

Step 2 of Water Supply Reliability Certification and Data Submission Form

Humboldt Community Services District << Enter name of urban water supplier

User Input Instructions

- (1) Please select units of measure from the dropdown menu.
- (2) Enter information on available water supplies and supplies committed to other uses.

LEGEND:

User Input or Selection	
Linked from User Input	

Acre-Feet << Select units of measure

Available Water Supplies

Sources of Supply	Name of Provider(s) or Description	Source used in prior years?	Water Available in			Wholesaler information Direct Web Link	Wholesaler Water System Number**
			WY 2017 *	WY 2018 *	WY 2019		
WHOLESALER SUPPLIED >> Provide direct web link(s) to information on the volume of water the wholesaler expects to deliver to the retailer water supplier in each year.							
Wholesaler 1	Humboldt Bay Municipal Water District	Y	2,768.0	2,768.0	2,768.0	http://www.hbmwd.com/what-s-n	377
Wholesaler 2		Select Y/N					
Wholesaler 3		Select Y/N					
Wholesaler 4		Select Y/N					
Wholesaler 5		Select Y/N					
SELF-SUPPLIED							
Water Recycling (potable)		Select Y/N					
Surface water: SWP		Select Y/N					
Surface water: CVP		Select Y/N					
Surface water: Colorado River		Select Y/N					
Surface water: other (describe)		Select Y/N					
Surface water: other (describe)		Select Y/N					
Local Groundwater	Humboldt Community Services District	Y	710.0	710.0	710.0		
Seawater Desalination		Select Y/N					
Transfers		Select Y/N					
Exchanges		Select Y/N					
Other (describe):		Select Y/N					
SUBTOTAL of available supplies (in units selected)			3,478.0	3,478.0	3,478.0		

<< Complete groundwater tab

<< To add more self-supplied sources, insert as many rows

* Any carryover from one year is incorporated in the supply of the following year, as legally allowed.

** Look up Water system number at this link: <https://sdwis.waterboards.ca.gov/PDWW/>

Rows can be inserted to account for other sources of supply (e.g., desalination of brackish water, banked water)

If a source has not been used in prior years, e.g., a new treatment facility will be constructed, supporting documentation must document when the new source will be fully implemented.

Water Supplies Committed to Other Uses (Not Available)

Other Uses	Describe	Quantity in WY 2017	Quantity in WY 2018	Quantity in WY 2019
Agriculture				
Commercial, industrial or institutional				
New residential customers				
Transfers				
Other:				
Other:				
SUBTOTAL of supplies not available (in units selected)		-	-	-
TOTAL available water supply (in units selected)		3,478.0	3,478.0	3,478.0

(Subtotal of available supplies minus subtotal of supplies committed to other uses)

>>> Please enter values calculated below in Step 2 of the online form

TOTAL available water supply converted to acre feet	FALSE	FALSE	FALSE
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>> If error, verify you have selected units of measure

If using local groundwater sources, answer questions below

Complete only if relying on local groundwater for a portion of supply (not brackish groundwater desalination or banking)

Do you know the volume of water in the aquifer that is in your source(s) of groundwater?

Pick one:

Optional notes and comments:

According to the California Groundwater Bulletin 118, 2004, " Groundwater Storage Capacity. Published information was not found addressing groundwater storage."

How frequently are groundwater elevations monitored?

Pick one:

Optional notes and comments:

The HCSD groundwater well (Spruce Point) is artesian and due to the well design does not allow measurement of water levels, static or drawdown, however there are several CASGEM wells in the same groundwater basin (Eureka Plain Groundwater Basin) that are being monitored semi-annually

At what depth is/was your water table? (in feet) Do not average values for multiple basins, management zones, or wells.

If there are multiple wells, enter the depth for the source where the largest portion of supply comes from; itemize information in the notes or supporting documentation.

In June 2016 feet

In June 2013 feet

Optional notes and comments:

The Spruce Point groundwater well is artesian at static conditions (depth to water = 0 feet). Due to the well design there are no means to measure water levels, static or drawdown. Depth to water during pumping at 440 gpm has is approximately 51 feet (Winzler & Kelly, 1988)

How many feet can you withdraw without substantially affecting your ability to pump water? (in feet)

If there are multiple wells, enter the depth for the source where the largest portion of supply comes from as a representative well; provide additional information in the notes or supporting documentation.

feet

Optional notes and comments:

The depth to the pump in the Spruce Point well is 120 feet from the land surface. Step drawdown pump test information from (Winzler & Kelly, 1988) indicates pumping at 581 gpm resulted in a drawdown of 51 feet. Presently, pumping occurs at a lesser rate of 440 gpm and the same drawdown of 51 feet is conservatively assumed resulting in

Do you have groundwater that you expect to sell or distribute to another water supplier that is not accounted for in your calculations?

Pick one:

Describe:

>>> Thank you.

Humboldt Community Services District

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WATER SUPPLY RELIABILITY CERTIFICATION SUPPORTING ANALYSIS AND CALCULATIONS

June 21, 2016

Pursuant to the modifications made to the Emergency Water Conservation Regulations adopted by the State Water Resources Control Board on May 18, 2016, Humboldt Community Services District is providing the following water supply reliability certification supporting analysis and calculations.

Background

Humboldt Community Services District (HCSD) receives water supplies from two sources including purchased water from a regional water wholesaler Humboldt Bay Municipal Water District (HBMWD) and self supplied groundwater from a well operated by HCSD.

Water Availability

Purchased Water

The projected wholesaler supply information was provided by HBMWD. See www.hbmwd.com/what-s-new for details.

Groundwater

The HCSD groundwater well (Spruce Point) pumps groundwater from the Eureka Plain Groundwater Basin. The Spruce Point well is artesian and due to the well design does not allow measurement of water levels, static or drawdown, however, there are several CASGEM wells in the Eureka Plain Groundwater Basin that are being monitored semi-annually. Graphs of seasonal groundwater levels and precipitation records were reviewed to determine the impact of precipitation trends on groundwater levels in the Eureka Plain Groundwater Basin.

Based on a review of the precipitation record (Figure 1), the drought conditions to be modeled over the next three years (based on the precipitation from 2013-2015) is 78% of normal. Historically there was a similar 6-year period with 77% of normal precipitation (1987-1992).

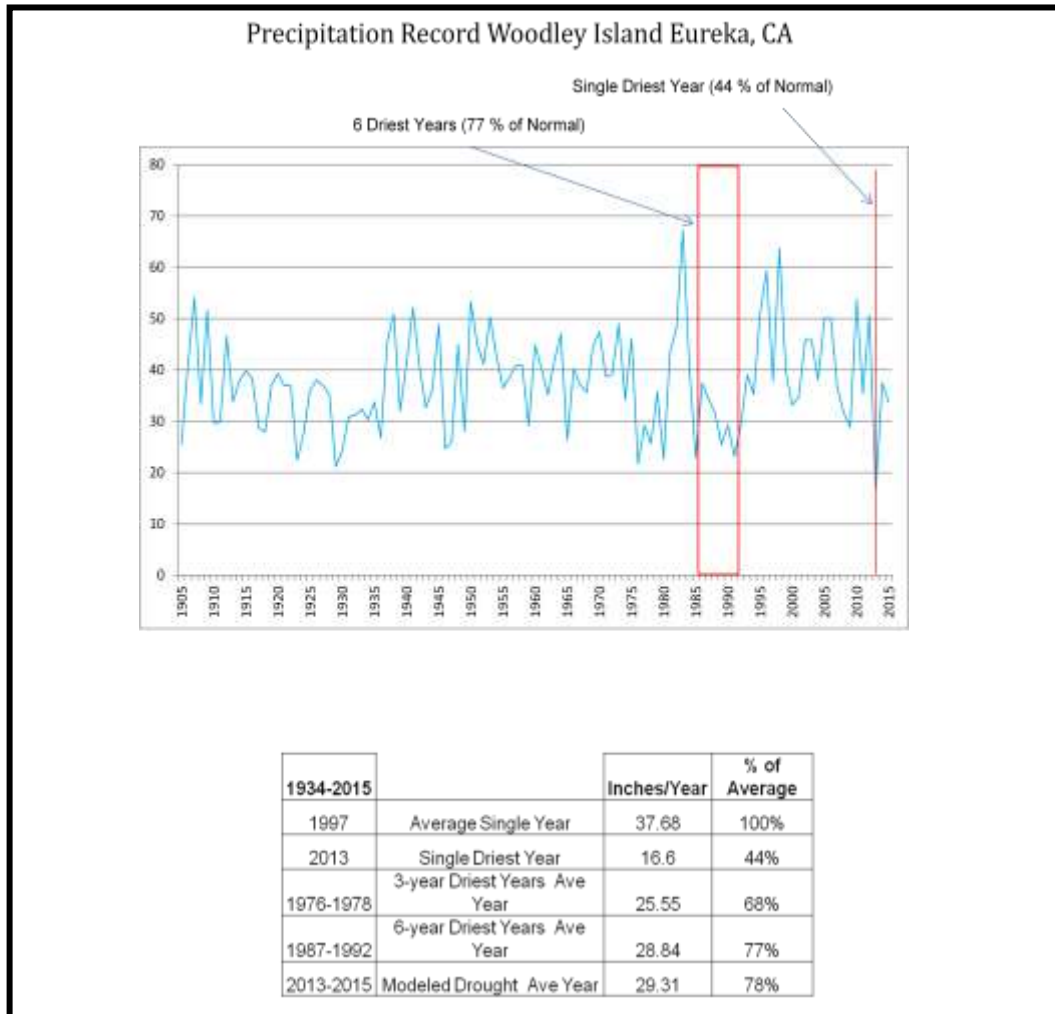


Figure 1: Precipitation Record for the Eureka Plain Groundwater Basin area 1905-2015

Figure 2 details that the groundwater levels is for the CASGEM well that showed the greatest impact of precipitation on groundwater levels. During the historic 6-year drought there was a maximum drop of approximately 8 feet in groundwater elevation.

Eureka Plain Groundwater Basin Response to Precipitation

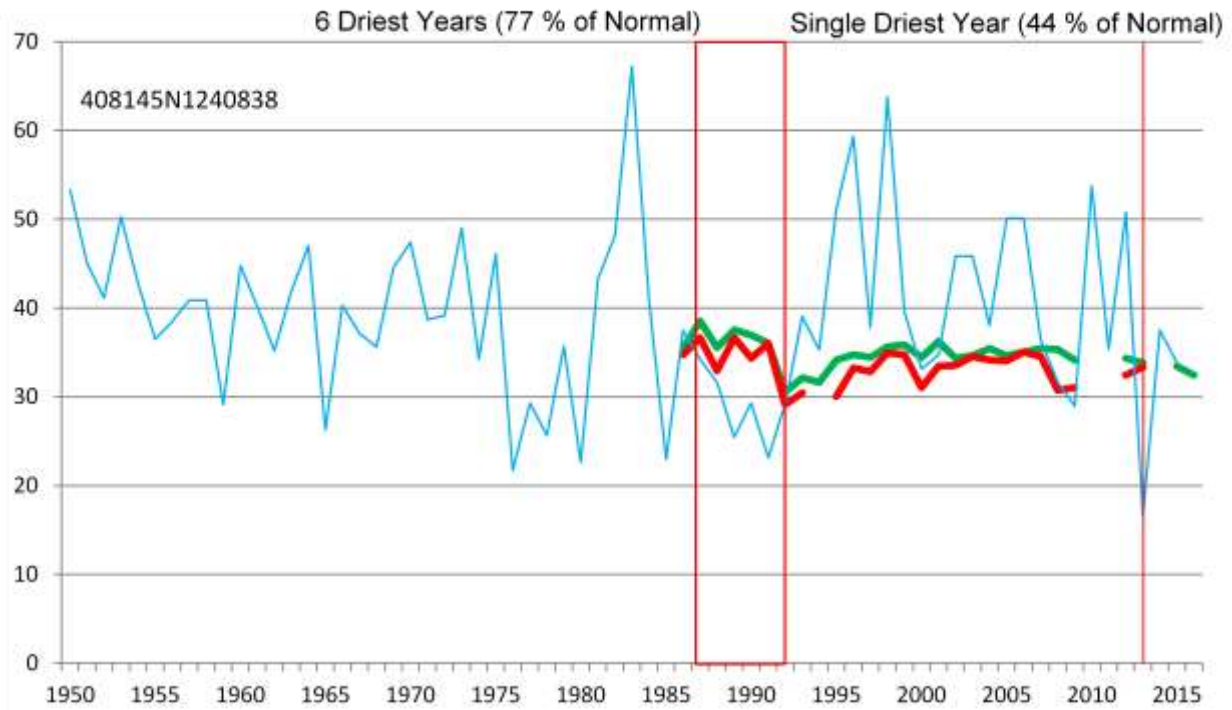


Figure 2: Eureka Plain Groundwater Basin response to precipitation, 1950-2015

The Spruce Point groundwater well is artesian at static conditions. The depth to the pump in the Spruce Point well is 120 feet from the land surface. Step drawdown pump test information from (Winzler & Kelly, 1988) indicates pumping at 581 gpm resulted in a drawdown of 51 feet (Figure 3). Pumping occurs at a lesser rate of 440 gpm and the same drawdown of 51 feet is conservatively assumed resulting in 69 feet of additional drawdown without affecting the ability to pump.

If there were an additional drawdown of 8 feet due to the modeled 6-year drought, there would still be 43 feet of water available. The conclusion is that even during the modeled drought period there will be adequate groundwater to meet the needs of HCSD. Therefore the water supply from the groundwater well has been presented as the pumping capacity of the Spruce Point well (440 gpm) resulting in a supply of 710 acre feet per year.

STEP Drawdown
Test 1 – 531 GPM Drawdown = 51 feet Rate = $531/51 = 10.4\text{GPM/Ft}$
Test 2 – 747 GPM Drawdown = 73 feet Rate = $747/73 = 10.2\text{ GPM/Ft}$
Test 3 – 999 GPM Drawdown = 103 feet Rate = $999/103 = 9.7\text{ GPM/Ft}$
Test 4 – 1269 GPM Drawdown = 133 Feet Rate = $1269/133 = 9.5\text{ GPM/F}$
Test 5 – 1674 GPM Drawdown = 181 Feet Rate = $1674/181 = 9.2\text{ GPM/Ft}$
Note 1: HCSD current operations = 440 GPM Note 2: 4.5 PSI artesian when well is shut off Note 3: Pump is located -120' from ground surface

Figure 3: Spruce Point Well - Estimated Flow to Drawdown Ratio (Winzler and Kelly 1988)