

# **Drinking Water Source Assessment**

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*Water System*

**Zone 7 Water Agency**

Alameda County

*Water Source*

**CHAIN OF LAKES WELL 2 (3S/1E-11M3) - PENDING**

*Assessment Date*

**May, 2008**

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California Department of Health Services  
Drinking Water Field Operations Branch  
Zone 7 Water Agency

<b>District No.</b> B7
<b>System No.</b> 0110010
<b>Source No.</b> 024
<b>PS Code</b> 0110010-024

**Drinking Water Source Location - Groundwater**

District Name Zone 7 Water Agency District No. B7 County Alameda  
 System Name Zone 7 Water Agency System No. 0110010  
 Source Name GRAVEL PITS WELL 2- PENDING Source No. 024 PS Code 0110010-024

Location Date \_\_\_\_\_ Source Located By \_\_\_\_\_

**Method of Determining Location**

\_\_\_\_\_ USGS Quad Map (7.5 minute series, 1:24,000 scale), hand calculated  
 \_\_\_\_\_ USGS Quad Map (7.5 minute series, 1:24,000 scale), computer calculated  
 \_\_\_\_\_ Global Positioning System (GPS)  
     Unit (manufacturer/model) \_\_\_\_\_  
     Accuracy of GPS unit (+/- \_\_\_\_\_ ft.)  
 \_\_\_\_\_ Other Method Land Surveying  
     Accuracy of method (+/- 1 ft.)

**Location of well (decimal degrees)**

Latitude 37.685666° North  
 Longitude -120.837849° West

**Physical Description of Location (Pertinent Landmarks, Address, or Approximate Address)**

The eastern corner of the Gravel Pits access road between Lake H and Cope Lake, near the Arroyo Mocho. El Charro Road and Cope Lake, Pleasanton CA.

**General Description of Recharge Area, if known**

The Livermore -- Amador Basin

**Assessment Summary**

District Name	<u>Zone 7 Water Agency</u>	District No.	<u>B7</u>	County	<u>Alameda</u>
System Name	<u>Zone 7 Water Agency</u>	System No.	<u>0110010</u>		
Source Name	<u>GRAVEL PITS WELL 2 - PENDING</u>	Source No.	<u>024</u>	PS Code	<u>0110010-024</u>
Completed by	<u>James Witty</u>			Date	<u>May, 2008</u>

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

**Description of System and Source**

The Zone 7 Water Agency (Zone 7) located in Alameda County supplies treated drinking water to retailers in Pleasanton, Livermore, Dublin, and the Dougherty Valley area. Zone 7 supplies drinking water to nearly 200,000 people in its service area.

The source water for Zone 7 is comprised of a mixture of surface water and groundwater. The surface water is comprised of State Water Project Water imported through the Sacramento and San Joaquin River Delta and local rain water captured and stored in Del Valle Reservoir. The groundwater source is the Livermore-Amador Valley Basin which is subdivided into fourteen (14) sub basins. The area of the Basin is approximately 42,000 acres. The Livermore-Amador Valley Basin stores natural recharge from precipitation and surface water courses in the valley that have head waters in the uplands surrounding the valley. Zone 7 currently employs artificial recharge to the basin by releasing surface water supplies into Arroyos in the basin. There are multiple land uses in the basin, including agricultural, industrial, municipal, and undeveloped. These land uses, and especially the water use associated with them, can affect groundwater quality and quantity.

The Chain of Lakes Well Field is located in the center of the Amador sub basin, a portion of the Main basin consisting of the highest quality most productive aquifers in the Livermore-Amador Valley Basin. The Chain of Lakes Well Field will be developed to assist in meeting future water demands and to minimize groundwater drawdown in sub basins currently being utilized for the regions water supply.

**Assessment Procedures**

ECO:LOGIC Engineering conducted the assessment of the source, Chain of Lakes Well No. 2, for the Zone 7 Water Agency. The assessment was based on multiple sources of information including the following:

Seasonal groundwater elevation contour maps of the Livermore-Amador Valley for the period of 2003 through 2007.

Lithologic cross sections developed from borehole logs.

Pumping Test data for the Gravel Pits Exploratory Well (No. 3S/1E 14 D2), Chain of Lakes Well No. 1 (3S/1E 10 K3), and Chain of Lakes Well No. 2 (3S/1E 11 M3).

Lithologic and Geophysical logs of the Gravel Pits Monitoring Well (No. 3S/1E 10 K2), Chain of Lakes Well No. 1 (3S/1E 10 K3), and Chain of Lakes Well No. 2 (3S/1E 11 M3).

Design Specifications for Chain of Lakes Well Numbers 1 and 2.

The Zone 7 Water Agency Well Master Plan.

The 2006 Zone 7 Water Agency Groundwater Management Plan.

Environmental Database Records Search, Conducted July 2007 by EDR, Inc.

Historical aerial photography .

**Assessment Summary**

District Name Zone 7 Water Agency District No. B7 County Alameda

System Name Zone 7 Water Agency System No. 0110010

Source Name GRAVEL PITS WELL 2 - PENDING Source No. 024 PS Code 0110010-024

Completed by James Witty Date May, 2008

**Contents of this Assessment**

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

**Vulnerability Summary**

District Name Zone 7 Water Agency District No. B7 County Alameda  
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**THE FOLLOWING INFORMATION MUST BE INCLUDED IN THE SYSTEM CONSUMER CONFIDENCE REPORT**

A source water assessment was conducted for the GRAVEL PITS WELL 2 - PENDING  
 of the Zone 7 Water Agency water system in May, 2008

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

- Mining operations - Active
- Mining operations - Historic

**Discussion of Vulnerability**

Although no contaminants have been detected in the groundwater in the vicinity of the Chain of Lakes Wells, the source is vulnerable to activities in the area. The greatest risk to the source are the historic and active mining operations in the area. Since the mining operations are for sand and gravel, there is minimal introduction of contaminants to produce the final product. However, the processing of the aggregates could concentrate existing elements in wash water and tailings that could pose a threat to water quality. The source is also susceptible to wells in the capture zone which may provide conduits for surface contamination to reach the underlying aquifer. The majority of the wells in the vicinity have been installed relatively recent and are expected to have been installed in compliance with the California Well Standards. Some wells were completed prior to 1970 and may not have been completed to these standards. The source is also susceptible to underground petroleum storage tanks, and some older tanks have leaked polluting the groundwater. The older tanks responsible for leaks have been closed. Tanks in use are registered and actively monitored.

A copy of the complete assessment may be viewed at:

Zone 7 Water Agency  
 100 North Canyons Parkway  
 Livermore, CA 94551

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

Gurpal Deol  
 Zone 7 Water Quality Manager  
 (925) 447-0533

**Delineation of Water Protection Zones**

District Name Zone 7 Water Agency District No. B7 County Alameda  
 System Name Zone 7 Water Agency System No. 0110010  
 Source Name GRAVEL PITS WELL 2 - PENDING Source No. 024 PS Code 0110010-024  
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**Method Used to Delineate Protection Zones**

1. Calculated Fixed Radius
- X 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)	<u>3,000</u>	gallons/minute
	<u>4,839</u>	acre feet/year
	<u>210,801,000</u>	cubic feet/year
Effective Porosity	<u>0.20</u>	<input checked="" type="checkbox"/> Default Value
Screened interval of Well	<u>180</u> feet	<input type="checkbox"/> Default Value

Direction of Ground Water Flow	<u>250.00</u>	degrees
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Protection Zone	Calculated Value	Minimum Value	Base Radius	Direction	Modified Distance
Zone A - 2 Year TOT*	1,931 Feet	600 Feet	1,931 Feet	upgradient	<b>2,896 Feet</b>
				downgradient	<b>965 Feet</b>
Zone B5 - 5 Year TOT*	3,053 Feet	1,500 Feet	3,053 Feet	upgradient	<b>4,579 Feet</b>
				downgradient	<b>1,526 Feet</b>
Zone B10 - 10 Year TOT*	4,317 Feet	0 Feet	4,317 Feet	upgradient	<b>6,476 Feet</b>
				downgradient	<b>2,159 Feet</b>

\*TOT = Time of Travel

**Physical Barrier Effectiveness (PBE)**

District Name Zone 7 Water Agency District No. B7 County Alameda  
 System Name Zone 7 Water Agency System No. 0110010  
 Source Name GRAVEL PITS WELL 2 - PENDING Source No. 024 PS Code 0110010-024

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Parameter	Possible Points	This Source	Score
<b>Type of Aquifer Confinement</b>			
1. Unconfined, Semi-confined, Fractured Rock, Unknown Aquifer	0	X	0
2. Confined	50		
<b>Aquifer Material (Unconfined Aquifers)</b>			
Type of material within aquifer			
1. Porous Media (Interbedded sands, silts, clays, gravels) with continuous clay layer minimum 25' thick above water table within Zone A	20		
2. Porous Media (Interbedded sands, silts, clays, gravels)	10	X	10
3. Fractured rock ( Low Physical Barrier Effectiveness - no further questions required)	0		
<b>Pathways of Contamination (All Aquifers)</b>			
Presence of Abandoned or Improperly Destroyed Wells			
1. Present within Zone A (2 year TOT distance)	Yes	0	
	No	5	X
	Unknown	0	
2. Present within Zone B5 (2 -5 year TOT distance)	Yes	0	X
	No	3	
	Unknown	0	
3. Present within Zone B10 (5-10 year TOT distance)	Yes	0	X
	No	2	
	Unknown	0	
<b>Static Water Conditions (Unconfined Aquifers)</b>			
Depth to Static Water (DTW) <u>50</u> feet	0 to 20 feet	0	
	20 to 50 feet	2	
	50 to 100 feet	6	X
	Greater than 100 feet	10	
	Unknown	0	
<b>Well Operation (Unconfined Aquifers)</b>			
Depth to Uppermost Perforations (DUP) <u>345</u> feet			
Maximum Pumping Rate of Well (Q) <u>3000</u> gallons/minute			
Length of Screened Interval (H) <u>180</u> feet			
[DUP - DTW / Q/H] <u>17.70</u>	Less than 5	0	
	Between 5 and 10	5	
	Greater than 10	10	X
	Unknown	0	

**Physical Barrier Effectiveness (PBE)**

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Parameter	Possible Points	This Source	Score
<b>Well Construction (All Aquifers)</b>			
Sanitary Seal (Annular Seal) Depth <u>198</u> feet	None or 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	
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 = 70

Score	<u>51</u>
Effectiveness	<u>Moderate</u>



**Inventory of Possible Contaminating Activities (PCA Inventory)**

District Name Zone 7 Water Agency District No. B7 County Alameda  
 System Name Zone 7 Water Agency System No. 0110010  
 Source Name GRAVEL PITS WELL 2 - PENDING Source No. 024 PS Code 0110010-024

Completed by James Witty Date May, 2008

PCA (Risk Ranking)	PCA In Zone A	PCA In Zone B5	PCA In Zone B10	*	Comments
<b>Commercial/Industrial Activities</b>					
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)	U	U	U		
Chemical/petroleum processing/storage (VH)	N	Y	Y		
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	N	N		
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)	N	N	Y		
Parking lots/malls [>50 spaces] (M)	N	N	N		
Cement/concrete plants (M)	Y	Y	Y		
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  
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PCA (Risk Ranking)	PCA in Zone A	PCA in Zone B5	PCA in Zone B10	*	Comments
<b>Residential/Municipal Activities</b>					
Airports - Maintenance/fueling areas (VH)	N	N	N		6,000 ft upgradient
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	N	Y		Sanitary Facilities for Well House
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)	Y	Y	Y		
Housing - high density [>1 house/0.5 acres] (M)	N	N	Y		
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	N		
Hotels, Motels (L)	N	N	N		
<b>Agricultural/Rural Activities</b>					
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 regulation1 (VH in Zone A, otherwise M)	N	N	N		
Animal Feeding Operations as defined in federal regulation2 (VH in Zone A, otherwise H)	N	N	N		
Other Animal operations (H in Zone A, otherwise M)	N	N	N		
Farm chemical distributor/ application service (H)	N	N	N		
Farm machinery repair (H)	N	N	N		
Septic systems - low density [<1/acre] (H in Zone A, otherwise L)	Y	Y	Y		

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PCA (Risk Ranking)	PCA in Zone A	PCA in Zone B5	PCA in Zone B10	*	Comments
<b>Agricultural/Rural Activities</b>					
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)	N	Y	Y		
Managed Forests (M)	N	N	N		
Crops, irrigated [Berries, hops, mint, orchards, sod, greenhouses, vineyards, nurseries, vegetable] (M)	Y	Y	Y		
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)	Y	Y	Y		
<b>Other Activities</b>					
NPDES/WDR permitted discharges (H)	N	N	N		
Underground Injection of Commercial/Industrial Discharges (VH)	N	N	N		
Historic gas stations (VH)	N	N	N		
Historic waste dumps/landfills (VH)	N	N	N		
Illegal activities/ unauthorized dumping (H)	U	U	U		
Injection wells/dry wells/ sumps (VH)	U	U	U		
Known Contaminant Plumes (VH)	N	Y	Y		TPHd
Military installations (VH)	N	N	N		
Mining operations - Historic (VH)	Y	Y	Y		
Mining operations - Active (VH)	Y	Y	Y		
Mining - Sand/Gravel (H)	Y	Y	Y		
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)	N	Y	Y		TPHd
Underground storage tanks - Decommissioned - inactive tanks (L)	N	N	Y		

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PCA (Risk Ranking)	PCA in Zone A	PCA in Zone B5	PCA in Zone B10	*	Comments
<b>Other Activities</b>					
Underground storage tanks - Non-regulated tanks [tanks smaller than regulatory limit] (H)	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	Y	Y		
Above ground storage tanks (M)	N	N	N		
Wells - Water supply (M)	Y	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)	N	N	N		
Transportation corridors - Historic railroad right-of-ways (M)	N	N	N		
Transportation corridors - Road Right-of-ways [herbicide use areas] (M)	Y	Y	Y		
Transportation corridors - Roads/Streets (L)	Y	Y	Y		
Hospitals (M)	N	N	N		
Storm Drain Discharge Points (M)	Y	Y	Y		
Storm Water Detention Facilities (M)	N	N	N		
Artificial Recharge Projects - Injection wells [potable water] (L)	N	N	N		
Artificial Recharge Projects - Injection wells [non-potable water] (M)	N	N	N		
Artificial Recharge Projects - Spreading Basins [potable water] (L)	N	N	N		
Artificial Recharge Projects - Spreading Basins [non-potable water] (M)	N	N	N		
Medical/dental offices/clinics (L)	N	N	N		
Veterinary offices/clinics (L)	N	N	N		
Surface water - streams/lakes/rivers (L)	Y	Y	Y		
Wells - monitoring, test holes (L)	Y	Y	Y		

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**Vulnerability Ranking**

District Name Zone 7 Water Agency District No. B7 County Alameda  
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Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
A	Mining operations - Active (VH)		7	5	3	15
A	Mining operations - Historic (VH)		7	5	3	15
A	Mining - Sand/Gravel (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
B5	Chemical/petroleum processing/storage (VH)		7	3	3	13
B5	Known Contaminant Plumes (VH)		7	3	3	13
B5	Mining operations - Active (VH)		7	3	3	13
B5	Mining operations - Historic (VH)		7	3	3	13
B5	Underground storage tanks - Confirmed leaking tanks (VH)		7	3	3	13
A	Cement/concrete plants (M)		3	5	3	11
A	Crops, irrigated [Berries, hops, mint, orchards, sod, greenhouses, vineyards, nurseries, vegetable] (M)		3	5	3	11
A	Golf courses (M)		3	5	3	11
A	Storm Drain Discharge Points (M)		3	5	3	11
A	Transportation corridors - Road Right-of-ways [herbicide use areas] (M)		3	5	3	11
A	Wells - Water supply (M)		3	5	3	11
B5	Mining - Sand/Gravel (H)		5	3	3	11
B5	Wells - Agricultural/ Irrigation (H)		5	3	3	11
B10	Chemical/petroleum processing/storage (VH)		7	1	3	11
B10	Known Contaminant Plumes (VH)		7	1	3	11
B10	Mining operations - Active (VH)		7	1	3	11
B10	Mining operations - Historic (VH)		7	1	3	11
B10	Underground storage tanks - Confirmed leaking tanks (VH)		7	1	3	11
A	Injection wells/dry wells/ sumps (VH)		7	0	3	10
B5	Injection wells/dry wells/ sumps (VH)		7	0	3	10
B10	Injection wells/dry wells/ sumps (VH)		7	0	3	10
A	Crops, nonirrigated [e.g., Christmas trees, grains, grass seeds, hay, pasture] [includes drip-irrigated crops] (L)		1	5	3	9
A	Surface water - streams/lakes/rivers (L)		1	5	3	9

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**Vulnerability Ranking**

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Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
A	Transportation corridors - Roads/Streets (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	Crops, irrigated [Berries, hops, mint, orchards, sod, greenhouses, vineyards, nurseries, vegetable] (M)		3	3	3	9
B5	Golf courses (M)		3	3	3	9
B5	Storm Drain Discharge Points (M)		3	3	3	9
B5	Transportation corridors - Road Right-of-ways [herbicide use areas] (M)		3	3	3	9
B5	Wells - Water supply (M)		3	3	3	9
B10	Mining - Sand/Gravel (H)		5	1	3	9
B10	Wells - Agricultural/ Irrigation (H)		5	1	3	9
A	Chemical/petroleum pipelines (H)		5	0	3	8
A	Illegal activities/unauthorized dumping (H)		5	0	3	8
B5	Chemical/petroleum pipelines (H)		5	0	3	8
B5	Illegal activities/unauthorized dumping (H)		5	0	3	8
B10	Chemical/petroleum pipelines (H)		5	0	3	8
B10	Illegal activities/unauthorized dumping (H)		5	0	3	8

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

## WELL DATA SHEET (Page 1 of 3)

Complete as much information as possible. Leave blank if information is not available, use N.A. if not applicable.		
* Indicates items required for Source Water Assessment		
** Indicates additional items required for assessments and Ground Water Rule		
	(separate multiple entries in field with semi-colon)	
<b>DATA SHEET GENERAL INFORMATION</b>		
System Name	Zone 7 Water Agency	from DHS database
System Number	0110010	from DHS database
Source of Information (well log, DHS/County files, system, etc)	Well Log	
Organization Collecting Information (DHS, County, System, other)	System's Consultant	
Date Information Collected/Updated	2/6/2008	
<b>WELL IDENTIFICATION</b>		
* Well Number or Name	Chain of Lakes Well No 2 (012)	from DHS database
* DHS Source Identification Number (FRDS ID No.)		
DWR Well Log on File? ("YES" or "NO")	No	
State Well Number (from DWR)		
Well Status (Active, Standby, Inactive)	Active	from DHS database
<b>WELL LOCATION</b>		
Latitude	37° 41' 08.398"	from DHS database
Longitude	-121° 50' 16.255"	from DHS database
Ground Surface Elevation (ft above Mean Sea Level)	360	Estimated
Street Address		
Nearest Cross Street	El Charro Road	
City	Pleasanton	
County	Alameda	
* Neighborhood/Surrounding Area (see Note 1)	Ru, Re, I, Mu, O	
Site plan on file? ("YES" or "NO")		In Progress
DWR Ground Water Basin	Livermoore Valley	to come from DWR
DWR Ground Water Sub-basin	Amador	to come from DWR
<b>SANITARY CONDITIONS</b>		
** Distance to closest Sewer Line, Sewage Disposal, Septic Tank (ft)	>2000	75% Design
Distance to Active Wells (ft)	1,215	Estimated from Coordinates
Distance to Abandoned Wells (ft)	3375	Estimated from Coordinates
Distance to Surface Water (ft)	106	actual
** Size of controlled area around well (square feet)	8,570	Planned
* Type of access control to well site (fencing, building, etc)	Fencing	Planned
* Surface Seal? (Concrete slab)("YES", "NO" or "UNKNOWN")	Yes	Planned
* Dimensions of concrete slab: Length(ft)/ Width(ft)/ Thick(in)	37.33/27.33/0.66	Planned
* Within 100 year flood plain? ("YES", "NO" or "UNKNOWN")	No	
* Drainage away from well? ("YES" or "NO")	Yes	Planned
<b>ENCLOSURE/HOUSING</b>		
Enclosure Type (building, vault, none, etc.)	Building	Planned
Floor material	Concrete	Planned
Located in Pit? ("YES" or "NO")	No	
Pit depth (feet) (if applicable)		
<b>WELL CONSTRUCTION</b>		
Date drilled	November, 2007	
Drilling Method	Mud Rotary	
Depth of Bore Hole (feet below ground surface)	705	actual
Casing Beginning Depth/Ending Depth(ft below surface), 2nd Casing Beginning Depth/Ending Depth, 3rd Casing, etc.	-1/100; -1/198; -2/333; 333/335; 335/685	actual
Casing Diameter (inches); 2nd Casing Diameter, 3rd Casing, etc.	40; 30; 18.625; 16.625; 18.625	actual

## WELL DATA SHEET (Page 2 of 3)

Complete as much information as possible. Leave blank if information is not available, use N.A. if not applicable.		
* Indicates items required for Source Water Assessment		
** Indicates additional items required for assessments and Ground Water Rule		
Casing Material; 2nd Casing Material; 3rd Casing, etc.	0.5" Steel; 0.375" Steel; 0.375" HSLA Steel; Dissimilar Metals Connector; 0.375" Stainless Steel	
	(separate multiple entries in field with semi-colon)	Actual, Estimated or Default?
WELL CONSTRUCTION (continued)		
Conductor casing used? ("YES", "NO" or "UNKNOWN") (See Note 2)	Yes	
Conductor casing removed? ("YES", "NO" or "UNKNOWN")	No	
* Depth to highest perforations/screens (ft below surface) (or "UNKNOWN")	343	
Screened Interval Beginning Depth/Ending Depth (ft below surface); 2nd Screened Interval Beg. Depth/Ending Depth, 3rd Screened Interval, etc.	343/383; 458/473; 558/683	
* Total length of screened interval (ft) (default = 10% pump capacity in gpm) (or "UNKNOWN")	180	
* Annular Seal? ("YES", "NO" or "UNKNOWN") (See Note 3)	Yes	
* Depth of Annular Seal (ft)	198	
Material of Annular Seal (cement grout, bentonite, etc.)	Cement Sand Grout	
Gravel pack Depth to top (ft below ground surface)	0	
Total length of gravel pack (ft)	683	
AQUIFER		
* Aquifer Materials (list all that apply: sand, silt, clay, gravel, rock, fractured rock)	sand, silt, clay, gravel	
* Effective porosity (decimal percent) (default = 0.2) (or "UNKNOWN")	0.2	default
* Confining layer (Impervious Strata) above aquifer? ("YES", "NO" or "UNKNOWN")	Yes	
Thickness of confining layer, if known (ft)	40	Log
Depth to confining layer, if known (ft below ground)	160	Log
* Static water level (ft below ground surface)	50	Winter 07:08 Conditions
Static water level measurement: Date/Method	2/14/08 Electric Tape	
Pumping water level (ft below ground surface)	215	estimated 90 day drawdown
Pumping water level measurement: Date/Method	max design drawdown	
WELL PRODUCTION		
Well Yield (gpm)	3,500	
Well Yield Based On (i.e., pump test, etc.)	Pumping Test	
Date measured	Feb 08	
Is the well metered? ("YES" or "NO")	Yes	Planned
Production (gallons per year)	TBD	Planned for Intermittant
Frequency of Use (hours/year)	TBD	operation on an as needed
Typical pumping duration (hours/day)	TBD	basis primarily for drought
		and emergencies
PUMP		
Make	TBD	
Type	TBD	
Size (hp)	600	
* Capacity (gpm)	3,500	
Depth to suction intake (ft below ground surface)	300	
Lubrication Type	Water	
Type of Power: (i.e., electric, diesel, etc.)	Electric	
Auxiliary power available? ("YES" or "NO")	TBD	
Operation controlled by: (i.e., level in tank, pressure, etc.)	Remote as needed	
Pump to Waste capability? ("YES" or "NO")		
Discharges to: (i.e., distribution system, storage, etc.)	Distribution System	



