

# Drinking Water Source Assessment

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Water System

**Palomino Lakes Mutual Water Co.**

Sonoma County

Water Source

**WELL 01**

Assessment Date

**July, 2001**

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California Department of Health Services  
Drinking Water Field Operations Branch  
DHS Sonoma District

|                     |                    |
|---------------------|--------------------|
| <b>District No.</b> | <b>18</b>          |
| <b>System No.</b>   | <b>4900570</b>     |
| <b>Source No.</b>   | <b>001</b>         |
| <b>PS Code</b>      | <b>4900570-001</b> |

## Assessment Summary

**District Name** DHS Sonoma District      **District No.** 18      **County** Sonoma  
**System Name** Palomino Lakes Mutual Water Co.      **System No.** 4900570  
**Source Name** WELL 01      **Source No.** 001      **PS Code** 4900570-001  


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**Completed by** Robert Brownwood      **Date** July, 2001

According to DHS records, this Source is Groundwater. This Assessment was done using the Default Groundwater System Method.

### Description of System and Source

The Palomino Lakes Mutual Water Co. water system is located in Sonoma County and serves the Palomino Lakes Subdivision. There are approximately 106 service connections serving a population of 250.

The drinking water source for the Palomino Lakes Mutual Water Co. water system is Well No. 1 located approximately 1000 feet from the Russian River, near Asti.

### Assessment Procedures

The assessment of the source WELL 01 was conducted by the Department of Health Services, Sonoma District Office. The following sources of information were used in the assessment: DHS files and an inspection of the water system.

Procedures used to conduct the assessment include: Turbo Swap

### Contents of this Assessment

|                                         |                                        |                                                |
|-----------------------------------------|----------------------------------------|------------------------------------------------|
| Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Assessment Summary                             |
| Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Vulnerability Summary                          |
| Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> | Source Location Form                           |
| Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Delineation of Water Protection Zones          |
| Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Physical Barrier Effectiveness Checklist       |
| Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Source Data Sheet                              |
| Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Inventory of Possible Contaminating Activities |
| Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Vulnerability Ranking                          |
| Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Assessment Map                                 |

**Vulnerability Summary**

District Name DHS Sonoma District District No. 18 County Sonoma  
System Name Palomino Lakes Mutual Water Co. System No. 4900570  
Source Name WELL 01 Source No. 001 PS Code 4900570-001

Completed by Robert Brownwood Date July, 2001

**THE FOLLOWING INFORMATION MUST BE INCLUDED IN THE SYSTEM CONSUMER CONFIDENCE**

A source water assessment was conducted for the WELL 01  
of the Palomino Lakes Mutual Water Co. water system in July, 2001.

The source is considered most vulnerable to the following activities not associated with any detected contaminants:

Agricultural Drainage  
Mining - Sand/Gravel  
Septic systems - low density [ $<1/\text{acre}$ ]  
Wells - Agricultural/ Irrigation

A copy of the complete assessment may be viewed at:

Drinking Water Field Operations Branch  
50 D Street, Suite 200  
Santa Rosa, CA 95404

You may request a summary of the assessment be sent to you by contacting:

Office Representative  
(707) 576-2145  
(707) 576-2722 (fax)

## Delineation of Water Protection Zones

District Name DHS Sonoma District District No. 18 County Sonoma  
 System Name Palomino Lakes Mutual Water Co. System No. 4900570  
 Source Name WELL 01 Source No. 001 PS Code 4900570-001

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### Method Used to Delineate Protection Zones

#### X 1. Calculated Fixed Radius

2. Modified Calculated Fixed Radius (Attach documentation for direction of ground water flow.)
3. More Detailed Methods
4. Arbitrary Fixed Radius (For use only by or permission of DHS)

Maximum Pumping Rate of Well (Q) 190 gallons/minute  
306 acre feet/year  
13,350,730 cubic feet/year

Effective Porosity 0.20  Default Value

Screened Interval of Well 10 feet  Default Value

| Protection Zone         | Calculated Value | Minimum Value | Radius of Protection Zone |
|-------------------------|------------------|---------------|---------------------------|
| Zone A - 2 Year TOT*    | 2,061 Feet       | 600 Feet      | <b>2,061</b> Feet         |
| Zone B5 - 5 Year TOT*   | 3,259 Feet       | 1,000 Feet    | <b>3,259</b> Feet         |
| Zone B10 - 10 Year TOT* | 4,610 Feet       | 1,500 Feet    | <b>4,610</b> Feet         |

\*TOT = Time of Travel

## Physical Barrier Effectiveness (PBE)

District Name DHS Sonoma District District No. 18 County Sonoma  
 System Name Palomino Lakes Mutual Water Co. System No. 4900570  
 Source Name WELL 01 Source No. 001 PS Code 4900570-001

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| Parameter                                                                                                                               | Possible Points               | This Source | Score     |
|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------|-----------|
| <b>Type of Aquifer Confinement</b>                                                                                                      |                               |             |           |
| 1. Unconfined, Semi-confined, Fractured Rock, Unknown Aquifer                                                                           | 0                             | <b>X</b>    | <b>0</b>  |
| 2. Confined                                                                                                                             | 50                            |             |           |
| <b>Aquifer Material (Unconfined Aquifers)</b>                                                                                           |                               |             |           |
| <b>Type of material within aquifer</b>                                                                                                  |                               |             |           |
| 1. Porous Media (Interbedded sands, silts, clays, gravels) with continuous clay layer minimum 25' thick above water table within Zone A | 20                            |             |           |
| 2. Porous Media (Interbedded sands, silts, clays, gravels)                                                                              | 10                            | <b>X</b>    | <b>10</b> |
| 3. Fractured rock ( Low Physical Barrier Effectiveness - no further questions required)                                                 | 0                             |             |           |
| <b>Pathways of Contamination (All Aquifers)</b>                                                                                         |                               |             |           |
| <b>Presence of Abandoned or Improperly Destroyed Wells</b>                                                                              |                               |             |           |
| 1. Present within Zone A (2 year TOT distance)                                                                                          | Yes                           | 0           |           |
|                                                                                                                                         | No                            | 5           |           |
|                                                                                                                                         | Unknown                       | 0           | <b>X</b>  |
| 2. Present within Zone B5 (2 -5 year TOT distance)                                                                                      | Yes                           | 0           |           |
|                                                                                                                                         | No                            | 3           |           |
|                                                                                                                                         | Unknown                       | 0           | <b>X</b>  |
| 3. Present within Zone B10 (5-10 year TOT distance)                                                                                     | Yes                           | 0           |           |
|                                                                                                                                         | No                            | 2           |           |
|                                                                                                                                         | Unknown                       | 0           | <b>X</b>  |
| <b>Static Water Conditions (Unconfined Aquifers)</b>                                                                                    |                               |             |           |
| Depth to Static Water (DTW) <u>10</u> feet                                                                                              | 0 to 20 feet                  | 0           | <b>X</b>  |
|                                                                                                                                         | 20 to 50 feet                 | 2           |           |
|                                                                                                                                         | 50 to 100 feet                | 6           |           |
|                                                                                                                                         | Greater than 100 feet         | 10          |           |
|                                                                                                                                         | Unknown                       | 0           |           |
| <b>Well Operation (Unconfined Aquifers)</b>                                                                                             |                               |             |           |
| Depth to Uppermost Perforations (DUP) <u>10</u> feet                                                                                    |                               |             |           |
| Maximum Pumping Rate of Well (Q) <u>190</u> gallons/minute                                                                              |                               |             |           |
| Length of Screened Interval (H) <u>10</u> feet                                                                                          | Less than 5                   | 0           | <b>X</b>  |
|                                                                                                                                         | Between 5 and 10              | 5           |           |
|                                                                                                                                         | Greater than 10               | 10          |           |
|                                                                                                                                         | Unknown                       | 0           |           |
|                                                                                                                                         | [DUP - DTW / Q/H] <u>0.00</u> |             |           |

## Physical Barrier Effectiveness (PBE)

District Name DHS Sonoma District District No. 18 County Sonoma  
 System Name Palomino Lakes Mutual Water Co. System No. 4900570  
 Source Name WELL 01 Source No. 001 PS Code 4900570-001

Completed by Robert Brownwood Date July, 2001

| Parameter                                           | Possible Points                                                                                          | This Source | Score    |
|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------|-------------|----------|
| <b>Well Construction (All Aquifers)</b>             |                                                                                                          |             |          |
| Sanitary Seal (Annular Seal) Depth<br><u>4</u> feet | None or less than 20 feet                                                                                | <b>X</b>    | <b>0</b> |
|                                                     | Between 20 and 50 feet                                                                                   |             |          |
|                                                     | 50 feet or greater                                                                                       |             |          |
|                                                     | Unknown                                                                                                  |             |          |
| Surface Seal (concrete cap)                         | Not present or improperly constructed                                                                    | <b>X</b>    | <b>0</b> |
|                                                     | Watertight, slopes away from well at least 2' laterally in all directions                                |             |          |
|                                                     | Unknown                                                                                                  |             |          |
| Flooding potential at well site                     | Subject to localized flooding (i.e. in low area or unsealed pit or vault) or within 100 year flood plain | <b>X</b>    | <b>0</b> |
|                                                     | Not subject to flooding                                                                                  |             |          |
|                                                     | Unknown                                                                                                  |             |          |
| Security at well site                               | Not secure                                                                                               |             |          |
|                                                     | Secure                                                                                                   | <b>X</b>    | <b>5</b> |
|                                                     | Unknown                                                                                                  |             |          |

| Score     | Effectiveness |
|-----------|---------------|
| 0 to 35   | Low           |
| 36 to 69  | Moderate      |
| 70 to 100 | High          |

**Maximum Score = 70**

|               |            |
|---------------|------------|
| Score         | <u>15</u>  |
| Effectiveness | <u>Low</u> |

## Inventory of Possible Contaminating Activities (PCA Inventory)

**District Name** DHS Sonoma District      **District No.** 18      **County** Sonoma  
**System Name** Palomino Lakes Mutual Water Co.      **System No.** 4900570  
**Source Name** WELL 01      **Source No.** 001      **PS Code** 4900570-001

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| PCA (Risk Ranking)                                                                                           | PCA in Zone A | PCA in Zone B5 | PCA in Zone B10 | * | Comments |
|--------------------------------------------------------------------------------------------------------------|---------------|----------------|-----------------|---|----------|
| <b>Residential/Municipal Activities</b>                                                                      |               |                |                 |   |          |
| Airports - Maintenance/fueling areas (VH)                                                                    | N             | N              | N               |   |          |
| Landfills/dumps (VH)                                                                                         | N             | N              | N               |   |          |
| Railroad yards/maintenance/fueling areas (H)                                                                 | <b>U</b>      | <b>U</b>       | <b>U</b>        |   |          |
| Septic systems - high density [>1/acre] (VH in Zone A, otherwise M)                                          | N             | <b>Y</b>       | <b>Y</b>        |   |          |
| Sewer collection systems (H in Zone A, otherwise L)                                                          | N             | N              | N               |   |          |
| Utility stations - maintenance areas (H)                                                                     | N             | <b>U</b>       | <b>U</b>        |   |          |
| Wastewater treatment plants (VH in Zone A, otherwise H)                                                      | N             | N              | N               |   |          |
| Drinking water treatment plants (M)                                                                          | N             | N              | N               |   |          |
| Golf courses (M)                                                                                             | N             | N              | N               |   |          |
| Housing - high density [>1 house/0.5 acres] (M)                                                              | <b>Y</b>      | <b>Y</b>       | <b>Y</b>        |   |          |
| Motor pools (M)                                                                                              | N             | <b>U</b>       | <b>U</b>        |   |          |
| Parks (M)                                                                                                    | N             | N              | N               |   |          |
| Waste transfer/recycling stations (M)                                                                        | N             | N              | N               |   |          |
| Apartments and condominiums (L)                                                                              | N             | N              | N               |   |          |
| Campgrounds/Recreational areas (L)                                                                           | N             | <b>U</b>       | <b>U</b>        |   |          |
| Fire stations (L)                                                                                            | N             | <b>U</b>       | <b>U</b>        |   |          |
| RV Parks (L)                                                                                                 | N             | <b>U</b>       | <b>U</b>        |   |          |
| Schools (L)                                                                                                  | N             | <b>Y</b>       | <b>U</b>        |   |          |
| Hotels, Motels (L)                                                                                           | N             | <b>U</b>       | <b>U</b>        |   |          |
| <b>Agricultural/Rural Activities</b>                                                                         |               |                |                 |   |          |
| Grazing [> 5 large animals or equivalent per acre] (H in Zone A, otherwise M)                                | <b>U</b>      | <b>U</b>       | <b>U</b>        |   |          |
| Concentrated Animal Feeding Operations [CAFOs] as defined in federal regulation1 (VH in Zone A, otherwise M) | N             | <b>U</b>       | <b>U</b>        |   |          |
| Animal Feeding Operations as defined in federal regulation2 (VH in Zone A, otherwise H)                      | N             | N              | N               |   |          |
| Other Animal operations (H in Zone A, otherwise M)                                                           | N             | N              | N               |   |          |
| Farm chemical distributor/ application service (H)                                                           | N             | N              | N               |   |          |
| Farm machinery repair (H)                                                                                    | <b>U</b>      | <b>U</b>       | <b>U</b>        |   |          |
| Septic systems - low density [<1/acre] (H in Zone A, otherwise L)                                            | <b>Y</b>      | <b>Y</b>       | <b>Y</b>        |   |          |

**Y = Yes      N = No      U = Unknown**  
**\* = A contaminant potentially associated with this activity has been detected in the water supply.**

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**District Name** DHS Sonoma District      **District No.** 18      **County** Sonoma  
**System Name** Palomino Lakes Mutual Water Co.      **System No.** 4900570  
**Source Name** WELL 01      **Source No.** 001      **PS Code** 4900570-001

**Completed by** Robert Brownwood      **Date** July, 2001

| PCA (Risk Ranking)                                                                                                 | PCA in<br>Zone A | PCA in<br>Zone B5 | PCA in<br>Zone B10 | * | Comments |
|--------------------------------------------------------------------------------------------------------------------|------------------|-------------------|--------------------|---|----------|
| <b>Agricultural/Rural Activities</b>                                                                               |                  |                   |                    |   |          |
| Lagoons/liquid wastes (H)                                                                                          | U                | U                 | U                  |   |          |
| Machine shops (H)                                                                                                  | N                | U                 | U                  |   |          |
| Pesticide/fertilizer/petroleum storage & transfer areas (H)                                                        | U                | U                 | U                  |   |          |
| Agricultural Drainage (H in Zone A, otherwise M)                                                                   | Y                | Y                 | Y                  |   |          |
| Wells - Agricultural/ Irrigation (H)                                                                               | Y                | Y                 | Y                  |   |          |
| Managed Forests (M)                                                                                                | U                | U                 | U                  |   |          |
| Crops, irrigated [Berries, hops, mint, orchards, sod, greenhouses, vineyards, nurseries, vegetable] (M)            | Y                | Y                 | Y                  |   |          |
| Fertilizer/Pesticide/Herbicide Application (M)                                                                     | Y                | Y                 | Y                  |   |          |
| Sewage sludge/biosolids application (M)                                                                            | N                | N                 | N                  |   |          |
| Crops, nonirrigated [e.g., Christmas trees, grains, grass seeds, hay, pasture] [includes drip-irrigated crops] (L) | U                | U                 | U                  |   |          |
| <b>Other Activities</b>                                                                                            |                  |                   |                    |   |          |
| NPDES/WDR permitted discharges (H)                                                                                 | U                | U                 | U                  |   |          |
| Underground Injection of Commercial/Industrial Discharges (VH)                                                     | U                | U                 | U                  |   |          |
| Historic gas stations (VH)                                                                                         | U                | U                 | U                  |   |          |
| Historic waste dumps/landfills (VH)                                                                                | U                | U                 | U                  |   |          |
| Illegal activities/unauthorized dumping (H)                                                                        | U                | U                 | U                  |   |          |
| Injection wells/dry wells/ sumps (VH)                                                                              | U                | U                 | U                  |   |          |
| Known Contaminant Plumes (VH)                                                                                      | N                | N                 | N                  |   |          |
| Military installations (VH)                                                                                        | N                | N                 | N                  |   |          |
| Mining operations - Historic (VH)                                                                                  | U                | U                 | U                  |   |          |
| Mining operations - Active (VH)                                                                                    | U                | U                 | U                  |   |          |
| Mining - Sand/Gravel (H)                                                                                           | Y                | Y                 | Y                  |   |          |
| Wells - Oil, Gas, Geothermal (H)                                                                                   | U                | U                 | U                  |   |          |
| Salt Water Intrusion (H)                                                                                           | N                | N                 | N                  |   |          |
| Recreational area - surface water source (H)                                                                       | N                | N                 | N                  |   |          |
| Underground storage tanks - Confirmed leaking tanks (VH)                                                           | U                | U                 | U                  |   |          |
| Underground storage tanks - Decommissioned - inactive tanks (L)                                                    | U                | U                 | U                  |   |          |

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**System Name** Palomino Lakes Mutual Water Co.      **System No.** 4900570  
**Source Name** WELL 01      **Source No.** 001      **PS Code** 4900570-001

**Completed by** Robert Brownwood      **Date** July, 2001

| PCA (Risk Ranking)                                                                        | PCA in Zone A | PCA in Zone B5 | PCA in Zone B10 | * | Comments |
|-------------------------------------------------------------------------------------------|---------------|----------------|-----------------|---|----------|
| <b>Other Activities</b>                                                                   |               |                |                 |   |          |
| Underground storage tanks - Non-regulated tanks [tanks smaller than regulatory limit] (H) | <b>U</b>      | <b>U</b>       | <b>U</b>        |   |          |
| Underground storage tanks - Not yet upgraded or registered tanks (H)                      | <b>U</b>      | <b>U</b>       | <b>U</b>        |   |          |
| Underground storage tanks - Upgraded and/or registered - active tanks (L)                 | <b>U</b>      | <b>U</b>       | <b>U</b>        |   |          |
| Above ground storage tanks (M)                                                            | <b>U</b>      | <b>U</b>       | <b>U</b>        |   |          |
| Wells - Water supply (M)                                                                  | <b>Y</b>      | <b>Y</b>       | <b>Y</b>        |   |          |
| Construction/demolition staging areas (M)                                                 | N             | N              | N               |   |          |
| Contractor or government agency equipment storage yards (M)                               | N             | <b>U</b>       | <b>U</b>        |   |          |
| Dredging (M)                                                                              | N             | N              | N               |   |          |
| Transportation corridors - Freeways/state highways (M)                                    | N             | N              | <b>Y</b>        |   |          |
| Transportation corridors - Railroads (M)                                                  | N             | <b>Y</b>       | <b>Y</b>        |   |          |
| Transportation corridors - Historic railroad right-of-ways (M)                            | <b>Y</b>      | <b>Y</b>       | <b>Y</b>        |   |          |
| Transportation corridors - Road Right-of-ways [herbicide use areas] (M)                   | <b>Y</b>      | <b>Y</b>       | <b>Y</b>        |   |          |
| Transportation corridors - Roads/Streets (L)                                              | <b>Y</b>      | <b>Y</b>       | <b>Y</b>        |   |          |
| Hospitals (M)                                                                             | N             | N              | N               |   |          |
| Storm Drain Discharge Points (M)                                                          | N             | N              | N               |   |          |
| Storm Water Detention Facilities (M)                                                      | N             | N              | N               |   |          |
| Artificial Recharge Projects - Injection wells [potable water] (L)                        | N             | N              | N               |   |          |
| Artificial Recharge Projects - Injection wells [non-potable water] (M)                    | N             | N              | N               |   |          |
| Artificial Recharge Projects - Spreading Basins [potable water] (L)                       | N             | N              | N               |   |          |
| Artificial Recharge Projects - Spreading Basins [non-potable water] (M)                   | N             | N              | N               |   |          |
| Medical/dental offices/clinics (L)                                                        | N             | N              | N               |   |          |
| Veterinary offices/clinics (L)                                                            | N             | <b>U</b>       | <b>U</b>        |   |          |
| Surface water - streams/lakes/streams (L)                                                 | <b>Y</b>      | <b>Y</b>       | <b>Y</b>        |   |          |
| Wells - monitoring, test holes (L)                                                        | <b>U</b>      | <b>U</b>       | <b>U</b>        |   |          |

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## Vulnerability Ranking

District Name DHS Sonoma District District No. 18 County Sonoma

System Name Palomino Lakes Mutual Water Co. System No. 4900570

Source Name WELL 01 Source No. 001 PS Code 4900570-001

Completed by Robert Brownwood Date July, 2001

| Zone | PCA (Risk Ranking)                                                                                      | * | PCA Risk Points | Zone Points | PBE Points | Vulnerability Score |
|------|---------------------------------------------------------------------------------------------------------|---|-----------------|-------------|------------|---------------------|
| A    | Agricultural Drainage (H in Zone A, otherwise M)                                                        |   | 5               | 5           | 5          | 15                  |
| A    | Mining - Sand/Gravel (H)                                                                                |   | 5               | 5           | 5          | 15                  |
| A    | Septic systems - low density [<1/acre] (H in Zone A, otherwise L)                                       |   | 5               | 5           | 5          | 15                  |
| A    | Wells - Agricultural/ Irrigation (H)                                                                    |   | 5               | 5           | 5          | 15                  |
| A    | Crops, irrigated [Berries, hops, mint, orchards, sod, greenhouses, vineyards, nurseries, vegetable] (M) |   | 3               | 5           | 5          | 13                  |
| A    | Fertilizer/Pesticide/Herbicide Application (M)                                                          |   | 3               | 5           | 5          | 13                  |
| A    | Housing - high density [>1 house/0.5 acres] (M)                                                         |   | 3               | 5           | 5          | 13                  |
| A    | Transportation corridors - Historic railroad right-of-ways (M)                                          |   | 3               | 5           | 5          | 13                  |
| A    | Transportation corridors - Road Right-of-ways [herbicide use areas] (M)                                 |   | 3               | 5           | 5          | 13                  |
| A    | Wells - Water supply (M)                                                                                |   | 3               | 5           | 5          | 13                  |
| B5   | Mining - Sand/Gravel (H)                                                                                |   | 5               | 3           | 5          | 13                  |
| B5   | Wells - Agricultural/ Irrigation (H)                                                                    |   | 5               | 3           | 5          | 13                  |
| A    | Historic gas stations (VH)                                                                              |   | 7               | 0           | 5          | 12                  |
| A    | Historic waste dumps/landfills (VH)                                                                     |   | 7               | 0           | 5          | 12                  |
| A    | Injection wells/dry wells/ sumps (VH)                                                                   |   | 7               | 0           | 5          | 12                  |
| A    | Mining operations - Active (VH)                                                                         |   | 7               | 0           | 5          | 12                  |
| A    | Mining operations - Historic (VH)                                                                       |   | 7               | 0           | 5          | 12                  |
| A    | Underground Injection of Commercial/Industrial Discharges (VH)                                          |   | 7               | 0           | 5          | 12                  |
| A    | Underground storage tanks - Confirmed leaking tanks (VH)                                                |   | 7               | 0           | 5          | 12                  |
| B5   | Historic gas stations (VH)                                                                              |   | 7               | 0           | 5          | 12                  |
| B5   | Historic waste dumps/landfills (VH)                                                                     |   | 7               | 0           | 5          | 12                  |
| B5   | Injection wells/dry wells/ sumps (VH)                                                                   |   | 7               | 0           | 5          | 12                  |
| B5   | Mining operations - Active (VH)                                                                         |   | 7               | 0           | 5          | 12                  |
| B5   | Mining operations - Historic (VH)                                                                       |   | 7               | 0           | 5          | 12                  |
| B5   | Underground Injection of Commercial/Industrial Discharges (VH)                                          |   | 7               | 0           | 5          | 12                  |
| B5   | Underground storage tanks - Confirmed leaking tanks (VH)                                                |   | 7               | 0           | 5          | 12                  |
| B10  | Historic gas stations (VH)                                                                              |   | 7               | 0           | 5          | 12                  |
| B10  | Historic waste dumps/landfills (VH)                                                                     |   | 7               | 0           | 5          | 12                  |
| B10  | Injection wells/dry wells/ sumps (VH)                                                                   |   | 7               | 0           | 5          | 12                  |

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## Vulnerability Ranking

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**System Name** Palomino Lakes Mutual Water Co.      **System No.** 4900570  
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**Completed by** Robert Brownwood      **Date** July, 2001

| Zone | PCA (Risk Ranking)                                                                                      | * | PCA Risk Points | Zone Points | PBE Points | Vulnerability Score |
|------|---------------------------------------------------------------------------------------------------------|---|-----------------|-------------|------------|---------------------|
| B10  | Mining operations - Active (VH)                                                                         |   | 7               | 0           | 5          | 12                  |
| B10  | Mining operations - Historic (VH)                                                                       |   | 7               | 0           | 5          | 12                  |
| B10  | Underground Injection of Commercial/Industrial Discharges (VH)                                          |   | 7               | 0           | 5          | 12                  |
| B10  | Underground storage tanks - Confirmed leaking tanks (VH)                                                |   | 7               | 0           | 5          | 12                  |
| A    | Surface water - streams/lakes/streams (L)                                                               |   | 1               | 5           | 5          | 11                  |
| A    | Transportation corridors - Roads/Streets (L)                                                            |   | 1               | 5           | 5          | 11                  |
| B5   | Agricultural Drainage (H in Zone A, otherwise M)                                                        |   | 3               | 3           | 5          | 11                  |
| B5   | Crops, irrigated [Berries, hops, mint, orchards, sod, greenhouses, vineyards, nurseries, vegetable] (M) |   | 3               | 3           | 5          | 11                  |
| B5   | Fertilizer/Pesticide/Herbicide Application (M)                                                          |   | 3               | 3           | 5          | 11                  |
| B5   | Housing - high density [>1 house/0.5 acres] (M)                                                         |   | 3               | 3           | 5          | 11                  |
| B5   | Septic systems - high density [>1/acre] (VH in Zone A, otherwise M)                                     |   | 3               | 3           | 5          | 11                  |
| B5   | Transportation corridors - Historic railroad right-of-ways (M)                                          |   | 3               | 3           | 5          | 11                  |
| B5   | Transportation corridors - Railroads (M)                                                                |   | 3               | 3           | 5          | 11                  |
| B5   | Transportation corridors - Road Right-of-ways [herbicide use areas] (M)                                 |   | 3               | 3           | 5          | 11                  |
| B5   | Wells - Water supply (M)                                                                                |   | 3               | 3           | 5          | 11                  |
| B10  | Mining - Sand/Gravel (H)                                                                                |   | 5               | 1           | 5          | 11                  |
| B10  | Wells - Agricultural/ Irrigation (H)                                                                    |   | 5               | 1           | 5          | 11                  |
| A    | Farm machinery repair (H)                                                                               |   | 5               | 0           | 5          | 10                  |
| A    | Grazing [> 5 large animals or equivalent per acre] (H in Zone A, otherwise M)                           |   | 5               | 0           | 5          | 10                  |
| A    | Illegal activities/unauthorized dumping (H)                                                             |   | 5               | 0           | 5          | 10                  |
| A    | Lagoons/liquid wastes (H)                                                                               |   | 5               | 0           | 5          | 10                  |
| A    | NPDES/WDR permitted discharges (H)                                                                      |   | 5               | 0           | 5          | 10                  |
| A    | Pesticide/fertilizer/petroleum storage & transfer areas (H)                                             |   | 5               | 0           | 5          | 10                  |
| A    | Railroad yards/maintenance/fueling areas (H)                                                            |   | 5               | 0           | 5          | 10                  |
| A    | Underground storage tanks - Non-regulated tanks [tanks smaller than regulatory limit] (H)               |   | 5               | 0           | 5          | 10                  |
| A    | Underground storage tanks - Not yet upgraded or registered tanks (H)                                    |   | 5               | 0           | 5          | 10                  |
| A    | Wells - Oil, Gas, Geothermal (H)                                                                        |   | 5               | 0           | 5          | 10                  |

\* = A contaminant potentially associated with this activity has been detected in the water supply.

## Vulnerability Ranking

District Name DHS Sonoma District District No. 18 County Sonoma

System Name Palomino Lakes Mutual Water Co. System No. 4900570

Source Name WELL 01 Source No. 001 PS Code 4900570-001

Completed by Robert Brownwood Date July, 2001

| Zone | PCA (Risk Ranking)                                                                                           | * | PCA Risk Points | Zone Points | PBE Points | Vulnerability Score |
|------|--------------------------------------------------------------------------------------------------------------|---|-----------------|-------------|------------|---------------------|
| B5   | Concentrated Animal Feeding Operations [CAFOs] as defined in federal regulation1 (VH in Zone A, otherwise H) |   | 5               | 0           | 5          | 10                  |
| B5   | Farm machinery repair (H)                                                                                    |   | 5               | 0           | 5          | 10                  |
| B5   | Illegal activities/unauthorized dumping (H)                                                                  |   | 5               | 0           | 5          | 10                  |
| B5   | Lagoons/liquid wastes (H)                                                                                    |   | 5               | 0           | 5          | 10                  |
| B5   | Machine shops (H)                                                                                            |   | 5               | 0           | 5          | 10                  |
| B5   | NPDES/WDR permitted discharges (H)                                                                           |   | 5               | 0           | 5          | 10                  |
| B5   | Pesticide/fertilizer/petroleum storage & transfer areas (H)                                                  |   | 5               | 0           | 5          | 10                  |
| B5   | Railroad yards/maintenance/fueling areas (H)                                                                 |   | 5               | 0           | 5          | 10                  |
| B5   | Underground storage tanks - Non-regulated tanks [tanks smaller than regulatory limit] (H)                    |   | 5               | 0           | 5          | 10                  |
| B5   | Underground storage tanks - Not yet upgraded or registered tanks (H)                                         |   | 5               | 0           | 5          | 10                  |
| B5   | Utility stations - maintenance areas (H)                                                                     |   | 5               | 0           | 5          | 10                  |
| B5   | Wells - Oil, Gas, Geothermal (H)                                                                             |   | 5               | 0           | 5          | 10                  |
| B10  | Concentrated Animal Feeding Operations [CAFOs] as defined in federal regulation1 (VH in Zone A, otherwise H) |   | 5               | 0           | 5          | 10                  |
| B10  | Farm machinery repair (H)                                                                                    |   | 5               | 0           | 5          | 10                  |
| B10  | Illegal activities/unauthorized dumping (H)                                                                  |   | 5               | 0           | 5          | 10                  |
| B10  | Lagoons/liquid wastes (H)                                                                                    |   | 5               | 0           | 5          | 10                  |
| B10  | Machine shops (H)                                                                                            |   | 5               | 0           | 5          | 10                  |
| B10  | NPDES/WDR permitted discharges (H)                                                                           |   | 5               | 0           | 5          | 10                  |
| B10  | Pesticide/fertilizer/petroleum storage & transfer areas (H)                                                  |   | 5               | 0           | 5          | 10                  |
| B10  | Railroad yards/maintenance/fueling areas (H)                                                                 |   | 5               | 0           | 5          | 10                  |
| B10  | Underground storage tanks - Non-regulated tanks [tanks smaller than regulatory limit] (H)                    |   | 5               | 0           | 5          | 10                  |
| B10  | Underground storage tanks - Not yet upgraded or registered tanks (H)                                         |   | 5               | 0           | 5          | 10                  |
| B10  | Utility stations - maintenance areas (H)                                                                     |   | 5               | 0           | 5          | 10                  |
| B10  | Wells - Oil, Gas, Geothermal (H)                                                                             |   | 5               | 0           | 5          | 10                  |
| B5   | Schools (L)                                                                                                  |   | 1               | 3           | 5          | 9                   |
| B5   | Septic systems - low density [<1/acre] (H in Zone A, otherwise L)                                            |   | 1               | 3           | 5          | 9                   |
| B5   | Surface water - streams/lakes/rivers (L)                                                                     |   | 1               | 3           | 5          | 9                   |

\* = A contaminant potentially associated with this activity has been detected in the water supply.

## Vulnerability Ranking

**District Name** DHS Sonoma District      **District No.** 18      **County** Sonoma  
**System Name** Palomino Lakes Mutual Water Co.      **System No.** 4900570  
**Source Name** WELL 01      **Source No.** 001      **PS Code** 4900570-001

**Completed by** Robert Brownwood      **Date** July, 2001

| Zone | PCA (Risk Ranking)                                                                                      | * | PCA Risk Points | Zone Points | PBE Points | Vulnerability Score |
|------|---------------------------------------------------------------------------------------------------------|---|-----------------|-------------|------------|---------------------|
| B5   | Transportation corridors - Roads/Streets (L)                                                            |   | 1               | 3           | 5          | 9                   |
| B10  | Agricultural Drainage (H in Zone A, otherwise M)                                                        |   | 3               | 1           | 5          | 9                   |
| B10  | Crops, irrigated [Berries, hops, mint, orchards, sod, greenhouses, vineyards, nurseries, vegetable] (M) |   | 3               | 1           | 5          | 9                   |
| B10  | Fertilizer/Pesticide/Herbicide Application (M)                                                          |   | 3               | 1           | 5          | 9                   |
| B10  | Housing - high density [>1 house/0.5 acres] (M)                                                         |   | 3               | 1           | 5          | 9                   |
| B10  | Septic systems - high density [>1/acre] (VH in Zone A, otherwise M)                                     |   | 3               | 1           | 5          | 9                   |
| B10  | Transportation corridors - Freeways/state highways (M)                                                  |   | 3               | 1           | 5          | 9                   |
| B10  | Transportation corridors - Historic railroad right-of-ways (M)                                          |   | 3               | 1           | 5          | 9                   |
| B10  | Transportation corridors - Railroads (M)                                                                |   | 3               | 1           | 5          | 9                   |
| B10  | Transportation corridors - Road Right-of-ways [herbicide use areas] (M)                                 |   | 3               | 1           | 5          | 9                   |
| B10  | Wells - Water supply (M)                                                                                |   | 3               | 1           | 5          | 9                   |
| A    | Above ground storage tanks (M)                                                                          |   | 3               | 0           | 5          | 8                   |
| A    | Managed Forests (M)                                                                                     |   | 3               | 0           | 5          | 8                   |
| B5   | Above ground storage tanks (M)                                                                          |   | 3               | 0           | 5          | 8                   |
| B5   | Contractor or government agency equipment storage yards (M)                                             |   | 3               | 0           | 5          | 8                   |
| B5   | Grazing [> 5 large animals or equivalent per acre] (H in Zone A, otherwise M)                           |   | 3               | 0           | 5          | 8                   |
| B5   | Managed Forests (M)                                                                                     |   | 3               | 0           | 5          | 8                   |
| B5   | Motor pools (M)                                                                                         |   | 3               | 0           | 5          | 8                   |
| B10  | Above ground storage tanks (M)                                                                          |   | 3               | 0           | 5          | 8                   |
| B10  | Contractor or government agency equipment storage yards (M)                                             |   | 3               | 0           | 5          | 8                   |
| B10  | Grazing [> 5 large animals or equivalent per acre] (H in Zone A, otherwise M)                           |   | 3               | 0           | 5          | 8                   |
| B10  | Managed Forests (M)                                                                                     |   | 3               | 0           | 5          | 8                   |
| B10  | Motor pools (M)                                                                                         |   | 3               | 0           | 5          | 8                   |

\* = A contaminant potentially associated with this activity has been detected in the water supply.