

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Maximum (°F)	52	53	58	61	69	80	87	86	82	69	60	50
Minimum (°F)	32	32	34	37	44	53	58	56	50	42	36	31
Mean (°F)	42	43	46	49	57	67	73	71	66	56	48	41
Growing Degree Days (Base 50 °F)	---	---	---	80	220	492	690	655	470	199	---	---
Precipitation (Inches)	1.7	1.5	1.5	0.7	0.4	0.1	0.3	0.1	0.1	0.5	1.5	2.4

¹⁴ The climate data used to produce the climate summaries provided in this petition were obtained from stations in the National Climatic Data Center's Global Historical Climatology Network-Daily database. Data from two stations were combined for the Tehachapi area, USC00048826 Tehachapi CA USA and USC00048829 Tehachapi 4 SE CA US. The two weather stations were/are centrally located in the proposed viticultural area at 4,017 and 4,220 feet, respectively. Though the period of data collection overlaps slightly, USC00048826 ceased operation in 1997 when USC00048829 came into service.

Exhibit 20

TEHACHAPI AVA CLIMATE DATA BY YEAR (2007-2016)

	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Lowest Minimum (°F)	19	14	15	10	17	14	24	13	15	8
Highest Maximum (°F)	96	96	95	98	96	95	98	98	96	101
Growing Degree Days (Base 50 °F)	2744	2911	3053	2821	2917	2483	2448	2887	2966	2809
Last Spring Frost Date (Base 30 °F)	4/16	4/15	4/3	4/19	4/14	5/2	4/14	4/25	4/26	4/24
First Fall Frost Date (Base 30 °F)	11/2	11/4	11/25	10/31	11/10	10/29	11/11	10/6	10/12	9/25
Growing Season (Days)	200	203	236	195	210	180	211	164	169	154
Precipitation (Inches)	15.2	10.6	8.6	8.1	10.8	20.0	7.1	7.6	10.4	6.7

Exhibit 21 Graph of Tehachapi KTSP weather station data for the first week of July 2017 demonstrating that the temperature spends more time near the high than the low. Graph was obtained from the Weather Underground website.

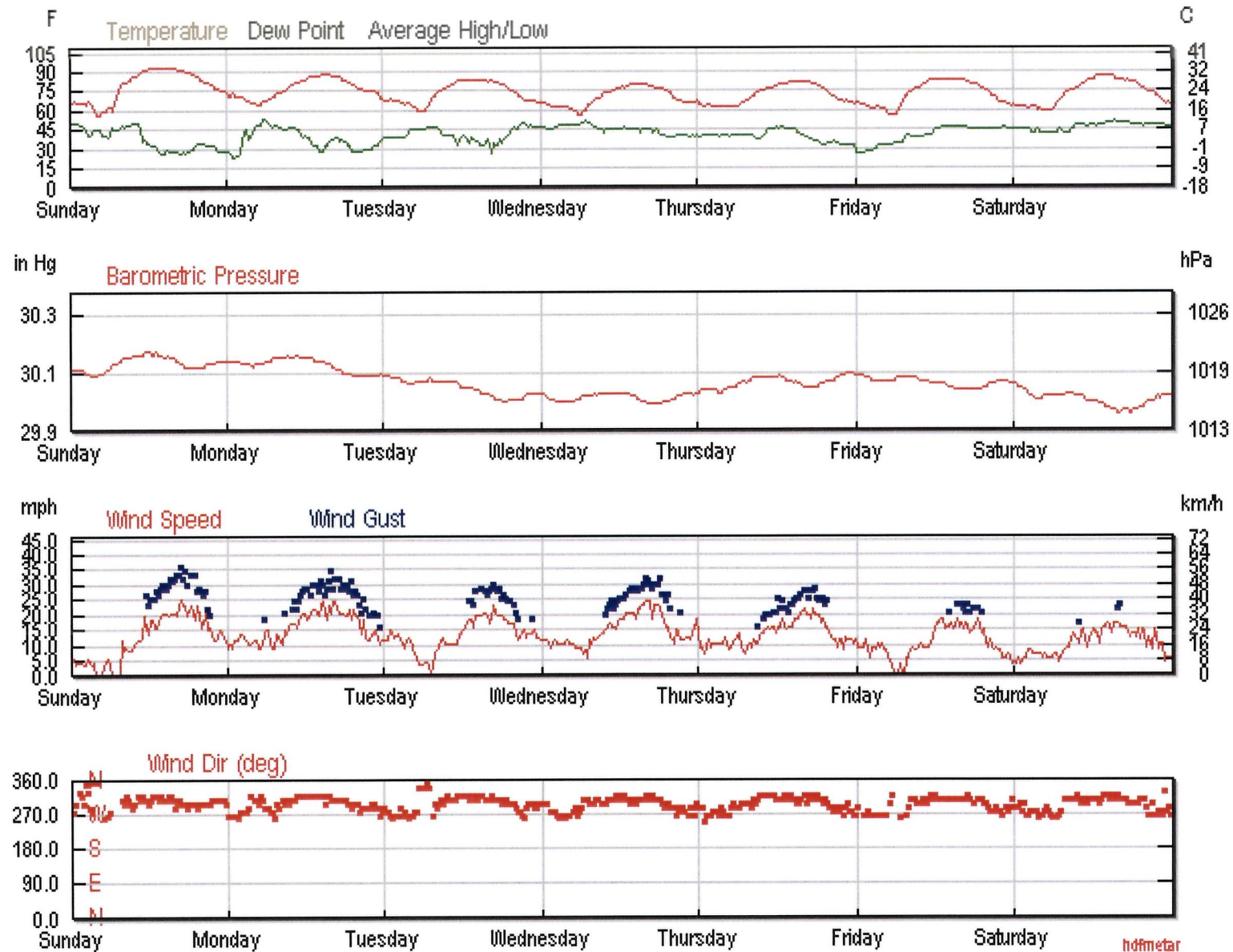


Exhibit 22

TEHACHAPI AVA AVERAGE CLIMATE DATA (1980-2016)

Date of Last Spring Frost (Base 30 °F)	Date of First Fall Frost (Base 30 °F)	Length of Growing Season (Days, Base 30 °F)	Average Growing Degree Days (Base 50 °F)	Precipitation (Inches)
April 15	November 3	201	2853	12.0

Exhibit 23

AVERAGE CLIMATE DATA FOR TEHACHAPI, CA AND SURROUNDING AREAS (2007-2016)

Weather Station Name (Network ID No.)	Station Elevation (Feet)	Minimum Temperature (°F)	Maximum Temperature (°F)	Length of Growing Season (Days, Base 30 °F)	Average Growing Degree Days (Base 50 °F)
Tehachapi 4 SE (USC00048829)	4,220	8	101	198	2,762
<i>Weather Stations Located W of Tehachapi</i>					
Bakersfield Airport (USW00023155)	489	25	112	349	5,521
<i>Weather Stations Located E of Tehachapi</i>					
Edwards AFB North Auxiliary Airfield (USW00053144)	2,283	3	128	231	4,881
<i>Weather Stations Located NNE of Tehachapi</i>					
Walker Pass California (USR0000CWAL)	5,572	10	106	216	3,834
Five Mile California (USR0000CFIV)	4,150	18	109	318	5,522
<i>Weather Stations Located NNW of Tehachapi</i>					
Johnsondale California (USR0000CJOH)	4,700	-5	104	139	2,149
UHL Hot Springs (USR0000CUHL)	3,720	15	109	245	3,529