LAS CRUCES CHAPTER OF THE NEW MEXICO WINE & VINE SOCIETY
P. O. Box 432
Fairacres, New Mexico 88003
Phone: (505) 524-1400

June 22, 1983

Director
Bureau of Alcohol, Tobacco and Firearms
1200 Pennsylvania Ave. N.W.
Washington, D.C. 20226

Dear Sir:

In accordance with 27 CFR 4.25a regarding the labeling of wine with an appellation of origin, the Las Cruces Chapter of the New Mexico Wine and Vine Society is submitting this petition to establish a viticultural area in Dona Ana county. The proposed viticultural area would be called the "Mesilla Valley."

Enclosed, you should find the following:

1) A description of the proposed boundary for the Mesilla Valley viticultural area.

2) A brief history of the name and of the grape industry in the Mesilla Valley.

3) A description of the soil in the Mesilla Valley.

4) A description of the climate in the Mesilla Valley.

5) A U.S.G.S. "Hydrologic Unit Map - 1974 State of New Mexico."

6) Fifteen U.S.G.S. 7.5 minute quadrangle maps showing the Mesilla Valley viticultural area.

7) The "International Boundary and Water Commission, U.S. and Mexico, El Paso Rio Grande Projects" map, which shows the irrigated land and the present extent of viticulture within the valley.

8) A letter of declaration of support signed by the commercial growers and vinters in the valley.

9) A copy of the resolution passed by the Las Cruces Chapter of the New Mexico Wine and Vine Society.

The Las Cruces Chapter of the New Mexico Wine and Vine Society would appreciate your consideration of the Mesilla Valley as a viticultural area. If you have any questions, please feel free to contact me.

Sincerely yours,

George Newman

George Newman, President

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Resolution of the Las Cruces Chapter
of the New Mexico Wine & Vine Society

The Las Cruces Chapter of the New Mexico Wine and Vine Society unanimously passed a resolution on June 29, 1983 to recommend that the Bureau of Alcohol, Tobacco and Firearms accept the petition as submitted by the Las Cruces Chapter of the New Mexico Wine and Vine Society establishing the Mesilla Valley as a unique viticultural area.

George Newman
President

Bernice Binns
Secretary

We, the undersigned, the only commercial and bonded wineries in the Mesilla Valley, support the petition for the proposed Mesilla Valley appellation, submitted by the Las Cruces Chapter of the New Mexico Wine and Vine Society:

1) Eddie Binns

Binns Vineyard and Winery (BWNM 35)

2) Dan M. Estrada

Estrada Winery (BWNM 27)

3) C. H. Roope

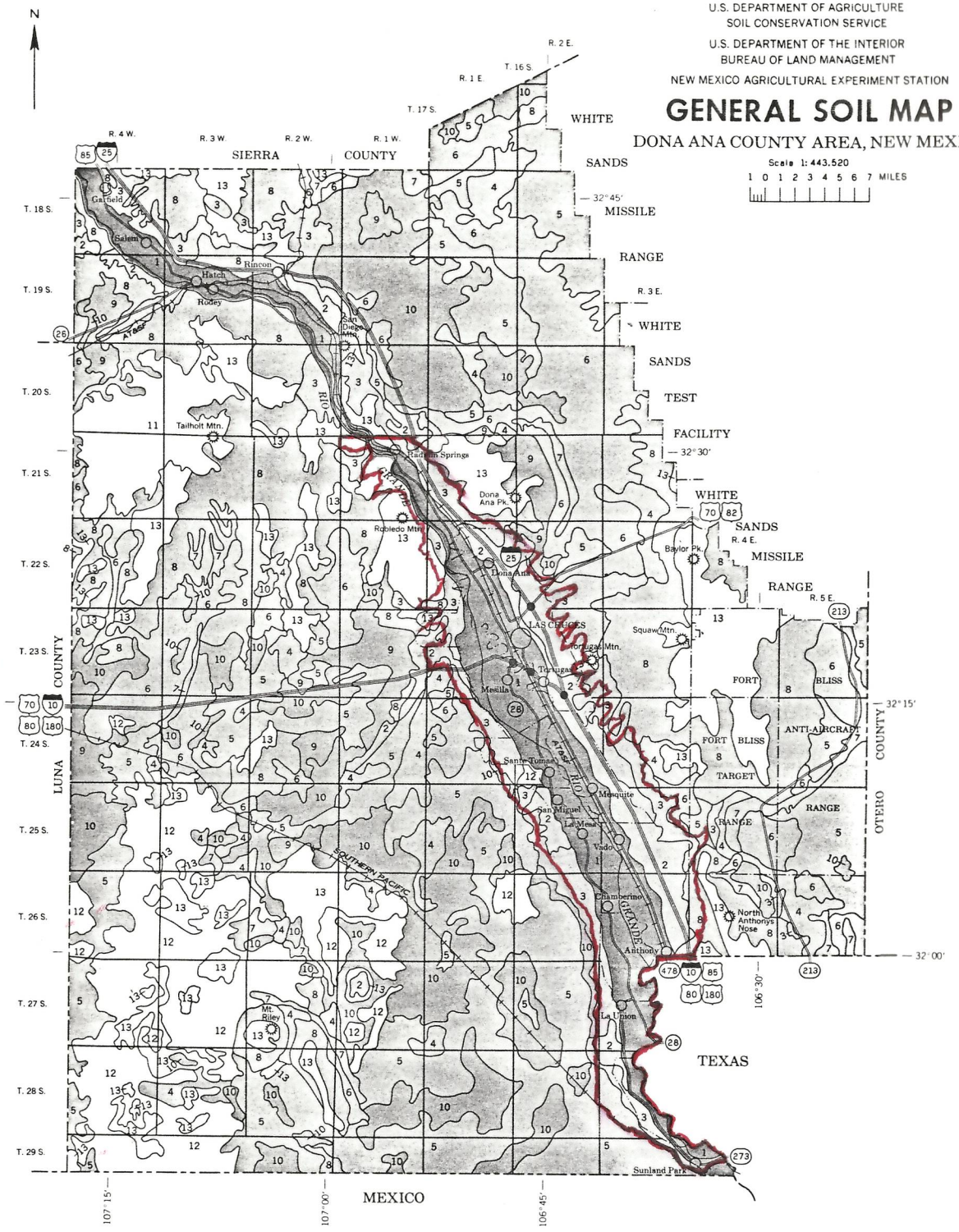
La Vina winery BWNM30

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
NEW MEXICO AGRICULTURAL EXPERIMENT STATION

GENERAL SOIL MAP

DONA ANA COUNTY AREA, NEW MEXICO

Scale 1: 443,520
1 0 1 2 3 4 5 6 7 MILES



MAP UNITS

DEEP, NEARLY LEVEL, WELL DRAINED SOILS THAT FORMED IN ALLUVIUM; ON FLOOD PLAINS AND STREAM TERRACES

1 Glendale-Harkey: Deep, nearly level, well drained soils that formed in alluvium; on flood plains and stream terraces

SHALLOW OR DEEP, NEARLY LEVEL TO VERY STEEP, WELL DRAINED TO EXCESSIVELY DRAINED SOILS THAT FORMED IN ALLUVIUM, ALLUVIUM MODIFIED BY WIND, AND EOLIAN MATERIAL; ON FANS, TERRACES, RIDGES, VALLEY AND BASIN FLOORS, FLOOD PLAINS, AND PIEDMONTS

2 Bluepoint: Deep, gently undulating to moderately rolling, somewhat excessively drained soils that formed in alluvium modified by wind; on fans, terraces, and ridges

3 Caliza-Bluepoint-Yturbide: Deep, gently undulating to very steep, well drained, somewhat excessively drained, and excessively drained soils that formed in alluvium, gravelly alluvium, and alluvium modified by wind; on fans and terraces

4 Pajarito-Onite-Pintura: Deep, nearly level to undulating, well drained and somewhat excessively drained soils that formed in alluvium, alluvium modified by wind, and eolian material; on fans

5 Pintura-Wink: Deep, nearly level to undulating, well drained and somewhat excessively drained soils that formed in alluvium, alluvium modified by wind, and eolian material; on fans

6 Berino-Dona Ana: Deep, gently undulating to undulating, well drained soils that formed in alluvium and alluvium modified by wind; on fans, piedmonts, and valley and basin floors

7 Mimbres-Stellar: Deep, nearly level to gently undulating, well drained soils that formed in alluvium; on fans, basin floors, and flood plains

8 Nickel-Upton: Shallow or deep, undulating to moderately rolling, well drained soils that formed in gravelly and very gravelly alluvium; on fans

SHALLOW TO DEEP, NEARLY LEVEL TO UNDULATING, WELL DRAINED SOILS THAT FORMED IN RESIDUUM, ALLUVIUM, AND EOLIAN MATERIAL; ON MESAS, PLAINS, RIDGES, BASIN FLOORS, AND FANS

9 Cacique-Cruces: Shallow to moderately deep, nearly level to gently sloping, well drained soils that formed in alluvium; on basin floors

10 Harrisburg-Simona-Wink: Shallow to deep, gently undulating to undulating, well drained soils that formed in residuum from sandstone, eolian material, and alluvium modified by wind; on mesas, plains, ridges, and fans

ROCK OUTCROP AND SHALLOW TO DEEP, GENTLY UNDULATING TO EXTREMELY STEEP, WELL DRAINED SOILS THAT FORMED IN ALLUVIUM, COLLUVIUM, RESIDUUM, AND EOLIAN MATERIAL; ON MOUNTAINS, UPLANDS, AND RIDGES

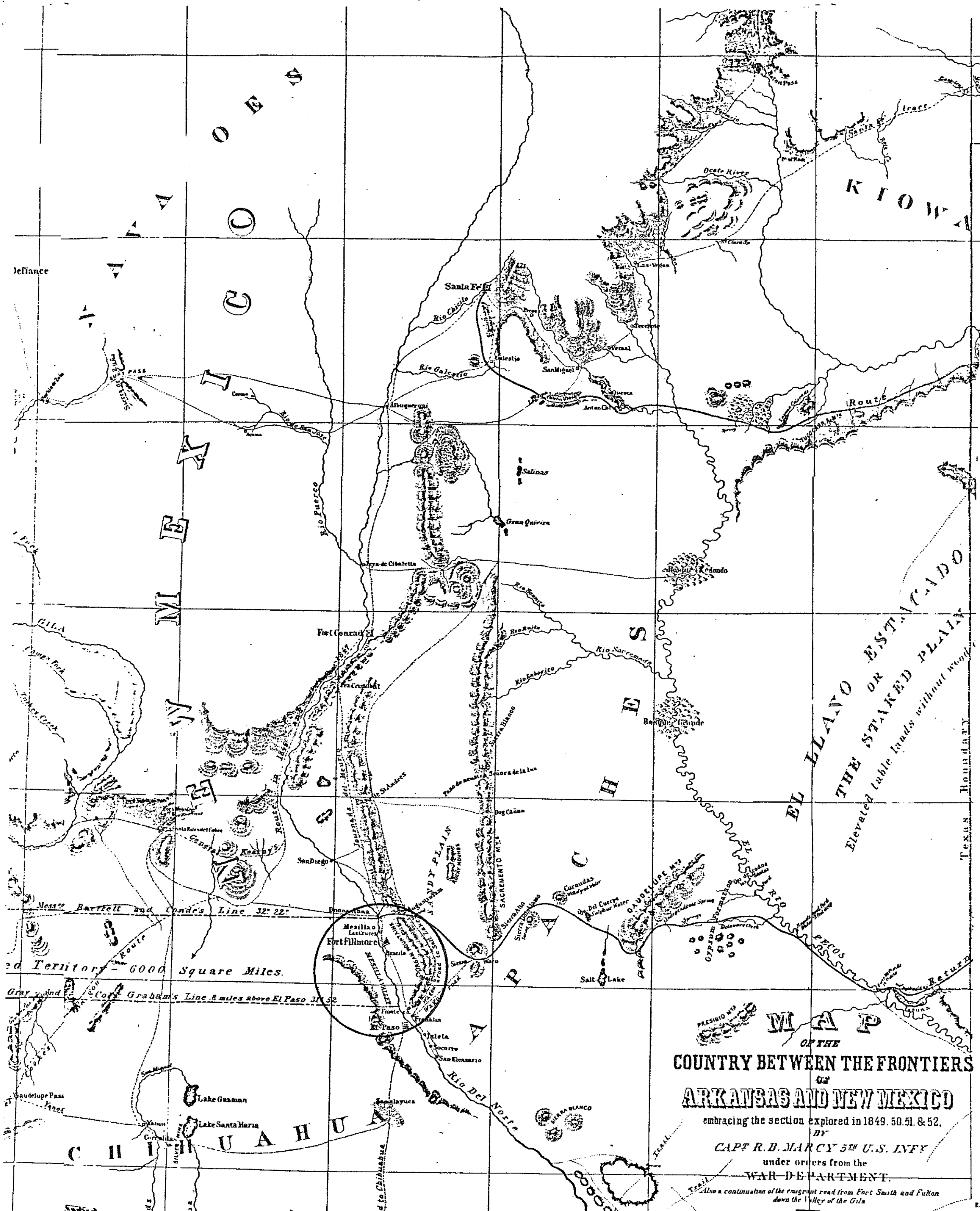
11 Rock outcrop-Motoqua: Rock outcrop and shallow, moderately rolling to extremely steep, well drained soils that formed in alluvium and colluvium; on mountains

12 Akela-Rock outcrop-Aftaden: Rock outcrop and shallow, gently undulating to moderately rolling, well drained soils that formed in eolian material and residuum from basalt; on lava flows, uplands, and ridges

13 Rock outcrop-Torriorthents: Rock outcrop and shallow to deep, hilly to extremely steep, well drained soils that formed in alluvium and colluvium; on mountains

Compiled 1979

Each area outlined on this map consists of



New Mexico detail reproduced 1975,
Rio Grande Historical Collections,
New Mexico State University Library

NARRATIVE DESCRIPTION OF THE PROPOSED BOUNDARIES FOR
THE MESILLA VALLEY VITICULTURAL AREA

The beginning point is along the Faulkner Canyon on the "Leasburg, New Mexico," U.S.G.S. map at the northwest corner of Section 15, Township 21 South (T21S), Range 1 West (R1W).

(1) From the beginning point, the boundary runds east 3.7 miles along the section line until it converges with the 4,200 foot elevation contour line at Section 18, T21S/R1E;

(2) Then it runs southeasterly, along the 4,200 foot elevation contour line to a point approximately 3.5 miles south of Bishop Cap where it intersects the Fort Bliss Military Reservation boundary on the "Bishop Cap, N.Mex.," U.S.G.S. map at the northeast portion of Section 13, T 25S/R3E;

(3) Then it follows the Fort Bliss Military Reservation boundary south approximately 3.7 miles and east approximately .8 miles to the intersection with the 4,200 foot elevation contour line on the "Anthony, N.Mex.-Tex.," U.S.G.S. map at the southeast portion of Section 31, T25E/R4E;

(4) Then it continues south along the 4,200 foot elevation contour line to the New Mexico (Dona Ana County)-Texas (El Paso County) border at the southern part of Section 32, T26S/R4E;

(6) Then it follows the Southern Pacific Railroad tracks northwesterly for approximately 12.5 miles until it reaches the 4,100 foot elevation contour line on the "Strauss, N.Mex.-Tex.," U.S.G.S. map at the center of Section 24, T28S/R2E;

(7) Then it follows the 4,100 foot elevation contour line in a northwesterly direction until it intersects with the north line of Section 32, T25S/R2E, on the "Little Black Mountain, N.Mex.," U.S.G.S. map;

(8) Then it runs westerly approximately .5 miles along the north line of Section 32, T25S/R2E, until it meets the 4,150 foot elevation contour line;

(9) Then it follows the 4,150 foot elevation contour line northward until it meets with Interstate 70/80/100 at the southeast corner of Section 19, T23S/R1E, on the "Las Cruces, N.Mex.," U.S.G.S. map;

(10) Then it runs west along Interstate 70/80/100 for approximately .9 miles until it reaches the 4,200 foot elevation contour line at the northeast corner of Section 30, T23S/R1E, on the "Picacho Mt., N.Mex.," U.S.G.S. map;

(11) Then it runs northwest along the 4,200 foot elevation contour line until it reaches the west line of Section 15, T21S/R1W on the "Leasburg, N.Mex.," U.S.G.S. map;

(12) Then it continues north in a straight direction to the west line of Section 15, T21S/R1W, to the beginning point.

PROPOSED BOUNDARIES

The entire Mesilla Valley is located in Dona Ana County in southern New Mexico and covers approximately 1,500 square miles (see the enclosed U.S.G.S. "Hydrologic Unit Map - 1974 State of New Mexico" for the exact boundary). The southern border of the valley runs along the New Mexico-Texas border and the New Mexico-Mexico border. The western border of the valley is marked by the Portillo Mountains, the Aden Hills, the Sleeping Lady Hills and the Sierra de Las Uvas Mountains. The northern border of the valley ends at Tonuco where the river valley narrows. To the east, the valley is flanked by the Dona Ana, Organ and Franklin Mountains. While most of the irrigated land in the valley is under 4,000 feet in elevation, mountainous peaks in the Mesilla Valley reach 8,870 feet.

The proposed viticultural area follows the Rio Grande River and surrounding irrigated land within the Mesilla Valley and covers approximately 400 square miles. Elevations within the proposed viticultural area range from approximately 3,700 feet to 4,200 feet above sea level. The higher mesa areas and mountainous elevations have been excluded from the proposed viticultural area since very few grapes are grown in these locations at the present time.

The boundaries of the proposed Mesilla Valley viticultural area can be found on the following U.S.G.S. 7.5 minute quadrangle maps (see enclosed maps):

"Leasburg Quadrangle, NM"
"Dona Ana Quadrangle, NM"
"Las Cruces Quadrangle, NM"
"Tortugas Mountain Quadrangle, NM"
"San Miguel Quadrangle, NM"
"Bishop Cap Quadrangle, NM"
"Anthony Quadrangle, NM"
"La Union Quadrangle, NM-TX"
"Canutillo Quadrangle, TX-NM"

"Smeltertown Quadrangle, TX-NM"
"Strauss Quadrangle, NM-TX"
"La Mesa Quadrangle, NM"
"Little Black Mountain Quadrangle, NM"
"Black Mesa Quadrangle, NM"
"Picacho Mountain Quadrangle, NM"

Please see figure 1, "Index to Topographic Maps of New Mexico," for a description of how these 7.5 minute quadrangle maps fit together.

The boundary for the proposed Mesilla Valley viticultural area is as follows:

The beginning point of located along the Faulkner Canyon on the U.S.G.S. map "Leasburg Quadrangle" at the northwest corner of Section 15 in Township 21 South, Range 1 West. From the beginning point, the boundary runs directly east 3.7 miles along the section line where it converges with the 4,200 foot elevation contour line.

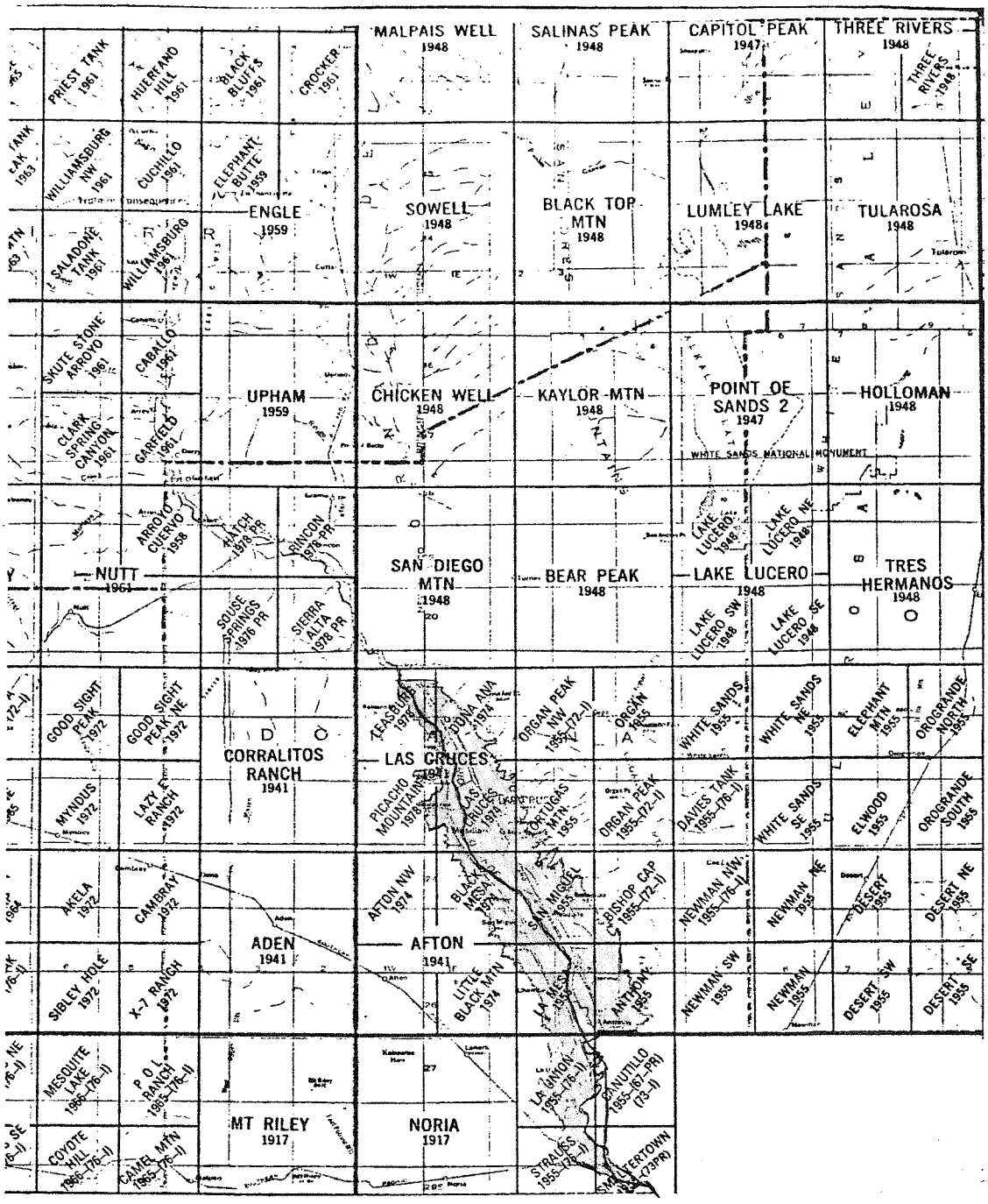
From here the boundary runs southeasterly along the 4,200 foot contour line. The eastern boundary of the Mesilla Valley viticultural area is flanked by the Dona Ana Mountains, the Organ Mountains, Bishop Cap and the Franklin Mountains, but no area above the 4,200 foot contour line is included in the proposed viticultural area.

Approximately 3.5 miles south of Bishop Cap, the 4,200 foot contour line intersects the Fort Bliss Military Researvation boundary. The viticultural boundary follows the military reservation boundary south 3.7 miles and then east approximately .8 miles.

The viticultural area boundary then continues to follow the 4,200 foot contour line until it reaches the New Mexico-Texas border. The boundary of the proposed viticultural area then follows the New Mexico-Texas border until it intersects with the Southern Pacific Railroad tracks.

The boundary follows the railroad tracks northwesterly for approximately 12.5 miles until it reaches the 4,100 foot contour line. The

Figure 1. Index to Topographic Maps of New Mexico.



Source: U.S.G.S. "Index to Topographic Maps of New Mexico."

boundary runs northwesterly along the 4,100 foot contour line. The western boundary of the proposed viticultural area approximately marks the top of the west mesa in the Mesilla Valley. At the north border of Section 32 in Township 25 South, Range 2 East the boundary runs west .5 miles and then follows the 4,150 foot contour line north.

At Interstate 70/80/180 the boundary follows the interstate west .9 miles. The boundary then continues north along the 4,200 foot contour line until it reaches the west border of Section 15 in Township 21 South, Range 1 West. The border follows this section line north to the beginning point along the Faulkner Canyon.

HISTORY

The Mesilla Valley derived its name from the Spanish explorer Don Juan de Onate who, in 1598, found an Indian village on the present day site of Mesilla, New Mexico. He named the village "Trenequel de la Mesilla." Mesilla means, "little table" and refers to the plateau on which the town is situated. The entire valley is now referred to as the Mesilla Valley.

Wine grapes have been planted in the Mesilla Valley for over one hundred years. The first vineyards were probably planted in the Mesilla Valley shortly after 1841 when the oldest town in the valley, Dona Ana, was first settled. These grapes were of the Mission variety and were introduced from present day Mexico.[1]

The Mesilla Valley appears to have favorable wine grape growing conditions which would allow the wine grape industry in the valley to continue to expand (see the "International Boundary and Water Commission, U.S. and Mexico, El Paso Rio Grande Projects" map, (I. B. & W. C. map), which indicates the irrigated areas within the valley and the present extent of viticulture within the valley). Presently, there are three bonded wineries in the Mesilla Valley as well as twenty-one private grape growers with at least twenty vines as indicated on the I. B. & W. C. map. The approval of an appellation of origin would encourage continued expansion of the wine grape industry in the Mesilla Valley.

A chemical analysis conducted by the New Mexico State Planning Office of the musts from several varieties of grapes grown in the Mesilla Valley compared favorably with grapes coming from Region V in California. This

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[1]Garcia, Fabian, European Grapes, New Mexico Agricultural Experiment Station Bulletin, No. 58.

study indicated that grapes from the Mesilla Valley are suitable for production of dry table and dessert wines.[2]

As other crops, such as cotton, become less profitable to grow in the Mesilla Valley, wine grape production may become a viable alternative. A feasibility analysis on the potential profitability of wine grapes in the Mesilla Valley conducted at New Mexico State University concludes, "Given the potential publicity attached to a locally produced wine, lower transportation cost, the possibility of wholesaling and retailing wines by the wineries themselves, and instate tax advantages, the marketing of wine within the state appears to be feasible."[3]

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[2]Eggert, Gilbert L., Wine Manufacturing Industry Feasibility Study, New Mexico State Planning Office, Project No. 331-900-004-2. Final Report, 1974, pp. 1-18.

[3]Clevenger, Thomas S., et. al., Potential Profitability of Wine Grapes in the Mesilla Valley, New Mexico Agricultural Experiment Station Research Report No. 333, 1978, p. 11.

SOIL

The soil within the proposed viticultural area is predominately from the Glendale-Harkey series based on the U.S. Department of Agriculture, Soil Conservation Service's approved soil names. Soils from the Glendale-Harkey series are stratified, deep, well drained, nearly level soils that are formed in alluvium. Typically, the surface layer is loam or clay loam and the layers below are clay loam and very fine sandy loam. These soils were formed on flood plains and stream terraces.

Soils to the east and west of the proposed viticultural area tend to be more steeply sloped and may contain more sand. At the higher elevations the soil contains rock outcroppings and is generally shallower.

CLIMATE

The Mesilla Valley has an arid continental climate with over 4,000 degree-days annually. The mean annual temperature is 60.8°F although daily temperatures fluctuate about 33°F (see table 1). Winter minimum temperatures of 32°F are common, but winter temperature below 2°F occur only one year in ten during January. The growing season is approximately 200 days long and occurs from approximately April 12 to October 27. On the average, the temperature will fall 3°F for every increase of 1,000 feet in elevation above the floor of the valley. This makes the higher elevations in the valley somewhat cooler.

Fall, winter, and spring are the dry seasons of the year. During these seasons, moisture in the air coming from the Pacific Ocean is removed as it passes over the mountains west of New Mexico. During the summer months, moisture-laden air coming from the Gulf of Mexico enters southern New Mexico. Strong surface heating and the upslope flow of air cause brief and somewhat heavy afternoon and evening thunder showers. The Organ Mountains to the east of the Mesilla Valley protect the valley from the heavier showers. Precipitation in the valley usually amounts to only about eight inches annually. At higher elevations in the valley, rainfall may be heavier. The relative humidity in the valley is generally low.

Winter is generally mild and sunny. The average snowfall in the proposed viticultural area of the Mesilla Valley is less than three inches annually and seldom lasts more than two consecutive days. At elevations higher than 4,500 feet snowfall is more common and is more apt to remain on the ground for longer periods of time.

Table 1. Climatological summary of temperature and precipitation data in the Mesilla Valley, New Mexico based on climatic data collected at the State University substation of the U.S. Weather Bureau.

	Month												
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Temperature Means (°F)													
Daily Maximum	58.4	62.9	69.3	77.8	85.7	94.6	94.6	92.1	87.1	78.5	66.4	58.6	77.2
Daily Minimum	26.5	29.5	34.9	42.3	50.0	60.0	66.2	63.7	56.4	44.0	32.5	26.7	44.4
Monthly	42.5	46.2	52.1	60.1	67.9	77.3	80.4	77.9	71.8	61.3	49.4	42.7	60.8
Degree-Days[1]	0	0	65	303	555	819	942	865	654	350	0	0	4,553
Precipitation Totals (inches)													
Monthly Mean	.39	.45	.30	.14	.24	.63	1.50	1.84	1.15	.83	.40	.44	8.31
Average Number of Days Per Month Below:													
32°F	25.0	18.9	12.8	3.0	0.3	0.0	0.0	0.0	0.0	2.1	17.1	24.9	104.1
14°F	2.5	0.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.8	5.6
2°F	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1

[1]Degree-days for a month equals the monthly mean temperatures minus 50°F times the number of days in that month.

Source: Data from the climatological substation of U.S. Weather Bureau for State University, New Mexico (1892 - 1981).

LAS CRUCES CHAPTER OF THE NEW MEXICO WINE & VINE SOCIETY
P. O. Box 432
Fairacres, New Mexico 88003
Phone: (505) 524-1400

Ed Reisman
ATF Specialist
FAA, Wine and Beer Branch
Bureau of Alcohol, Tobacco and Firearms
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20226

Dear Mr. Reisman:

This is in response to your letter on August 19, 1983 regarding the need for additional evidence to support our petition for the establishment of an American viticultural area to be known as "Mesilla Valley".

In compliance with the requirements listed in 27 CFR 4.25(e)(2) and your suggestions we are submitting the additional information which you requested. The additional information was compiled by New Mexico State University, College of Agriculture. Please see the enclosed petition with requested revisions.

We are sorry about any inconvinience that this may have caused. If you have any questions, please feel free to contact me or Gail Welsh at the Department of Agricultural Economics and Agricultural Business, P.O. Box 3169, New Mexico State University, phone (505) 646-5315.

Sincerely,

George Newman
President

bh

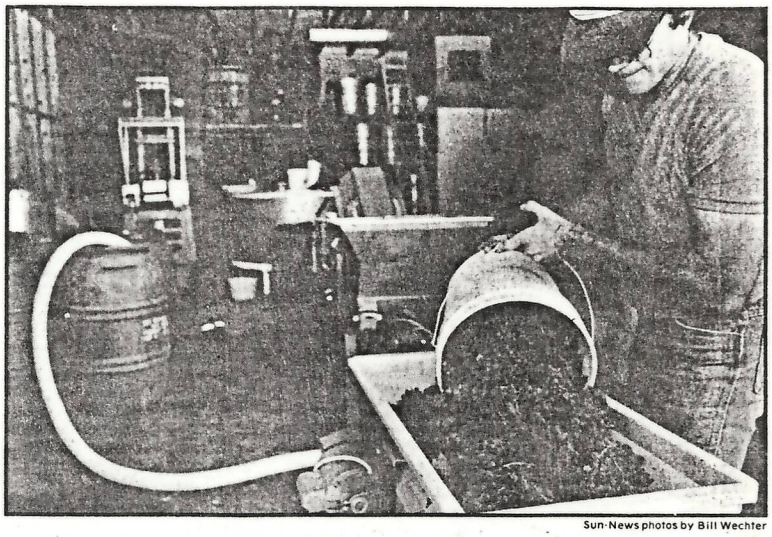
Enclosures

xc: Gail Welsh

Las Cruces Sun-News

Local

Sunday, August 28, 1983



Sun-News photos by Bill Wechter

Mike Binns helps in the family winery that has increased production fivefold in its first year.

Wine production expands; quality remains watchword

By MARVIN TESSNEER
Of The Sun-News

Eddie Binns has increased his wine production fivefold in one year, but he plans to slow down expansion to assure quality wine.

"I don't want to grow too big too fast," he explained in his federally certified Fairacres winery. "I want to produce a quality product to appeal to the wine connoisseur."

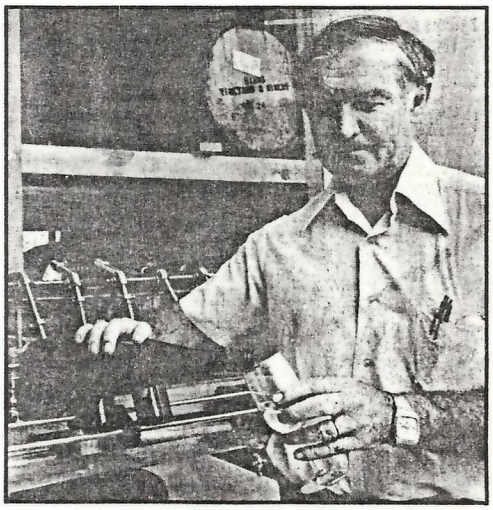
Binns opened his winery last year and produced 3,000 gallons of red and white wine. And at the rate the grapes are coming in this year he expects to produce about 15,000 gallons.

He plans to keep up expansion until he hits a 100,000-gallon "plateau." That converts into 500,000 bottles a year. He expects to reach that plateau in his fifth production year.

"Then it'll be time to re-evaluate," Binns said.

Right now, his winery is a family operation. But if it surpasses the 100,000-gallon category, he might have to hire full-time professional wine makers.

His ambition is to develop wines that are identified with this valley. He is almost assured of a market. New Mexico residents consume 3 million gallons of wine annually.



Eddie Binns pours himself a sample of the fruit of his labors.

Binns started out using grapes from his own 15-acre vineyard. This year he is accepting grapes from five other small vineyards.

"I'm generating a market for another product," he explained. "Grapes can be grown on small acreage and bring high returns. I hope to expand grape production in the Mesilla Valley."

To keep pace with his expansion, Binns has installed a new Italian crusher. The unit also separates stems and leaves in the initial step.

When Binns makes white wine, the pulp is sent to a continuous press to obtain the maximum volume of juice. Then the juice is stored in refrigerated tanks or barrels that are held in cold storage for fermentation, usually about two weeks.

He has purchased four 3,000-gallon tanks with cold water jackets to ferment the white wine. He will install them when he enlarges his winery, he said.

Fermentation of red wine requires a different process. The pulp is pumped into barrels and allowed to ferment for about a week or 10 days at room temperature.

After fermentation, the pulp is sent through a press to remove skins and seeds and remove juice remaining in the skins, Binns explained.

Binns expects to start marketing his wine in late October or early November. He still is working on a label, "trying to find a good local tie-in."

Valley wine makers and grape growers have applied to the Alcohol, Tobacco and Firearms Administration for an official wine producing designation. If the designation is granted, wine producers will be permitted to promote their wine as a special product from this area, Binns said.

There are two other certified wine makers in Dona Ana County, Dan Estrada in Mesilla and Clarence Cooper near Chamberino. The Estrada permit is the oldest.

"Wine making is not automatic," Binns said. "There is a lot of chemical analysis to keep it from spoiling and a lot of monitoring to keep it from turning into vinegar."

Wine tests include:

- Acid content to keep it in balance to prevent the wine going sour flat. The acid content can be adjusted with chilling to crystalize excess acid or by adding acid crystals if it is too low.
- Yeast types, making sure the right ones are present to convert sugar into alcohol.
- Alcohol content, monitoring to make sure it is in the 11 to 12 percent range.

Although Binns is happy to share his knowledge with people who are interested in making wine, he discourages the title "expert."

"I've only been in wine making a short time, since 1979," he said. "It's been a tremendous learning process. And I have respect for the professional wine makers whose families have been in the wine business for generations."

Mesilla Valley Vintner

text and photographs
by Michael Henzl

One mile south of tiny Chamberino at the western edge of the Mesilla Valley stand the vineyards of La Viña Winery. Lit by the late afternoon sun, the vines glow vibrantly against a backdrop that includes the Organ and Franklin Mountain ranges. It is August, and the plants sag under the weight of their fruit. For Clarence Cooper, founder of La Viña, the sight of the heavily laden vines is gratifying. The large harvest is especially welcome after the previous year's disappointing crop.

Although New Mexico is not commonly associated with wine production, the state actually has a long history of wine making, Cooper explains. Wine was already being produced by missions along the Rio Grande for use in religious services in the early 17th century — long before vineyards were established in California. Over the next three centuries, grape cultivation and wine production steadily increased. By 1900, the region's annual output had reached almost a million gallons. Alas, prohibition killed the wine industry in New Mexico; few of the vineyards ever reopened. Nevertheless, the fertile Mesilla Valley in southern New Mexico was once dotted with wineries, typically small and family run. Cooper views La Viña as a return to this tradition.

Unquestionably, La Viña is small. In fact, it is largely a one-man operation. From crushing the grapes to overseeing the fermentation to bottling the finished product and affixing the label, Cooper handles almost all of the vintner's duties himself. And, remarkably, he manages to do it in his spare time. Cooper — Dr. Clarence Cooper — is an associate professor of physics at the University of Texas at El Paso. By day, he instructs students in the physical laws governing the universe and pursues his research in acoustics. In the evening and on weekends, he runs his winery.

Cooper was born 48 years ago in El Salto, Mexico, a small city nestled in the Sierra Madre Occidental, 600 miles due south of Chamberino. His father was general manager for a nearby lumber mill. Clarence spent his early childhood in Mexico, but from the age of 12 he attended public schools in El Paso.

After graduating from high school, he enrolled at Texas Western University, now UT-El Paso. He received his bachelor's degree from there in 1957 and subsequently obtained master's and doctoral degrees from Vanderbilt University and UT-Austin, respectively.

Cooper's wine-making career dates back to 1973. He had then owned his farm near Chamberino for 12 years and was using the land to raise cotton — a crop well suited to the area. However, that year he put in a small, experimental vineyard. The wine that Cooper produced from those grapes was so good that he was encouraged to add a few more vines the following year and a few more the year after that. Eventually, he decided to put his wine-making talents to the commercial test. After enlarging the vineyard and raising the building that houses his wine shop and equipment, Cooper opened for business in 1977.

The vineyards presently cover 18 acres. Fifteen varieties of grapes are represented there, some still in the trial stage. Not surprisingly, certain types are better suited than others to the region's climate and soil. French Colombard and White Riesling are two whites that seem to prosper. In the reds, Cooper has had especially good luck with the Ruby Cabernet variety.

Overall, he says, the climate is quite favorable for grape cultivation. The vines sprout in late April or early May. The harvest usually begins in September, although during a hot season, the grapes may be ready by late August. Cooper's worst problem, oddly enough, is the severity of the winters. At night, the mercury can dip to 10 degrees F, which is cold enough to kill the dormant vines back to the roots. High temperatures in the summer are less of a problem. "It may reach 105 degrees during the day," he says, "but then at night, it cools down to about 70, so that our average temperatures are not that horrendous." However, he admits that record high temperatures during the summer of 1980 contributed heavily to that year's extremely poor crop.

La Viña produces 5,000 to 7,000 gallons of wine annually from between 80,000 and 100,000 pounds of grapes. Cooper typically bottles a Barbera, a Ruby Cabernet, a French Colombard, and a White Riesling, as well as several blends. He awards the Barbera top honors, while conceding that many people find that variety too heavy. The Ruby Cabernet is a close second, he says.

Clarence Cooper updates information on a barrel of Ruby Cabernet.

Despite a very busy schedule, Cooper still finds time to play the guitar and performs regularly as part of a trio, Los Paisanos. Music is an important part of his life. "If I go for any length of time without playing," he says, "I start to feel that there is something missing."

Cooper would like to expand his winery somewhat, increasing his annual output to perhaps 10,000 gallons. However, he doesn't foresee the business becoming a full-time occupation in the near future. "That probably won't happen until I retire from teaching," he says. "And that's still 'a fur piece' down the road."

La Viña is neat and efficient — a reflection perhaps of Cooper's scientific background. Equipment is sensibly arranged; the presses and fermentors are kept sparkling; and the multitudinous wine barrels are arrayed neatly in sturdy racks along the walls. Even at harvest time, when the pace is most hectic and space is really at a premium, Cooper manages to maintain order. This efficiency enables him, despite the modest size of his operation, to process some 3,000 gallons of wine at a time.

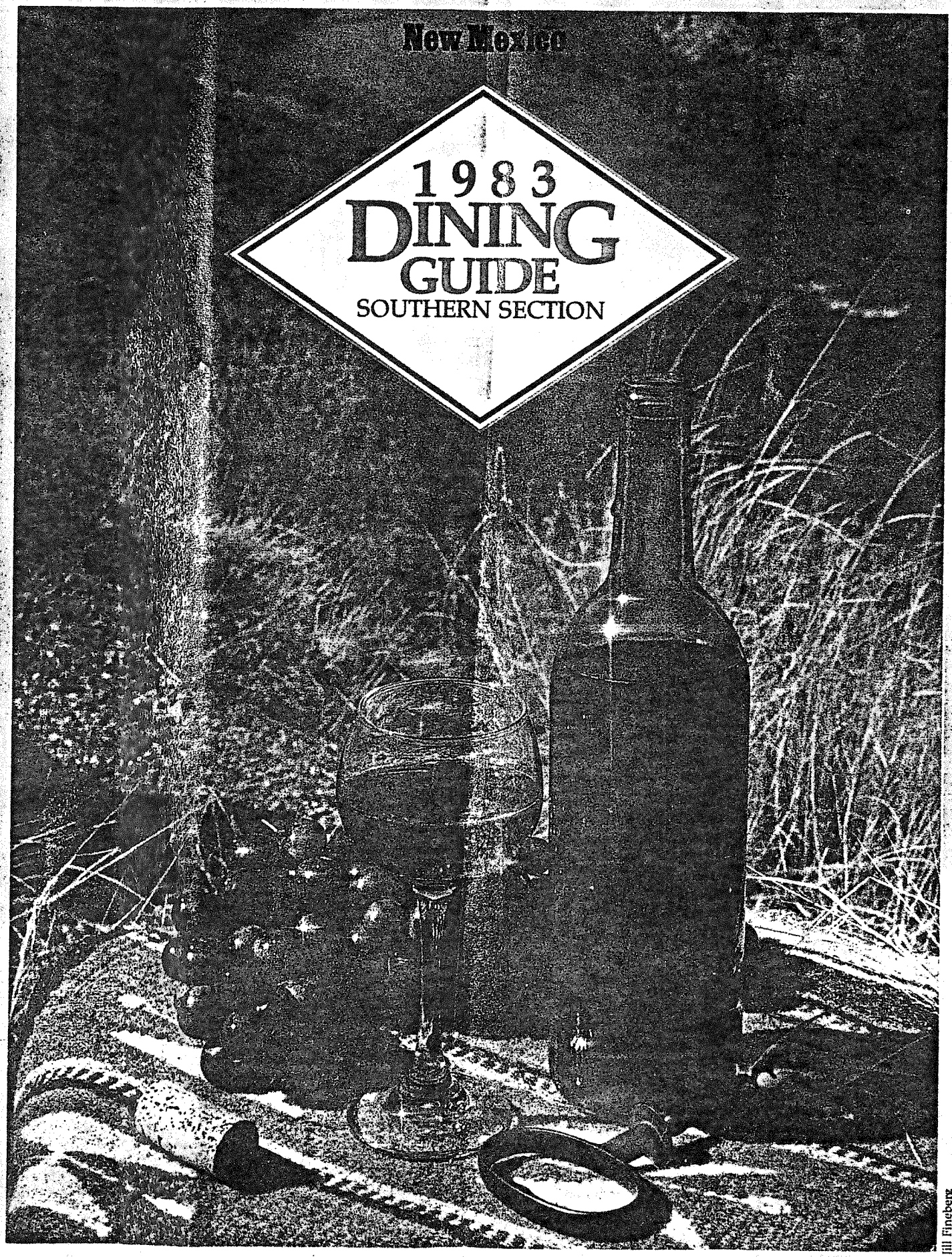
A small shop occupies the front of the winery building. Visitors to the shop are greeted, as they enter, with a generous dose of the vintner's warm hospitality and the mingled aromas of grapes and wines. Cooper enjoys having visitors and is happy to give tours and offer samples of his products.

La Viña is located one-half mile west of NM 28, one mile south of Chamberino. It is open to visitors from 9 a.m. to 6 p.m. on Friday and Saturday.

New Mexico

1983 DINING GUIDE

SOUTHERN SECTION



Jill Fineberg

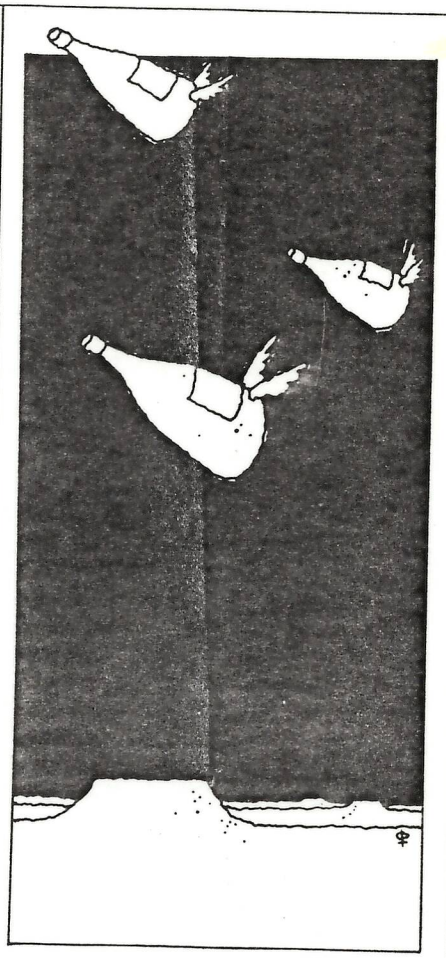
New Mexico's Grape Expectations

by David Nolf

Many a native and visitor alike are familiar with the captivations of the New Mexico landscape—that spellbound sensation, eyes burgeoning in wonder. But few, I imagine, have been truly enchanted by a glass of New Mexico wine, even though there has always been the *promise* of something good. After all, the Spanish priests began cultivating vines in the late 16th century, 200 years before Father Junípero Serra established the first California mission in San Diego and planted his own cuttings. In New Mexico, in 1846, General Stephen Kearny and his unkempt army found vines flourishing, especially along the Río Grande Valley, when they proclaimed New Mexico part of the United States.

Soon after, W.W.H. Davis, a transplanted lawyer, wrote in his classic book *El Gringo* that the red wine of Bernalillo was reputedly "better than that imported from France." One must remember, however, that the red Bordeaux wine coming into the United States in the mid-1850s was pretty awful. The year 1853 was a terrible one for French vintners, very wet, and it produced one of the worst harvests of the decade. In 1854 odium, sometimes called powdery mildew, launched its assault on French vines. The fungus raged out of control for several years—in which no good French wine was made—until the winegrowers discovered the use of sulphur.

So New Mexico's wines, which were being made not only in Bernalillo, but all over the state, tasted good in comparison. But New Mexico has always lacked a true champion of the vine, someone interested in more than mere acreage and standard production, someone who would experiment with different types of grapes to find where they grow best. Perhaps if Agoston Haraszthy, that tireless promoter and planter of vines, had stayed on—he passed through Albuquerque on his way to California in 1849—New Mexico would be more prominent on the national wine map today.



David Povilaitis

Still, it's never too late, and there are now sure signs that the California wine boom of the 1970s has finally reached New Mexico. After 400 years our wine business is still in its infancy, but things are changing—fast.

The most surprising activity is in the south central and southern parts of the state. Here, in the milder regions, *vitis vinifera*, European grapes, can sometimes be grown with success. In other parts of the state hybrids are generally cultivated because they can withstand the harsher winters. Of course, heat in summer can be a problem almost anywhere.

Consider. A French concern is planting 200 acres of cuttings around Elephant Butte. New Mexicans are planting 40 acres near Columbus and 160 acres near Lordsburg. And some Swiss businessmen have in mind planting an astonishing 10,000 acres south of Deming.

Then, of course, there are the Hinkles's 40 acres in Dexter just south of Roswell. The Hinkles own the Viña Madre Winery and have been in business since 1978. Two brothers, Glenn and Ed Binns, have close to 15 acres near Las Cruces and plan to release their first 1300 cases of French Colombard, Chenin Blanc, Zinfandel, and Zinfandel Rosé sometime this spring.

Clarence Cooper's La Viña Winery (17 acres in Chamberino, near Las Cruces) has been in operation since 1977 and his wines are distributed throughout the state. The new 1982 releases include a Johannisberg Riesling, Ruby Cabernet, Chablis, and Zinfandel Rosé. The wines are all estate-bottled, and I found the Zinfandel Rosé—which is the color of most California White Zinfandels, pale salmon—to be almost the equal of those California counterparts, with a slight residual sugar balanced by a fruity acidity. It's a wonderful wine to take into the mountains on spring picnics. The Chablis has the fruity zest of the better California jug wines, tasting of Chenin Blanc and French Colombard.

Wine activity in the northern part of the state is also effervescing. Len Rosingana, a former owner of Stony Ridge Winery in the Livermore Valley of California, has planted six acres of vines in Cerrillos, just outside of Santa Fe. While waiting for his vines to bear fruit, he is buying grapes from local growers and making wine in a Los Lunas facility. That facility is owned by Richard Chiavario, who plans to be in business himself this year.

Tony Claiborne of Rico's Winery in Albuquerque has formed a partnership with Jim and Ruth Winchell and they expect to open their new 8,000-square-foot West Wind Winery in Bernalillo this spring, and hope to build quickly to a 35,000-gallon capacity. They will keep the "Las Animas" label and continue to produce the most consistent wines: El Viejo, Ojo de Perdiz, and Río Grande Rojo. West Wind Winery will have 10 acres of its own, and Claiborne is eager to experiment with vinifera vines such as Syrah, Cinsault, Muller-Thurgau, and Cabernet Franc. More good news: they hope to keep the price of their wine at $5 or below.

The Johnson Brothers, Pat and Mike, opened their La Chiripada Winery in Dixon, north of Santa Fe last November. Full distribution will begin this spring but the interested taster can always buy the wines at the winery. It's a spectacular drive north from Santa Fe or south from Taos, and the winery is easy to find because of the bright multicolored sign on the north edge of town. The winery is open daily except Sunday, 10 a.m. to 5 p.m.

La Chiripada means "stroke of luck" in Spanish and the Johnson brothers have certainly combined fortune with

skill in their first releases. The 1982 Baco Noir Rosé is made like a Beaujolais Nouveau and so is very fresh and fruity and full of flavor. They have also made a wine from the French hybrid, Marechal Foch. the Marechal Foch was first developed in Alsace and makes a sturdy red wine. La Chiripada's version reminded me of a light California Pinot Noir. In addition the Johnsons produced a delicious apple wine from the famous fruit of the region.

This sudden life of the vine in New Mexico is similar to those early fervent days of the 1860s in California. Those who want to keep up with all the developments, as well as plain old steadfast wine-lovers, might consider membership in the New Mexico Wines and Vines Society. Dues are $6.00 a year, and each member receives the society newsletter, which chronicles all the vinous activity in the state. (Send $6.00 to Phil Fitter, Treasurer, Route 2, Box 310 A, Santa Fe, NM 87501).

It will be interesting over the next few years to see what comes of all this budding activity. Who knows? Perhaps one of the innovative winegrowers will discover an especially spicy strain of grapes and will produce that elusive miracle—the perfect wine to drink with enchiladas.

day Champagne Brunch, 10 a.m.-2 p.m. Open all holidays. MC, V, AE, DC, CB.

Eloy's Mexican Restaurants, Inc., 3617 Wyoming NE (293-6018); 1826 Eubank NE (293-4628). Homemade Mexican food; family-owned restaurants. $3.25-$4-L; $4.75-$5-D. Open 11 a.m.-8 p.m. Mon.-Thurs.; 11 a.m.-9 p.m. Fri., Sat. MC, V.

El Patrón, 2266 Wyoming (Mall) (293-6451). Mexican food. Specialty is carnitas—pork marinated in house sauce and sauteed to perfection. Six dining rooms on two levels plus banquet facilities. Old Mexico decor; live guitar music. $1.85-$9.25. Open 11 a.m.-8:30 p.m. Mon.-Sat.; 11 a.m.-9 p.m. Sun. Closed Thkg., Xmas., NYD. MC, V, AE.

Delfino's, Four Seasons Hotel, 2500 Carlisle NE (888-3311). Steak and New Mexican cuisine. Cocktails. $2.45-$8.45-L; $6.45-$18-D. Open 11:30 a.m.-2 p.m. Mon.-Fri.; 6 p.m.-10 p.m. Sun.-Thurs.; 6 p.m.-11 p.m. Fri. & Sat. Fiesta Brunch, Sundays 10 a.m.-2 p.m. Open all holidays. MC, V, AE, DC, CB.

El Pinto, 10500 Fourth St. NW (898-1771). Territorial-style restaurant is set in the North Valley. "Comida Corrida" is recommended. Beer and wine. Wine margaritas, piña coladas. $2.65-$7.25-L; $3.40-$9.25-D. Open 11:30 a.m.-2 p.m.; 5 p.m.-8:30 p.m. Tues.-Sat., 12 p.m.-8:30 p.m. Sun. MC, V.

Farrell's Ice Cream Parlour Restaurant, 203 Winrock Center (883-6840). Ice cream specialties. $1.05-$17. Hamburgers, sandwiches, pizza, salads, $2.35-$4.50. Open 11:30 a.m.-10 p.m. Mon.-Thurs.; 11 a.m.-12 a.m. Fri., Sat.; 12 p.m.-10 p.m. Sun. Closed Thkg., Xmas., NYD.

Frank's Other Place, First Plaza Galería, Third & Tijeras (243-7789). Specialty sandwiches, fountain items, and desserts. Beer and wine. $1.20-$2.50. Open 10 a.m.-3:30 p.m. Mon.-Fri.

Friar's North, 4410 Wyoming NE (293-9366). American and Mexican food served in the Feather Room. Nightly entertainment and dancing. Lunch only. $3.80. Open 10 a.m.-3:30 p.m. Mon.-Fri. Closed Xmas., election days. MC, V.

Frontier, 2400 Central SE (265-0550). Well-known locally for its hot, homemade, buttered sweet rolls. Serves breakfasts, specialty burgers, sandwiches, and Mexican food. $1.10-$4. Open 7 a.m.-12 a.m. daily. Closed Xmas. & NYD.

García's of Scottsdale, 6301 Uptown Blvd. (884-7900). Mexican and American food. Try the chimichangas or the pollo fundido. Cocktails. $1.95-$9.25. Open 11 a.m.-10 p.m. Mon.-Thurs.; 11 a.m.-12 a.m. Fri. & Sat.; 12 p.m.-10 p.m. Sun. Closed Thkg., Xmas., NYD. MC, V, AE.

Garduño's, 8806 Fourth St. NW (898-2772) and 5400 Academy NE (821-3030). Mexican food. Comidas especiales include tacos grandes, chimichangas, and flautas de Chimayó. Live entertainment Fri., Sat., Sun. $3.50-$5.75. Fourth St. location open 11 a.m.-9:30 p.m., Mon.-Sat.; 11 a.m.-9 p.m., Sun. Academy location open 11 a.m.-10 p.m. Mon.-Thurs.; 11 a.m.-10:30 p.m. Fri. & Sat.; 11 a.m.-9 p.m. Sun. Closed Thkg., Xmas., NYD. MC, V.

Gyros Diner, 106 Cornell Dr. SE (898-2772). University area cafe specializing in Greek and Mediterranean dishes, including gyros, souvlaki, spanikopita, tiropita, baklava, hummus, falafel, and tabouli. $1-$4.25. Open 11 a.m.-8 p.m. Mon.-Fri.; 12 p.m.-5 p.m. Sat. Closed Thkg., Xmas., NYD.

High Finance, Sandía Peak (243-9742). Steak and seafood. Take tram to the top. Stunning view of city, day or night. Summer: open 9 a.m.-10 p.m. daily; winter: 9 a.m.-9 p.m. Mon.-Thurs.; 9 a.m.-10 p.m. Fri. & Sat. Open all holidays. MC, V, AE.

Holiday Inn Midtown, 2020 Menaul Blvd. NE (884-2511). Continental. Prime rib specialty. Daily luncheon buffets, and a seafood buffet on Fridays. Cocktails. Quiet, cozy atmosphere. $8-D. Open 6 a.m.-2 p.m.; 5 p.m.-10 p.m. daily. MC, V, AE, DC, CB.

Imperial House Dining Room, Classic Hotel, 6815 Menaul NE. (881-0000). Steak and seafood gourmet dining in elegant atmosphere. Tableside flambé. Cocktails. $3.75-$9.50-L; $10.50-$15.95-D. Open 11:30 a.m.-2 p.m., Mon.-Fri.; 6 p.m.-10 p.m. Sun.-Thurs.; 6 p.m.-11 p.m. Fri.-Sat. Call for holiday hours. MC, V, AE, DC, CB.

Ivory Chopsticks, 8510 Indian School Rd. (296-2593). Chinese, Szechuan, Mandarin, Cantonese, Dim Sum cuisine. Specialties include hot and sour soup, mu shu pork, beef Szechuan. $3.50-$17. Open 11:30 a.m.-10 p.m. Mon.-Thurs.; 11:30 a.m.-11 p.m., Fri. & Sat. 11 a.m.-9 p.m. Sun. Closed Xmas. MC, V.

Jade Garden, 1030 Candelaria NW (345-0002). Family restaurant specializing in Cantonese food. American entrees also served. Beer and wine. $2.75-$7.95. Open 11 a.m.-9 p.m. Mon.-Thurs.; 11 a.m.-10 p.m. Fri.; 12 p.m.-9:30 p.m. Sat. MC, V.

Japanese Kitchen Steak Houses, 2900 Coors Rd. (836-7100) and 12 Winrock Center (884-8937). Japanese cuisine, "Samurai chefs." Hibachi chicken, Sukiyaki steak, fresh shrimp. $3 and up-L; $7 and up-D. Open 11:30 a.m.-2:30 p.m. Mon.-Sat., at both locations; 5 p.m.-10 p.m. Sun.-Thurs.; 5 p.m.-11 p.m. Fri. & Sat. MC, V, AE, DC, CB.

Joseph's Table, 404 San Felipe NW, Old Town (242-1304). Light lunches, special dinners, festive desserts. Specializes in home-cooking, fresh-baked breads. Intimate dining. Dinner by reservation only, one day in advance. $2.75-$4.50-L; $8-$15 for full-course dinners. Open 12 p.m.-2 p.m. Tues.-Sat. Dinners from 8 p.m. Closed Xmas., Easter. MC, V.

King David's, 1611 Fourth NW (242-9661). Serves Mexican and American food. Hot and cold luncheon sandwiches. Breakfast special 99 cents; nothing more than $2.85. Local restaurant with loyal patrons. Open 6 a.m.-6 p.m. daily. Closed Xmas.

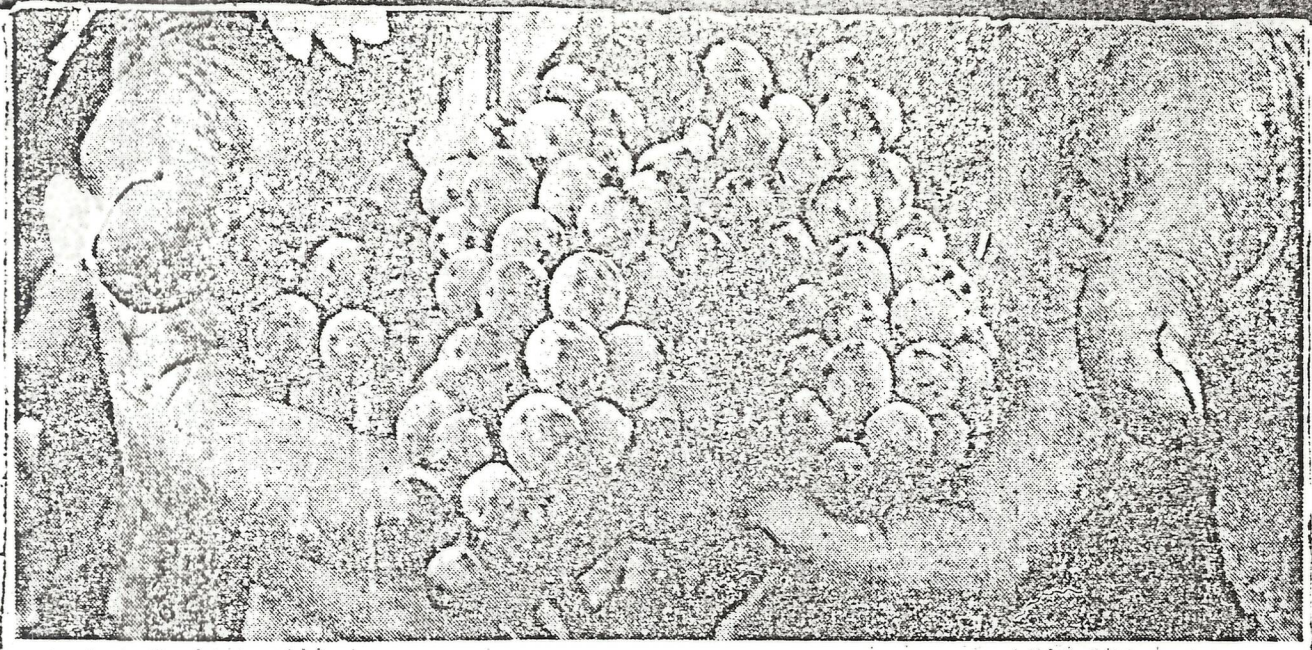
Koryo Chung, 1404 Eubank NE (293-4511). Specializes in Korean, Chinese, Szechuan food. Oriental music, candlelight, bamboo decor. Open 11:30 a.m.-9 p.m. Sun.-Thurs.; 11:30 a.m.-10 p.m. Fri. & Sat. Closed Xmas., NYD. MC, V.

La Crêpe Michel, 400 San Felipe NW, Old Town (243-4174). Small cozy restaurant serving French cuisine. Homemade dinner crêpes, quiches, soups, salads, fresh seafood. $4.25-$5.50-L; $3.95-$8.95-D. Open 12 p.m.-2 p.m. Tues.-Fri.; 6 p.m.-9:30 p.m. Tues.-Sat.; Sun brunch 12 p.m.-3 p.m.; Sun. dinner 6 p.m.-8 p.m. Closed Thkg., Xmas., NYD. MC, V.

La Esquina, First Plaza Galería, Second and Tijeras (242-3432). Southwestern food. Waterfall, patio dining. $4-$6. Open 11 a.m.-2:30 p.m. Mon.-Wed.; 5:30 p.m.-9 p.m. Fri. Closed Xmas., NYD. MC, V.

La Hacienda, 302 San Felipe NW, Old Town (242-4866). New Mexican and American food. Segovian guitarist in the summertime. $3-$5-L; $3.95-$9.95-D. Summer breakfasts served 8 a.m.-11 a.m. Open 6 p.m.-9 p.m. daily Closed Thkg., Xmas., NYD. MC, V, AE, DC.

SWWF-AGRICULTURE-GRAPES



GRAPES AGAIN MAKING AN IMPACT IN NEW MEXICO

The Sun May Be The Secret

EL PASO TIMES NOV. 9, 1975

Grapes Return To Mesilla Valley

By BARBARA KERR PAGE
Times Las Cruces Bureau

LAS CRUCES, N.M. — The fruit of the vine is returning to the Mesilla Valley.

Once a major industry in southern New Mexico before the 1920s and Prohibition, grape growing is "catching on again," according to Dona Ana County Agent Don Chappell.

Reasons for the renewed interest vary. Some agricultural observers have noted that the demand for both table grapes and wine has increased 20 per cent annually, according to one report.

Others have observed that processors have expressed interest in alternate, nonunion, lower-priced markets than those currently found in New York and California.

However, wary about any immediate impact the area might have on the grape or wine market — "California has 85 per cent of the country's market and is still producing more grapes than it needs" — Chappell sees instead the renewed interest as a more personal one.

"People are finding out that nothing is better under a hot sun than eating grapes. Grapes and pecans," said the county agent.

The grape growing revival—first observed here in the 1960s—has progressed much in recent years, according to Chappell, though it is still limited to small farms and area backyards.

In addition, local sales have particularly increased at the area's farmers' markets and roadside stands, he added.

Best known vineyard in the area is Tatreault Vineyard northwest of Mesilla. D. L. Powers in LFairacres raises Vines.

"It's not a big business yet," he observed, noting that a currently prohibitive financial investment would be needed to go into full production for either shipping grapes or bottling wine.

But, with or without large-scale business potential, grape growing in southern New Mexico can produce fruit that matches the quality and quantity of grapes grown anywhere else, local growers maintain.

During a recent meeting at the county extension office, the still juicy and tasty quality of late season grapes were noted among local growers and farmer Powers recently pointed out that he reaped up to 40 pounds of grapes per vine.

"It's the sun," Chappell said of the secret to the valley's high-quality fruit. "The more sun you have, the better the grape, the better the wine."

In addition to optimum sunlight in the Southwest, the basic soil aids in the development of a grape high in sugar and low in acid, it was observed. The basic soil particularly suits the growing of European varieties and hybrids for table grapes, wines and raisins.

Over 50 different grapes have been grown in the valley, although some of the favorities continue to be Thompson Seedless, Red Malaga, Concord, Zinfandel, Seneca, Muscat, the original Mission and Black Monukka grapes.

The seedless Black Monukka is a particular favorite of Chappell's who notes that the grape can be used as table grape, wine and raisin and that it is particularly tasty. "I'd like to see more of the grape grown here," he said.

Although planting and pruning can take place in winter, most work begins in early spring. Irrigation of vines can be by hosing or draping vines over irrigation ditches. "It takes no more water to grow grapes than it does to grow cotton," Chappell pointed out.

The future for the grape growing revival?

"Oh, more and more people will add grapes to their farms or yards. More people will think about making wines," Chappell observed.

New Mexico Wine 'Fit For A King'

Times Las Cruces Bureau

LAS CRUCES, N.M. — "In no other country in America," outlined a report sent to the King of Spain in 1978, "can wine be found with the taste and bouquet of the wine of New Mexico."

The wine praised by the report came principally from vineyards that spanned from present-day Juarez, Mexico, to the Mesilla Valley in southern New Mexico — and in the centuries to follow that grape-growing region became part of a lively agricultural history.

The origin and initial planting of grapes in the region remains unknown, although one early observer has suggested that the grapes were produced from the seeds of dried grapes

Mexico College of Agriculture and Mechanical Arts in Las Cruces planted its own experimental vineyard, featuring over 50 different grapes of primarily European varieties which were best suited to the area's basic soil.

Successful varieties and hybrids were transplanted to area vineyards and the mission-controlled wine and brandy industries continued. However, with the institution of Prohibition in 1920, the church reluctantly ordered the missions to plow up their grapes and plant cotton.

The missions' wine-making continued for a few years, though, into the 1920, according to one observer, with area residents lining up daily to pur-

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New Mexico Business Journal

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Las Cruces & Convention Guide

Financial Competition

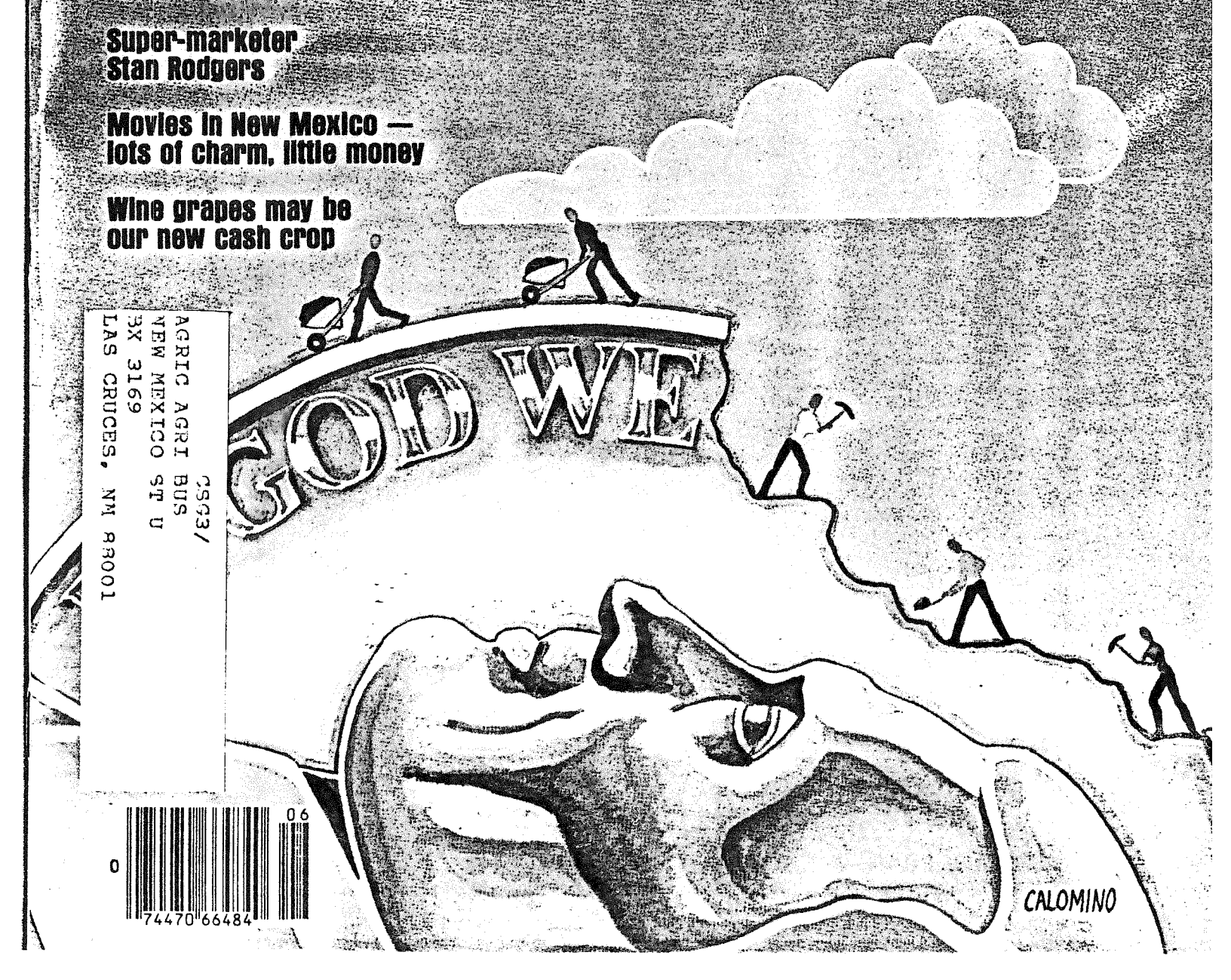
Chipping away for a piece of the action

Computers! Reprogramming the way we live and work

Super-marketer Stan Rodgers

Movies in New Mexico — lots of charm, little money

Wine grapes may be our new cash crop



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New Mexico Business journal

Financial competition

"Financial centers" forged by the forces of deregulation are beginning to resemble "financial centaurs" — mixed beasts with with characteristics of different branches of the industry. The changes are forcing financial managers in New Mexico to re-think their roles in the big picture and to brace for the coming battle for survival.

The cover design for the story is original artwork by Martin Calomino, a leading Albuquerque free-lance artist.

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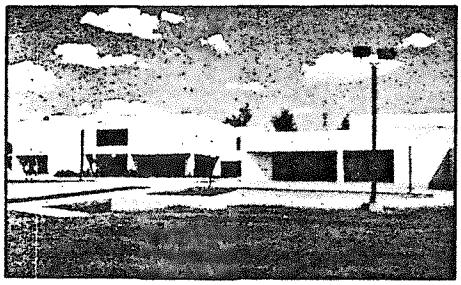

Convention guide

Our special section this year on New Mexico's meeting facilities provides meeting planners with the most comprehensive listing anywhere. For planners of huge events to small meetings — from in-state to beyond — the section is a must.

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Las Cruces business

While community leaders argue over whether Las Cruces should expect booming growth or the slow-and-steady kind, merchants worry about when the growth will catch up to the retailing development. As the second-largest city in the state, Las Cruces is still clearly over-merchandized, but businessmen are convinced "something" is going to happen. Perhaps...

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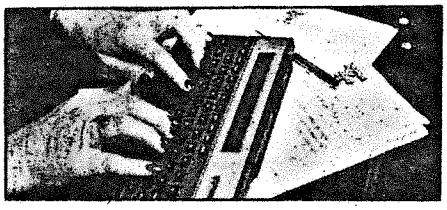

But does it compute?

Despite that the personal computer business should top $6 billion in sales in 1983, the word "computer" still conjures up visions of mammoth machines and men in white coats for some people. Market experts say the fears should be dispelled as quickly as possible, because the industry is not retreating. Projections for '85 call for sales to top $12 billion.

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Roll 'em!

Though the movie-making business adds great glamour to New Mexico, the financial benefits have not been as rewarding as they have been in other states. Out-of-state producers have brought in much of their talent, rather than looking for it here. But that may be changing with a new support crew and some altered direction.

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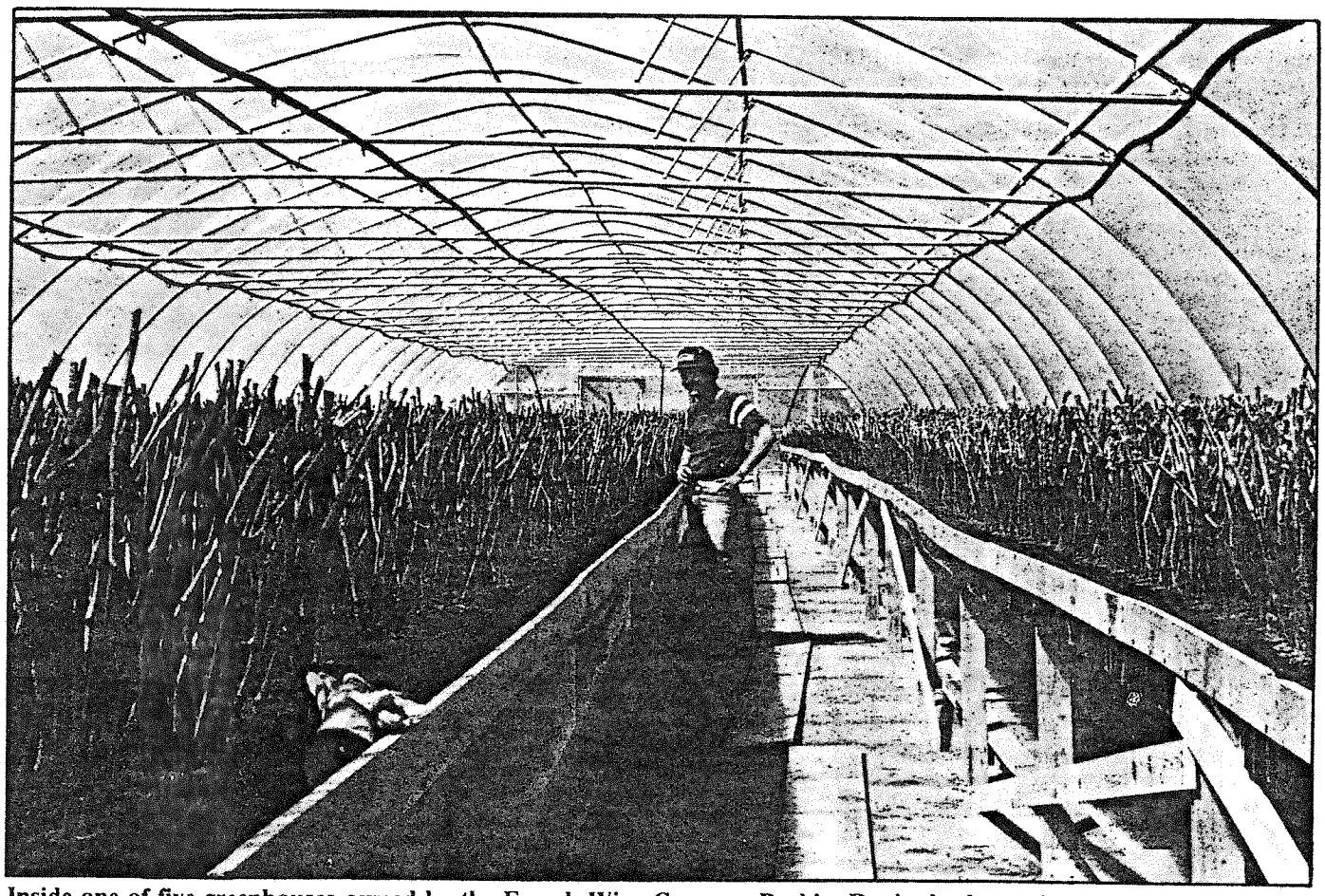


Inside one of five greenhouses owned by the French Wine Growers, Barbier Denis checks cuttings being rooted.

'It has yet to be proven that wine made from grapes grown here can be of the same quality as fine California wines.' —Lynn Rosingana

Grapes becoming new cash crop for New Mexico

By RENEE RUBIN

Most people associate wine with lush vineyards in France, California or New York, but New Mexico was also once a leading wine producer and may well be on its way to regaining that status.

Commercial grapevines will wind their way across about 1,000 acres of New Mexico land by this summer, and viticulturists intend to plant an additional 10,000 acres in the next decade. Seven wineries in the state currently ferment and market wine commercially. That number will at least double in the next five years if current plans bear fruit.

But that may be a big "if."

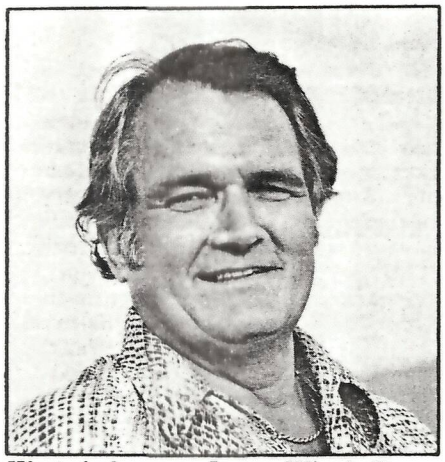
"It is hard to know what types of grapes to grow here," said Lynn Rosingana, one of the founding partners of Stoney Ridge Winery in California and now a resident of Santa Fe. "In California you know what you can grow and the quality of wine you can expect. There is a lot more pioneering here."

Rosingana, who produced two gold medal vintages in California, said, "It has yet to be proven that wine made from grapes grown here can be of the same quality as fine California wines." It may take a long time to find out, too, he added.

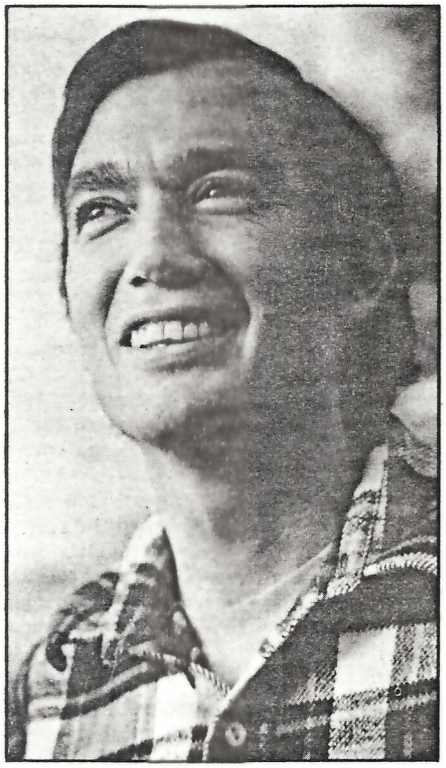
Vines take three years to begin producing and at least seven years to reach maximum yield. From the time the grapes are harvested to the time the wine is sold is usually at least one more year and sometimes much longer.

In the meantime, the winemakers have a great deal of money tied up in their vineyards and wineries. Viticulturists estimate costs of between $2,500 and $5,000 for each acre to establish a vineyard after the land has been purchased. An additional $1,000 a year is needed to prune and train each acre of vines before the first harvest.

The state's wine operations vary from Dan Estrada's two-acre "grapery" in Mesilla to the French Wine Growers Assocation's proposed 8,000-acre business five miles east of Elephant Butte Reservoir. While Clarence Gailord, president of the New Mexico Vine and Wine Society, plans to produce about 5,000 gallons of wine annually by 1984, the French Wine Growers Association intends to ferment at least 24 million bottles a year when all 8,000 acres come into full production.



Westwind owner James Winchell



Tony Lusk-Claiborne

Although New Mexico was rated as the fifth largest producer of wines in the nation in the 1880s, the industry declined in the 20th century due to increasing labor costs, low demand, competition from other crops such as cotton, and prohibition.

But New Mexico's wine business is again booming.

"There is a real renaissance in the grape industry in this state," said Michael Johnson, co-owner of La Chiripada in Dixon, N.M.

New Mexico's wine industry revival stems primarily from a nationwide increase in wine consumption. John Sichler, who has planted 225 acres of grapes in the Belen area, says average wine consumption has doubled nationally in the last 10 years and has grown from about two gallons to four-and-a-half gallons per person annually.

Mary Beth Nelson, interpreter and liaison officer for Jean Zanchi and Son Ltd., one of the primary members of the French Wine Growers Association, says the group "feels Americans are just getting into the habit of having wine with dinner, and consumption will increase markedly."

Labor availability and relatively low land prices in New Mexico have attracted investors, including some Europeans escaping political and economic problems abroad. The Luna County Wine Development Corp., one and a half miles south of Deming, paid $1,800 per acre for irrigated land. By comparison, California real estate sells for between $20,000 and $40,000 an acre, according to Glenn Binns, co-owner of Binns Vinery and Winery in Las Cruces.

Las Cruces has become something of a hotbed of wine activity. Besides increasing interest at New Mexico State University in grapes as a new cash crop, several residents are actively working on commercial developments.

George Newman, president of the Las Cruces chapter of Vines and Wines and vice president of the same organization on the state level, said his local group included about 30 members—most of them not involved in commercial operations. Many of them, though, like Newman, are just getting started with experimental vineyards to see which varieties will grow best and produce the best wine.

After a season's experiment on a half acre, Newman says his hopes are riding on a semillon grape, which produces a notable sauterne, he said. The state and specifically the Mesilla Valley have good chances of producing a wine "distinct to the region," he said.

His group is actively seeking an appellation controlle designation from the Bureau of Alcohol, Tobacco and Firearms. That effort should be significantly aided by the university's burgeoning interest in the industry, he said. Agriculture experts are recognizing that the state needs a "crop less water intensive than cotton and alfalfa. That's grapes," Newman said.

Grapes can successfully be grown on sandy soil, hillsides and small acreages that have little other agricultural value.

The soil and climate in West Texas and New Mexico favor grape growing. Charles McKinney, spokesman for the University of Texas' experimental vineyard in West Texas, says grapes have been the most successful of their experimental crops.

"Grapes prefer a warm and dry growing season. Warm days and cool nights also favor grapes," said Tony Lusk-Claiborne, who has operated Rico's Winery in Albuquerque since 1976. Rot and fungal diseases are minimized by the dry climate.

New Mexico's weather also can be a detriment. A cold snap after a warm spell in spring can cause moisture in the vine to freeze and the plant to break. Cold winters cause some varieties to die back to the ground, and sudden summer thunderstorms can damage plants.

Supplying water to the grapes also can be problematic—and at best, expensive. The French Wine Growers Association has purchased water rights for up to 16,000 acre feet of water a year from Albuquerque. The water has to be pumped four miles from Elephant Butte Reservoir to the vineyard's reservoir and then through almost 19 miles of distribution system to drip irrigate the vines. The association estimates the water system alone will cost $5 million to construct.

Lyle Talbot, who has a 16-acre vineyard at the base of the Sandia Mountains, says he has significantly reduced his costs with modern techniques. An automatic drip system replaced flood irrigation, allowing him to produce the same amount of grapes per acre with 22 percent of the water, less labor and few weeds. He injects enzymes, fertilizers and iron into his water system as needed, further reducing labor expenses. Although Talbot's vineyard is a money-making proposition, he estimates it would take 40 to 50 acres of grapes to make a living solely from a vinery.

While Talbot concentrates his efforts on grape growing, Lusk-Claiborne focuses his attention on the winemaking process. Lusk-Claiborne started Rico's with $5,000 in 1976, he said. He leased the building and bought all his grapes from other New Mexico farmers. He admits, though, that the 4,000-gallon operation was too small to completely support him and his family. He and Jim and Ruth Winchell now almost have completed a new Bernalillo winery, Westwind, which will have a 30,000-gallon capacity.

A new winery costs about $10 for each gallon of capacity, the experts say. A 100,000-gallon-capacity winery, for instance, would cost about $1 million to construct and equip.

New Mexico vineyards and wineries are financed privately for the most part. However, the Johnsons in Dixon were able to get a bank loan for their bottling operation. Sichler and Don Spiers near Belen received Federal Land Bank loans for the vineyards, and both the Belen and Truth or Consequences businesses are seeking industrial revenue bonds to help pay for initial costs.

They feel the return in the end will make it worthwhile. Sichler, a longtime Rio Grande Valley farmer, says grapes produce the best net income per acre of "any New Mexico crop I can think of." Lusk-Claiborne estimates a well run winery will return from 15 to 20 percent on an investment in the long term. The French Wine Growers Association believes it will net $1 on every bottle of wine it sells.

To achieve these goals, the wineries will have to successfully market their product, and that may be the most difficult aspect of operating in New Mexico.

Please see WINE, P. 76

Wine

From P. 75

"We are the new kids on the block," said McKinney, recalling that it took California wines a long time to gain respect. Luna County Wine Development Corp., which plans to begin construction on a 3-million-liter-capacity winery in 1984, will market its wines widely and will have to compete against California, French and other better known wines.

However, smaller producers, such as Chiavario Vineyards north of Belen and Viña Madre south of Roswell, sell all their wine directly from the winery. Others such as La Viña in Chamberino and Rico's in Albuquerque retail wine at the winery and to regional wholesalers in New Mexico and Texas.

List of wineries to visit in state, Page 78

Binns and other producers who are just getting started hope to develop their market by producing a wine that goes well with green chile and Southwestern food. "Wine should complement the local cuisine," Binns said.

New Mexico vintners do not view each other as foes. "Through healthy competition, New Mexico wineries will develop wines capable of putting this state on the map of wine lovers everywhere," said Roy Bowers of Luna County Wine Development Corp.

Forecasts for New Mexico's future in the wine industry vary. Lusk-Claiborne believes New Mexico may someday rival Washington state, which produces quality wine but in less quantity than New York or California.

Clarence Cooper, owner of La Viña in Chamberino, speaks with less optimism. California has produced a surplus of grapes this year, and the wineries there have wine flowing over in all their reserve tanks, he said.

Fortunately, people enter the wine business for more reasons than money. Talbot says growing grapes is "one of the happiest avocations anyone could have." Johnson calls winemaking a "fine art." Lusk-Claiborne prides himself on making a "hand-crafted" item.

If all else fails, winemakers can always sit back and sip a glass of their product.

Renee Rubin, a former newspaper reporter and information specialist with New Mexico Tech, is a free-lance writer in Truth or Consequences. **BJ**

New Mexico wineries you can visit

Binns Vinery and Winery
3910 W. Picacho
(one-quarter mile west of the Rio Grande)
Las Cruces, N.M.

Owners Glenn and Eddie Binns began producing wine in the Las Cruces winery last year but plan to wait until this fall to begin selling it. They intend to sell a Chablis, Burgundy and generic Rhine wine at first.

Estrada Winery
West University Ave.
Mesilla, N.M.

This historic winery dates back to territorial times. Continuing an old family tradition, Dan Estrada makes red wine from mission grapes. The winery is located next to the Estrada home, and customers may purchase wine whenever someone is home.

Chiavario Vineyards and Winery
Highway 85
Two miles north of Belen, N.M.

Richard Chiavario began making wine commercially last fall and plans to begin sales early this summer. He will be open on Friday and Saturday and will sell a dry red table wine and dry white table wine.

La Chiripada
State Highway 68
Near Dixon, 25 miles north of Española, N.M.

A wine tasting room is included at La Chiripada, Spanish for "a stroke of luck." Michael and Patrick Johnson produce several varieties including Blanc de Blancs, Rieslings, Baco Noir, Chancellor and Leon Millot. The winery is open from 10 a.m. to 5 p.m., Monday through Saturday.

La Viña
One mile south of Chamberino, N.M.
(between Las Cruces and El Paso)
One-half mile west of State Highway 28

Clarence Cooper has been producing wine in his Chamberino winery since 1977. Cooper gives tours of his facilities and provides samples of his wine, which includes Barbera, Ruby Cabernet, French Colombard and White Riesling. The winery is open from 9 a.m. to 5 p.m., Friday and Saturday.

Viña Madre
State Highway 2
13 miles south of Roswell, N.M.

James and Lillian Hinkle began their winery on the east side of the state three years ago. They specialize in Cabernet Sauvignon, Zinfandel, Ruby Cabernet, Riesling and Gamay. The winery is open on weekends or by appointment.

Westwind
State Highway 44
West of Bernalillo, N.M.
(One-quarter mile west of the Rio Grande)

James and Ruth Winchell expect to complete Westwind in June. Tony Lusk-Claiborne (formerly of Rico's) will serve as their general manager, viticulturist and enologist. The winery will offer Rio Grande Rojo, El Viejo, Baco Noir and Lincoln County White, among others. A tasting room overlooking the Sandia Mountains will be included. Hours are still to be determined. **BJ**

OFFICE OF STATE CLIMATOLOGIST

NEW MEXICO DEPARTMENT OF AGRICULTURE
Box 5702/Las Cruces, New Mexico 88003
Telephone (505) 646-2642

September 15, 1983

Mr. Ed Reisman, ATF Specialist
Bureau of Alcohol, Tobacco and Firearms
1200 Pennsylvania Ave. N.W.
Washington, D.C. 20226

Dear Mr. Reisman:

This is in response to your letter to Mr. George Newman, president of the Las Cruces Chapter of the New Mexico Wine & Vine Society, dated August 19, 1983 regarding the need for additional climatic information in order to establish an appellation of origin for the Mesilla Valley. Although the temperatures in the higher elevations in the Mesilla Valley (above 4,200 feet) have not been regularly recorded, some generalizations about temperature patterns in these areas can be made based on the general temperature patterns associated with mountain-valley topography.

Mean maximum temperatures will depend almost entirely on elevation. However, nighttime minimum temperatures will depend not only on elevation but also on the local topography. In general, the valley will tend to have minimum temperatures as much as 5-10° cooler than the surrounding mesa regions. However, locations in or near an arroyo in the mesa region may have temperatures as cool or cooler than the valley. As a result, growing season length and growing degree days may vary substantially over fairly short distances.

When weather data recorded at the State University national weather service (N.W.S.) station in the Mesilla Valley is compared with weather data from the Hatch, Deming and the Jornada Experimental Range N.W.S. stations and from White Sands Missle Range, differences between the Mesilla Valley and the surrounding areas become evident (see figure 1 and table 1). To the north of the Mesilla Valley in Hatch, temperature fluctuations between daily maximums and daily minimums are wider. There are fewer heating degree-days (4,317 degree-days in Hatch versus 4,553 degree-days at State University). The growing season in Hatch is only 187 days while at State University there are 198 days. Precipitation at Hatch is slightly greater, averaging 16 percent more than at State University.

To the west of the Mesilla Valley at the Deming station where the elevation is about 4,330 feet above sea level, there are slightly fewer degree-days (4,541 days) and the growing season is, on the average, one week shorter.

To the northeast of the Mesilla Valley at the Jornada Experimental Range station daily minimum temperatures are lower than at State University. At the Jornada Experimental Range station, there are on average 138 days per year when the temperature falls below 32°F and 1 day per year when the temperature falls below 0°F. At the State University station there are only 104 days per year when the temperature falls below 32°F and only 1 day in 10 years when the temperature falls below 0°F.

To the east of the Mesilla Valley at the headquarters of White Sands Missle Range, which is located on the mesa above the valley floor, minimum temperatures average 5-10°F warmer throughout the year. This results in a longer growing season and more degree days.

Sincerely,

Kenneth Kunkel

Kenneth Kunkel
State Climatologist

bh

Enclosures

xc: Gail Welsh
George Newman

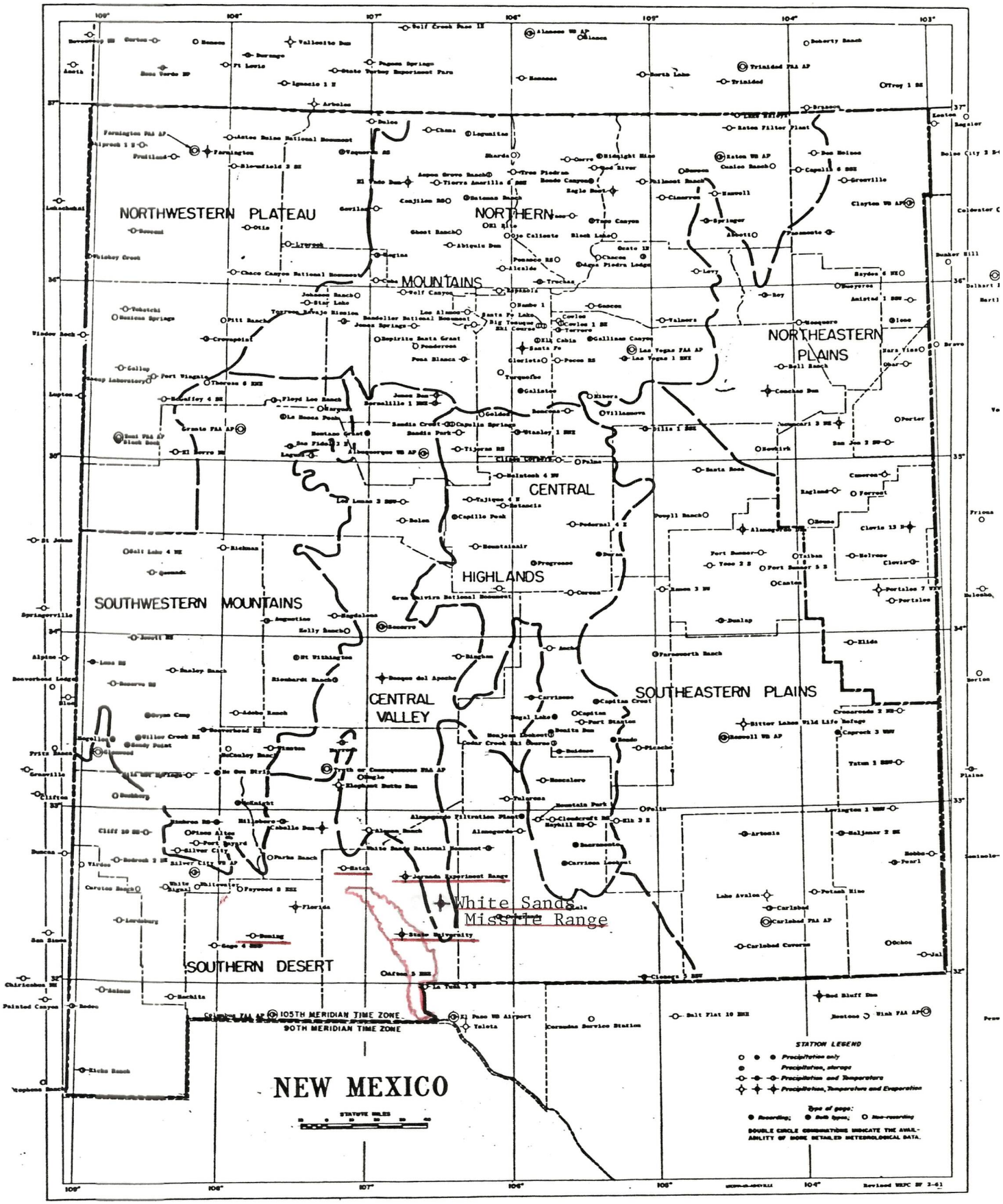


Figure 1. National Weather Service stations in New Mexico.

Table 1. Comparative summary of temperature and precipitation in the Mesilla Valley, New Mexico and surrounding areas based on climatic data collected at the State University, Hatch, Deming and Joranada Experimental Range substations of the National Weather Service

	Month												
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
I. Temperature Data:													
A. State University (Mesilla Valley)													
Means (°F)													
Daily Maximum	58.4	62.9	69.3	77.8	85.7	94.6	94.6	92.1	87.1	78.5	66.4	58.6	77.2
Daily Minimum	26.5	29.5	34.9	42.3	50.0	60.0	66.2	63.7	56.4	44.0	32.5	26.7	44.4
Monthly[1]	42.5	46.2	52.1	60.1	67.9	77.3	80.4	77.9	71.8	61.3	49.4	42.7	60.8
Degree-Days[1]	0	0	65	303	555	819	942	865	654	350	0	0	4,553
Average Growing Season[2] (days)													198
B. Hatch													
Means (°F)													
Daily Maximum	58.6	63.4	69.4	77.9	86.1	95.2	95.4	92.6	87.7	79.2	67.2	58.8	77.6
Daily Minimum	23.0	26.4	32.9	40.8	48.1	57.1	63.5	61.2	53.7	40.9	29.7	23.0	41.7
Monthly[1]	40.8	44.9	51.2	59.4	67.1	76.2	79.5	76.9	70.7	60.1	48.5	40.9	59.7
Degree-Days[1]	0	0	37	282	530	786	914	834	621	313	0	0	4,317
Average Growing Season[2] (days)													187
C. Deming													
Means (°F)													
Monthly[1]	40.9	45.3	50.4	59.2	67.8	77.1	80.7	78.8	72.6	61.8	49.6	41.9	60.5
Degree-Days[1]	0	0	12	276	552	813	952	893	678	365	0	0	4,541
Average Growing Season[2] (days)													191
D. Joranada Experimental Range													
Means (°F)													
Daily Maximum	57.7	61.9	68.8	77.3	85.6	95.4	96.2	93.2	87.8	78.5	66.3	57.6	77.2
Daily Minimum	20.5	23.6	29.2	36.8	44.6	55.2	62.0	59.7	52.4	39.6	27.3	20.6	39.3
Monthly[1]	39.1	42.8	49.0	57.1	65.2	75.3	79.1	76.5	70.1	59.1	46.8	39.1	58.3
Degree-Days[1]	0	0	0	213	471	759	902	822	603	282	0	0	4,052
Average Growing Season[2] (days)													169
E. White Sands Missle Range													
Means (°F)													
Daily Maximum	56.6	60.0	65.9	75.4	84.3	92.8	93.3	91.1	86.1	76.4	64.0	56.5	75.2
Daily Minimum	34.6	37.6	43.3	52.4	60.5	69.0	70.5	68.8	63.3	53.2	41.3	34.6	52.4
Monthly[1]	45.5	48.8	54.6	63.9	72.4	80.9	81.9	80.0	74.7	64.8	52.6	45.6	63.8
Degree-Days[1]	0	0	143	417	694	927	989	930	741	459	78	0	5,378
Average Growing Season[2] (days)													N/A

Table 1. (cont'd.)

	Month												
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
II. Minimum Temperatures													
A. State University (Mesilla Valley)													
Average Number of Days/Month													
Below: 32°F	25.0	18.9	12.8	3.0	0.3	0.0	0.0	0.0	0.0	2.1	17.1	24.9	104.1
10°F	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.6	2.0
0°F	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
B. Hatch													
Average Number of Days/Month													
Below: 32°F	27.2	21.8	15.1	3.9	0.3	0.0	0.0	0.0	0.0	3.7	20.7	27.1	119.8
10°F	1.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.2	3.3
0°F	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
C. Deming													
Average Number of Days/Month													
Below: 32°F	25.4	20.0	13.1	3.7	0.4	0.0	0.0	0.0	0.0	1.5	15.8	25.3	105.2
10°F	1.4	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.7	2.8
0°F	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D. Joranada Experimental Range													
Average Number of Days/Month													
Below: 32°F	27.1	22.2	20.2	9.9	1.9	0.0	0.0	0.0	0.1	6.8	22.0	27.6	137.8
10°F	4.5	2.4	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	4.1	12.8
0°F	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	1.2
E. White Sands Missle Range													
(information not available)													

Table 1. (cont'd.)

	Month												
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
III. Total Average Monthly Precipitation (inches)													
A. State University (Mesilla Valley)	.39	.45	.30	.14	.24	.63	1.50	1.84	1.15	0.83	.40	.44	8.31
B. Hatch	.43	.35	.27	.19	.27	.50	1.94	2.23	1.39	1.09	.38	.54	9.58
C. Deming	.47	.42	.34	.22	.12	.34	2.00	1.78	1.37	0.61	.33	.56	8.56
D. Joranada Experimental Range	.44	.34	.30	.17	.26	.49	1.81	1.96	1.30	0.94	.43	.53	8.97
E. White Sands Missle Range	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10.79

[1]Degree-days for a month are calculated by subtracting 50°F from the mean monthly temperature and multiplying that figure by the number of days in that month.

[2]The average growing season measures the average frost free period annually when the temperature does not fall below 32°F.

Source: Data used for calculating the figures in this table is from the following U.S. Weather Bureau substations, State University (1891-1982, lat. N32°17' long. W106°45', elev. 3881 ft.), Hatch 2 W (1948-1981, lat. N32°40' long. W107°11', elev. 4052 ft.), Deming (1948-1973 lat. N32°16' long. W107°46', elev. 4332 ft.), and Joranada Exp. Range (1953-1981 lat. N32°37' long. W106°44', elev. 4275 ft.); and the U.S. military weather station at White Sands Missle Range (1950-1974, lat. 32°227' long. 106°28.8', elev. 4238 ft.).

COLLEGE OF AGRICULTURE AND HOME ECONOMICS

DEPARTMENT OF AGRICULTURAL ECONOMICS
AND AGRICULTURAL BUSINESS
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Telephone (505) 646-3215

NEW MEXICO STATE UNIVERSITY

September 20, 1983

Mr. Ed Reisman, ATF Specialist
Bureau of Alcohol, Tobacco and Firearms
1200 Pennsylvania Ave. N.W.
Washington, D.C. 20226

Dear Mr. Reisman:

This is in response to your letter to Mr. George Newman, dated August 19, 1983, regarding the need for additional information to support the petition for the establishment of an American viticultural area to be known as "Mesilla Valley."

Based on survey work conducted in the Department of Agricultural Economics and Agricultural Business and information collected from the Las Cruces Chapter of the New Mexico Wine and Vine Society, a complete list of all the names and addresses of grape growers with twenty or more vines in the Mesilla Valley was assembled (see "International Boundary and Water Commission, U.S. and Mexico, El Paso Rio Grande Projects" map for the names and locations of these growers). The proposed boundaries of the Mesilla Valley viticultural area were then drawn so as to include all of the major wine grape growers.

Since irrigation water is available from the Rio Grande River, most of the prime farmland follows the river. The viticultural area within the Mesilla Valley also follows the river. Presently, there are no wine grape growers at the higher elevations (above 4,200 feet above sea level). At these higher elevations, water must be pumped from wells to irrigate land. This can be both unreliable and an expensive method for irrigation.

Sincerely yours,

William D. Gorman
Professor

11d

xc: Gail Welsh
George Newman

COLLEGE OF AGRICULTURE AND HOME ECONOMICS

DEPARTMENT OF AGRICULTURAL ECONOMICS
AND AGRICULTURAL BUSINESS
Box 3169/Las Cruces, New Mexico 88003-3169
Telephone (505) 646-3215

September 20, 1983

Mr. Ed Reisman, ATF Specialist
Bureau of Alcohol, Tobacco and Firearms
1200 Pennsylvania Ave. N.W.
Washington, D.C. 20226

Dear Mr. Reisman:

This is in response to your letter to Mr. George Newman, dated August 19, 1983, regarding the need for additional information in order to establish an appellation of origin for the Mesilla Valley. In addition to the original petition, the following information is also being submitted:

1) Newspaper and magazine articles.

   Henzl, Michael. "Mesilla Valley Vintner," New Mexico Magazine, March 1982.

   Nolf, David. "New Mexico's Grape Expectations," New Mexico Magazine, May 1983.

   Page, Barbara K. "Grapes Return to the Mesilla Valley," El Paso Times, Nov. 9, 1975.

   Rubin, Renee. "Grapes Becoming New Cash Crop for New Mexico," New Mexico Business Journal, June 1983.

2) A photocopy of an historical map of present day New Mexico and surrounding areas drawn by Captain R. B. Marcy of the 5th U.S. Infantry based on exploration in this area from 1849-1852. The area known as the "Mesilla Valley" is circled in red.

3) A general soils map of Dona Ana County, New Mexico. An approximate outline of the Mesilla Valley viticultural area is shown in red. Please note that the soil associations within the Mesilla Valley viticultural area are predominantly from groups 1 Grendale-Harkey, 2 Bluepoint, and 3 Caliza-Bluepoint-Yturbide; while the soils in the surrounding area predominantly belong to groups 4-13.

4) A letter from the state climatologist distinguishing weather conditions in the Mesilla Valley viticultural area from weather conditions in the surrounding areas.

5) A narrative description of the boundaries proposed for the viticultural area.

6) A letter elaborating on the Mesilla Valley viticultural area from Dr. William D. Gorman.

If you have any questions, please feel free to contact me at (505) 646-5315.

Sincerely yours,

Gail A. Welsh

Gail A. Welsh
Research Specialist I

11d

xc: George Newman

COLLEGE OF AGRICULTURE AND HOME ECONOMICS

DEPARTMENT OF AGRICULTURAL ECONOMICS
AND AGRICULTURAL BUSINESS
Box 3169/Las Cruces, New Mexico 88003-3169
Telephone (505) 646-3215

October 27, 1983

Mr. Ed Reisman, ATF Specialist
Bureau of Alcohol, Tobacco and Firearms
1200 Pennsylvania Ave. N.W.
Washington, D.C. 20226

Dear Mr. Reisman:

This is in response to your request for information concerning the major vinifera and the extent of viticulture in the Mesilla Valley as per your conversation With George Newman. The following is a list of the major wine grape varieties grown in the Mesilla Valley:

French Columbard
Cabernet Savignon
Zinfandel
Chenin Blanc
Pinot Chardonney

In addition, the following varieties are also commonly grown in the Mesilla Valley:

Mission
White Riesling
Grenache

Presently, there are over 40 acres of grapes planted in the Mesilla Valley. During the next two years the number of acres planted in grapes is expected to double.

If I can be of any further assistance to you please contact me at (505) 646-5315 or you may write to me at Box 3169/Dept. of Agricultural Economics and Agricultural Business/New Mexico State University/ Las Cruces, NM 88003.

Sincerely,

Gail A. Welsh

Gail A. Welsh
Research Specialist I

xc: George Newman

COLLEGE OF AGRICULTURE AND HOME ECONOMICS

DEPARTMENT OF AGRICULTURAL ECONOMICS
AND AGRICULTURAL BUSINESS
Box 3169/Las Cruces, New Mexico 88003
Telephone (505) 646-3215

November 30, 1983

Mr. Ed Reisman
ATF Specialist
FAA, Wine and Beer Branch
Bureau of Alcohol, Tobacco and Firearms
1200 Pennsylvania Ave., N. W.
Washington, D.C. 20226

Dear Ed:

I am enclosing a copy of an article which appeared in the November, 1983 issue of Wines & Vines. This article deals with the expanding wine industry in southern New Mexico. I hope it is of some help to you.

Sincerely,

Gail A. Welsh

Gail A. Welsh
Research Specialist I

Enclosure
xc: Dorene Brown
George Newman

Europeans put their money on New Mexico

The desert sprouts winegrapes

ROGER LARSEN

The arid high plains of southern New Mexico seem an unlikely place for wine vineyards. Even less likely is the accent of Frenchmen and Italians outlining their planting projections, winery capacity and marketing approach for grapes grown on what yesterday was desert.

European wine investors have descended upon New Mexico. Don't confuse these new developments with the five and ten-acre vineyards for which New Mexico is typically known. Thousands of acres are planned.

Larger winegrowing states needn't worry; but it is clear that these people who now hold only temporary visas are experienced professionals. They mean business. And, for a state ranking 43rd in per capita income, the infusion of lire and francs is welcome.

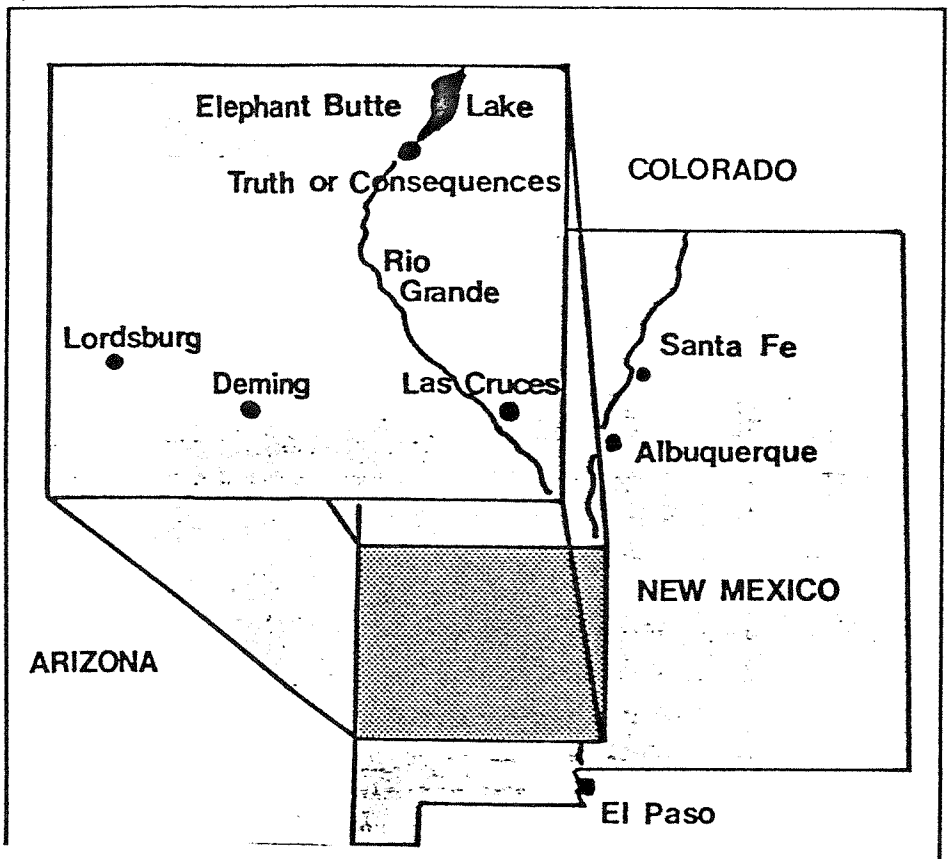
Truth or Consequences or water

Swiss grape broker Jean Saliot is a key figure. He has helped develop vineyards all over the world and now turns his attention to what he feels is the potentially explosive U.S. market. Fifteen miles east of Truth or Consequences, a town of 5,219, Saliot found land that suited him: virgin loam, an altitude of 4,000 feet and 219 frost-free days per year. Truth or Consequences' previous and only claim to fame has been being named after the old Ralph Edwards television game program.

The big question is water: where does it come from? The answer is Albuquerque, the envy of several southwestern cities because of its water surplus. The city of 400,000 uses underground water exclusively; but, in the early 1960s, city fathers had the vision to purchase surface water rights to the Rio Grande coming down from Colorado. That water now accumulates in northern New Mexico dams at the rate of 48,000 acre feet per year.

Saliot's complicated water contract negotiations preceded Albuquerque City Council approval to sell him 400 acre feet. In a couple of years, that figure will grow to 1,600 acre feet annually for between $41 and $42 per acre foot. You might say Saliot is doing Albuquerque a favor by purchasing its water. Because if the city doesn't actually use the water it could lose the future rights to it.

Instead, everybody wins. The growers can irrigate the desert. Albuquerque keeps its surface water rights, and uses its new-found lease revenue to purchase additional permanent water rights from local farmers. Those rights often are leased back until the city needs them.



With the water purchase arranged, and with federal Bureau of Reclamation permission to take water from Elephant Butte Lake near Truth or Consequences after Albuquerque has sent it down the Rio Grande, the time came to buy land.

It lacks french bread . . . but there's great potential

Saliot's Corcovado Corp. purchased 21,000 acres of a mammoth 400,000-acre ranch owned by Oppenheimer Industries of Kansas City. Enter: Jean Zanchi, from Lausanne, Switzerland. One of western Europe's major wine importers/exporters, Zanchi recently sold wineries in Spain, Italy and Switzerland. He held onto only one, in Germany. Zanchi agrees with Saliot's opinion that success requires a large operation in the U.S. He joined the ad hoc French Wine Grower's Association in Truth or Consequences and purchased 8,000 acres. A dozen other French-Swiss investors have since purchased 5,000 acres of Saliot's land.

Jean Zanchi and Son Ltd. set up offices in Truth or Consequences. While Zanchi's son Tony longs for french bread, he shares his father's commitment and points to the tremendous per capita wine consumption difference between the U.S. and Europe.

Plans are to experiment with several varieties, and bringing the main products – Cabernet Sauvignon and Chardonnay – to market in only three years if all goes well. Vines will be machine-harvested and drip-irrigated. Sixteen and one-half miles of pipeline bring water from Elephant Butte Lake east to the vineyard. A 20-million-bottle winery is to be completed by the end of 1984. A formal opening of their greenhouses was held this past July 9. Wooed by public relations representatives and impressed by the size of the operation, New Mexico Governor Toney Anaya and Congressman Joe Skeen were guests.

Zanchi looked around before deciding to buy. He found land in other areas too expensive or it didn't suit his taste. California was basically ruled out from the beginning because of its expensive land. Zanchi also felt that, in starting from scratch, it would take much too long to penetrate the California market. After selecting and purchasing a parcel near Truth or Consequences, the Zanchis planted 20 acres of grapes in 1981, 700 vines per acre. Now 285 are planted and that is to skyrocket to 8,000 acres in just a few years. If all goes without a hitch, they'll exercise their option on another 8,000-acre parcel.

"Why not *here*? Why *not* here?"

Just east of Lordsburg (pop. 3,195) in the extreme southwestern sector of the state, former members of Saliot's French Wine Grower's Association splintered off in an in-

Wines & Vines -- Volume 64, Number 11 November, 1983

dependent operation. Herve Lescombes, his brother Jean Paul, nephew Pierre Hernandez and Gerard Rottiers formed San Andres Corporation.

Lescombes came to the United States in 1980; Rottiers a year later. Both had produced wine near Chablis, France. Rottiers points to the strict control the French government exercises on grape growing as one reason for coming to the U.S. Authorization to plant grapes in France has to be made a year in advance. "This year," he said "we planted 210 acres and we didn't ask anybody. In Burgundy, for example, they don't allow you to plant the amount you want to plant. They'll allow you a little more than one extra acre per year. You've got other problems: political, taxes and unions." Lescombes added, "In France, you can grow 10 pounds of grapes per vine, as in California. But in France, you can take only two or three pounds from the vine. The rest is left in the field. You don't ask why. You just do what the French say." Adding insult to injury, the current socialist government in France is making it difficult for Frenchmen to take money out of the country. Lescombes says the maximum is $300 per person per year. Those who wish to leave must employ creative ways of taking their capital with them.

"People in New Mexico are marvelous"

San Andres was scheduled to build a small winery for this year's 10,000 to 15,000-bottle vintage, all to be sold in New Mexico. A 200-acre planting is scheduled next year: Chenin Blanc, Colombard, Zinfandel and mostly Chardonnay (of which they already have almost 100 acres). There are no plans to limit the size of the operation; expansion will depend on sales. San Andres hopes to market worldwide eventually. "In France," noted Rottiers, "we used to ship wine all around the world. We came here to plant vineyards, to make some wine, and to make some money." Lescombes hopes to go to France to finalize distribution through his former contacts. They would see to distributing San Andres wine in Europe.

On the U.S. front, Rottier said, "We cannot get into competition with wineries that have been around a long time. What we need to do is make some good wine. That is possible to do here, we know it. We can make high quality wine, but the market is more open to a good middle quality wine than the real top-top-top quality wine. I have found some really good quality wine in California. So, why not *here*? Why *not* here?"

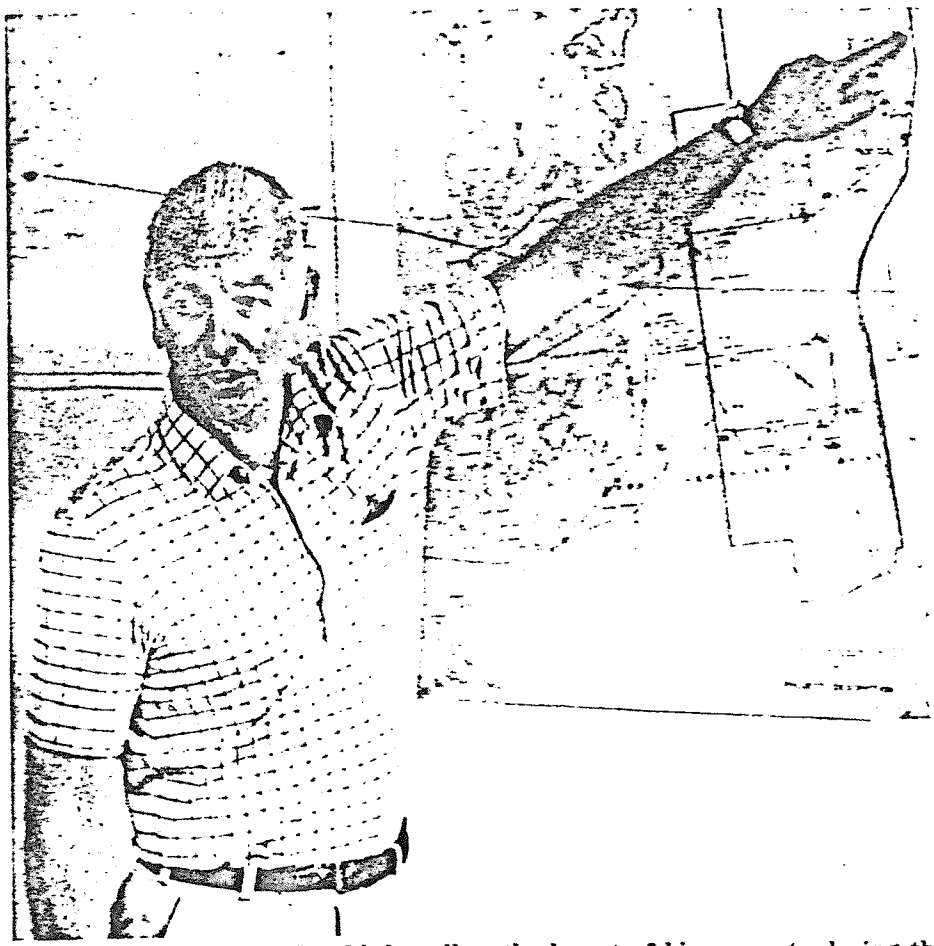
Rottiers confessed he did not find the wine to be good in France when he returned in February. "I was surprised. I no longer have the mouth for French Chablis. It's too hard, too dry. I was with a friend who also remarked on it; he hates to drink sulfur and acidity. Here, you drink just the grape and I like it now. More taste of the grape, more juicy than in France. I speak for the average wine, not the top, top label wines."

Rottiers isn't concerned with a crisis in quality in the American wine industry. "The United States consumer is better every year . . . getting used to better and better wines. Even in Europe, you don't have any trouble selling the top quality wines and getting a good price," he said.

Grape growing and winemaking aren't really Rottiers' main problem. "We've got everything nice: good water, nice sun, a nice climate. We've got everything nice. The people don't know too much about vineyards, but they're good workers. People in New Mexico are marvelous. The real problem is getting our resident papers. I've been here for a year and a half, and I'll probably have to wait for another year."

"You diversify a bit"

Seventy miles east of Deming, a town of nearly 10,000, two more groups of foreigners hope to strike it rich in winemaking. Canadian David Ward is executive vice president, secretary and operations manager of Luna County Wine Development Corporation. He isn't a viticulturist. However, his managerial skills have been tested in developing shopping centers, ski resorts and condominiums. His brother-in-law, corporation president Athanas Tontchev, is a



Swiss winegrower Jean Zanchi describes the layout of his property during the formal opening of his operation at Truth or Consequences.

financial expert, while Swiss attorney Paul Dorsaz is executive vice president and treasurer. Tontchev, a Canadian citizen, is moving to Deming from Switzerland. Dorsaz will move to Deming in August, 1985, when their 10-million-gallon winery is scheduled to open.

Luna County Wine Development Corporation planted 171 acres of grapes in 1983. They hope to plant 1,500 acres a year until their two plots, totaling 3,440 acres, are packed with 17 cultivars.

Ward is aiming for the U.S. market only—with half of his output blended for the American palate. With the other half, he'll attempt to bring a new taste to market, a very dry blend as close as possible to the Swiss taste. He'll hire two Swiss winemakers to coordinate that half and a Californian to work on the American blend. Swiss field managers already are tending the vines and supervising planting. "They come over here and they're amazed," said Ward. "Amazed that you can have 2,000 acres all in one block. It's a mile and one-half long. It boggles their minds because, over there, they're growing in 10 or 15 or 20-acre plots, all on terraces on a mountainside."

Ward said he and his partners considered getting involved in the French Wine Grower's Association operation near Truth or Consequences. But they didn't like the fact that Albuquerque could break the contract and take water back if it needed to. So, Tontchev spent four months in a chartered plane scouring sections of Texas, Colorado, Arizona, Utah, California and New Mexico before deciding on the Deming area.

And, why a United States site at all? Besides feeling the time was right for wine development, Ward said, "People like my brother-in-law feel secure in Canada or the United States. They are politically stable. We've gone through a bit of a recession but Canada and the U.S. are economically stable. Whereas in Europe . . . well you never know what's going to happen over there. You diversify a bit."

Ward agreed with San Andres' Rottiers about local residents' help and willingness to take advantage of new developments. "In Deming," said Ward, "you're looking at really an older set of people, a lot of retirees and a lot of farmers in their late 60s and early 70s. The kids don't want any part of farming. They get an education and they're all off to the bright lights somewhere. These are some of the nicest people I've met on any project for a long time. I think they just bend over backwards to help us."

Regarding the labor force, Ward said, "The Mexican labor that is available in this area is top-notch. You show them what's to be done, spend some time with them to show them properly, and, boy, they'll do a real good job for you." But, he's careful on this score, too. "We can't afford to hire an illegal. None of us is a citizen of the U.S. We hire one illegal and they deport us. Workers have to come to us with a green card and a social security card."

The possibility of spring frost is of great concern to Ward. He'll be installing weather monitors to signal freeze and an overhead sprinkler system to protect the plants.

"It's for the adventure . . . to do something new and good"

A second Deming group is Uvas Farming Corporation. Swiss winemaker Vincent Vuigneur, his brother Noel and Italian wine technician Vito Liso are the investors. Vuigneur's family has been producing wine for 150 years; he marketed nine varieties in Sion, Switzerland. A specialist in the mechanics of fermentation and filtration, Liso lived in Switzerland for 15 years. Uvas intends to concentrate on growing 10 varieties and experimenting with another half-dozen.

Of their 1,000 acres, 400 were planted in grapes in 1983 and hopes are to plant the remainder and purchase more land in 1984. A 1,000,000-gallon winery is under construction that can be expanded to 3,000,000 gallons.

Like San Andres and Luna County Wine Development, Uvas Farming is buying its land from local farmers. Ten wells supply water for drip irrigation. They'll study the 1984 vintage and do their first marketing in 1985. Speaking through an interpreter, Liso noted plans to sell wine in New Mexico first, then in surrounding states. He thinks the U.S. market is potentially so large they'll be busy without distributing worldwide.

Again, the question is: Why the United States at all? Even though there wasn't as much available land in Switzerland as they would have liked, Liso and Vuigneur came to the U.S. more for the adventure than to get out of Switzerland. "We didn't come here just to make money," said Liso. "We have enough to live on. We want to do something new and good. We are pioneers of the Uvas here." At first, Liso gives the impression that life in his corner of the United States leaves nothing to be desired, including the food. But he does confess, "We miss fresh fish. We try to do the best with what we have."

Taking the good with the bad

These investments are significant for New Mexico as well as for the American wine industry. The flood of foreign cash and the optimism surrounding a new, clean industry seemed to come overnight and are praised in New Mexico. The state is doing its part by providing horticultural and economic research services at New Mexico State University in Las Cruces. Money also has been made available to hire new specialists in the state's newly formed industrial development training program.

However, there is a dark cloud about which few of the recent arrivals are aware. New Mexico is one of 18 price affirmation states. That wasn't a problem before 1979. But, in that year, makers of *alcoholic beverages* and not simply *spiritous liquors* were required to affirm that their price to New Mexico wholesalers was no greater than the lowest price charged to wholesalers anywhere in the country.

State Representative Murray Ryan, who

sponsored the change, said he had information that brewers, not wineries, were charging New Mexico wholesalers more than out-of-state wholesalers. Ryan conceded that producers may have to cut prices occasionally to enter new markets. But, he felt that some brewers were cutting prices in existing markets simply to put smaller brewers out of business. They had to make up those reduced profits, he said, by charging states like New Mexico more. Ryan insisted he doesn't have anything against winemakers. It simply was easier to include everyone under the umbrella law rather than excepting a sector such as wine.

All plantings are own-rooted

An effort in the 1983 New Mexico legislature to change the law back to *spiritous liquors* was tabled. "One tactic used," said Ryan, "was to create the appearance that New Mexico's newborn wine industry would be harmed by this price affirmation concept. It's way too early to indicate what, if any, effect price affirmation would have on development of this new industry. I think maybe we're three to five or more years away from being able to determine that."

Ryan:1 Brewers: 0

On July 21, 1983, the New Mexico Supreme Court upheld the 1979 amendment that included all alcoholic beverages in the price affirmation act. The United States Brewers Association argued that the act imposed an undue burden on interstate commerce. The court ruled, "Although the 21st amendment does not override the Constitution's commerce clause, each must be considered in the light of the other and in the context of the issues and interests at stake in any concrete case."

Concerning the brewers' claim that the act required price-fixing that is unlawful under federal law, the court said: ". . . if legislation is constitutional on its face, then it will remain constitutional until such time as there is specific enforcement experience that will give us a body of historical facts upon which we can base a proper judgment, as opposed to an inappropriate decision based on hypothesis, assumed facts or potential conflicts."

Strike three for the brewers was the court's judgment that the act is not in violation of the police powers of the state. "By virtue of the 21st Amendment, the states have been conferred with something more than a nominal degree of authority over public health, welfare and morals when they act to regulate the liquor business. In light of this authority, the Act is neither arbitrary nor discriminatory."

With a newly-booming wine industry in the southern part of the state, pressure to repeal the price affirmation act will be felt more strongly with each passing vintage. However, loss of this first round hasn't deterred the wave of foreign winemakers. Three groups of Germans are considering land purchases near Truth or Consequences. One of these is reportedly reviewing contracts to purchase 10,000 acres.

(Larsen is an advertising copywriter in Albuquerque and a freelance writer.)

LOCAL REACTION

And what of local vintner reaction to the appearance of foreigners? In 1983, San Andres' Lescombes sold two tons of grapes to the 22-acre Binns Vineyards and Winery in Las Cruces. Bernice Binns said she thinks New Mexico growers are glad to see the foreign interest. She feels that with the investment and eventual marketing that will be pouring forth from the new operations, increased pride built up in New Mexico residents will help sales of all the state's wines.

Another benefit may be additional assistance from the state university at Las Cruces. Dr. William Gorman, professor of agricultural economics, said "I'd like to say I preceded the grape industry with research, but I haven't," adding that previously there hadn't been the acreage or interest to justify much research.

What of grape pests? Salt accumulation is a problem in some vineyards, and grape leafhoppers are present. Thus far, Texas root rot has not been a problem, but growers are on the lookout. Virtually all plantings to date are own-rooted.

The average cost for vineyard land in southern New Mexico is $1,600 per acre. The lowest price, for unimproved range land, is $100 per acre. The top price, for land with water, is $2,200 per acre.

R.L.

Adopt post info

RECEIVED 1/31/84

COLLEGE OF AGRICULTURE AND HOME ECONOMICS

DEPARTMENT OF AGRICULTURAL ECONOMICS
AND AGRICULTURAL BUSINESS
Box 3169/Las Cruces, New Mexico 88003-3169
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646-4321

NEW MEXICO STATE UNIVERSITY

January 18, 1984

Edward A. Reisman
ATF Specialist
Bureau of Alcohol, Tobacco and Firearms
1200 Pennsylvania Avenue N.W.
Washington, D.C. 20226

Dear Mr. Reisman:

With reference to the enclosed letter from George Newman of New Mexico Vine and Wine Society, the following additional comments may serve to clarify or substantiate the boundary selections.

The eastern boundary of the viticultural area has been extended to the Ft. Bliss Military reservation boundary to include a known vineyard and to simplify the visual perception of boundary. The boundary proceeds due south to Texas from here.

Mesilla Valley extension into Texas is supported by the flow of the Rio Grande River and the associated foothills that continue into Texas. The viticultural area boundary is visually supported in the Texas area by the use of Interstate 10 to the east until it intersects with the Southern Pacific Railroad tracks. Any areas to the east of I-10 would not support viticulture and the areas south of the Southern Pacific railroad as well are urban, industrial or not suited to agriculture.

Concerning the western boundary of the viticultural area, the 4200' contour line separates the area of valley-foothills where viticulture is possible or probable from the upper mesa on the westside of the Mesilla Valley where soil types and water availability are poor. The mesa is desert, sand and scrub brush. Although there is no constructed feature that would adequately serve as a boundary, the abrupt nature of the change in topography creates a visual boundary.

Regarding your concerns of contour lines of 4100,4150 and 4200' and the probability of viticulture at the higher elevations, please be aware that the lowest elevation in the valley is not less than 3700' and one vineyard is producing near 5000'.

Please keep us advised of any further requirements.

Sincerely yours,

Dorene Brown

Dorene Brown
Research Aide, Agricultural Economics

cc: George Newman
Greg Baker

LAS CRUCES CHAPTER OF THE NEW MEXICO VINE & WINE SOCIETY
P. O. Box 432
Fairacres, New Mexico 88003
Phone: (505) 524-1400

January 17, 1984

Edward A. Reisman
ATF Specialist
Bureau of Alcohol, Tobacco and Firearms
1200 Pennsylvania Avenue N.W.
Washington, D.C. 20226

Dear Mr. Reisman:

In response to your correspondence of December 7, 1983, regarding requested changes in the viticultural area boundaries for the Mesilla Valley appellation, we submit the following:

1) Revised narrative description of proposed boundaries for the Mesilla Valley viticultural area.

2) Sixteen U.S.G.S. 7.5 minute quadrangle maps showing the Mesilla Valley viticultural area boundaries.

We have drawn the new boundaries based on features which appear on the U.S.G.S. maps. Where possible, easily identified landmarks such as roads, canals, power lines and freeways have been used. In the absence of any visible landmarks, section lines and benchmarks are used to simplify boundary identification. These changes were most applicable on the eastern and southern boundaries of the appellation. You will note the inclusion of a portion of Texas within the boundary.

The western boundary of the viticultural area has retained much of the use of the 4200' contour line. There are virtually no visible landmarks such as roads or power lines in this area. The contour line appropriately marks the transition from valley-foothills to dryland mesa where water availability is poor and soil type differs notably.

It must be noted that the lowest elevation within the boundaries is not less than 3700'. Also, these changes have increased the total area by approximately 95 square miles.

We hope these revisions meet with your approval and that the process of preparing the notice of proposed rulemaking can continue. Please feel free to contact me if you have any questions.

Sincerely yours,

George Newman, President

db

Enc.

cc: Greg Baker
Dorene Brown

PROPOSED BOUNDARIES

The Mesilla Valley is located in Dona Ana County in southern New Mexico and covers approximately 1,500 square miles (see the enclosed U.S.G.S. "Hydrologic Unit Map - 1974 State of New Mexico" for the exact boundary). The southern border of the valley runs along the New Mexico-Texas border and the New Mexico-Mexico border. The western border of the valley is marked by the Portillo Mountains, the Aden Hills, the Sleeping Lady Hills and the Sierra de Las Uvas Mountains. The northern border of the valley ends at Tonuco where the river valley narrows. To the east, the valley is flanked by the Dona Ana, Organ and Franklin Mountains. While most of the irrigated land in the valley is under 4,000 feet in elevation, mountainous peaks in the Mesilla Valley reach 8,870 feet.

The proposed viticultural area follows the Rio Grande River and surrounding irrigated land within the Mesilla Valley and covers approximately 495 square miles. Elevations within the proposed viticultural area range from approximately 3,700 feet to 5,000 feet above sea level. The higher mesa areas and mountainous elevations have been excluded from the proposed viticultural area since very few grapes are grown in these locations at the present time.

The boundaries of the proposed Mesilla Valley viticultural area can be found on the following U.S.G.S. 7.5 minute quadrangle maps (see enclosed maps):

"Leasburg Quadrangle, NM"
"Dona Ana Quadrangle, NM"
"Las Cruces Quadrangle, NM"
"Tortugas Mountain Quadrangle, NM"
"Organ Peak Quadrangle, NM"
"San Miguel Quadrangle, NM"
"Bishop Cap Quadrangle, NM"
"Anthony Quadrangle, NM"
"Canutillo Quadrangle, TX-NM"

"Smeltertown Quadrangle, TX-NM"
"Strauss Quadrangle, NM-TX"
"La Union Quadrangle, NM-TX"
"La Mesa Quadrangle, NM"
"Little Black Mountain Quadrangle, NM"
"Black Mesa Quadrangle, NM"
"Picacho Mountain Quadrangle, NM"

Please see figure 1, "Index to Topographic Maps of New Mexico," for a description of how these 7.5 minute quadrangle maps fit together.

The boundary for the proposed Mesilla Valley viticultural area is as follows:

The beginning point of located along the Faulkner Canyon on the U.S.G.S. map "Leasburg Quadrangle" at the northwest corner of Section 15 in Township 21 South, Range 1 West. From the beginning point, the boundary runs directly east 4.1 miles along the section line where it converges with power transmission lines in Section 17 of "Dona Ana Quadrangle" USGS map.

From here, the boundary follows the power line southeasterly 4.5 miles to the intersection of easterly power lines NE corner of Section 4, thence 2 miles east, 2 miles SE, 3 miles south, to southeast corner of Section 20.

The boundary proceeds due east one mile and then south three miles on eastern section lines of Section 28, 33, 4 of "Tortugas Mountain Quadrangle." Boundary line proceeds eight miles due east on section line to NE corner of Section 12, "Organ Peak Quadrangle." Boundary proceeds south 17 miles on section line which is the Fort Bliss Military Reservation boundary. (Ft. Bliss boundary turns east at Sec. 31.). Boundary continues due south 5.5 miles to intersect Interstate 10, 1.5 miles east of Anthony, NM/Texas border.

The viticultural area boundary follows I-10 south approximately 22 miles until it intersects with the Southern Pacific Railroad tracks. Area boundary proceeds approximately 13 miles NW on SPRR to the Strauss

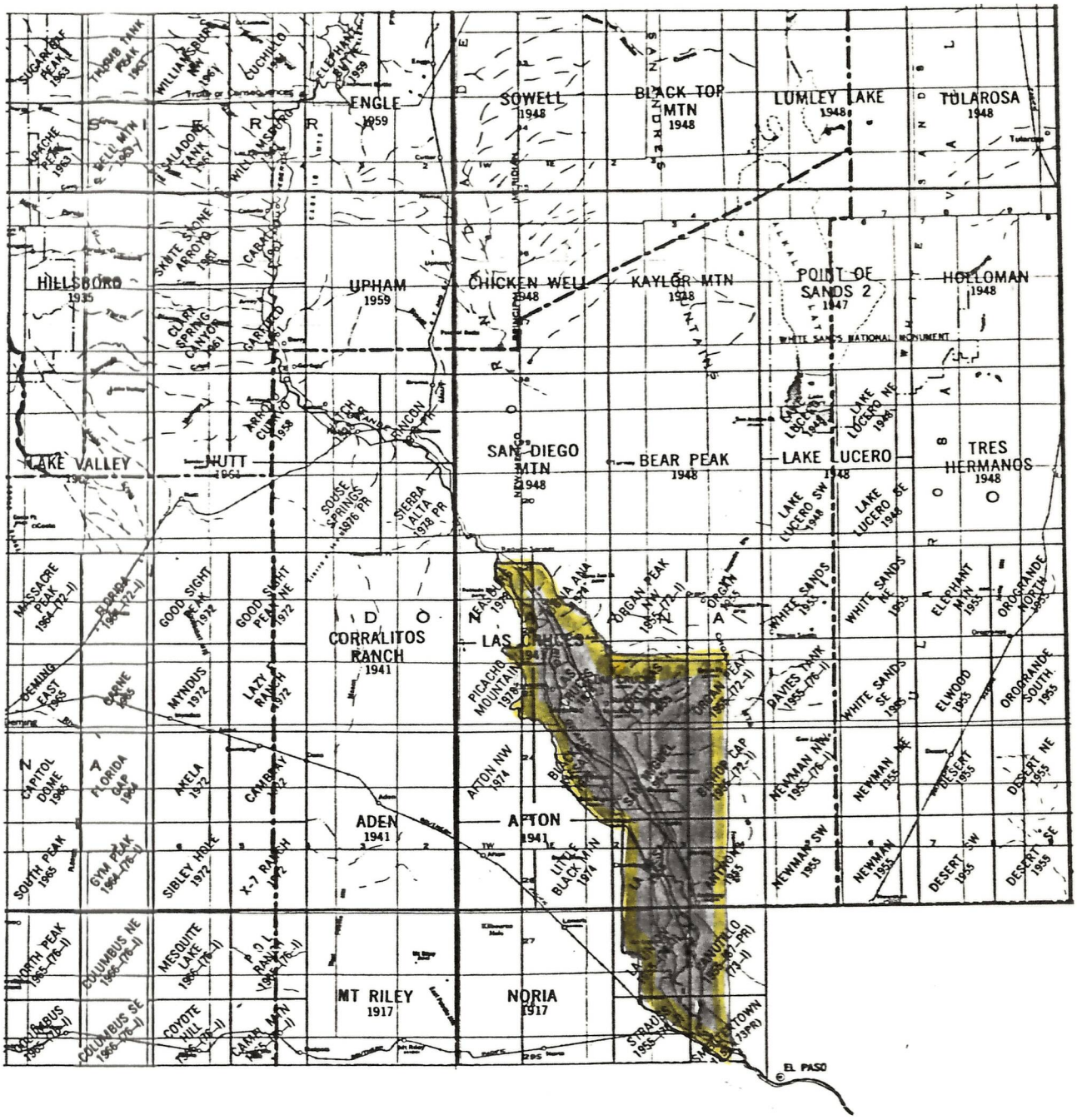
switchyards at the corner of Section 14, 13, 23, 24 of "Strauss Quadrangle," Township 28 South, Range 2 East.

The appellation boundary then proceeds due north approximately 11 miles on section line between Section 14 and Section 13 passing through "La Union Quadrangle," "La Mesa Quadrangle," to the intersection of Section 23, 24, 25, 26 in Township 26 South, Range 2 East.

Then, boundary proceeds west two miles to SW corner of Section 22, north four miles on section line to pipeline in SW corner of Section 34, northwest along pipeline to NW section line of Section 32 of "Little Black Mtn. Quadrangle Map," Township 25 South, Range 2 east, north one mile to 4200' contour line northwesterly through "Black Mesa Quadrangle" to I-10 in "Las Cruces Quadrangle," thence west once mile to Jackrabbit Interchange, Township 23 South, Range 1 East shown on "Picacho Mountain Quadrangle."

Boundary then proceeds north at 4200' contour line until it reaches the west border of Section 15 in Township 21 South, Range 1 West shown on "Leasburg Quadrangle." The boundary follows this section line north to the beginning point along the Faulkner Canyon.

Figure 1. Index to Topographic Maps of New Mexico



Source: U.S.G.S. "Index to Topographic Maps of New Mexico

COLLEGE OF AGRICULTURE AND HOME ECONOMICS

DEPARTMENT OF AGRICULTURAL ECONOMICS
AND AGRICULTURAL BUSINESS
Box 3169/Las Cruces, New Mexico 88003
Telephone (505) 646-3215

February 24, 1984

Mr. Ed Reisman, ATF Specialist
Bureau of Alcohol, Tobacco and Firearms
1200 Pennsylvania Avenue N.W.
Washington, D.C. 10116

Dear Mr. Reisman:

In accordance with our telephone conversation of February 2 and your correspondence of February 6, 1984, the following provides additional information concerning the revised boundaries of the Mesilla Valley appellation.

The revised boundaries have simplified boundary lines by using section lines instead of contour lines as requested and have therefore included as well as excluded some small areas. The major change has been in the eastern portion of the viticultural area and begins near I-70 east of Las Cruces. Attached are several items in support of information about climate, soils and location of vineyards within this area:

1) letter from Ken Kunkel, State Climatologist, dated 2-8-84.

2) Soil types maps, Dona Ana County Area and El Paso County Area.

3) "El Paso Rio Grande Projects" map and photocopy of that portion indicating vineyard locations.

4) Photocopy of U.S.G.S. 7.5' Quadrangle Map "Organ Peak" indicating detailed location of Cox Ranch and proposed vineyard elevation.

5) Hydrologic Unit Map, Mesilla Valley.

The owner of the Cox Ranch has plans to build a winery on the site indicated and has proposed twenty acres to be planted this year with an additional 150 acres proposed to include a full range of wines and champagne. The vineyards are to be located in an area of sandy loam soil at an elevation of approximately 5000 feet.

The boundary revision which includes portions of Texas within the viticultural area has incorporated approximately 35 square miles, all located on the west side of Interstate 10. This small area is considered to be the southernmost part of the Mesilla Valley and would not deviate from general Mesilla Valley conditions of soil, water or temperature. Your copy of the "International Boundary and Water Commission, U.S. and Mexico, El Paso Rio Grande Projects" map illustrates the location of this included area. There are presently no known vineyards in this area and no knowledge of any proposed commercial vineyards or wineries.

In response to the specifics listed in your letter, by item:

(a) Approximately 495 square miles are now included within the proposed viticultural area.

(b) The amended boundary application has included only one new vineyard, The Cox Ranch. The Cox Ranch owner proposed to plant twenty acres this year and an additional 150 acres are planned. He also plans to build a winery on the site. Please see attachment 3, submitted with the original application, showing the locations of all known vineyards and indicating the location of this new vineyard.

(c) The newly included area contains no vines at present, therefore, the map as submitted with the original proposal (attachment 3) is still correct. The Cox Ranch has been indicated on this map. They propose to plant twenty acres of vines this year.

(d) The Cox Ranch is indicated and the proposed location of the vineyard is highlighted on a photocopy of a portion of the U.S.G.S. 7.5' quadrangle map "Organ Peak." Please see attachment 4.

(e) The soil associations of the proposed area remain within acceptable viticultural requirements. Please see attachment 2, photocopy of Dona Ana County Area General Soil Map and El Paso County Area General Soils Map.

(f) Please refer to attachment 1, letter from State Climatologist Kunkel. There are no expected significant differences in climate for the proposed areas under question. Some temperature differences can be expected. Daily maximum temperatures in the eastern portion of the Mesilla Valley (in the area of the Cox Ranch) can be expected to be 3-4 degrees lower than the lowest locations of the valley. However, minimum daily temperatures will probably be higher by about 1-3 degrees. Mean temperatures will be similar to the mean temperatures of the lower valley.

In summary, there are no significant differences of climate, soil or temperature to be considered by the addition of approximately 95 square miles to the Mesilla Valley appellation. The only vineyard which has been included within the revised boundaries is at 5000 feet elevation. The total area of the revised application is 495 square miles.

Please advise if there is any further information required.

Sincerely,

Dorene K. Brown

cc: Greg Baker
George Newman

Enc.

OFFICE OF STATE CLIMATOLOGIST

NEW MEXICO DEPARTMENT OF AGRICULTURE
Box 5702/Las Cruces, New Mexico 88003
Telephone (505) 646-2642

February 8, 1984

Mr. Ed Reisman, ATF Specialist
Bureau of Alcohol, Tobacco and Firearms
1200 Pennsylvania Ave., NW
Washington, D.C. 20226

Dear Mr. Reisman:

I wish to give you some climatic information on those areas which have been added to the Mesilla Valley region under the request to establish an appellation of origin. With regard to that section of the Mesilla Valley in Texas, there are no available climatic data for that area. However, the topography and elevation are very similar to the adjacent areas of the Mesilla Valley in New Mexico. I therefore do not expect any significant differences in the local climate. With respect to that section added to the east side of the region, again there are no available climatic data. However, data from nearby locations can be used to infer the climate in this area. Since some sections of this area are above 5000 feet in elevation (about 1000 feet higher than the lowest valley location), I expect some temperature differences. For those areas above 5000 feet daily maximum temperatures will be about 3° - 4° F lower than the lowest locations in the valley. However, because of drainage of cold air into the valley, minimum temperatures at these higher locations will probably be higher (by about 1° - 3°F) than the lowest locations. The mean temperature at these higher locations is therefore likely to be similar to or only slightly lower than the mean temperature at these lower locations.

Sincerely,

Kenneth E. Kunkel

Kenneth E. Kunkel
State Climatologist

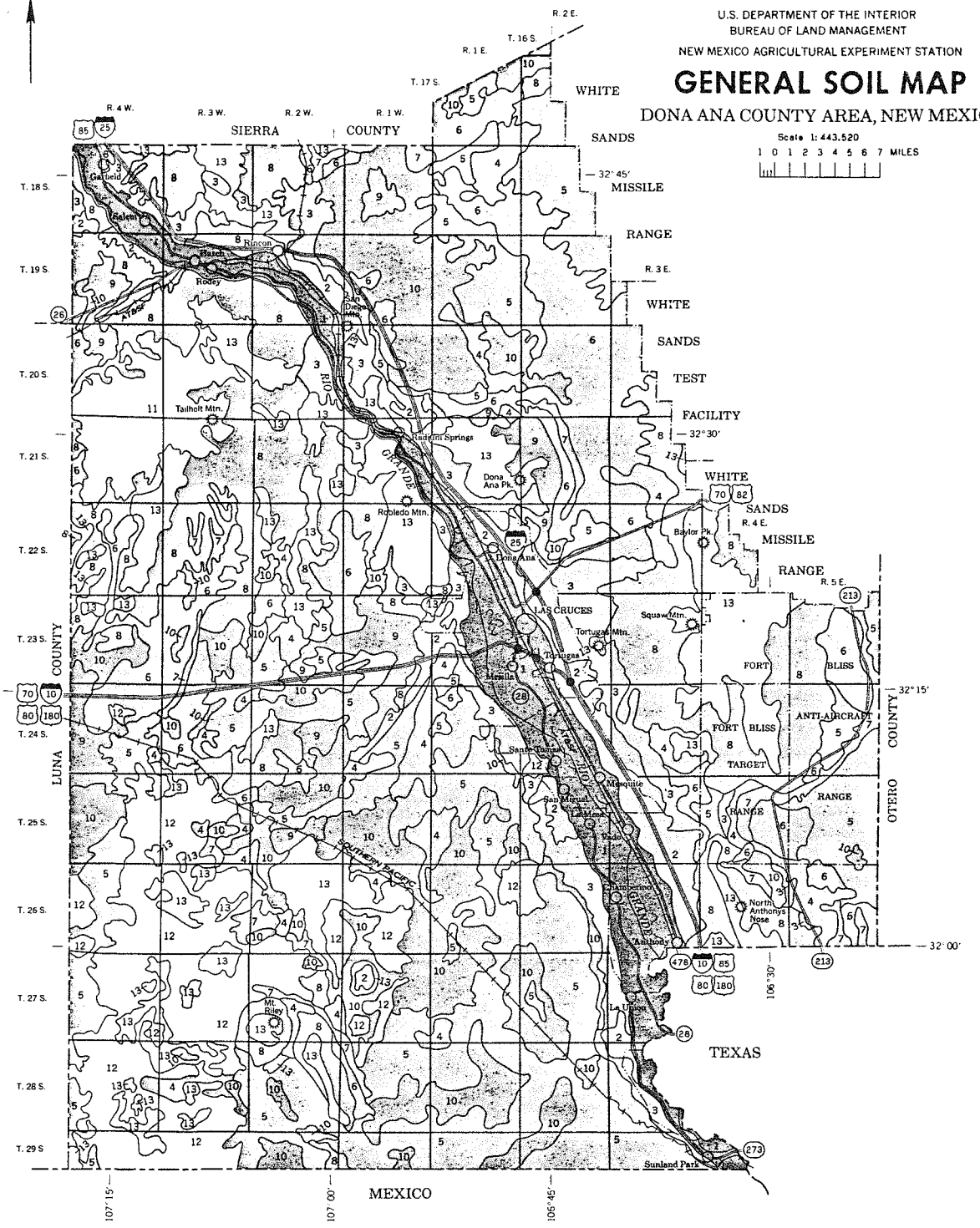
KEK/dg

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
NEW MEXICO AGRICULTURAL EXPERIMENT STATION

GENERAL SOIL MAP

DONA ANA COUNTY AREA, NEW MEXICO

Scale 1: 443,520
1 0 1 2 3 4 5 6 7 MILES



MAP UNITS

DEEP, NEARLY LEVEL, WELL DRAINED SOILS THAT FORMED IN ALLUVIUM, ON FLOOD PLAINS AND STREAM TERRACES

1 Glendale-Harkey: Deep, nearly level, well drained soils that formed in alluvium; on flood plains and stream terraces

SHALLOW OR DEEP, NEARLY LEVEL TO VERY STEEP, WELL DRAINED TO EXCESSIVELY DRAINED SOILS THAT FORMED IN ALLUVIUM, ALLUVIUM MODIFIED BY WIND, AND EOLIAN MATERIAL; ON FANS, TERRACES, RIDGES, VALLEY AND BASIN FLOORS, FLOOD PLAINS, AND PIEDMONTS

2 B[illegible]t: Deep, gently undulating to moderately rolling, somewhat e[illegible]ly drained soils that formed in alluvium modified by wind; on [illegible]aces, and ridges

3 [illegible]epont Yturbide: Deep, gently undulating to very steep, well dra[illegible] somewhat excessively drained, and excessively drained soils that formed in alluvium, gravelly alluvium, and alluvium modified by wind; on fans and terraces

4 Pajarito-Onite-Pintura: Deep, nearly level to undulating, well drained and somewhat excessively drained soils that formed in alluvium, alluvium modified by wind, and eolian material; on fans

5 Pintura-Wink: Deep, nearly level to undulating, well drained and somewhat excessively drained soils that formed in alluvium, alluvium modified by wind, and eolian material; on fans

6 Berino-Dona Ana: Deep, gently undulating to undulating, well drained soils that formed in alluvium and alluvium modified by wind; on fans, piedmonts, and valley and basin floors

7 Mimbres-Stellar: Deep, nearly level to gently undulating, well drained soils that formed in alluvium; on fans, basin floors, and flood plains

8 Nickel-Upton: Shallow or deep, undulating to moderately rolling, well drained soils that formed in gravelly and very gravelly alluvium; on fans, terraces, ridges, and piedmonts

SHALLOW TO DEEP, NEARLY LEVEL TO UNDULATING, WELL DRAINED SOILS THAT FORMED IN RESIDUUM, ALLUVIUM, AND EOLIAN MATERIAL; ON MESAS, PLAINS, RIDGES, BASIN FLOORS, AND FANS

9 Cacique-Cruces: Shallow to moderately deep, nearly level to gently sloping, well drained soils that formed in alluvium; on basin floors

10 Harrisburg-Simona-Wink: Shallow to deep, gently undulating to undulating, well drained soils that formed in residuum from sandstone, eolian material, and alluvium modified by wind; on mesas, plains, ridges, and fans

ROCK OUTCROP AND SHALLOW TO DEEP, GENTLY UNDULATING TO EXTREMELY STEEP, WELL DRAINED SOILS THAT FORMED IN ALLUVIUM, COLLUVIUM, RESIDUUM, AND EOLIAN MATERIAL; ON MOUNTAINS, UPLANDS, AND RIDGES

11 Rock outcrop-Motoqua: Rock outcrop and shallow, moderately rolling to extremely steep, well drained soils that formed in alluvium and colluvium; on mountains

12 Akela-Rock outcrop-Aftaden: Rock outcrop and shallow, gently undulating to moderately rolling, well drained soils that formed in eolian material and residuum from basalt; on lava flows, uplands, and ridges

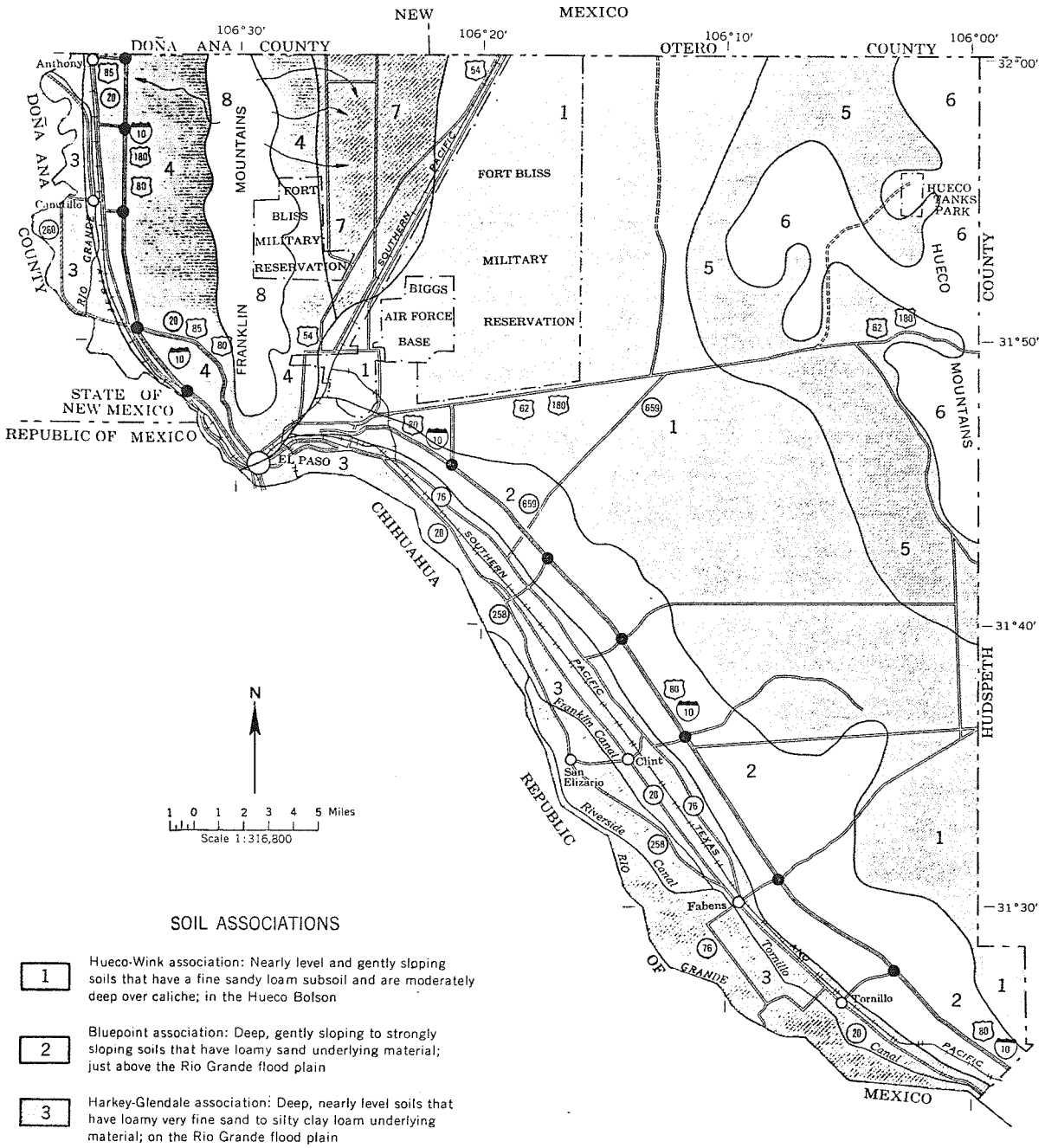
13 Rock outcrop-Torriorthents: Rock outcrop and shallow to deep, hilly to extremely steep, well drained soils that formed in alluvium and colluvium; on mountains

Compiled 1979

Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis

GENERAL SOIL MAP

EL PASO COUNTY, TEXAS



SOIL ASSOCIATIONS

1 — Hueco-Wink association: Nearly level and gently sloping soils that have a fine sandy loam subsoil and are moderately deep over caliche; in the Hueco Bolson

2 — Bluepoint association: Deep, gently sloping to strongly sloping soils that have loamy sand underlying material; just above the Rio Grande flood plain

3 — Harkey-Glendale association: Deep, nearly level soils that have loamy very fine sand to silty clay loam underlying material; on the Rio Grande flood plain

4 — Delnorte-Canutio association: Nearly level to steep soils that are shallow or very shallow over caliche or that are deep and gravelly throughout; mainly on and near foot slopes of the Franklin Mountains

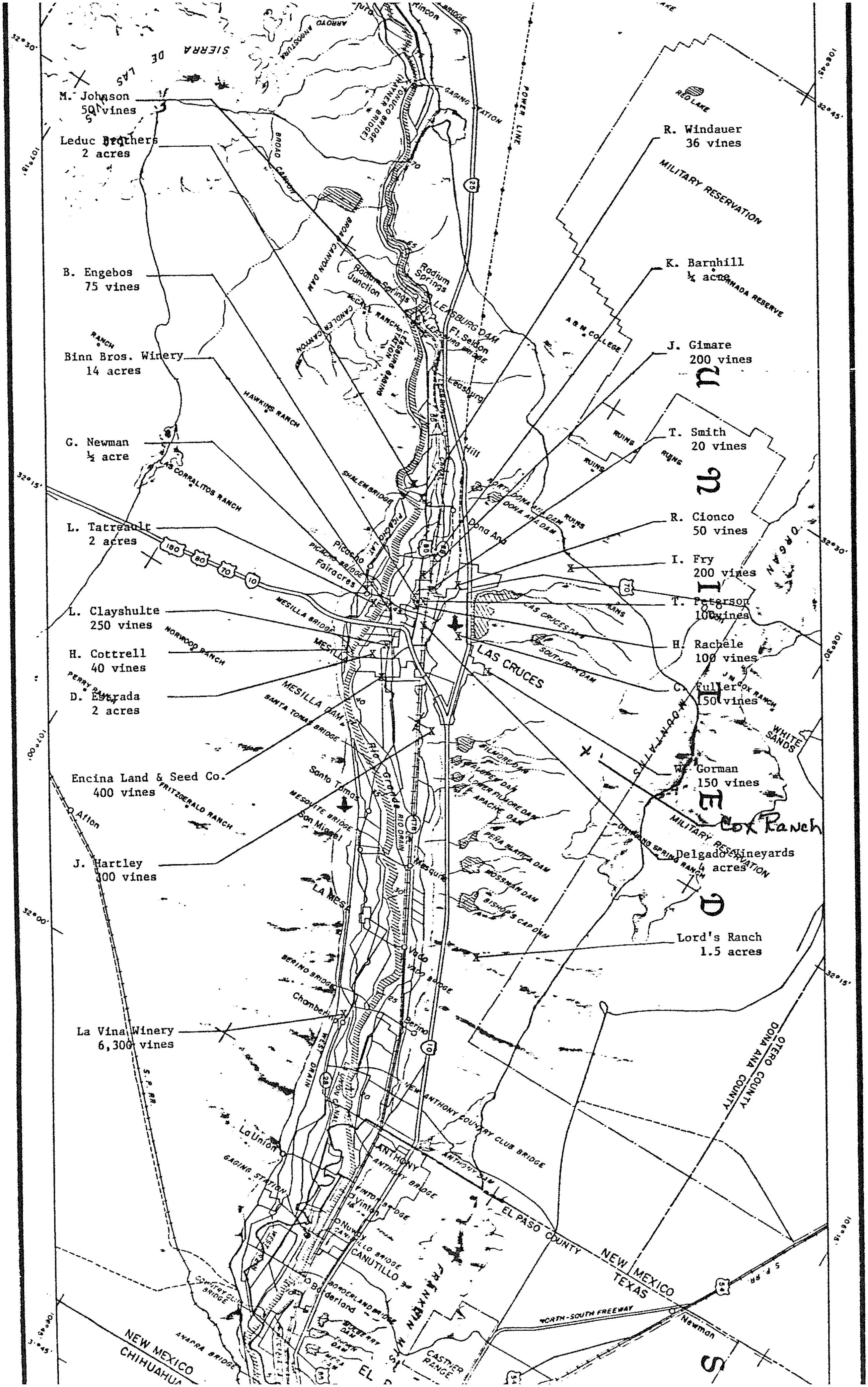
5 — Wink-Simona-Mimbres association: Nearly level to sloping soils that are moderately deep or shallow over hard caliche or that are deep and have a silt loam subsoil; mainly on alluvial fans and foot slopes of the Hueco Mountains

6 — Limestone rock land-Lozier association: Steep and very steep, rocky areas and very shallow, stony soils; in the Hueco Mountains

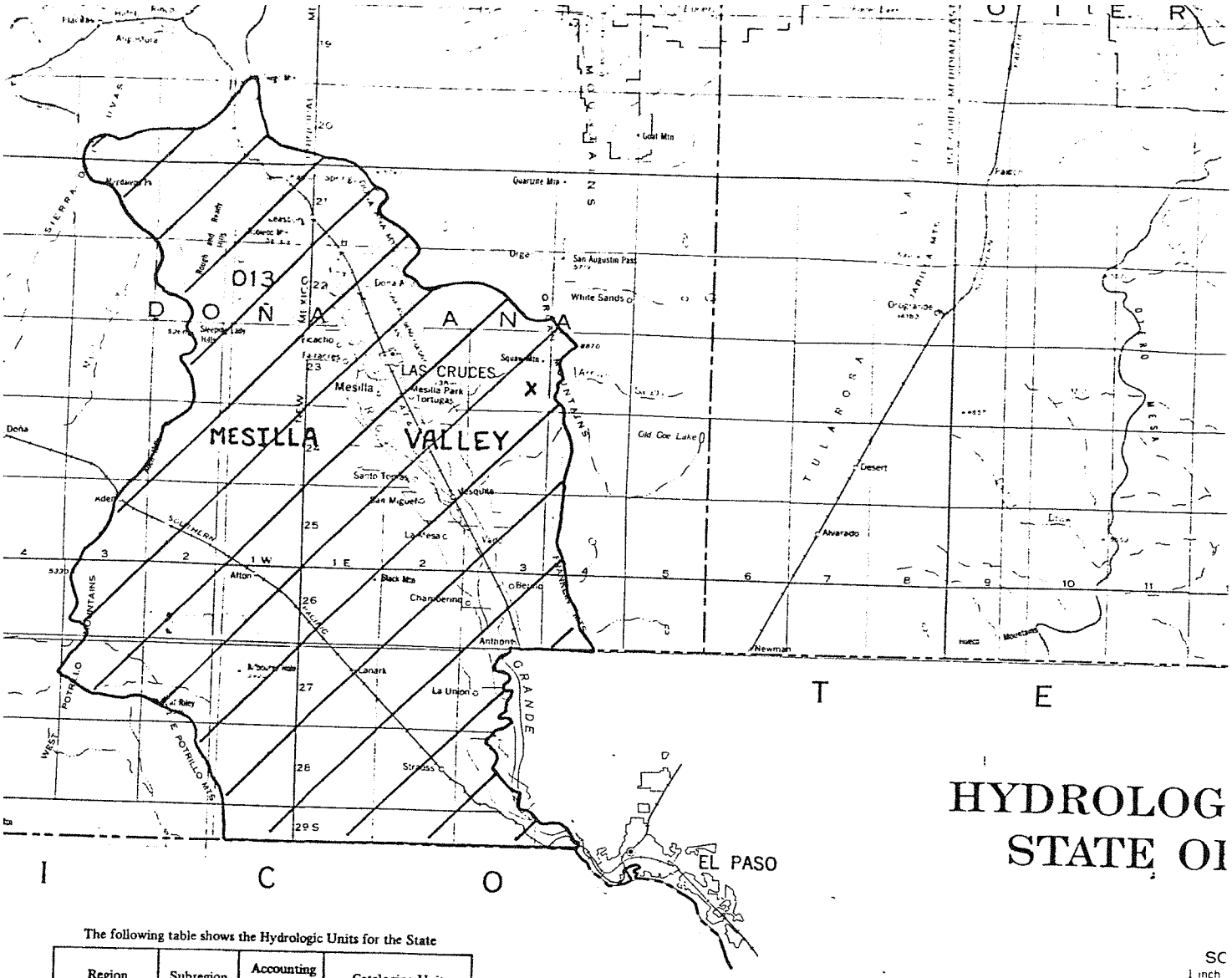
7 — Turney-Berino association: Nearly level and gently sloping soils that have a clay loam subsoil and are moderately deep over soft caliche; in the Hueco Bolson

8 — Igneous rock land-Limestone rock land association: Very steep areas of igneous and limestone rocks and stony soils; in the Franklin Mountains

3)


M. Johnson
50 vines
Leduc Brothers
2 acres
B. Engebos
75 vines
Binn Bros. Winery
14 acres
G. Newman
½ acre
L. Tatreault
2 acres
L. Clayshulte
250 vines
H. Cottrell
40 vines
D. Estrada
2 acres
Encina Land & Seed Co.
400 vines
J. Hartley
300 vines
La Vina Winery
6,300 vines
R. Windauer
36 vines
K. Barnhill
½ acre
J. Gimare
200 vines
T. Smith
20 vines
R. Cionco
50 vines
I. Fry
200 vines
T. Peterson
100 vines
H. Rachele
100 vines
C. Fuller
150 vines
W. Gorman
150 vines
Cox Ranch
Delgado Vineyards
4 acres
Lord's Ranch
1.5 acres
MILITARY RESERVATION
LAS CRUCES
Radium Springs
Leasburg
Dona Ana
Picacho
Fairacres
Mesilla
MESILLA DAM
Santo Tomas
San Miguel
Mesquite
Vado
Chamberino
Berino
La Union
ANTHONY
Vinton
Nuway
CANUTILLO
Borderland
Afton
Rincon
Hatch
A & M COLLEGE
WHITE SANDS
ORGAN MOUNTAINS
EL PASO COUNTY
DONA ANA COUNTY
OTERO COUNTY
NEW MEXICO
TEXAS
CHIHUAHUA
Newman
CASTNER RANGE
NORTH-SOUTH FREEWAY

U.S.G.S. 7' Quadrangle Map
"Organ Peak"



HYDROLOG
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The following table shows the Hydrologic Units for the State

Region	Subregion	Accounting Unit	Cataloging Unit
11 Arkansas-Red-White	02	00	10
	04	00	01, 02
	08	00	01, 02, 03, 04, 05, 06
			07, 08
	09	01	01, 02, 03, 04
	10	01	01
	12	01	01, 02
12 Texas-Gulf	05	00	01, 02, 05
	08	00	01, 03, 04, 06
13 Rio Grande	01	00	02, 05
	02	01	01, 02
		02	01, 02, 03, 04, 05, 06
			07, 08, 09, 10, 11
	03	01	01, 02, 03
		02	01, 02
	05	00	01, 02, 03, 04
	06	00	01, 02, 03, 04, 05, 06
			07, 08, 09, 10, 11
	07	00	01, 02, 07
14 Upper Colorado	08	01	01, 03, 04, 05, 06, 07
		02	01, 04
15 Lower Colorado	02	00	01, 02, 03, 04, 06
	04	00	01, 02, 03, 04, 06
	08	03	02, 03

SC
1 inch

Dat
Compiled edited and published
Lambert conformal conic

LEGEND

State capital
County seat
City, town, or village
Scheduled service airport
Built-up area shown [illegible] Population
County boundary
National park
National wildlife refuge
National forest
[illegible] reservation

U. S. Dept. of the Int
U. S. Dept. of the Arr

107°
105°

COLLEGE OF AGRICULTURE AND HOME ECONOMICS

DEPARTMENT OF AGRICULTURAL ECONOMICS
AND AGRICULTURAL BUSINESS
Box 3169/Las Cruces, New Mexico 88003-3169
Telephone (505) 646-3215

NEW MEXICO STATE UNIVERSITY

April 10, 1984

Mr. Ed Reisman, ATF Specialist
Bureau of Alcohol, Tobacco and Firearms
1200 Pennsylvania Avenue NW
Washington, D.C. 20226

Dear Mr. Reisman:

In response to your letter of April 3 addressed to George Newman regarding the Mesilla Valley appellation, you requested the identity of a road which was used as part of the southern boundary in Texas. The road which connects La Mesa Road and a crossing with the Southern Pacific Railroad tracks at Smeltertown, Texas, is known as Executive Center Blvd.

Regarding our phone conversation of 4-6-84, enclosed is a copy of Leaflet 2740 on Drip Irrigation published by the USDA Agricultural Extension Service, University of California, April 1979. Hopefully this leaflet will answer many of your questions about the use of drip irrigation. Enclosed also is a copy of the original map in your possession indicating the growers in the Mesilla Valley and their individual acreages. We have marked this copy with yellow marker those growers who are currently using drip irrigation.

We have noted the boundary changes on our USGS maps and find no reasons to make any further revisions. Please keep us advised of the status of this application.

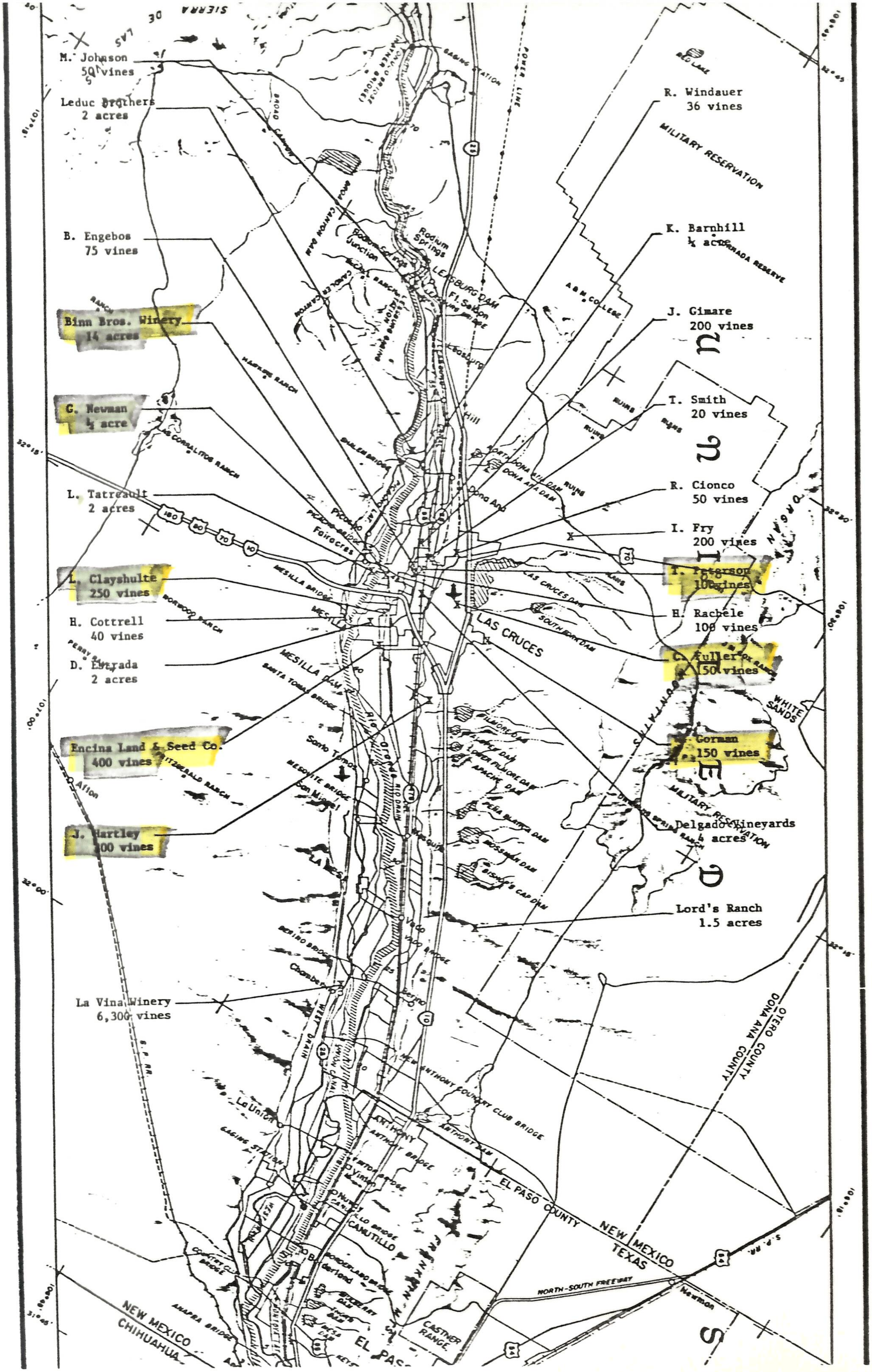
Sincerely,

Dorene Brown

Dorene K. Brown
Research Aide

Enc.

cc: George Newman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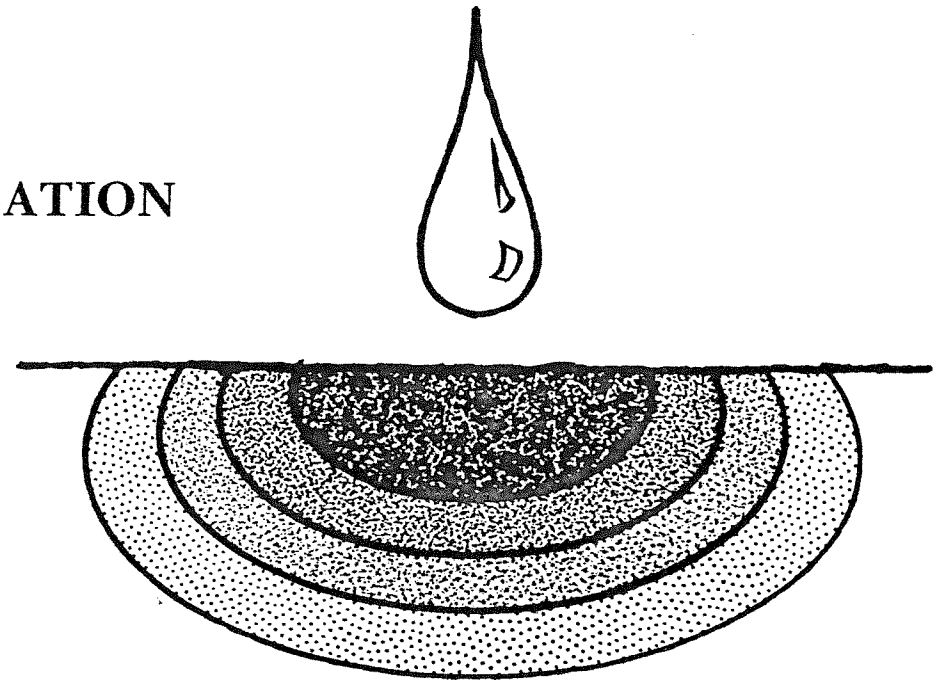
CHIHUAHUA
WHITE SANDS
OTERO COUNTY
DONA ANA COUNTY
Radium Springs
LEASBURG DAM
Fairacres
Anthony
Canutillo
Vado
Berino
Chamberino
La Union
CASTNER RANGE

DRIP IRRIGATION



The authors are Albert W. Marsh, Extension Irrigation and Soils Specialist, University of California, Riverside; Roy L. Branson, Extension Soils and Water Specialist, University of California, Riverside; Sterling Davis, Agricultural Engineer, USDA-ARS, University of California, Riverside; C. Don Gustafson, Farm Advisor, Cooperative Extension, San Diego County; F. K. Aljibury, Extension Area Soil and Water Specialist, San Joaquin Valley Agricultural Research and Extension Center, Parlier.

WHAT IS DRIP IRRIGATION?

Drip irrigation is the frequent, slow application of water to soil through mechanical devices called emitters that are located at selected points along water-delivery lines. (The importance of the words "frequent" and "slow" is explained later under "Operational Requirements.") Most emitters are placed on the ground, but they can be buried at shallow depths for protection. Water enters soil from the emitters, and most water movement to wet the soil between emitters occurs by capillarity beneath the soil's surface.

Less Soil is Wetted

The volume of soil wetted by drip irrigation usually is much less than that wetted by other irrigation methods. It may be only 10 percent of the soil in the root zone for newly planted crops. Researchers and experienced operators believe that at least 33 percent of the soil in the root zone under mature crops must be wetted, and that crop performance improves as the amount wetted increases to 60 percent or higher. The amount of soil wetted depends on soil characteristics, irrigation operation time, and the number of emitters used. This number ranges from less than one emitter per plant for row crops to eight or more emitters placed in-line or around large trees.

It's Different

Drip irrigation differs from conventional irrigation methods in many respects: the equipment used and its management with respect to irrigation scheduling and fertilization; the results obtained in terms of water

Division of Agricultural Sciences
UNIVERSITY OF CALIFORNIA

LEAFLET
2740

REPRINTED APRIL 1979

use and plant response; and the effects of water and salt concentration and distribution in the soil.

HOW IS IT DONE?

Drip irrigation is done by a system consisting of emitters, lateral lines, main lines, and a "head" or control station.

Emitters

Emitters, which control water flow from lateral lines into the soil, vary in type from porous-wall (line source) units to complicated mechanical or passageway (point source) units. Emitters will decrease the pressure from the inside to the outside of the lateral, thus allowing the water to emerge as drops. This may be done by small holes, larger holes in series, long passageways, vortex chambers, discs, steel balls, manual adjustment or other mechanical means to reduce water flow into the soil. Some emitters maintain steady flow at different pressures by changing the length or cross-section of passageway. Rate of flow usually is fixed at from ½ to 2 gallons per hour (gph); 1 gph is most common. Some emitters have manually adjusted rates; some are reported to be self-cleaning, and some flush automatically.

Lateral lines

Emitters are connected to or are a part of the lateral lines, which usually are plastic and of small diameter (3/8 to 3/4 inch) — these lines may go long distances because flows are low. Lateral lines generally are one per tree row and one for each crop row or pair of rows, and should be installed as near level as possible, particularly for systems using pressures of less than 10 pounds per square inch (psi).

Main lines

Main lines, which are usually plastic and buried, convey water from the head to the lateral lines. Size of main lines depends upon number of laterals and flow of water to them.

The head

The head is the control station where water is measured, filtered or screened, treated, and regulated as to pressure and timing of application.

Meters. Water generally is measured onto a field with meters. Some meters automatically turn off when the desired amount of water has been applied.

Filters and screens. Generally, water used for drip irrigation must be cleaner than drinking water. To accomplish this, various types of sand filters or cartridge filters and screens of 100 to 200 mesh are used individually or in combination. The sand filter usually has manual or automatic backflushing devices for cleaning. The cartridge filter is changed when dirty, and screens are usually cleaned manually.

Injectors. Injectors are used to apply fertilizer, algaecides, and other materials into the lines. These may be piston-type power injectors or Venturi-type that create a pressure drop across an orifice to suck material for treatment from a tank.

Pressure regulators. Most systems require some pressure regulation — a brass or plastic mechanical pressure regulator usually is used. Pressures for different emitters vary from 2 or 3 psi to 30 or 40 psi. Emitters operate best at design pressure.

Clocks. Special clocks are geared to provide timed water applications ranging from 5 minutes to 24 hours for any predetermined number of days. The clocks, which are powered by electric lines, batteries, or water, actuate control valves that turn water on and off as needed.

ADVANTAGES

Operating Costs

Drip irrigation can reduce operating costs, and this has been the main interest in this new method. Drip systems can irrigate crops with significantly less water than is required by other more common irrigation methods. For example, young orchards irrigated by a drip system may require only one-half as much water as those under sprinkler or surface irrigation. As orchards mature, water savings from a drip system operation diminish but still may be important to many growers who need to irrigate more efficiently because of the scarcity and high prices of water.

Labor costs for irrigating also can be cut, since water applied by drip irrigation merely needs to be regulated, not tended. Such

regulation usually is accomplished by labor-saving automatic timing devices.

Field operations easier

Because much of the soil surface never is wetted by irrigation water, weed growth is reduced by drip irrigation. This lowers labor and chemical costs for weed control. Also, because less soil is wetted during irrigation by a drip system, uninterrupted orchard operations are possible. With row crops on beds, for example, the furrows in which farm workers walk remain relatively dry and provide firm footing.

Fertilization

Fertilizers can be injected into drip irrigation water to avoid the labor needed for ground application. Several highly soluble materials are available for this purpose, and new products that widen the choice are being introduced. Greater control over fertilizer placement and timing through drip irrigation may lead to improved fertilization efficiencies.

Pipe sizes

Because drip rates are slow, main and lateral line sizes can be smaller than those required for sprinkler or surface irrigation.

Soil moisture uniformity

Frequent irrigations maintain a soil-moisture condition that does not fluctuate between wet and dry extremes and also keep most of the soil well aerated. Less drying-down between irrigations keeps salts in soil water more dilute, and this makes possible the use of more saline waters than can be applied with other irrigation methods.

PROBLEMS

Clogging

Because the emitter water outlets are very small, they can become clogged by particles of mineral or organic matter. This can reduce emission rates, upset uniformity of water distribution, and thereby cause plant damage. In some cases, particles are present in irrigation water delivered to the grower and are not adequately filtered at the head. In others, particles may develop in water as it stands in the lines or evaporates from emitter orifices between irrigations. Iron oxide, calcium carbonate, algae and microbial slimes have formed in drip-irrigation systems in certain locations. Chemical treatment of waters can prevent or correct most of these emitter-clogging problems.

Phosphate fertilizers in irrigation waters also can cause clogging — phosphate reacts with any calcium in the water, forming a precipitate that can clog fine-mesh filters and emitters.

Many emitters operate at low pressures (3 to 20 psi). If a field slopes steeply, the nozzle discharge during irrigation may differ up to 50 percent from that intended, and the lines drain through lower emitters after the water is shut off. Some plants would receive too much and others too little water.

Soil conditions

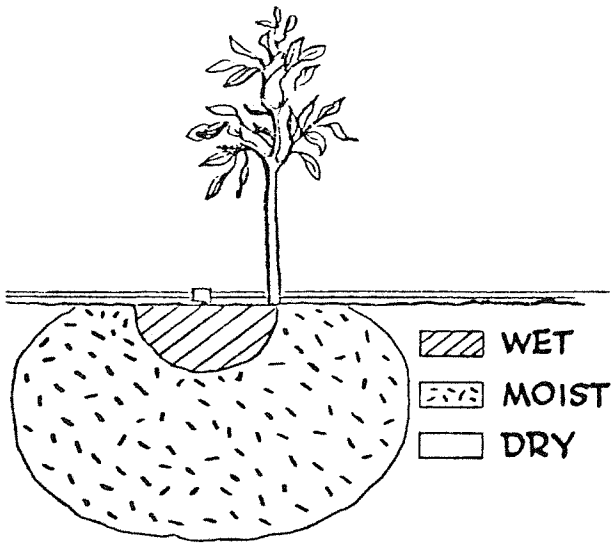
Some soils may not have sufficient infiltration capacity to absorb water at the usual discharge rate without runoff or undesirable ponding. At 1 gph discharge, the soil must have an infiltration capacity of 0.5 inch per hour to keep the pool of free water around the emitter from exceeding 2 feet in diameter. Sandy soils are probably best adapted to drip irrigation, especially those with slight horizontal stratification. Such stratification is beneficial for drip irrigation because it promotes lateral water movement and wets a greater volume of soil. Experience has shown that medium-textured soils usually perform well, but some fine-textured soils have created problems.

Salt accumulation

Salts tend to concentrate at the soil surface and constitute a potential hazard because light rains can move them into the root zone. Therefore, when rain occurs after a period of salt accumulation, irrigation should continue on schedule until about 2 inches of rain have fallen to ensure leaching of salts below the root zone.

During drip irrigation, salts also concentrate below the surface at the perimeter of the soil volume wetted by each emitter. Drying of the soil between irrigations may cause a reverse movement of soil water and transfer of salt from the perimeter back toward the emitter. Water movement must always be away from the emitter to avoid salt damage.

Should uncontrolled events cause interruption of irrigation, crop damage could occur rather quickly. Foraging ability of roots for nutrients and water is limited to the small volume of soil wetted.



Rodents are known to chew polyethylene laterals. Rodent control, or use of polyvinylchloride (PVC) laterals, are possible solutions.

OPERATIONAL REQUIREMENTS

Irrigations must be frequent. This means daily or alternate days during the major growing season. Plants deplete the water faster in the small root volume wetted. Rate of water movement by capillarity, (which accounts for most soil wetting between emitters) decreases rapidly as soil dries, and becomes zero if soil cracks.

Water should be applied slowly so that it will be absorbed and not run off from application points. Runoff and ponding should be avoided.

Application duration should be the time needed to apply the water consumed since the previous irrigation. It may range between 1 and 16 hours and should not be continuous. If more than 16 of each 24 hours are needed regularly, the number of emitters should be increased. Duration should not extend beyond the time when ponding or runoff starts — this can be avoided by stopping the water and starting again at a later time.

Amount of water applied should be based on measured or carefully observed soil-water conditions that reveal the balance between additions and withdrawals. Tensiometers placed in the active root zone and 12 to 15 inches from the nearest emitter provide a suitable guide when their readings stay between 10 and 20 centibars. Evaporation measurements can be used if suitable correction factors for plant size are available. Unfortunately, these factors range between 10 and 80 percent and keep changing as plants grow.

Filters and screens must be cleaned periodically by hand or by built-in backflushing if drip systems are to function properly. Depending on water quality and filter size, this may be weekly, twice a week, or twice a month. Once a month the clamp at the end of each lateral line should be released to flush out accumulated sediment.

Emitters should be checked visually each week for correct flow. As their performance builds confidence, the intervals between checking may be increased. Take precise measurements at least twice each year by catching the flow from a number of emitters in a calibrated cylinder for exactly 1 minute. Problems of emitter performance or pressure control in lateral lines are revealed by such measurements.

Water pressure in the lateral at the emitter affects the output of most emitters. A few types are pressure-compensating within limits to maintain a constant outflow. Pressure control in the distribution system is generally necessary, and is accomplished by placing laterals as nearly as possible on the contour and by including an adjustment valve at the connection of each lateral to the main on sloping fields. The pressure at these adjustment valves should be checked periodically and the valve readjusted as needed.

For further information see Leaflet 21025, *Drip Irrigation for the Home Garden and Landscape.*

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the United States Department of Agriculture, James B, Kendrick, Jr., Director, Cooperative Extension, University of California.

5m–4/79–VL/ME