This petition is submitted on behalf of the winegrowers in the proposed Santa Lucia Highlands Viticultural area.

This petition was prepared by the Harmony Wine Company.

Requests for additional information or follow-up can be made to:

Harmony Wine Company
290 Igo Way
Boulder Creek, CA. 95006
Phone No.: (408) 338-2646

Very truly yours,

Barry C. Jackson
Harmony Wine Company
PROPOSED

SANTA LUCIA HIGHLANDS

AMERICAN VITICULTURAL AREA

Monterey County, California
INTRODUCTION

This petition seeks to establish an American Viticultural Area in central Monterey County, California. The name of the proposed viticultural area would be "Santa Lucia Highlands."

The proposed area is the eastern flank of the Santa Lucia Mountain Range. The general boundaries are: Mount Toro and Limekiln Creek to the north; the Salinas River and its associated terraces form the eastern boundary; the Arroyo Seco in the south; the top of the ridgeline of the Sierra de Salinas forms the western boundary.

There are currently 2,200 acres committed to active viticulture, with plans underway to plant an additional 800 acres to winegrapes. The planted acreage of the proposed area is approximately 10% of the total in Monterey County. The total area of the proposed appellation is approximately 45,000 acres.

There is some overlap of the proposed area and the already existing American Viticultural Area "Arroyo Seco." The area of overlap is the southeastern portion of the proposed Santa Lucia Highlands and the northwestern section of "Arroyo Seco."
Geographical Features

The Santa Lucia Highlands are the eastern flank of the Santa Lucia Mountains that extend westward to the Pacific Ocean. The alluvial terraces that compose the "Highlands" are the western boundary of the Salinas Valley. The Gabilan Mountains to the east frame the opposite side of the valley.

Alluvial terraces are the dominant feature of the Santa Lucia Highlands, and are in fact, one of the main factors differentiating the "Highlands" from the valley floor. These terraces are the result of a complex interplay of geotectonic forces and the erosional effect of the Salinas River. Uplift of both the Santa Lucia and Gabilan ranges results in the formation of alluvial fans on the flanks of these ranges. This uplift, and associated tectonic tilt to the west, occurs at different times and locations along the respective ranges. This westward "tilt" has caused the Salinas River to be pushed to the west side of the valley. Erosion by the river has cut the main terrace formation that runs from just southwest of Gonzales, to the area due south of Soledad. In some locations these bluffs at the edge of the valley can exceed one hundred feet in elevation above the valley floor. This same terrace formation, now the result of erosion by the Arroyo Seco, extends down into the Arroyo Seco canyon.

The most northerly section of the proposed area, from Limekiln Creek to the area near the junction of River Road and Gonzales Road, is characterized by multiple terrace formations. There is no single well-defined "bench." This is the result of current, active uplift and erosion. Due to this active terrace formation, the west bank of the Salinas River becomes the boundary in this northern section.
Climate

Proximity to the Pacific Ocean results in a strong maritime influence on temperature, wind and fog formation.

Examination of heat summation data shows a generally cooler climate on the west side of the valley.

<table>
<thead>
<tr>
<th>Gonzales Westside</th>
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<tr>
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(84-86 Avg. = 1923)

<table>
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<tr>
<td>Average:</td>
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Precipitation is concentrated in the winter months and averages 10 to 15 inches annually. Due to the maritime influence, fog is a constant feature in the Salinas Valley,
particularly during summer months. The fog burns off earlier in the day in the areas above the valley floor. This earlier burn-off results in greater light intensity for a longer period for vineyards located in the "Highlands."

The north-south orientation of the valley causes cool marine air to be drawn into the valley by warm air rising off the valley floor. The narrow aspect of the valley (approximately 6 miles wide at Gonzales and 3 miles at Soledad) creates somewhat of a wind-tunnel effect. Windspeeds average 5 to 16 miles per hour, but higher velocities are not uncommon, particularly around Soledad where the valley narrows. Windspeeds are highest through the center of the valley and diminish at the edges. According to recent research at U. C. Davis, high wind stress influence has been correlated to higher pH in winegrapes and windspeeds exceeding 15 mph cause photosynthesis to cease, delaying the onset of maturity.

**Soils**

The primary soils associated with the alluvial terraces of the Santa Lucia Highlands are the Arroyo Seco and Chualar series. These are well-drained soils formed from granitic alluvium, and in the case of the Chualar series, some schistose rocks, on alluvial fans and terraces. These soils are generally loam or gravelly, sandy loam, with an underlying very gravelly material. Permeability is moderately rapid. Roots can penetrate to a depth of sixty inches or more. These soils form slopes of 2% to 9% on most of the alluvial fans and terraces.

Included in the alluvial fans and terraces were small areas of Placentia, Rincon, Tujunga, Lockwood, Gorgonio and Hanford soils.
The upper slopes of the Santa Lucia Highlands are composed of Cieneba, Sheridan, Vista, Junipero, McCoy, Gazos, Linne and Santa Lucia-Reelze association soils, on slopes of 15% to 75% grade.

The geology of the Santa Lucia range consists of large masses of granitic and metamorphic in the northern section, diatomaceous shale and massive sandstone in the central area, and masses of shale, sandstone and serpentine to the south.

The soils of the valley floor are primarily from the Mocho, Cropley, Pico and Danville series. The Mocho soils of the valley floor are silty clay loams of 0% to 2% grade. The Cropley soils are silty clay of 0% to 2% grade. The Pico and Danville soils are sandy clay loams of 0% to 2% grade.


Viticulture

Commercial viticulture in the proposed area began in the early 1970's. As previously stated, there are approximately 2,200 acres currently planted to vines, with another 800 acres under preparation. The principle vineyards in the Santa Lucia Highlands are: Smith & Hook, Paraiso Springs, Sleepy Hollow, IVV, Mirassou, Robert Talbott, Hillside, Doctor's, Lone Oak, La Estancia, La Reina and Vinco.

There are three wineries located within the proposed area: Smith & Hook, Paraiso Springs and Robert Talbott.

The principle cultivars within the proposed area are: Chardonnay, Pinot Blanc, Johannisberg Riesling, Cabernet Sauvignon, Merlot, Pinot Noir and Cabernet Franc.
Factors of Differentiation

The following factors differentiate the proposed Santa Lucia Highlands from the adjacent Salinas Valley floor and other viticultural areas in Monterey County.

- A well-defined alluvial terrace running the length of the eastern boundary.

- Generally cooler microclimate: cool Region I/II vs. Region II/III.

- Different soil types: gravelly, sandy loam vs. silty clay loam.

- Higher elevation: initially 40 to 120 feet higher than valley floor and climbing to 1200 feet above the valley floor.

- Climate: less wind and earlier fog burn-off with morning sun.

- East facing slopes receiving morning sun first.
Proposed Boundaries

The boundaries of the proposed Santa Lucia Highlands Viticultural Area may be found on the following seven U.S.G.S. 7-1/2 minute quadrangle maps: "Chualar Quadrangle, California," "Gonzales Quadrangle, California," "Rana Creek Quadrangle, California," "Palo Escrito Peak Quadrangle, California," "Soledad Quadrangle, California," "Sycamore Flat Quadrangle, California," and "Paraiso Springs Quadrangle, California."

From the beginning point at Mount Toro (3560'), the boundary follows Limekiln Creek for approximately 5 miles to the 100 foot elevation, at which point the boundary follows the 100 foot elevation in a southeasterly direction for approximately one mile, where the boundary intersects the west bank of the Salinas River. From this point the boundary follows the west bank of the Salinas River in a southeasterly direction for approximately 2-1/2 miles. At the point where the river channel crosses the 120 foot elevation, the boundary follows the 120 foot elevation due south for approximately 2,200 feet where it climbs to the 160 foot elevation. From this point the boundary follows the 160 foot elevation in a southeasterly direction for approximately 6-1/2 miles, to the point where the 160 foot elevation crosses River Road. From this point the boundary follows River Road in a southeasterly direction for approximately one mile to the junction of River, Fort Romie and Foothill Roads. From this point the boundary follows Foothill Road in a southeasterly direction for approximately 4 miles to the junction of Foothill and Paraiso Roads. From this point the boundary follows Paraiso Road in a southeasterly direction for approximately 800 feet to the point where the 240 foot elevation crosses Paraiso Road. From this point the boundary follows the
240 foot elevation for approximately 3 miles. From this point the boundary follows the 280 foot elevation due south for approximately 1-1/2 miles. From this point the boundary follows the 320 foot elevation south for approximately 1-1/2 miles. From this point the boundary follows the 360 foot elevation in a southwesterly direction for approximately 3/4 mile to Bench Mark 406. From this point the boundary follows the 400 foot elevation in a southwesterly direction for approximately 2-1/4 miles to the unnamed drainage 2,000 feet west of the gauging station at the Arroyo Seco Bridge. From this point the boundary follows the unnamed drainage in a northwesterly direction for approximately 3 miles to Paraiso Peak (3114'). From this point the boundary follows the ridgeline in a northwesterly direction for approximately 6 miles to Twin Peaks (3985'). From this point the boundary follows the ridgeline in a northwesterly direction for approximately 4-1/2 miles to Palo Escrito Peak (4467'). From this point the boundary follows the ridgeline in a northwesterly direction for approximately 10 miles back to the point of beginning at Mount Toro (3560').

The enclosed map is the U.S.G.S. map of Monterey County, California, 1:250,000 scale.

The proposed Santa Lucia Highlands, American Viticultural Area is shown in red.
Ms. Nancy Sutton  
Bureau of Alcohol, Tobacco and Firearms  
Wine and Beer Branch, Room 6236  
1200 Pennsylvania Avenue, N.W.  
Washington, D.C. 20226  

Dear Nancy,

Please find enclosed "Map A" and Key, on which is the information you requested in your letter of 16 August, 1990.

Item 1 needed the location of wineries both inside and outside the proposed area. These are indicated by a red dot on the map with a letter designation. Vineyards are shown on the map in green with a V-number designation. Location of the vineyards on the map are approximate and not to scale.

Item 2 referred to the location of vineyards outside of the proposed appellation. These vineyards are shown in orange on the map, with a V-number designation.

Item 3 was the request for the location of Robert Talbott Vineyards and winery. This is shown on the map as V-1 and winery A. They are located at the northwestern end of the proposed appellation.

Item 4 referred to the Lone Oak brand. Lone Oak is a vineyard owned by Smith & Hook Vineyards, with wine production at the Smith & Hook Winery, winery B on the map.

Item 5 requested the publication date for an article on the Santa Lucia Highlands appearing in the Bakersfield Californian newspaper. The publication date was 10 May, 1990.

I have also enclosed photocopies of more recent articles about the Santa Lucia Highlands. Please find also photocopies of label approvals for: Hahn, Lone Oak, and Smith & Hook.

Please contact me so I may be of continued assistance to you.

Enjoy the Holidays!

Sincerely,

[Signature]

Harvey C. Jackson  
Harmony Wine Company

Enclosures (8)
KEY FOR "MAP A"

**Vineyards:** inside of proposed Appellation

- V-1 Robert Talbott Vyds.
- V-2 I.V.V. Vyds.
- V-3 Sleepy Hollow Vyds.
- V-4 Vinco
- V-5 La Reina Vyds.
- V-6 La Estancia Vyds.
- V-7 Lone Oak Vyds.
- V-8 Hillside Vyds.
- V-9 Doctor's Vyds.
- V-10 Smith & Hook Vyds.
- V-11 Paraiso Springs Vyds.
- V-12 Mirassou Mission Ranch
- V-13 Fairview Vyds.
- V-14 Paraiso Vyds.

**Vineyards:** outside of proposed Appellation

- V-15 San Saba Vyds.
- V-16 San Felipe Vyds.
- V-17 Ventana Vyds.
- V-18 Zabala Vyds.

**Wineories:** inside of proposed Appellation

- A Robert Talbott Vyds.
- B Smith & Hook Vyds.
- C Paraiso Springs Vyds.

**Wineories:** outside of proposed Appellation

- W Vintner's International
- X Paul Masson
- Y Ventana Vyds.
- Z Jekel Vyds.
Viticulture Bits

BY
ELAINE GIANPIETRO

From harvest to market, the annual fall winegrape crush finds Monterey Bay Area wineries in great ferment. And for area connoisseurs, it is a time of grape expectations.

All indicators point to 1990 being a successful year in Monterey County's nationally recognized wine grape growing region. Area viticulturists believe this year's crop could be one of their heaviest, barring any untimely rain.

New cultivation techniques such as leaf pulling and vertical trellising will further enhance the character of Monterey County's award-winning chardonnay. Those vines grafted to chardonnay three to five years ago also will be producing at higher levels, adding to what is already the county's leading varietal.

Though the drought has affected all of California, and the Central Coast in particular, the condition is not yet considered severe in the vineyards. Some growers have decreased their water usage by as much as 30%, and still the harvest is progressing.

During the past 25 years Monterey Wine Country has grown to 27,000 acres planted in vineyards of various sizes. Due to the favorable climate (warm days, cool nights, afternoon ocean breezes), the rich soils and state-of-the-art technology combined with traditional practices, Monterey County wines have continued to gain national prominence.

With many European wine producers such as Beringer, Chandon, Piper and Mouton-Rothchild becoming a part of the California wine scene, the trend to collect, covet and cellar our own Monterey County wines now may be our best investment bets!
California wine country comes to Vail

by Trish Kiesewetter

"I am happy to report, having tasted each vintage, that the Smith & Hook Cabernet wines compare in richness and elegance, cork-to-cork with any of the classified growths of Bordeaux, upon which their production is patterned. They remove irrefutably any doubt the merits of Cabernet wines Monterey County... they are superb."

Robert Lawrence Balzer
Los Angeles Times
Book of California Wines

Accolades such as this one have greeted the wines from the Smith & Hook Vineyards for more than a decade and, while not yet a household word, the vineyard's popularity with restaurateurs and wine collectors grows each year.

Nestled in the Santa Lucia Highlands of central California's Monterey County, Smith & Hook's vineyards were first planted in 1974. With the maturing of the vines and the expertise of the vineyard's winemaker, the red wines could soon hold their own with any of California's finest, and now, the best of Bordeaux. These are wines which make any meal a special one, and would be a great addition to any collection.

Owned and operated by the Nicholas Hahn family from Switzerland, Smith & Hook is truly a business where the family takes tremendous interest. Both mother and daughter sit on the board of directors, father has extensive influence in the business side, and the son is training to become a wine master. Such family involvement helps maintain the high quality and personal care required to make great wine.

But you do not have to travel all the way to the California wine country to sample this rewarding wine. The Sonnenalp Hotel is going to bring the Hahn family to Vail by hosting a wine dinner at Friday, Nov. 23. Smith & Hook owners Nicky and Gaby Hahn will be on hand to personally explain the various wines you will taste as well as discuss the pleasures, and perils, of owning a vineyard.

Chef Mark Spitzer and his crew have once again dreamed up a mouth-watering meal. The last wine dinner had you salivating for roast saddle of lamb days afterward.

This time you will begin with a glass of gewurztraminer in the King's Club at 6:30 p.m., moving into Ludwig's about 7 to begin a wonderful evening. The first course will be capon galantine served with an orange cranberry sauce accompanied by a chardonnay wine. Then you will take a trip to the ocean with a brioche filled with sauced crab and oysters in a lemon creme sauce. This course will allow you to sample a fine merlot, another great red from Smith & Hook.

You will cleanse your palate with an orange sorbet and move onto stuffed porkloin with crayfish mousse and a delicate apple ginger sauce. Of course the grand Cabernets will be brought out and you will be able to see for yourself from whence comes Smith & Hook's reputation.

The Sonnenalp's new pastry chef seems to outdo himself every time and the thought of a hazelnut tuile with fresh berries and chocolate Napoleon is enough to send anyone into ecstasy. A late harvest semillon will finish of this delightful dinner.

As always, reservations are limited so you had best call soon. The entire dinner, excluding tax and gratuity, is $48.50. These wine dinners are relaxed, fun evenings to spend with friends, enjoying superb cuisine and noteworthy wines.

Gallery Association to
SANFORD WINERY

Sanford wines are produced from grapes in carefully selected vineyards of Santa Barbara County. Bruno Delfonso's wines are made in small lots, employing traditional methods. The Sanford winery and ranch is located in the San Ynez Valley, five miles west of Buellton.

Wines: Chardonnay, Sauvignon Blanc, Pinot Noir, and Pinot Noir-Bin Gris.

SMITH & HOOK

Smith & Hook's vineyards are nestled in the Santa Lucia Highlands of Central California's Monterey County. Since their first plantings in 1974, Smith & Hook has become the foremost producer of Cabernet Sauvignon in Monterey County. Smith & Hook is owned and operated by the Nicholas Hahn family. The vineyards are located on property that originated from two neighboring ranches, one owned by Mr. Smith and the other by Mr. Hook, hence it's name.

Wines: Cabernet Sauvignon and Merlot.

ACKNOWLEDGEMENTS

Blue Note PATRICK'S

Wineglasses courtesy of Pat Marchbanks
Printing courtesy of DESTEC Energy

Friday, October 26, 1990
Bakersfield Convention Center
5:00 pm to 7:30 pm
Gift Mart Shopping 'til 9:00 pm
FEATURED WINES

ARIEL VINEYARDS

Ariel delivers all the pleasures of fine wines without the effects of alcohol. Ariel wines are made using traditional wine-making practices. After proper aging, alcohol is gently filtered from the wine by a unique application of cold filtration developed by wine maker, Barry Onekow. The result is a wine with less than half of one percent alcohol, approximately the same as found in fruit juice. Ariel also contains less than half of the calories of their alcoholic counterparts.


Eberle Winery was founded in 1982 in Paso Robles. Production is limited to 10,000 cases allowing owner/winemaker, Gary Eberle, and his assistant, Toby Shumrick, to handle each phase of the winemaking process themselves. The desire for absolute quality control from the vineyard to the finished bottle of wine was Gary's primary motivation for establishing his own vineyards and winery.

Wines: Cabernet Sauvignon, Chardonnay and Muscat Canelli.

JEKEL VINEYARDS

Jekel Vineyards winery is located on the sloping Arroyo Seco appellation in the Salinas Valley of Monterey. In 1972 Bill Jekel planted the Gravelstone Vineyard noted for its unique combination of rocky soils and cool micro-climate. Jekel's winemaking philosophy is to preserve the natural quality of the grapes as they process to fine wine.

Wines: Cabernet Sauvignon, Chardonnay, Johannisberg Riesling, Cabernet Franc, and Merlot.

The J. Lohr Winery is located in San Jose and is centrally located to all four of the J. Lohr vineyards - Greenfield Vineyards and Cypress Vineyard in Monterey, Carol's Vineyard in Napa, Pheasant's Call Vineyards in the Sacramento Delta and the Paso Robles Vineyards. The winery has been in operation over fourteen years producing wines of outstanding quality, consistency and value.


J. LOHR WINERY

EBERLE WINERY

MURPHY GOODE WINERY

For more than 20 years, Tim Murphy and Dale Goode have been growing grapes in Sonoma County's Alexander Valley. In 1979, they formed a partnership to plant the Murphy-Goode Vineyards. The goal of Murphy-Goode Estate Winery is to produce wines that showcase the unique flavors of Murphy-Goode Vineyards and Murphy Ranch Vineyards.

Wines: Sauvignon Blanc, Chardonnay, Merlot, and Cabernet Sauvignon.
DEPARTMENT OF THE TREASURY - BUREAU OF ALCOHOL, TOBACCO AND FIREARMS
APPLICATION FOR AND CERTIFICATION/EXEMPTION OF LABEL/BOTTLE APPROVAL
(See Instructions and Paperwork Reduction Act Notice on Back)

PART 1 - APPLICATION

CT 8011 CR 21 AP

1. VENDOR CODE (Required) 4591
2. SERIAL NO (Required) 1990-4
3. BRAND NAME (Required) Hahn Winery
4. CLASS AND SUBCLASS (Required) Red - Cabernet Sauvignon
5. PRODUCT NAME OR APP
6. VINTAGE (Year Only) 1987
7. FORMULA NO. (If Any) 11. LAB. ANALYSIS NO.

PART II - APPLICANT'S CERTIFICATION

The applicant hereby declares under the penalties of perjury that to the best of his/her knowledge and belief all statements appearing in the above application are true and correct and the representations of the labels and in the supplement to the above statements are true and correct. The applicant further certifies that the product will be exclusively used for the purpose specified in the above application.

Duane D. DeBoer, President Winemaker

PART III - ATF CERTIFICATE

This certificate is issued subject to applicable laws and regulations and conditions as set forth on the back of this form.

Stephen C. Hubergren, Director, Bureau of Alcohol, Tobacco and Firearms

HAHN WINERY

This fine wine, grown in the cool climate of the Santa Lucia Highlands, is a product of the Hahn family winery. The name Hahn is a translation of "rooster" and the graphics shown on the label are...
DEPARTMENT OF THE TREASURY - BUREAU OF ALCOHOL, TOBACCO AND FIREARMS
APPLICATION FOR AND CERTIFICATION/EXEMPTION OF LABEL/BOTTLE APPROVAL
(See Instructions and Paperwork Reduction Act Notice on Back)

PART I - APPLICATION

NAME AND ADDRESS AND PLANT REGISTRY NO. OR BASIC PERMIT NO. OF APPLICANT

Smith & Hook Winery
37700 Foothill Road
Soledad, CA 93960
Drawer C

BW: #5015

PART II - APPLICANT'S CERTIFICATION

The applicant hereby declares under the penalties of perjury that to the best of his/her knowledge and belief all statements appearing in the above application are true and correct and the representations of the labels and in the supplemental documents truly and correctly represent the contents of the containers to which such labels will be applied. Additionally, the applicant for exemption from label approval further certifies that the product will be exclusively disposed of in the State shown in Item 4b, and that each container will bear the legend "For Sale in (State shown in Item 4b) only".

D. DATE OF APPLICATION
8-14-90

F. SIGNATURE OF APPLICANT OR AUTHORIZED AGENT
Duane D. DeBoer
President - Winemaker

PART III - ATF CERTIFICATE

This certificate is issued subject to applicable laws and regulations and conditions as set forth on the back of this form.

E. DATE ISSUED
AUG 2 3 1990

G. SIGNATURE OF DIRECTOR, BUREAU OF ALCOHOL, TOBACCO AND FIREARMS

FOR ATF USE ONLY

QUALIFICATIONS

Not less than 75 percent of the volume of this wine must be derived from Santa Lucia Highlands

SMITH & HOOK

SIGNATURE: [Signature]

TERMINATION DATE

(If Any)

FORMAT COMPLETE SET OF LABELS BELOW
### Application for and Certification/Exemption of Label/Bottle Approval

**Part I - Application**

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**Type of Application**

- [X] Certificate of Label Approval
- [ ] Certificate of Exemption from Label Approval "For Sale in______ Only" (If in State abbreviation)
- [ ] Distinctive Liquor Bottle Approval
- [ ] Total Bottle Capacity Before Closure ______, Fill in amount

**State Any Wording, Not Shown On Labels (e.g., brand, etc.)**

**Part II - Applicant's Certification**

The applicant hereby declares under the penalties of perjury and to the best of his/her knowledge and belief all statements appearing in the above application are true and correct and the representations of the labels and in the supplemental documents truly and correctly represent the contents of the containers to which such labels will be applied. Additionally, the applicant for exemption from label approval further certifies that the product will be exclusively disposed of in the State shown in item 4b, and that each container will bear the legend "For Sale in (State shown in item 4b) only".

**Date of Application**

02-28-89

**Signature of Applicant or Authorized Agent**

Duane D. DeBoer - President, Winemaker

**Part III - ATF Certificate**

This certificate is issued subject to applicable laws and regulations and conditions as set forth on the back of this form.

**Date Issued**

Jun 6 1989

**Signature of Director, Bureau of Alcohol, Tobacco and Firearms**

Not Less Than --% of the Volume

Of This Wine Must Be Derived From

Grapes Grown in the Location

Mentioned on the Label.

In 1980 we created the Smith & Hook Winery, which has since become Monterey County's premier Cabernet Sauvignon Estate. Lone Oak Estate was created as a distinctly separate
Mr. David Brokaw  
Bureau of Alcohol, Tobacco & Firearms  
Wine & Beer Branch  
Washington, D.C.  20226

May 3, 1991

Dear Mr. Brokaw,

Please find enclosed the revised copy of the petition to establish the "Santa Lucia Highlands" as an American Viticultural Area. The revisions reflect the new boundaries as described in my letter of April 9, 1991. The complete copy is enclosed. Please find also a larger scale map showing the boundary relationships between "monterey", "Arroyo Seco" and "Santa Lucia Highlands".

I will FAX this material to you also.

Please call me if you have any questions.

Smith & Hook Winery  (408)678-2132  
Harmony Wine Company  (408)338-2646

Sincerely,

Barry C. Jackson  
Harmony Wine Company

BCJ: jlg  
enclosure (1)
PROPOSED

SANTA LUCIA HIGHLANDS

AMERICAN VITICULTURAL AREA

Monterey County, California
INTRODUCTION

This petition seeks to establish an American viticultural Area in central Monterey County, California. The name of the proposed viticultural area would be "Santa Lucia Highlands."

The proposed area is the eastern flank of the Santa Lucia Mountain Range. The general boundaries are: Limekiln Creek to the north; the Salinas River and its associated terraces form the eastern boundary; "Arroyo Seco" in the Southeast; the existing "Monterey" appellation forms the western boundary.

There are currently 1,850 acres committed to active viticulture, with plans underway to plant an additional 400 acres to winegrapes. The planted acreage of the proposed area is approximately 9% of the total in Monterey County. The total area of the proposed appellation is approximately 22,000 acres.

The proposed "Santa Lucia Highlands" is a sub-appellation of "Monterey" and is completely within the existing boundaries.
Geographical Features

The Santa Lucia Highlands are the eastern flank of the Santa Lucia Mountains that extend westward to the Pacific Ocean. The alluvial terraces that compose the "Highlands" are the western boundary of the Salinas Valley. The Gabilan Mountains to the east frame the opposite side of the valley.

Alluvial terraces are the dominant feature of the Santa Lucia Highlands, and are in fact, one of the main factors differentiating the "Highlands" from the valley floor. These terraces are the result of a complex interplay of geotectonic forces and the erosional effect of the Salinas River. Uplift of both the Santa Lucia and Gabilan ranges results in the formation of alluvial fans on the flanks of these ranges. This uplift, and associated tectonic tilt to the west, occurs at different times and locations along the respective ranges. This westward "tilt" has caused the Salinas River to be pushed to the west side of the valley. Erosion by the river has cut the main terrace formation that runs from just southwest of Gonzales, to the area due south of Soledad. In some locations these bluffs at the edge of the valley can exceed one hundred feet in elevation above the valley floor. This same terrace formation, now the result of erosion by the Arroyo Seco, extends down into the Arroyo Seco canyon.

The most northerly section of the proposed area, from Limekiln Creek to the area near the junction of River Road and Gonzales Road, is characterized by multiple terrace formations. There is no single well-defined "bench." This is the result of current, active uplift and erosion. Due to this active terrace formation, the west bank of the Salinas River becomes the boundary in this northern section.
Climate

Proximity to the Pacific Ocean results in a strong maritime influence on temperature, wind and fog formation.

Examination of heat summation data shows a generally cooler climate on the west side of the valley.

### Gonzales Westside

<table>
<thead>
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<th>Degree-Days</th>
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<tbody>
<tr>
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<td>82</td>
<td>2080</td>
</tr>
<tr>
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Average: 2215

(84-86 Avg. = 1923)

### Gonzales Eastside

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Average: 3106

### Soledad Westside

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Average: 2868

### Soledad Eastside

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</tr>
<tr>
<td>82</td>
<td>2530</td>
</tr>
</tbody>
</table>

Average: 2978

Precipitation is concentrated in the winter months and averages 10 to 15 inches annually. Due to the maritime influence, fog is a constant feature in the Salinas Valley,
particularly during summer months. The fog burns off earlier in the day in the areas above the valley floor. This earlier burn-off results in greater light intensity for a longer period for vineyards located in the "Highlands."

The north-south orientation of the valley causes cool marine air to be drawn into the valley by warm air rising off the valley floor. The narrow aspect of the valley (approximately 6 miles wide at Gonzales and 3 miles at Soledad) creates somewhat of a wind-tunnel effect. Windspeeds average 5 to 16 miles per hour, but higher velocities are not uncommon, particularly around Soledad where the valley narrows. Windspeeds are highest through the center of the valley and diminish at the edges. According to recent research at U. C. Davis, high wind stress influence has been correlated to higher pH in winegrapes and windspeeds exceeding 15 mph cause photosynthesis to cease, delaying the onset of maturity.

Soils

The primary soils associated with the alluvial terraces of the Santa Lucia Highlands are the Arroyo Seco and Chualar series. These are well-drained soils formed from granitic alluvium, and in the case of the Chualar series, some schistose rocks, on alluvial fans and terraces. These soils are generally loam or gravelly, sandy loam, with an underlying very gravelly material. Permeability is moderately rapid. Roots can penetrate to a depth of sixty inches or more. These soils form slopes of 2% to 9% on most of the alluvial fans and terraces.

Included in the alluvial fans and terraces were small areas of Placentia, Rincon, Tujunga, Lockwood, Gorgonio and Hanford soils.
The upper slopes of the Santa Lucia Mountains are composed of Cieneba, Sheridan, Vista, Junipero, McCoy, Gazos, Linne and Santa Lucia-Relize association soils, on slopes of 15% to 75% grade.

The geology of the Santa Lucia range consists of large masses of granitic and metamorphic in the northern section, diatomaceous shale and massive sandstone in the central area, and masses of shale, sandstone and serpentine to the south.

The soils of the valley floor are primarily from the Mocho, Cropley, Pico and Danville series. The Mocho soils of the valley floor are silty clay loams of 0% to 2% grade. The Pico and Danville soils are sandy clay loams of 0% to 2% grade.


Viticulture

Commercial viticulture in the proposed area began in the early 1970's. As previously stated, there are approximately 1,850 acres currently planted to vines, with another 200 acres under preparation. The principle vineyards in the Santa Lucia Highlands are: Smith & Hook, Paraiso Springs, Sleepy Hollow, IVV, Robert Talbott, Hillside, Doctor's, Lone Oak, La Estancia, La Reina and Vinco.

There are three wineries located within the proposed area: Smith & Hook, Paraiso Springs and Robert Talbott.

The principle cultivars within the proposed area are: Chardonnay, Pinot Blanc, Johannisberg Riesling, Cabernet Sauvignon, Merlot, Pinot Noir and Cabernet Franc.
Factors of Differentiation

The following factors differentiate the proposed Santa Lucia Highlands from the adjacent Salinas Valley floor and other viticultural areas in Monterey County.

- A well-defined alluvial terrace running the length of the eastern boundary.

- Generally cooler microclimate: cool Region I/II vs. Region II/III.

- Different soil types: gravelly, sandy loam vs. silty clay loam.

- Higher elevation: initially 40 to 120 feet higher than valley floor and climbing to 1200 feet above the valley floor.

- Climate: less wind and earlier fog burn-off with morning sun.

- East facing slopes receiving morning sun first.
PROPOSED BOUNDARIES

The proposed Santa Lucia Highlands Viticultural Area is located in Monterey County, California. The boundaries of the proposed Santa Lucia Highlands Viticultural Area may be found on the following seven U.S.G.S. 7-½ minute quadrangle maps: "Chualar Quadrangle, California," "Gonzales Quadrangle, California," "Rana Creek Quadrangle, California," "Palo Escrito Peak Quadrangle, California," "Soledad Quadrangle, California," "Sycamore Flat Quadrangle, California," and "Paraiso Springs Quadrangle, California."

The beginning point is found on the "Chualar, California" U.S.G.S. map, where Limekiln Creek crosses the 360 foot contour interval. This point also coincides with the western boundary of the Guadalupe Y Llanitos de los Correos Land Grant and the eastern boundary of section 28, T16S., R4E. This point also marks the spot where the western boundary of the Monterey Viticultural Area crosses Limekiln Creek.

From the beginning point the boundary follows Limekiln Creek for approximately 1½ miles to the 100 foot elevation, at which point the boundary follows the 100 contour in a southeasterly direction for approximately one mile, where the boundary intersects the west bank of the Salinas River.

From this point the boundary follows the west bank of the Salinas River in a southeasterly direction for approximately 2-½ miles. At the point where the river channel crosses the 120 foot elevation, the boundary follows the 120 foot elevation due south for approximately 2,200 feet where it climbs to the 160 foot elevation. From this point the boundary follows the 160 foot elevation in a southeasterly direction for approximately 6-½ miles, to the point where the 160 foot elevation crosses River road. From this point the boundary follows River road in a southeasterly direction for approximately one mile to the junction of river, Fort Rome and Foothill Roads. From this point the boundary follows Foothill Road in a southeasterly direction for approximately 4 miles to the junction of Foothill and Paraiso Roads.

This point marks the co-incidence of the Arroyo Seco Viticultural Area boundary and the boundary of the proposed Santa Lucia Highlands. From this point the boundary follows Paraiso Road in a southerly direction to the intersection with Clark road. Then south for approximately 1.8 miles to the northeast corner of section 5, T.19 S., R.6 E.
At this point the proposed Santa Lucia Highlands boundry diverges from the boundry of the Arroyo Seco Viticultural Area and co-incides with the boundry of the Monterey Viticultural Area.

From the southeast corner of section 32, T.18 S., R.6 E., due west along the southern boundaries of sections 32 and 31, to the southwest corner of section 31, T.18 S., R.6 E. Then north along the western boundries of sections 31 and 30, to the northwestern corner of section 30, T.18 S., R.6 E. Then northwest in a straight diagonal line from the southeast corner of section 24, T.18 S., R.5 E., to the northwest corner of section 24, T.18 S., R.5 E. Then north along the western boundry of section 13, T.18 S., R.5 E., to the northwestern corner of section 13, T.18 S., R.5 E. Then northwest in a diagonal line from the southeast corner of section 11, T.18 S., R.5 E., across sections 11 and 3, to the northwest corner of section 3, T.18 S., R.5 E. Then due west along the southern boundry of section 33, T.17 S., R.5 E., to the southwestern corner of section 33, T.17 S., R.5 E. Then north along the western boundry of section 33 to the southeast corner of section 29, T.17 S., R.5 E.

Then northwest in a diagonal line through sections 29, 19, 13, and 11, to the northwest corner of section 11, T.17 S., R.4 E. Then north along the western boundry of section 2, T.17 S., R.4 E., to the northwestern corner of section 2, T.17 S., R.4 E. Then west along the Southern boundry of section 34, T.16 S., R.4 E., to the southwestern corner of section 34, T.16 S., R.4 E. Then north along the eastern boundry of sections 33 and 28, T.16 S., R.4 E., for approximate 1 mile, to the point where the eastern boundry of section 28, T.16 S., R.4 E., co-incides with the western boundry of the Guadalupe Y Llanitos de los Correos Land Grant. Then northwest along the Grant line for approximately 2,500 feet to the point of beginning on Limekiln Creek.
Appellation Boundaries
Santa Lucia Highlands Orange
Monterey Blue
Arroyo Seco Green
Mr. David Brokaw  
Bureau of Alcohol, Tobacco & Firearms  
Wine & Beer Branch, Room 6236  
1200 Pennsylvania Avenue, N.W.  
Washington, D.C. 20226

April 9, 1991

Dear Mr. Brokaw,

Enclosed is a set of revised boundaries for the proposed Santa Lucia Highlands viticultural area. In response to Chief Busey's letter of 20 February, 1991, the boundaries have been re-drawn to eliminate the overlaps with pre-existing appellations.

The western boundary now co-incides with "Monterey" and the overlap into the "Arroyo Seco" has been eliminated. The Southeastern boundary of the "Santa Lucia Highlands" now co-incides with the northwestern boundary of "Arroyo Seco".

The eastern boundary for the "SLH", formed by river terraces, remains unchanged.

Enclosed is the revised physical description of the boundaries for the proposed area. A set of seven U.S.G.S. 7½ minute quadrangle maps showing the revised boundaries for the "Santa Lucia Highlands", as well as, the boundaries for "Monterey" and "Arroyo Seco" is also enclosed.

Photocopies of two label approvals for Lone Oak and Smith & Hook are included, along with a recent magazine article about the area.

Please call me if you have any questions.

Sincerely yours,

Barry C. Jackson  
Harmony Wine Company

BCJ:jlg  
enlosures (11)  
cc:SLH Group
PROPOSED BOUNDARIES

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Dear Mr. Brokaw,

Please find enclosed a syndication list for Jerry D. Mead. The article about the Santa Lucia Highlands was published on May 27, 1990. The article would have appeared in the listed publications within two or three days of that date.

Further research will be conducted with regards to "name evidence" for the Santa Lucia Highlands.

Please call if you have any further questions.

Sincerely yours,

Barry C. Jackson
Harmony Wine Company

BCJ: jlg
enenclosures(2)
Jerry Mead Syndication List
May 27, 1990
Santa Lucia Highlands Article

Peninsula Herald Monterey, CA
South Bay Daily Breeze Torrance, CA
Santa Monica Outlook, CA
San Pedro News-Pilot, CA
Escondido, Times-Advocate, CA
Redlands Daily Facts, CA
Las Vegas, Review-Journal, CA
San Mateo Times, CA
Marin Independent-Journal CA
Ventura Star - Press, CA
Redding Record - Searchlight, CA
Sacramento Union, CA
Chico Enterprise - Record, CA
Manteca Bulletin, CA
Visalia Times - Delta, CA
California Visitors Review, CA
Fremont Argus, CA
Livermore Herald, CA
Alameda Star, CA
Hawaii Tribune-Herald, Hilo, Hawaii
Mr. David W. Brokaw
Wine & Beer Branch
Bureau of Alcohol, Tobacco and Firearms
650 Massachusetts Ave. N.W.
Washington, D.C. 20226

September 24, 1991

Dear Mr. Brokaw,

We at Smith & Hook Vineyards feel that the Santa Lucia Highlands fit, exactly, the criteria set forth to establish viticultural areas in the U.S.

The Santa Lucia Highlands is an area that is geographically and climatologically distinct from surrounding and contiguous areas. The alluvial fans and bench lands forming the Santa Lucia Highlands are discernible with the naked eye from many miles away.

The Santa Lucia Highlands are an unique area in Monterey County, as well as, the rest of California. We feel this unique area in Monterey County, as well as, the rest of California. We feel this unique area is perfectly suited to be granted "Appellation" status.

Sincerely,

Nicolaus L. A. Hahn
Chairman of the Board

NLAH:jlg
Smith & Hook debunks Monterey County weather myth

Smith & Hook winery is debunking the myth that good Cabernet Sauvignon doesn't come from Monterey County.

In fact, Cabernet Sauvignon is produced in Monterey County.

That some folks think Monterey County is too cool a climate for Cabernet is mistaken. A tour of the isolated winery located in the Santa Lucia Highlands overlooking Soledad and the Salinas Valley.

"We specialize in Cabernet Sauvignon," says Art Nathan, winemaker. "The climate here is ideal for Cabernet Sauvignon." The valley is cool, with temperatures averaging 50-55 degrees Fahrenheit. The wine is rich in dark fruit flavors and has a smooth finish.

The winery is located on a hilltop with views of the Salinas Valley and the Santa Lucia Mountains. The soil is composed of sand and gravel, which provides excellent drainage and good aeration for the vines.

The 1994 Cabernet Sauvignon has a deep ruby color and an aroma of black currants and black cherries. The wine is full-bodied with a long finish.

The winery offers tastings of their current releases, which include Cabernet Sauvignon, Merlot, and Syrah. The wines are available for purchase at the winery or through their online store.

For more information, visit the winery's website or call (831) 728-WINE.
Monterey wine country

Plenty of vineyards, and now a few wineries open for tasting and touring

"America's salad bowl," it's usually called, not America's wine glass. We think of lettuce and carrots as Monterey County's agricultural force, but drive the county and you'll see lots of grapes amid the row crops - 30,000 acres of vineyards, roughly as many as in Napa County.

A high percentage of the grapes grown here are made into wine elsewhere, so while vineyards are plentiful, wineries are scarce. Some of the best-known, like Chalone, aren't open to the public without an appointment. Of those open regularly, most lie in the Salinas Valley. Luckily, the valley is a beautiful place to while away a late-winter day. As bare and twisted as wrought iron, vines (budding out next month) score the Salinas River bottom lands and curve with the green folds of the Santa Lucia foothills. You can picnic and admire some art and some history, all on a short detour off U.S. 101.

(As well, we list tasting rooms and a wine museum in the Monterey-Carmel area, about 18 miles southwest via Route 68.) Toward the Salinas Valley's north end, where cool marine air prevails, growers plant Riesling and Chardonnay. To the south grow Cabernet and Merlot.

Large-scale planting of grapes began back in the early 1970s and, recalls one grower, "We grew them the way we grew broccoli." The result: vintages saddled with strong vegetal overtones. But today, more savvy growers produce wine marked by intensity of flavor - a product, they say, of the region's relatively long growing season.

Monterey Vineyard, northernmost of the Salinas Valley wineries, lies in Gonzales. There are good tours of the sprawling facilities, but what makes this an especially interesting stop is the photography gallery, which displays Ansel Adams' Story of a Winery, shot in Monterey and Santa...
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You can teach Amerasian Shirley Kim about her American heritage and bring hope to her future by becoming a Pearl S. Buck Foundation sponsor.

Since 1964, sponsors have opened the doors to medical care, education, and supportive counseling for over 15,000 half-American children in Asia.

Your sponsorship may never replace a child’s yearned-for father, but it will bring encouragement, hope, and proof that Americans care deeply about Amerasian children.

The Pearl S. Buck Foundation, Inc.
Green Hills Farm, Perkasie, PA 18944
1-800-523-5328

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Clara counties between 1960 and 1963. The rest of the gallery devotes itself to contemporary photographers.

At 800 S. Alta Street, the winery is open from 10 to 5 daily, with tours on the hour from 11 to 4; (408) 675-2316. From U.S. 101, exit on Gloria Road and go west to Alta; turn north to the winery.

Smith and Hook Winery perches on the foothills of the Santa Lucias; its views encompass the Salinas Valley and the Gabilan Range to the east.

Cabernet and Merlot are the preferred plantings here; you can sample the results in the barrel-shaped tasting room, and picnic on the winery deck or at other overlooks. (Picnickers should bring jackets and sweaters—it can be windy.)

The winery, at 37700 Foothill Road, is open noon to 5 daily; 678-2132. From Gonzales, take Gonzales River Road west 2½ miles; turn south on River Road and go 8 miles; veer right on Foothill Road to the winery. There’s a second tasting room in Carmel (see below).

Mission Soledad sits near the junction of Mission and Fort Rorrie roads. Founded in 1791, it never prospered as other missions did. But its rural setting makes it one of the most pleasurable to visit. Hours are 10 to 4 daily except Tuesdays.

Jekel Vineyards Winery specializes in Chardonnay and Alsation-style Riesling. A small picnic area near the handsome board-and-batten winery gives a good view of vineyards and hills. At 40155 Walnut Avenue in Greenfield, Jekel is open from 10 to 5 daily; call 674-5522.

Wine stops in Monterey and Carmel - Kenyon Vineyards, at 2999 Monterey-Salinas Highway (State 68). Monterey, offers tastings of Chardonnay and White Riesling from noon to 5 daily; 372-7415.

Chateau Julien Wine Estate, at 8940 Carmel Valley Road in Carmel Valley, makes Chardonnay, Merlot, and Sauvignon Blanc. Tours and tastings run from 8:30 to 5 weekdays, 11 to 5 weekends; 624-2600.

Smith and Hook (see above) has a tasting room at The Crossroads shopping center, 217 Crossroads Boulevard, Carmel; it’s open daily from 10 to 6; 625-6480.

Monterey Peninsula Winery has a tasting room at 786 Wave Street, a block above the Monterey Aquarium. It’s open from 10 to 5 daily, noon to 5 Sunday; 372-4949.

Paul Masson Wine Museum, at 700 Cannery Row, offers a 10-minute movie on the life of wine pioneer Masson. It also includes much interesting equipment: a twisted array of corkscrews, cooper’s tools such as crozes and adzes, and mysterious instruments including an ebuliometer (which measures alcohol content). The museum has a tasting area and exhibits of works by local artists. Hours are 11 to 6 daily; 646-5446.
Touring Monterey's magnificent wine country

by Joe Tarantino

Wine country travelers who come to California thinking first of touring Napa or Sonoma County should think again. Already world-famous for a year-round temperate climate and scenic beauty, Monterey County is also among the great wine regions of California. For those who make the trip, the discovery will be eye-opening.

 Monterey County's viticultural profile has changed dramatically during the 1980s. In 1982, there were nearly 35,000 acres of vines here. Today, there are approximately 25,000 acres. Of that acreage, a far greater portion is devoted to premium grapes, such as Chardonnay, than in 1982. Today, Monterey County is the third largest viticultural area in the state in terms of planted acres. Though capable of producing Cabernet Sauvignon, Merlot and Pinot Noirs of distinction, Monterey's crown jewels are its consistently fine Chardonnays and Rieslings.

Concurrent with the viticultural shift, wineries have bolstered their standing within the industry, and many wineries and vineyards have gained fame among wine makers and consumers around the world.

The Monterey Peninsula, with its three small cities, Monterey, Carmel and Pacific Grove, is located approximately 450 miles north of Los Angeles and 125 miles south of San Francisco, or roughly eight hours and two hours respectively by car. Several airlines fly into Monterey from points throughout the United States.

Winding along the coastline for about 125 miles, Monterey County's contours consist of the long, narrow Salinas Valley, made famous by resident novelist John Steinbeck, cradled between two rugged mountain ranges. To the west, the Salinas Valley is bound by the heavily wooded Santa Lucia Mountains, which rise dramatically from the shore. On the eastern side are the more arid, barren Gabilan Mountains.

The best months to visit are September and October when the harvest is under way. The summer crowds have gone, room and airline rates begin to decline and, best yet, the weather is typically at a glorious peak: bright, sunny days and cool nights, in contrast to the dense fog which smothers the coastline during summer when hot inland weather draws in cold Pacific air.

Where to go

Wine country tours are best done by car. One itinerary begins eastbound on Carmel Valley Road. Roughly four miles into the valley is Chateau Julien (8940 Carmel Valley Rd. Phone: 408-624-2600). Built in the style of a French chateau, this 25,000 case winery offers a visual treat to fans of chateau-style architecture. The homely interior features a tasting room, large hall and a fireplace. Chateau Julien is best known for Merlot and Chardonnay, made in a medium to full-bodied accessible style. Allow about 30-40 minutes for a tasting and tour.
Continuing east for 10 minutes brings you to Los Laureles Grade, a steep winding road that peaks at nearly 1,000 foot elevation, offering a panoramic view of the spectacular Salinas Valley. The Grade connects to Highway 68. Turning right will lead to Highway 101 and the wineries of the Salinas Valley. Turning left will return you to Monterey.

Before reaching Salinas and the Highway 101 interchange, turn right onto scenic River Road, which winds along the western base of the Santa Lucia Mountains. River Road will bring you to the Smith & Hook Winery (37700 Foothill Rd. Phone: 408-678-2606), which is open daily from 11 a.m. to 4 p.m. The property, once a horse ranch, includes a 240 acre vineyard nestled against the western slopes of the valley. The winery produces Cabernet Sauvignon, Merlot, and Chardonnay, which it grows, and two late-harvest dessert wines. The beautiful setting and picnic facilities make Smith & Hook a worthwhile destination. Tours are by appointment only.

Nearby, at 40155 Walnut Avenue in Greenfield, is Jekel Vineyards, which has distinguished itself for Chardonnay, reserve Cabernet Sauvignon, off-dry and dessert style Riesling. The tasting room is friendly, the samplings generous, but winery tours are by appointment only (Phone: 408-674-5522).

Just south of Gonzales, on Highway 101, is the Monterey Vineyard (880 S. Alta. Phone: 408-675-2481), the center-piece winery of the Salinas Valley. This very large, 500,000 case operation boasts a lavish visitor's center, open daily from 10 a.m. - 5 p.m., featuring hourly tours (Thursday through Sunday), a tasting bar, park-like picnic grounds and a photographic gallery exhibiting work from parent company Joseph E. Seagram & Sons' extensive private art collection as well as a rare serial work, "The Story of a Winery," by the late Ansel Adams, commissioned by Seagram in the early 1960s.

Off the beaten track is Chalone Vineyards (Stone Canyon Rd., Soledad). This wine-world-famous producer of Pinot Blanc, Chardonnay, and Pinot Noir grows 110 acres of grapes at a 2,000 foot elevation, near the Pinnacles National Park, five miles east of Soledad. Founded in 1969 by Dick Graff and his family, Chalone has since become one of the most revered wineries in California. Tours are available Saturdays from 10 a.m. - 2:30 p.m., weekdays by appointment (Phone: 408-678-1717).

Morgan Winery, based in Salinas (540 G. Brunker Ave. Phone: 408-453-3822), is about 40 minutes north of Chalone Vineyards on Highway 101. The facility is very small and tours and tasting are only by appointment. But the call is worthwhile because winemaker Dan Lee produces some of the best Chardonnay in California. Excellent quality Sauvignon Blanc, Cabernet Sauvignon, and Pinot Noir are also bottled under the Morgan banner.

Where to stay

Being a very popular resort destination on the California coastline, the Monterey Peninsula is heavily populated with hotels, motels and bed & breakfasts. Room rates do vary throughout the year, but for the most part, prices are high. Despite the cost, accommodations need to be secured as far in advance as possible.

One find, if you're looking for no frills accommodations, is the Sea Breeze Motel (1100 Lighthouse Ave., Pacific Grove, $40/night. Phone: 408-372-7775). A bit pricier, but still economical are the Best Western Park Crest (1100 Munras Ave., Monterey, $68-89. Phone: 408-372-4576), The Homestead (Lincoln & 8th, Carmel, $60-70. Phone: 408-624-1191) and the Ramada Inn (1425 Munras Ave., Monterey, $79-89. Phone: 408-649-1020).

Further inland, in Carmel Village, 12 miles east of Carmel, is The Blue Sky Lodge (Flight Road. Phone: 408-659-2256), with rooms averaging about $60/night. The Los Laureles Lodge (Carmel Valley Rd., $78-88. Phone: 408-659-2233), located on the village outskirts is just a tad more expensive. Above the village, perched on a hillside 1,000 feet above sea level is the rustic Robles Del Rio Lodge (200 Punta Del Monte. $59-99. Phone: 408-659-3705). The lodge also offers suites and cottages, most with gorgeous views of the valley. The on-premise restaurant, The Ridge, features superb California/French cuisine and a lengthy wine list devoted exclusively to local producers.

Among bed & breakfasts, and there are nearly two dozen on the Peninsula, prices average well over $100 per night. They range from four room homes to 26-room inns. The Happy Landing Carmel, Monte Verde between 5th & 6th. $90-135.

Phone: 408-624-7917) is a Hansel and Gretel style inn, located near Carmel Beach, with stained glass windows, offering a continental breakfast, and coffee, tea and cakes in the afternoon. The Jabeberwock (Monterey, 598 Laine St., $35-60. Phone: 408-373-4777), has only seven rooms, but is a most unusual, inviting and uniquely landscaped inn, serving a full breakfast each morning. A larger inn, The Century (Pacific Grove, 612 Central Ave., $120-148. Phone: 408-373-3372), houses 26 rooms in a large, handsome, renovated Victorian home that is lavish and ornate throughout. Management serves aperitifs by fireplace each evening and a buffet-style breakfast each morning.

Luxury accommodations on the Monterey Peninsula are among the finest in the state. The Highlands Inn (four miles south of Carmel on Highway 1, $225-310. Phone: 408-624-3801), set above the rocky cliffs overlooking the Pacific Ocean, commands one of the world's most stunning displays of natural beauty. Established in 1916, the Highlands Inn has earned considerable plaudits, including a recent Mobil Guide 5-star award. The Pacific's Edge restaurant, located on the hotel grounds, specializes in full-flavored, yet elegant California cuisine, complemented by one of the best wine cellars in central California.

Quail Lodge (Carmel Valley Rd., Carmel Valley $195-1500. Phone: 408-624-1581), founded in 1961, offers guests a tranquil rural setting. The accommodations here evoke a residential character. Each of the hotel's 100 rooms has a patio, balcony or porch overlooking the park-like grounds. This immaculately-maintained property, featuring a beautiful man-made lake, a private golf course and a gourmet restaurant (The Covey), ranked among the very best on the Peninsula, has earned Quail Lodge Mobil Guide's 5-star award for 15 out of the last 15 years.

The Hyatt Regency (Monterey, 1 Old Golf Course Rd., $165-200. Phone: 408-372-1234), situated adjacent to the historic Old Del Monte Golf Course, the oldest course west of the Mississippi, offers spacious accommodations and extensive facilities, including two outdoor heated pools, whirlpools, five championship tennis courts and, of course, the 18-hole Del Monte golf course, originally opened in 1897. Like most peninsula resort properties, the Hyatt maintains an elegant dining room, the Peninsula Restaurant, which features continental/California cuisine and enjoys a strong local following.

Pebble Beach's 5,300-acre expanse fea-
The Monterey Plaza Hotel, Beau Thai (807 Cannery Row), Fundango (17th St., Pacific Grove) and Central 1 5 9 (159 Central Ave., Pacific Grove).

If you decide to explore the south coastal region, two exceptional restaurants in Big Sur are easily accessible off Highway 1. They are Deetjen's Big Sur Inn, a very rustic, charming lodge and restaurant, and The Ventana Restaurant, with its in-house bakery (which also serves the Ventana Inn). The restaurant has a well-deserved reputation for fresh grilled fish specialties and attentive service.

Other attractions

Building up an appetite isn't difficult. The Monterey Peninsula and surrounding environs offer many sightseeing attractions. There are numerous recreational activities, including some of the most challenging and famous golf courses in the world, such as Spyglass Hill, Cypress Point and the Pebble Beach links, which serve for the nationally televised AT&T Pro-Am golf tournament.

Beaches dot the 30-mile stretch of coastline from Carmel to Big Sur. Swimming, however, is not encouraged due to deceptive and treacherous tides.

The Monterey Bay Aquarium, the largest aquarium on the west coast, features a live "touch tank," kelp gardens which may be viewed from below the surface and a revolving series of special exhibits focusing on sea life from around the world. Allow 3-4 hours to properly tour this extravagant marine museum. Open daily 10-6 p.m. Admission is $7 adults, $5 students, $3 children.

The Carmel Mission, located about one mile south of Carmel, is the most visited landmark in the Central Coast. There are four frequently visited missions within a day's drive and 16 more in California. The mission chain was established in the 18th century, creating a line of refuges along which future cities could (and did) develop. The Carmel Mission in particular, offers an unparalleled natural setting, with striking Moorish architecture and gardens. Founded by Father Junipero Serra, the mission is unique in that it is constructed of local sandstone, not the usual adobe. Many original furnishings from the churches which preceded this one are on view.

Point Lobos State Reserve is widely acclaimed as perhaps the most scenic park on the west coast. Located a five minute drive south of Carmel. Point Lobos is a marine sanctuary full of nature walks through forests, into coves and along rocky cliffs. The most dramatic tour is the East Grove Trail, along the north edge of the reserve. If you can, bring binoculars to better observe the animals and scenery and come early in the day. Weekends are often crowded, especially during the summer months. Hours are daily 9 a.m. to dusk. Picnic facilities are available.

The village of Carmel can provide a day's walk. The quaint, romantic ocean and forest setting, a favorite honeymoon destination, is among the most unique towns in all of California. There are no neon signs, no fast food outlets or nightclubs, no billboards, parking meters, or electric streetlights, and few streetlights. What Carmel has, and how, are exotic gift shops, jewelers, antique and collectable stores, art galleries, garden shops and fashion boutiques. One tip: watch where you park. Most zones are only one hour, but further out from the town center there are two hour and no-time-limit parking zones.

Historic Monterey overlooks a beautiful bay famous for indigenous seafood such as prawns, salmon, and squid. The city offers numerous touring possibilities. In the 1920s and 1930s, Monterey was one of the most important seafood markets in the world. Though less prominent than in years past, Fisherman's Wharf remains an enduring legacy of Monterey's past. The past remains too, in the many renovated adobe buildings which are concentrated downtown near the waterfront. With their period furnishing and beautiful gardens, they offer a glimpse of 18th and 19th century life at Monterey.

Possibilities abound for day-long auto trips beyond the peninsula. For example: drive north for 30 minutes on Highway 1 to Watsonville, home to Rod McElhanan Orchid Farms (on San Juan Road), the world's largest exotic orchid hybridizer. From Watsonville, head east on Highway 129, over scenic, wooded Hecker Pass, which is dotted with several old-style, family-operated wineries.

Continuing east will take you to the historic village of San Juan Bautista. The town center is a State Historic Park encompassing a Mission, restored hotel, plaza and antique shops.

If you love the great outdoors, drive 10 miles south on Highway 1 to Bixby Creek Bridge, turn left just before crossing the bridge onto the Old Coast Road. Follow this unpaved road for 12 miles to Molera State Park, which brings you to high open vistas and lush fern groves, perfect for a picnic, and, like the rest of the spectacular Central Coast, not soon forgotten.
soil of sandy loam to sandy clay loam, and areas of strongly sloping to very steep, severely eroded banks or escarpments that have exposed cemented sandy alluvium or sandstone outcrops. Slopes are 9 to 30 percent.

The Santa Ynez soil has an available water capacity of 2 to 4 inches, and some water is held available for plants above the subsoil. Roots can penetrate to a depth of 16 to 24 inches. Runoff is medium to rapid, and the erosion hazard is moderate to high. This complex is used mostly for military purposes, but some areas are used for range, wildlife habitat, and watershed. Capability unit VIe-1 (15); Arnold soil in Sandy range site; Santa Ynez soil in Claypan range site.

Arroyo Seco Series

The Arroyo Seco series consists of well drained soils that formed in granite alluvium on alluvial fans and plains. Slopes are 0 to 9 percent. The vegetation is annual grasses and a few scattered oaks. The elevation is 100 to 3,000 feet. The mean annual precipitation is 12 to 30 inches, the mean annual air temperature is 58° to 60° F, and the frost-free season is 210 to 260 days. Summers are hot and dry, and winters are cool and moist.

In a representative profile the surface layer is grayish brown, neutral and mildly alkaline gravelly sandy loam 29 inches thick. The underlying material is brown, mildly alkaline gravelly sandy loam 13 inches thick and yellowbrown, mildly alkaline very gravelly coarse sandy loam. Permeability is moderately rapid. Most roots can penetrate to a depth of more than 60 inches, but the very gravelly underlying material limits the available water capacity and nutrient storage for some plants.

Arroyo Seco soils are used for irrigated row and field crops, dryland pasture, and dryfarmed grain. A few areas are used for orchards or vineyards.

Representative profile of Arroyo Seco gravelly sandy loam, 0 to 2 percent slopes, 300 feet SW of the town of Greenfield, SW of Greenfield-Arroyo Seco Road intersection, or 375 feet SW of 12th Street, then 500 feet SE on field road and 300 feet SW into field.

Ap—0 to 5 inches; grayish brown (10YR 5/2) gravelly sandy loam, very dark grayish brown (10YR 3/2) when moist; slightly hard, very friable, nonstony and nonplastic; common very fine interstitial pores; 15 percent gravel, 2 percent cobblestones; neutral; clear smooth boundary.

A1—0 to 18 inches; grayish brown (10YR 5/2) gravelly sandy loam, very dark grayish brown (10YR 3/2) when moist; weak coarse subangular blocky structure; hard, friable, nonstony and nonplastic; few very fine roots; common very fine tubular and interstitial pores; 20 percent gravel, 6 percent cobblestones; mildly alkaline; gradual wavy boundary.

A2—18 to 26 inches; grayish brown (10YR 5/2) gravelly sandy loam, very dark grayish brown (10YR 3/2) when moist; massive; slightly hard, very friable, slightly stony and nonplastic; few very fine roots; common very fine tubular and interstitial pores; 25 percent gravel, 10 percent cobblestones; mildly alkaline; gradual wavy boundary.

C1—29 to 48 inches; brown (10YR 5/2) gravelly sandy loam, dark brown (10YR 3/2) when moist; massive; slightly hard, very friable, nonstony and nonplastic; no roots observed; common very fine tubular pores; 25 percent gravel, 10 percent cobblestones; mildly alkaline; abrupt irregular boundary.

Coarse fragments make up about 10 to 25 percent of the A horizon. They are typically rounded or angular granite or quartzite gravel or cobblestones. The A horizon is grayish brown, dark gray, dark grayish brown, or brown. The A horizon, if not disturbed by tillage, is massive and slightly hard or has an angular blocky structure and hard. Reaction is slightly acid to moderately alkaline, and texture is gravelly sandy loam, gravelly fine sandy loam, or gravelly loam. The C1 horizon is gravelly sandy loam, gravelly fine sandy loam, or gravelly loam. It has 15 to 25 percent gravel and cobblestones. It is brown, grayish brown, yellowish brown, pale brown, or light yellowish brown, and reaction is neutral to moderately alkaline. In some profiles the A horizon rests directly over the C1 horizon at a depth of 40 to 60 inches. The Bt horizon has 50 to 85 percent gravel, cobblestones, and stones.

AsA—Arroyo Seco gravelly sandy loam, 0 to 2 percent slopes. This is a nearly level soil on alluvial fans and plains. It has the profile described as representative of the series.

Included with this soil in mapping were small areas of Hanford, Chualar, Danville, Tujunga, Gorgonic, and Mocho soils. Also included were areas of a soil that is similar to this Arroyo Seco soil, but the gravelly and cobble substratum is at a depth of about 24 to 40 inches. Areas that have a cobble surface layer were also included.

Runoff is slow, and the erosion hazard is slight. The available water capacity is 4 to 6 inches and is reduced somewhat by the coarse fragments in the profile, especially in the underlying material.

This soil is used mostly for irrigated row and field crops. Some areas are used for orchards and vineyards. Capability unit IIIa-4 (14); range site not assigned.

AsB—Arroyo Seco gravelly sandy loam, 2 to 5 percent slopes. This is a gently sloping soil on alluvial fans and plains.

Included with this soil in mapping were small areas of Hanford, Eider, Chualar, Danville, and Tujunga soils. Also included were areas where the very gravelly and cobble substratum is at a depth of 24 to 40 inches and areas that have a gravelly surface layer. On the Hunter Liggett Military Reservation, areas of Lockwood, Santa Ynez, and Chamise soils were also included.

Runoff is slow, and the erosion hazard is slight. The available water capacity is 4 to 6 inches and is reduced by the coarse fragments in the soil.

This Arroyo Seco soil is used mostly for irrigated row and field crops. A few areas are used for orchards and vineyards or dryfarmed hay and grain. Capability unit IIIe-4 (14); range site not assigned.

AsC—Arroyo Seco gravelly sandy loam, 5 to 9 percent slopes. This is a moderately sloping soil on alluvial fans. It has a profile similar to the one described as representative of the series, but the surface layer is dark gray, a few cobblestone are on the surface, and up to 20 percent cobblestones and stones are throughout the profile.
Included with this soil in mapping were areas of Elder, Gergoro, Chuara, Placentia, Gloria, and Danville soils and Fluvent, stony, and Xerorthents, sandy. Also included were areas of Arroyo Seco soils that have more than 85 percent gravel below a depth of 20 inches and areas where slopes range from less than 5 percent to as steep as 18 percent.

Runoff is medium, and the erosion hazard is moderate. The available water capacity is 4 to 6 inches.

This soil is used mostly for annual pasture and dry-farmed hay and grain. A few areas in the Salinas Valley are irrigated and used for row or field crops, and one area west of Soledad is used for citrus. Capability unit III-4 (15); range site not assigned.

AvA—Arroyo Seco gravelly loam, 0 to 2 percent slopes. This is a nearly level soil on alluvial fans. It has a profile similar to the one described as representative of the series, but it is about 20 percent sharp, angular gravel 2 to 5 millimeters in diameter and the surface layer is dark gray.

Included with this soil in mapping were areas of Gorgonio, Elder, Chualar, and Danville soils.

Runoff is slow, and the erosion hazard is slight. The available water capacity is 5 to 7 inches.

This soil is used mostly for irrigated field and row crops. Capability unit IIs-4 (14); range site not assigned.

AvB—Arroyo Seco gravelly loam, 2 to 5 percent slopes. This is a gently sloping soil on alluvial fans. It has a profile similar to the one described as representative of the series, but the surface layer is dark gray and contains about 20 percent sharp, angular gravel 2 to 5 millimeters in diameter. The substratum, below a depth of 40 to 45 inches, is loamy coarse sand or fine gravelly coarse sandy loam.

Included with this soil in mapping were small areas of Gorgonio, Elder, Chualar, and Danville soils. Also included were soils that are similar to this Arroyo Seco soil but have less than 10 percent fine gravel throughout the profile.

Runoff is slow, and the erosion hazard is slight. The available water capacity is 5 to 7 inches.

This Arroyo Seco soil is used mostly for irrigated field and row crops. Capability unit IIs-4 (14); range site not assigned.

Ayar Series

The Ayar series consists of well drained soils that formed on uplands in material weathered from calcareous shale and sandstone. Slopes are 5 to 50 percent. The vegetation is mainly annual grasses and forbs. The elevation is 200 to 2,200 feet. The mean annual precipitation is 18 to 25 inches, the mean annual air temperature is 59° to 61°F, and the frost-free season is about 220 days. Summers are hot and dry, and winters are cool and moist.

In a representative profile the surface layer is brown and grayish brown, moderately alkaline silty clay about 24 inches thick. Below this is brown and pale brown, moderately alkaline silty clay underlain by calcareous sandstone at a depth of 45 inches.

Permeability is slow, and the available water capacity is 6 to 9 inches. Roots penetrate to a depth of 40 to 60 inches.

Ayar soils are used for dryland grain and range. Representative profile of Ayar silty clay, 15 to 30 percent slopes, about 12 miles west of Greenfield at the confluence of Paolina and Task Creeks.

A1—0 to 1 inch; brown (10YR 5/3) silty clay, dark brown (10YR 5/3) when moist; strong, fine, granular structure; slightly hard, friable, sticky and plastic; many very fine roots; many very fine and fine interstitial pores; slightly effervescent with lime disseminated in and soft masses; moderately alkaline; abrupt smooth boundary.

A1—1 inch to 12 inches; grayish brown (10YR 5/2) silty clay, dark brown (10YR 4/3) when moist; massive; hard; firm, sticky and plastic; many very fine roots; many very fine and interstitial pores; slight effervescence with lime disseminated in soft masses; moderately alkaline; abrupt smooth boundary.

A1—12 to 24 inches; grayish brown (10YR 5/2) silty clay, dark brown (10YR 4/3) when moist; massive; extremely hard, firm, very sticky and very plastic; common very fine roots; many very fine tubular pores and common very fine interstitial pores; common intersecting aleurites; strongly effervescent with lime disseminated in soft masses; moderately alkaline; gradual wavy boundary.

C1—24 to 46 inches; brown (10YR 5/3) silty clay, yellowish brown (10YR 6/4) when moist; common fine distinct white (10YR 8/1) line mottles and dark gray (10YR 4/1) line mottles; strongly angular blocky structure; extremely hard, firm, very sticky and very plastic; common very fine roots concentrated along peds; many very fine tubular pores and few very few fine interstitial pores; many intersecting aleurites; strongly effervescent with lime disseminated in and soft masses; moderately alkaline; gradual wavy boundary.

C2a—46 to 65 inches; pale brown (10YR 6/3) silty clay, yellowish brown (10YR 6/6) when moist; many fine and large distinct white (10YR 8/1) line mottles and few fine faint gray (10YR 4/1) line mottles; moderate fine and medium subangular blocky structure; hard, friable, sticky and plastic; few very fine roots; many very fine tubular pores and few very fine interstitial pores; violently effervescent with lime disseminated in and soft masses; moderately alkaline; abrupt irregular boundary.

I1R—45 to 50 inches; calcareous sandstone.

The A1 horizon ranges from grayish brown to dark brown, and the texture is typically clay loam to silty clay. Reaction is mildly alkaline to moderately alkaline. When dry, the A horizon cracks to a depth of 24 inches.

The C horizon ranges from grayish brown to light yellowish brown, and textures are silty clay or clay. The depth to bedrock is typically 45 inches, but ranges from 40 to 60 inches.

AyD—Ayar silty clay, 5 to 15 percent slopes. This is a gently sloping to strongly sloping soil on hills. Slopes are mostly 9 percent.

Included with this soil in mapping were areas of Nacimiento, Alo, Diablo, Rincon, and Cropsey soils. Also included were small areas of a clay soil that is similar to the Ayar soil, but is 20 to 40 inches deep to bedrock.

Runoff is medium, and the erosion hazard is moderate.

This soil is used mostly for dryland grain and range. Capability unit III-5 (15); Clayey range site.

AyE—Ayar silty clay, 15 to 30 percent slopes. This is a moderately steep soil on uplands. It has the profile described as representative of the series.

Included with this soil in mapping were small areas of Alo, Diablo, Linne, and Nacimiento soils. Also included were areas of Ayar silty clay, 5 to 15 percent
Benito soils. Also included were strongly acid soils that have 5 to 30 percent coarse fragments in the subsoil and some areas where till and sheet erosion is moderate.

Runoff is rapid, and the erosion hazard is high. Small landslips occur throughout this unit.

This soil is used mostly for range. Capability unit Vle-1 (15); Terrace range site.

**Chualar Series**

The Chualar series consists of well drained soils that formed in alluvium derived from granitic and schistose rocks on alluvial fans and terraces. Slopes are 0 to 9 percent. The vegetation consists of annual grasses, forbs, and a few scattered oaks. The elevation is 50 to 2,000 feet. The mean annual precipitation is 12 to 25 inches, the mean annual air temperature is 57° to 60° F., and the frost-free season is about 250 days. Summers are warm and dry, except in the northern Salinas Valley where they are foggy, and winters are cool and moist.

In a representative profile the surface layer is dark grayish brown, mildly alkaline loam and sandy loam about 21 inches thick. The subsoil extends to a depth of 59 inches. The upper 3 inches is yellowish brown and brown, neutral to moderately alkaline sandy loam, sandy clay loam, and fine gravelly sandy loam. The lower 4 inches is brown, neutral fine gravelly coarse sandy loam. The substratum is brown, Neutral gravelly coarse sand that extends to a depth of at least 60 inches.

Permeability is moderately slow, and the available water capacity is 7.5 to 9 inches. Roots penetrate to a depth of more than 60 inches.

Chualar soils are used mostly for irrigated row and field crops. They are also used for irrigated pasture, dryland grain, or range.

Representative profile of Chualar loam, 0 to 2 percent slopes, about 1 mile NE of Chualar, 0.46 mile SW on Chualar Road from Old Stage Road, on north side of road, 830 feet NW on dirt road, then 20 feet NE into field.

Ap—0 to 7 inches; dark grayish brown (10YR 3/2) loam, very dark grayish brown (10YR 3/2) when moist; weak medium granular and subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common very fine roots; many very fine interstitial pores; mildly alkaline; clear smooth boundary.

A2—7 to 21 inches; dark grayish brown (10YR 4/2) heavy sandy loam, very dark grayish brown (10YR 3/2) when moist; moderate medium and coarse granular structure; hard, friable, slightly sticky and plastic; few very fine roots; many very fine interstitial pores; mildly alkaline; clear loamy sand boundary.

B2—21 to 40 inches; yellowish brown (10YR 5/4) heavy sandy loam, dark brown (10YR 3/3) when moist; massive; hard, friable, sticky and plastic; few very fine roots; many very fine interstitial pores; common very fine and few fine tubular pores; common very fine clay films bridging grains and lining pores; moderately alkaline; many brotovinae; clear smooth boundary.

B2L—40 to 44 inches; brown (7.5YR 5/4) sandy clay loam, dark brown (7.5YR 3/2) when moist; weak coarse angular blocky structure; very hard, firm, very sticky and plastic; no roots observed; common very fine interstitial pores; continuous thin clay films bridging grains, lining pores, and on ped faces; mildly alkaline; diffuse smooth boundary.

**Cba—Chualar loam, 0 to 2 percent slopes.** This soil is on alluvial fans and terraces. It has the profile described as representative of the series. In places the surface layer is sandy loam.

Included with this soil in mapping were areas that have slopes of more than 2 percent, and areas of Danville, Arroyo Seco, Elder, Gloria, and Placentia soils. Also included were soils that have a subsoil of sandy loam or loam that is less than 18 percent clay and some soils that have a hard, massive, dense layer at a depth of 30 to 48 inches. Small areas of Elder soils were included in the vicinity of Arroyo Seco and Clark Road.

Runoff is slow, and the erosion hazard is minimal to slight.

This soil is used mostly for irrigated row crops, field crops, vineyards, and pasture. It is also used for dry-farmed grain or native range. Capability units 1 (14), Vle-1 (15); range site not assigned.

**Cbh—Chualar loam, 2 to 5 percent slopes.** This is a gently sloping soil on fans and terraces. The surface layer is loam or, in places, very fine gravelly loam, and it is 16 to 24 inches thick. The subsoil is 10 to 20 inches thick and ranges from slightly acid to mildly alkaline.

Included with this soil in mapping were small areas of Arroyo Seco, Elder, Gloria, Placentia, and Chamilise soils and Chualar soils that have slopes of 0 to 2 percent and 5 to 9 percent. Included along the Arroyo Seco were some areas of this soil that are underlain by granite and shale cobblestones commonly at a depth
of more than 40 inches. Included along some of the valleys in the Hunter Liggett Military Reservation were areas of Chualar soils that are underlain by shale, sandstone, granite, or schist at a depth of 3 to 5 feet. All areas in the same area were soils on low knolls that have a surface layer of pale brown sandy loam and are 20 to 24 inches deep to bedrock.

Runoff is slow, and the erosion hazard is slight. This soil is used mostly for irrigated row and field crops and dryland grain. Some areas are used for range. Capability unit 11e-1 (14); range site not assigned.

ChC—Chualar loam, 5 to 9 percent slopes. This is a moderately sloping soil on fans and some terraces. It has a profile similar to the one described as representative of the series, but the surface layer is loam to light sandy clay loam that is commonly 10 to 20 inches thick and ranges from 9 to 46 inches. The subsoil is generally 20 to 36 inches thick, but ranges from 5 to 36 inches. The subsoil is underlain by gravelly cobblestone and glacial outwash till and bedrock. Below a depth of 10 feet this soil, in places, is underlain by gravel, cobblestones, or clay deposits. Slopes are mostly 9 percent.

Included with this soil in mapping were small areas of Arroyo Seco, Nacimiento, San Benito, Los Osos, San Luis Obispo, and Tujunga soils, Badland, Xerorthents, dissected, and Xerorthents, sandy. Also included were some small areas that have a strongly acid or medium acid subsoil and substratum, some areas near Arroyo Seco and River Road where the surface layer is massive and hard, and some areas that have slopes of less than 5 percent or of 9 to 15 percent. Some areas of till and sheet erosion and a few gullies were also included.

Runoff is medium, and the erosion hazard is moderate.

This soil is used mostly for dryland grain and range.

As irrigation water is developed, more of this soil is used for irrigated row and field crops. Capability unit 11e-1 (14); range site not assigned.

Cienega Series

The Cienega series consists of excessively drained soils on mountains. These soils formed in material underlain by granitic and schistose rocks. Slopes are 50 to 75 percent. The vegetation consists of chamise, buckbrush, and manzanita; scattered scrub oaks, digger pine, and yucca; and some grass. Most areas are in chamise. The elevation is 1,000 to 5,000 feet. The mean annual air temperature is 60° to 65°F, and the annual precipitation is 16 to 25 inches. The frost-free season is about 200 days. Summers are hot and dry, and winters are cool and moist.

In a representative profile the surface layer is brown, slightly acid or neutral fine gravelly sandy loam. It is underlain by weathered granite at a depth of about 11 inches.

Permeability is moderately rapid, and the available water capacity is 1 to 2 inches. Roots penetrate to a depth of 7 to 18 inches. Cienega soils are used mostly for watershed and wildlife habitat.

Representative profile of Cienega fine gravelly sandy loam, 50 to 75 percent slopes, about 9 miles east of Old Stage Road on Chualar Canyon Road, on a ridge on the north side of the road 20 feet from the edge of the road cut, in SE corner NE34 SE34, sec. 14, T. 14 S., R. 5 E.

O—I horizon, consists of decomposed brush leaves, grass, and twigs litter; gray, chestnut brown, dark brown, and black; medium fine, granular structure; slightly hard, very friable, nonsticky and nonplastic; many very fine and few medium rocks; very fine and fine tilulcous and interstitial pores; 20 percent pebbles; slightly acid; clear smooth boundary.

A1—5 to 4 inches; brown (10YR 4/2) fine gravelly sandy loam, dark brown (10YR 3/3) when moist; moderate medium and fine granular structure; slightly hard, very friable, nonsticky and nonplastic; many very fine and medium rocks; very fine and fine tilulcous and interstitial pores; 25 percent pebbles; neutral; clear irregular boundary.

C—11 to 60 inches; very pale brown and yellowish brown (10YR 7/4 and 5/4) weathered granite; rock structure; larger roots penetrate fractures.

The soil is very micaceous throughout. The O1 horizon is dark grayish brown, grayish brown, brown, light brownish gray, pale brown, or light yellowish brown. Texture is coarse sandy loam, gravelly sandy loam, or gravelly light loam, or gravelly clay. Depth to bedrock varies considerably over short distances; and below a depth of 10 feet this soil, in places, is underlain by gravel, cobblestones, or clay deposits. Slopes are mostly 9 percent.

Included with this soil in mapping were Cienega soils that have slopes of more than 75 percent and that make up about 10 percent of the acreage; small areas of Sheridan, Gilroy, and Vista soils; and areas of soils, on the lower part of hillsides, that have a sandy clay loam subsoil and are more than 20 inches deep. Also included were soils that have slopes of more than 50 percent and are underlain by rock at a depth of less than 20 inches. They make up about 15 percent of the inland acreage, and about half of the acreage near the coast. Stony soils that have a surface layer of very dark grayish brown or very dark brown sandy loam or loam and that are more than 20 inches deep to bedrock make up about 20 percent of the acreage, and soils that have a surface layer of pale brown sandy loam and are less than 10 inches deep make up 5 percent. Small areas of Rock outcrop-Xerorthents were also included.

Runoff is very rapid, and the erosion hazard is very high.

This Cienega soil is used for watershed and wildlife habitat. A few areas are used for range. Capability unit VIIe-1 (15); Shallow Loamy range site.

Cd—Cienega-Rock outcrop complex. This mapping unit is on mountains in the Los Padres National Forest and the Ventana Wilderness. The exposure is to the south, and the elevation is 1,500 to 5,000 feet. The Cienega soils formed in material that was derived from granitic rocks. Slopes are 50 to 75 percent. Rock outcrop consists of granite boulders, stones, or outcrops covering areas of 1 to 5 acres. The soil and rock out-
Santa Lucia Highlands Proposed Viticultural Area

1. Barry Jackson, Petitioner and Amy Olczewz, Inspector, San Jose A.O. at Smith & Hook Winery, south of Salinas, CA, within proposed viticultural area.

2. Lettuce fields on the flatlands of Salinas Valley. In the mid-ground are the alluvial fans and the Santa Lucia Mountains are in the background.

3. Looking south across the drop of the alluvial fan from the highlands to the flatlands.
PETITIONER, Barry Jackson, provided a tour of the Santa Lucia Highlands area for information-gathering purposes. San Jose inspector, Amy Olszewski, and I participated. Pictures were taken for documentation of the area proposed.

Mr. Jackson provided the background information necessary to understand the geological formation of the highlands. In essence, within the past 10-30 million years the alluvial fans of the Santa Lucia Range has been formed through the pushing of the opposing Gabilan Range into the Salinas River. This in turn pushed into the Santa Lucias, with the force to create alluvial fans.

Also of significance is the Salinas River, a major underground estuary, providing water necessary for Salinas Valley agriculture. Broccoli, cauliflower, onions, beans, asparagus, lettuce and potatoes are farmed on the valley flatlands. The highlands are predominantly vineyards, lemon groves and grazing land.

The proposed viticultural area boundaries, as shown in the pictures, have been provided in the form of alluvial fans to the east and mountain peaks on the west. The comments accompanying each picture may be used in conjunction with the U.S.G.S. maps provided in the petition.

Nancy Sutton, Specialist
Wine & Beer Branch
1. View of southwest boundary.
Picture taken from Arroyo Seco Road, approx. .5 miles from Gaging Station.
Note valley between mountains where proposed boundary starts.

2. View of southeast point of vit area.
Picture taken from Arroyo Seco Road area east of Gaging Station. Note pronounced drop of alluvial fan, in distance which defines the proposed boundary. Vineyard land below the drop isn't included (see next picture).
(USGS Paraiso Springs Map -- Continued)

3. View of southern area at proposed boundary. Alluvial fan drops approximately 60 feet to valley flatlands. Foreground isn't included in proposed area.

4. Northerly view taken from Los Coches Road, slightly south of reservoir spillway. Note the drop of the fan to the valley floor.
5. Southerly view taken from atop an alluvial fan looking down to River Road and flatlands. Note row of grape vines on far slope.

6. Easterly view across the Salinas Valley showing the Gabilan Range. Picture taken from 600' elevation at Smith & Hook Ranch (winery). Note vineyards in foreground, drop of fan, and then valley agricultural flatlands. Morning fog is burning off.
7. Westerly view from Smith & Hook showing mountains from fan area. Vineyards continue toward the mountain.

8. Northerly view of fan meeting flatlands at Coches Road. Proposed boundary, in this picture, is at road.
(USGS Palo Escrito Map -- Continued)

9. Westerly view of fan sloping down and then dropping off to flatlands. Note lettuce crop in foreground and vineyards on the fan. Picture taken from River Road.

(USGS Chualar Quadrangle Map)

10. View of northeast point of proposed area boundary where land slopes to river bed. Picture taken from River Road.
11. Westerly view of Lime Kiln Creek area
as it slopes down from mountain area. Picture
taken from River Road.

12. View of northwestern point
(Mt. Toro area) where Lime Kiln Creek
cuts into highlands. Picture taken
from Hwy. #101 facing west. Note
flatland as compared to slope of
alluvial fans (brown sloping areas).
SANTA LUCIA HIGHLANDS

Proposed viticultural area

Shows overlapping vit areas; totally within Central Coast.