Drinking Water Source Assessment

Water System

Woodland, City of

Yolo County

Water Source

WELL 01 - STANDBY

Assessment Date

December, 2002

Assessment Completed By

City of Woodland

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

District No.	**09**
System No.	**5710006**
Source No.	**001**
PS Code	**5710006-001**

Vulnerability Summary

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 01 - STANDBY **Source No.** 001 **PS Code** 5710006-001

Completed by City of Woodland **Date** December, 2002

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

A source water assessment was conducted for the **WELL 01 - STANDBY**

of the **Woodland, City of** water system in **December, 2002** .

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

Automobile - Gas stations
Historic gas stations
Known Contaminant Plumes
Metal plating/ finishing/fabricating
Underground storage tanks - Confirmed leaking tanks

Discussion of Vulnerability

Well 1, located next to two main transportation corridors in Woodland, Main St. (old HY 16) and East Street (old HY 113) with the California Northern Railroad (old Southern Pacific tracks) has a large number of transportation related PCAs.

A copy of the complete assessment may be viewed at:

City of Woodland, Yard
855 N. Pioneer Ave.
Woodland, CA 95778

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

System Engineer
(530) 661-5962
(530) 661-1290 (fax)
pubworks@cityofwoodland.org

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 01 - STANDBY **Source No.** 001 **PS Code** 5710006-001

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
A	Automobile - Gas stations (VH)		7	5	5	17
A	Historic gas stations (VH)		7	5	5	17
A	Known Contaminant Plumes (VH)		7	5	5	17
A	Metal plating/ finishing/fabricating (VH)		7	5	5	17
A	Underground storage tanks - Confirmed leaking tanks (VH)		7	5	5	17
A	Automobile - Repair shops (H)		5	5	5	15
A	Chemical/petroleum pipelines (H)		5	5	5	15
A	Machine shops (H)		5	5	5	15
A	Sewer collection systems (H in Zone A, otherwise L)		5	5	5	15
B5	Automobile - Gas stations (VH)		7	3	5	15
B5	Historic gas stations (VH)		7	3	5	15
B5	Known Contaminant Plumes (VH)		7	3	5	15
B5	Underground storage tanks - Confirmed leaking tanks (VH)		7	3	5	15
A	Housing - high density [>1 house/0.5 acres] (M)		3	5	5	13
A	Parks (M)		3	5	5	13
A	Transportation corridors - Freeways/state highways (M)		3	5	5	13
A	Transportation corridors - Historic railroad right-of-ways (M)		3	5	5	13
A	Transportation corridors - Railroads (M)		3	5	5	13
B5	Automobile - Repair shops (H)		5	3	5	13
B5	Chemical/petroleum pipelines (H)		5	3	5	13
B5	Fleet/truck/bus terminals (H)		5	3	5	13
B5	Machine shops (H)		5	3	5	13
B10	Historic gas stations (VH)		7	1	5	13
B10	Known Contaminant Plumes (VH)		7	1	5	13
B10	Underground storage tanks - Confirmed leaking tanks (VH)		7	1	5	13
A	Hotels, Motels (L)		1	5	5	11
A	Office buildings/complexes (L)		1	5	5	11

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

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 01 - STANDBY **Source No.** 001 **PS Code** 5710006-001

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
A	Transportation corridors - Roads/Streets (L)		1	5	5	11
A	Underground storage tanks - Upgraded and/or registered - active tanks (L)		1	5	5	11
A	Wells - monitoring, test holes (L)		1	5	5	11
B5	Housing - high density [>1 house/0.5 acres] (M)		3	3	5	11
B5	Parking lots/malls [>50 spaces] (M)		3	3	5	11
B5	Transportation corridors - Freeways/state highways (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
B10	Automobile - Body shops (H)		5	1	5	11
B10	Automobile - Repair shops (H)		5	1	5	11
B10	Chemical/petroleum pipelines (H)		5	1	5	11
B10	Fleet/truck/bus terminals (H)		5	1	5	11
B10	Photo processing/printing (H)		5	1	5	11
A	Illegal activities/unauthorized dumping (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
B5	Illegal activities/unauthorized dumping (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
B10	Illegal activities/unauthorized dumping (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
B5	Medical/dental offices/clinics (L)		1	3	5	9
B5	Office buildings/complexes (L)		1	3	5	9
B5	RV/mini storage (L)		1	3	5	9

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

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 01 - STANDBY **Source No.** 001 **PS Code** 5710006-001

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
B5	Rental Yards (L)		1	3	5	9
B5	Sewer collection systems (H in Zone A, otherwise L)		1	3	5	9
B5	Transportation corridors - Roads/Streets (L)		1	3	5	9
B5	Underground storage tanks - Upgraded and/or registered - active tanks (L)		1	3	5	9
B5	Veterinary offices/clinics (L)		1	3	5	9
B5	Wells - monitoring, test holes (L)		1	3	5	9
B10	Hardware/lumber/parts stores (M)		3	1	5	9
B10	Housing - high density [>1 house/0.5 acres] (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

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

Explanation of Source Water Assessments and Definition of Terms

A source water assessment was recently completed for this drinking water source. The assessment identifies the vulnerability of the drinking water supply to contamination from typical human activities. The assessments are intended to facilitate and provide the basic information necessary for a local community to develop a program to protect the drinking water supply.

A summary of the complete assessment is provided here. For more information, contact the agency or individual that prepared the assessment (shown in summary). You may also contact the local Department of Health Services Drinking Water Field Operations Branch district office (http://www.dhs.ca.gov/ps/ddwem/technical/dwp/districtofficesmap.pdf). Additional information about assessments can be found at: http://www.dhs.ca.gov/ps/ddwem/dwsap/FAQ.htm

Terms used in this summary:

Source Water Assessment: An assessment is an evaluation of a drinking water source to determine the "possible contaminating activities" (PCAs) to which the source is most vulnerable. The assessment includes: a delineation of protection zones around the source; an inventory of the types of PCAs within the source protection zones; and an analysis to determine the PCAs to which the source is most vulnerable. The information is compiled into a report that includes a map, calculations, checklists, and a summary of the findings.

Possible Contaminating Activity (PCA): A PCA is a current or historic human activity that is an actual or potential origin of contamination for a drinking water source. PCAs include activities that use, store, produce or dispose of chemicals that have the potential to contaminate drinking water supplies. There are 110 types of PCAs in the California DWSAP program.

PCA Risk Ranking: Each type of PCA is assigned a risk ranking (Very High, High, Moderate, or Low). The risk ranking is based on the contaminant(s) typically associated with that PCA, the likelihood of release from that type of facility based on historical experience, and the mobility of the contaminant(s).

PCA Inventory: The PCA inventory is a review using local knowledge, databases, and on-site evaluations to identify the occurrence and approximate location of PCAs in the source water zones. The inventory for the basic DWSAP assessments is a presence-absence review. If a type of PCA occurs in a zone, a "Yes" is noted in the inventory for that zone, regardless of whether there is one or many of that type of facility within the zone. If a PCA has been associated with a contaminant detected in the water supply, a notation is made in the PCA inventory.

Source Water Zones or Areas: These are areas located around and typically adjacent to a drinking water source that have been identified as initial protection areas.

For groundwater sources, there are typically three concentric circular zones around a source (Zones A, B5 and B10). The sizes of the are determined based on characteristics of the source. PCAs located in the inner Zone A are considered more of a risk to the water supply than PCAs located in the middle Zone B5. Similarly, PCAs located in Zone B5 are considered more of a risk than PCAs located in the outer Zone B10.

For surface water sources, the watershed is defined as the overall protection area, and as an option, zones are defined closer to the source. Two types of zones are typically established. Zone A is the area within and near the surface water body and its tributaries. Zone B is an area within 2,500 feet of the intake, not including areas in Zone A. For surface water sources, PCAs located in Zone A are considered a greater threat than PCAs located in Zone B. PCAs located on the watershed outside of the zones are considered to be of less risk to the water supply. If zones have not been defined, PCAs are considered to be of equal risk regardless of location on the watershed.

Physical Barrier Effectiveness (PBE): The PBE for a source is an evaluation of the ability of the source and the surrounding area to prevent the movement of contaminants into the source. The PBE is based on the construction and operation features of the source, and the characteristics of the surrounding area. A source is assigned a PBE of Low, Moderate or High, where High indicates that the physical barriers of the source and site are very effective in preventing the movement of contaminants. By design, typical groundwater sources will have Moderate PBE, while typical surface water sources will have Low PBE. This is due to the greater exposure of surface water sources to contamination.

Vulnerability Ranking: The vulnerability ranking is a summary of the PCAs identified in the assessment prioritized by the risk that they pose to the water supply. The prioritization is based on the risk associated with a PCA, the zone in which it occurs, and the PBE of the source. In the vulnerability ranking, points are assigned as follows:

PCA risk ranking	Very High = 7	High = 5	Moderate = 3	Low = 1	Unknown in any zone = 0
Zone (Groundwater)	A = 5	B5 = 3	B10 = 1		
Zone (Surface water with zones)	A = 5	B = 3	Watershed = 1		
Zone (Surface water without zones)	Watershed = 5				
Physical Barrier Effectiveness	Low = 5	Moderate = 3	High = 1		

The points for each type of PCA in each zone are totaled to give a vulnerability score, and the PCAs are ranked in order from the highest score to the lowest score. PCAs associated with detected contaminants are ranked at the top, regardless of vulnerability score. By definition, groundwater sources are not considered vulnerable to PCAs with scores less than 8, and surface water sources are not considered vulnerable to PCAs with scores less than 11. It should be noted that the vulnerability ranking scores do not have a direct quantitative value. Rather, the points are used only to relatively rank the types of PCAs for an individual source.

Note: Some of the summaries do not include a vulnerability ranking. If the assessment was done on paper and the details were not entered into the database, the vulnerability ranking is not available here. In addition, alternate methods of determining vulnerability were allowed in some cases, and the vulnerability ranking is not in the database.

Vulnerability Summary: The source is considered most vulnerable to the PCAs with the highest score, and to PCAs associated with detected contaminants. These PCAs are noted in the vulnerability summary. Further details or discussion may be provided in the vulnerability discussion.

Drinking Water Source Assessment

Water System

Woodland, City of

Yolo County

Water Source

WELL 04 - STANDBY

Assessment Date

December, 2002

Assessment Completed By

City of Woodland

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

District No.	**09**
System No.	**5710006**
Source No.	**003**
PS Code	**5710006-003**

Vulnerability Summary

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 04 - STANDBY **Source No.** 003 **PS Code** 5710006-003

Completed by City of Woodland **Date** December, 2002

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

A source water assessment was conducted for the **WELL 04 - STANDBY**

of the **Woodland, City of** water system in **December, 2002** .

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

Military installations

Discussion of Vulnerability

The Military installation found within Zone A is the National Guard Armory and probably posses less of a threat than indicated. This well is pumped at very low rates; the highest yearly average in the last three years was 0.26 gallons per minute. This rate produces a very small capture zone, which limits the number of PCAs.

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Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 04 - STANDBY **Source No.** 003 **PS Code** 5710006-003

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
A	Military installations (VH)		7	5	5	17
A	Sewer collection systems (H in Zone A, otherwise L)		5	5	5	15
A	Housing - high density [>1 house/0.5 acres] (M)		3	5	5	13
A	Parks (M)		3	5	5	13
A	Transportation corridors - Roads/Streets (L)		1	5	5	11
A	Wells - monitoring, test holes (L)		1	5	5	11
B5	Hospitals (M)		3	3	5	11
B5	Housing - high density [>1 house/0.5 acres] (M)		3	3	5	11
B5	Parks (M)		3	3	5	11
B5	Sewer collection systems (H in Zone A, otherwise L)		1	3	5	9
B5	Transportation corridors - Roads/Streets (L)		1	3	5	9
B10	Housing - high density [>1 house/0.5 acres] (M)		3	1	5	9
B10	Parks (M)		3	1	5	9

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For surface water sources, the watershed is defined as the overall protection area, and as an option, zones are defined closer to the source. Two types of zones are typically established. Zone A is the area within and near the surface water body and its tributaries. Zone B is an area within 2,500 feet of the intake, not including areas in Zone A. For surface water sources, PCAs located in Zone A are considered a greater threat than PCAs located in Zone B. PCAs located on the watershed outside of the zones are considered to be of less risk to the water supply. If zones have not been defined, PCAs are considered to be of equal risk regardless of location on the watershed.

Physical Barrier Effectiveness (PBE): The PBE for a source is an evaluation of the ability of the source and the surrounding area to prevent the movement of contaminants into the source. The PBE is based on the construction and operation features of the source, and the characteristics of the surrounding area. A source is assigned a PBE of Low, Moderate or High, where High indicates that the physical barriers of the source and site are very effective in preventing the movement of contaminants. By design, typical groundwater sources will have Moderate PBE, while typical surface water sources will have Low PBE. This is due to the greater exposure of surface water sources to contamination.

Vulnerability Ranking: The vulnerability ranking is a summary of the PCAs identified in the assessment prioritized by the risk that they pose to the water supply. The prioritization is based on the risk associated with a PCA, the zone in which it occurs, and the PBE of the source. In the vulnerability ranking, points are assigned as follows:

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Zone (Surface water without zones)	Watershed = 5				
Physical Barrier Effectiveness	Low = 5	Moderate = 3	High = 1		

The points for each type of PCA in each zone are totaled to give a vulnerability score, and the PCAs are ranked in order from the highest score to the lowest score. PCAs associated with detected contaminants are ranked at the top, regardless of vulnerability score. By definition, groundwater sources are not considered vulnerable to PCAs with scores less than 8, and surface water sources are not considered vulnerable to PCAs with scores less than 11. It should be noted that the vulnerability ranking scores do not have a direct quantitative value. Rather, the points are used only to relatively rank the types of PCAs for an individual source.

Note: Some of the summaries do not include a vulnerability ranking. If the assessment was done on paper and the details were not entered into the database, the vulnerability ranking is not available here. In addition, alternate methods of determining vulnerability were allowed in some cases, and the vulnerability ranking is not in the database.

Vulnerability Summary: The source is considered most vulnerable to the PCAs with the highest score, and to PCAs associated with detected contaminants. These PCAs are noted in the vulnerability summary. Further details or discussion may be provided in the vulnerability discussion.

Drinking Water Source Assessment

Water System

Woodland, City of

Yolo County

Water Source

WELL 05 -

Assessment Date

December, 2002

Assessment Completed By

City of Woodland

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

District No.	**09**
System No.	**5710006**
Source No.	**004**
PS Code	**5710006-004**

Vulnerability Summary

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 05 - **Source No.** 004 **PS Code** 5710006-004

Completed by City of Woodland **Date** December, 2002

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

A source water assessment was conducted for the **WELL 05 -**

of the **Woodland, City of** water system in **December, 2002** .

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

Dry cleaners

Discussion of Vulnerability

Well 5's capture zone extends into the agricultural area, predominately a former turkey farm south of Woodland and shows some levels of nitrate as a result. The nitrate level has not exceeded 30 ppm.

A copy of the complete assessment may be viewed at:

City of Woodland, Yard
855 N. Pioneer Ave.
Woodland, CA 95778

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

System Engineer
(530) 661-5962
(530) 661-1290 (fax)
pubworks@cityofwoodland.org

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 05 - **Source No.** 004 **PS Code** 5710006-004

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
A	Dry cleaners (VH)		7	5	5	17
A	Photo processing/printing (H)		5	5	5	15
A	Sewer collection systems (H in Zone A, otherwise L)		5	5	5	15
B5	Automobile - Gas stations (VH)		7	3	5	15
B5	Chemical/petroleum processing/storage (VH)		7	3	5	15
B5	Historic gas stations (VH)		7	3	5	15
B5	Known Contaminant Plumes (VH)		7	3	5	15
B5	Landfills/dumps (VH)		7	3	5	15
B5	Underground storage tanks - Confirmed leaking tanks (VH)		7	3	5	15
A	Housing - high density [>1 house/0.5 acres] (M)		3	5	5	13
A	Parks (M)		3	5	5	13
B5	Automobile - Repair shops (H)		5	3	5	13
B5	Chemical/petroleum pipelines (H)		5	3	5	13
B5	Photo processing/printing (H)		5	3	5	13
B5	Research laboratories (H)		5	3	5	13
B10	Automobile - Gas stations (VH)		7	1	5	13
B10	Chemical/petroleum processing/storage (VH)		7	1	5	13
B10	Dry cleaners (VH)		7	1	5	13
B10	Historic gas stations (VH)		7	1	5	13
B10	Known Contaminant Plumes (VH)		7	1	5	13
B10	Underground storage tanks - Confirmed leaking tanks (VH)		7	1	5	13
A	Apartments and condominiums (L)		1	5	5	11
A	Medical/dental offices/clinics (L)		1	5	5	11
A	Office buildings/complexes (L)		1	5	5	11
A	Schools (L)		1	5	5	11
A	Transportation corridors - Roads/Streets (L)		1	5	5	11
A	Wells - monitoring, test holes (L)		1	5	5	11

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

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 05 - **Source No.** 004 **PS Code** 5710006-004

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
B5	Above ground storage tanks (M)		3	3	5	11
B5	Automobile - Car washes (M)		3	3	5	11
B5	Funeral services/graveyards (M)		3	3	5	11
B5	Housing - high density [>1 house/0.5 acres] (M)		3	3	5	11
B5	Parking lots/malls [>50 spaces] (M)		3	3	5	11
B5	Parks (M)		3	3	5	11
B5	Transportation corridors - Freeways/state highways (M)		3	3	5	11
B5	Transportation corridors - Railroads (M)		3	3	5	11
B5	Wells - Water supply (M)		3	3	5	11
B10	Automobile - Repair shops (H)		5	1	5	11
B10	Chemical/petroleum pipelines (H)		5	1	5	11
B10	Fleet/truck/bus terminals (H)		5	1	5	11
B10	Machine shops (H)		5	1	5	11
B10	Photo processing/printing (H)		5	1	5	11
B10	Wells - Agricultural/ Irrigation (H)		5	1	5	11
A	Illegal activities/unauthorized dumping (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
B5	Illegal activities/unauthorized dumping (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
B10	Illegal activities/unauthorized dumping (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
B5	Apartments and condominiums (L)		1	3	5	9
B5	Medical/dental offices/clinics (L)		1	3	5	9

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

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 05 - **Source No.** 004 **PS Code** 5710006-004

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
B5	Office buildings/complexes (L)		1	3	5	9
B5	RV/mini storage (L)		1	3	5	9
B5	Schools (L)		1	3	5	9
B5	Sewer collection systems (H in Zone A, otherwise L)		1	3	5	9
B5	Transportation corridors - Roads/Streets (L)		1	3	5	9
B5	Underground storage tanks - Decommissioned - inactive tanks (L)		1	3	5	9
B5	Underground storage tanks - Upgraded and/or registered - active tanks (L)		1	3	5	9
B5	Wells - monitoring, test holes (L)		1	3	5	9
B10	Above ground storage tanks (M)		3	1	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	Funeral services/graveyards (M)		3	1	5	9
B10	Hardware/lumber/parts stores (M)		3	1	5	9
B10	Hospitals (M)		3	1	5	9
B10	Housing - high density [>1 house/0.5 acres] (M)		3	1	5	9
B10	Parking lots/malls [>50 spaces] (M)		3	1	5	9
B10	Parks (M)		3	1	5	9
B10	Storm Drain Discharge Points (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	Wells - Water supply (M)		3	1	5	9

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

Explanation of Source Water Assessments and Definition of Terms

A source water assessment was recently completed for this drinking water source. The assessment identifies the vulnerability of the drinking water supply to contamination from typical human activities. The assessments are intended to facilitate and provide the basic information necessary for a local community to develop a program to protect the drinking water supply.

A summary of the complete assessment is provided here. For more information, contact the agency or individual that prepared the assessment (shown in summary). You may also contact the local Department of Health Services Drinking Water Field Operations Branch district office (http://www.dhs.ca.gov/ps/ddwem/technical/dwp/districtofficesmap.pdf). Additional information about assessments can be found at: http://www.dhs.ca.gov/ps/ddwem/dwsap/FAQ.htm

Terms used in this summary:

Source Water Assessment: An assessment is an evaluation of a drinking water source to determine the "possible contaminating activities" (PCAs) to which the source is most vulnerable. The assessment includes: a delineation of protection zones around the source; an inventory of the types of PCAs within the source protection zones; and an analysis to determine the PCAs to which the source is most vulnerable. The information is compiled into a report that includes a map, calculations, checklists, and a summary of the findings.

Possible Contaminating Activity (PCA): A PCA is a current or historic human activity that is an actual or potential origin of contamination for a drinking water source. PCAs include activities that use, store, produce or dispose of chemicals that have the potential to contaminate drinking water supplies. There are 110 types of PCAs in the California DWSAP program.

PCA Risk Ranking: Each type of PCA is assigned a risk ranking (Very High, High, Moderate, or Low). The risk ranking is based on the contaminant(s) typically associated with that PCA, the likelihood of release from that type of facility based on historical experience, and the mobility of the contaminant(s).

PCA Inventory: The PCA inventory is a review using local knowledge, databases, and on-site evaluations to identify the occurrence and approximate location of PCAs in the source water zones. The inventory for the basic DWSAP assessments is a presence-absence review. If a type of PCA occurs in a zone, a "Yes" is noted in the inventory for that zone, regardless of whether there is one or many of that type of facility within the zone. If a PCA has been associated with a contaminant detected in the water supply, a notation is made in the PCA inventory.

Source Water Zones or Areas: These are areas located around and typically adjacent to a drinking water source that have been identified as initial protection areas.

For groundwater sources, there are typically three concentric circular zones around a source (Zones A, B5 and B10). The sizes of the are determined based on characteristics of the source. PCAs located in the inner Zone A are considered more of a risk to the water supply than PCAs located in the middle Zone B5. Similarly, PCAs located in Zone B5 are considered more of a risk than PCAs located in the outer Zone B10.

For surface water sources, the watershed is defined as the overall protection area, and as an option, zones are defined closer to the source. Two types of zones are typically established. Zone A is the area within and near the surface water body and its tributaries. Zone B is an area within 2,500 feet of the intake, not including areas in Zone A. For surface water sources, PCAs located in Zone A are considered a greater threat than PCAs located in Zone B. PCAs located on the watershed outside of the zones are considered to be of less risk to the water supply. If zones have not been defined, PCAs are considered to be of equal risk regardless of location on the watershed.

Physical Barrier Effectiveness (PBE): The PBE for a source is an evaluation of the ability of the source and the surrounding area to prevent the movement of contaminants into the source. The PBE is based on the construction and operation features of the source, and the characteristics of the surrounding area. A source is assigned a PBE of Low, Moderate or High, where High indicates that the physical barriers of the source and site are very effective in preventing the movement of contaminants. By design, typical groundwater sources will have Moderate PBE, while typical surface water sources will have Low PBE. This is due to the greater exposure of surface water sources to contamination.

Vulnerability Ranking: The vulnerability ranking is a summary of the PCAs identified in the assessment prioritized by the risk that they pose to the water supply. The prioritization is based on the risk associated with a PCA, the zone in which it occurs, and the PBE of the source. In the vulnerability ranking, points are assigned as follows:

PCA risk ranking	Very High = 7	High = 5	Moderate = 3	Low = 1	Unknown in any zone = 0
Zone (Groundwater)	A = 5	B5 = 3	B10 = 1		
Zone (Surface water with zones)	A = 5	B = 3	Watershed = 1		
Zone (Surface water without zones)	Watershed = 5				
Physical Barrier Effectiveness	Low = 5	Moderate = 3	High = 1		

The points for each type of PCA in each zone are totaled to give a vulnerability score, and the PCAs are ranked in order from the highest score to the lowest score. PCAs associated with detected contaminants are ranked at the top, regardless of vulnerability score. By definition, groundwater sources are not considered vulnerable to PCAs with scores less than 8, and surface water sources are not considered vulnerable to PCAs with scores less than 11. It should be noted that the vulnerability ranking scores do not have a direct quantitative value. Rather, the points are used only to relatively rank the types of PCAs for an individual source.

Note: Some of the summaries do not include a vulnerability ranking. If the assessment was done on paper and the details were not entered into the database, the vulnerability ranking is not available here. In addition, alternate methods of determining vulnerability were allowed in some cases, and the vulnerability ranking is not in the database.

Vulnerability Summary: The source is considered most vulnerable to the PCAs with the highest score, and to PCAs associated with detected contaminants. These PCAs are noted in the vulnerability summary. Further details or discussion may be provided in the vulnerability discussion.

Drinking Water Source Assessment

Water System

Woodland, City of

Yolo County

Water Source

WELL 06

Assessment Date

December, 2002

Assessment Completed By

City of Woodland

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

District No.	**09**
System No.	**5710006**
Source No.	**005**
PS Code	**5710006-005**

Vulnerability Summary

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 06 **Source No.** 005 **PS Code** 5710006-005

Completed by City of Woodland **Date** December, 2002

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

A source water assessment was conducted for the **WELL 06**

of the **Woodland, City of** water system in **December, 2002** .

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

Automobile - Gas stations
Dry cleaners
Historic gas stations
Known Contaminant Plumes
Underground storage tanks - Confirmed leaking tanks

Discussion of Vulnerability

Well 6 is located near one of the main transportation corridors, Main St. (old HY 16), and has a large number of transportation related PCA. It is also located next to the center of the Woodland's old commercial district and the resulting concentration of PCAs

A copy of the complete assessment may be viewed at:

City of Woodland, Yard
855 N. Pioneer Ave.
Woodland, CA 95778

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

System Engineer
(530) 661-5962
(530) 661-1290 (fax)
pubworks@cityofwoodland.org

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 06 **Source No.** 005 **PS Code** 5710006-005

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
A	Automobile - Gas stations (VH)		7	5	3	15
A	Dry cleaners (VH)		7	5	3	15
A	Historic gas stations (VH)		7	5	3	15
A	Known Contaminant Plumes (VH)		7	5	3	15
A	Underground storage tanks - Confirmed leaking tanks (VH)		7	5	3	15
A	Automobile - Repair shops (H)		5	5	3	13
A	Photo processing/printing (H)		5	5	3	13
A	Sewer collection systems (H in Zone A, otherwise L)		5	5	3	13
B5	Automobile - Gas stations (VH)		7	3	3	13
B5	Chemical/petroleum processing/storage (VH)		7	3	3	13
B5	Dry cleaners (VH)		7	3	3	13
B5	Historic gas stations (VH)		7	3	3	13
B5	Known Contaminant Plumes (VH)		7	3	3	13
B5	Underground storage tanks - Confirmed leaking tanks (VH)		7	3	3	13
A	Above ground storage tanks (M)		3	5	3	11
A	Hardware/lumber/parts stores (M)		3	5	3	11
A	Housing - high density [>1 house/0.5 acres] (M)		3	5	3	11
A	Parking lots/malls [>50 spaces] (M)		3	5	3	11
A	Transportation corridors - Freeways/state highways (M)		3	5	3	11
B5	Automobile - Repair shops (H)		5	3	3	11
B5	Photo processing/printing (H)		5	3	3	11
B10	Automobile - Gas stations (VH)		7	1	3	11
B10	Chemical/petroleum processing/storage (VH)		7	1	3	11
B10	Historic gas stations (VH)		7	1	3	11
B10	Known Contaminant Plumes (VH)		7	1	3	11
B10	Underground storage tanks - Confirmed leaking tanks (VH)		7	1	3	11
A	Apartments and condominiums (L)		1	5	3	9

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

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 06 **Source No.** 005 **PS Code** 5710006-005

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
A	Hotels, Motels (L)		1	5	3	9
A	Medical/dental offices/clinics (L)		1	5	3	9
A	Office buildings/complexes (L)		1	5	3	9
A	Schools (L)		1	5	3	9
A	Transportation corridors - Roads/Streets (L)		1	5	3	9
A	Underground storage tanks - Upgraded and/or registered - active tanks (L)		1	5	3	9
A	Wells - monitoring, test holes (L)		1	5	3	9
B5	Above ground storage tanks (M)		3	3	3	9
B5	Automobile - Car washes (M)		3	3	3	9
B5	Hardware/lumber/parts stores (M)		3	3	3	9
B5	Housing - high density [>1 house/0.5 acres] (M)		3	3	3	9
B5	Parking lots/malls [>50 spaces] (M)		3	3	3	9
B5	Parks (M)		3	3	3	9
B5	Transportation corridors - Freeways/state highways (M)		3	3	3	9
B5	Transportation corridors - Historic railroad right-of-ways (M)		3	3	3	9
B10	Automobile - Repair shops (H)		5	1	3	9
B10	Photo processing/printing (H)		5	1	3	9
A	Underground storage tanks - Non-regulated tanks [tanks smaller than regulatory limit] (H)		5	0	3	8
A	Underground storage tanks - Not yet upgraded or registered tanks (H)		5	0	3	8
B5	Underground storage tanks - Non-regulated tanks [tanks smaller than regulatory limit] (H)		5	0	3	8
B5	Underground storage tanks - Not yet upgraded or registered tanks (H)		5	0	3	8
B10	Underground storage tanks - Non-regulated tanks [tanks smaller than regulatory limit] (H)		5	0	3	8
B10	Underground storage tanks - Not yet upgraded or registered tanks (H)		5	0	3	8

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

Explanation of Source Water Assessments and Definition of Terms

A source water assessment was recently completed for this drinking water source. The assessment identifies the vulnerability of the drinking water supply to contamination from typical human activities. The assessments are intended to facilitate and provide the basic information necessary for a local community to develop a program to protect the drinking water supply.

A summary of the complete assessment is provided here. For more information, contact the agency or individual that prepared the assessment (shown in summary). You may also contact the local Department of Health Services Drinking Water Field Operations Branch district office (http://www.dhs.ca.gov/ps/ddwem/technical/dwp/districtofficesmap.pdf). Additional information about assessments can be found at: http://www.dhs.ca.gov/ps/ddwem/dwsap/FAQ.htm

Terms used in this summary:

Source Water Assessment: An assessment is an evaluation of a drinking water source to determine the "possible contaminating activities" (PCAs) to which the source is most vulnerable. The assessment includes: a delineation of protection zones around the source; an inventory of the types of PCAs within the source protection zones; and an analysis to determine the PCAs to which the source is most vulnerable. The information is compiled into a report that includes a map, calculations, checklists, and a summary of the findings.

Possible Contaminating Activity (PCA): A PCA is a current or historic human activity that is an actual or potential origin of contamination for a drinking water source. PCAs include activities that use, store, produce or dispose of chemicals that have the potential to contaminate drinking water supplies. There are 110 types of PCAs in the California DWSAP program.

PCA Risk Ranking: Each type of PCA is assigned a risk ranking (Very High, High, Moderate, or Low). The risk ranking is based on the contaminant(s) typically associated with that PCA, the likelihood of release from that type of facility based on historical experience, and the mobility of the contaminant(s).

PCA Inventory: The PCA inventory is a review using local knowledge, databases, and on-site evaluations to identify the occurrence and approximate location of PCAs in the source water zones. The inventory for the basic DWSAP assessments is a presence-absence review. If a type of PCA occurs in a zone, a "Yes" is noted in the inventory for that zone, regardless of whether there is one or many of that type of facility within the zone. If a PCA has been associated with a contaminant detected in the water supply, a notation is made in the PCA inventory.

Source Water Zones or Areas: These are areas located around and typically adjacent to a drinking water source that have been identified as initial protection areas.

For groundwater sources, there are typically three concentric circular zones around a source (Zones A, B5 and B10). The sizes of the are determined based on characteristics of the source. PCAs located in the inner Zone A are considered more of a risk to the water supply than PCAs located in the middle Zone B5. Similarly, PCAs located in Zone B5 are considered more of a risk than PCAs located in the outer Zone B10.

For surface water sources, the watershed is defined as the overall protection area, and as an option, zones are defined closer to the source. Two types of zones are typically established. Zone A is the area within and near the surface water body and its tributaries. Zone B is an area within 2,500 feet of the intake, not including areas in Zone A. For surface water sources, PCAs located in Zone A are considered a greater threat than PCAs located in Zone B. PCAs located on the watershed outside of the zones are considered to be of less risk to the water supply. If zones have not been defined, PCAs are considered to be of equal risk regardless of location on the watershed.

Physical Barrier Effectiveness (PBE): The PBE for a source is an evaluation of the ability of the source and the surrounding area to prevent the movement of contaminants into the source. The PBE is based on the construction and operation features of the source, and the characteristics of the surrounding area. A source is assigned a PBE of Low, Moderate or High, where High indicates that the physical barriers of the source and site are very effective in preventing the movement of contaminants. By design, typical groundwater sources will have Moderate PBE, while typical surface water sources will have Low PBE. This is due to the greater exposure of surface water sources to contamination.

Vulnerability Ranking: The vulnerability ranking is a summary of the PCAs identified in the assessment prioritized by the risk that they pose to the water supply. The prioritization is based on the risk associated with a PCA, the zone in which it occurs, and the PBE of the source. In the vulnerability ranking, points are assigned as follows:

PCA risk ranking	Very High = 7	High = 5	Moderate = 3	Low = 1	Unknown in any zone = 0
Zone (Groundwater)	A = 5	B5 = 3	B10 = 1		
Zone (Surface water with zones)	A = 5	B = 3	Watershed = 1		
Zone (Surface water without zones)	Watershed = 5				
Physical Barrier Effectiveness	Low = 5	Moderate = 3	High = 1		

The points for each type of PCA in each zone are totaled to give a vulnerability score, and the PCAs are ranked in order from the highest score to the lowest score. PCAs associated with detected contaminants are ranked at the top, regardless of vulnerability score. By definition, groundwater sources are not considered vulnerable to PCAs with scores less than 8, and surface water sources are not considered vulnerable to PCAs with scores less than 11. It should be noted that the vulnerability ranking scores do not have a direct quantitative value. Rather, the points are used only to relatively rank the types of PCAs for an individual source.

Note: Some of the summaries do not include a vulnerability ranking. If the assessment was done on paper and the details were not entered into the database, the vulnerability ranking is not available here. In addition, alternate methods of determining vulnerability were allowed in some cases, and the vulnerability ranking is not in the database.

Vulnerability Summary: The source is considered most vulnerable to the PCAs with the highest score, and to PCAs associated with detected contaminants. These PCAs are noted in the vulnerability summary. Further details or discussion may be provided in the vulnerability discussion.

Drinking Water Source Assessment

Water System

Woodland, City of

Yolo County

Water Source

WELL 09

Assessment Date

December, 2002

Assessment Completed By

City of Woodland

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

District No.	**09**
System No.	**5710006**
Source No.	**008**
PS Code	**5710006-008**

Vulnerability Summary

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 09 **Source No.** 008 **PS Code** 5710006-008

Completed by City of Woodland **Date** December, 2002

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

A source water assessment was conducted for the **WELL 09**

of the **Woodland, City of** water system in **December, 2002** .

The source is considered most vulnerable to the following activities associated with contaminants detected in the water supply:

Crops, irrigated [Berries, hops, mint, orchards, sod, greenhouses,
Fertilizer/Pesticide/Herbicide Application

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

Sewer collection systems

Discussion of Vulnerability

Well 9's capture zone extends into the agricultural area, predominately former turkey farms south and south east of Woodland and shows some levels of nitrate as a result. The nitrate level has exceeded 40 ppm and as such is a cause for concern.

A copy of the complete assessment may be viewed at:

City of Woodland, Yard
855 N. Pioneer Ave.
Woodland, CA 95778

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

System Engineer
(530) 661-5962
(530) 661-1290 (fax)
pubworks@cityofwoodland.org

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 09 **Source No.** 008 **PS Code** 5710006-008

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
A	Crops, irrigated [Berries, hops, mint, orchards, sod, greenhouses, vineyards, nurseries, vegetable] (M)	*	3	5	3	11
A	Fertilizer/Pesticide/Herbicide Application (M)	*	3	5	3	11
B5	Crops, irrigated [Berries, hops, mint, orchards, sod, greenhouses, vineyards, nurseries, vegetable] (M)	*	3	3	3	9
B5	Fertilizer/Pesticide/Herbicide Application (M)	*	3	3	3	9
B10	Crops, irrigated [Berries, hops, mint, orchards, sod, greenhouses, vineyards, nurseries, vegetable] (M)	*	3	1	3	7
B10	Fertilizer/Pesticide/Herbicide Application (M)	*	3	1	3	7
A	Sewer collection systems (H in Zone A, otherwise L)		5	5	3	13
A	Food processing (M)		3	5	3	11
A	Housing - high density [>1 house/0.5 acres] (M)		3	5	3	11
A	Parking lots/malls [>50 spaces] (M)		3	5	3	11
A	Parks (M)		3	5	3	11
A	Transportation corridors - Freeways/state highways (M)		3	5	3	11
A	Transportation corridors - Railroads (M)		3	5	3	11
B10	Known Contaminant Plumes (VH)		7	1	3	11
A	Apartments and condominiums (L)		1	5	3	9
A	Transportation corridors - Roads/Streets (L)		1	5	3	9
B5	Food processing (M)		3	3	3	9
B5	Housing - high density [>1 house/0.5 acres] (M)		3	3	3	9
B5	Parking lots/malls [>50 spaces] (M)		3	3	3	9
B5	Transportation corridors - Freeways/state highways (M)		3	3	3	9
B5	Transportation corridors - Railroads (M)		3	3	3	9
B10	Wells - Agricultural/ Irrigation (H)		5	1	3	9

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For surface water sources, the watershed is defined as the overall protection area, and as an option, zones are defined closer to the source. Two types of zones are typically established. Zone A is the area within and near the surface water body and its tributaries. Zone B is an area within 2,500 feet of the intake, not including areas in Zone A. For surface water sources, PCAs located in Zone A are considered a greater threat than PCAs located in Zone B. PCAs located on the watershed outside of the zones are considered to be of less risk to the water supply. If zones have not been defined, PCAs are considered to be of equal risk regardless of location on the watershed.

Physical Barrier Effectiveness (PBE): The PBE for a source is an evaluation of the ability of the source and the surrounding area to prevent the movement of contaminants into the source. The PBE is based on the construction and operation features of the source, and the characteristics of the surrounding area. A source is assigned a PBE of Low, Moderate or High, where High indicates that the physical barriers of the source and site are very effective in preventing the movement of contaminants. By design, typical groundwater sources will have Moderate PBE, while typical surface water sources will have Low PBE. This is due to the greater exposure of surface water sources to contamination.

Vulnerability Ranking: The vulnerability ranking is a summary of the PCAs identified in the assessment prioritized by the risk that they pose to the water supply. The prioritization is based on the risk associated with a PCA, the zone in which it occurs, and the PBE of the source. In the vulnerability ranking, points are assigned as follows:

PCA risk ranking	Very High = 7	High = 5	Moderate = 3	Low = 1	Unknown in any zone = 0
Zone (Groundwater)	A = 5	B5 = 3	B10 = 1		
Zone (Surface water with zones)	A = 5	B = 3	Watershed = 1		
Zone (Surface water without zones)	Watershed = 5				
Physical Barrier Effectiveness	Low = 5	Moderate = 3	High = 1		

The points for each type of PCA in each zone are totaled to give a vulnerability score, and the PCAs are ranked in order from the highest score to the lowest score. PCAs associated with detected contaminants are ranked at the top, regardless of vulnerability score. By definition, groundwater sources are not considered vulnerable to PCAs with scores less than 8, and surface water sources are not considered vulnerable to PCAs with scores less than 11. It should be noted that the vulnerability ranking scores do not have a direct quantitative value. Rather, the points are used only to relatively rank the types of PCAs for an individual source.

Note: Some of the summaries do not include a vulnerability ranking. If the assessment was done on paper and the details were not entered into the database, the vulnerability ranking is not available here. In addition, alternate methods of determining vulnerability were allowed in some cases, and the vulnerability ranking is not in the database.

Vulnerability Summary: The source is considered most vulnerable to the PCAs with the highest score, and to PCAs associated with detected contaminants. These PCAs are noted in the vulnerability summary. Further details or discussion may be provided in the vulnerability discussion.

Drinking Water Source Assessment

Water System

Woodland, City of

Yolo County

Water Source

WELL 10

Assessment Date

December, 2002

Assessment Completed By

City of Woodland

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

District No.	**09**
System No.	**5710006**
Source No.	**009**
PS Code	**5710006-009**

Vulnerability Summary

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 10 **Source No.** 009 **PS Code** 5710006-009

Completed by City of Woodland **Date** December, 2002

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

A source water assessment was conducted for the **WELL 10**

of the **Woodland, City of** water system in **December, 2002** .

The source is considered most vulnerable to the following activities associated with contaminants detected in the water supply:

Crops, irrigated [Berries, hops, mint, orchards, sod, greenhouses,
Fertilizer/Pesticide/Herbicide Application

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

Underground storage tanks - Confirmed leaking tanks

Discussion of Vulnerability

Well 10's capture zone extends into the agricultural area north and west of Woodland and shows some levels of nitrate as a result. The nitrate level has exceeded 30 ppm and as such is a cause for concern.

A copy of the complete assessment may be viewed at:

City of Woodland, Yard
855 N. Pioneer Ave.
Woodland, CA 95778

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

System Engineer
(530) 661-5962
(530) 661-1290 (fax)
pubworks@cityofwoodland.org

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 10 **Source No.** 009 **PS Code** 5710006-009

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
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
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
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
A	Underground storage tanks - Confirmed leaking tanks (VH)		7	5	5	17
A	Automobile - Repair shops (H)		5	5	5	15
A	Fleet/truck/bus terminals (H)		5	5	5	15
A	Sewer collection systems (H in Zone A, otherwise L)		5	5	5	15
A	Utility stations - maintenance areas (H)		5	5	5	15
B5	Automobile - Gas stations (VH)		7	3	5	15
B5	Historic gas stations (VH)		7	3	5	15
B5	Underground storage tanks - Confirmed leaking tanks (VH)		7	3	5	15
A	Contractor or government agency equipment storage yards (M)		3	5	5	13
A	Hospitals (M)		3	5	5	13
A	Housing - high density [>1 house/0.5 acres] (M)		3	5	5	13
A	Parking lots/malls [>50 spaces] (M)		3	5	5	13
A	Parks (M)		3	5	5	13
A	Wells - Water supply (M)		3	5	5	13
B5	Automobile - Body shops (H)		5	3	5	13
B5	Automobile - Repair shops (H)		5	3	5	13
B5	Fleet/truck/bus terminals (H)		5	3	5	13
B5	Pesticide/fertilizer/petroleum storage & transfer areas (H)		5	3	5	13
B5	Photo processing/printing (H)		5	3	5	13
B5	Wells - Agricultural/ Irrigation (H)		5	3	5	13

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

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 10 **Source No.** 009 **PS Code** 5710006-009

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
B5	Wells - Oil, Gas, Geothermal (H)		5	3	5	13
B10	Automobile - Gas stations (VH)		7	1	5	13
B10	Historic gas stations (VH)		7	1	5	13
B10	Underground storage tanks - Confirmed leaking tanks (VH)		7	1	5	13
A	Apartments and condominiums (L)		1	5	5	11
A	Medical/dental offices/clinics (L)		1	5	5	11
A	Office buildings/complexes (L)		1	5	5	11
A	Schools (L)		1	5	5	11
A	Transportation corridors - Roads/Streets (L)		1	5	5	11
A	Wells - monitoring, test holes (L)		1	5	5	11
B5	Agricultural Drainage (H in Zone A, otherwise M)		3	3	5	11
B5	Housing - high density [>1 house/0.5 acres] (M)		3	3	5	11
B5	Parking lots/malls [>50 spaces] (M)		3	3	5	11
B5	Transportation corridors - Freeways/state highways (M)		3	3	5	11
B5	Wells - Water supply (M)		3	3	5	11
B10	Automobile - Repair shops (H)		5	1	5	11
B10	Farm machinery repair (H)		5	1	5	11
B10	Fleet/truck/bus terminals (H)		5	1	5	11
B10	Wells - Agricultural/ Irrigation (H)		5	1	5	11
B10	Wells - Oil, Gas, Geothermal (H)		5	1	5	11
A	Illegal activities/unauthorized dumping (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
B5	Illegal activities/unauthorized dumping (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

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

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 10 **Source No.** 009 **PS Code** 5710006-009

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
B10	Illegal activities/unauthorized dumping (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
B5	Apartments and condominiums (L)		1	3	5	9
B5	Medical/dental offices/clinics (L)		1	3	5	9
B5	Office buildings/complexes (L)		1	3	5	9
B5	Rental Yards (L)		1	3	5	9
B5	Septic systems - low density [<1/acre] (H in Zone A, otherwise L)		1	3	5	9
B5	Sewer collection systems (H in Zone A, otherwise L)		1	3	5	9
B5	Transportation corridors - Roads/Streets (L)		1	3	5	9
B5	Veterinary offices/clinics (L)		1	3	5	9
B5	Wells - monitoring, test holes (L)		1	3	5	9
B10	Above ground storage tanks (M)		3	1	5	9
B10	Agricultural Drainage (H in Zone A, otherwise M)		3	1	5	9
B10	Automobile - Car washes (M)		3	1	5	9
B10	Hardware/lumber/parts stores (M)		3	1	5	9
B10	Housing - high density [>1 house/0.5 acres] (M)		3	1	5	9
B10	Parking lots/malls [>50 spaces] (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	Wells - Water supply (M)		3	1	5	9

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

Explanation of Source Water Assessments and Definition of Terms

A source water assessment was recently completed for this drinking water source. The assessment identifies the vulnerability of the drinking water supply to contamination from typical human activities. The assessments are intended to facilitate and provide the basic information necessary for a local community to develop a program to protect the drinking water supply.

A summary of the complete assessment is provided here. For more information, contact the agency or individual that prepared the assessment (shown in summary). You may also contact the local Department of Health Services Drinking Water Field Operations Branch district office (http://www.dhs.ca.gov/ps/ddwem/technical/dwp/districtofficesmap.pdf). Additional information about assessments can be found at: http://www.dhs.ca.gov/ps/ddwem/dwsap/FAQ.htm

Terms used in this summary:

Source Water Assessment: An assessment is an evaluation of a drinking water source to determine the "possible contaminating activities" (PCAs) to which the source is most vulnerable. The assessment includes: a delineation of protection zones around the source; an inventory of the types of PCAs within the source protection zones; and an analysis to determine the PCAs to which the source is most vulnerable. The information is compiled into a report that includes a map, calculations, checklists, and a summary of the findings.

Possible Contaminating Activity (PCA): A PCA is a current or historic human activity that is an actual or potential origin of contamination for a drinking water source. PCAs include activities that use, store, produce or dispose of chemicals that have the potential to contaminate drinking water supplies. There are 110 types of PCAs in the California DWSAP program.

PCA Risk Ranking: Each type of PCA is assigned a risk ranking (Very High, High, Moderate, or Low). The risk ranking is based on the contaminant(s) typically associated with that PCA, the likelihood of release from that type of facility based on historical experience, and the mobility of the contaminant(s).

PCA Inventory: The PCA inventory is a review using local knowledge, databases, and on-site evaluations to identify the occurrence and approximate location of PCAs in the source water zones. The inventory for the basic DWSAP assessments is a presence-absence review. If a type of PCA occurs in a zone, a "Yes" is noted in the inventory for that zone, regardless of whether there is one or many of that type of facility within the zone. If a PCA has been associated with a contaminant detected in the water supply, a notation is made in the PCA inventory.

Source Water Zones or Areas: These are areas located around and typically adjacent to a drinking water source that have been identified as initial protection areas.

For groundwater sources, there are typically three concentric circular zones around a source (Zones A, B5 and B10). The sizes of the are determined based on characteristics of the source. PCAs located in the inner Zone A are considered more of a risk to the water supply than PCAs located in the middle Zone B5. Similarly, PCAs located in Zone B5 are considered more of a risk than PCAs located in the outer Zone B10.

For surface water sources, the watershed is defined as the overall protection area, and as an option, zones are defined closer to the source. Two types of zones are typically established. Zone A is the area within and near the surface water body and its tributaries. Zone B is an area within 2,500 feet of the intake, not including areas in Zone A. For surface water sources, PCAs located in Zone A are considered a greater threat than PCAs located in Zone B. PCAs located on the watershed outside of the zones are considered to be of less risk to the water supply. If zones have not been defined, PCAs are considered to be of equal risk regardless of location on the watershed.

Physical Barrier Effectiveness (PBE): The PBE for a source is an evaluation of the ability of the source and the surrounding area to prevent the movement of contaminants into the source. The PBE is based on the construction and operation features of the source, and the characteristics of the surrounding area. A source is assigned a PBE of Low, Moderate or High, where High indicates that the physical barriers of the source and site are very effective in preventing the movement of contaminants. By design, typical groundwater sources will have Moderate PBE, while typical surface water sources will have Low PBE. This is due to the greater exposure of surface water sources to contamination.

Vulnerability Ranking: The vulnerability ranking is a summary of the PCAs identified in the assessment prioritized by the risk that they pose to the water supply. The prioritization is based on the risk associated with a PCA, the zone in which it occurs, and the PBE of the source. In the vulnerability ranking, points are assigned as follows:

PCA risk ranking	Very High = 7	High = 5	Moderate = 3	Low = 1	Unknown in any zone = 0
Zone (Groundwater)	A = 5	B5 = 3	B10 = 1		
Zone (Surface water with zones)	A = 5	B = 3	Watershed = 1		
Zone (Surface water without zones)	Watershed = 5				
Physical Barrier Effectiveness	Low = 5	Moderate = 3	High = 1		

The points for each type of PCA in each zone are totaled to give a vulnerability score, and the PCAs are ranked in order from the highest score to the lowest score. PCAs associated with detected contaminants are ranked at the top, regardless of vulnerability score. By definition, groundwater sources are not considered vulnerable to PCAs with scores less than 8, and surface water sources are not considered vulnerable to PCAs with scores less than 11. It should be noted that the vulnerability ranking scores do not have a direct quantitative value. Rather, the points are used only to relatively rank the types of PCAs for an individual source.

Note: Some of the summaries do not include a vulnerability ranking. If the assessment was done on paper and the details were not entered into the database, the vulnerability ranking is not available here. In addition, alternate methods of determining vulnerability were allowed in some cases, and the vulnerability ranking is not in the database.

Vulnerability Summary: The source is considered most vulnerable to the PCAs with the highest score, and to PCAs associated with detected contaminants. These PCAs are noted in the vulnerability summary. Further details or discussion may be provided in the vulnerability discussion.

Drinking Water Source Assessment

Water System

Woodland, City of

Yolo County

Water Source

WELL 11

Assessment Date

December, 2002

Assessment Completed By

City of Woodland

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

District No.	**09**
System No.	**5710006**
Source No.	**010**
PS Code	**5710006-010**

Vulnerability Summary

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 11 **Source No.** 010 **PS Code** 5710006-010

Completed by City of Woodland **Date** December, 2002

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

A source water assessment was conducted for the **WELL 11**

of the **Woodland, City of** water system in **December, 2002** .

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

Historic gas stations
Known Contaminant Plumes
Underground storage tanks - Confirmed leaking tanks

Discussion of Vulnerability

Well 11's capture zone extends into the agricultural area west of Woodland and shows some levels of nitrate as a result. The nitrate level has exceeded 30 ppm in the past and as such is a cause for concern.

A copy of the complete assessment may be viewed at:

City of Woodland, Yard
855 N. Pioneer Ave.
Woodland, CA 95778

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

System Engineer
(530) 661-5962
(530) 661-1290 (fax)
pubworks@cityofwoodland.org

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 11 **Source No.** 010 **PS Code** 5710006-010

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
A	Historic gas stations (VH)		7	5	5	17
A	Known Contaminant Plumes (VH)		7	5	5	17
A	Underground storage tanks - Confirmed leaking tanks (VH)		7	5	5	17
A	Automobile - Body shops (H)		5	5	5	15
A	Automobile - Repair shops (H)		5	5	5	15
A	Photo processing/printing (H)		5	5	5	15
A	Septic systems - low density [<1/acre] (H in Zone A, otherwise L)		5	5	5	15
A	Sewer collection systems (H in Zone A, otherwise L)		5	5	5	15
A	Wells - Agricultural/ Irrigation (H)		5	5	5	15
B5	Automobile - Gas stations (VH)		7	3	5	15
B5	Chemical/petroleum processing/storage (VH)		7	3	5	15
B5	Historic gas stations (VH)		7	3	5	15
B5	Underground storage tanks - Confirmed leaking tanks (VH)		7	3	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	Hardware/lumber/parts stores (M)		3	5	5	13
A	Hospitals (M)		3	5	5	13
A	Housing - high density [>1 house/0.5 acres] (M)		3	5	5	13
A	Parking lots/malls [>50 spaces] (M)		3	5	5	13
A	Parks (M)		3	5	5	13
A	Transportation corridors - Freeways/state highways (M)		3	5	5	13
A	Wells - Water supply (M)		3	5	5	13
B5	Automobile - Repair shops (H)		5	3	5	13
B5	Fleet/truck/bus terminals (H)		5	3	5	13
B5	Pesticide/fertilizer/petroleum storage & transfer areas (H)		5	3	5	13
B5	Wells - Agricultural/ Irrigation (H)		5	3	5	13
B5	Wells - Oil, Gas, Geothermal (H)		5	3	5	13

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

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 11 **Source No.** 010 **PS Code** 5710006-010

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
B10	Automobile - Gas stations (VH)		7	1	5	13
B10	Historic gas stations (VH)		7	1	5	13
B10	Underground storage tanks - Confirmed leaking tanks (VH)		7	1	5	13
A	Apartments and condominiums (L)		1	5	5	11
A	Medical/dental offices/clinics (L)		1	5	5	11
A	Office buildings/complexes (L)		1	5	5	11
A	RV/mini storage (L)		1	5	5	11
A	Rental Yards (L)		1	5	5	11
A	Schools (L)		1	5	5	11
A	Transportation corridors - Roads/Streets (L)		1	5	5	11
A	Underground storage tanks - Upgraded and/or registered - active tanks (L)		1	5	5	11
A	Veterinary offices/clinics (L)		1	5	5	11
A	Wells - monitoring, test holes (L)		1	5	5	11
B5	Above ground storage tanks (M)		3	3	5	11
B5	Agricultural Drainage (H in Zone A, otherwise M)		3	3	5	11
B5	Automobile - Car washes (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	Funeral services/graveyards (M)		3	3	5	11
B5	Housing - high density [>1 house/0.5 acres] (M)		3	3	5	11
B5	Parking lots/malls [>50 spaces] (M)		3	3	5	11
B5	Parks (M)		3	3	5	11
B5	Septic systems - high density [>1/acre] (VH in Zone A, otherwise M)		3	3	5	11
B5	Storm Water Detention Facilities (M)		3	3	5	11
B5	Transportation corridors - Freeways/state highways (M)		3	3	5	11
B5	Wells - Water supply (M)		3	3	5	11

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

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 11 **Source No.** 010 **PS Code** 5710006-010

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
B10	Automobile - Repair shops (H)		5	1	5	11
B10	Farm machinery repair (H)		5	1	5	11
B10	Fleet/truck/bus terminals (H)		5	1	5	11
B10	Furniture repair/manufacturing (H)		5	1	5	11
B10	Photo processing/printing (H)		5	1	5	11
B10	Wells - Agricultural/ Irrigation (H)		5	1	5	11
B10	Wells - Oil, Gas, Geothermal (H)		5	1	5	11
A	Illegal activities/unauthorized dumping (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
B5	Illegal activities/unauthorized dumping (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
B10	Illegal activities/unauthorized dumping (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
B5	Apartments and condominiums (L)		1	3	5	9
B5	Medical/dental offices/clinics (L)		1	3	5	9
B5	Office buildings/complexes (L)		1	3	5	9
B5	RV/mini storage (L)		1	3	5	9
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	Sewer collection systems (H in Zone A, otherwise L)		1	3	5	9
B5	Transportation corridors - Roads/Streets (L)		1	3	5	9
B5	Underground storage tanks - Upgraded and/or registered - active tanks (L)		1	3	5	9

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

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 11 **Source No.** 010 **PS Code** 5710006-010

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
B5	Veterinary offices/clinics (L)		1	3	5	9
B5	Wells - monitoring, test holes (L)		1	3	5	9
B10	Agricultural Drainage (H in Zone A, otherwise M)		3	1	5	9
B10	Automobile - Car washes (M)		3	1	5	9
B10	Contractor or government agency equipment storage yards (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	Hardware/lumber/parts stores (M)		3	1	5	9
B10	Housing - high density [>1 house/0.5 acres] (M)		3	1	5	9
B10	Parking lots/malls [>50 spaces] (M)		3	1	5	9
B10	Parks (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	Wells - Water supply (M)		3	1	5	9

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

Explanation of Source Water Assessments and Definition of Terms

A source water assessment was recently completed for this drinking water source. The assessment identifies the vulnerability of the drinking water supply to contamination from typical human activities. The assessments are intended to facilitate and provide the basic information necessary for a local community to develop a program to protect the drinking water supply.

A summary of the complete assessment is provided here. For more information, contact the agency or individual that prepared the assessment (shown in summary). You may also contact the local Department of Health Services Drinking Water Field Operations Branch district office (http://www.dhs.ca.gov/ps/ddwem/technical/dwp/districtofficesmap.pdf). Additional information about assessments can be found at: http://www.dhs.ca.gov/ps/ddwem/dwsap/FAQ.htm

Terms used in this summary:

Source Water Assessment: An assessment is an evaluation of a drinking water source to determine the "possible contaminating activities" (PCAs) to which the source is most vulnerable. The assessment includes: a delineation of protection zones around the source; an inventory of the types of PCAs within the source protection zones; and an analysis to determine the PCAs to which the source is most vulnerable. The information is compiled into a report that includes a map, calculations, checklists, and a summary of the findings.

Possible Contaminating Activity (PCA): A PCA is a current or historic human activity that is an actual or potential origin of contamination for a drinking water source. PCAs include activities that use, store, produce or dispose of chemicals that have the potential to contaminate drinking water supplies. There are 110 types of PCAs in the California DWSAP program.

PCA Risk Ranking: Each type of PCA is assigned a risk ranking (Very High, High, Moderate, or Low). The risk ranking is based on the contaminant(s) typically associated with that PCA, the likelihood of release from that type of facility based on historical experience, and the mobility of the contaminant(s).

PCA Inventory: The PCA inventory is a review using local knowledge, databases, and on-site evaluations to identify the occurrence and approximate location of PCAs in the source water zones. The inventory for the basic DWSAP assessments is a presence-absence review. If a type of PCA occurs in a zone, a "Yes" is noted in the inventory for that zone, regardless of whether there is one or many of that type of facility within the zone. If a PCA has been associated with a contaminant detected in the water supply, a notation is made in the PCA inventory.

Source Water Zones or Areas: These are areas located around and typically adjacent to a drinking water source that have been identified as initial protection areas.

For groundwater sources, there are typically three concentric circular zones around a source (Zones A, B5 and B10). The sizes of the are determined based on characteristics of the source. PCAs located in the inner Zone A are considered more of a risk to the water supply than PCAs located in the middle Zone B5. Similarly, PCAs located in Zone B5 are considered more of a risk than PCAs located in the outer Zone B10.

For surface water sources, the watershed is defined as the overall protection area, and as an option, zones are defined closer to the source. Two types of zones are typically established. Zone A is the area within and near the surface water body and its tributaries. Zone B is an area within 2,500 feet of the intake, not including areas in Zone A. For surface water sources, PCAs located in Zone A are considered a greater threat than PCAs located in Zone B. PCAs located on the watershed outside of the zones are considered to be of less risk to the water supply. If zones have not been defined, PCAs are considered to be of equal risk regardless of location on the watershed.

Physical Barrier Effectiveness (PBE): The PBE for a source is an evaluation of the ability of the source and the surrounding area to prevent the movement of contaminants into the source. The PBE is based on the construction and operation features of the source, and the characteristics of the surrounding area. A source is assigned a PBE of Low, Moderate or High, where High indicates that the physical barriers of the source and site are very effective in preventing the movement of contaminants. By design, typical groundwater sources will have Moderate PBE, while typical surface water sources will have Low PBE. This is due to the greater exposure of surface water sources to contamination.

Vulnerability Ranking: The vulnerability ranking is a summary of the PCAs identified in the assessment prioritized by the risk that they pose to the water supply. The prioritization is based on the risk associated with a PCA, the zone in which it occurs, and the PBE of the source. In the vulnerability ranking, points are assigned as follows:

PCA risk ranking	Very High = 7	High = 5	Moderate = 3	Low = 1	Unknown in any zone = 0
Zone (Groundwater)	A = 5	B5 = 3	B10 = 1		
Zone (Surface water with zones)	A = 5	B = 3	Watershed = 1		
Zone (Surface water without zones)	Watershed = 5				
Physical Barrier Effectiveness	Low = 5	Moderate = 3	High = 1		

The points for each type of PCA in each zone are totaled to give a vulnerability score, and the PCAs are ranked in order from the highest score to the lowest score. PCAs associated with detected contaminants are ranked at the top, regardless of vulnerability score. By definition, groundwater sources are not considered vulnerable to PCAs with scores less than 8, and surface water sources are not considered vulnerable to PCAs with scores less than 11. It should be noted that the vulnerability ranking scores do not have a direct quantitative value. Rather, the points are used only to relatively rank the types of PCAs for an individual source.

Note: Some of the summaries do not include a vulnerability ranking. If the assessment was done on paper and the details were not entered into the database, the vulnerability ranking is not available here. In addition, alternate methods of determining vulnerability were allowed in some cases, and the vulnerability ranking is not in the database.

Vulnerability Summary: The source is considered most vulnerable to the PCAs with the highest score, and to PCAs associated with detected contaminants. These PCAs are noted in the vulnerability summary. Further details or discussion may be provided in the vulnerability discussion.

Drinking Water Source Assessment

Water System

Woodland, City of

Yolo County

Water Source

WELL 12 - STANDBY

Assessment Date

December, 2002

Assessment Completed By

City of Woodland

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

District No.	**09**
System No.	**5710006**
Source No.	**011**
PS Code	**5710006-011**

Vulnerability Summary

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 12 - STANDBY **Source No.** 011 **PS Code** 5710006-011

Completed by City of Woodland **Date** December, 2002

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

A source water assessment was conducted for the **WELL 12 - STANDBY**

of the **Woodland, City of** water system in **December, 2002** .

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

Underground storage tanks - Confirmed leaking tanks

Discussion of Vulnerability

Well 12 is located in the industrial part of Woodland and has a relative small number of PCAs.

A copy of the complete assessment may be viewed at:

City of Woodland, Yard
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Woodland, CA 95778

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System Engineer
(530) 661-5962
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Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 12 - STANDBY **Source No.** 011 **PS Code** 5710006-011

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
A	Underground storage tanks - Confirmed leaking tanks (VH)		7	5	5	17
A	Fleet/truck/bus terminals (H)		5	5	5	15
A	Sewer collection systems (H in Zone A, otherwise L)		5	5	5	15
B5	Underground storage tanks - Confirmed leaking tanks (VH)		7	3	5	15
A	Parking lots/malls [>50 spaces] (M)		3	5	5	13
B5	Lumber processing and manufacturing (H)		5	3	5	13
B10	Known Contaminant Plumes (VH)		7	1	5	13
B10	Underground storage tanks - Confirmed leaking tanks (VH)		7	1	5	13
A	Transportation corridors - Roads/Streets (L)		1	5	5	11
A	Wells - monitoring, test holes (L)		1	5	5	11
B5	Parking lots/malls [>50 spaces] (M)		3	3	5	11
B5	Transportation corridors - Railroads (M)		3	3	5	11
B10	Lumber processing and manufacturing (H)		5	1	5	11
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
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
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
B5	Sewer collection systems (H in Zone A, otherwise L)		1	3	5	9
B5	Transportation corridors - Roads/Streets (L)		1	3	5	9
B5	Underground storage tanks - Upgraded and/or registered - active tanks (L)		1	3	5	9
B5	Wells - monitoring, test holes (L)		1	3	5	9
B10	Hardware/lumber/parts stores (M)		3	1	5	9
B10	Parking lots/malls [>50 spaces] (M)		3	1	5	9

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

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 12 - STANDBY **Source No.** 011 **PS Code** 5710006-011

Completed by City of Woodland **Date** December, 2002

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Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
B10	Transportation corridors - Freeways/state highways (M)		3	1	5	9
B10	Transportation corridors - Railroads (M)		3	1	5	9

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Explanation of Source Water Assessments and Definition of Terms

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Physical Barrier Effectiveness (PBE): The PBE for a source is an evaluation of the ability of the source and the surrounding area to prevent the movement of contaminants into the source. The PBE is based on the construction and operation features of the source, and the characteristics of the surrounding area. A source is assigned a PBE of Low, Moderate or High, where High indicates that the physical barriers of the source and site are very effective in preventing the movement of contaminants. By design, typical groundwater sources will have Moderate PBE, while typical surface water sources will have Low PBE. This is due to the greater exposure of surface water sources to contamination.

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Physical Barrier Effectiveness	Low = 5	Moderate = 3	High = 1		

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Vulnerability Summary: The source is considered most vulnerable to the PCAs with the highest score, and to PCAs associated with detected contaminants. These PCAs are noted in the vulnerability summary. Further details or discussion may be provided in the vulnerability discussion.

Drinking Water Source Assessment

Water System

Woodland, City of

Yolo County

Water Source

WELL 13

Assessment Date

December, 2002

Assessment Completed By

City of Woodland

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

District No.	**09**
System No.	**5710006**
Source No.	**012**
PS Code	**5710006-012**

Vulnerability Summary

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 13 **Source No.** 012 **PS Code** 5710006-012

Completed by City of Woodland **Date** December, 2002

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

A source water assessment was conducted for the **WELL 13**

of the **Woodland, City of** water system in **December, 2002** .

The source is considered most vulnerable to the following activities associated with contaminants detected in the water supply:

Crops, irrigated [Berries, hops, mint, orchards, sod, greenhouses,
Fertilizer/Pesticide/Herbicide Application

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

Agricultural Drainage
Septic systems - low density [<1/acre]
Sewer collection systems
Wells - Agricultural/ Irrigation
Underground storage tanks - Confirmed leaking tanks

Discussion of Vulnerability

Well 13's capture zone extends into the agricultural area west and southwest of Woodland and shows some levels of nitrate as a result. The nitrate level has exceeded 30 ppm in the past and as such is a cause for concern.

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Woodland, CA 95778

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Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 13 **Source No.** 012 **PS Code** 5710006-012

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
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
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
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
A	Agricultural Drainage (H in Zone A, otherwise M)		5	5	5	15
A	Septic systems - low density [<1/acre] (H in Zone A, otherwise L)		5	5	5	15
A	Sewer collection systems (H in Zone A, otherwise L)		5	5	5	15
A	Wells - Agricultural/ Irrigation (H)		5	5	5	15
B5	Underground storage tanks - Confirmed leaking tanks (VH)		7	3	5	15
A	Hospitals (M)		3	5	5	13
A	Housing - high density [>1 house/0.5 acres] (M)		3	5	5	13
A	Parking lots/malls [>50 spaces] (M)		3	5	5	13
A	Parks (M)		3	5	5	13
A	Storm Water Detention Facilities (M)		3	5	5	13
A	Wells - Water supply (M)		3	5	5	13
B5	Wells - Agricultural/ Irrigation (H)		5	3	5	13
B10	Known Contaminant Plumes (VH)		7	1	5	13
A	Apartments and condominiums (L)		1	5	5	11
A	Medical/dental offices/clinics (L)		1	5	5	11
A	Office buildings/complexes (L)		1	5	5	11
A	Schools (L)		1	5	5	11
A	Transportation corridors - Roads/Streets (L)		1	5	5	11
A	Underground storage tanks - Upgraded and/or registered - active tanks (L)		1	5	5	11

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

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 13 **Source No.** 012 **PS Code** 5710006-012

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
B5	Agricultural Drainage (H in Zone A, otherwise M)		3	3	5	11
B5	Housing - high density [>1 house/0.5 acres] (M)		3	3	5	11
B5	Parking lots/malls [>50 spaces] (M)		3	3	5	11
B5	Parks (M)		3	3	5	11
B5	Wells - Water supply (M)		3	3	5	11
B10	Automobile - Repair shops (H)		5	1	5	11
B10	Wells - Agricultural/ Irrigation (H)		5	1	5	11
B10	Wells - Oil, Gas, Geothermal (H)		5	1	5	11
A	Illegal activities/unauthorized dumping (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
B5	Illegal activities/unauthorized dumping (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
B10	Illegal activities/unauthorized dumping (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
B5	Apartments and condominiums (L)		1	3	5	9
B5	Medical/dental offices/clinics (L)		1	3	5	9
B5	Office buildings/complexes (L)		1	3	5	9
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	Sewer collection systems (H in Zone A, otherwise L)		1	3	5	9
B5	Transportation corridors - Roads/Streets (L)		1	3	5	9
B5	Wells - monitoring, test holes (L)		1	3	5	9
B10	Agricultural Drainage (H in Zone A, otherwise M)		3	1	5	9

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Vulnerability Ranking

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Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
B10	Funeral services/graveyards (M)		3	1	5	9
B10	Hospitals (M)		3	1	5	9
B10	Housing - high density [>1 house/0.5 acres] (M)		3	1	5	9
B10	Parking lots/malls [>50 spaces] (M)		3	1	5	9
B10	Parks (M)		3	1	5	9
B10	Septic systems - high density [>1/acre] (VH in Zone A, otherwise M)		3	1	5	9

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Explanation of Source Water Assessments and Definition of Terms

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For groundwater sources, there are typically three concentric circular zones around a source (Zones A, B5 and B10). The sizes of the are determined based on characteristics of the source. PCAs located in the inner Zone A are considered more of a risk to the water supply than PCAs located in the middle Zone B5. Similarly, PCAs located in Zone B5 are considered more of a risk than PCAs located in the outer Zone B10.

For surface water sources, the watershed is defined as the overall protection area, and as an option, zones are defined closer to the source. Two types of zones are typically established. Zone A is the area within and near the surface water body and its tributaries. Zone B is an area within 2,500 feet of the intake, not including areas in Zone A. For surface water sources, PCAs located in Zone A are considered a greater threat than PCAs located in Zone B. PCAs located on the watershed outside of the zones are considered to be of less risk to the water supply. If zones have not been defined, PCAs are considered to be of equal risk regardless of location on the watershed.

Physical Barrier Effectiveness (PBE): The PBE for a source is an evaluation of the ability of the source and the surrounding area to prevent the movement of contaminants into the source. The PBE is based on the construction and operation features of the source, and the characteristics of the surrounding area. A source is assigned a PBE of Low, Moderate or High, where High indicates that the physical barriers of the source and site are very effective in preventing the movement of contaminants. By design, typical groundwater sources will have Moderate PBE, while typical surface water sources will have Low PBE. This is due to the greater exposure of surface water sources to contamination.

Vulnerability Ranking: The vulnerability ranking is a summary of the PCAs identified in the assessment prioritized by the risk that they pose to the water supply. The prioritization is based on the risk associated with a PCA, the zone in which it occurs, and the PBE of the source. In the vulnerability ranking, points are assigned as follows:

PCA risk ranking	Very High = 7	High = 5	Moderate = 3	Low = 1	Unknown in any zone = 0
Zone (Groundwater)	A = 5	B5 = 3	B10 = 1		
Zone (Surface water with zones)	A = 5	B = 3	Watershed = 1		
Zone (Surface water without zones)	Watershed = 5				
Physical Barrier Effectiveness	Low = 5	Moderate = 3	High = 1		

The points for each type of PCA in each zone are totaled to give a vulnerability score, and the PCAs are ranked in order from the highest score to the lowest score. PCAs associated with detected contaminants are ranked at the top, regardless of vulnerability score. By definition, groundwater sources are not considered vulnerable to PCAs with scores less than 8, and surface water sources are not considered vulnerable to PCAs with scores less than 11. It should be noted that the vulnerability ranking scores do not have a direct quantitative value. Rather, the points are used only to relatively rank the types of PCAs for an individual source.

Note: Some of the summaries do not include a vulnerability ranking. If the assessment was done on paper and the details were not entered into the database, the vulnerability ranking is not available here. In addition, alternate methods of determining vulnerability were allowed in some cases, and the vulnerability ranking is not in the database.

Vulnerability Summary: The source is considered most vulnerable to the PCAs with the highest score, and to PCAs associated with detected contaminants. These PCAs are noted in the vulnerability summary. Further details or discussion may be provided in the vulnerability discussion.

Drinking Water Source Assessment

Water System

Woodland, City of

Yolo County

Water Source

WELL 14

Assessment Date

December, 2002

Assessment Completed By

City of Woodland

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

District No.	**09**
System No.	**5710006**
Source No.	**013**
PS Code	**5710006-013**

Vulnerability Summary

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 14 **Source No.** 013 **PS Code** 5710006-013

Completed by City of Woodland **Date** December, 2002

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

A source water assessment was conducted for the **WELL 14**

of the **Woodland, City of** water system in **December, 2002** .

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

Automobile - Gas stations
Chemical/petroleum processing/storage
Historic gas stations
Known Contaminant Plumes
Underground storage tanks - Confirmed leaking tanks

Discussion of Vulnerability

Well 14, located next to the main transportation corridors, Main St. (old HY 16), HY 113, and I-5 has a large number of transportation related PCAs.

A copy of the complete assessment may be viewed at:

City of Woodland, Yard
855 N. Pioneer Ave.
Woodland, CA 95778

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

System Engineer
(530) 661-5962
(530) 661-1290 (fax)
pubworks@cityofwoodland.org

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 14 **Source No.** 013 **PS Code** 5710006-013

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
A	Automobile - Gas stations (VH)		7	5	3	15
A	Chemical/petroleum processing/storage (VH)		7	5	3	15
A	Historic gas stations (VH)		7	5	3	15
A	Known Contaminant Plumes (VH)		7	5	3	15
A	Underground storage tanks - Confirmed leaking tanks (VH)		7	5	3	15
A	Automobile - Body shops (H)		5	5	3	13
A	Automobile - Repair shops (H)		5	5	3	13
A	Fleet/truck/bus terminals (H)		5	5	3	13
A	Furniture repair/manufacturing (H)		5	5	3	13
A	Home manufacturing (H)		5	5	3	13
A	Lumber processing and manufacturing (H)		5	5	3	13
A	Pesticide/fertilizer/petroleum storage & transfer areas (H)		5	5	3	13
A	Septic systems - low density [<1/acre] (H in Zone A, otherwise L)		5	5	3	13
A	Sewer collection systems (H in Zone A, otherwise L)		5	5	3	13
A	Wells - Agricultural/ Irrigation (H)		5	5	3	13
B5	Automobile - Gas stations (VH)		7	3	3	13
B5	Dry cleaners (VH)		7	3	3	13
B5	Historic gas stations (VH)		7	3	3	13
B5	Known Contaminant Plumes (VH)		7	3	3	13
B5	Plastics/synthetics producers (VH)		7	3	3	13
B5	Underground storage tanks - Confirmed leaking tanks (VH)		7	3	3	13
A	Above ground storage tanks (M)		3	5	3	11
A	Crops, irrigated [Berries, hops, mint, orchards, sod, greenhouses, vineyards, nurseries, vegetable] (M)		3	5	3	11
A	Fertilizer/Pesticide/Herbicide Application (M)		3	5	3	11
A	Food processing (M)		3	5	3	11
A	Housing - high density [>1 house/0.5 acres] (M)		3	5	3	11
A	Transportation corridors - Freeways/state highways (M)		3	5	3	11

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

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 14 **Source No.** 013 **PS Code** 5710006-013

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
A	Transportation corridors - Railroads (M)		3	5	3	11
B5	Automobile - Body shops (H)		5	3	3	11
B5	Automobile - Repair shops (H)		5	3	3	11
B5	Fleet/truck/bus terminals (H)		5	3	3	11
B5	Furniture repair/manufacturing (H)		5	3	3	11
B5	Home manufacturing (H)		5	3	3	11
B10	Automobile - Gas stations (VH)		7	1	3	11
B10	Historic gas stations (VH)		7	1	3	11
B10	Known Contaminant Plumes (VH)		7	1	3	11
B10	Metal plating/ finishing/fabricating (VH)		7	1	3	11
B10	Underground storage tanks - Confirmed leaking tanks (VH)		7	1	3	11
A	Crops, nonirrigated [e.g., Christmas trees, grains, grass seeds, hay, pasture] [includes drip-irrigated crops] (L)		1	5	3	9
A	Hotels, Motels (L)		1	5	3	9
A	Office buildings/complexes (L)		1	5	3	9
A	RV/mini storage (L)		1	5	3	9
A	Transportation corridors - Roads/Streets (L)		1	5	3	9
A	Underground storage tanks - Upgraded and/or registered - active tanks (L)		1	5	3	9
A	Wells - monitoring, test holes (L)		1	5	3	9
B5	Crops, irrigated [Berries, hops, mint, orchards, sod, greenhouses, vineyards, nurseries, vegetable] (M)		3	3	3	9
B5	Fertilizer/Pesticide/Herbicide Application (M)		3	3	3	9
B5	Food processing (M)		3	3	3	9
B5	Hardware/lumber/parts stores (M)		3	3	3	9
B5	Housing - high density [>1 house/0.5 acres] (M)		3	3	3	9
B5	Parking lots/malls [>50 spaces] (M)		3	3	3	9
B5	Transportation corridors - Freeways/state highways (M)		3	3	3	9
B5	Transportation corridors - Railroads (M)		3	3	3	9

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

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 14 **Source No.** 013 **PS Code** 5710006-013

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
B5	Wells - Water supply (M)		3	3	3	9
B10	Automobile - Body shops (H)		5	1	3	9
B10	Automobile - Repair shops (H)		5	1	3	9
B10	Electrical/electronic manufacturing (H)		5	1	3	9
B10	Farm chemical distributor/ application service (H)		5	1	3	9
B10	Fleet/truck/bus terminals (H)		5	1	3	9
B10	Home manufacturing (H)		5	1	3	9
B10	Machine shops (H)		5	1	3	9
B10	Pesticide/fertilizer/petroleum storage & transfer areas (H)		5	1	3	9
B10	Photo processing/printing (H)		5	1	3	9
B10	Research laboratories (H)		5	1	3	9
B10	Wells - Oil, Gas, Geothermal (H)		5	1	3	9
A	Illegal activities/unauthorized dumping (H)		5	0	3	8
A	Underground storage tanks - Non-regulated tanks [tanks smaller than regulatory limit] (H)		5	0	3	8
A	Underground storage tanks - Not yet upgraded or registered tanks (H)		5	0	3	8
B5	Illegal activities/unauthorized dumping (H)		5	0	3	8
B5	Underground storage tanks - Non-regulated tanks [tanks smaller than regulatory limit] (H)		5	0	3	8
B5	Underground storage tanks - Not yet upgraded or registered tanks (H)		5	0	3	8
B10	Illegal activities/unauthorized dumping (H)		5	0	3	8
B10	Underground storage tanks - Non-regulated tanks [tanks smaller than regulatory limit] (H)		5	0	3	8
B10	Underground storage tanks - Not yet upgraded or registered tanks (H)		5	0	3	8

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

Explanation of Source Water Assessments and Definition of Terms

A source water assessment was recently completed for this drinking water source. The assessment identifies the vulnerability of the drinking water supply to contamination from typical human activities. The assessments are intended to facilitate and provide the basic information necessary for a local community to develop a program to protect the drinking water supply.

A summary of the complete assessment is provided here. For more information, contact the agency or individual that prepared the assessment (shown in summary). You may also contact the local Department of Health Services Drinking Water Field Operations Branch district office (http://www.dhs.ca.gov/ps/ddwem/technical/dwp/districtofficesmap.pdf). Additional information about assessments can be found at: http://www.dhs.ca.gov/ps/ddwem/dwsap/FAQ.htm

Terms used in this summary:

Source Water Assessment: An assessment is an evaluation of a drinking water source to determine the "possible contaminating activities" (PCAs) to which the source is most vulnerable. The assessment includes: a delineation of protection zones around the source; an inventory of the types of PCAs within the source protection zones; and an analysis to determine the PCAs to which the source is most vulnerable. The information is compiled into a report that includes a map, calculations, checklists, and a summary of the findings.

Possible Contaminating Activity (PCA): A PCA is a current or historic human activity that is an actual or potential origin of contamination for a drinking water source. PCAs include activities that use, store, produce or dispose of chemicals that have the potential to contaminate drinking water supplies. There are 110 types of PCAs in the California DWSAP program.

PCA Risk Ranking: Each type of PCA is assigned a risk ranking (Very High, High, Moderate, or Low). The risk ranking is based on the contaminant(s) typically associated with that PCA, the likelihood of release from that type of facility based on historical experience, and the mobility of the contaminant(s).

PCA Inventory: The PCA inventory is a review using local knowledge, databases, and on-site evaluations to identify the occurrence and approximate location of PCAs in the source water zones. The inventory for the basic DWSAP assessments is a presence-absence review. If a type of PCA occurs in a zone, a "Yes" is noted in the inventory for that zone, regardless of whether there is one or many of that type of facility within the zone. If a PCA has been associated with a contaminant detected in the water supply, a notation is made in the PCA inventory.

Source Water Zones or Areas: These are areas located around and typically adjacent to a drinking water source that have been identified as initial protection areas.

For groundwater sources, there are typically three concentric circular zones around a source (Zones A, B5 and B10). The sizes of the are determined based on characteristics of the source. PCAs located in the inner Zone A are considered more of a risk to the water supply than PCAs located in the middle Zone B5. Similarly, PCAs located in Zone B5 are considered more of a risk than PCAs located in the outer Zone B10.

For surface water sources, the watershed is defined as the overall protection area, and as an option, zones are defined closer to the source. Two types of zones are typically established. Zone A is the area within and near the surface water body and its tributaries. Zone B is an area within 2,500 feet of the intake, not including areas in Zone A. For surface water sources, PCAs located in Zone A are considered a greater threat than PCAs located in Zone B. PCAs located on the watershed outside of the zones are considered to be of less risk to the water supply. If zones have not been defined, PCAs are considered to be of equal risk regardless of location on the watershed.

Physical Barrier Effectiveness (PBE): The PBE for a source is an evaluation of the ability of the source and the surrounding area to prevent the movement of contaminants into the source. The PBE is based on the construction and operation features of the source, and the characteristics of the surrounding area. A source is assigned a PBE of Low, Moderate or High, where High indicates that the physical barriers of the source and site are very effective in preventing the movement of contaminants. By design, typical groundwater sources will have Moderate PBE, while typical surface water sources will have Low PBE. This is due to the greater exposure of surface water sources to contamination.

Vulnerability Ranking: The vulnerability ranking is a summary of the PCAs identified in the assessment prioritized by the risk that they pose to the water supply. The prioritization is based on the risk associated with a PCA, the zone in which it occurs, and the PBE of the source. In the vulnerability ranking, points are assigned as follows:

PCA risk ranking	Very High = 7	High = 5	Moderate = 3	Low = 1	Unknown in any zone = 0
Zone (Groundwater)	A = 5	B5 = 3	B10 = 1		
Zone (Surface water with zones)	A = 5	B = 3	Watershed = 1		
Zone (Surface water without zones)	Watershed = 5				
Physical Barrier Effectiveness	Low = 5	Moderate = 3	High = 1		

The points for each type of PCA in each zone are totaled to give a vulnerability score, and the PCAs are ranked in order from the highest score to the lowest score. PCAs associated with detected contaminants are ranked at the top, regardless of vulnerability score. By definition, groundwater sources are not considered vulnerable to PCAs with scores less than 8, and surface water sources are not considered vulnerable to PCAs with scores less than 11. It should be noted that the vulnerability ranking scores do not have a direct quantitative value. Rather, the points are used only to relatively rank the types of PCAs for an individual source.

Note: Some of the summaries do not include a vulnerability ranking. If the assessment was done on paper and the details were not entered into the database, the vulnerability ranking is not available here. In addition, alternate methods of determining vulnerability were allowed in some cases, and the vulnerability ranking is not in the database.

Vulnerability Summary: The source is considered most vulnerable to the PCAs with the highest score, and to PCAs associated with detected contaminants. These PCAs are noted in the vulnerability summary. Further details or discussion may be provided in the vulnerability discussion.

Drinking Water Source Assessment

Water System

Woodland, City of

Yolo County

Water Source

WELL 15 - STANDBY

Assessment Date

December, 2002

Assessment Completed By

City of Woodland

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

District No.	**09**
System No.	**5710006**
Source No.	**014**
PS Code	**5710006-014**

Vulnerability Summary

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 15 - STANDBY **Source No.** 014 **PS Code** 5710006-014

Completed by City of Woodland **Date** December, 2002

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

A source water assessment was conducted for the **WELL 15 - STANDBY**

of the **Woodland, City of** water system in **December, 2002** .

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

Sewer collection systems

Discussion of Vulnerability

The outer edge Well 15's Zone B10 is bordered by the two main transportation corridors in Woodland, Main St. (old HY 16), East Street (old HY 113) with the California Northern Railroad (old Southern Pacific tracks) and HY 113 and therefore, has a large number of transportation related PCAs.

A copy of the complete assessment may be viewed at:

City of Woodland, Yard
855 N. Pioneer Ave.
Woodland, CA 95778

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

System Engineer
(530) 661-5962
(530) 661-1290 (fax)
pubworks@cityofwoodland.org

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 15 - STANDBY **Source No.** 014 **PS Code** 5710006-014

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
A	Sewer collection systems (H in Zone A, otherwise L)		5	5	3	13
A	Housing - high density [>1 house/0.5 acres] (M)		3	5	3	11
A	Parks (M)		3	5	3	11
B10	Automobile - Gas stations (VH)		7	1	3	11
B10	Chemical/petroleum processing/storage (VH)		7	1	3	11
B10	Historic gas stations (VH)		7	1	3	11
B10	Known Contaminant Plumes (VH)		7	1	3	11
B10	Underground storage tanks - Confirmed leaking tanks (VH)		7	1	3	11
A	Transportation corridors - Roads/Streets (L)		1	5	3	9
B5	Housing - high density [>1 house/0.5 acres] (M)		3	3	3	9
B5	Parks (M)		3	3	3	9
B10	Automobile - Body shops (H)		5	1	3	9
B10	Automobile - Repair shops (H)		5	1	3	9
B10	Chemical/petroleum pipelines (H)		5	1	3	9
B10	Fleet/truck/bus terminals (H)		5	1	3	9
B10	Photo processing/printing (H)		5	1	3	9
A	Illegal activities/unauthorized dumping (H)		5	0	3	8
A	Underground storage tanks - Non-regulated tanks [tanks smaller than regulatory limit] (H)		5	0	3	8
A	Underground storage tanks - Not yet upgraded or registered tanks (H)		5	0	3	8
B5	Illegal activities/unauthorized dumping (H)		5	0	3	8
B5	Underground storage tanks - Non-regulated tanks [tanks smaller than regulatory limit] (H)		5	0	3	8
B5	Underground storage tanks - Not yet upgraded or registered tanks (H)		5	0	3	8
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*** = A contaminant potentially associated with this activity has been detected in the water supply.**

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Vulnerability Summary: The source is considered most vulnerable to the PCAs with the highest score, and to PCAs associated with detected contaminants. These PCAs are noted in the vulnerability summary. Further details or discussion may be provided in the vulnerability discussion.

Drinking Water Source Assessment

Water System

Woodland, City of

Yolo County

Water Source

WELL 16 COLLEGE AVE.

Assessment Date

December, 2002

Assessment Completed By

City of Woodland

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

District No.	**09**
System No.	**5710006**
Source No.	**015**
PS Code	**5710006-015**

Vulnerability Summary

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 16 COLLEGE AVE. **Source No.** 015 **PS Code** 5710006-015

Completed by City of Woodland **Date** December, 2002

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

A source water assessment was conducted for the **WELL 16 COLLEGE AVE.**

of the **Woodland, City of** water system in **December, 2002** .

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

Agricultural Drainage
Septic systems - low density [<1/acre]
Sewer collection systems
Wells - Agricultural/ Irrigation

Discussion of Vulnerability

Well16's capture zone extends into the agricultural area, predominately a former turkey farm south of Woodland, and shows some levels of nitrate as a result. The nitrate level has not exceeded 30 ppm.

A copy of the complete assessment may be viewed at:

City of Woodland, Yard
855 N. Pioneer Ave.
Woodland, CA 95778

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

System Engineer
(530) 661-5962
(530) 661-1290 (fax)
pubworks@cityofwoodland.org

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 16 COLLEGE AVE. **Source No.** 015 **PS Code** 5710006-015

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
A	Agricultural Drainage (H in Zone A, otherwise M)		5	5	3	13
A	Septic systems - low density [<1/acre] (H in Zone A, otherwise L)		5	5	3	13
A	Sewer collection systems (H in Zone A, otherwise L)		5	5	3	13
A	Wells - Agricultural/ Irrigation (H)		5	5	3	13
A	Crops, irrigated [Berries, hops, mint, orchards, sod, greenhouses, vineyards, nurseries, vegetable] (M)		3	5	3	11
A	Fertilizer/Pesticide/Herbicide Application (M)		3	5	3	11
A	Housing - high density [>1 house/0.5 acres] (M)		3	5	3	11
A	Parks (M)		3	5	3	11
A	Wells - Water supply (M)		3	5	3	11
B5	Wells - Agricultural/ Irrigation (H)		5	3	3	11
A	Transportation corridors - Roads/Streets (L)		1	5	3	9
B5	Agricultural Drainage (H in Zone A, otherwise M)		3	3	3	9
B5	Crops, irrigated [Berries, hops, mint, orchards, sod, greenhouses, vineyards, nurseries, vegetable] (M)		3	3	3	9
B5	Fertilizer/Pesticide/Herbicide Application (M)		3	3	3	9
B5	Housing - high density [>1 house/0.5 acres] (M)		3	3	3	9
B10	Illegal activities/unauthorized dumping (H)		5	1	3	9
B10	Wells - Agricultural/ Irrigation (H)		5	1	3	9

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

Explanation of Source Water Assessments and Definition of Terms

A source water assessment was recently completed for this drinking water source. The assessment identifies the vulnerability of the drinking water supply to contamination from typical human activities. The assessments are intended to facilitate and provide the basic information necessary for a local community to develop a program to protect the drinking water supply.

A summary of the complete assessment is provided here. For more information, contact the agency or individual that prepared the assessment (shown in summary). You may also contact the local Department of Health Services Drinking Water Field Operations Branch district office (http://www.dhs.ca.gov/ps/ddwem/technical/dwp/districtofficesmap.pdf). Additional information about assessments can be found at: http://www.dhs.ca.gov/ps/ddwem/dwsap/FAQ.htm

Terms used in this summary:

Source Water Assessment: An assessment is an evaluation of a drinking water source to determine the "possible contaminating activities" (PCAs) to which the source is most vulnerable. The assessment includes: a delineation of protection zones around the source; an inventory of the types of PCAs within the source protection zones; and an analysis to determine the PCAs to which the source is most vulnerable. The information is compiled into a report that includes a map, calculations, checklists, and a summary of the findings.

Possible Contaminating Activity (PCA): A PCA is a current or historic human activity that is an actual or potential origin of contamination for a drinking water source. PCAs include activities that use, store, produce or dispose of chemicals that have the potential to contaminate drinking water supplies. There are 110 types of PCAs in the California DWSAP program.

PCA Risk Ranking: Each type of PCA is assigned a risk ranking (Very High, High, Moderate, or Low). The risk ranking is based on the contaminant(s) typically associated with that PCA, the likelihood of release from that type of facility based on historical experience, and the mobility of the contaminant(s).

PCA Inventory: The PCA inventory is a review using local knowledge, databases, and on-site evaluations to identify the occurrence and approximate location of PCAs in the source water zones. The inventory for the basic DWSAP assessments is a presence-absence review. If a type of PCA occurs in a zone, a "Yes" is noted in the inventory for that zone, regardless of whether there is one or many of that type of facility within the zone. If a PCA has been associated with a contaminant detected in the water supply, a notation is made in the PCA inventory.

Source Water Zones or Areas: These are areas located around and typically adjacent to a drinking water source that have been identified as initial protection areas.

For groundwater sources, there are typically three concentric circular zones around a source (Zones A, B5 and B10). The sizes of the are determined based on characteristics of the source. PCAs located in the inner Zone A are considered more of a risk to the water supply than PCAs located in the middle Zone B5. Similarly, PCAs located in Zone B5 are considered more of a risk than PCAs located in the outer Zone B10.

For surface water sources, the watershed is defined as the overall protection area, and as an option, zones are defined closer to the source. Two types of zones are typically established. Zone A is the area within and near the surface water body and its tributaries. Zone B is an area within 2,500 feet of the intake, not including areas in Zone A. For surface water sources, PCAs located in Zone A are considered a greater threat than PCAs located in Zone B. PCAs located on the watershed outside of the zones are considered to be of less risk to the water supply. If zones have not been defined, PCAs are considered to be of equal risk regardless of location on the watershed.

Physical Barrier Effectiveness (PBE): The PBE for a source is an evaluation of the ability of the source and the surrounding area to prevent the movement of contaminants into the source. The PBE is based on the construction and operation features of the source, and the characteristics of the surrounding area. A source is assigned a PBE of Low, Moderate or High, where High indicates that the physical barriers of the source and site are very effective in preventing the movement of contaminants. By design, typical groundwater sources will have Moderate PBE, while typical surface water sources will have Low PBE. This is due to the greater exposure of surface water sources to contamination.

Vulnerability Ranking: The vulnerability ranking is a summary of the PCAs identified in the assessment prioritized by the risk that they pose to the water supply. The prioritization is based on the risk associated with a PCA, the zone in which it occurs, and the PBE of the source. In the vulnerability ranking, points are assigned as follows:

PCA risk ranking	Very High = 7	High = 5	Moderate = 3	Low = 1	Unknown in any zone = 0
Zone (Groundwater)	A = 5	B5 = 3	B10 = 1		
Zone (Surface water with zones)	A = 5	B = 3	Watershed = 1		
Zone (Surface water without zones)	Watershed = 5				
Physical Barrier Effectiveness	Low = 5	Moderate = 3	High = 1		

The points for each type of PCA in each zone are totaled to give a vulnerability score, and the PCAs are ranked in order from the highest score to the lowest score. PCAs associated with detected contaminants are ranked at the top, regardless of vulnerability score. By definition, groundwater sources are not considered vulnerable to PCAs with scores less than 8, and surface water sources are not considered vulnerable to PCAs with scores less than 11. It should be noted that the vulnerability ranking scores do not have a direct quantitative value. Rather, the points are used only to relatively rank the types of PCAs for an individual source.

Note: Some of the summaries do not include a vulnerability ranking. If the assessment was done on paper and the details were not entered into the database, the vulnerability ranking is not available here. In addition, alternate methods of determining vulnerability were allowed in some cases, and the vulnerability ranking is not in the database.

Vulnerability Summary: The source is considered most vulnerable to the PCAs with the highest score, and to PCAs associated with detected contaminants. These PCAs are noted in the vulnerability summary. Further details or discussion may be provided in the vulnerability discussion.

Drinking Water Source Assessment

Water System

Woodland, City of

Yolo County

Water Source

WELL 17

Assessment Date

December, 2002

Assessment Completed By

City of Woodland

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

District No.	**09**
System No.	**5710006**
Source No.	**016**
PS Code	**5710006-016**

Vulnerability Summary

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 17 **Source No.** 016 **PS Code** 5710006-016

Completed by City of Woodland **Date** December, 2002

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

A source water assessment was conducted for the **WELL 17**

of the **Woodland, City of** water system in **December, 2002** .

The source is considered most vulnerable to the following activities associated with contaminants detected in the water supply:

Crops, irrigated [Berries, hops, mint, orchards, sod, greenhouses,
Fertilizer/Pesticide/Herbicide Application

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

Agricultural Drainage
Septic systems - low density [<1/acre]
Sewer collection systems
Wells - Agricultural/ Irrigation
Underground storage tanks - Confirmed leaking tanks

Discussion of Vulnerability

Well 17's capture zone extends into the agricultural area around Woodland and shows some levels of nitrate as a result. The nitrate level has exceeded 40 ppm in the past and as such was a cause for concern.

To alleviate the nitrate problem in this well, a packer was used to block off the upper slots in the well, 141 to 151 and 179 to 189 feet below the surface, in order to decrease the flow of nitrate rich water. This has proved to be successful, reducing the nitrate levels to acceptable levels.

A copy of the complete assessment may be viewed at:

City of Woodland, Yard
855 N. Pioneer Ave.
Woodland, CA 95778

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

System Engineer
(530) 661-5962
(530) 661-1290 (fax)
pubworks@cityofwoodland.org

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 17 **Source No.** 016 **PS Code** 5710006-016

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
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
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
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
A	Agricultural Drainage (H in Zone A, otherwise M)		5	5	5	15
A	Septic systems - low density [<1/acre] (H in Zone A, otherwise L)		5	5	5	15
A	Sewer collection systems (H in Zone A, otherwise L)		5	5	5	15
A	Wells - Agricultural/ Irrigation (H)		5	5	5	15
B5	Underground storage tanks - Confirmed leaking tanks (VH)		7	3	5	15
A	Housing - high density [>1 house/0.5 acres] (M)		3	5	5	13
A	Parks (M)		3	5	5	13
A	Storm Water Detention Facilities (M)		3	5	5	13
A	Wells - Water supply (M)		3	5	5	13
B5	Wells - Agricultural/ Irrigation (H)		5	3	5	13
B5	Wells - Oil, Gas, Geothermal (H)		5	3	5	13
A	Transportation corridors - Roads/Streets (L)		1	5	5	11
B5	Agricultural Drainage (H in Zone A, otherwise M)		3	3	5	11
B5	Housing - high density [>1 house/0.5 acres] (M)		3	3	5	11
B5	Wells - Water supply (M)		3	3	5	11
B10	Wells - Agricultural/ Irrigation (H)		5	1	5	11
B10	Wells - Oil, Gas, Geothermal (H)		5	1	5	11
B5	Septic systems - low density [<1/acre] (H in Zone A, otherwise L)		1	3	5	9
B5	Sewer collection systems (H in Zone A, otherwise L)		1	3	5	9
B5	Transportation corridors - Roads/Streets (L)		1	3	5	9

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

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 17 **Source No.** 016 **PS Code** 5710006-016

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
B10	Agricultural Drainage (H in Zone A, otherwise M)		3	1	5	9
B10	Hospitals (M)		3	1	5	9
B10	Housing - high density [>1 house/0.5 acres] (M)		3	1	5	9
B10	Parking lots/malls [>50 spaces] (M)		3	1	5	9
B10	Parks (M)		3	1	5	9
B10	Wells - Water supply (M)		3	1	5	9

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Explanation of Source Water Assessments and Definition of Terms

A source water assessment was recently completed for this drinking water source. The assessment identifies the vulnerability of the drinking water supply to contamination from typical human activities. The assessments are intended to facilitate and provide the basic information necessary for a local community to develop a program to protect the drinking water supply.

A summary of the complete assessment is provided here. For more information, contact the agency or individual that prepared the assessment (shown in summary). You may also contact the local Department of Health Services Drinking Water Field Operations Branch district office (http://www.dhs.ca.gov/ps/ddwem/technical/dwp/districtofficesmap.pdf). Additional information about assessments can be found at: http://www.dhs.ca.gov/ps/ddwem/dwsap/FAQ.htm

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Zone (Groundwater)	A = 5	B5 = 3	B10 = 1		
Zone (Surface water with zones)	A = 5	B = 3	Watershed = 1		
Zone (Surface water without zones)	Watershed = 5				
Physical Barrier Effectiveness	Low = 5	Moderate = 3	High = 1		

The points for each type of PCA in each zone are totaled to give a vulnerability score, and the PCAs are ranked in order from the highest score to the lowest score. PCAs associated with detected contaminants are ranked at the top, regardless of vulnerability score. By definition, groundwater sources are not considered vulnerable to PCAs with scores less than 8, and surface water sources are not considered vulnerable to PCAs with scores less than 11. It should be noted that the vulnerability ranking scores do not have a direct quantitative value. Rather, the points are used only to relatively rank the types of PCAs for an individual source.

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Drinking Water Source Assessment

Water System

Woodland, City of

Yolo County

Water Source

WELL 18

Assessment Date

December, 2002

Assessment Completed By

City of Woodland

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

District No.	**09**
System No.	**5710006**
Source No.	**017**
PS Code	**5710006-017**

Vulnerability Summary

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 18 **Source No.** 017 **PS Code** 5710006-017

Completed by City of Woodland **Date** December, 2002

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

A source water assessment was conducted for the **WELL 18**

of the **Woodland, City of** water system in **December, 2002** .

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

Known Contaminant Plumes
Underground storage tanks - Confirmed leaking tanks

Discussion of Vulnerability

Well 18 is located on the Yolo County Fair Grounds and is used mainly to supply water for that property. The main threat to this well is the presence of a PCE plume, originating from a former dry cleaner at County Fair Mall.

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Vulnerability Ranking

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System Name Woodland, City of **System No.** 5710006

Source Name WELL 18 **Source No.** 017 **PS Code** 5710006-017

Completed by City of Woodland **Date** December, 2002

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Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
A	Known Contaminant Plumes (VH)		7	5	3	15
A	Underground storage tanks - Confirmed leaking tanks (VH)		7	5	3	15
A	Sewer collection systems (H in Zone A, otherwise L)		5	5	3	13
B5	Known Contaminant Plumes (VH)		7	3	3	13
A	Parking lots/malls [>50 spaces] (M)		3	5	3	11
A	Parks (M)		3	5	3	11
B5	Fleet/truck/bus terminals (H)		5	3	3	11
B10	Known Contaminant Plumes (VH)		7	1	3	11
A	Transportation corridors - Roads/Streets (L)		1	5	3	9
A	Wells - monitoring, test holes (L)		1	5	3	9
B5	Parking lots/malls [>50 spaces] (M)		3	3	3	9
B5	Parks (M)		3	3	3	9
B10	Chemical/petroleum pipelines (H)		5	1	3	9

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Physical Barrier Effectiveness	Low = 5	Moderate = 3	High = 1		

The points for each type of PCA in each zone are totaled to give a vulnerability score, and the PCAs are ranked in order from the highest score to the lowest score. PCAs associated with detected contaminants are ranked at the top, regardless of vulnerability score. By definition, groundwater sources are not considered vulnerable to PCAs with scores less than 8, and surface water sources are not considered vulnerable to PCAs with scores less than 11. It should be noted that the vulnerability ranking scores do not have a direct quantitative value. Rather, the points are used only to relatively rank the types of PCAs for an individual source.

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Drinking Water Source Assessment

Water System

Woodland, City of

Yolo County

Water Source

WELL 19 CORP YARD NORTH

Assessment Date

December, 2002

Assessment Completed By

City of Woodland

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

District No.	**09**
System No.	**5710006**
Source No.	**018**
PS Code	**5710006-018**

Vulnerability Summary

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 19 CORP YARD NORTH **Source No.** 018 **PS Code** 5710006-018

Completed by City of Woodland **Date** December, 2002

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

A source water assessment was conducted for the **WELL 19 CORP YARD NORTH**

of the **Woodland, City of** water system in **December, 2002** .

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

Historic gas stations
Historic waste dumps/landfills
Known Contaminant Plumes
Landfills/dumps
Metal plating/ finishing/fabricating
Underground storage tanks - Confirmed leaking tanks

Discussion of Vulnerability

Well 19, located next to the two main transportation corridors in Woodland, Main St. (old HY 16) and East Street (old HY 113) with the California Northern Railroad (old Southern Pacific tracks) has a large number of transportation related PCAs.

A copy of the complete assessment may be viewed at:

City of Woodland, Yard
855 N. Pioneer Ave.
Woodland, CA 95778

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(530) 661-5962
(530) 661-1290 (fax)
pubworks@cityofwoodland.org

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 19 CORP YARD NORTH **Source No.** 018 **PS Code** 5710006-018

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
A	Historic gas stations (VH)		7	5	3	15
A	Historic waste dumps/landfills (VH)		7	5	3	15
A	Known Contaminant Plumes (VH)		7	5	3	15
A	Landfills/dumps (VH)		7	5	3	15
A	Metal plating/ finishing/fabricating (VH)		7	5	3	15
A	Underground storage tanks - Confirmed leaking tanks (VH)		7	5	3	15
A	Automobile - Body shops (H)		5	5	3	13
A	Automobile - Repair shops (H)		5	5	3	13
A	Chemical/petroleum pipelines (H)		5	5	3	13
A	Electrical/electronic manufacturing (H)		5	5	3	13
A	Farm chemical distributor/ application service (H)		5	5	3	13
A	Fleet/truck/bus terminals (H)		5	5	3	13
A	Machine shops (H)		5	5	3	13
A	Railroad yards/maintenance/fueling areas (H)		5	5	3	13
A	Research laboratories (H)		5	5	3	13
A	Sewer collection systems (H in Zone A, otherwise L)		5	5	3	13
B5	Automobile - Gas stations (VH)		7	3	3	13
B5	Chemical/petroleum processing/storage (VH)		7	3	3	13
B5	Historic gas stations (VH)		7	3	3	13
B5	Known Contaminant Plumes (VH)		7	3	3	13
B5	Metal plating/ finishing/fabricating (VH)		7	3	3	13
B5	Plastics/synthetics producers (VH)		7	3	3	13
B5	Underground storage tanks - Confirmed leaking tanks (VH)		7	3	3	13
A	Contractor or government agency equipment storage yards (M)		3	5	3	11
A	Crops, irrigated [Berries, hops, mint, orchards, sod, greenhouses, vineyards, nurseries, vegetable] (M)		3	5	3	11
A	Fertilizer/Pesticide/Herbicide Application (M)		3	5	3	11
A	Food processing (M)		3	5	3	11

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

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Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
A	Housing - high density [>1 house/0.5 acres] (M)		3	5	3	11
A	Parks (M)		3	5	3	11
A	Transportation corridors - Freeways/state highways (M)		3	5	3	11
A	Transportation corridors - Railroads (M)		3	5	3	11
B5	Automobile - Body shops (H)		5	3	3	11
B5	Automobile - Repair shops (H)		5	3	3	11
B5	Chemical/petroleum pipelines (H)		5	3	3	11
B5	Fleet/truck/bus terminals (H)		5	3	3	11
B5	Machine shops (H)		5	3	3	11
B5	Pesticide/fertilizer/petroleum storage & transfer areas (H)		5	3	3	11
B10	Automobile - Gas stations (VH)		7	1	3	11
B10	Chemical/petroleum processing/storage (VH)		7	1	3	11
B10	Historic gas stations (VH)		7	1	3	11
B10	Known Contaminant Plumes (VH)		7	1	3	11
B10	Metal plating/ finishing/fabricating (VH)		7	1	3	11
B10	Plastics/synthetics producers (VH)		7	1	3	11
B10	Underground storage tanks - Confirmed leaking tanks (VH)		7	1	3	11
A	Office buildings/complexes (L)		1	5	3	9
A	RV/mini storage (L)		1	5	3	9
A	Transportation corridors - Roads/Streets (L)		1	5	3	9
A	Underground storage tanks - Upgraded and/or registered - active tanks (L)		1	5	3	9
A	Wells - monitoring, test holes (L)		1	5	3	9
B5	Cement/concrete plants (M)		3	3	3	9
B5	Contractor or government agency equipment storage yards (M)		3	3	3	9
B5	Crops, irrigated [Berries, hops, mint, orchards, sod, greenhouses, vineyards, nurseries, vegetable] (M)		3	3	3	9
B5	Fertilizer/Pesticide/Herbicide Application (M)		3	3	3	9

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Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
B5	Food processing (M)		3	3	3	9
B5	Funeral services/graveyards (M)		3	3	3	9
B5	Hardware/lumber/parts stores (M)		3	3	3	9
B5	Housing - high density [>1 house/0.5 acres] (M)		3	3	3	9
B5	Parking lots/malls [>50 spaces] (M)		3	3	3	9
B5	Transportation corridors - Freeways/state highways (M)		3	3	3	9
B5	Transportation corridors - Railroads (M)		3	3	3	9
B10	Automobile - Body shops (H)		5	1	3	9
B10	Automobile - Repair shops (H)		5	1	3	9
B10	Chemical/petroleum pipelines (H)		5	1	3	9
B10	Fleet/truck/bus terminals (H)		5	1	3	9
B10	Furniture repair/manufacturing (H)		5	1	3	9
B10	Machine shops (H)		5	1	3	9
B10	Pesticide/fertilizer/petroleum storage & transfer areas (H)		5	1	3	9
B10	Photo processing/printing (H)		5	1	3	9
A	Illegal activities/unauthorized dumping (H)		5	0	3	8
A	Underground storage tanks - Non-regulated tanks [tanks smaller than regulatory limit] (H)		5	0	3	8
A	Underground storage tanks - Not yet upgraded or registered tanks (H)		5	0	3	8
B5	Illegal activities/unauthorized dumping (H)		5	0	3	8
B5	Underground storage tanks - Non-regulated tanks [tanks smaller than regulatory limit] (H)		5	0	3	8
B5	Underground storage tanks - Not yet upgraded or registered tanks (H)		5	0	3	8
B10	Illegal activities/unauthorized dumping (H)		5	0	3	8
B10	Underground storage tanks - Non-regulated tanks [tanks smaller than regulatory limit] (H)		5	0	3	8
B10	Underground storage tanks - Not yet upgraded or registered tanks (H)		5	0	3	8

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

Explanation of Source Water Assessments and Definition of Terms

A source water assessment was recently completed for this drinking water source. The assessment identifies the vulnerability of the drinking water supply to contamination from typical human activities. The assessments are intended to facilitate and provide the basic information necessary for a local community to develop a program to protect the drinking water supply.

A summary of the complete assessment is provided here. For more information, contact the agency or individual that prepared the assessment (shown in summary). You may also contact the local Department of Health Services Drinking Water Field Operations Branch district office (http://www.dhs.ca.gov/ps/ddwem/technical/dwp/districtofficesmap.pdf). Additional information about assessments can be found at: http://www.dhs.ca.gov/ps/ddwem/dwsap/FAQ.htm

Terms used in this summary:

Source Water Assessment: An assessment is an evaluation of a drinking water source to determine the "possible contaminating activities" (PCAs) to which the source is most vulnerable. The assessment includes: a delineation of protection zones around the source; an inventory of the types of PCAs within the source protection zones; and an analysis to determine the PCAs to which the source is most vulnerable. The information is compiled into a report that includes a map, calculations, checklists, and a summary of the findings.

Possible Contaminating Activity (PCA): A PCA is a current or historic human activity that is an actual or potential origin of contamination for a drinking water source. PCAs include activities that use, store, produce or dispose of chemicals that have the potential to contaminate drinking water supplies. There are 110 types of PCAs in the California DWSAP program.

PCA Risk Ranking: Each type of PCA is assigned a risk ranking (Very High, High, Moderate, or Low). The risk ranking is based on the contaminant(s) typically associated with that PCA, the likelihood of release from that type of facility based on historical experience, and the mobility of the contaminant(s).

PCA Inventory: The PCA inventory is a review using local knowledge, databases, and on-site evaluations to identify the occurrence and approximate location of PCAs in the source water zones. The inventory for the basic DWSAP assessments is a presence-absence review. If a type of PCA occurs in a zone, a "Yes" is noted in the inventory for that zone, regardless of whether there is one or many of that type of facility within the zone. If a PCA has been associated with a contaminant detected in the water supply, a notation is made in the PCA inventory.

Source Water Zones or Areas: These are areas located around and typically adjacent to a drinking water source that have been identified as initial protection areas.

For groundwater sources, there are typically three concentric circular zones around a source (Zones A, B5 and B10). The sizes of the are determined based on characteristics of the source. PCAs located in the inner Zone A are considered more of a risk to the water supply than PCAs located in the middle Zone B5. Similarly, PCAs located in Zone B5 are considered more of a risk than PCAs located in the outer Zone B10.

For surface water sources, the watershed is defined as the overall protection area, and as an option, zones are defined closer to the source. Two types of zones are typically established. Zone A is the area within and near the surface water body and its tributaries. Zone B is an area within 2,500 feet of the intake, not including areas in Zone A. For surface water sources, PCAs located in Zone A are considered a greater threat than PCAs located in Zone B. PCAs located on the watershed outside of the zones are considered to be of less risk to the water supply. If zones have not been defined, PCAs are considered to be of equal risk regardless of location on the watershed.

Physical Barrier Effectiveness (PBE): The PBE for a source is an evaluation of the ability of the source and the surrounding area to prevent the movement of contaminants into the source. The PBE is based on the construction and operation features of the source, and the characteristics of the surrounding area. A source is assigned a PBE of Low, Moderate or High, where High indicates that the physical barriers of the source and site are very effective in preventing the movement of contaminants. By design, typical groundwater sources will have Moderate PBE, while typical surface water sources will have Low PBE. This is due to the greater exposure of surface water sources to contamination.

Vulnerability Ranking: The vulnerability ranking is a summary of the PCAs identified in the assessment prioritized by the risk that they pose to the water supply. The prioritization is based on the risk associated with a PCA, the zone in which it occurs, and the PBE of the source. In the vulnerability ranking, points are assigned as follows:

PCA risk ranking	Very High = 7	High = 5	Moderate = 3	Low = 1	Unknown in any zone = 0
Zone (Groundwater)	A = 5	B5 = 3	B10 = 1		
Zone (Surface water with zones)	A = 5	B = 3	Watershed = 1		
Zone (Surface water without zones)	Watershed = 5				
Physical Barrier Effectiveness	Low = 5	Moderate = 3	High = 1		

The points for each type of PCA in each zone are totaled to give a vulnerability score, and the PCAs are ranked in order from the highest score to the lowest score. PCAs associated with detected contaminants are ranked at the top, regardless of vulnerability score. By definition, groundwater sources are not considered vulnerable to PCAs with scores less than 8, and surface water sources are not considered vulnerable to PCAs with scores less than 11. It should be noted that the vulnerability ranking scores do not have a direct quantitative value. Rather, the points are used only to relatively rank the types of PCAs for an individual source.

Note: Some of the summaries do not include a vulnerability ranking. If the assessment was done on paper and the details were not entered into the database, the vulnerability ranking is not available here. In addition, alternate methods of determining vulnerability were allowed in some cases, and the vulnerability ranking is not in the database.

Vulnerability Summary: The source is considered most vulnerable to the PCAs with the highest score, and to PCAs associated with detected contaminants. These PCAs are noted in the vulnerability summary. Further details or discussion may be provided in the vulnerability discussion.

Drinking Water Source Assessment

Water System

Woodland, City of

Yolo County

Water Source

WELL 20

Assessment Date

December, 2002

Assessment Completed By

City of Woodland

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

District No.	**09**
System No.	**5710006**
Source No.	**019**
PS Code	**5710006-019**

Vulnerability Summary

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 20 **Source No.** 019 **PS Code** 5710006-019

Completed by City of Woodland **Date** December, 2002

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

A source water assessment was conducted for the **WELL 20**

of the **Woodland, City of** water system in **December, 2002** .

The source is considered most vulnerable to the following activities associated with contaminants detected in the water supply:

Crops, irrigated [Berries, hops, mint, orchards, sod, greenhouses,
Fertilizer/Pesticide/Herbicide Application

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

Historic gas stations
Underground storage tanks - Confirmed leaking tanks

Discussion of Vulnerability

Well 20's capture zone extends into the agricultural area west of Woodland and shows some levels of nitrate as a result. The nitrate level has exceeded 40 ppm in the past and as such was a cause for concern.

To lessen the nitrate problem in this well a packer was used to block off the two upper sets of slots in the well, 175-195 and 230-250 feet below the surface, in order to decrease the flow of nitrate rich water. This has proved to be successful, reducing the nitrate levels to acceptable levels.

A copy of the complete assessment may be viewed at:

City of Woodland, Yard
855 N. Pioneer Ave.
Woodland, CA 95778

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

System Engineer
(530) 661-5962
(530) 661-1290 (fax)
pubworks@cityofwoodland.org

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 20 **Source No.** 019 **PS Code** 5710006-019

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
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
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
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
A	Historic gas stations (VH)		7	5	5	17
A	Underground storage tanks - Confirmed leaking tanks (VH)		7	5	5	17
A	Automobile - Repair shops (H)		5	5	5	15
A	Fleet/truck/bus terminals (H)		5	5	5	15
A	Photo processing/printing (H)		5	5	5	15
A	Septic systems - low density [<1/acre] (H in Zone A, otherwise L)		5	5	5	15
A	Sewer collection systems (H in Zone A, otherwise L)		5	5	5	15
A	Wells - Agricultural/ Irrigation (H)		5	5	5	15
A	Wells - Oil, Gas, Geothermal (H)		5	5	5	15
B5	Historic gas stations (VH)		7	3	5	15
B5	Known Contaminant Plumes (VH)		7	3	5	15
B5	Underground storage tanks - Confirmed leaking tanks (VH)		7	3	5	15
A	Contractor or government agency equipment storage yards (M)		3	5	5	13
A	Housing - high density [>1 house/0.5 acres] (M)		3	5	5	13
A	Parking lots/malls [>50 spaces] (M)		3	5	5	13
A	Parks (M)		3	5	5	13
A	Transportation corridors - Freeways/state highways (M)		3	5	5	13
A	Wells - Water supply (M)		3	5	5	13
B5	Automobile - Body shops (H)		5	3	5	13
B5	Automobile - Repair shops (H)		5	3	5	13

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Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
B5	Fleet/truck/bus terminals (H)		5	3	5	13
B5	Machine shops (H)		5	3	5	13
B5	Wells - Agricultural/ Irrigation (H)		5	3	5	13
B10	Automobile - Gas stations (VH)		7	1	5	13
B10	Chemical/petroleum processing/storage (VH)		7	1	5	13
B10	Known Contaminant Plumes (VH)		7	1	5	13
A	Apartments and condominiums (L)		1	5	5	11
A	Office buildings/complexes (L)		1	5	5	11
A	RV/mini storage (L)		1	5	5	11
A	Rental Yards (L)		1	5	5	11
A	Transportation corridors - Roads/Streets (L)		1	5	5	11
A	Wells - monitoring, test holes (L)		1	5	5	11
B5	Above ground storage tanks (M)		3	3	5	11
B5	Hardware/lumber/parts stores (M)		3	3	5	11
B5	Housing - high density [>1 house/0.5 acres] (M)		3	3	5	11
B5	Parking lots/malls [>50 spaces] (M)		3	3	5	11
B5	Parks (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 - Freeways/state highways (M)		3	3	5	11
B5	Wells - Water supply (M)		3	3	5	11
B10	Automobile - Repair shops (H)		5	1	5	11
B10	Fleet/truck/bus terminals (H)		5	1	5	11
B10	Wells - Agricultural/ Irrigation (H)		5	1	5	11
B10	Wells - Oil, Gas, Geothermal (H)		5	1	5	11
A	Illegal activities/unauthorized dumping (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

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Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
B5	Illegal activities/unauthorized dumping (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
B10	Illegal activities/unauthorized dumping (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
B5	Apartments and condominiums (L)		1	3	5	9
B5	Medical/dental offices/clinics (L)		1	3	5	9
B5	Office buildings/complexes (L)		1	3	5	9
B5	RV/mini storage (L)		1	3	5	9
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	Sewer collection systems (H in Zone A, otherwise L)		1	3	5	9
B5	Transportation corridors - Roads/Streets (L)		1	3	5	9
B5	Veterinary offices/clinics (L)		1	3	5	9
B5	Wells - monitoring, test holes (L)		1	3	5	9
B10	Agricultural Drainage (H in Zone A, otherwise M)		3	1	5	9
B10	Housing - high density [>1 house/0.5 acres] (M)		3	1	5	9
B10	Parking lots/malls [>50 spaces] (M)		3	1	5	9
B10	Parks (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	Wells - Water supply (M)		3	1	5	9

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Explanation of Source Water Assessments and Definition of Terms

A source water assessment was recently completed for this drinking water source. The assessment identifies the vulnerability of the drinking water supply to contamination from typical human activities. The assessments are intended to facilitate and provide the basic information necessary for a local community to develop a program to protect the drinking water supply.

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Terms used in this summary:

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PCA Inventory: The PCA inventory is a review using local knowledge, databases, and on-site evaluations to identify the occurrence and approximate location of PCAs in the source water zones. The inventory for the basic DWSAP assessments is a presence-absence review. If a type of PCA occurs in a zone, a "Yes" is noted in the inventory for that zone, regardless of whether there is one or many of that type of facility within the zone. If a PCA has been associated with a contaminant detected in the water supply, a notation is made in the PCA inventory.

Source Water Zones or Areas: These are areas located around and typically adjacent to a drinking water source that have been identified as initial protection areas.

For groundwater sources, there are typically three concentric circular zones around a source (Zones A, B5 and B10). The sizes of the are determined based on characteristics of the source. PCAs located in the inner Zone A are considered more of a risk to the water supply than PCAs located in the middle Zone B5. Similarly, PCAs located in Zone B5 are considered more of a risk than PCAs located in the outer Zone B10.

For surface water sources, the watershed is defined as the overall protection area, and as an option, zones are defined closer to the source. Two types of zones are typically established. Zone A is the area within and near the surface water body and its tributaries. Zone B is an area within 2,500 feet of the intake, not including areas in Zone A. For surface water sources, PCAs located in Zone A are considered a greater threat than PCAs located in Zone B. PCAs located on the watershed outside of the zones are considered to be of less risk to the water supply. If zones have not been defined, PCAs are considered to be of equal risk regardless of location on the watershed.

Physical Barrier Effectiveness (PBE): The PBE for a source is an evaluation of the ability of the source and the surrounding area to prevent the movement of contaminants into the source. The PBE is based on the construction and operation features of the source, and the characteristics of the surrounding area. A source is assigned a PBE of Low, Moderate or High, where High indicates that the physical barriers of the source and site are very effective in preventing the movement of contaminants. By design, typical groundwater sources will have Moderate PBE, while typical surface water sources will have Low PBE. This is due to the greater exposure of surface water sources to contamination.

Vulnerability Ranking: The vulnerability ranking is a summary of the PCAs identified in the assessment prioritized by the risk that they pose to the water supply. The prioritization is based on the risk associated with a PCA, the zone in which it occurs, and the PBE of the source. In the vulnerability ranking, points are assigned as follows:

PCA risk ranking	Very High = 7	High = 5	Moderate = 3	Low = 1	Unknown in any zone = 0
Zone (Groundwater)	A = 5	B5 = 3	B10 = 1		
Zone (Surface water with zones)	A = 5	B = 3	Watershed = 1		
Zone (Surface water without zones)	Watershed = 5				
Physical Barrier Effectiveness	Low = 5	Moderate = 3	High = 1		

The points for each type of PCA in each zone are totaled to give a vulnerability score, and the PCAs are ranked in order from the highest score to the lowest score. PCAs associated with detected contaminants are ranked at the top, regardless of vulnerability score. By definition, groundwater sources are not considered vulnerable to PCAs with scores less than 8, and surface water sources are not considered vulnerable to PCAs with scores less than 11. It should be noted that the vulnerability ranking scores do not have a direct quantitative value. Rather, the points are used only to relatively rank the types of PCAs for an individual source.

Note: Some of the summaries do not include a vulnerability ranking. If the assessment was done on paper and the details were not entered into the database, the vulnerability ranking is not available here. In addition, alternate methods of determining vulnerability were allowed in some cases, and the vulnerability ranking is not in the database.

Vulnerability Summary: The source is considered most vulnerable to the PCAs with the highest score, and to PCAs associated with detected contaminants. These PCAs are noted in the vulnerability summary. Further details or discussion may be provided in the vulnerability discussion.

Drinking Water Source Assessment

Water System

Woodland, City of

Yolo County

Water Source

WELL 21

Assessment Date

December, 2002

Assessment Completed By

City of Woodland

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

District No.	**09**
System No.	**5710006**
Source No.	**020**
PS Code	**5710006-020**

Vulnerability Summary

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 21 **Source No.** 020 **PS Code** 5710006-020

Completed by City of Woodland **Date** December, 2002

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

A source water assessment was conducted for the **WELL 21**

of the **Woodland, City of** water system in **December, 2002** .

The source is considered most vulnerable to the following activities associated with contaminants detected in the water supply:

Crops, irrigated [Berries, hops, mint, orchards, sod, greenhouses,
Fertilizer/Pesticide/Herbicide Application

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

Sewer collection systems

Discussion of Vulnerability

Well 21's capture zone extends into the agricultural area north of Woodland and shows some levels of nitrate as a result. The nitrate level has exceeded 30 ppm in the past and as such is a cause for concern.

A copy of the complete assessment may be viewed at:

City of Woodland, Yard
855 N. Pioneer Ave.
Woodland, CA 95778

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

System Engineer
(530) 661-5962
(530) 661-1290 (fax)
pubworks@cityofwoodland.org

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 21 **Source No.** 020 **PS Code** 5710006-020

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
A	Crops, irrigated [Berries, hops, mint, orchards, sod, greenhouses, vineyards, nurseries, vegetable] (M)	*	3	5	3	11
A	Fertilizer/Pesticide/Herbicide Application (M)	*	3	5	3	11
B5	Crops, irrigated [Berries, hops, mint, orchards, sod, greenhouses, vineyards, nurseries, vegetable] (M)	*	3	3	3	9
B5	Fertilizer/Pesticide/Herbicide Application (M)	*	3	3	3	9
B10	Crops, irrigated [Berries, hops, mint, orchards, sod, greenhouses, vineyards, nurseries, vegetable] (M)	*	3	1	3	7
B10	Fertilizer/Pesticide/Herbicide Application (M)	*	3	1	3	7
A	Sewer collection systems (H in Zone A, otherwise L)		5	5	3	13
A	Housing - high density [>1 house/0.5 acres] (M)		3	5	3	11
A	Parks (M)		3	5	3	11
B5	Fleet/truck/bus terminals (H)		5	3	3	11
A	Rental Yards (L)		1	5	3	9
A	Transportation corridors - Roads/Streets (L)		1	5	3	9
B5	Housing - high density [>1 house/0.5 acres] (M)		3	3	3	9
B5	Parks (M)		3	3	3	9
B10	Wells - Agricultural/ Irrigation (H)		5	1	3	9

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

Explanation of Source Water Assessments and Definition of Terms

A source water assessment was recently completed for this drinking water source. The assessment identifies the vulnerability of the drinking water supply to contamination from typical human activities. The assessments are intended to facilitate and provide the basic information necessary for a local community to develop a program to protect the drinking water supply.

A summary of the complete assessment is provided here. For more information, contact the agency or individual that prepared the assessment (shown in summary). You may also contact the local Department of Health Services Drinking Water Field Operations Branch district office (http://www.dhs.ca.gov/ps/ddwem/technical/dwp/districtofficesmap.pdf). Additional information about assessments can be found at: http://www.dhs.ca.gov/ps/ddwem/dwsap/FAQ.htm

Terms used in this summary:

Source Water Assessment: An assessment is an evaluation of a drinking water source to determine the "possible contaminating activities" (PCAs) to which the source is most vulnerable. The assessment includes: a delineation of protection zones around the source; an inventory of the types of PCAs within the source protection zones; and an analysis to determine the PCAs to which the source is most vulnerable. The information is compiled into a report that includes a map, calculations, checklists, and a summary of the findings.

Possible Contaminating Activity (PCA): A PCA is a current or historic human activity that is an actual or potential origin of contamination for a drinking water source. PCAs include activities that use, store, produce or dispose of chemicals that have the potential to contaminate drinking water supplies. There are 110 types of PCAs in the California DWSAP program.

PCA Risk Ranking: Each type of PCA is assigned a risk ranking (Very High, High, Moderate, or Low). The risk ranking is based on the contaminant(s) typically associated with that PCA, the likelihood of release from that type of facility based on historical experience, and the mobility of the contaminant(s).

PCA Inventory: The PCA inventory is a review using local knowledge, databases, and on-site evaluations to identify the occurrence and approximate location of PCAs in the source water zones. The inventory for the basic DWSAP assessments is a presence-absence review. If a type of PCA occurs in a zone, a "Yes" is noted in the inventory for that zone, regardless of whether there is one or many of that type of facility within the zone. If a PCA has been associated with a contaminant detected in the water supply, a notation is made in the PCA inventory.

Source Water Zones or Areas: These are areas located around and typically adjacent to a drinking water source that have been identified as initial protection areas.

For groundwater sources, there are typically three concentric circular zones around a source (Zones A, B5 and B10). The sizes of the are determined based on characteristics of the source. PCAs located in the inner Zone A are considered more of a risk to the water supply than PCAs located in the middle Zone B5. Similarly, PCAs located in Zone B5 are considered more of a risk than PCAs located in the outer Zone B10.

For surface water sources, the watershed is defined as the overall protection area, and as an option, zones are defined closer to the source. Two types of zones are typically established. Zone A is the area within and near the surface water body and its tributaries. Zone B is an area within 2,500 feet of the intake, not including areas in Zone A. For surface water sources, PCAs located in Zone A are considered a greater threat than PCAs located in Zone B. PCAs located on the watershed outside of the zones are considered to be of less risk to the water supply. If zones have not been defined, PCAs are considered to be of equal risk regardless of location on the watershed.

Physical Barrier Effectiveness (PBE): The PBE for a source is an evaluation of the ability of the source and the surrounding area to prevent the movement of contaminants into the source. The PBE is based on the construction and operation features of the source, and the characteristics of the surrounding area. A source is assigned a PBE of Low, Moderate or High, where High indicates that the physical barriers of the source and site are very effective in preventing the movement of contaminants. By design, typical groundwater sources will have Moderate PBE, while typical surface water sources will have Low PBE. This is due to the greater exposure of surface water sources to contamination.

Vulnerability Ranking: The vulnerability ranking is a summary of the PCAs identified in the assessment prioritized by the risk that they pose to the water supply. The prioritization is based on the risk associated with a PCA, the zone in which it occurs, and the PBE of the source. In the vulnerability ranking, points are assigned as follows:

PCA risk ranking	Very High = 7	High = 5	Moderate = 3	Low = 1	Unknown in any zone = 0
Zone (Groundwater)	A = 5	B5 = 3	B10 = 1		
Zone (Surface water with zones)	A = 5	B = 3	Watershed = 1		
Zone (Surface water without zones)	Watershed = 5				
Physical Barrier Effectiveness	Low = 5	Moderate = 3	High = 1		

The points for each type of PCA in each zone are totaled to give a vulnerability score, and the PCAs are ranked in order from the highest score to the lowest score. PCAs associated with detected contaminants are ranked at the top, regardless of vulnerability score. By definition, groundwater sources are not considered vulnerable to PCAs with scores less than 8, and surface water sources are not considered vulnerable to PCAs with scores less than 11. It should be noted that the vulnerability ranking scores do not have a direct quantitative value. Rather, the points are used only to relatively rank the types of PCAs for an individual source.

Note: Some of the summaries do not include a vulnerability ranking. If the assessment was done on paper and the details were not entered into the database, the vulnerability ranking is not available here. In addition, alternate methods of determining vulnerability were allowed in some cases, and the vulnerability ranking is not in the database.

Vulnerability Summary: The source is considered most vulnerable to the PCAs with the highest score, and to PCAs associated with detected contaminants. These PCAs are noted in the vulnerability summary. Further details or discussion may be provided in the vulnerability discussion.

Drinking Water Source Assessment

Water System

Woodland, City of

Yolo County

Water Source

WELL 22 - SOUTHEAST

Assessment Date

December, 2002

Assessment Completed By

City of Woodland

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

District No.	**09**
System No.	**5710006**
Source No.	**022**
PS Code	**5710006-022**

Vulnerability Summary

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 24 - SOUTHEAST **Source No.** 022 **PS Code** 5710006-022

Completed by City of Woodland **Date** December, 2002

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

A source water assessment was conducted for the **WELL 24 - SOUTHEAST**

of the **Woodland, City of** water system in **December, 2002** .

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

Sewer collection systems
Wells - Oil, Gas, Geothermal
Underground storage tanks - Confirmed leaking tanks

Discussion of Vulnerability

Well 22 is located in a new residential neighborhood. It is near HY 113 and I-5 but it is completed in the deeper gravels and should have little interaction with the surface PCAs

A copy of the complete assessment may be viewed at:

City of Woodland, Yard
855 N. Pioneer Ave.
Woodland, CA 95778

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

System Engineer
(530) 661-5962
(530) 661-1290 (fax)
pubworks@cityofwoodland.org

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 24 - SOUTHEAST **Source No.** 022 **PS Code** 5710006-022

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
A	Sewer collection systems (H in Zone A, otherwise L)		5	5	3	13
A	Wells - Oil, Gas, Geothermal (H)		5	5	3	13
B5	Underground storage tanks - Confirmed leaking tanks (VH)		7	3	3	13
A	Housing - high density [>1 house/0.5 acres] (M)		3	5	3	11
A	Parks (M)		3	5	3	11
B5	Wells - Agricultural/ Irrigation (H)		5	3	3	11
B5	Wells - Oil, Gas, Geothermal (H)		5	3	3	11
B10	Automobile - Gas stations (VH)		7	1	3	11
B10	Dry cleaners (VH)		7	1	3	11
B10	Historic gas stations (VH)		7	1	3	11
B10	Known Contaminant Plumes (VH)		7	1	3	11
B10	Underground storage tanks - Confirmed leaking tanks (VH)		7	1	3	11
A	Transportation corridors - Roads/Streets (L)		1	5	3	9
B5	Housing - high density [>1 house/0.5 acres] (M)		3	3	3	9
B5	Parking lots/malls [>50 spaces] (M)		3	3	3	9
B5	Parks (M)		3	3	3	9
B5	Transportation corridors - Freeways/state highways (M)		3	3	3	9
B5	Wells - Water supply (M)		3	3	3	9
B10	Automobile - Body shops (H)		5	1	3	9
B10	Automobile - Repair shops (H)		5	1	3	9
B10	Fleet/truck/bus terminals (H)		5	1	3	9
B10	Machine shops (H)		5	1	3	9
B10	Photo processing/printing (H)		5	1	3	9
B10	Railroad yards/maintenance/fueling areas (H)		5	1	3	9
B10	Wells - Agricultural/ Irrigation (H)		5	1	3	9
B10	Wells - Oil, Gas, Geothermal (H)		5	1	3	9
A	Underground storage tanks - Non-regulated tanks [tanks smaller than regulatory limit] (H)		5	0	3	8

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

Vulnerability Ranking

District Name DHS Sacramento District **District No.** 09 **County** Yolo

System Name Woodland, City of **System No.** 5710006

Source Name WELL 24 - SOUTHEAST **Source No.** 022 **PS Code** 5710006-022

Completed by City of Woodland **Date** December, 2002

The following PCAs were identified in the assessment and are listed in priority order based on risk to the water supply. Refer to the last page for more information.

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
A	Underground storage tanks - Not yet upgraded or registered tanks (H)		5	0	3	8
B5	Underground storage tanks - Non-regulated tanks [tanks smaller than regulatory limit] (H)		5	0	3	8
B5	Underground storage tanks - Not yet upgraded or registered tanks (H)		5	0	3	8
B10	Underground storage tanks - Non-regulated tanks [tanks smaller than regulatory limit] (H)		5	0	3	8
B10	Underground storage tanks - Not yet upgraded or registered tanks (H)		5	0	3	8

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

Explanation of Source Water Assessments and Definition of Terms

A source water assessment was recently completed for this drinking water source. The assessment identifies the vulnerability of the drinking water supply to contamination from typical human activities. The assessments are intended to facilitate and provide the basic information necessary for a local community to develop a program to protect the drinking water supply.

A summary of the complete assessment is provided here. For more information, contact the agency or individual that prepared the assessment (shown in summary). You may also contact the local Department of Health Services Drinking Water Field Operations Branch district office (http://www.dhs.ca.gov/ps/ddwem/technical/dwp/districtofficesmap.pdf). Additional information about assessments can be found at: http://www.dhs.ca.gov/ps/ddwem/dwsap/FAQ.htm

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Physical Barrier Effectiveness (PBE): The PBE for a source is an evaluation of the ability of the source and the surrounding area to prevent the movement of contaminants into the source. The PBE is based on the construction and operation features of the source, and the characteristics of the surrounding area. A source is assigned a PBE of Low, Moderate or High, where High indicates that the physical barriers of the source and site are very effective in preventing the movement of contaminants. By design, typical groundwater sources will have Moderate PBE, while typical surface water sources will have Low PBE. This is due to the greater exposure of surface water sources to contamination.

Vulnerability Ranking: The vulnerability ranking is a summary of the PCAs identified in the assessment prioritized by the risk that they pose to the water supply. The prioritization is based on the risk associated with a PCA, the zone in which it occurs, and the PBE of the source. In the vulnerability ranking, points are assigned as follows:

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Zone (Surface water with zones)	A = 5	B = 3	Watershed = 1		
Zone (Surface water without zones)	Watershed = 5				
Physical Barrier Effectiveness	Low = 5	Moderate = 3	High = 1		

The points for each type of PCA in each zone are totaled to give a vulnerability score, and the PCAs are ranked in order from the highest score to the lowest score. PCAs associated with detected contaminants are ranked at the top, regardless of vulnerability score. By definition, groundwater sources are not considered vulnerable to PCAs with scores less than 8, and surface water sources are not considered vulnerable to PCAs with scores less than 11. It should be noted that the vulnerability ranking scores do not have a direct quantitative value. Rather, the points are used only to relatively rank the types of PCAs for an individual source.

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Vulnerability Summary: The source is considered most vulnerable to the PCAs with the highest score, and to PCAs associated with detected contaminants. These PCAs are noted in the vulnerability summary. Further details or discussion may be provided in the vulnerability discussion.

Drinking Water Source Assessment

Water System

City of Woodland

Yolo County

Water Source

WELL 24 - PENDING

Assessment Date

April, 2005

California Department of Health Services
Drinking Water Field Operations Branch
West Yost & Associates - Davis

District No.	**U7**
System No.	**5710006**
Source No.	**023**
PS Code	**5710006-023**

Assessment Summary

District Name West Yost & Associates - Davis **District No.** U7 **County** Yolo

System Name City of Woodland **System No.** 5710006

Source Name WELL 24 - PENDING **Source No.** 023 **PS Code** 5710006-023

Completed by Scott Heald **Date** April, 2005

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

Description of System and Source

The City of Woodland water system is located in Yolo County and serves the City of Woodland. There are approximately 12,789 service connections serving a population of 50,600.

The drinking water source for the City of Woodland water system are the 18 wells located within the City of Woodland. The recharge area for the sources includes approximately 64 square miles. Cache Creek in the Capay Valley west of Woodland is the primary recharge source, where it intersects the production gravels.

General land use is agricultural and agricultural related, urban and residential.

Assessment Procedures

The assessment of the source WELL 24 - PENDING was conducted by West Yost & Associates for the City of Woodland. The following sources of information were used in the assessment: EDR (Environmental Data Resources, Inc.) radius search including numerous Federal and State data bases (see entire report on disk), online street maps, aerial photos; USGS 7.5-minute quad maps.

Procedures used to conduct the assessment include:
Mapping the two year (A), five year (B5), and ten year (B10) zones of influence on a map showing the locations of possible contaminating activities.

Contents of this Assessment

Yes [X]	No [ ]	Assessment Summary
Yes [X]	No [ ]	Vulnerability Summary
Yes [ ]	No [X]	Source Location Form
Yes [X]	No [ ]	Delineation of Water Protection Zones
Yes [X]	No [ ]	Physical Barrier Effectiveness Checklist
Yes [X]	No [ ]	Source Data Sheet
Yes [X]	No [ ]	Inventory of Possible Contaminating Activities
Yes [X]	No [ ]	Vulnerability Ranking
Yes [X]	No [ ]	Assessment Map

Vulnerability Summary

District Name West Yost & Associates - Davis **District No.** U7 **County** Yolo

System Name City of Woodland **System No.** 5710006

Source Name WELL 24 - PENDING **Source No.** 023 **PS Code** 5710006-023

Completed by Scott Heald **Date** April, 2005

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

A source water assessment was conducted for the **WELL 24 - PENDING**

of the **City of Woodland** water system in **April, 2005** .

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

Sewer collection systems
Wells - Agricultural/ Irrigation
Historic waste dumps/landfills

Discussion of Vulnerability

The well is under construction.

Low to moderate (< 10 mg/l) levels of nitrate have been detected in one of the aquifer zones that will be screened for this well. Completion is expected to be at depths that will minimize interaction with other surface PCAs.

A copy of the complete assessment may be viewed at:

City of Woodland, Yard
855 N Pioneer Ave
Woodland, CA 95776

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

System Engineer
(530) 661-5962
(530) 661-1290 (fax)

Delineation of Water Protection Zones

District Name West Yost & Associates - Davis **District No.** U7 **County** Yolo

System Name City of Woodland **System No.** 5710006

Source Name WELL 24 - PENDING **Source No.** 023 **PS Code** 5710006-023

Completed by Dianna Jensen **Date** December, 2003

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)	**2,000**	gallons/minute	
	3,226	acre feet/year	
	140,534,000	cubic feet/year	
Effective Porosity	**0.20**		[X] Default Value
Screened Interval of Well	**80**	feet	[ ] Default Value

Protection Zone	Calculated Value	Minimum Value	Radius of Protection Zone
Zone A - 2 Year TOT*	2,365 Feet	600 Feet	**2,365** Feet
Zone B5 - 5 Year TOT*	3,739 Feet	1,000 Feet	**3,739** Feet
Zone B10 - 10 Year TOT*	5,288 Feet	1,500 Feet	**5,288** Feet

*TOT = Time of Travel

Physical Barrier Effectiveness (PBE)

District Name West Yost & Associates - Davis **District No.** U7 **County** Yolo

System Name City of Woodland **System No.** 5710006

Source Name WELL 24 - PENDING **Source No.** 023 **PS Code** 5710006-023

Completed by Scott Heald **Date** September, 2004

Parameter		Possible Points	This Source	Score
Type of Aquifer **Confinement**				
1. Unconfined, Semi-confined, Fractured Rock, Unknown Aquifer		0		
2. Confined		50	X	**50**
Pathways of Contamination (All Aquifers) **Presence of Abandoned or Improperly Destroyed Wells**				
1. Present within Zone A (2 year TOT distance)	Yes	0		
	No	5		
	Unknown	0	X	**0**
2. Present within Zone B5 (2 -5 year TOT distance)	Yes	0		
	No	3		
	Unknown	0	X	**0**
3. Present within Zone B10 (5-10 year TOT distance)	Yes	0		
	No	2		
	Unknown	0	X	**0**
Hydraulic Head (Confined Aquifers) **What is the relationship in the hydraulic head between the confined aquifer and the overlying unconfined aquifer? (i.e. does the well flow under artesian conditions?)**				
1. Head in confined aquifer is higher than head in unconfined aquifer under all conditions.		20		
2. Head in confined aquifer is higher than head in unconfined aquifer under static conditions.		10		
3. Head in confined aquifer is lower than or same as head in unconfined aquifer under static conditions.		0	X	**0**
4. Unknown		0		
Well Construction (All Aquifers)				
Sanitary Seal (Annular Seal) Depth **280** feet	None of less than 20 feet	0		
	Between 20 and 50 feet	6		
	50 feet or greater	10	X	**10**
	Unknown	0		
Surface Seal (concrete cap)	Not present or improperly constructed	0		
	Watertight, slopes away from well at least 2' laterally in all directions	4	X	**4**
	Unknown	0		

Physical Barrier Effectiveness (PBE)

District Name West Yost & Associates - Davis **District No.** U7 **County** Yolo

System Name City of Woodland **System No.** 5710006

Source Name WELL 24 - PENDING **Source No.** 023 **PS Code** 5710006-023

Completed by Scott Heald **Date** September, 2004

Parameter		Possible Points	This Source	Score
Well Construction (All Aquifers)--continued				
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	0		
	Not subject to flooding	1	X	1
	Unknown	0		
Security at well site	Not secure	0		
	Secure	5	X	5
	Unknown	0		

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

Maximum Score = 100

Score 70

Effectiveness High

Inventory of Possible Contaminating Activities (PCA Inventory)

District Name West Yost & Associates - Davis **District No.** U7 **County** Yolo

System Name City of Woodland **System No.** 5710006

Source Name WELL 24 - PENDING **Source No.** 023 **PS Code** 5710006-023

Completed by Scott Heald **Date** May, 2004

PCA (Risk Ranking)	PCA in Zone A	PCA in Zone B5	PCA in Zone B10	*	Comments
Commercial/Industrial Activities					
Automobile - Body shops (H)	N	N	N		
Automobile - Car washes (M)	N	N	N		
Automobile - Gas stations (VH)	N	N	N		
Automobile - Repair shops (H)	N	N	N		
Boat services/repair/refinishing (H)	N	N	N		
Chemical/petroleum pipelines (H)	N	N	N		
Chemical/petroleum processing/storage (VH)	N	N	N		
Dry cleaners (VH)	N	N	N		
Electrical/electronic manufacturing (H)	N	N	N		
Fleet/truck/bus terminals (H)	N	N	N		
Furniture repair/manufacturing (H)	N	N	N		
Home manufacturing (H)	N	N	N		
Junk/scrap/salvage yards (H)	N	**Y**	**U**		
Machine shops (H)	N	N	N		
Metal plating/ finishing/fabricating (VH)	N	N	N		
Photo processing/printing (H)	N	N	N		
Plastics/synthetics producers (VH)	N	N	N		
Research laboratories (H)	N	N	N		
Wood preserving/treating (H)	N	N	N		
Wood/pulp/paper processing and mills (H)	N	N	N		
Lumber processing and manufacturing (H)	N	N	N		
Sewer collection systems (H in Zone A, otherwise L)	**Y**	**Y**	**Y**		
Parking lots/malls [>50 spaces] (M)	N	N	N		
Cement/concrete plants (M)	N	N	N		
Food processing (M)	N	N	N		
Funeral services/graveyards (M)	N	N	N		
Hardware/lumber/parts stores (M)	N	N	N		
Appliance/Electronic Repair (L)	N	N	N		
Office buildings/complexes (L)	N	N	N		
Rental Yards (L)	N	N	N		
RV/mini storage (L)	N	N	N		

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

Inventory of Possible Contaminating Activities (PCA Inventory)

District Name West Yost & Associates - Davis **District No.** U7 **County** Yolo

System Name City of Woodland **System No.** 5710006

Source Name WELL 24 - PENDING **Source No.** 023 **PS Code** 5710006-023

Completed by Scott Heald **Date** May, 2004

PCA (Risk Ranking)	PCA in Zone A	PCA in Zone B5	PCA in Zone B10	*	Comments
Residential/Municipal Activities					
Airports - Maintenance/fueling areas (VH)	N	N	N		
Landfills/dumps (VH)	N	N	N		
Railroad yards/maintenance/fueling areas (H)	N	N	N		
Septic systems - high density [>1/acre] (VH in Zone A, otherwise M)	N	N	N		
Sewer collection systems (H in Zone A, otherwise L)	N	N	N		
Utility stations - maintenance areas (H)	N	N	N		
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)	N	N	N		
Motor pools (M)	N	N	N		
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	N	N		
Fire stations (L)	N	N	N		
RV Parks (L)	N	N	N		
Schools (L)	N	N	**Y**		
Hotels, Motels (L)	N	N	N		
Agricultural/Rural Activities					
Grazing [> 5 large animals or equivalent per acre] (H in Zone A, otherwise M)	N	N	N		
Concentrated Animal Feeding Operations [CAFOs] as defined in federal regulation 1 (VH in Zone A, otherwise H)	N	N	N		
Animal Feeding Operations as defined in federal regulation 2 (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)	N	N	N		
Septic systems - low density [<1/acre] (H in Zone A, otherwise L)	N	N	**U**		

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Inventory of Possible Contaminating Activities (PCA Inventory)

District Name West Yost & Associates - Davis **District No.** U7 **County** Yolo

System Name City of Woodland **System No.** 5710006

Source Name WELL 24 - PENDING **Source No.** 023 **PS Code** 5710006-023

Completed by Scott Heald **Date** May, 2004

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

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

Inventory of Possible Contaminating Activities (PCA Inventory)

District Name West Yost & Associates - Davis **District No.** U7 **County** Yolo

System Name City of Woodland **System No.** 5710006

Source Name WELL 24 - PENDING **Source No.** 023 **PS Code** 5710006-023

Completed by Scott Heald **Date** May, 2004

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

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

Vulnerability Ranking

District Name West Yost & Associates - Davis **District No.** U7 **County** Yolo

System Name City of Woodland **System No.** 5710006

Source Name WELL 24 - PENDING **Source No.** 023 **PS Code** 5710006-023

Completed by Scott Heald **Date** September, 2004

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
A	Sewer collection systems (H in Zone A, otherwise L)		5	5	1	11
A	Wells - Agricultural/ Irrigation (H)		5	5	1	11
B5	Historic waste dumps/landfills (VH)		7	3	1	11
B5	Junk/scrap/salvage yards (H)		5	3	1	9
B5	Wells - Agricultural/ Irrigation (H)		5	3	1	9
B10	Historic waste dumps/landfills (VH)		7	1	1	9

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

Drinking Water Source Assessment

Water System

CITY OF WOODLAND

Yolo County

Water Source

WELL 28

Assessment Date

June, 2013

California Department of Health Services
Drinking Water Field Operations Branch
City of Woodland

TurboSWAP ID.	**J7**
System No.	**5710006**
Source No.	**052**
PS Code	**5710006-052**

Assessment Summary

Assessment By City of Woodland **ID.** J7 **County** Yolo

System Name CITY OF WOODLAND **System No.** 5710006

Source Name WELL 28 **Source No.** 052 **PS Code** 5710006-052

Completed by bkaasa **Date** June, 2013

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

Description of System and Source

The CITY OF WOODLAND water system is located in Yolo County and serves the City of Woodland. There are approximately 15,000 service connections serving a population of 56,000.

The drinking water source for the CITY OF WOODLAND water system is groundwater from wells located within the city limits. General land use is urban, residential, and industrial.

Assessment Procedures

The assessment of the source WELL 28 was conducted by consulting firm West Yost Associates, under direction from the City of Woodland. The following sources of information were used in the assessment: water system files, previous study, environmental data resources GeoCheck report, other internet searches.

Procedures used to conduct the assessment included:
Completing the site data sheet, performing the delineation assessment, creating the site assessment map, reviewing sources for PCAs, compiling data into TurboSWAP.

Contents of this Assessment

Yes [X]	No [ ]	Assessment Summary
Yes [X]	No [ ]	Vulnerability Summary
Yes [ ]	No [X]	Source Location Form
Yes [X]	No [ ]	Delineation of Water Protection Zones
Yes [X]	No [ ]	Physical Barrier Effectiveness Checklist
Yes [X]	No [ ]	Source Data Sheet
Yes [X]	No [ ]	Inventory of Possible Contaminating Activities
Yes [X]	No [ ]	Vulnerability Ranking
Yes [X]	No [ ]	Assessment Map

Vulnerability Summary

Assessment By City of Woodland **ID.** J7 **County** Yolo

System Name CITY OF WOODLAND **System No.** 5710006

Source Name WELL 28 **Source No.** 052 **PS Code** 5710006-052

Completed by bkaasa **Date** June, 2013

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

A source water assessment was conducted for the **WELL 28**

of the **CITY OF WOODLAND** water system in **June, 2013** .

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

Historic gas stations
Underground storage tanks - Confirmed leaking tanks

Discussion of Vulnerability

There have been no contaminants detected in the water supply, however the source is still considered vulnerable to activities located near the drinking water source.

The depth of the well, deep surface seal, and above ground facilities protecting the well should greatly limit contamination of this water source from PCAs located near the site.

The site is most vulnerable from direct contamination of the deep aquifer. This can include contamination of surrounding deep monitoring wells and production wells within the delineation zones.

Contamination from other PCAs is typically going to be too shallow to affect this water source.

A copy of the complete assessment may be viewed at:

City of Woodland Department of Public Works
300 First Street
Woodland, CA 95695

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

Ms. Liz Houck
Utilities Infrastructure Support
530-661-5973

Delineation of Water Protection Zones

Assessment By City of Woodland **ID.** J7 **County** Yolo

System Name CITY OF WOODLAND **System No.** 5710006

Source Name WELL 28 **Source No.** 052 **PS Code** 5710006-052

Completed by bkaasa **Date** June, 2013

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)	**2,000**	gallons/minute	
	3,226	acre feet/year	
	140,534,000	cubic feet/year	
Effective Porosity	**0.20**		[X] Default Value
Screened Interval of Well	**85**	feet	[ ] Default Value

Protection Zone	Calculated Value	Minimum Value	Radius of Protection Zone
Zone A - 2 Year TOT*	2,294 Feet	600 Feet	**2,294** Feet
Zone B5 - 5 Year TOT*	3,627 Feet	1,000 Feet	**3,627** Feet
Zone B10 - 10 Year TOT*	5,130 Feet	1,500 Feet	**5,130** Feet

*TOT = Time of Travel

Physical Barrier Effectiveness (PBE)

Assessment By City of Woodland **ID.** J7 **County** Yolo

System Name CITY OF WOODLAND **System No.** 5710006

Source Name WELL 28 **Source No.** 052 **PS Code** 5710006-052

Completed by bkaasa **Date** June, 2013

Parameter		Possible Points	This Source	Score
Type of Aquifer **Confinement**				
1. Unconfined, Semi-confined, Fractured Rock, Unknown Aquifer		0		
2. Confined		50	X	**50**
Pathways of Contamination (All Aquifers) **Presence of Abandoned or Improperly Destroyed Wells**				
1. Present within Zone A (2 year TOT distance)	Yes	0		
	No	5		
	Unknown	0	X	**0**
2. Present within Zone B5 (2 -5 year TOT distance)	Yes	0		
	No	3		
	Unknown	0	X	**0**
3. Present within Zone B10 (5-10 year TOT distance)	Yes	0		
	No	2		
	Unknown	0	X	**0**
Hydraulic Head (Confined Aquifers) **What is the relationship in the hydraulic head between the confined aquifer and the overlying unconfined aquifer? (i.e. does the well flow under artesian conditions?)**				
1. Head in confined aquifer is higher than head in unconfined aquifer under all conditions.		20		
2. Head in confined aquifer is higher than head in unconfined aquifer under static conditions.		10		
3. Head in confined aquifer is lower than or same as head in unconfined aquifer under static conditions.		0	X	**0**
4. Unknown		0		
Well Construction (All Aquifers)				
Sanitary Seal (Annular Seal) Depth **365** feet	None of less than 20 feet	0		
	Between 20 and 50 feet	6		
	50 feet or greater	10	X	**10**
	Unknown	0		
Surface Seal (concrete cap)	Not present or improperly constructed	0		
	Watertight, slopes away from well at least 2' laterally in all directions	4	X	**4**
	Unknown	0		

Physical Barrier Effectiveness (PBE)

Assessment By City of Woodland **ID.** J7 **County** Yolo

System Name CITY OF WOODLAND **System No.** 5710006

Source Name WELL 28 **Source No.** 052 **PS Code** 5710006-052

Completed by bkaasa **Date** June, 2013

Parameter		Possible Points	This Source	Score
Well Construction (All Aquifers)--continued				
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	0		
	Not subject to flooding	1	X	1
	Unknown	0		
Security at well site	Not secure	0		
	Secure	5	X	5
	Unknown	0		

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

Maximum Score = 100

Score 70

Effectiveness High

Inventory of Possible Contaminating Activities (PCA Inventory)

Assessment By City of Woodland **ID.** J7 **County** Yolo

System Name CITY OF WOODLAND **System No.** 5710006

Source Name WELL 28 **Source No.** 052 **PS Code** 5710006-052

Completed by bkaasa **Date** June, 2013

PCA (Risk Ranking)	PCA in Zone A	PCA in Zone B5	PCA in Zone B10	*	Comments
Commercial/Industrial Activities					
Automobile - Body shops (H)	**Y**	**Y**	**Y**		
Automobile - Car washes (M)	N	N	**Y**		
Automobile - Gas stations (VH)	N	**Y**	**Y**		
Automobile - Repair shops (H)	**Y**	**Y**	**Y**		
Boat services/repair/refinishing (H)	N	N	N		
Chemical/petroleum pipelines (H)	**Y**	**Y**	**Y**		
Chemical/petroleum processing/storage (VH)	N	N	**Y**		
Dry cleaners (VH)	N	N	**Y**		
Electrical/electronic manufacturing (H)	N	N	N		
Fleet/truck/bus terminals (H)	**Y**	**Y**	**Y**		
Furniture repair/manufacturing (H)	N	N	N		
Home manufacturing (H)	N	N	N		
Junk/scrap/salvage yards (H)	N	N	N		
Machine shops (H)	**Y**	N	**Y**		
Metal plating/finishing/fabricating (VH)	N	N	N		
Photo processing/printing (H)	N	N	**Y**		
Plastics/synthetics producers (VH)	N	N	N		
Research laboratories (H)	N	N	N		
Wood preserving/treating (H)	N	N	N		
Wood/pulp/paper processing and mills (H)	N	N	N		
Lumber processing and manufacturing (H)	N	N	N		
Sewer collection systems (H in Zone A, otherwise L)	**Y**	**Y**	**Y**		
Parking lots/malls [>50 spaces] (M)	**Y**	**Y**	**Y**		
Cement/concrete plants (M)	N	N	N		
Food processing (M)	N	**Y**	N		
Funeral services/graveyards (M)	**Y**	N	**Y**		
Hardware/lumber/parts stores (M)	N	**Y**	N		
Appliance/Electronic Repair (L)	**Y**	**Y**	N		
Office buildings/complexes (L)	**Y**	**Y**	**Y**		
Rental Yards (L)	**Y**	**Y**	N		
RV/mini storage (L)	**Y**	**Y**	N		

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

Inventory of Possible Contaminating Activities (PCA Inventory)

Assessment By City of Woodland **ID.** J7 **County** Yolo

System Name CITY OF WOODLAND **System No.** 5710006

Source Name WELL 28 **Source No.** 052 **PS Code** 5710006-052

Completed by bkaasa **Date** June, 2013

PCA (Risk Ranking)	PCA in Zone A	PCA in Zone B5	PCA in Zone B10	*	Comments
Residential/Municipal Activities					
Airports - Maintenance/fueling areas (VH)	N	N	N		
Landfills/dumps (VH)	N	N	N		
Railroad yards/maintenance/fueling areas (H)	N	N	N		
Septic systems - high density [>1/acre] (VH in Zone A, otherwise M)	N	N	N		
Sewer collection systems (H in Zone A, otherwise L)	**Y**	**Y**	**Y**		
Utility stations - maintenance areas (H)	N	N	N		
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)	**Y**	**Y**	**Y**		
Motor pools (M)	N	N	N		
Parks (M)	**Y**	**Y**	**Y**		
Waste transfer/recycling stations (M)	N	**Y**	**Y**		
Apartments and condominiums (L)	N	**Y**	**Y**		
Campgrounds/Recreational areas (L)	N	N	N		
Fire stations (L)	**Y**	N	**Y**		
RV Parks (L)	N	N	N		
Schools (L)	**Y**	**Y**	**Y**		
Hotels, Motels (L)	**Y**	N	**Y**		
Other Activities					
NPDES/WDR permitted discharges (H)	N	N	N		
Underground Injection of Commercial/Industrial Discharges (VH)	N	N	N		
Historic gas stations (VH)	**Y**	**Y**	**Y**		
Historic waste dumps/landfills (VH)	N	N	N		
Illegal activities/unauthorized dumping (H)	**U**	**U**	**U**		
Injection wells/dry wells/sumps (VH)	N	N	N		
Known Contaminant Plumes (VH)	**U**	**U**	**U**		
Military installations (VH)	N	N	N		
Mining operations - Historic (VH)	N	N	N		

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Inventory of Possible Contaminating Activities (PCA Inventory)

Assessment By City of Woodland **ID.** J7 **County** Yolo

System Name CITY OF WOODLAND **System No.** 5710006

Source Name WELL 28 **Source No.** 052 **PS Code** 5710006-052

Completed by bkaasa **Date** June, 2013

PCA (Risk Ranking)	PCA in Zone A	PCA in Zone B5	PCA in Zone B10	*	Comments
Other Activities					
Mining operations - Active (VH)	N	N	N		
Mining - Sand/Gravel (H)	N	N	N		
Wells - Oil, Gas, Geothermal (H)	N	N	N		
Salt Water Intrusion (H)	N	N	N		
Recreational area - surface water source (H)	N	N	N		
Underground storage tanks - Confirmed leaking tanks (VH)	**Y**	**Y**	**Y**		
Underground storage tanks - Decommissioned - inactive tanks (L)	**U**	**U**	**U**		
Underground storage tanks - Non-regulated tanks [tanks smaller than regulatory limit] (H)	**U**	**U**	**U**		
Underground storage tanks - Not yet upgraded or registered tanks (H)	**U**	**U**	**U**		
Underground storage tanks - Upgraded and/or registered - active tanks (L)	**Y**	**Y**	**Y**		
Above ground storage tanks (M)	**U**	**U**	**Y**		
Wells - Water supply (M)	N	**Y**	**Y**		
Construction/demolition staging areas (M)	N	N	N		
Contractor or government agency equipment storage yards (M)	N	N	N		
Dredging (M)	N	N	N		
Transportation corridors - Freeways/state highways (M)	N	N	**Y**		
Transportation corridors - Railroads (M)	**Y**	**Y**	**Y**		
Transportation corridors - Historic railroad right-of-ways (M)	**U**	**U**	**U**		
Transportation corridors - Road Right-of-ways [herbicide use areas] (M)	N	N	N		
Transportation corridors - Roads/Streets (L)	**Y**	**Y**	**Y**		
Hospitals (M)	N	**Y**	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		

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

Inventory of Possible Contaminating Activities (PCA Inventory)

Assessment By City of Woodland **ID.** J7 **County** Yolo

System Name CITY OF WOODLAND **System No.** 5710006

Source Name WELL 28 **Source No.** 052 **PS Code** 5710006-052

Completed by bkaasa **Date** June, 2013

PCA (Risk Ranking)	PCA in Zone A	PCA in Zone B5	PCA in Zone B10	*	Comments
Other Activities					
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)	**Y**	**Y**	**Y**		
Veterinary offices/clinics (L)	**Y**	**Y**	N		
Surface water - streams/lakes/rivers (L)	N	N	N		
Wells - monitoring, test holes (L)	**Y**	**U**	**U**		

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

Vulnerability Ranking

Assessment By City of Woodland **ID.** J7 **County** Yolo

System Name CITY OF WOODLAND **System No.** 5710006

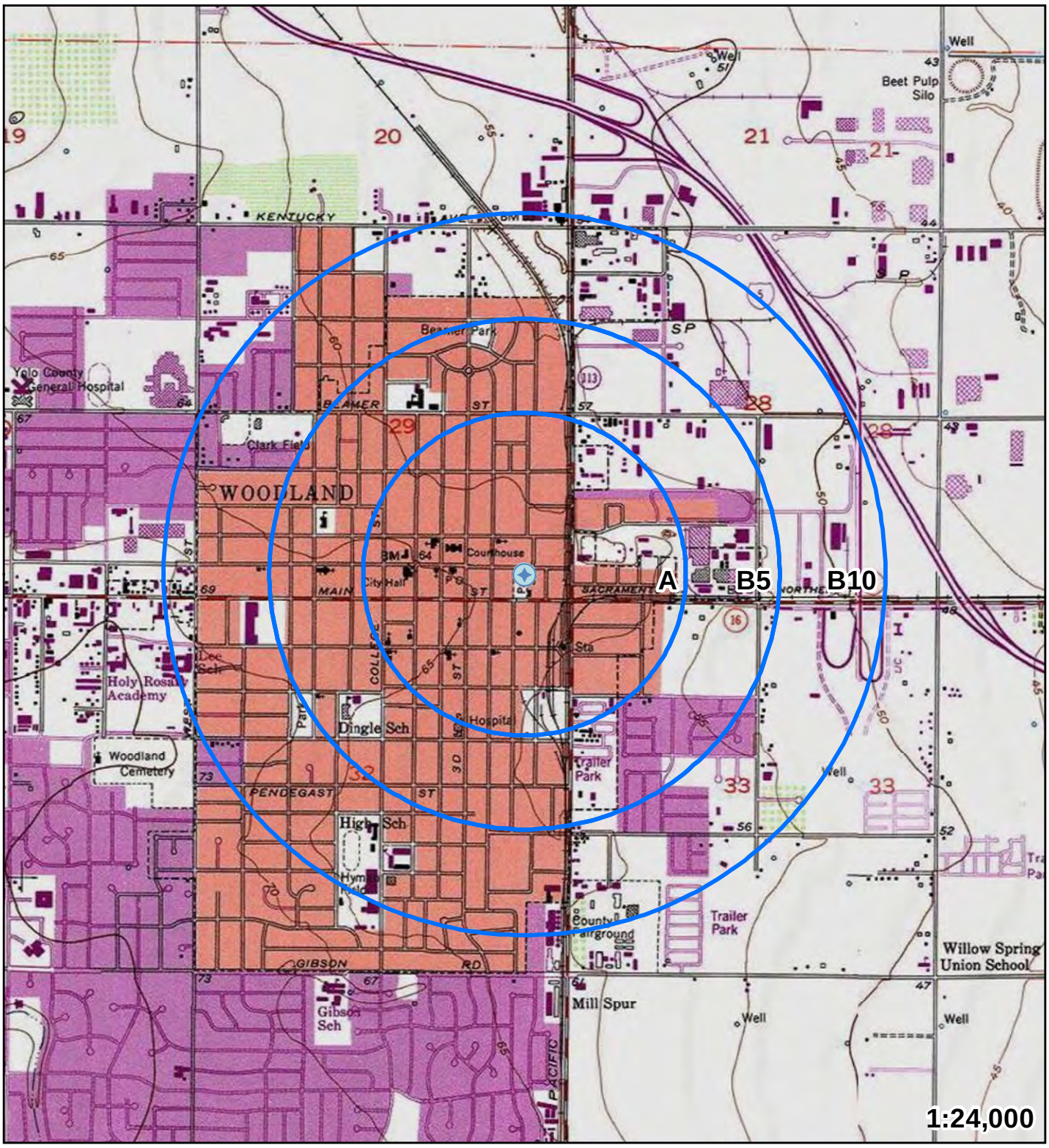
Source Name WELL 28 **Source No.** 052 **PS Code** 5710006-052

Completed by bkaasa **Date** June, 2013

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
A	Historic gas stations (VH)		7	5	1	13
A	Underground storage tanks - Confirmed leaking tanks (VH)		7	5	1	13
A	Automobile - Body shops (H)		5	5	1	11
A	Automobile - Repair shops (H)		5	5	1	11
A	Chemical/petroleum pipelines (H)		5	5	1	11
A	Fleet/truck/bus terminals (H)		5	5	1	11
A	Machine shops (H)		5	5	1	11
A	Sewer collection systems (H in Zone A, otherwise L)		5	5	1	11
A	Sewer collection systems (H in Zone A, otherwise L)		5	5	1	11
B5	Automobile - Gas stations (VH)		7	3	1	11
B5	Historic gas stations (VH)		7	3	1	11
B5	Underground storage tanks - Confirmed leaking tanks (VH)		7	3	1	11
A	Funeral services/graveyards (M)		3	5	1	9
A	Housing - high density [>1 house/0.5 acres] (M)		3	5	1	9
A	Parking lots/malls [>50 spaces] (M)		3	5	1	9
A	Parks (M)		3	5	1	9
A	Transportation corridors - Railroads (M)		3	5	1	9
B5	Automobile - Body shops (H)		5	3	1	9
B5	Automobile - Repair shops (H)		5	3	1	9
B5	Chemical/petroleum pipelines (H)		5	3	1	9
B5	Fleet/truck/bus terminals (H)		5	3	1	9
B10	Automobile - Gas stations (VH)		7	1	1	9
B10	Chemical/petroleum processing/storage (VH)		7	1	1	9
B10	Dry cleaners (VH)		7	1	1	9
B10	Historic gas stations (VH)		7	1	1	9
B10	Underground storage tanks - Confirmed leaking tanks (VH)		7	1	1	9
A	Known Contaminant Plumes (VH)		7	0	1	8
B5	Known Contaminant Plumes (VH)		7	0	1	8
B10	Known Contaminant Plumes (VH)		7	0	1	8

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

DWSAP Assessment Map - City of Woodland Well 28



Well Number:	System Number:	System Name:	Source Number:	Source Name:
5710006-052	5710006	Woodland, City of	052	Well 28
Media Type:	**Effective Porosity:**	**Screened Interval:**	**Pumping Capacity:**	
Porous	0.2	425-475; 520-535; 570-590	2000 gpm	
Radius A:	**Radius B5:**	**Radius B10:**		
2294	3627	5130		