Carpinteria Valley Water District

Water Management Plan

2017 Bureau of Reclamation Criteria

Date of first draft – December 21, 2017
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Section 1: Description of the District

District Name: Carpinteria Valley Water District
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A. History

1. **Date district formed:** 1941 **Date of first Reclamation contract:** 1949
Original size (acres): 8704 **Current year (last complete calendar year):** 2016

2. **Current size, population, and irrigated acres**

	2016
Size (acres)	11,300
Population served (urban connections)	15,619
Irrigated acres	3,252

3. **Water supplies received in current year (2016)**

Water Source	AF
Federal urban water (Tbl 1)	325
Federal agricultural water (Tbl 1)	418
State water (Tbl 1)	377
Other Wholesaler (define) (Tbl 1)	0
Local surface water (Tbl 1)	0
Upslope drain water (Tbl 1)	0
District groundwater (Tbl 2)	2,729
Banked water (Tbl 1)	0
Transferred water (Tbl 1)	12
Recycled water (Tbl 3)	0
Other (define) (Tbl 1)	0
Total	3,861

4. **Annual entitlement under each right and/or contract**

	AF	Source	Contract #	Availability period(s)
Reclamation Urban AFY	1,463	Cachuma	I75r-1802	No Limits
Reclamation Agriculture AFY	1,350	Cachuma	I75r-1802	No Limits
Other AFY	2,200	SWP	09702	No Limits

5. Anticipated land-use changes. For Ag contractors, also include changes in irrigated acres.
Recent changes in society has resulted in the growing of cannabis for medicinal purposes and will likely be grown for recreational use in area greenhouses. This may put pressure on open nurseries to convert to 'hoop' type covers. The largest crop in the District - avocados - has held steady in the past 6 years and is expected to remain dominant as retail prices remain high. Minor conversion of agricultural has occurred due to the prolonged drought.

6. Cropping patterns (Agricultural only)
List of current crops (crops with 5% or less of total acreage) can be combined in the 'Other' category.

Original Plan (1986)(a)		Previous Plan (2010)		Current	
Crop Name	**Acres**	**Crop Name**	**Acre**	**Crop Name**	**Acres**
Avocados	1,862	Avocados	1,849	Avocado	1,860
Lemons	266	Lemons	207	Lemons	196
Nursery (open)	652	Nursery (open)	415	Nursery (open)	335
Nursery (covered)	381	Nursery	370	Nursery (covered)	360
Fruit trees	248	Fruit trees	185	Fruit trees	172
		Field	141	Field	174
Other (<5%)	119	Other	46	Other	155
Total	3,528	Total	3,213	Total	3,252

Note: (a) Based on 1969 Data

7. Major irrigation methods (by acreage) (Agricultural only)

Original Plan (1986)(a)		Previous Plan (2010)		Current	
Irrigation Method	**Acres**	**Irrigation Method**	**Acres**	**Irrigation Method**	**Acres**
Level Basin		Level Basin		Level Basin	
Furrow		Furrow		Furrow	
Sprinkler	3270	Sprinkler	1987	Sprinkle	2011
Low-volume		Low-volume	973	Low-volume	985
Multiple		Multiple		Multiple	
		Hand watering	207	Hand watering	210
Other		*Othe*	46	*Other*	46
Total	3270	*Total*	3213	*Total*	3252

Note: (a) Based on 1969 Data

B. Location and Facilities

See Attachment A for maps containing the following: incoming flow locations, turnouts (internal flow), and outflow (spill) points, conveyance system, storage facilities, operational loss recovery system, district wells and lift pumps, water quality monitoring locations, and groundwater facilities.

1. Incoming flow locations and measurement methods

Location Name	Physical Location	Type of Measurement Device	Accuracy
Boundary	District boundary at South Coast Conduit	Meter	+/-6%
Well	Headquarters Facility at District Yard	Meter	+/-6%

2. Current year Agricultural Conveyance System

Miles Unlined - Canal	Miles Lined - Canal	Miles Piped	Miles Other
NA	NA	NA	NA

3 Current year Urban Distribution System

Miles AC Pipe	Miles Steel Pipe	Miles Cast Iron Pipe	Miles - Other
39.23	31.75	0.01	11.06

4. Storage facilities (tanks, reservoirs, regulating reservoirs)

Name	Type	Capacity (AF)	Distribution or Spill
Shepard Mesa	Tank	0.15	Distribution
Carpinteria	Reservoir	44.66	Distribution
Gobernador	Reservoir	1.53	Distribution
Foothill	Reservoir	9.21	Distribution

5. Description of the agricultural spill recovery system and outflow points.

Not Applicable. The District has a closed, piped and pressurized distribution system.

6. Agricultural delivery system operation (check all that apply)

Scheduled	Rotation	Other
		On-Demand

7. Restrictions on water source(s)

Source	Restriction	Cause of Restriction	Effect on Operations
Reclamation - Cachuma	Limitation and release requirements on Cachuma Project water diversions, Contract Yield of 2800 AFY	SWRCB – Order #WR 89-18,	Yield of Cachuma Project limited to level below scheduled entitlement
SWP	Conveyance of SWP water to District	Drought, Endangered Species Act compliance, Pipeline capacity	Reliability on delivery is variable
Groundwater	Pumping capacity exhausted	Over-drawing of ground water by private and District pumping	Demand capacity approached

8. Proposed changes or additions to facilities and operations for the next 5 years

Over the next five years, the following changes to District facilities and operations are anticipated:

- Convert all water meters to Advance Metering Infrastructure (AMI) system. This project should be completed by summer 2018.
- Implement Sustainable Groundwater Management Act (SGMA) for the Carpinteria Valley ground water basin, expecting to be lead agency for the Groundwater Sustainability Agency (GSA) and Groundwater Sustainability Plan (GSP) for the basin.
- Install 3 new monitoring wells for sampling and testing for possible seawater intrusion.
- Install new water mains and future reclaimed water mains in two freeway over-crossings (Linden Ave and Casitas Pass overpasses) on freeway improvement project.
- In the process of study feasibility of full advance water treatment for recycle water project with the goal to reinject into groundwater for indirect basin recharge.

C. Topography and Soils

1. Topography of the district and its impact on water operations and management

The District service area is located on a narrow, moderately to gently-sloping alluvial plain which extends from the base of the Santa Ynez Mountains southward to the Pacific Ocean. Natural drainage of the plain is provided by Carpinteria Creek, Franklin Creek, Santa Monica Creek, Rincon Creek, and Toro Creek; the headwaters of each creek are located in the Santa Ynez Mountains.

The soils have been classified by the US Soil Conservation Service and are a combination of associations 1, 2, 3, and 7 type soils. The District is not aware of soil-related conditions or problems which may impact agriculture. See Attachment A for a soils map.

2. District soil association map (Agricultural only)

See Attachment A, District Soils Map

3. Agricultural limitations resulting from soil problems (Agricultural only)

Soil Problem	Estimated Acres	Effect on Water Operations and Management
Salinity	0	None
High-water table	0	None
High or low infiltration rates	0	None
Other (define)	0	None

D. Climate

1. General climate of the district service area

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Avg Precip. (a)	4.09	4.07	3.10	1.19	0.38	0.09	0.03	0.04	0.27	0.66	1.60	2.88	18.39
Avg Temp. (c)	53.9	55.1	56.5	58.8	60.6	63.4	66.6	67.5	66.6	63.4	58.9	54.9	60.5
Max. Temp. (b)	64.9	65.6	66.8	69.0	69.9	72.4	75.9	77.1	76.7	74.4	70.9	66.4	70.8
Min. Temp. (b)	43.0	44.6	46.2	48.6	51.3	54.3	57.3	57.9	56.4	52.5	46.9	43.4	50.2
ETo (d)	1.64	3.22	3.71	4.95	4.11	4.94	5.59	4.93	3.61	2.76	1.99	1.3	42.75

(a) Santa Barbara County, Mo Yearly Rainfall Record -Depth Durations for Station No. 234, 1899-2017
(b) Western Region Climate Center, Santa Barbara Station No. 047902 Y: 01/01/1893-06/09/2016
(c) Western Region Climate Center, Santa Barbara Station No. 047902 Y: 1893-2012
(d) Santa Barbara CIMIS Station NO. 107 Y: 01/01/2016 - 12/31/2016

Weather station ID: Western Region Climate Center, Santa Barbara Station No. 047902

Data period: 1893 to 2016

ET Station ID: Santa Barbara CIMIS Station NO. 107

Average annual frost-free days: 365

Frost Free Days - According to National Oceanic and Atmospheric Administration (NOAA), frost free days are days with temperatures greater than 28 degrees Fahrenheit.

2. Impact of microclimates on water management within the service area

Annual variation in climate conditions is minimal within the District. However, unique topographic conditions in the Gobernador Canyon area of the District can lead to frost conditions for approximately 5 days per year. Growers in this canyon area must be prepared to implement the appropriate frost protection measures to minimize the effects of frost on their crops. Many of the District's customers utilize extensive water conservation measures and irrigation methods to reduce water demands.

E. Natural and Cultural Resources

1. Natural resource areas within the service area

Name	Estimated Acres	Description
Carpinteria Slough	215	Natural tidal wetlands managed by UCSB

2. Description of district management of these resources in the past or present

None. The District has not in the past nor does it presently manage natural, recreational or cultural resources in the area.

3. Recreational and/or cultural resources areas within the service area

Name	Estimated Acres	Description
City, County, State and Private Park	110	9 parks, day use, camping, polo fields

F. Operating Rules and Regulations

1. Operating rules and regulations

See Attachment B, District Rules and Regulations, 2017

2. Water allocation policy (Agricultural only)

All agricultural customers are metered and served by an on-demand system. During water shortage, available water may be limited by customer type, per California law.

3. Official and actual lead times necessary for water orders and shut-off (Agricultural only)

Not applicable. All agricultural customers are metered and served by an on-demand system.

4. Policies regarding return flows (surface and subsurface drainage from farms) and outflow (Agricultural only)

All agricultural customers are metered and served by an on-demand system. Because of this, it is not anticipated that surface drainage return flows will be significant. However, for groundwater return flows from applied irrigation, State of California law defines rights to those return flows. I.e. all return flows from imported water belong to the importer, in this case Carpinteria Valley Water District. Other return flows are considered in the same way as natural recharge.

5. Policies on water transfers by the district and its customers

See Attachment B, District Rules and Regulations, 2017 Page 23

Summary - District Rule/Regulation No. 23: "A customer shall not resell or transfer any of the water received from the District to any other customer or person, or on other premises than specified in their application for service, without the prior written consent of the District. Any such District consent shall be subject to the requirement that the customer defend, indemnify and hold the District harmless against any claims arising from or related to such resale."

If a member agency of the Cachuma Project has surplus water, it has the legal ability to transfer these supplies to another member agency. Transfers are handled by the Cachuma Operations and Maintenance Board (COMB).

G. Water Measurement, Pricing, and Billing

1. Agricultural Customers

Refer to BMP A.1. Information on water measurement for agricultural contractors is completed under BMP A.1.

2. Urban Customers

a. **Total number of connections**: 3,979
b. **Total number of metered connections:** 3,979
c. **Total number of connections not billed by quantity:** 6 (District Facilities)
d. **Percentage of water that was measured at delivery point:** 100
e. **Percentage of delivered water that was billed by quantity:** 100
f. Measurement device table

Meter Size and Type	Number	Accuracy* (+/-percentage)	Reading Frequency (Days)	Calibration Frequency (Months)	Maintenance Frequency (Months)
5/8-3/4"	3,280	98.5-101.5*	30	NA**	as usage fluctuates***
1"	359	98.5-101.5*	30	NA**	as usage fluctuates***
1 ½"	178	98.5-101.5*	30	NA**	as usage fluctuates***
2"	145	98.5-101.5*	30	NA**	as usage fluctuates***
3"	8	98.5-101.5*	30	NA**	as usage fluctuates***
4"	3	98.5-101.5*	30	NA**	as usage fluctuates***
6"	6	98.5-101.5*	30	NA**	as usage fluctuates***
Total****	3,979				

Notes: * new meter accuracy (represents meter accuracy when installed) – See Attachment C
** more cost effective to replace than repair/calibrate
*** billing software alerts to high/low reads and prompts investigation

3. Agricultural and Urban Rates

a. Current year agricultural and /or urban water charges - including rate structures and billing frequency

See Attachment B, Appendix A, Pages i-ii

b. Annual charges collected from agricultural customers

Fixed Charges				
Charge	**Charges ($ by unit)**	**Charge units $/acre, etc.**	**Units billed during year acres, etc.**	**Total $ collected ($ times units)**
Residential Equivalency	$21.04 per residence	ag residence	4704	$98,972
Basic Charge	$6.55 per meter equivalent*	meter size	32436	$212,456
State Water Project Charge	$20.00 per meter equivalent*	meter size	32436	$648,720
CIP Charge	$2.75 per HCF	average monthly usage	51744	$142,296
Drought Surcharge-Volume	$0.70 per HCF	average monthly usage	51744	$36,221
Drought Surcharge - Meter	$2.00 per meter equivalent*	meter size	32436	$64,872

Volumetric charges				
Charge	**Charges ($ by unit)**	**Charge units $/AF, etc.**	**Units billed during year AF, etc.**	**Total $ collected ($ times units)**
Tier 1	$ 1.91 per HCF	monthly allocation	579880	$1,107,571
Tier 2	$ 2.50 per HCF	all water in excess of monthly allocation	263796	$659,490

See Attachment D, District Sample Bills

*The District's meter equivalent charges are based on the capacity of a 5/8" meter relative to the capacity of larger meters. For example, a 5/8" meter flows 20 gpm compared to a 3/4" meter of 30 gpm; therfore giving it a meter equivalency of 1.5. A 2" meter flow capacity of 160 gpm, has a meter equivalency of 8.

Annual charges collected from urban customers

Fixed Charges				
Charges	**Charges ($ by unit)**	**Charge units ($/meter size)**	**Units billed during year (by meter size) etc.**	**Total $ collected ($ times units)**
Basic Charge	$6.55 per meter equivalent*	meter size	100452	$657,961
State Water Project Charge	$20.00 per meter equivalent*	meter size	100452	$2,009,040
Dwelling Equivalence Charge	$20.00 per additional meter equivalent*	residence count / meter size	40200	$804,000
CIP Charge	$2.75 per HCF	average monthly usage	904056	$2,486,154
Drought Surcharge - Volume	$0.70 per HCF	average monthly usage	904056	$632,839
Drought Surcharge - Meter	$2.00 per meter equivalent*	meter size	100452	$200,904

Volumetric charges				
Charges	**Charges ($ by unit)**	**Charge units ($/HCF), etc.**	**Units billed during year HCF, Kgal, etc.**	**Total $ collected ($ times units)**
Base	$ 3.63 per HCF	winter average	573402	$2,081,449
Peak	$ 4.75 per HCF	all water in excess of monthly allocation	107000	$508,250

See Attachment D, District Sample Bills

*The District's meter equivalent charges are based on the capacity of a 5/8" meter relative to the capacity of larger meters. For example, a 5/8" meter flows 20 gpm compared to a 3/4" meter of 30 gpm; therfore giving it a meter equivalency of 1.5. A 2" meter flow capacity of 160 gpm, has a meter equivalency of 8.

c. Describe the contractor's record management system

The District maintains all records in a computer database. Customers can request a use history of 1 to 5 years (or longer if needed). Bills are mailed monthly to all customers.

H. Water Shortage Allocation Policies

1. Current year water shortage policies or shortage response plan - specifying how reduced water supplies are allocated

See Attachment E, District Water Shortage Contingency Plan

2. Current year policies that address wasteful use of water and enforcement methods

See Attachment B, District Rules and Regulations, page 34 and Ordinance 15-2.

Rule No. 29 states the following:

> No customer shall provide water to any person, company or corporation other than the occupant or occupants of the premises of said customer, nor shall any customer knowingly permit leaks or waste of water.
>
> If any customer willfully or negligently wastes water, the water may be shut off and the connection sealed by the District, and the water shall not be turned on again until a reconnection fee is paid by said customer to the District, in addition to accrued monthly service charges and fees for metered water use. The reconnection fee is provided in the District's annual fee table in (District's current water Rates and Charges).

In addition District Ordinance 15-2, adopted May 13, 2015, prohibits specific actions and provides for the following enforcement methods:

> a) a letter to the District customer of record indicating a violation of one or more of the aforementioned water use prohibitions or restrictions; and
>
> b) a letter to the District customer of record indicating a second violation of one or more of the aforementioned water use prohibitions or restrictions and a fine of twenty-five dollars ($25.00) added to the customer's next bill for the second offense;
>
> c) a letter to the District customer of record indicating a third violation of one or more of the aforementioned water use prohibitions or restrictions and a fine of one hundred dollars ($100.00) added to the customer's next bill for the third; and
>
> d) a letter to the District customer of record indicating additional incidences of violation of one or more of the aforementioned water use prohibitions or restrictions and further fines with a limit up to five hundred dollars ($500.00) for each day a violation occurs at the discretion of the Board of Directors.

I. Evaluate Policies of Regulatory Agencies Affecting the Contractor and Identify Policies that Inhibit Good Water Management.

Discuss possible modifications to policies and solutions for improved water management.

The Cachuma Project, hereafter Project, lies within the Santa Ynez River. The Santa Ynez River is critical habitat for Southern California DPS (*Oncorhynchus mykiss).* This sub unit of steel head has been listed on both the Federal and State Endangered Species list. National Marine Fisheries Service (NMFS) is the lead regulatory agency to manage the fisheries health in the Santa Ynez River. Reclamation is charged to implement measures determined by the NMFS in order to protect and recover the good health of the Steel head fisheries in the Santa Ynez River.

Better coordination between the NMFS, Reclamation and the Project Member units should be of the highest priority. Competing priority are common between the interests of fish management agencies and water supply agencies. Because of this, adversarial approaches are the common route to resolution. This approach often ends with poor outcomes for all interests.

Technical solutions and synergistic policies should be the goal of resource management. To that end, greater emphasis and effort should be put into finding technical solution that benefit all interest when formulating policy.

Additionally, unrelated to fisheries, Reclamation should provide a more flexible framework for water management activities including, surplus deliveries, yields, storage management and off project storage such that the Project users can adaptively manage resources. Water supply policies should be designed with this in mind.

Section 2: Inventory of Water Resources

A. Surface Water Supply

1. Surface water supplies in acre feet, imported and originating within the service area, by month (Table 1).

See Section 5, Water Inventory Tables, Table 1

2. Amount of water delivered to the district by each of the district sources for the last 10 years

See Section 5, Water Inventory Tables, Table 8.

B. Groundwater Supply

1. Groundwater extracted by the district and delivered, by month (Table 2)

See Section 5, Water Inventory Tables, Table 2

2. Groundwater basin(s) that underlies the service area

Name	Size (Square Miles)	Usable Capacity (AF)	Safe Yield (AF/Y)
Carpinteria	12	39,000	4,000

3. Map of district-operated wells and managed groundwater recharge areas

See Attachment A, for District Map of Groundwater Facilities

4. Description of conjunctive use of surface and groundwater

The District's current conjunctive use program involves use of more groundwater during dry months/years when surface water supplies are limited and more surface water during wet months/years when sufficient supplies are available.

5. Groundwater Management Plan

See Attachment F, Groundwater Management Plan

6. Groundwater Banking Plan

The District currently participates in two "out of District storage programs". The first program includes a cooperative arrangement for groundwater banking called "Short-Term Water Storage Partnership" (Rosedale-Rio Bravo Water Storage District and Irvine Ranch Water District), which the District has participated in since 2008. This program involves storage of SWP water in the groundwater basins managed by the Rosedale-Rio Bravo Water Storage District. The second program involves the District temporarily storing SWP carryover water in San Luis Reservoir. The groundwater banking program and the availability of storage in San Luis Reservoir are two programs made available to increase overall SWP supply reliability.

Currently, the District has approximately 400 AF of deliverable water stored in these two out-of-District storage programs. Implementation of a portion of these arrangements, or any future potential water storage or banking arrangements, can reasonably be expected to provide up to 1,000 AF of supply in future years. The District anticipates increasing this out-of-District storage amount between now and 2035.

See Attachment G, Groundwater Banking Plan

C. Other Water Supplies

1. "Other" water used as part of the water supply – Describe supply

See Section 5, Water Inventory Tables, Table 1
In 2016, the District used supplemental water purchased via the Central Coast Water Authority in 2015.

D. Source Water Quality Monitoring Practices

1. Potable Water Quality (Urban only)

See Attachment H – District Annual Potable Water Quality Report

2. Agricultural water quality concerns: Yes [ ] No [X]

3. Description of the agricultural water quality testing program and the role of each participant, including the district, in the program.

The District has an annual AB 3030 ground water reporting program. We sample approximately 30-35 private wells, District wells, along with the creeks within the District boundary's biannually. With the data that is collected, an annual ground water report is written on the health of the groundwater basin by a registered hydrologist.

4. Current water quality monitoring programs for surface water by source

Not Applicable. Surface water is treated at the City of Santa Barbara Cater Treatment Plant before entering the District's fully piped system through the South Coast Conduit.
See Attachment H – District Annual Potable Water Quality Report.

Analyses Performed	Frequency	Concentration Range	Average
See Attachment H			

Current water quality monitoring programs for groundwater by source (Agricultural only)

Groundwater produced by the District is treated to potable drinking standards.
See Attachment H – District Annual Potable Water Quality Report for analyses performed.

Analyses Performed	Frequency	Concentration Range	Average
See Attachment H			

E. Water Uses within the District

1. Agricultural

See Section 5, Water Inventory Tables, Table 5 - Crop Water Needs

2. Types of irrigation systems used for each crop in current year

Crop name	Total Acres	Level Basin acres	Furrow acres	Sprinkler acres	Low Volume acres	Multiple methods -acres
Avocado	1,860	0	0	1209	651	0
Lemons	196	0	0	127	69	0
Nursery (open)	335	0	0	167	0	168
Nursery (covered)	360	0	0	183	148	29
Fruit trees	172	0	0	120	52	0
Field	174	0	0	108	52	14
Other	155	0	0	97	13	45
Total	3,252	0	0	2011	985	256

3. Urban use by customer type in current year

Customer Type	Number of Connections	AF
Single-family	3,241	742
Multi-family	351	400
Commercial	214	231
Industrial	58	64
Institutional*	62	77
Landscape irrigation	53	48
Wholesale	0	0
Recycled	0	0
Other Fire	128	0
Other - District	6	0.25
Total	4,113	1,562.25

*District uses term – Public Authority

4. Urban Wastewater Collection/Treatment Systems serving the service area

Treatment Plant	Treatment Level (1, 2, 3)	AF	Disposal to / uses
Carpinteria Sanitary District	2	1200	Discharge to ocean
Total discharged to ocean and/or saline sink		1200	

5. Groundwater recharge in current year (Table 6)

Recharge Area	Method of Recharge	AF	Method of Retrieval
None		0	
	Total	0	

6a. Transfers and exchanges into the service area in current year – (Table 1)

From Whom	To Whom	AF	Use
CCWA - AVEC	Carpinteria Valley Water District	-500*	Supplemental Drought Supply
	Total	-500	

*At the end of 2016, the District owed AVEC 500 AF of water

6b. Transfers and exchanges out of the service area in current year – (Table 6)

From Whom	To Whom	AF	Use
None	None	0	
	Total	0	

7. Wheeling, or other transactions in and out of the district boundaries – (Table 6)

From Whom	To Whom	AF	Use
Casitas Municipal Water District	Carpinteria Valley Water District	-39*	Exchange
	Total		

* At the end of 2016, CMWD owed the District water.

8. Other uses of water

Other Uses	AF
None	0

F. Outflow from the District (Agricultural only)

See Facilities Map, Attachment A, for the location of surface and subsurface outflow points, outflow measurement points, outflow water-quality testing locations

1. Surface and subsurface drain/outflow

Outflow point	Location description	AF	Type of measurement	Accuracy (%)	% of total outflow	Acres drained
None						

Outflow point	Where the outflow goes (drain, river or other location)	Type Reuse (if known)
None		

2. Description of the Outflow (surface and subsurface) water quality testing program and the role of each participant in the program

Not Applicable. The District does not have surface or subsurface drainage.

3. Outflow (surface drainage & spill) Quality Testing Program

Analyses Performed	Frequency	Concentration Range	Average	Reuse limitation?
None				

Outflow (subsurface drainage) Quality Testing Program

Analyses Performed	Frequency	Concentration Range	Average	Reuse limitation?
None				

4. Provide a brief discussion of the District's involvement in Central Valley Regional Water Quality Control Board programs or requirements for remediating or monitoring any contaminants that would significantly degrade water quality in the receiving surface waters.

Not Applicable. The District does not participate in Central Valley Regional Water Quality Control Board programs.

Section 3: Best Management Practices (BMPs) for Agricultural Contractors

A. Critical Agricultural BMPs

1. Measure the volume of water delivered by the district to each turnout with devices that are operated and maintained to a reasonable degree of accuracy, under most conditions, to +/- 6%

a. **Number of delivery points (turnouts and connections)** 385

b. **Number of delivery points serving more than one farm** 0

c. **Number of measured delivery points (meters and measurement devices)** 385

d. **Percentage of water delivered to the contractor that was measured at a delivery point** 100

e. **Total number of delivery points not billed by quantity** 0

f. **Delivery point measurement device table**

Measurement Type	Number	Accuracy* (+/- %)	Reading Frequency (Days)	Calibration Frequency (Months)	Maintenance Frequency (Months)
Propeller meter	385	98.5 – 101.5*	30	NA**	as usage fluctuates***
Total	385	98.5 – 101.5*	30	NA**	as usage fluctuates***

* new meter accuracy (represents meter accuracy when installed) – See Attachment C

** more cost effective to replace than repair / calibrate

*** billing software alerts to high / low reads and prompts investigation

2. Designate a water conservation coordinator to develop and implement the Plan and develop progress reports.

Name: Brian King

Title: District Engineer

Address: 1301 Santa Ynez Ave, Carpinteria, CA 93013

Telephone: 805-684-2816

E-mail: Brian @cvwd.net

See Attachment J for job description and minimum qualifications.

3. Provide or support the availability of water management services to water users
See Attachment I, Notices of District Education Programs and Services Available to Customers.

a. On-Farm Evaluations

1) On farm irrigation and drainage system evaluations using a mobile lab type assessment

	Total in District	Number surveyed last year	Number surveyed in current year	Number projected for next year	Number projected 2nd year in future
Irrigated acres	3,252	80	0	80	80
Number of farms	385	9	0	9	9

Agricultural water evaluations are offered through the Cachuma Resource Conservation District (CRCD) Mobile Irrigation Lab (MIL). Funding is provided by the Department of Water Resources (DWR) and the Santa Barbara County Water Agency (SBCWA).

2) Timely field and crop-specific water delivery information to the water user
Every connection is metered and can be read by customer on hourly, daily or weekly basis in order to determine timely field and crop specific information to that customer. Current andhistorical monthly metered use information is also available from the District. In addition, given new technology, the District is moving away from CIMIS based irrigation controllers and going toward on-farm ETo solutions.

b. Real-time and normal irrigation scheduling and crop ET information
The District's Agricultural Conservation webpage, *http://cvwd.net/water_conservation/agriculture.htm*, provides a link to CIMIS, allowing farmers to access ET data in order to effectively manage efficient irrigation scheduling for their crops.

c. Surface, ground, and drainage water quantity and quality data provided to water users.
Annual water quality report supplied to all customers.
See Attachment H, Annual Potable Water Quality Report.

d. Agricultural water management educational programs and materials for farmers, staff, and the public

Program	Co-Funders (If Any)	Yearly Targets
CRCD MIL	DWR Santa Barbara County Water Agency NRCS	Agricultural Account Holders and Ag. Managers
CRCD Informational Courses	CRCD	Agricultural Account Holders and Ag. Managers
Green Gardener Program	Santa Barbara County Water Agency	Flower growers, landscapers
Agriculture Outreach Program		Agricultural Account Holders and Ag. Managers

See Attachment I for samples of provided materials and notices

e. Other

None.

4. Pricing structure - based at least in part on quantity delivered

All water is priced by volume. In addition, based on meter size, the District charges agricultural customers a monthly meter fee, and at this time a temporary Drought Surcharge Fee. If an agricultural meter also serves a residence, then a Residential Equivalency Fee and Capital Improvement Program Fee are charged.

5. Evaluate and improve efficiencies of district pumps

	Total in district	*# surveyed last year*	*# surveyed in current year*	*# projected for next year*
Wells	3	0	0	2
Booster Pumps	5	0	0	5

District pumps are typically evaluated every year on a set schedule. Additionally, pump information is evaluated through the District's SCADA system. Pumps are operated via the SCADA system which monitors low use periods and time of use.

B. Exemptible BMPs for Agricultural Contractors

(See Planner, Chapter 2, Addendum B for examples of exemptible conditions)

1. Facilitate alternative land use

Drainage Characteristic	Acreage	Potential Alternate Uses
High water table (<5 feet)	0	Not Applicable
Poor drainage	0	Not Applicable
Groundwater Selenium concentration > 50 ppb	0	Not Applicable
Poor productivity	0	Not Applicable

Not Applicable. The District has no land identified for alternative land use nor are there drainage problems to control.

2. Facilitate use of available recycled urban wastewater

Sources of Recycled Urban Waste Water	AF/Y Available	AF/Y Currently Used in District
None		

At this time the District does not have a Recycled Water Program. However, a facilities plan has been completed and the District is moving toward implementing an indirect potable reuse project that will produce up to 1100 AFY and will be fully utilized as a water supply for the Carpinteria Valley.

3. Facilitate the financing of capital improvements for on-farm irrigation systems

Program	Description
None	

4. Incentive pricing

Describe incentive rate structure or other programs and purpose.

None. The District provides 42% of agricultural water demands within the District. The District does not currently have block rate structure for agriculture customers. The District must maintain a price for agricultural water that is reasonable to the farmers in order to encourage sales of surface water supplies (to minimize impact on local groundwater supplies), yet also encourage efficient water use.

5. a) Line or pipe ditches and canals

Not Applicable. The District has a closed, piped, and pressurized distribution system.

b) Construct/line regulatory reservoirs

Not Applicable. The District does not have regulatory reservoirs as it is a fully piped distribution system.

6. Increase flexibility in water ordering by, and delivery to, water users

Not Applicable. The District maintains a fully piped and pressurized system. Customers receive water on-demand.

7. Construct and operate district spill and tailwater recovery systems.

Not applicable. The District has a closed, fully piped, and pressurized distribution system. There are no drainage outflow locations for spill or tailwater recovery.

8. Plan to measure outflow.

Total # of outflow (surface) locations/points 0

Total # of outflow (subsurface) locations/points 0

Total # of measured outflow points 0

Percentage of total outflow (volume) measured during report year 0

Identify locations, prioritize, determine best measurement method/cost, submit funding proposal

Location & Priority	Estimated cost (in $1,000s)				
	Year 1	Year 2	Year 3	Year 4	Year 5
None	0	0	0	0	0

9. Optimize conjunctive use of surface and groundwater

COMB, as part of its analysis on Water Supply Reliability of the South Coast Conduit, suggested the use of the Carpinteria Groundwater Basin as a potential beneficial location for storage of excess Cachuma water to improve system reliability. The modeling of demands along the South Coast, along with analysis of the condition of the South Coast Conduit, highlighted the need for more reliable local supplies for all of the COMB member agencies. In addition, a review of the District's groundwater and water supply management strategies was conducted in 2006 by Kennedy/Jenks Consultants. Potential options reviewed, included the use of Aquifer Storage and Recovery (ASR) and other conjunctive use strategies, to further optimize the District's current conjunctive use program.

Recognizing the potential of ASR for optimizing its conjunctive use program, the District began investigating ASR in 2003 with the performance of a demonstration ASR project at its Headquarters Well. During the testing program, a total of 36.2 AF were injected

into the basin through the well, and approximately 58.3 AF were subsequently extracted. The results of the testing program showed that the Headquarters Well was a viable ASR well with an estimated long-term injection capacity of approximately 300 gallons per minute (gpm) and an extraction/recovery pumping rate of approximately 1,500 gpm. In 2012, as part of a numerical groundwater model development project for the Carpinteria Groundwater Basin, the District performed a groundwater modeling simulation of an ASR operational scenario, which involved injecting surplus Cachuma Lake "spill water" into its Headquarters Well and recently constructed El Carro #2 Well. The simulation was run under the model calibration base period conditions of Water Years 1985 through 2008. Based on the review of historical Cachuma spill records for the scenario, there was no surplus Cachuma Lake water available for recharge in 16 of the 24 simulated years. During the 8 years when surplus Cachuma Lake water was available, the amount of water recharged ranged between 275 AFY and 815 AFY. The results of the simulation were favorable, depicting basin-wide groundwater level increases due to increased recharge and accumulation of basin storage. It was also noted that some of the recharged water is lost from the basin due to outflow to the ocean during the simulation; however, approximately 70 percent remained in the basin at the end of the simulation.

The District conducted a demonstration ASR project at its El Carro #2 Well In 2013. During the testing program, a total of 11.5 AF were injected into the basin through the well, and approximately 23.6 AF were subsequently extracted. The results of that testing program showed that the El Carro #2 Well was also a viable ASR well, with an estimated long-term injection capacity of approximately 400 gpm and an extraction/recovery pumping rate of approximately 1,500 gpm.

The District is currently planning to implement a long-term (2 years) ASR testing program during WY 2018–2019. The intent of testing program is to mimic the operation of a permanent ASR program in the Carpinteria Groundwater Basin, which will involve simultaneous injection at both the Headquarters and El Carro #2 Wells when surplus Cachuma Lake water supplies are available and subsequent recovery of the stored water during dry periods. The results of the testing program will be used to develop the design, operational parameters, and permitting requirements for a permanent ASR project in the basin.

10. Automate distribution and/or drainage system structures
Identify locations where automation would increase delivery flexibility and reduce spill and losses. Describe program to achieve these benefits and estimate the annual water savings.
Not applicable. The District has a closed, fully piped, and pressurized distribution system.

11. Facilitate or promote water customer pump testing and evaluation
See Attachment I, Notices of District Education Programs and Services Available to Customers

12. Mapping

GIS maps	Estimated cost (in $1,000s)				
	Year 1	Year 2	Year 3	Year 5	Year 6
Layer 1 – Distribution system	Complete				
Layer 2 – Drainage system	Complete				
Suggested layers:					
Layer 3 – Groundwater information	Complete				
Layer 4 – Soils map	Complete				
Layer 5 – Natural & cultural resources	NA				
Layer 6 – Problem areas	NA				

C. Provide a 5-Year Budget for Implementing BMPs

1. Amount actually spent during current year.
Year 2016

BMP #	BMP Name	Projected Expenditures (not including staff hours)	Staff Hours
A 1	Measurement	$24,201	162
2	Conservation Staff	$0	107
3	On-farm Evaluations/Water Delivery Info	$0	0
	Irrigation Scheduling	$0	0
	Water Quality	$55,609	2883
	Agricultural Education Program	$1,360	115
4	Quantity Pricing	$0	0
5	Contractor's Pumps	$0	11
B 1	Alternative Land Use	$0	0
2	Urban Recycled Water Use	$0	80
3	Financing of On-Farm Improvements	$0	0
4	Incentive Pricing	$0	92
5	Line or Pipe Canals/Install Reservoirs	$0	0
6	Increase Delivery Flexibility	$0	0
7	District Spill/Tailwater Recovery Systems	$0	0
8	Measure outflow	$0	0
9	Optimize Conjunctive Use	$0	0
10	Automate Canal Structures	$0	0
11	Customer Pump Testing	$0	0
12	Mapping	$11,099	235
	Total	$92,270	3685

2. Projected budget summary for the next year.

Year 2017

BMP #	BMP Name	Projected Expenditures (not including staff hours)	Staff Hours
A 1	Measurement	$255,424.86	0
2	Conservation Staff	$0	107
3	On-farm Evaluations/Water Delivery Info	$0	0
	Irrigation Scheduling	$0	0
	Water Quality	$36,257	2883
	Agricultural Education Program	$67	115
4	Quantity Pricing	$0	0
5	Contractor's Pumps	$0	11
B 1	Alternative Land Use	$0	0
2	Urban Recycled Water Use	$0	200
3	Financing of On-Farm Improvements	$0	0
4	Incentive Pricing	$0	80
5	Line or Pipe Canals/Install Reservoirs	$0	0
6	Increase Delivery Flexibility	$0	0
7	District Spill/Tailwater Recovery Systems	$0	0
8	Measure outflow	$0	0
9	Optimize Conjunctive Use	$0	0
10	Automate Canal Structures	$0	0
11	Customer Pump Testing	$0	0
12	Mapping	$831	235
	Total	$292,580	3631

3. Projected budget summary for 3rd year.
Year 2018

BMP #	BMP Name	Projected Expenditures (not including staff hours)	Staff Hours
A 1	Measurement	$85,142	0
2	Conservation Staff	$0	107
3	On-farm Evaluations/Water Delivery Info	$5,000	0
	Irrigation Scheduling	$0	0
	Water Quality	$37,163	2883
	Agricultural Education Program	$0	115
4	Quantity Pricing	$0	0
5	Contractor's Pumps	$0	11
B 1	Alternative Land Use	$0	0
2	Urban Recycled Water Use	$0	80
3	Financing of On-Farm Improvements	$5,000	0
4	Incentive Pricing	$0	80
5	Line or Pipe Canals/Install Reservoirs	$0	0
6	Increase Delivery Flexibility	$0	0
7	District Spill/Tailwater Recovery Systems	$0	0
8	Measure outflow	$0	0
9	Optimize Conjunctive Use	$0	0
10	Automate Canal Structures	$0	0
11	Customer Pump Testing	$0	0
12	Mapping	$848	235
	Total	$133,153	3511

4. Projected budget summary for 4th year.
Year 2019

BMP #	BMP Name	Projected Expenditures (not including staff hours)	Staff Hours
A 1	Measurement	$85,142	0
2	Conservation Staff	$0	107
3	On-farm Evaluations/Water	$5,000	0
	Delivery Info	$0	0
	Irrigation Scheduling	$0	0
	Water Quality	$38,093	2883
	Agricultural Education Program	$0	115
4	Quantity Pricing	$0	0
5	Contractor's Pumps	$0	0
B 1	Alternative Land Use	$0	0
2	Urban Recycled Water Use	$0	338
3	Financing of On-Farm Improvements	$5,000	0
4	Incentive Pricing	$0	80
5	Line or Pipe Canals/Install Reservoirs	$0	0
6	Increase Delivery Flexibility	$0	0
7	District Spill/Tailwater Recovery Systems	$0	0
8	Measure outflow	$0	0
9	Optimize Conjunctive Use	$0	0
10	Automate Canal Structures	$0	0
11	Customer Pump Testing	$0	0
12	Mapping	$865	235
	Total	$134,100	3758

5. Projected budget summary for 5th year.
Year 2020

BMP #	BMP Name	Projected Expenditures (not including staff hours)	Staff Hours
A 1	Measurement	$85,142	0
2	Conservation Staff	$0	107
3	On-farm Evaluations/Water	$5,000	0
	Delivery Info	$0	0
	Irrigation Scheduling	$0	0
	Water Quality	$39,045	2883
	Agricultural Education Program	$0	115
4	Quantity Pricing	$0	0
5	Contractor's Pumps	$0	0
B 1	Alternative Land Use	$0	0
2	Urban Recycled Water Use	$0	439
3	Financing of On-Farm Improvements	$5,000	0
4	Incentive Pricing	$0	80
5	Line or Pipe Canals/Install Reservoirs	$0	0
6	Increase Delivery Flexibility	$0	0
7	District Spill/Tailwater Recovery Systems	$0	0
8	Measure outflow	$0	0
9	Optimize Conjunctive Use	$0	0
10	Automate Canal Structures	$0	0
11	Customer Pump Testing	$0	0
12	Mapping	$882	235
	Total	$135,069	3859

Section 4: Best Management Practices for Urban Contractors

A. Urban BMPs

See Attachment K for CVWD's 2015 CUWCC Coverage Report
See Attachment L for CVWD's 2016 CUWCC Coverage Report

Foundational BMPs

1. Utility Operations Programs
   1.1. Operations Practices
      A.1) Conservation Coordinator
      A.2) Water waste prevention
      A.3) Wholesale agency assistance programs
   1.2. Water Loss Control
      1.3. Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections
      1.4. Retail Conservation Pricing

2. Education Programs
   2.1. Public Information Programs
   2.2. School Education Programs

Programmatic BMPs

3. Residential
   A.1) Residential assistance program
   A.2) Landscape water survey
   A.3) High-efficiency clothes washers (HECWs)
   A.4) WaterSense Specification (WSS) toilets
   A.5) WaterSense Specifications for residential development

4. Commercial, Industrial, and Institutional (CII)

5. Landscape

B. Provide a 5-Year Budget for Expenditures and Staff Effort for BMPs

1. **Amount actually spent during current year.**

Year 2016

BMP #	BMP Name	Projected Expenditures (not including staff hours)	Staff Hours
1	**Utilities Operations**		
1.1	Operations Practices	$0	0
1.2	Water Loss Control	$0	202
1.3	Metering	$0	0
1.4	Retail Conservation Pricing	$0	92
2	**Education Programs**		
2.1	Public Information Programs	$11,643	613
2.2	School Education Programs	$595	77
3	**Residential**	$33,017	383
4	**CII**	$3,000	77
5	**Landscape**	$5,691	77
	Total	$53,946	1521

2. **Projected budget summary for 2nd year.**

Year 2017

BMP #	BMP Name	Projected Expenditures (not including staff hours)	Staff Hours
1	**Utilities Operations**		
1.1	Operations Practices	$0	0
1.2	Water Loss Control	$5,000	202
1.3	Metering	$2,582,629	0
1.4	Retail Conservation Pricing	$0	80
2	**Education Programs**		
2.1	Public Information Programs	$20,000	613
2.2	School Education Programs	$7,000	77
3	**Residential**	$10,000	383
4	**CII**	$7,900	77
5	**Landscape**	$15,000	77
	Total	$2,647,529	1509

3. **Projected budget summary for 3rd year.**

Year 2018

BMP #	BMP Name	Projected Expenditures (not including staff hours)	Staff Hours
1	**Utilities Operations**		
1.1	Operations Practices	$0	0
1.2	Water Loss Control	$5,000	202
1.3	Metering	$860,876	0
1.4	Retail Conservation Pricing	$0	80
2	**Education Programs**		
2.1	Public Information Programs	$20,000	613
2.2	School Education Programs	$7,000	77
3	**Residential**	$10,000	383
4	**CII**	$7,900	77
5	**Landscape**	$15,000	77
	Total	$925,776	1509

4. **Projected budget summary for 4th year.**

Year 2019

BMP #	BMP Name	Projected Expenditures (not including staff hours)	Staff Hours
1	**Utilities Operations**		
1.1	Operations Practices	$0	0
1.2	Water Loss Control	$5,000	202
1.3	Metering	$0	0
1.4	Retail Conservation Pricing	$0	80
2	**Education Programs**		
2.1	Public Information Programs	$20,000	613
2.2	School Education Programs	$7,000	77
3	**Residential**	$10,000	383
4	**CII**	$7,900	77
5	**Landscape**	$15,000	77
	Total	$64,900	1509

5. **Projected budget summary for 5th year.**

Year 2020

BMP #	BMP Name	Projected Expenditures (not including staff hours)	Staff Hours
1	**Utilities Operations**		
1.1	Operations Practices	$0	0
1.2	Water Loss Control	$5,000	202
1.3	Metering	$0	0
1.4	Retail Conservation Pricing	$0	80
2	**Education Programs**		
2.1	Public Information Programs	$20,000	613
2.2	School Education Programs	$7,000	77
3	**Residential**	$10,000	383
4	**CII**	$7,900	77
5	**Landscape**	$15,000	77
	Total	$64,900	1509

Section 5. District Water Inventory Tables - Agricultural and Urban

Year of Data	2016

Table 1

Surface Water Supply

2016 Month	Federal Ag Water (acre-feet)	Federal non-Ag Water. (acre-feet)	State Water (acre-feet)	Local Water (NA) (acre-feet)	Other Water (acre-feet)	Transfers into District (acre-feet)	Upslope Drain Water (acre-feet)	Total (acre-feet)
Method								
January	0	0	16	0	0	12	0	28
February	0	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0	0
April	13	10	29	0	0	0	0	52
May	57	47	0	0	0	0	0	104
June	126	100	0	0	0	0	0	226
July	93	69	100	0	0	0	0	262
August	98	73	0	0	0	0	0	171
September	32	25	96	0	0	0	0	154
October	0	0	112	0	0	0	0	112
November	0	0	24	0	0	0	0	24
December	0	0	0	0	0	0	0	0
TOTAL	418	325	377	0	0	12	0	1,131

11.93 AF of Casitas water accounting in January 2016

Table 2

Ground Water Supply

2016 Month	District Groundwater (acre-feet)	Private Urban *(acre-feet)	Private Agric Groundwater *(acre-feet)
Method			
January	201	0	0
February	211	0	0
March	235	0	0
April	267	0	0
May	256	0	0
June	151	0	0
July	165	0	0
August	256	0	0
September	253	0	0
October	277	0	0
November	249	0	0
December	208	0	3,405
TOTAL	2,729	0	3,405

*normally estimated

The District only calculates estimated AG extraction on an annual basis

Table 3

Total Water Supply

2016 Month	Surface Water Total (acre-feet)	District Groundwater (acre-feet)	Recycled M&I Wastewater (acre-feet)	Total District Water (acre-feet)
Method				
January	28	201	0	228
February	0	211	0	211
March	0	235	0	235
April	52	267	0	319
May	104	256	0	360
June	226	151	0	376
July	262	165	0	427
August	171	256	0	427
September	154	253	0	406
October	112	277	0	389
November	24	249	0	273
December	0	208	0	208
TOTAL	1,131	2,729	0	3,860

*Recycled M&I Wastewater is treated urban wastewater that is used for agriculture.

2016 Precipitation Worksheet

	inches precip	ft precip	acres	AF/Year
Jan	5.09	0.42	0.00	0.00
Feb	0.81	0.07	0.00	0.00
Mar	0.20	0.02	0.00	0.00
Apr	0.70	0.06	0.00	0.00
May	0.60	0.05	0.00	0.00
Jun	0.56	0.05	0.00	0.00
Jul	1.18	0.10	0.00	0.00
Aug	1.19	0.10	0.00	0.00
Sept	0.35	0.03	0.00	0.00
Oct	1.54	0.13	0.00	0.00
Nov	0.47	0.04	0.00	0.00
Dec	0.03	0.00		
TOTAL	**12.72**	**1.06**		

2016 Evaporation Worksheet

	inches evap	ft evap	acres	AF/YEAR
Jan	1.64	0.14	0.00	0.00
Feb	3.22	0.27	0.00	0.00
Mar	3.71	0.31	0.00	0.00
Apr	4.95	0.41	0.00	0.00
May	4.11	0.34	0.00	0.00
Jun	4.94	0.41	0.00	0.00
Jul	5.59	0.47	0.00	0.00
Aug	4.93	0.41	0.00	0.00
Sept	3.61	0.30	0.00	0.00
Oct	2.76	0.23	0.00	0.00
Nov	1.99	0.17	0.00	0.00
Dec	1.30	0.11		
TOTAL	**42.75**	**3.56**		

Santa Barbara CIMIS, Station No. 107 2016

Table 4

Distribution System

2016 Area or Line	Length (feet)	Leaks (acre-feet)(1)	Breaks (acre-feet) (2)	Flushing/Fire (acre-feet)(2)	Total (acre-feet)
Line	433,224	346.37	0	0	346.37
TOTAL	433224	346.37	0	0	346.37

(1) Total Water Loss

(2) No data available

Table 5

Crop Water Needs

2016 Crop Name	Area (crop acres)	Crop ET (AF/Ac)	Leaching Requirement (AF/Ac)	Cultural Practices (AF/Ac)	Effective Precipitation (AF/Ac)	Appl. Crop Water Use (acre-feet)
Avocado	1,860	2.8	0.0	0.0	1.2	3,143
Lemons	196	2.8	0.0	0.0	1.2	323
Nursery (open)	335	2.3	0.0	0.0	1.2	369
Nursery (covered)	360	2.0	0.0	0.0	0.0	720
Fruit trees	172	2.7	0.0	0.0	1.2	267
Field	174	2.3	0.0	0.0	1.2	191
Other	155	2.0	0.0	0.0	1.2	132
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
Crop Acres	3,252					5,145

Total Irrig. Acres 3252 (If this number is larger than your known total, it may be due to double cropping)

Table 6

2016 District Water Inventory

Water Supply	Table 3		3,860
Environmental Consumptive Use	(Distribution, Drain, etc.)	minus	
Groundwater recharge	(intentional - ponds, injection)	minus	
Seepage	Table 4	minus	0
Evaporation - Precipitation	Table 4	minus	0
Spillage	Table 4	minus	0
Leaks, Breaks, Flushing / Fire	Table 4	minus	0
Transfers out of District		minus	
Water Available for sale to customers			3,860
Actual Agricultural Water Sales 2016	From District Sales Records		
Private Groundwater	Table 2	plus	3,405
Crop Water Needs	Table 5	minus	5,145
Drainwater outflow	(tail and tile not recycled)	minus	0
Percolation from Agricultural Land	(calculated)		(1,740)
M&I Actual Water Sales 2016	From District Records		
Inside Use	Feb urban use x 12		
Landscape / Outside Use	(calculated)		0
Unaccounted for Water	(calculated)		3,860

Table 7

Influence on Groundwater and Saline Sink

2016

Agric Land Deep Perc + Seepage + Recharge - Groundwater Pumping = District Influence on	(2,729)
Estimated actual change in ground water storage, including natural recharge)	0
Irrigated Acres (from Table 5)	3,252
Irrigated acres over a perched water table	0
Irrigated acres draining to a saline sink	0
Portion of percolation from agri seeping to a perched water table	0
Portion of percolation from agri seeping to a saline sink	0
Portion of On-Farm Drain water flowing to a perched water table/saline sink	0
Portion of Dist. Sys. seep/leaks/spills to perched water table/saline sink	0
Total (AF) flowing to a perched water table and saline sink	0

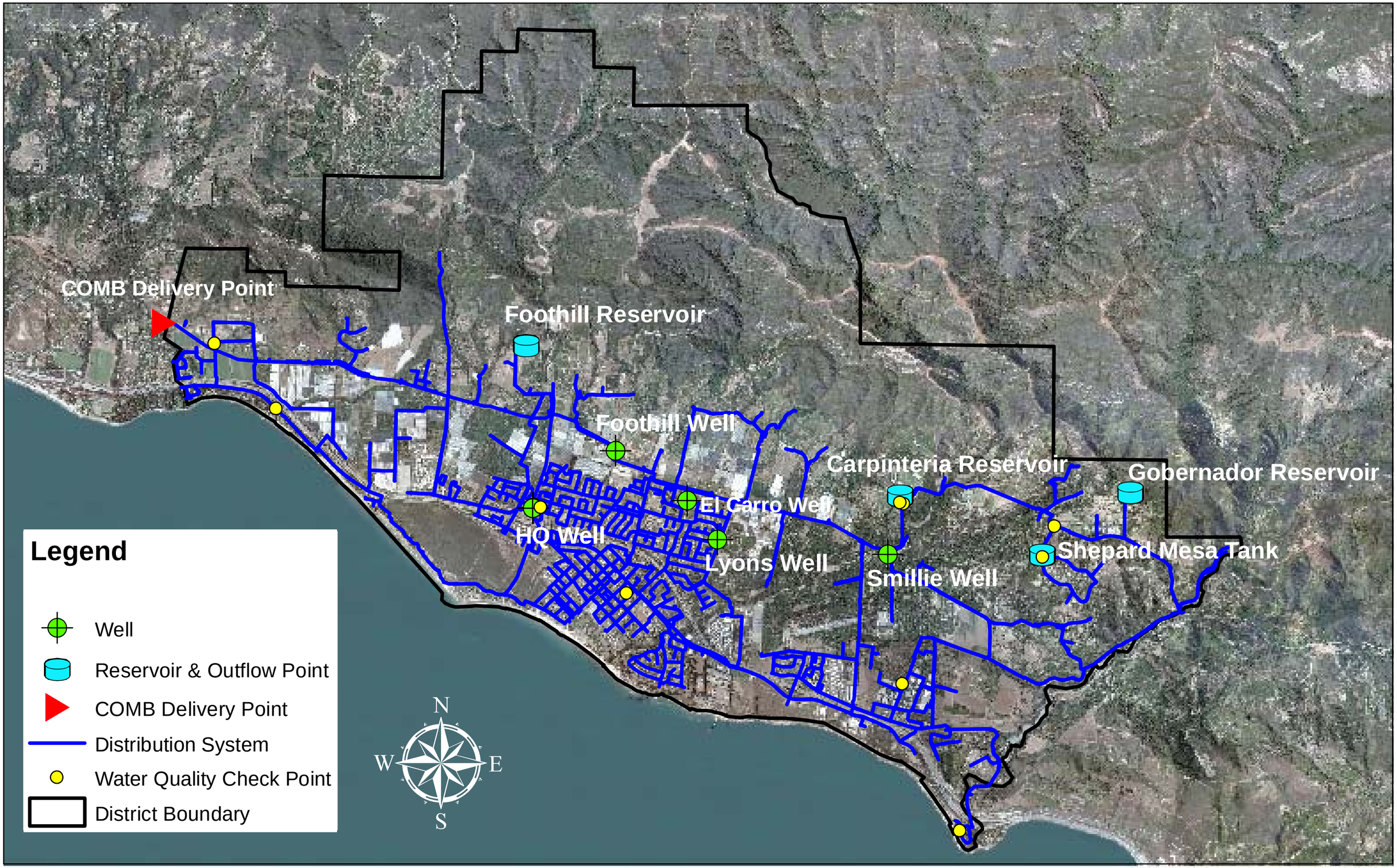
Table 8

Annual Water Quantities Delivered Under Each Right or Contract

Year	Federal Ag Water (acre-feet)	Federal non-Ag Water. (acre-feet)	State Water (acre-feet)	Local Water (NA) (acre-feet)	Other Water (acre-feet)	Transfers into District (acre-feet)	Upslope Drain Water (acre-feet)	Total (acre-feet)
2007	1,364	1,369	200	0	0	0	0	2,933
2008	1,329	1,387	117	0	0	0	0	2,833
2009	1,360	1,476	0	0	0	0	0	2,836
2010	1,509	1,649	0	0	0	0	0	3,157
2011	1,261	1,412	0	0	0	0	0	2,673
2012	1,696	1,660	0	0	0	0	0	3,356
2013	1,988	2,071	474	0	0	0	0	4,533
2014	1,263	1,065	761	0	0	0	0	3,089
2015	422	292	476	0	0	0	0	1,190
2016	418	325	377	0	0	0	0	1,119
Total	12,610	12,704	2,404	0	0	0	0	27,718
Average	1,261	1,270	240	0	0	0	0	2,772

Attachment A

District Maps

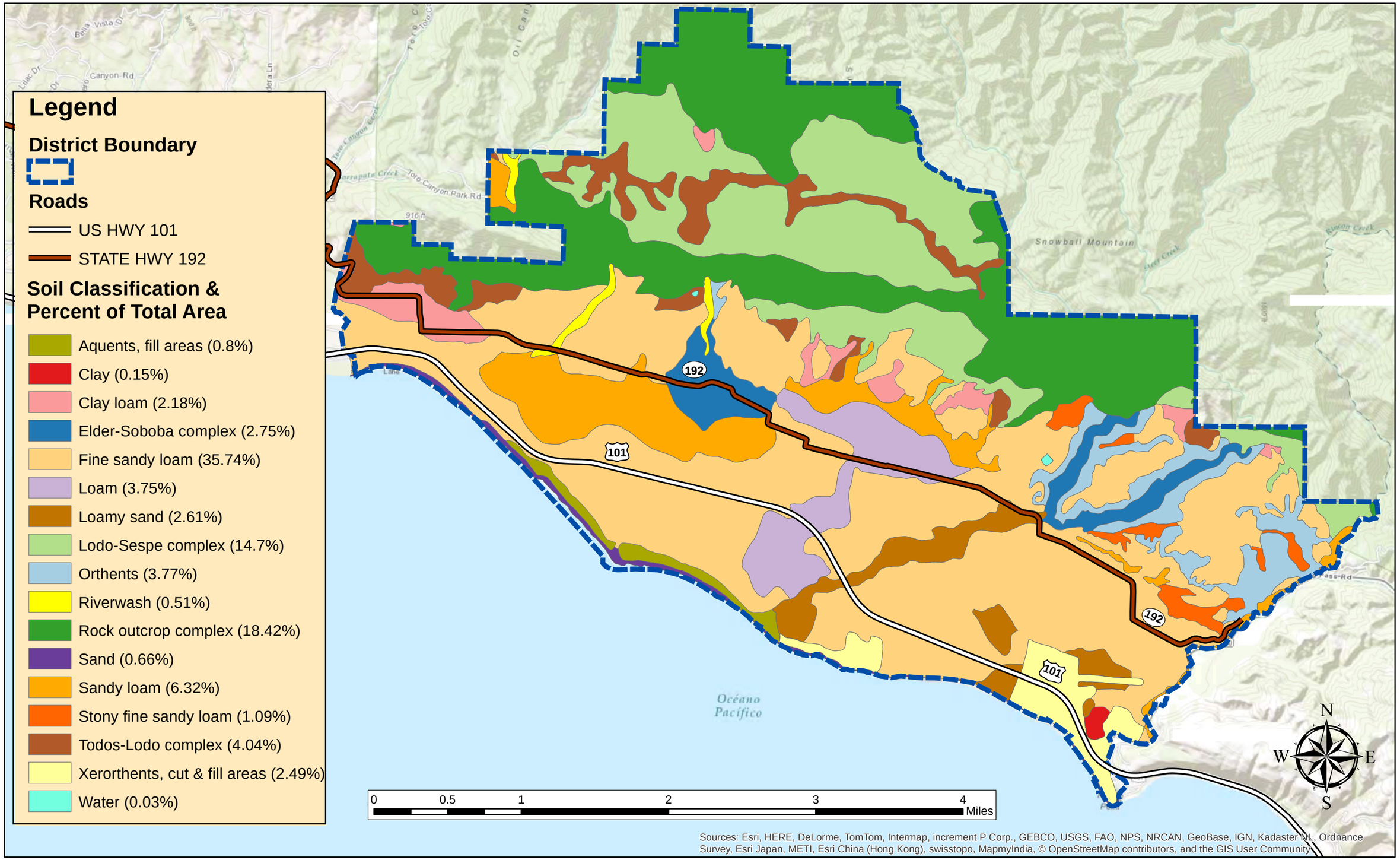


March 2011

Carpinteria Valley Water District

Created By CVWD Engineering

USDA Natural Resources Conservation Service - Soil Classifications



March 2016

Created by CVWD Engineering

Attachment B

Rules and Regulations, Water Rates and Charges

CARPINTERIA VALLEY WATER DISTRICT

RULES AND REGULATIONS

2016-17

Adopted by the Board of Directors

January 11, 2017

(Revised January 18, 2017)

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RULES AND REGULATIONS

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CARPINTERIA VALLEY WATER DISTRICT

RULES AND REGULATIONS

1. RULES AND REGULATIONS

a. These Rules and Regulations shall be known as "The Rules and Regulations of Carpinteria Valley Water District".

b. No officer, agent or employee of Carpinteria Valley Water District (District) shall have any authority to waive, alter or amend in part or in whole, these Rules and Regulations.

c. These Rules and Regulations may be amended, added to or revoked in whole or in part, at any meeting, general or special, of the Board of Directors of Carpinteria Valley Water District, a quorum being present, by a majority vote of the Directors, provided that a written notice of any proposed amendment, addition or revocations shall have been delivered to each Director prior to any such meeting.

d. The term "customer" as used in these Rules and Regulations, is defined to mean the person(s) served water as a result of having made an application for service as provided for in these Rules and Regulations. Appendix E identifies the various customer classes recognized by the District and the definition of independent water service entities. Customers – by receiving water service – implicitly agree to abide by these Rules and Regulations.

2. AREA SERVED, CONDITIONS OF SERVICE AND SERVICE INTERUPTABILITY

Except as provided by law and in these Rules and Regulations, only those lands lying within of Carpinteria Valley Water District Boundary, and no other lands, with the exception of lands served by agreement with Casitas Municipal Water District in Ventura County will be served with water from the works of Carpinteria Valley Water District.

Service of water shall be subject to the terms and conditions of these Rules and Regulations and the terms and conditions of a certain contract dated April 15, 1995, Master

Contract Renewal #175R-1802R between Carpinteria Valley Water District and the United States Bureau of Reclamation.

The District does not guarantee continuous delivery of water. Routine and emergency repairs to District facilities, infrastructure and appurtenances may require the District to discontinue water flow in any portion of its service area. With the exception of emergencies, reasonable effort will be made to inform customers affected by such service interruptions prior to the discontinuance of service. As noted in Rule 25, the District assumes no responsibility for damages or losses that may occur to customers' apparatus and appliances.

3. APPLICATION FOR SERVICE

a. **New or Enlarged Connections:** A written application for water service must be made for new or enlarged service connections. Said application shall be made to the District on a form provided by the District and available to the applicant at the District Office.

b. **Owner Occupants:** In addition to providing personal and contact information regarding water service [Owner Application], owner occupants shall be asked to sign a continuing service agreement whereby ongoing monthly service charges associated with water service will be paid for until such time as the property has been transferred to another owner or a tenant occupant has become the customer of record. However, property owners continue to assume responsibility of all unpaid charges incurred by their tenants.

c. **Tenant Occupants:** In addition to providing personal and contact information regarding water service [Tenant Application], tenant occupants will be responsible for obtaining a signature from the property owner or duly appointed representative whereby the property owner assumes responsibility of unpaid water service charges in the event the tenant occupant terminates water service and fails to pay.

All applications for new service connections must be accompanied by the Connection Fees as required in Rule Number 9 of these Rules and Regulations, and in addition, the applicant must establish credit with the District as set forth in Rule Number 4.

4. CREDIT OF APPLICANT

a. **Establishment of Credit:** No later than 14 working days after the commencement of service, each applicant must establish credit with the District by any one of the following methods:

(1) If the applicant provides sufficient evidence of creditworthiness established on another Carpinteria Valley Water District service account, as determined solely by the Manager or his designee, credit will be deemed established.

(2) By a cash deposit with the District in the amount required by Rule Number 6, hereof.

(3) By receipt of a letter or e-mail from another public water agency with the following information confirming the customer's good credit account history for a current account with that agency:

i. Date account was open.

ii. Statement that there have been no shut offs for non-payment or door tags in the last 2 years.

A current account includes an account closed at the request of the customer within 60 days of the date of the new service request. The District must receive a customer's letter of credit prior to service start date.

b. Re-Establishment of Credit:

(1) If a customer fails to pay a water bill within fifteen (15) days after presentation of said bill, as set forth in Rule Number 5, then, even though

the customer's service has not been disconnected as set forth in Rule Number 13(d) hereof, said customer may be required to re-establish credit with the District by making a cash deposit in the amount required by Rule Number 6 of these Rules and Regulations.

Customers who are delinquent on their payments may be contacted by the District via telephone, letter or electronic means.

(2) If a customer fails to pay a water bill within fifteen (15) days after presentation of a second notice that the bill is due and owing, then whether or not service has been disconnected as provided in Rule Number 13(d), said customer may be required to re-establish credit with the District by making a cash deposit with the District in an amount equal to twice the estimated average of a bill for the type of service to be rendered.

Customers who are delinquent on their payments may be contacted by the District via telephone, letter or electronic means.

5. PRESENTATION AND PAYMENT OF BILLS

Bills for services by the District will be presented by the District for payment at monthly intervals and all of said bills will be due and payable upon presentation of said bill to the customer.

Bills shall be considered presented when either delivered personally to the customer or when deposited in the United States mail, postage prepaid, and addressed to the customer at the address shown on the customer's application for service. The District offers a direct payment service whereby monthly water bills are automatically deducted from a customer's checking account. Forms for such service are available at the District office or the District's website.

Payments may be made at the District office. Credit card payments *must* be made in person at the District office, with proof of identity shown upon payment. Electronic payments may be made through the District's website (www.cvwd.net or https://www.municipalonlinepayments.com/cvwdca). A service fee for processing may be applied to the account as specified in the District's annual fee table in Appendix C.

If the District receives a returned check from the bank for non-sufficient funds, the customer shall be charged a returned check fee as specified in the District's annual fee table in Appendix C.

In the event that the District receives a second returned check from the bank for non-sufficient funds (either personal check or automatic clearing house check), a customer will be required to pay subsequent water bills in cash, credit card or cash equivalent (cashier's check, money order etc.) for twelve months. The customer will have 2 days to bring the account to good standing and pay all returned check fees and any penalties and charges for service termination.

6. DEPOSITS

a. **Deposit Amount** The amount of cash deposit necessary to establish credit, as required by Rule Number 4 for all classes of service, shall be a sum equal to twice the estimated average bill for the type of service rendered.

b. **Refund of Deposit**: Where service has been ordered permanently discontinued by the customer, all money on deposit with the District for the purpose of establishing credit will be first applied to the payment of any bills due and owing the District, and the balance of said deposit, if any, will be refunded to the customer.

The District will review the account history of each customer after two years. If the account is in good standing after two years a refund of the amount of deposit for the purpose of establishing credit will be issued to the customer of record. Good standing requires no door tags within the two-year period. If a customer has their deposit refunded after the two-year period and they receive in excess of one door

tag within any following two-year period they may be required to pay a deposit amount (see 6a for amount) to return their account to good standing. Said deposit must be paid prior to reconnecting service after their second shut off notice.

c. **Failure to Pay**: The District must receive said deposit within 14 working days of the service start date or shut off procedures will begin immediately.

d. **Lifeline Program**: The District will apply a 20% credit to the total Monthly Service Charge every month for qualified residential customers. To participate in the District's Lifeline program, you must be a qualified participant in Southern California Edison's CARE program, Southern California Gas Company's CARE program or the LIFELINE program administered through your local telephone provider. See the California Public Utilities Commission's website (http://www.cpuc.ca.gov/PUC/CEC/d_lowerbill.htm) for more information on how to qualify for these programs.
Verification is deemed complete upon District customer submitting a current Edison bill confirming their participation in the CARE Program. Master metered customers will also receive a credit of 20% of the per dwelling unit Monthly Service Charge for each verified CARE participant served by the master meter account holder.

7. INSTALLATION, DOWNSIZING, AND REMOVAL OF WATER SERVICE CONNECTION

a. Upon approval by the District of an application for water service connection and the receipt of any deposits or fees required to be deposited or paid by these Rules and Regulations, the District will furnish and install service pipe of suitable capacity from its water mains to the curb line of property abutting upon a public street, highway, lane, alley or road along which the District has, or will install, water mains.

b. All customer piping and appurtenances as described in Section (1) below shall be installed by the customer and at the customer's sole cost and expense. Said piping and appurtenances so installed by the customer must conform to the California Plumbing Code; Local Building codes and District specifications.

(1) A typical meter installation is depicted in Figure 1 below. The District is responsible for the proper operation and maintenance of the water meter including the gasket on the customer side of the meter. Piping and appurtenances including any shut-off or customer valve after the gasket and meter mounting hardware on the customer side of the meter are the customer's property and responsibility (see section c. below).

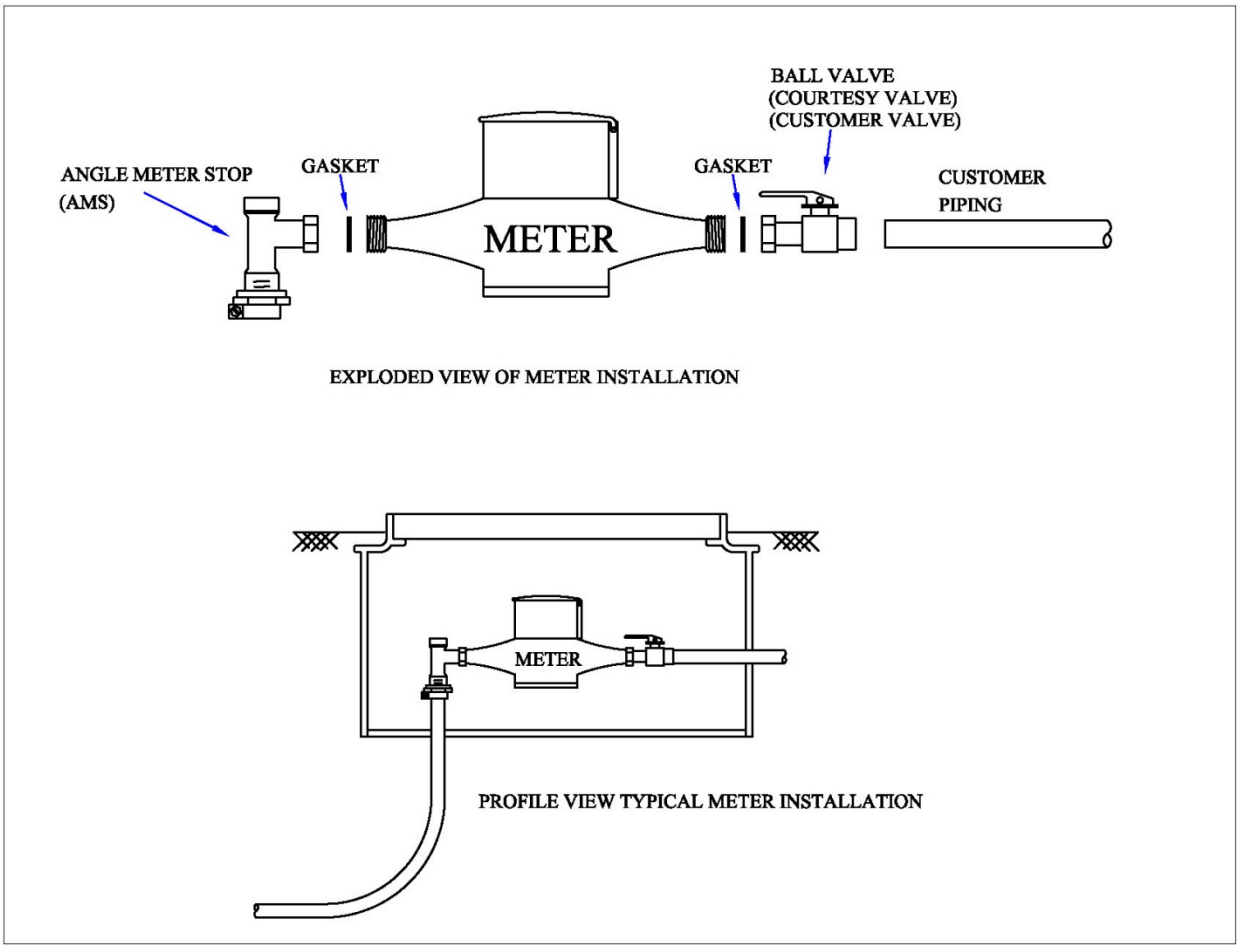

Figure 1

c. If a customer owns more than one property within the District and conditions or water requirements for one property has changed a customer may request for a service connection to be moved. Under such a request the following shall apply:

(1) Provided suitable outlets exist, a service may be moved from one property to another on a cost plus 30% basis for materials and outside services, and cost plus 55% for labor and equipment. Equipment shall be charged at rates as specified in the District's annual fee table in Appendix C. Valves, check valves, and meter shall be installed in the new location and such pipe and fittings as are suitable for re-use shall be used. The District shall be the sole judge of suitability of pipe and fittings for re-use.

(2) A service vacated in section (1) above, may be replaced with a new service of a size mutually satisfactory to District and customer, on a cost plus 30% basis for materials and outside services, and cost plus 55% for labor and equipment. Equipment shall be charged at rates as specified in the District's annual fee table in Appendix C. Such a service will require the customer to pay the appropriate. Capital Cost Recovery Fees for the new meter.

d. Downsizing may be done upon receipt of a completed application by the customer, subject to the following:

(1) A favorable engineering feasibility and water needs analysis performed by the District; and

(2) Payment of deposit for District expenses, based on a determination of costs by the General Manager (see Appendix C).

When downsizing a service, the District will install and connect all devices and appurtenances on the District side of the meter. The customer shall contract with an appropriate vendor to connect the new meter to the existing water service on the customer side of the meter (see section b.(1) above).

No adjustment of the Capital Cost Recovery Fees will be considered for meter downsizing. Any subsequent replacement with the original or larger meter service will be subject to the then prevailing Capital Cost Recovery fee schedule and regulations (see Appendix B for current fees and Appendix D for CCRF methodology).

e. A customer may request the removal of a redundant or unwanted meter, for which approval is subject to the following:

(1) A favorable engineering feasibility and water needs analysis performed by the District; and

(2) Payment for District expenses, based on meter size as specified in the District's annual fee table in Appendix C.

The District reserves the right to remove all service lines and appurtenances to the distribution main at the customer's expense. The cost for such a removal will be done on a cost plus 30% basis for materials and outside services, and cost plus 55% for labor and equipment. Equipment shall be charged at rates as specified in the District's annual fee table in Appendix C. There will be no refund of Capital Cost Recovery Fees in accordance to District Resolution 870 (Appendix D). Deposits will be required as in Rule 9(a).

A meter approved by the District for removal or removed after customer request or failure to pay may be re-installed upon request of a customer, and will be done on a cost plus 30% basis for materials and outside services, and cost plus 55% for labor and equipment. Equipment shall be charged at rates as specified in the District's annual fee table in Appendix C. Capital Cost Recovery Fees based on the size of the meter must be paid in accordance to District Resolution 870 (Appendix D). Deposits will be required as in Rule 9(a).

8. WATER MAIN EXTENSIONS

a. The District may, upon written application, extend its water distribution system inside the District to serve a new customer or group of customers. New customers shall be those who make application for service from such extensions, in accordance with District Rules and Regulations, prior to the time construction work is started on said extension, and who agree to pay minimum charges and regular rates for water service from the date of completion of the extension, or as service is

available to each parcel, as the work progresses. All water main extensions will be subject to a "Facilities Extension Agreement" between the District and the customer(s) applying for the main extension.

Should an extension require construction of water facilities, the District shall decide if the extension will be constructed by District personnel or an District approved contractor. In the event that the District undertakes the extension, the applicant(s) shall deposit with the District, in advance and before construction is started, an amount which shall be the District's estimate of the entire cost of the extension. "Cost of Installation" includes all labor, material, equipment, engineering and miscellaneous items furnished or used in making such extension, and will be done on a cost plus 30% basis for materials and outside services, and cost plus 55% for labor and equipment. Equipment shall be charged at rates as specified in the District's annual fee table in Appendix C. Upon completion of the extension, the actual cost thereof shall be retained by the District and the balance, if any returned to the applicant(s). In the event the amount deposited does not cover the cost of the extension, the applicant(s) shall pay the balance due, upon demand.

b. Upon completion and acceptance of the extension, the applicant(s) shall dedicate the water facilities and appurtenances to the District.

c. In the event that the District requires an extension with a pipe size larger than necessary to serve the property of the applicant(s), the additional cost on account of installing a larger than necessary pipe, shall be borne by the applicant(s). Such costs will be included in the actual costs of said extension, but may be subject to refund as in Section 8(d) below.

d. For a period of ten (10) years, commencing with the date of acceptance of the extension by the District, the District will refund to the applicant a pro rata share of moneys which the District may collect on account of a "Benefited Property Charge" for such extension, as said charge is hereinafter defined. The District shall be under no obligation, however, to take legal action to enforce collection of said "Benefited Property Charges", and does not hereby create or establish any rights of the applicant as a third party beneficiary to any agreement or action by the District.

(i) Upon completion and acceptance of an extension, the actual costs of said extension, exclusive of public fire hydrants and services which are attributable to the applicant(s) as determined by the District, shall be prorated to all parcels, including the applicants, which in the sole opinion of the District, will be, or in the future may be, benefited by water service connections from said extension.

(ii) Applicant shall be given a description of the parcels, which will be subject to the benefited property charge. The costs so pro-rated as to parcels of real property not owned by the applicant, or any of them if there be more than one, as of the date of acceptance of the extension, shall be known as the "Benefited Property Charge". Prior to the service of water to any parcel of real property, for which parcel there has been allocated a Benefited Property Charge, the applicant(s) for water service to said parcel shall pay to the District, said charge, which payment shall be in addition to any other required by these Rules and Regulations on account of water service connections.

(iii) In no event shall the total amount refundable to any applicant(s) exceed the total cost of the extension attributable to the applicant(s) and no refund shall be made after said ten (10) year period, even though the District for its own benefit may still continue to collect all charges allocated to each party benefited.

e. The District shall hold title to all accepted pipe line extensions. The District reserves the right at all times, to add any extension or additional metered customers to an extension, without procuring the consent of any party or parties contributing to the cost of the original or subsequent extension.

f. Where possible, water main extensions and any related facilities shall be installed in streets or roads formally dedicated to public use. In the event that private land must be traversed, a legal easement shall be established and dedicated to the Carpinteria Valley Water District.

g. All extensions of water mains shall be made in accordance with the plans and specifications as approved by the District Manager, who will determine the size of facilities required and will estimate the cost of all work to be done.

h. If pumping is required on any extension, to provide adequate service pressure above 350 feet elevation, (Pumping Level I) and above 650 feet elevation (Pumping Level II) surcharges per 100 cubic feet shall apply These surcharges are described in the District's annual fee table in Appendix C.

i. If pumping plants, storage facilities or any other related facilities are required in order to provide water service, including fire services, such facilities shall be included in the costs of the extension. The District shall determine the number and size of pumping plants, storage facilities or any other related facilities, which shall be constructed as a part of the distribution system extension, at the sole cost of the applicant(s).

j. The applicant(s) shall provide the District, without cost to the District, all necessary reservoir sites, easements and rights-of-way for said storage facilities, pumping plants or related facilities, including rights-of-way for necessary roads, power and communication. In the event that necessary sites, rights-of-way or easements are on property other than that owned by the applicant(s) and the applicant(s) is unable to acquire said sites, rights-of-way or easements, by negotiation, the District may, but shall be under no obligation to, use its power of eminent domain to acquire said sites, rights-of-way or easements, after the applicant(s) has first deposited with the District, the total estimated cost of said acquisition. Any difference between the amount deposited and the actual total cost of acquisition, shall be adjusted by a refund or additional payment, as the case may be.

k. All of the foregoing provisions of this Rule, which are applicable to main extensions, shall also apply to reservoirs, pumping plants, or other related facilities, except that in no event shall the District be obligated to pay any costs on account of installing a reservoir, pumping plant or other related facilities larger than necessary to serve the property of the applicant.

9. CONNECTION FEES

a. The fees for making new service connections, re-installations, or for enlarging service connections already in existence, shall be at District's cost plus overhead of 30% on materials and outside services, and cost plus 55% for labor and equipment. Equipment shall be charged at rates as specified in the District's annual fee table in Appendix C. Deposits in the amounts as shown in the District's annual fee table in Appendix C. will be required based on meter size. If the amount of the deposit is less than the actual costs, the customer will be billed for the balance. If the amount of the deposit is more than the actual costs, the balance will be refunded to the customer. An itemized billing will be given for all installations.

b. Service piping shall be no less than one pipe diameter size larger than the meter size for meters ¾" – 1 ½" minimum service piping shall be 1" size for 3/4" meter, 1 ½" size for 1" meter and 2" size for 1 ½" meters.

c. If the division of a parcel of land or change in land use has resulted in a larger service than that required by Rule Number 12, for the remaining area, the District shall, at the request of the customer and upon payment of all necessary costs and fees, remove the existing service and replace same with an appropriately sized service to satisfy the remaining area. No refund is to be made by the District for the existing connection or meter (See Appendix D).

d. Subject to Rule 7b(1) above, all service connections and meters with appurtenances installed, regardless of size, shall remain the property of the District.

e. In addition to the standard connection fees in Rule 9(a), the District will comply with the requirements of the Regulations of the California Administrative Code, Title 17, known as "Cross Connection" regulations (see Rule 35).

10. CAPITAL COST RECOVERY FEES

a. Rates for the Capital Cost Recovery Fees shall be determined in the annual schedule of rates and charges as adopted by the Board of Directors as attached in Appendix B.

b. The Capital Cost Recovery Fee for new service connections shall be charged based on the size of the new meter required for the property as calculated by the District and shall be charged at the time of issuance of such new meter. New water service connections or changes to existing services shall follow the methodology described in Resolution 870 (see Appendix D) and adhere to the annual Capital Cost Recovery Fee table provided in Appendix B.

c. The Capital Cost Recovery Fee for larger meters which replace an existing active meter shall be equal to the difference between the current Capital Cost Recovery Fee for the new meter required, and the Capital Cost Recovery Fee for the previously installed meter service. Examples for such changes are specified in Resolution 870 (see Appendix D).

d. Separate water service connections for fire sprinklers are required for certain structures and uses within the District. These meters are sized based upon the need for maximum short duration flow capacities rather than on the District's standard meter size requirements for estimated water use for the building, property size or use proposed. New fire service connections or changes to existing services shall follow the methodology described in Resolution 870 (see Appendix D) and adhere to the annual Capital Cost Recovery Fee table provided in Appendix B.

e. Connection Fees for installing new water and fire services and meters will continue to be charged in addition to the Capital Cost Recovery Fee, based on actual costs plus overhead and equipment charges as determined by the District. The District will continue to require a deposit to cover the estimated District costs related to such service installation.

f. All deposits and fees for service installation must be made in full prior to the District's approval of a construction agreement. All Capital Cost Recovery Fees must be paid in full prior to the installation of a meter. The District encourages new customers to work with District staff to properly time the installation of new meters and services. In the event that Capital Cost Recovery Fees are paid without a scheduled date for meter installation (pre-pay) the customer shall be responsible for all Capital Cost Recovery Fees that accrue between the time of initial payment and time of meter installation. The District will not provide final project approval (including but not limited to Certification of Occupancy) until all fees, charges and deposits have been paid in full.

11. WATER RATES AND CHARGES

In applying water rates and charges, account shall be taken of type of service, size of service and surcharge for pumping.

a. **Type of Service**: For rate purposes, water service shall be divided into two types as follows:

(1) Type 1 service shall apply to services supplied for municipal and industrial use. Type 1 service shall be further divided into subtypes as follows:

(i) "Domestic Residential Service A" shall apply to all services supplied exclusively for domestic residential use excluding multi-family (two or more) residential units served by a single District master meter.

(ii) "Domestic Residential Service B" shall apply to all services supplied exclusively for domestic multi-family (two or more) residential use served by a single District master meter.

(iii) "Commercial Service A, Industrial and Public Authority Service" shall apply to services supplied in whole or in part for commercial,

industrial or public authority use with the exception of Commercial Service B and C facilities identified below.

(iv) "Commercial Service B" shall apply to temporary and semi-permanent residential activities including but not limited to adult living facilities, assisted living facilities, bed and breakfast facilities, boarding and rooming houses, dormitories, extended care facilities, foster care facilities, guest ranches, group homes, hostels, hotels, motels, orphanages, residential care facilities, resort hotels, transitional care facilities.

(v) "Commercial Service C" shall apply to all commercial facilities that include individual residential dwelling units as defined by the District in its Rules and Regulations.

(vi) "Private Fire Service" shall apply to any water service entity designated as a closed water distribution system or network with the sole purpose or function of fire suppression.

(vii) "Temporary Meter" service shall apply to services to circuses, bazaars, fairs, temporary restaurants, construction works, or temporary emergency services for residents, etc., of a temporary nature

(2) Type 2 service shall apply to all services qualifying as "Agricultural" services as defined below:

(i) "Agricultural" service is defined as the use of water for agricultural purposes, delivered through a 1 ½" (or larger) meter to irrigate not less than 2 acres for commercial agricultural purposes. Existing ¾", 1", and 1 ½" meter services, serving 2 acres or more of commercial agriculture, shall be considered agricultural services. Use of water in connection with commercial poultry or livestock operations, or any other similar uses shall be considered an agricultural use, if the service meets requirements respecting the size of the meter and the

area served. All services that do not qualify as Agricultural service shall be considered Type 1 service.

(ii) If a service is located on less than 2 acres, a customer may request the District's General Manager to review the location and size of service in order to determine if such service is "Municipal and Industrial" or "Agricultural". If a service is located on less than 2 acres, the District's General Manager may determine it to be "Agricultural" if, excluding the acreage of residential structure(s), hardscape (including driveways) and adjacent landscape, no less than 1/3 of an acre but at least 50% of the remaining parcel acreage is used for agricultural purposes. The General Manager's determination shall be final, unless an appeal by the customer within thirty (30) days of receipt of written notice of such determination is made to the District's Board, in which case the determination of the Board made at a public meeting with notice to the customer shall be final. Any determination by the District, however, may be subject to change based upon Contract #I75R-1802R as referenced in Rule 2 above.

(iii) All Agricultural accounts with one or more residential units that are not independently metered, shall be subject to a monthly residential equivalency charge (REQ) for each residential unit as shown in the District's annual fee table in Appendix A. This charge is the difference between the cost of water of the average monthly use by single-family residential accounts and the cost of the same volume of water at the agricultural rate. The REQ is adjusted every year based on a rolling 5 year average

b. **Size of Service**: (See Rule No. 12).

c. **Monthly Service**: The minimum monthly service charge for Type 1 and Type 2 metered services, regardless of the amount of water used by a customer during any

given month or fraction thereof, shall be in accordance with the schedule of rates and charges as adopted by the Board of Directors as attached in Appendix A.

d. **Water Measurements**: Except as these Rules and Regulations otherwise provide, all water supplied by the District shall be measured by standard water meters, and a hundred cubic feet shall be the standard unit of measurement.

e. **Meter Water Rates**: The rates charged by the District for water furnished through meter service, shall be in accordance with the annual schedule of rates and charges as adopted by the Board of Directors as attached in Appendix A.

f. **Surcharge for Pumping**: Customers receiving water in certain pressure zones may require the District to pump or re-pump water. To provide proper service, the District may install a connection in these pressure zones, and will apply the following surcharge:

Pressure Zone I: Connections served by the Gobernador Reservoir
(See Appendix A for current surcharge)
Pressure Zone II: Connections served by the Shepard Mesa Tank
(See Appendix A for current surcharge)

12. MAXIMUM FLOW

Nothing herein contained shall be construed as, nor shall it constitute a representation by the District that said maximum rate of flow will be available to any customer at any specified time or times.

Maximum flow allowed through meters of various sizes shall be as follows:

¾" meter	30 gallons per minute
1" meter	50 gallons per minute
1 1/2 " meter	100 gallons per minute
2" meter	160 gallons per minute

3" meter	375 gallons per minute
4" meter	700 gallons per minute

Customer shall be responsible for rate of flow through meter and violation of this rule shall be grounds for discontinuance of service.

Acreage and Meter Size for Agricultural:

2 – 3 acres	1 ½" meter
3 – 36 acres	2" meter
36 – 105 acres	3" meter
105 acres – up	4" meter

13. DISCONTINUATION OF SERVICE

a. **Request for Discontinuation**: A customer may at any time request discontinuation of service by written request or by telephone. Said request must be received by the District office at least one (1) business day prior to the date on which discontinuation is desired. Such request for discontinuation may include a request for service removal, in which case the District, upon notice to the record property owner, may remove the installed meter service.

b. **Vacating of Premises**: A customer who vacates a premises for which he has been served water and who fails to request discontinuation in the manner provided in Section (a) of this Rules and Regulations, shall be held responsible for all water consumed on said premises up until the time that the District has actual notice that said customer has vacated said premises.

c. **Continuation of Monthly Service Charge**: Customers and/or property owners with an installed meter service, whether the meter is on or off are required to pay a monthly service charge. If the monthly service charge is not paid according to these Rules and Regulations, the record customer will be notified by mail, with a copy to the address shown on the Santa Barbara County tax rolls if the record customer is different from the record owner. Failure to pay the monthly service charge within 30

days of the date of such notice could result in the removal of the meter. If the meter is removed for non-payment, or at the request of the customer or property owner, payment of a fee for the reinstallation of the meter as well as the applicable Capital Cost Recovery Fees as outlined in Appendix D (see also Rule 10).

d. **Nonpayment of Bills**:

(1) The District may discontinue water service without further notice to any customer who fails or refuses to pay any bill presented within fifteen (15) days after said bill has been presented to him. The sending of any further notice to a customer prior to such discontinuation by the District shall not constitute a waiver of the District's right to discontinue said service for nonpayment within said fifteen (15) day period (see Rule 13(j)).

Customers who are delinquent on their payments may be contacted by the District via telephone, letter or electronic means.

(2) The District may discontinue or refuse to provide service to a customer at any new location who fails or refuses to pay any bill for service rendered at any former location within thirty (30) days after said bill for service at a former location has been presented at the address given by said customer on the application for service at said new location.

Customers who are delinquent on their payments may be contacted by the District via telephone, letter or electronic means.

e. **Unsafe Apparatus or Appliances**: The District shall have the right to refuse or discontinue service of water to a customer if said customer's service apparatus or appliances or any part thereof shall at any time be deemed by the District to be unsafe or unfit for the service of water. The District may also refuse or discontinue the service of water to a customer if the use of said customer's apparatus or

appliances for the service of water is prohibited or forbidden under the authority of any State, City, County or Municipal law, statute or ordinance, now or hereafter in existence, and the customer shall not be entitled to service of water until such time as he or she has put the apparatus or appliances in a condition deemed safe by the District or has complied with all of the same laws, statutes or ordinances, as the case may be.

Each customer shall be responsible for keeping their service apparatus and appliances in a safe and sound condition and in compliance with all applicable laws, statutes and ordinances. There shall be no obligation or duty upon the District to inspect said apparatus and appliances and the action of the District in serving water to a customer does not constitute a representation by the District that the customer's apparatus or appliances are in a safe condition and comply with all of the applicable laws, statutes and ordinances.

The District may also deem conditions that limit access to District meters and appliances to be unsafe and, therefore, be grounds for discontinuance of service. (See Rules 17 and 24.)

f. **Use of Service Apparatus or Appliances Detrimental to Other Customers**: The District may refuse or discontinue the service of water to any customer who has apparatus or appliances, the operation or utilization of which would be detrimental to or would interfere with the serving of water to other customers.

g. **Violation of Rules and Regulations**: Violation of any of the Rules and Regulations of Carpinteria Valley Water District shall constitute grounds for the District to discontinue service of water to said customer.

h. **Notice**: Except as otherwise herein provided, the District will not discontinue service to any customer without first giving said customer written notice of said discontinuation, including the reasons therefore and a reasonable time, as determined by the District, within which to remedy, cure or contest the facts upon which the discontinuation is based.

i. **Door Tag Notice**:

(1) If an account is past due the District will not discontinue service without first hanging a door-tag at the service property. The door-tag will state the shut-off date and the amount that must be paid to avoid shut off. The District will charge for processing this door tag in the amount as shown in the District's annual fee table in Appendix C. Said fee will be assessed on a customer's account as of the penalty date and time shown on the Disconnect Notice, regardless if payment is received prior to the door-tag being delivered to the customer's property.

(2) In the event that the District receives a Request for Discontinuance of Service and has not yet received a Request for Service the District will hang a door-tag giving the new occupant 24-hours to contact the District before service is discontinued.

Notwithstanding Rule 13(i) above, the District may, without notice, discontinue the service of water to any customer in any case where the District determines, in its sole discretion, that continuation of service would result in a waste of water or would constitute or create an immediate danger or hazard to either the customer or the District, or both.

14. RECONNECTION CHARGE

In any case where the District has discontinued the service of water to a customer for nonpayment of bills or for other violation of these Rules and Regulations, said customer shall not receive such service until and unless, the customer satisfies all requirements of these Rules and Regulations, pays to the District a fee to cover the administrative costs for such reconnection (see Appendix C) and has brought their account to a zero balance. The customer will be required to pay the reconnection charge and bring their balance to zero if the past due amount is not paid by 9:00 a.m. on the shut off date.

15. DISPUTED BILLS AND MONETARY PENALTIES

a) In the event that a customer disputes or denies the accuracy of any bill, or requests reduction in payment due to a leak or some other similar problem on the customer side of the meter, the following procedure shall be followed:

(1) The customer shall deposit with the District an amount as determined by the District based on the normal average amount of water metered for the period in question (and associated meter charges) within the time required by Rule Number 13(d) hereof and shall accompany said deposit with a written statement that said customer believes the bill to be in error or in excess of normal usage due to a leak or some other similar misfortune and briefly stating the reasons for believing said bill is in error or that due to circumstance beyond the customer's control some reduction should be provided.

(2) The District will, upon receipt of said deposit and statement, give written notice to said customer that his or her bill will be considered by the Board of Directors of the District at the next meeting of the Board of Directors which next meeting shall not be sooner than 7 days after the giving of said statement by the District to said customer.

(3) At said meeting of said Board, the customer may appear in person or by his representative, and present whatever evidence he or she may have concerning the alleged error in his or her bill or basis for requested relief and the Board shall give its decision not later than ten (10) days after the conclusion of said meeting.

Failure of a customer to give notice to the District of an error in or request for reduction of their bill within ten (10) days of receiving said bill, shall constitute a waiver of any error or request for reduction by said customer and the bill shall be deemed correct and final as presented.

(4) A request for reduction in a bill due to a leak or some other similar problem occurring on the customer side of the meter, subject to fulfillment of all of the requirements of this rule, may, after Board of Directors review, and within the Board of Director's sole discretion, be favorably granted by the Board of Directors as follows:

i) A credit of 25% of the charge for the amount of water metered in excess of the 4-year average amount of water metered for the month in question as determined by the District may be applied to the customer's account after a Water Audit is completed by the District.

ii) A three-month period of time may be allowed for payment of the total amount of the bill, less the 25% adjustment.

(5) The Manager, at the Manager's discretion, may provide a credit of 25% to the customer's account, if calculated to be less than $150, without forwarding the request for reduction to the Board of Directors, and after a Water Savings Survey is completed by the District.

b) In the event that a customer of record wishes to dispute monetary penalties the following procedure shall be followed:

(1) The customer of record shall pay all monetary penalties and water-service charges and keep their account in good financial standing;

(2) The customer of record shall provide written documentation to the District detailing their dispute and providing a reason for the monetary penalty to be waived;

(3) The General Manager or Assistant General Manager District will review the circumstances associated with the monetary penalty and make a determination of whether the waiver is granted or not and notify the customer of record;

(4) In the event that a waiver is not granted by the General Manager or Assistant at General Manager, the customer of record may in writing appeal further to the Board of Directors.

16. RECORDS REPRODUCTION FEE

At the Manager's discretion, a per-page charge must be paid upon receipt of 10 or more copies of letter and/or legal size records made in-house as requested (see Appendix C). For requests in excess of 25 photocopies the District reserves the right to require, at the discretion of the Business Manager, that an outside service provider perform the requested coping at the expense of the person making the request.

Reproduction of blueprints, maps and similar documents will be provided by the District as follows: Fees for blueprints, maps, etc. must be paid equal to the fee billed to the District for the service provided by an outside service provider upon receipt of the reproductions by the person requesting the copies. Fees for maps and similar products that the District can reproduce will be charged based on reproduction costs (see Appendix C).

The District may also charge for the duplication of video recordings of meetings. These charges will reflect the cost of video / digital media and any specialized computer software that may be necessary for duplication (see Appendix C).

Requests for digital records and data can usually be met without charge. At the Manager's discretion, data manipulation and conversion requiring an hour or more of staff time may be assessed at a rate of cost plus 55% for labor and equipment. Individuals or organizations requesting digital record and data are required to pay a deposit toward estimated costs. Any unused deposit money will be credited back to the applicant.

17. METERS AND APPLIANCES

a. **Meters and Appliances**: All meters and appliances installed by the District upon the customer's property for the purpose of delivering water to the customer shall be the property of the District, and may be repaired, replaced or removed by the District at any time.

Meters and appliances must be accessible to the District or its duly authorized agents at all times. Barriers to access – including but not limited to fences, gates, locks, vehicles, equipment, dogs or other animals or refuse will be reported to the customer and required to be corrected immediately. Should a condition limiting access remain, the District reserves the right to discontinue service after giving written notice to the customer via certified mail with return receipt. Service may be discontinued seven days after customer receipt of written notice and remain discontinued until such time as the condition limiting access has been modified or removed and access is deemed safe and acceptable by the District.

Except as herein otherwise provided, no rent or other charge shall be made by the customer against the District nor by the District against the customer for placing or maintaining said meters and appliances upon the customer's premises. The customer shall exercise reasonable care to prevent the District's meters and equipment from being injured or destroyed. In the event customer identifies any defect in the meter, customer shall notify the District thereof immediately.

The District shall have the right to remove any and all of its facilities installed on customer's premises at the termination of the service.

b. **Meter Installation**: All meters shall be installed by the District. Meters, wherever practicable, shall be placed in suitable meter boxes located in the sidewalk adjacent to the curb line. When it is not practicable to place meters in the sidewalk, the meters shall be installed in some convenient place approved by the District upon the customer's premises, and in a location that is at all times accessible for inspection, reading and testing.

c. **Meter Tampering**: The customer shall not make or maintain any by-pass or other connection between the meter and the District's main. The customer shall not tamper with the meter or interfere with the operation of the meter in any manner or for any purpose. Penalties for tampering with a meter or bypassing a meter may include, but are not limited to, tampering fines and penalties, fees for unmeasured water consumption, meter and appliance replacement costs and labor, criminal prosecution and disconnection of District water service (see Appendix C).

d. **Number of Customers per Water Service Connection**: In all cases in which water is to be served to a building occupied by multiple customers, independent services to the curb line must be provided for each such independent customer (see Appendix E). For example, a development is proposed to include four residential condominiums and three commercial stores. The proposed development would require seven appropriately-sized service connections in addition to any fire service connections deemed necessary by the responsible agency.

Individual parcels with multiple residential dwelling units shall be served with a separate meter for each residential dwelling unit except on agricultural parcels. If a second residential dwelling unit is proposed on a parcel zoned for single-family residences, the new residential dwelling unit must be serviced by a separate meter.

18. METER TESTS

Any customer may request the District to test his or her water meter. A deposit to cover the reasonable cost of the test will be required of the customer, in accordance with the District's annual fee table in Appendix C.

The amount so deposited will be returned to the customer if the meter is found, upon testing, to register more than one and one-half (1.5%) percent fast under conditions of normal operation; otherwise the deposit will be retained by the District.

A customer shall have the right to require the District to conduct the test in his or her presence, or if he or she so desires, in the presence of a representative appointed by him or her. The customer shall make this request in writing at the time the deposit is submitted. The customer will be notified in advance of the time and place the test will be made.

A report giving the name of the customer requesting a test, the date of the request, the location of the premises where the meter has been installed, the type, make, size and the result of the test, will be supplied to the customer within a reasonable time after completion of the test.

All new meters have been calibrated by the manufacturer , and no meter will be placed in service nor allowed to remain in service, which has an error in registration in excess of one and one-half (1.5%) percent, under conditions of normal operation.

19. ADJUSTMENT OF BILLS FOR METER ERROR

If as a result of the test pursuant to Rule Number 18 a meter is found to be more than one and one-half (1.5%) percent fast in registration, the District shall refund to the customer the overcharge based on a corrected meter reading for the period in which it can be shown the

meter was in error. If the period during which the meter was in error cannot be established to the satisfaction of the District, the period for which the refund shall be made shall be the period during which the meter was in use, or the period of three months immediately preceding the test, whichever is the shorter period.

If as a result of said meter test, a meter used for residential or domestic service is found to register less than seventy-five (75%) percent of actual consumption, the District shall present the customer with a bill for the amount of water actually consumed, but not covered by any bills previously presented to the customer for a period not to exceed three months immediately preceding the test.

If as a result of said test said domestic or residential meter is found not registering, the District shall present the customer with a bill equal in amount to an average bill of a like customer for the period during which it can be shown that although water was being used by the customer, the meter did not register, except that in no event shall said period be deemed to be longer than three months immediately preceding the test.

If as a result of a test on a meter used for commercial, public authority, industrial or agricultural purposes, said meter is found to register less than ninety-eight and one-half (98.5%) percent of the actual consumption, the District shall present the customer with a bill for the amount of water used but not covered by any previous bills for the period in which the meter was in error. In the event that said period of error cannot be established to the satisfaction of the District, it shall be assumed that said period was the three months period immediately preceding the test and the corrected bill shall be presented upon that basis.

20. NOTICES

Any notices given under these Rules and Regulations shall be given as follows:

a. **From the District to the Customer**: By written notice delivered personally to the customer or placed in the United States Mail, postage prepaid, and addressed to the address given by the customer to the District on his or her application for service, or at such other address as the customer may, in writing, direct the District to send notices.

b. **From the Customer to the District**: By written notice delivered to the District office, either by hand or by placing same in the United States Mail, postage prepaid, and addressed to the District office.

21. TEMPORARY SERVICE

Temporary service, as herein considered, refers to services to circuses, bazaars, fairs, temporary restaurants, construction works, or temporary emergency services for residents, etc., of a temporary nature.

If in the District's opinion the furnishing of such service will not create an undue hardship upon the District or its customers, the District will furnish temporary water service under the following conditions:

a. The applicant for such temporary service shall be required to pay to the District an advance, or otherwise as the District may elect, the total cost of installing and removing any facilities necessary in connection with furnishing of such service by the District.

b. Each applicant for temporary service shall be required to deposit with the District a sum of money equal to the estimated amount of the District's bill for such service, or to otherwise secure, in a manner satisfactory to the District, the payment of any bills which may accrue by reason of such service so furnished or supplied.

c. Temporary Meter Connection Charge: A Monthly Service Charge (MSC) equivalent to that of a 3" meter MSC shall be required for all temporary meters (see Appendix A).

d. Method of Billing: Quantity of water charged for at commercial rates will be equivalent to the use as recorded on a temporary meter. Water will be rendered following application. No load estimation will be permitted without District authorization.

e. Use From Miscellaneous Outlets: The user shall be required to furnish and install fittings on the District's outlet (exclusive of fire hydrants) together with an auxiliary control Gate Valve which must be in good working order, without leakage, and to be used for control of water deliveries. When water is taken from a miscellaneous outlet (end drain), the user will be charged a deposit amount equal to the Monthly Service Charge of a 3" meter (see Appendix A), a portion of which is non-refundable as a service charge in connection with the use of the outlet. The non-refundable charge is provided in the District's annual fee table in Appendix C. Water used will be billed at the commercial rate as specified in Appendix H.

f. Use From Fire Hydrants: If water is to be taken from a fire hydrant, the user will be charged a deposit amount equal to the Monthly Service Charge of a 3" meter (see Appendix A), a portion of which is non-refundable as a service charge in connection with the use of the District's special fire hydrant take-off assembly. The non-refundable charge is provided in the District's annual fee table in Appendix C. User must obtain a permit from the Carpinteria – Summerland Fire Protection District prior to making an application with the District for use of a fire hydrant. Water used will be billed at the commercial rate as specified in Appendix H.

g. There will be a charge levied by the District each time the meter with or without fire hydrant take-off assembly is moved to a new location. This charge is provided in the District's annual fee table in Appendix C.

h. Carpinteria Sanitary District (CSD) Hydrant Meter for On-Going Use: The Carpinteria Sanitary District uses a temporary hydrant meter for the purpose of filling its sewer hydro-cleaning equipment at remote locations within its service area on a routine basis. CSD equipment is made available to CVWD periodically on an as-needed mutual aid basis. No Monthly Service Charges (MSC), for the temporary hydrant meter, or deposit requirements will be assessed. Any and all water use shall be billed in accordance to the rates presented in Appendix A. There will be no charge for temporary hydrant meter relocation so long as CVWD has access to read the meter on a monthly basis, day to be specified by CVWD. The proposed addition would go into effect on the May 28, 2006 billing cycle.

i. In some circumstances, the District may require the installation of a suitable backflow prevention device for temporary meters. (See Rule 35 below.)

j. Nothing in these Rules and Regulations shall be construed as limiting or in any way affecting the right of the District to collect from the customer any other or additional sum of money which may become due and payable to the District from the customer by reason of the temporary service furnished or to be furnished hereunder.

22. CONSUMPTION OF WATER AFTER DISCONNECTION

If after a service connection has been disconnected by the District, the occupant of the premises continues to obtain water through said service connection without District approval pursuant to these Rules and Regulations, water shall not again be supplied to the premises and/or the person using such water, until payment has been made for all water consumed during the period and all other payments for fines and penalties imposed pursuant to these Rules and Regulations have been received by the District, including a reconnection fee and such other fines and penalties, as set forth in the District's annual fee table in Appendix C. If any damage is done to the meter, lock or other equipment, the occupant may also be charged for replacement costs including materials and labor. The water user may also be subject to prosecution for theft of District water.

23. RESALE OF WATER

A customer shall not resell or transfer any of the water received from the District to any other customer or person, or on other premises than specified in their application for service, without the prior written consent of the District. Any such District consent shall be subject to the requirement that the customer defend, indemnify and hold the District harmless against any claims arising from or related to such resale.

24. DISTRICT'S RIGHT OF INGRESS TO, AND EGRESS FROM CUSTOMER'S PREMISES

The District or its duly authorized agents, shall at all times have the right of ingress to and egress from the customer's premises at all reasonable hours or during emergency

situations for any purpose reasonably connected with the furnishing of District water and the exercise of any and all rights given the District by law, or these Rules and Regulations.

Meters and appliances must be accessible to the District or its duly authorized agents at all times. Barriers to access – including but not limited to fences, gates, locks, vehicles, equipment, dogs or other animals or refuse will be reported to the customer and required to be corrected immediately. Should a condition limiting access remain, the District reserves the right to discontinue service after giving written notice to the customer via certified mail with return receipt. Service may be discontinued seven days after customer receipt of written notice and remain discontinued until such time as the condition limiting access has been modified or removed and access is deemed safe and acceptable by the District.

The District shall have the right to remove any and all of the District's property and equipment installed on the customer's premises at the termination of service.

25. CUSTOMER RESPONSIBLE FOR EQUIPMENT FOR RECEIVING WATER

The customer shall, at his or her own risk and expense, furnish, install and keep in good and safe condition, all apparatus and appliances which may be required for receiving, controlling, applying and utilizing District water. Such appliances may include but are not limited to: water lines; pressure regulators; water heaters; booster pumps and storage tanks. The District shall not be responsible for any loss or damage caused by the improper installation of such apparatus and appliances, negligence, want of proper care, or wrongful act of the customer, or any of his or her agents, employees or licensees, in installing, maintaining, using or operating any such apparatus or appliances. The customer shall be responsible for regulating pressure on said appliances.

In the event that the District must temporarily discontinue water service, the District shall make reasonable effort to inform customers of such interruptions prior to service discontinuance. The District shall not be responsible for customers' failure to receive or understand this information, nor will the District be responsible for damages caused to any equipment that requires continued water delivery.

26. SERVICE CONNECTIONS MADE BY DISTRICT EMPLOYEES

Only duly authorized employees of the District are allowed to connect to the customer's service or disconnect the same from the District's water mains.

27. DAMAGE TO DISTRICT PROPERTY

Any damage occurring to a meter or other appliances or pipes owned by the District caused by an action or failure to act by any customer, or any agent, employee, contractor, tenant or guest thereof, or arising or resulting from any activity, device or occurrence on customer's premises, shall be paid for by the customer on presentation of a bill therefore.

28. COMPENSATION TO DISTRICT EMPLOYEES

All inspectors, agents and employees of the District are strictly forbidden to demand or accept any personal compensation for services rendered to a customer.

29. WRONGFUL USE OR WASTE OF WATER

No customer shall provide water to any person, company or corporation other than the occupant or occupants of the premises of said customer, nor shall any customer knowingly permit leaks or waste of water.

If any customer willfully or negligently wastes water, the water may be shut off and the connection sealed by the District, and the water shall not be turned on again until a reconnection fee is paid by said customer to the District, in addition to accrued monthly service charges and fees for metered water use. The reconnection fee is provided in the District's annual fee table in Appendix C.

30. NON-OBSTRUCTION OF DISTRICT FACILITIES, WATER METERS, FIRE HYDRANTS AND OTHER APPURTENANCES

No person or persons shall block, hinder or impede access to or place upon, or about, water meter boxes, fire hydrants or other facilities (buildings, reservoirs, air vacuum

station, end drain, etc.) of the District, any object, material, debris, or structure of any kind that shall prevent free access to the same at all times. In the event that the District must remove any kind of impeding object, the District reserves the right to levy any and all costs associated with removing the obstruction onto the water bill of the customer or owner of the obstruction. These costs may include – but are not limited to - towing services, employee costs, equipment rental, tree removal, legal services and the like.

31. USE OF WATER DURING FIRE

The District may require customers to shut off all agricultural or other regular flow of water in the event of a fire in said customer's section of the District. All customers in the District may be required to shut off their water in the event of a fire in the business area of the District.

32. PRIVATE FIRE SPRINKLER OUTLETS

Monthly stand-by charges are established for private fire sprinkler outlets as set forth in the annual schedule of rates and charges as adopted by the Board of Directors as attached in Appendix A.

The applicant shall be responsible for the installation, repair and maintenance of said private fire sprinkler outlets and shall pay for any connection charge pertaining to said application.

Except as hereinafter provided, said private fire sprinkler outlet shall not be used for any purposes other than fire purposes and the use of said line for any other purpose shall constitute grounds for the discontinuance of said service by District.

33. PUBLIC FIRE HYDRANTS

The District may enter into contracts for the supplying of water for fire protection use to any other district, public agency or municipality located within the District, which district, public agency or municipality, has the power to levy or cause to be levied, taxes on property within its boundaries.

Said contract shall, among other things, provide that the district, municipality or agency desiring water for such purposes, shall install and pay for the entire fire protection system and shall be responsible for the maintenance and repair of said system.

No water may be used from said fire protection system for other than fire purposes without regular application having been made to the District and the District having approved said application. Said application for use other than fire use, if granted by the District, shall be upon such terms and conditions as to the use of water and the charge therefore as the District may deem proper.

34. SERVICE CALLS

Service calls made by the employees or representatives of the District during the regular office hours of the District shall be made with no charge to the customer except where it is necessary to make temporary repairs to the customer's installation, in order to prevent a break in the service to the customer.

35. CROSS CONNECTIONS

All customer water installations served with water by the District shall comply with the provisions of the Regulations of the State of California, Department of Public Health, Title 17, concerning cross-connections. The District has the responsibility of preventing water from unapproved sources, or any other substance, from entering the public water supply system. The District, after review of the conditions present or future, shall require an approved method of protecting the public water system by requiring the customer or customers to install at the customer's cost, or to reimburse the District for costs incurred by the District installing an approved device. The principle that the degree of protection shall be commensurate with the degree of hazard, will be applied by the District in determining the type of device, or method of protection.

All customers with said devices shall perform tests annually, with written confirmation of proper operation submitted to the District. Failure to test or repair defective devices may

result in termination of water service, fines and reconnection charges, as specified in Appendix C.

36. INCLUSION OF UNPAID CHARGES AS TAX LIENS

In addition to any other method for collection herein provided, the amount of any delinquent and unpaid charges for water and other services provided, including for monthly service charges, water rates and any damage to District property, may be collected as follows:

a. Following 30 day notice to the property owner, they may be added to and become a part of the annual taxes next levied upon the property upon which the water for which charges are unpaid was used and upon the property subject to the charges and shall constitute a lien on that property as of the same time and in the same manner as does the tax lien securing such annual taxes.

b. Following 30-day notice the amount of any unpaid charges may, at the discretion of the District, be secured by filing for record in the office of the county recorder a certificate specifying the amount of such charges and the name and address of the person liable therefore, which together with interest, penalty and any processing fees and charges (see Appendix C) shall constitute a lien upon all real property in the county owned or acquired by that person.

37. PRIVACY OF UTILITY ACCOUNT INFORMATION

a. Carpinteria Valley Water District customers supply personal information as a requirement of receiving water service. Government Code section 6254.16 specifically limits who has access to personal information gathered for utility billing purposes and under what circumstances that information may be released. Customer information is strictly confidential and may not be disclosed or accessed for purpose other than provision of, and billing for, utilities unless pursuant to one of the listed exceptions. For purposes of this Rule, “Utility Customer Information” is hereby defined as including, but not limited to, the name of the utility customer, credit history, utility usage data, home address, telephone number, social security number, and driver’s license number.

b. Exceptions: Disclosure of the name of a utility customer, the home address of a utility customer, and utility usage data only may be disclosed as follows:

(i) To an agent or authorized family member of the person to whom the information pertains, upon the written designation or authorization of such person, signed by the District customer.

(ii) To an officer or employee of the District or another governmental agency when necessary for the performance of his or her official duties.

(iii) To a consultant, under contract with the District, when necessary for the performance of services under said contract; provided, that the Department head administering said contract approves such disclosure.

(iv) Upon a valid court order.

(v) Upon the request of an employee of the Santa Barbara County Sherriff's Department or City of Carpinteria or County of Santa Barbara Code Enforcement Department relative to an ongoing criminal or code enforcement investigation.

(vi) Upon determination by the District that the District customer who is the subject of the request has used District services in a manner inconsistent with the District's rules and regulations.

(vii) Upon determination by the District that the District customer who is the subject of the request is an elected or appointed official of the District with authority to determine the District's utility usage policies, provided that the home address of an appointed official shall not be disclosed without his or her consent.

(viii) Upon determination by the District that the public interest in disclosure of the information clearly outweighs the public interest in nondisclosure. Reliance on this exception requires the express approval of the District's General Counsel. Requests for approval from the District's General Counsel shall be

submitted in writing. The General Manager shall receive a copy of all requests and responses.

c. Utility Customer Information Not Covered by Exceptions: Disclosure of additional Utility Customer Information (i.e., including but not limited to, credit history, telephone number, social security number, and driver's license number) will only occur pursuant to a valid court order .

Appendix A
Water Rates and Charges

TABLE I

2016-17

Water Rates (unit cost)

	Basic UNIT	Pressure Zone I UNIT	Pressure Zone II UNIT
Residential, Commercial, Industrial & Public Authority:			
BASE[1]	$3.63	$3.89	$4.07
PEAK	$4.75	$5.01	$5.19
Agricultural / Irrigation:			
TIER 1[2]	$1.91	$2.17	$2.35
TIER 2	$2.50	$2.76	$2.94
Residential Equivalency Fee:	$21.04	per residence per month	

1 unit = 100 cubic feet (HCF) or 748 gallons
Pressure Zone I = Connections served by Gobernador Reservoir
Pressure Zone II = Connections served by Shepard Mesa Tank

TABLE II

Monthly Basic and State Water Project Charges

(Master-meter Residential Accounts see note 3 below)

Meter Size:	***2015-16***			
	Basic	SWP[3]	Drought[4]	Total
5/8"	$9.83	$30.00	$3.00	$42.83
3/4"	$9.83	$30.00	$3.00	$42.83
1"	$16.38	$50.00	$5.00	$71.38
11/2"	$32.75	$100.00	$10.00	$142.75
2"	$52.40	$160.00	$16.00	$228.40
3"	$104.80	$320.00	$32.00	$456.80
4"	$163.75	$500.00	$50.00	$713.75
6"	$327.50	$1,000.00	$100.00	$1,427.50

TABLE III

Monthly Capital Improvement Program (CIP) Charge and Drought Surcharge[4]

CIP			Drought Surcharge		
2015-16			***2015-16***		
Rate:	$2.75	per HCF	Rate:	$0.70	per HCF
Minimum	$16.50	6 HCF	Minimum	$4.20	6 HCF
Maximum	$275.00	100 HCF	Maximum	$70.00	100 HCF
Agriculture	$30.25	per res.		$7.70	per res.

The CIP rate and Drought Surcharge are multiplied by the 5-year monthly average water consumption by account. The MINIMUM monthly charge is 6 HCF per dwelling unit or account. The MAXIMUM monthly charge is 100 HCF per dwelling unit or account.

TABLE IV

Monthly Service Charges - Fire Accounts

Service Size:	***2015-16***			
	Basic	SWP[3]	Drought[4]	Total
2"	$6.55	$20.00	$2.00	$28.55
3"	$14.74	$45.00	$4.50	$64.24
4"	$26.20	$80.00	$8.00	$114.20
6"	$58.95	$180.00	$18.00	$256.95
8"	$104.80	$320.00	$32.00	$456.80
10"	$163.75	$500.00	$50.00	$713.75

[1] BASE = 5 year Dec. to Mar. water consumption by account / dwelling unit; 6 HCF minimum

PEAK = all consumption in excess of BASE

[2] Tier 1 = 100% of 5-year average monthly consumption or pre-defined water need based on land use activity.

Tier 2 = all consumption in excess of Tier 1

[3] SWP = State Water Project // All master-metered accounts will pay a Dwelling Equivalency Fee (DEQ) equalizing the per dwelling unit SWP and Drought-related service charges to the level of a 3/4" meter

[4] The Drought Surcharges are temporary service charges established to pay for additional District expenses related to the ongoing drought emergency conditions.

Appendix B
Capital Cost Recovery Fees

EFFECTIVE JULY 1, 2016

WATER SERVICE
CAPITAL COST RECOVERY FEES 2016-17

Meter Size					
5/8 inch	**3/4 inch**	**1 inch**	**1 1/2 inch**	**2 inch**	**3 inch**
$12,001	$13,487	$19,669	$35,186	$53,818	$103,454

FIRE SERVICE
CAPITAL COST RECOVERY FEES 2016-17

Meter Size					
2 inch	**3 inch**	**4 inch**	**6 inch**	**8 inch**	**10 inch**
$7,435	$14,844	$24,885	$54,004	$96,915	$158,971

Appendix C
Miscellaneous Service Fees and Charges

Electronic Payment Fee		T.B.D.	Rule 5
Returned Check Fee		$25.00	Rule 5
Meter Downsizing Deposit			Rule 7(e)
	Determined by the General Manager at a cost plus 30% basis for materials and outside services and cost plus 55% for labor and equipment.		
Pumping Surcharge			Rule 8(g)
Pressure Zone I	connections served by Gobernador Reservoir	$0.26 per 100 cubic feet	
Pressure Zone II	connections served by Shepard Mesa Tank	$0.44 per 100 cubic feet	
Meter Installation / Removal Deposits			Rules 7(f) / 9(a)
	Meter Size	Deposit	
	3/4"	$9,000.00	
	1"	$12,000.00	
	1 1/2"	$14,000.00	
	2"	$15,000.00	
	greater than 2"	As determined by Manager	
Fire Sprinkler Outlet Deposits			Rule 9(a)
	Outlet Size	Deposit	
	4"	$19,000.00	
	6"	$25,000.00	
	8"	$30,000.00	
	greater than 8"	As determined by Manager	
	fire hydrant	$25,000.00	
Residential Equivalency Fee (REQ)		$24.66 per month	Rule 11(a)
Door Tag Fee		$27.00	Rule 13(d) / 13(i)
Reconnection Administration Fee		$37.00	Rules 14 / 22 / 29
Records Reproduction Fee		$0.50 per page $5.00 per map page $5.00 per video / dvd	Rule 16
Meter Tests Deposit			Rule 18
	Meter Size	Deposit	
	1" or less	$295.00	
	Over 1"	$425.00	
Temporary Service Connection Fee		$75.00	Rule 21(e)
Temporary Service Relocation Fee		$35.00 per move	Rule 21(g)
Temporary Service Deposit		As determined by Manager	Rule 21(b)
Tampering Fee		$500.00	Rules 17(c) / 22
Lien Recording Fee **Lien Release Fee**		$15.00 $25.00	Rule 36(a)

Equipment Charges			Rules 7/ 8 / 9
Back-hoe	$ 48.00	per hour	
Compressor	$ 37.50	per hour	
Crew truck	$ 64.00	per hour	
Concrete saw	$ 53.50	per day	
Dump truck	$ 48.00	per hour	
Generator	$ 69.50	per day	
Pick-up truck	$ 21.50	per hour	
Skid-steer	$ 32.00	per hour	
Tapping tool	$200.00	First tap + tool	
	$100.00	each additional tap	
Traffic control devices	$150.00	per day	
Trash pump	$ 160.50	per day	
Whacker / compactor	$ 107.00	per day	
Vacuum truck / trailer	$ 64.00	per hour	

Equipment charges based on Cal Trans / contractor rates.

Appendix D

RESOLUTION NUMBER 1010
RESOLUTION OF THE BOARD OF DIRECTORS OF
CARPINTERIA VALLEY WATER DISTRICT
ADOPTING AND ESTABLISHING A METHODOLOGY FOR CALCULATION OF THE CAPITAL COST RECOVERY FEE

WHEREAS, District Ordinance No. 92-1 establishes and requires payment of the Capital Cost Recovery Fee for all new and expanded service connections to the District's system; and

WHEREAS, the purpose of this fee is to reimburse the District for capital cost for facilities in existence at the time the charge is imposed and to finance facilities to be constructed in the future within the District's existing service area which are of proportional benefit to the persons or property being charged; and

WHEREAS, Ordinance No. 92-1 provides that the amount or rate of such Capital Cost Recovery Fee shall be set by the Board by resolution; and

WHEREAS, the District has studied the impacts of new and enlarged service connections on the District's existing services and facilities along with an analysis of new, improved or expanded public facilities and improvements required to maintain service for new or enlarged service connections and prepared and presented data concerning the appropriate rates and methodology for calculating the Capital Cost Recovery Fee, including the following studies:

1. "Proposed Capital Cost Recovery Fee; Date Indicating Estimated Cost Required to Provide Service For Which a Fee Will be Levied and the Revenue Sources Anticipated to Provide Service" dated July 3, 1997 ("Study 1").

2. "Fire Meter Equivalents", dated May 13, 2004 ("Study 2"), which sets the relationship between new and enlarged connections and the estimated cost and value of District facilities and the relationship between water service charges and fire service charges.

3. "Capital Cost Recovery Fees", dated August 12, 2010 ("Study 3"), which describes the updated valuation of District assets; and

WHEREAS, Studies 1, 2 and 3 were available for public inspection and review ten days prior to this public hearing and notice was given in compliance with Government Code Section 66016(a); and

WHEREAS, a public hearing, noticed pursuant to Government Code Section 66016, was held at a regularly scheduled meeting of the Board; and

WHEREAS, the Board finds that the Capital Cost Recovery Fee based on rates pursuant to this Resolution shall be used to reimburse the District for construction of the public facilities and improvements described or identified in Exhibit A, attached to Studies 1 and 3, as well as the principal and interest debt service cost borne by the District to pay for the District's share of the construction of the Coastal branch of the State Water Project; and

WHEREAS, after considering Studies 1, 2 and 3, the analysis as referenced hereinabove, and the testimony received at the public hearing, the Board approves said studies, and incorporates Studies 1, 2 and 3 herein, and further finds that the cost estimates set forth in Studies 1, 2 and 3 are reasonable estimates of the costs to the District providing for new and enlarged service connections as calculated by the method applied in Studies 1, 2 and 3, and the fees expected to be generated by the Capital Cost Recovery Fee will not exceed the cost of providing such facilities, which include the District's past cost to purchase and construct facilities, and do not exceed the proportional benefit derived by the persons or property upon which the Capital Cost Recovery Fee is imposed.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Carpinteria Valley Water District as follows:

1. The following service charge components and debt obligations shall be included in the calculation of the Annual Capital Cost Recovery Fee schedule:

    a. Accumulated annual Capital Expenditure costs borne by the basic monthly service charge component. This monthly charge component is imposed based on meter size.

    b. Accumulated annual debt obligations for the State Water Project (SWP) infrastructure, and borne by the SWP monthly service charge component. Participation in the SWP was approved by District customers and citizens on June 4, 1991 and incorporated into the Capital Cost Recovery Fee by the District Board on July 16, 1997, in Resolution No. 687. This monthly charge component is imposed based on meter size. These charges also include Meter Equivalency Fees (MEQ) established by Resolution No. 806 approved by the District Board on July 21, 2004 and superseded by Dwelling Equivalency Charges (DEQ) established by Resolution No. 845 approved by the District Board on May 23, 2007. The MEQ and DEQ fees were imposed on “Domestic Residential Service B” accounts (Master-meter accounts) to more equitably distribute the SWP debt to all District customers or accounts.

    c. Accumulated annual debt obligations associated with the Capital Improvement Program (CIP), and borne by the CIP monthly service charge component – including capital payments associated with the Cater Water Treatment facility in the City of Santa Barbara. This fee was approved by the District Board on September 20, 2000, in Resolution No. 736 and incorporated into the Capital Cost Recovery Fee. This monthly charge component is imposed based on the number of individual dwelling units in “Domestic Residential Service B” and “Commercial Service C” accounts and the number of sleeping facilities in “Commercial Service B” accounts served by a single meter. The average monthly charge for single-family residences shall be used as the basis for the Capital Cost Recovery Fee paid for new accounts.

        (i) Exception: The Capital Cost Recovery Fee for private fire service accounts shall not include water quality improvement debt associated with the CIP.

    d. Other annualized debt specified and approved by the District Board and reviewed and approved in accordance with law. Any new or potential fee

incorporated into the Capital Cost Recovery Fee shall adhere to the basic methodology outlined within this document.

2. The Capital Cost Recovery Fee shall be evaluated at the beginning of the fiscal year to determine if the amount of the Capital Cost Recovery Fee should be adjusted.

3. The rates for the portion of the Capital Cost Recovery Fee as provided under Ordinance No. 92 - 1, and as stated in District Rule 8(h), shall be as follows:

   a. New Regular Water Service Connections

The Base Charge Component for new water service connections (as described in Study 1, Resolution No. 687, and Study 3) shall be based on the size of the new service required for the property based upon the size of the parcel, number of proposed dwelling units served by the service, building size, or use involved. Table 1 sets forth the Base and Debt Charges as described in Study 1 and 3. Table 2 reflects the accumulated fees for service sizes as of July 1, 2016 to be imposed at time of issuance of a new service.

Table 1. Water Service Capital Cost Recovery Fee - Base and Debt Charges

Meter Size		Unit Benefit		Meter Equivalency		**Base Charge**
5/8"*	=	$1,663.00	x	1.0	=	$1,663.00
3/4"	=	"	x	1.5	=	$2,495.00
1"	=	"	x	2.5	=	$4,158.00
1-1/2"	=	"	x	5.0	=	$8,315.00
2"	=	"	x	8.0	=	$13,304.00
3"	=	"	x	18.0	=	$29,934.00

Meter Size		Unit Benefit		Meter Equivalency		**Debt Charge**
5/8"*	=	$6,892.00	x	1.5	=	$10,338.00
3/4"	=	"	x	1.5	=	$10,992.00
1"	=	"	x	2.5	=	$15,511.00
1-1/2"	=	"	x	5.0	=	$26,871.00
2"	=	"	x	8.0	=	$40,514.00
3"	=	"	x	18.0	=	$73,520.00

* The District no longer installs 5/8” meters.

For any meter larger than 3", the Base and Debt charges will be established by the General Manager and approved by the District Board.

Table 2. Water Service Capital Cost Recovery Fee – Effective July 1, 2016

Meter Size		CAPITAL COST RECOVERY FEE
5/8"*	=	$12,001.00
3/4"	=	$13,487.00
1"	=	$19,669.00
1-1/2"	=	$35,186.00
2"	=	$53,818.00
3"	=	$103,454.00

* The District no longer installs 5/8" meters.

(i) Exception: "Domestic Residential Service B", "Commercial Service B" and "Commercial Service C" accounts are those in which multiple dwelling units / hotel rooms are served by a single meter. Although District practices and polices require individual meters for distinct dwelling units, some exceptions may occur (see Exception (ii) below). In the event that a new service is expected to serve multiple dwellings or hotel rooms, the Capital Cost Recovery Fee imposed on a new service with multiple dwellings / hotel rooms shall reflect the accumulated per-dwelling / hotel room service charges imposed beginning July 1, 2000 (Resolution number 736) for the CIP Fees and July 1, 2004 for the Dwelling Equivalency Fees (Resolution 806 - superseded by Resolution 847, June 20, 2007) for each dwelling unit and the associated Capital Cost Recovery Meter Equivalency Fees for the new meter.

For example, a new account holder desires to install a 1" meter and serve two dwelling units on July 1, 2016. The Capital Cost Recovery Fee for such a project shall be $19,669.00 (accumulated Capital Cost Recovery Fees from Table 2 above) + $3,223.00 (accumulated CIP Fees based on the second dwelling unit since July 1, 2000) + 1,911.00 (accumulated Dwelling Equivalency Fees based on the second dwelling unit since July 1, 2004) =$24,803.00 (The District considers an account holder to be the individual or corporation paying for water or fire service. Account holders may or may not be the legal owner of the property or parcel served by a meter or service. Account holders who are not legal owner of property served by a meter may not be eligible for Capital Cost Recovery Fee credit.)

(ii) Exception: Capital Cost Recovery Fees shall not be levied upon any "Domestic Residential Service B" accounts with between 2 and 5 residential units that undergo redevelopment to improve or upgrade existing residential units but do not increase the number of residential units serviced. In such a circumstance, the owner or redeveloper of the property must pay the cost of installing new meters for each residential unit, but will not be required to pay Capital Cost Recovery Fees unless a larger meter is to be installed on-site.

b. Increases in Size of Meter or Size of Service

Account holders wishing to install a meter that is larger in size than the current meter shall pay the difference in accumulated Capital Cost Recovery Fees between the existing meter and the new meter, as provided under the District's standard provisions for determinations of required meter size.

For example, if a property is currently served by a 3/4" meter, and an account holder requires an increased meter size to 1", then the Capital Cost Recovery Fee would be: $19,669.00 (fee for a 1" meter as of July 1, 2016) - $13,487.00 (credit for past rate charges through existing 3/4" meter) = $6,182.00.

(i) Exception: Increased meter sizes for “Domestic Residential Service B”, “Commercial Service B” and “Commercial Service C” accounts may require acknowledgement of the per-dwelling unit or per-room contributions to Capital Cost Recovery Fees. In such a case, the District shall provide (within 30 calendar days of a petition for a larger meter) a detailed estimate of the contribution by said account for all service charges attributed to the Capital Cost Recovery Fee as described in Section 1 above and subject to the exception set forth in Section 3.a.(i) above.

(ii) Exception: Other exceptions may be identified and, pending approval by the District Board, incorporated into this Resolution without modification to the basic methodology described in this Resolution.

c. Decreases in Meter Size Service or Termination of Water Service - No Parcel or Property Subdivision

(i) In the event that an account holder applies for additional District meters to serve a change in existing land use or property use in the absence of a property or parcel split, the District shall apply a credit for the existing meter to any new Capital Cost Recovery Fees imposed by the District for the new meters only.

For example, an account holder with a 2" meter wishes to construct a project with 12 dwelling-units and twelve 3/4" meters and one 1" meter. Using the values from July 1, 2016, the Capital Cost Recovery Fees for the new meters would be $181,513.00 (12 x $13,487.00 + 1 x $19,669.00). A credit for $53,818.00 (for the existing 2" meter) would be applied and the account holder would owe $127,695.00.

No refund will be extended should the Capital Cost Recovery Fees for the new meters be less than the contributions made by the existing meter.

(ii) There may be instances when an account holder desires to decrease the size of a meter in the absence of a property or parcel split. In such an event, the District will not refund a customer or account the difference in accumulated Capital Cost Recovery Fees between the original meter and the newly installed smaller meter.

For example, an account holder wishes to replace an existing 3" meter with a 2" meter on July 1, 2016. Although the accumulated Capital Cost Recovery Fees for a 2" meter are $49,636.00 less than the fees for a 3" meter ($103,454.00 – 53,818.00), the District will not refund the difference of the accumulated Capital Cost Recovery Fees. The presumption by the District is that the land use or function of the property has changed and previous uses were accurately met by the original 3" meter.

(iii) There may be instances when an account holder desires to remove an existing meter from a parcel or property (termination of service) in the absence of a property or parcel split. In such an event, the District will not refund or credit an account the Capital Cost Recovery Fees imposed upon the account holder. However, the District retains the right to evaluate the contributions made by an account holder if a request by the account holder is made in writing to the Board to re-evaluate past Capital Cost Recovery Fees in the event that a meter is re-installed on the property or parcel. Such a request shall include information deemed necessary by the General Manager and/or District Engineer.

For example, an account holder desires to have a 2" meter removed in June 2009, but requests to have the meter re-installed in July 2016. In such a case, the District may factor in the previous payments or contributions made by the account holder in order to reduce the Capital Cost Recovery Fees for said account.

(1) Exception: Any meter removed prior to July 1, 1997 shall not be eligible for the review discussed in Section 3.c. above. In such a case the full Capital Cost Recovery Fee shall be imposed on the account for the installation of a new meter.

d. Decreases in Meter Size Service or Termination of Water Service in Connection with Parcel or Property Subdivision

(i) In the event that a parcel or property is subdivided, the accumulated Capital Cost Recovery Fees shall be assigned to the original property owners.

(ii) A request for meter removal (termination of service) from a subdivided parcel owner shall not result in a credit or refund of accumulated Capital Cost Recovery Fees or debt payments.

(iii) Notwithstanding Sections 3.d.(i) and 3.d.(ii) above, upon the request of a parcel owner, the District may review the contributions to Capital Cost Recovery Fees and may permit special dispensation of paid Capital Costs Recovery Fees should a new meter or meters be installed at a later time. Such a request shall be made by the parcel owner in writing for review and approval by the District Board.

e. Decreases in Meter Size Service or Termination of Water Service - "Domestic Residential Service B" accounts and the "Hotels / Motels" subgroup of "Commercial" accounts

(i) Beginning in July 2007, the District shall maintain a record of the monthly contributions of all "Domestic Residential Service B", "Commercial Service B" and "Commercial Service C" accounts with an indication of the various service charges contributed to the Capital Cost Recovery Fee as described in Section 1 above.

(ii) In the event that a "Domestic Residential Service B", "Commercial Service B" or "Commercial Service C" accountholder applies to replace an existing meter with additional meters due to changes in existing land use or property use in the absence of a property or parcel split, the District shall apply a credit for said existing meter to any new Capital Cost Recovery Fees imposed by the District for the new meters only as required by Section 3.a. above. However, the calculation of the credit for the existing meter shall reflect the actual contributions of the multiple dwellings toward the monthly service charges using a methodology described in the exception set forth Section 3a.(i) above.

(iii) A request for meter removal from a subdivided parcel shall not result in a refund of accumulated Capital Cost Recovery Fees or debt payments if no new meters are installed on the property.

(iv) Notwithstanding Sections 3.e.(i) and 3.e.(ii) above, upon the request of a parcel owner, the District may review the contributions to Capital Cost Recovery Fees and may permit special dispensation of paid Capital Cost Recovery Fees should a new meter or meters be installed at a later time. Such a request shall be made by the property owner in writing for review and approval by the District Board.

f. Fire Meter Service for Fire Sprinklers

(i) Separate water service connections for fire sprinklers are required for certain structures and uses within the District. These meters are sized based on the need for maximum short duration flow capacities. Notwithstanding the exception set forth in Section 1.c.(i) above, the District has established a relationship between the smallest size water meter and smallest fire meter (Study 2). As such, the infrastructure demand for a 2" fire meter shall be deemed equal to that of a 5/8" water meter. Table 3 sets forth the Base Charge Component for fire meter service and Table 4 illustrates the accumulated fees for fire meters as of July 1, 2016:

Table 3. Fire Service Capital Cost Recovery Fee - Base and Debt Charges

Meter Size		Unit Benefit		Meter Equivalency		**Base Charge**
2"	=	$1,422.00	x	1.0	=	$1,422.00
3"	=	"	x	2.25	=	$3,200.00
4"	=	"	x	4.0	=	$5,688.00
6"	=	"	x	9.0	=	$12,798.00
8"	=	"	x	16.0	=	$22,752.00
10"	=	"	x	25.0	=	$35,550.00

Meter Size		Unit Benefit		Meter Equivalency		**Debt Charge**
2"	=	$4,577.00	x	1.0	=	$6,013.00
3"	=	"	x	2.25	=	$11,644.00
4"	=	"	x	4.0	=	$19,197.00
6"	=	"	x	9.0	=	$41,206.00
8"	=	"	x	16.0	=	$74,163.00
10"	=	"	x	25.0	=	$123,421.00

Table 4. Fire Service Capital Cost Recovery Fees – Effective July 1, 2016

Meter Size		**CAPITAL COST RECOVERY FEE**
2"	=	$7,435.00
3"	=	$14,844.00
4"	=	$24,885.00
6"	=	$54,004.00
8"	=	$96,915.00
10"	=	$158,971.00

g. Changes in Fire Meter Service

(i) The District does not require or size fire services and shall not assume any responsibility associated with inappropriately sized service. As such any variation in fire service size is assumed to have been deemed appropriate by the property owner and an outside regulatory agency.

(ii) In the event that a larger fire service is to be installed, credit for any existing fire service that is removed will be granted to an account holder using the same methodology described in Section 3.b. above.

(iii) No refund will be provided to account holders requesting removal of an existing fire service. The same rationale described in Sections 3.c., 3.d.,3.e. and 3.g.(i) above apply.

h. Other Changes to Meter or Services

(i) There may be circumstances of meter or fire service changes, or termination of service not specifically addressed in Sections 3.a. through3.g. above. In such cases, the District may review the contributions to Capital Cost Recovery Fees and may permit special dispensation of paid Capital Costs Recovery Fees. Such a request shall be made by the property owner in writing for review and approval by the District Board.

4. The imposition of the Capital Cost Recovery Fee shall not preclude other fees and charges to be imposed on District account holders.

a. Connection Fees for installing new services and meters or associated with changes to existing meter or service will continue to be charged in addition to the Capital Cost Recovery Fee, based on actual costs plus overhead and equipment charges as approved by the District. The District will continue to require a deposit to cover the estimated District costs related to such service installation

5. The Capital Cost Recovery Fee is effective upon adoption and shall continue until changed by action of the District Board.

6. Any judicial action of proceeding to attach, review, set aside, void or annul this Resolution shall be commenced within 120 days of adoption.

7. The District Secretary is hereby authorized and directed to prepare and file a Notice of Exemption pursuant to CEQA Guidelines 15273(a).

PASSED AND ADOPTED by the Governing Board of the Carpinteria Valley Water District on the 8th day of June, 2016 by the following vote:

AYES: Roberts, Van Wingerden, Forde, Holcombe and Orozco
NAYES: None

ABSENT: None
ABSTAIN: None

APPROVED:

_____
Alonzo Orozco, President

ATTEST:

_____
Ursula Santana, Secretary

Appendix E
Safe Drinking Water Related Costs
Customer Classification
Independent Water Service Entity

Safe Drinking Water Related Costs

It is District policy to apportion water quality-related costs equitably to all customer classes. Assignment of such costs shall be based on public health and safety needs including drinking water; water for food preparation and cooking and water needs for bathing and sanitation. (Carpinteria Valley Water District Resolution Number 805)

Customer Classification (See also Carpinteria Valley Water District Resolution Number 637)

Commercial: The provision of water to a customer engaged in any of the following activities: retail or wholesale sales (except as designated industrial or agricultural); warehousing; restaurant food or beverage preparation, bakery or food delivery; office (expect as designated industrial or public); chiropractic, medical or dental service (except as designated public); aircraft, automotive, bicycle, or boat repair; laundry; lumber and construction material wholesale; clothing or footwear fabrication and repair; newspaper or news preparation; veterinarians and animal care facilities; carwash; taxis and goods delivery; movie and live performance theatres; home repair service; retail nursery (except as designated agricultural); bank or other financial institution; automotive service station; private school or tutoring service; church, mosque, synagogue or other religious institution; photographic studio; private club or service organization; fitness center, gym or related facility; personal service agencies such as accountants, lawyers, palm readers and the like; goods and services rental; private utility service such a cable, telephone and electricity and the like; recreational vehicle park (except as designated public); golf courses, driving ranges and putting arcades; junkyards and private waste facilities; casino, gambling hall, off-track betting facility and the like; self-storage or storage site; adult living facilities, assisted living facilities, bed and breakfast facilities, boarding and rooming houses, dormitories, extended care facilities, foster care facilities, guest ranches, group homes, hostels, hotels, motels, orphanages, residential care facilities, resort hotels, transitional care facilities and mixed residential-commercial facilities served by a single meter; or similar use as determined by the District's General Manager.

Fire service: The provision of water to a customer designated as a closed water distribution system or network with the sole purpose or function of fire suppression.

Industrial: The provision of water to a customer engaged in the manufacture or assembly of goods, research and development, mineral extraction or processing, seafood collection and processing, or engaged in the preparation of processed foodstuffs except as identified as commercial or agricultural.

Agricultural: The provision of water to a customer engaged in the growing of foodstuffs, nursery stock, flowers and plant bedding material, seeds or bulbs, or engaged in the raising of livestock and maintenance of pastureland.

Public Authority : The provision of water to any federal, state, county, city or special district public agency such as schools, hospitals, or similar use as determined by the District's General Manager..

Residential: The provision of water to any customer residing in any building or structure, including but not limited to including: single-family residences; attached or detached residential second units; multifamily residences; condominiums, town homes and the like including time-share units; trailer homes, mobile coaches and courts; apartments, flats, studio apartments, efficiency units and boarding houses and accessory buildings and structures;

Residential Dwelling Unit:

a. For the purposes of account billing and cost allocation and recovery, the Carpinteria Valley Water District hereby defines a "residential dwelling unit" as a building or structure or portion thereof designated or occupied in whole or in part as a residence or sleeping place, either permanently or temporarily, which includes sanitary facilities, and one kitchen provided within the unit. For purposes of this definition an attached or detached residential second unit shall be considered a separate residential dwelling unit District staff shall make determinations regarding whether a structure or building constitutes a residential dwelling unit upon review of all development proposals, a request for new water service or periodic review and inspection of existing service connections.

Service Connections:

For purposes of determining the number of water service connections necessary for commercial, industrial, public authority and residential customers, the District shall consider the following:

a. Independent ownership or rental status; or
b. Separate or distinct parcel boundaries as identified by the County of Santa Barbara or City of Carpinteria.

For purpose of determining the number of water service connections necessary for agricultural or agricultural customers, the District shall consider the following:

a. Independent ownership or rental status; or
b. Separate or distinct parcel boundaries as identified by the County of Santa Barbara or City of Carpinteria with the exception of contiguous parcels under the same ownership.

For the purpose of determining the number of water service connections necessary for fire service customers, the District shall rely upon local and state construction standards and fire service organization needs.

Appendix F
RESOLUTION NUMBER 805
RESOLUTION OF THE BOARD OF DIRECTORS OF THE CARPINTERIA VALLEY WATER DISTRICT ESTABLISHING SAFE AND RELIABLE WATER COST RECOVERY POLICY

WHEREAS, it is the general purpose of the Carpinteria Valley Water District to serve water to the permanent community of the Carpinteria Valley; and

WHEREAS, the six-decade legacy of service to the Carpinteria Valley has grown from primarily agricultural to both agricultural and urban beneficiaries; and

WHEREAS, the demands of such urban beneficiaries involve water treatment and other requirements not necessary to agricultural users; and

WHEREAS, all District customers benefit from the economies of scale from a single water distribution system serving both agricultural and urban users; and

WHEREAS, the District seeks to continue to provide irrigation water to agricultural customers and to satisfy the demand of the permanent urban residents of the Carpinteria Valley for safe, high-quality and reliable water service.

NOW, THEREFORE BE IT RESOLVED, that the costs of delivering safe and reliable water to residents shall be recovered equitably from each household served, in compliance with state laws and regulations.

Vote on the Resolution No. 805 by roll call resulted as follows:

AYES:
NAYES:
ABSENT:
ABSTAIN:

PASSED AND ADOPTED THIS 13th day of July 2004

APPROVED:

_____
Frederick Lemere, President

ATTEST:

_____
Charles B. Hamilton, Secretary

Appendix G
RESOLUTION NUMBER 637
RESOLUTION OF THE BOARD OF DIRECTORS OF CARPINTERIA COUNTY WATER DISTRICT ADOPTING RATES AND CHARGES FOR WATER SERVICE AND AMENDING DISTRICTS RULES AND REGULATIONS RELATING TO SUCH RATES AND CHARGES

WHEREAS, the Board of Directors of the Carpinteria County Water District ("District") has considered at noticed public meetings its estimated reasonable costs for providing water service to its customers and the revenue sources available to cover those costs; and

WHEREAS, data has been made available to the public by the District and has been presented at those public meetings indicating the estimated reasonable costs for providing water service and the available revenue sources; and

WHEREAS, the Board has thoroughly considered the testimony and evidence received from its staff and the public in both oral and written form; and

WHEREAS, after due deliberation and consideration of all of the record before it, the Board finds it is necessary and in the best interest of the District and its customers to increase certain rates and charges for water service and to make certain changes to its rules and regulations concerning such rates and charges; and

WHEREAS, the Board finds and determines that the rates and charges for water service as increased by this Resolution do not exceed the estimated reasonable cost of providing service for which the rates and charges are being made.

NOW BE IT HEREBY RESOLVED AND ORDERED by the Board of Directors of the Carpinteria County Water District:

1. Repeal of Resolution No. 625. The water rates and charges established by Resolution Number 625 adopted by the Board July 6, 1994, effective as of the June 29, 1994, billing period, are hereby rescinded effective as of the June 29, 1995 billing period.

2. Adoption of New Subtypes. The District water service classification for Type 1, Municipal and Industrial, is hereby divided into two subtypes, "Domestic Residential" and "Commercial, Industrial and Public Authority", which are hereby defined and included and incorporated in District Rule No. 10(a), as follows:

10. **WATER RATES**

In establishing water rates, account shall be taken of type of service, size of service and surcharge for pumping.

c. Type of Service: For rate purposes, water service shall be divided into two types as follows:

(1) Type 1 service shall apply to services supplied for municipal and industrial use. Type 1 service shall be further divided into subtypes as follows:

(i) "Domestic Residential Service" shall apply to all services for domestic residential use.

(ii) "Commercial, Industrial and Public Authority Service" shall apply to services supplied for commercial, industrial and Public Authority use.

(2) Type 2 service shall apply to all services qualifying as irrigation services as hereinafter defined, regardless of quality of water served.

Irrigation service is defined as the use of water for agricultural purposes, delivered through a 1 1/2 " (or larger) meter, to irrigate not less than 1 1/2 acres for commercial agricultural purposes; except that 3/4", 1", and 1 1/2 " meter services, existing and serving 1 1/2 acres or more of commercial agriculture, shall be considered irrigation services. Use of water in connection with the operations of a chicken ranch or for stock watering, or any other similar uses shall be considered an irrigation use, if the service meets requirements respecting the size of the meter and the area served. Domestic use of water in connection with an irrigation service customer's household will be considered incidental to the irrigation service, and delivered at the Type 2 rate. All services which do not qualify as irrigation service shall be considered municipal or industrial services.

If a service is located on less than 1 1/2 acres, the General Manager of the District shall review the location and size of service, and determine if said service is domestic or irrigation. The Manager's determination shall be conclusive, unless an appeal by the customer within thirty (30) days of receipt of written notice of such determination, be made by the Board of Directors of the District, in which cast the determination of the Board made at a public meeting with notice to the customer, shall be conclusive.

3. **Rates and Charges for Water Service**. Monthly Service Charges and Meter Water Rates, are hereby established and will become effective as of the June 29, 1995 billing period, and shall be set forth in District Rule No. 10 (c) and (f) respectively as follows:

c. **Monthly Service Charges:** The minimum monthly charge for Type 1, Type 2 and Fire Accounts metered services regardless of the amount of water used by a customer during any given month or fraction thereof, Monthly Service Fees Type 1, Type 2 and Fire Accounts shall be a charge in accordance with the following table:

TYPE 1 and TYPE 2		FIRE ACCOUNTS	
METER SIZE	MONTHLY CHARGE	METER SIZE	MONTHLY CHARGE
5/8	$ 7.10	2	$ 13.75
3/4	10.60	3	22.90
1	17.70	4	34.30
1 1/2	35.40	6	68.70
2	56.60	8	126.00
3	113.30	10	229.00
4	177.00		
6	354.00		
8	814.20		
10	1,345.20		

MONTHLY SERVICE FEES

NOTE: See Rule 15 -Meters and Appliances. The monthly service charge will not entitle the consumer to any quantity of water.

All water used by a customer will be supplied to said consumer at the rate set forth in said Section (f) hereof.

a. Metered Water Rates

4. **Procedural Exemption For Water Rates and Charges.** Pursuant to section 660l8(d) of the Government Code, the rates and Charges for water service as established in this Resolution are exempt from the notice and public hearing requirements of Section 66018 of the Government Code. It is further found and determined that these rates and charges are not the type of fees and charges as set forth in Section 66016(d) of the Government Code and therefore are not subject to the procedural requirements of Section 66016 of the Government Code.

5. **Rates and Charges Not Taxes**. The Governing Board of Directors of the Carpinteria County Water District hereby finds and determines that the limits of appropriation under Article XIII B of the Constitution of the State of California are not applicable to this District for fiscal year 1995-96 for the reason that the proceeds of this District's various user charges, rates and fees for said fiscal year do not exceed the costs reasonably borne by the District providing the services for which the charges, rates and fees are made and collected. The Board of Directors further finds and determines that said fees, rates and charges are not "proceeds of taxes· under Article XIII B.

6. **Terms of this Resolution**. This Resolution No. 637 shall be in full force and effect upon adoption and shall remain in effect until changed by the Governing Board of the Carpinteria County Water District. The 45-day period provided for in Government Code Section 7910 will expire July 29, 1995.

TYPE 1 and TYPE 2

METER SIZE	MONTHLY CHARGE
5/8	$ 7.10
3/4	10.60
1	17.70
1 1/2	35.40
2	56.60
3	113.30
4	177.00
6	354.00
8	814.20
10	1,345.20

FIRE ACCOUNTS

METER SIZE	MONTHLY CHARGE
2	$ 13.75
3	22.90
4	34.30
6	68.70
8	126.00
10	229.00

	BASIC	PUMPING LOWER AREA CARP - BOOSTER	PUMPING HIGHER AREA GOB - BOOSTER

TYPE 1

MUNICIPAL AND INDUSTRIAL

7. **Amendment to the District's Rules and Regulations; Conflicts; Validity**. The Terms and provisions of this Resolution shall become a part of the District Rules and Regulations, including amendment of Rule No. 10 to incorporate new service subtypes and increased water rates and charges as discussed in Section 2 and 3 above. To the extent that the terms and provisions of this Resolution are inconsistent or in conflict with the terms and revisions of any prior District ordinance, resolution, or rule and regulation, the terms of this Resolution shall prevail, and inconsistent and conflicting provisions of prior ordinances, resolutions and rules and regulations shall be suspended during the effective period of this Resolution. If any section, subsection, sentence, clause or phrase of this Resolution is for any reason held to be unconstitutional or invalid, such decision shall not effect (sic) the validity of the remaining portions of this Resolution. The Board of Directors hereby declares that it would have passed this Resolution and each section, subsection, sentence, clause or phrase thereof , irrespective of the fact that anyone or more section, subsection, sentence, clauses or phrases be unconstitutional or invalid.

8. **Exception From the Requirements of CEQA.** Section 21080(b) (8) of the Public Resources Code is contained in and is a part of the California Environmental Quality Act (CEQA) which Act is in Division of the Public Resources Code commencing at Section 21000. Section 21080 (b) (8) of said Act provides that CEQA does not apply to • (8). The establishment, modification, structuring, restructuring or approval of rates, tolls, fares or other charges by a public agency finds are for the purpose of (1) meeting operating expenses, including employee wage rates and fringe benefits, (2) purchasing or leasing supplies, equipment or materials, (3) meeting financial reserve needs or requirements, or (4) obtaining funds for capital projects necessary to maintain service within existing service areas".

It is hereby found and determined that none of the rates and charges fixed and established by this Resolution are for any purposes other than the purposes set forth in Section 21080(b) (8) and are therefore, pursuant to said Section, exempt from the requirements of CEQA. This Resolution constitutes the written findings of the record of the proceedings claiming the aforesaid exemption. The District Secretary is hereby authorized and directed to prepare and file a Notice of Exemption pursuant to CEQA Guidelines Section 15237(a).

PASSED AND ADOPTED by the Governing Board of the Carpinteria County Water District on the 14th day of June, 1995, by the following vote:

AYES: HICKEY, LEMERE, GILMOUR, BRADLEY
NAYES: NONE
ABSENT: NONE

A VACANCY EXISTS ON THE BOARD OF DIRECTORS

APRROVED:

Wilson, Bradley, Jr., President

ATTEST:

Robert R. Lieberknecht, Secretary

Appendix H

RESOLUTION NUMBER 1009

RESOLUTION OF THE BOARD OF DIRECTORS OF THE CARPINTERIA VALLEY WATER DISTRICT ADOPTING RATES AND CHARGES FOR WATER SERVICE

WHEREAS, the Board of Directors ("Board") of the Carpinteria Valley Water District ("District") considered its estimated necessary costs for providing water service to its customers and the revenue sources available to cover those costs at a noticed public hearing on June 8, 2016; and

WHEREAS, data was made available to the public by the District and presented at that public hearing indicating the estimated necessary costs for providing water service and the available revenue sources; and

WHEREAS, the District provided written notice as required by law of that public hearing including notice of the projected changes and increases in District rates and charges and the availability of data supporting such increase; and

WHEREAS, the Board thoroughly considered the testimony and evidence received from its staff and the public in both oral and written form; and

WHEREAS, after due deliberation and consideration of all of the record before it, the Board found it necessary and in the best interest of the District and its customers to change and increase certain rates and charges for water service; and

WHEREAS, the Board found and determined that the rates and charges for water service as set forth by this Resolution do not exceed the estimated necessary cost of providing service for which the rates and charges are being made.

NOW, THEREFORE, IT IS HEREBY RESOLVED AND ORDERED by the Board of Directors of the Carpinteria Valley Water District as follows:

1. Type of Service: In establishing water rates and charges, account shall be taken of type of service, size of service and surcharge for pumping. For rate purposes, water service shall be divided into two types as follows:

    a. Type 1 service shall apply to services supplied for municipal and industrial use. Type 1 service shall be further divided into subtypes as follows:

        (i) "Domestic Residential Service A" shall apply to all services supplied exclusively for domestic residential use excluding multi-family (two or more) residential units served by a single District master meter.

        (ii) "Domestic Residential Service B" shall apply to all services

supplied exclusively for domestic multi-family (two or more) residential use served by a single District master meter.

(iii) "Commercial Service A, Industrial and Public Authority Service" shall apply to services supplied in whole or in part for commercial, industrial or public authority use with the exception of Commercial Service B and C facilities identified below.

(iv) "Commercial Service B" shall apply to temporary and semi-permanent residential activities including but not limited to adult living facilities, assisted living facilities, bed and breakfast facilities, boarding and rooming houses, dormitories, extended care facilities, foster care facilities, guest ranches, group homes, hostels, hotels, motels, orphanages, residential care facilities, resort hotels, transitional care facilities.

(v) "Commercial Service C" shall apply to all commercial facilities that include individual residential dwelling units as defined by the District in its Rules and Regulations.

(vi) "Private Fire Service" shall apply to any water service entity designated as a closed water distribution system or network with the sole purpose or function of fire suppression.

(vii) "Temporary Meter" service shall apply to services to circuses, bazaars, fairs, temporary restaurants, construction works, or temporary emergency services for residents, etc., of a temporary nature.

b. Type 2 service shall apply to all services qualifying as "Agriculture" services as defined below:

(i) "Agriculture" service is defined as the use of water for agricultural purposes, delivered through a 1 ½" (or larger) meter to irrigate not less than 2 acres for commercial agricultural purposes; except that ¾", 1", and 1 ½" meter services, existing and serving 2 acres or more of commercial agriculture, shall be considered Agriculture services. Use of water in connection with the operations of a chicken ranch or for stock watering, or any other similar uses shall be considered an Agriculture use, if the service meets requirements respecting the size of the meter and the area served. All services that do not qualify as Agriculture service shall be considered Type 1 service.

(ii) If a service is located on less than 2 acres, a customer may request the District's General Manager to review the location

and size of service in order to determine if such service is "Municipal and Industrial" or "Agriculture". The General Manager's determination shall be final, unless an appeal by the customer within thirty (30) days of receipt of written notice of such determination is made to the District's Board, in which case the determination of the Board made at a public meeting with notice to the customer shall be final.

2. Rates and Charges for Water Service: Monthly Service Charges, Dwelling Unit Equivalency Charges and Residential Equivalency Charges, and Metered Water Rates are hereby established and will become effective as of the July 1st, 2016 billing period as follows:

a. Drought Stage 1 Metered Water Rates (unit cost). With the exception of the conditions outlined in section (b) below, the District shall impose water rates for each unit of water used by a customer in accordance with the schedule set forth in Table 1 and with the procedures set out in subsections (i) through (vi) of this section (a).

TABLE 1

2016-17 WATER RATES (unit cost)			
HCF = 100 cubic feet = 748 gallons	Basic HCF	Pressure Zone I[1] HCF	Pressure Zone II[2] HCF
Residential Commercial, Industrial & Public Authority:			
Base Tier:	$3.63	$3.89	$4.07
Peak Tier:	$4.75	$5.01	$5.19
Agricultural:			
Tier 1:	$1.91	$2.17	$2.35
Tier 2: (temporary)	$2.50	$2.76	$2.94

[1] Pressure Zone I = Connections served by Gobernador Reservoir

[2] Pressure Zone II = Connections served by Shepard Mesa Tank

(i) The amount billed for the actual amount of water used by an account will be billed in accordance with the rates set out in Table 1. For "Domestic Residential Service A" and "Commercial, Industrial and Public Authority Service A and B" accounts, water charges shall be determined by establishing a Base tier using the 5-year average water consumption for the months of December, January, February and March for each account. This consumption amount will establish the Base Tier amount charged at the rate specified in Table 1. All water consumed in excess of the Base tier shall be charged at the Peak tier rate. The minimum Base tier amount of water shall be 6 HCF per month per account.

For example, a commercial account with a 5-year December to March average water consumption of 54 HCF uses 135 HCF in July. The total water charge for this account for July water use would be:

Base:	54 HCF	x	$3.63	= $196.02
Peak:	70 HCF	x	$6.50	= $384.75
TOTAL	135 HCF			$580.77

(ii) The amount billed for the actual amount of water used by an account will be billed in accordance with the rates set out in Table 1. For Type 2 "Agricultural" accounts, temporary water charges shall be established by determining a Tier 1 using the 5 year average water consumption by month. This consumption amount will establish the Tier 1 amount charged at the rate specified in Table 1. All water consumed in excess of Tier 1 volume shall be charged at the Tier 2 rate.

For example, an agricultural customer with a 5-year average July water use of 300 HCF uses 395 HCF in July 2016. The total water charge for this account would be:

Tier 1:	300 HCF	x $1.91	=	$573.00
Tier 2:	95 HCF	x $2.50	=	$237.50
TOTAL	395 HCF			$810.50

(iii) For all "Domestic Residential Service B" accounts and the "Commercial Service C" accounts the 5-year December to March average shall be established based on the number of dwelling units or hotel/motel rooms served by a master meter. This is done to equitably distribute the costs of water in the same 2-tier structure for all customers. For example, if a master-meter account has 4 residential units and consumes an average of 24 HCF a month during the December to March period, the Base tier would be 24 HCF ÷ 4 residential units = 6 HCF per residential unit. The minimum Base amount of water per dwelling unit or room shall be 6 HCF per month.

(iv) Misuse of private fire services – for direct potable consumption, for example - shall result in charges for water, service fees and / or discontinuance of service.

(v) For all "Temporary Meter" accounts, the rate for water consumption shall be the sum of the "Type 1" commercial rate (subject to pumping surcharges) and the Capital Improvement Program rate (see sections f and g below). For example, a temporary meter registers the equivalent of 40 HCF

consumption for one month of use. The rate shall be 40 HCF x $3.63 + 40 HCF x $2.75 + 40 HCF x $0.70 = $283.20 or $7.08 per HCF consumed. The General Manager shall retain the right to modify these charges.

(vi) New and existing accounts lacking sufficient water use history to establish Base tier volumes shall be reviewed by the District General Manager to determine an appropriate value.

b. Residential Equivalency Charge (REQ). The District shall impose a REQ Charge on "Agriculture" accounts for each residential dwelling served by District water through the Agriculture account. The REQ shall be adjusted every year based on an average of the past five years of single family residential consumption. The REQ charge effective 2016-17 shall be $21.04 per dwelling unit.

c. Monthly Basic and State Water Project Service Charges and Temporary Drought Surcharge. The District shall impose a Monthly Service Charge in accordance with the schedule set forth in Table 2 for all Type 1 and Type 2 services regardless of the amount of water used by a customer during any given month or fraction thereof.

TABLE 2

2016-17 MONTHLY BASIC AND STATE WATER PROJECT SERVICE CHARGES AND TEMPORARY DROUGHT SURCHARGE

METER SIZE:	BASIC	SWP[1]	DROUGHT	TOTAL
5/8 "	9.83	30.00	3.00	$42.83
3/4"	9.83	30.00	3.00	$42.83
1"	16.38	50.00	5.00	$71.38
1 1/2"	32.75	100.00	10.00	$142.75
2"	52.40	160.00	16.00	$228.40
3"	104.80	320.00	32.00	$456.80
4"	163.75	500.00	50.00	$713.75
6"	327.50	1,000.00	100.00	$1,427.50
8"	753.25	2,300.00	230.00	$3,283.25

[1] SWP = State Water Project

d. Monthly Capital Improvement Program Service Charge ("CIP Charge") and Temporary Drought Surcharge. The District shall impose a monthly CIP Charge in accordance with the schedule set forth in Table 3 and the procedures set out in subsections (i) through (iv) of this section (d).

TABLE 3

2016-17 MONTHLY CAPITAL IMPROVEMENT PROGRAM SERVICE CHARGE AND TEMPORARY DROUGHT SURCHARGE			
CIP		***DROUGHT***	
Rate[1]:	$2.75	$0.70	per HCF
Minimum	$16.50	$4.20	6 HCF
Maximum	$275.00	$70.00	85 HCF

[1] Rate = Total CIP debt ÷ 5-year average annual M&I sales

8. The CIP Charge for all "Domestic Residential Service A" and "Commercial Service A and B, Industrial and Public Authority" accounts shall be based on the 5-year average monthly water consumption for each specific account. This volume shall be multiplied by an annually determined CIP rate. Beginning July 1st, 2016, this CIP rate shall be $2.75 per hundred cubic feet ("HCF"). A minimum CIP charge based on 6 HCF per month and a maximum charge based upon 100 HCF per month shall be applied. The Temporary Drought charge shall be determined in the same manner as the CIP charge.

9. "Domestic Residential Service B" accounts and "Commercial Service C" accounts shall be subject to a CIP Charge for each additional dwelling unit or hotel/motel room greater than one served by the master metered account. This charge shall be the greater of the minimum monthly CIP charge of 6 HCF, or a value determined by dividing the 5-year average monthly water consumption for the entire account by the number of dwelling units or hotel/motel room served by the master meter. For example, if an account with 4 dwelling units has a 5-year monthly average water consumption of 20 HCF, the per-unit average would be 5 HCF. In this example, the minimum CIP charge of 6 HCF would be applied to the account to determine the CIP rate. The Temporary Drought charge shall be determined in the same manner as the CIP charge.

10. Notwithstanding section a(iii) above, no CIP charge shall be levied against "Private Fire Service" accounts.

11. "Temporary Meter" accounts shall pay the CIP service charge based on monthly water consumption, subject to the minimum and maximum describe in section d(i) above. The Temporary Drought charge shall be determined in the same manner as the CIP charge.

12. Type 2 "Agriculture" accounts with residential dwellings shall

be subject to a CIP Charge based on the 5-year average monthly water consumption by "Domestic Residential Service A" accounts. Beginning July 1st, 2016, this value shall be 11 HCF per month times the CIP rate of $2.75 + 11 HCF per month times the Drought Surcharge rate of $0.70 = $37.95 for each residential dwelling behind the meter. This amount shall be recalculated every July 1st.

13. New and existing accounts lacking sufficient water use history to establish a CIP Charge shall be reviewed by District staff to determine an appropriate rate. The proposed CIP Charge shall be the greater of the accumulated monthly average or an average rate derived for similar accounts based on customer class.

e. Dwelling Unit Equivalency Charge (DEQ). The District shall impose a DEQ Charge on all "Domestic Residential Service B" customers as follows:

(i) The DEQ Charge is an amount shown on the bill sent to "Domestic Residential Service B" and "Commercial Service C" accounts that is necessary to make the total State Water Project component of the Monthly Service Charge, when divided by the number of dwelling units, equivalent to the $30.00 State Water Project component of the Monthly Service Charge applied to all "Domestic Residential Service A" accounts with a ¾" meter.

(ii) The DEQ is the difference between the State Water Project (SWP) component of the Monthly Service Charge that a "Domestic Residential Service A" account holder with a 3/4"meter would pay and the SWP component charges associated with a given "Domestic Residential Service B" (master meter) account divided by the number of residential accounts.

For example, if a "Domestic Residential Service B" or "Commercial Service C" account with 4 residential dwellings has a 1 ½" water meter, the SWP charge ($100.00) would be allocated equally between the four dwelling units, or $25.00 per dwelling unit. The DEQ for each dwelling unit would then be the difference between this amount and the SWP component charge for the ¾" meter account: $30.00 - $25.00 = $5.00.

In this example, the DEQ portion of the monthly bill from the District will display the total DEQ charges for all residential units ($5.00 x 4 residential units) or $20.00.

The DEQ will then appear on the Monthly Service Charge portion of the bill for this account as follows:

Basic:	$ 18.75	
SWP:	$ 100.00	
DEQ:	$ 20.00	
CIP:	$ 66.00	($16.50 x 4 dwelling units)
Drought Meter:	$ 12.00	
Total:	$ 230.75	($57.69 x 4 dwelling units)

f. The Temporary Drought Surcharge. The District shall impose the Temporary Drought Surcharge to all "Domestic Residential Service B" accounts in in a manner identical to the DEQ charge outline in section (f) above. This surcharge may be rescinded by the Board at any time without changes to other parts of this resolution.

g. Monthly Service Charges for Private Fire Service Accounts. The District shall impose a monthly service charge for fire accounts in accordance with the schedule in Table 4. The Temporary Drought Surcharge may be rescinded by the Board at any time without changes to other parts of this resolution.

TABLE 4

2016-17 MONTHLY BASIC AND STATE WATER PROJECT SERVICE CHARGES AND TEMPORARY DROUGHT SURCHARGE FOR FIRE SERVICE ACCOUNTS

METER SIZE:	BASIC	SWP[1]	DROUGHT	TOTAL
2"	6.55	20.00	2.00	$28.55
3"	14.74	45.00	4.50	$64.24
4"	26.20	80.00	8.00	$114.20
6"	58.95	180.00	18.00	$256.95
8"	104.80	320.00	32.00	$456.80
10"	163.75	500.00	50.00	$713.75

[1] SWP = State Water Project

h. Payment of the Monthly Charges. Payment of the monthly Basic, SW and CIP charges and temporary Drought surcharges does not entitle the customer to any quantity of water. All water used by a customer will be supplied to a customer at the rate set forth in sections "a" or "b" above.

3. Appeals of Base tier and CIP calculations. In the event that a customer or account holder disagrees with the District derived values for the Base tier or Tier 1 (section 2a) and CIP (section 2d) amounts of water, said customer may petition the General Manager to solely at his discretion assign a different methodology for calculation of the Base tier and/or CIP amounts of water. Any customer appealing District derived values shall have a sufficient water use history of 6 to 8 months, including

values for the December through March period.

4. Compliance with Article XIII D of the California Constitution. The Governing Board has determined that the imposition of the District's rates and charges for water service complies with the requirements of Article XIII D section 6 (b) of the California Constitution. Furthermore, and in accordance with the requirements of Section 6 (a) and with District Resolution No. 919, the District (i) provided 45 days prior written notice of the public hearing at which the Board considered the proposed changes and increases in the District's rates and charges for water service; (ii) considered all written protests presented to the District Board at or prior to the close of the public hearing; and (iii) following the conclusion of the public hearing, the District's General Manager counted the total number of written protest received by the District and informed the District Board that no majority protest existed.

5. Procedural Exemption for Water Rates and Charges: Pursuant to Section 66018 (d) of the Government Code, the rates and charges for water service as established in this Resolution are exempt from the notice and public hearing requirements of Section 66018 of the Government Code. It is further found and determined that these rates and charges are not the type of fees and charges as set forth in Section 66016 (d) of the Government Code and therefore are not subject to the procedural requirements of Section 66016 of the Government Code.

6. Effective Date of Resolution: This Resolution shall be in full force and effect upon adoption and shall remain in effect until changed by the District Board.

7. Amendment to the District's Rules and Regulations; Conflicts; Validity: The terms and provisions of this Resolution shall become a part of the District Rules and Regulations. To the extent that the terms and provisions of this Resolution are inconsistent or in conflict with the terms and provisions of any prior District ordinance, resolution, or rule and regulations, the terms of this Resolution shall prevail, and inconsistent and conflicting provisions of prior ordinances, resolutions and rules and regulations shall be suspended during the effective period of this Resolution. If any section, subsection, sentence, clause or phrase of this Resolution is for any reason held to be unconstitutional or invalid, such decision shall not affect the validity of the remaining portions of this Resolution. The Board hereby declares that it would have passed this Resolution and each section, subsection, sentence, clause or phrase thereof, irrespective of the fact that any one or more section, subsection, sentence, clauses or phrases by unconstitutional or invalid.

8. Exception from the Requirements of CEQA: Section 21080 (b) (8) of the Public Resources Code is contained in and is a part of the California Environmental Quality Act (CEQA). Section 21080 (b) (8) of said Act provides that CEQA does not apply to the establishment, modification, structuring, restructuring or approval of rates, tolls, fares or other charges by a public agency which are for the purpose of (1) meeting operating expense, including employee wage rates and fringe benefits, (2) purchasing or leasing supplies, equipment or materials, (3) meeting financial reserve needs or requirements, or (4) obtaining funds for capital projects necessary to maintain

service within existing service areas.

It is hereby found and determined that none of the rates and charges fixed and established by this Resolution are for any purposes other than the purposes set forth in Section 21080 (b) (8) and are therefore, pursuant to said Section, exempt from the requirements of CEQA. This Resolution constitutes the written findings of the record of the proceedings claiming the aforesaid exemption. The District Secretary is hereby authorized and directed to prepare and file a Notice of Exemption based upon Public Resources Code section 21080 (b) (8).

PASSED AND ADOPTED by the Governing Board of the Carpinteria Valley Water District on the 8th day of June, 2016, by the following roll call vote:

AYES:
NAYES:
ABSENT:
ABSTAIN:

ATTEST:

Alonzo Orozco, President

Ursula Santana, Secretary

Appendix I

APPLICATION FOR SERVICE / TERMINATION

CVWD Account: ___ (Office use only)

Carpinteria Valley Water District

Phone: (805) 684-2816 Business Fax: (805) 755-2351
District Office: 1301 Santa Ynez Ave. Carpinteria CA, 93013
Payments / Correspondence: P.O. Box 36, Carpinteria CA, 93014-0036
Visits us on the web at: www.cvwd.net

OCCUPANT APPLICATION FOR SERVICE

This form is to be completed by Rental Tenants when applying for water service.

Primary Name: _____ Start Service Date: _____

Secondary Name: _____

Number of Dwelling Units/Residences (to be served by meter): _____

Service Address: _____

Mailing Address: _____

Email: _____

4-digit PIN _____ or Driver's License # _____

Primary Phone: _____ Secondary Phone: _____

OCCUPANT hereby agrees:

I agree to be personally responsible for payment of all water bills for water delivered to the property address identified in this application. I agree to give Carpinteria Valley Water District written notice if I wish to discontinue service, and I understand that I will be responsible for payment for all service through the date when service is discontinued. I also understand that all bills not paid by the Penalty Date will incur door-tag fee. I am aware that my water service may be discontinued if my payments are not paid by 9:00 a.m. on shut off date and that service will not be reconnected until all delinquent charges and any penalties have been paid. I understand the District may contact me directly regarding any outstanding balance or delinquent payment.

I agree to abide by all District Rules and Regulations, available online at www.cvwd.net.

Name: _____ Signature: _____
Date: _____

NOTE: SIGNATURE OF PROPERTY OWNER (PAGE 2) IS REQUIRED FOR THIS APPLICATION TO BE COMPLETE.

OCCUPANT APPLICATION FOR SERVICE – PAGE 2

PROPERTY OWNER hereby agrees:
I declare that I am a legal owner of the property identified by the above property address, or the authorized agent of the owner, with authority to obligate the owner as stated herein. By co-signing this Occupant Application for water service at the subject property, I agree that the owner shall be jointly and severally responsible for any amounts due Carpinteria Valley Water District that the occupant fails to pay following termination or discontinuance of service to the property. I understand that if the occupant vacates the property without making final payment of all amounts due, the District may refuse to resume service to the property until the owner has paid all outstanding amounts in full, and the District thereafter may refuse Occupant Applications for service at this property, requiring the owner to be solely responsible to the District for all such services and may resort to placing a lien upon all real property. I further agree to defend and indemnify the District and its officers, employees and agents, and will hold them harmless from any and all liability arising from this Application and/or provision of service as requested. I understand the District may contact me directly regarding any outstanding balance or delinquent payment.

I agree to abide by all District Rules and Regulations, available online at www.cvwd.net.

Name: _____ Signature: _____
Date: _____ Phone(s): _____

Mailing Address: _____

_____

Service Address: _____

<MASTER_BOTTOM_END>
<DOCUMENT_END>

CVWD Account: (Office use only)

Carpinteria Valley Water District

Phone: (805) 684-2816 Business Fax: (805) 755-2351
District Office: 1301 Santa Ynez Ave, Carpinteria, CA 93013
Payments / Correspondence: P.O. Box 36, Carpinteria, CA 93014-0036
Visit us on the web at: www.cvwd.net

OWNER APPLICATION FOR SERVICE

This form is to be completed by Property Owners when applying for water service.

Primary Name: _____ Start Service Date: _____

Secondary/Property Management Co. Name: _____

Business Name (if applicable): _____

Service Address / APN: _____

Mailing Address:

Email: _____

4-digit Personal Identification Number _____ or California Driver's License _____

Primary Phone: _____ Secondary Phone: _____

PROPERTY OWNER hereby agrees:

I declare that I am the legal owner of the property identified above and agree to be solely responsible for and guarantee payment for all water bills incurred at the property identified herein. I agree to give Carpinteria Valley Water District written request for Termination of Water Service in order to discontinue service and understand that I am responsible for payment of all service through the Termination date shown on said notice. I understand that as the property owner I am still responsible for payment of any monthly service charges accrued after the termination date in the event that no other party assumes responsibility for water service.

I understand that bills not paid by 5:00 PM on the Penalty Date will receive a door-tag fee, and that the District offers a Direct Pay Program for automatic debit of the monthly bill.

I also understand that water service may be discontinued if my bill is not paid by the specified shut off date, and that water service will not be restored until all delinquent and penalty charges have been paid. I understand the District may contact me directly regarding any outstanding balance or delinquent payment.

I further agree to defend and indemnify the District and its officers, employees, and agents, and will hold them harmless from any and all liability arising from this Application and/or provision of service as requested.

I agree to abide by all District Rules and Regulations. (See www.cvwd.net for more information.)

Name: _____ Signature: _____

Date: _____

Carpinteria Valley Water District

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REQUEST FOR TERMINATION OF WATER SERVICE

This form is to be completed by customer of record when terminating water service.

Name: _____ Account Number: _____

Service Address / APN: _____

Termination Date: _____

Closing Bill Mailing Address: _____

_____

Primary Phone: _____ Secondary Phone: _____

Closing this account will generate a closing bill for which you will be responsible. If you have a deposit with the District, the deposit will be applied to your closing bill.

Any remaining balance will be mailed to the closing bill mailing address above.

Water service will not be discontinued and responsibility for payment of all charges will not end until this notification is received by Carpinteria Valley Water District.

I hereby authorize the Carpinteria Valley Water District to discontinue water service in my name:

Name: _____ Signature: _____

Date: _____

ORDINANCE NO. 15-2
AN ORDINANCE OF THE BOARD OF THE DIRECTORS OF THE CARPINTERIA VALLEY WATER DISTRICT AMENDING AND SUPERSEDING ORDINANCE 15-1 AND DECLARING A STAGE TWO DROUGHT CONDITION AND ESTABLISHING WATER USE REGULATIONS TO BE EFFECTIVE DURING A STAGE TWO DROUGHT CONDITION

WHEREAS, the Board of Directors on January 31, 1990 approved Ordinance 90-1 Pertaining to Drought Regulations and Water Conservation Standards; and

WHEREAS, the Board of Directors on February 12, 2014 approved Resolution No. 972 Declaring a Stage One Drought Emergency; and

WHEREAS, the Board of Directors on August 13, 2014 approved Resolution No. 980 Implementing the State Water Resources Control Board's Drought Emergency Water Conservation Regulation; and

WHEREAS, the Board of Directors on October 8, 2014 adopted Ordinance No. 14-1 Consolidating Mandatory Water Conservation Requirements set forth in Ordinance No. 90-1, Resolutions No. 972 and 980, and Adding New Requirements and Establishing Enforcement Measures to Address a Drought Emergency; and

WHEREAS, the Board of Directors on January 14, 2015 adopted Ordinance No. 15-1 Consolidating Mandatory Water Conservation Requirements set forth in Ordinance 14-1, Ordinance No. 90-1, Resolutions No. 972 and 980, and Deleting the Suspension of District Rule No. 15a (Sections 4 and 5); and

WHEREAS, the State of California Office of Administrative Law on March 27, 2015 approved the emergency regulatory action approved by the State Water Resources Control Board on March 17, 2015 adopting expanded emergency regulations to safeguard the state's remaining water supplies; and

WHEREAS, Governor Edmond G. Brown, on April 1, 2015 issued Executive Order B-29-15 proclaiming a State of Emergency, amending and extending orders and provisions contained in Executive Orders B-26-14 and B-28-14 due to the ongoing drought, California's severely depleted water supplies and the possibility that the current drought will stretch into a fifth straight year in 2016 and beyond; and

WHEREAS, continued drought conditions have reduced local and state-wide water resources over 15% of average annual demand; and

WHEREAS, there currently exists the possibility of shortages within the District's service area over 15% of average annual demand within the next 12 - 18 months; and

WHEREAS, the District is committed to achieving the Governor's April 1, 2015 Executive Order B-29-15 for a statewide 25 % reduction in urban potable water use through February of 2016; and

WHEREAS, the District is committed to achieving the District's assigned conservation standard of 20% as required for Tier 5 urban water suppliers by the State Water Resources Control Board for each month as compared to the amount used in the same month in 2013, to prevent a possible reduction in District water supply such that there would be insufficient water for human consumption, sanitation and fire protection; and

WHEREAS, the District is required to implement the imposition of mandatory restrictions on outdoor irrigation pursuant to emergency regulations, Cal. Code Regs. Title 23 Sections 863, 846 and 865 adopted by the State Water Board on July 15, 2014; and amended on March 17, 2015; and

WHEREAS, California Water Code Section 31026 also authorizes the District to restrict use of water during any emergency caused by drought, and to prohibit the waste of water during such periods; and

WHEREAS, the District's Water Shortage Contingency Plan provides that when the District determines that the water supply for the current or impending water year is anticipated to be approximately 15-30% less than projected normal demand a Stage Two shall be declared and such conditions now exist; and

WHEREAS, it is in the best interests of the customers of the District for the District to have regulations in place for the timely implementation of any future Water Shortage Emergency; and

WHEREAS, as the Board adopts this Ordinance, and finds that the restrictions set forth herein are necessary and proper to protect the water supply for human consumption, sanitation, and fire protection during Water Shortage emergencies, the Board also finds that the uses of water that are prohibited below are nonessential.

NOW THEREFORE BE IT ORDAINED, pursuant to Section 31026 of the Water Code, the Carpinteria Valley Water District prohibits the following:

a) running water from a hose, pipe, or any other device for the purpose of cleaning buildings and driveways or sidewalks except in the event the General Manager or designee determines that such use is the only feasible means of addressing a potential threat to health and safety;

b) washing of driveways and sidewalks except in the event the General Manager or designee determines that such use is the only feasible means of addressing a potential threat to health and safety;

c) irrigation of outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property such as patios, decks or driveways, private and public walkways, roadways, parking lots, or structures;

d) use of a fountain or other decorative water feature except if a recirculating system is in place;

e) manual irrigation by hose or moveable sprinkler at any time from 10:00 a.m. to 4:00 p.m. of any yard, park, recreation area, or other area containing landscape vegetation;

f) outdoor irrigation through fixed irrigation systems, either manually or by timer controller at any time from 8:00 a.m. to 6:00 p.m., of any yard, park, recreation area, or other area containing landscape vegetation, except for testing system or repairing leaks;

g) irrigation of turf or ornamental landscapes during and forty-eight (48) hours following measurable rainfall;

h) irrigation of landscapes outside newly constructed homes and buildings that is not delivered by drip or micro-spray systems;

i) irrigation of ornamental turf on public street medians

j) free-flowing hoses for all uses. Automatic shut-off devices shall be attached on any hose or filling apparatus in use.

BE IT FURTHER ORDAINED that pursuant to Section 31026 of the Water Code, the Carpinteria Valley Water District restricts use of District water as follows:

a) All restaurants located within the Carpinteria Valley Water District that provide table and/or counter service shall post, in a conspicuous place, a Notice of Drought Condition as approved by the General Manager and shall refrain from serving water except upon specific request by a customer;

b) Boats and vehicles shall be washed only at commercial car washing facilities or by use of a bucket and/or hose equipped with a self-closing valve that requires operator pressure to activate the flow of water;

c) Breaks or leaks in any customer's plumbing shall be immediately repaired upon discovery. If repairs cannot be completed within seventy-two (72) hours of detection or within seventy-two (72) hours of notification by the District, water service to the property may be turned off by District staff to prevent water loss until such time the repair has been completed;

d) Operators of hotels, motels and other commercial lodging establishments located within the Carpinteria Valley Water District shall post in each room a notice of

drought conditions containing water conservation information and a separate notice with language similar to the following:

"This area is suffering a Drought emergency. If you wish to have your sheets changed while you are staying, please leave this notice on your pillow. If you would like your towels changed, please leave them on the floor. Housekeeping will be pleased to accommodate you."

e) Operators of pools, exercise facilities and other similar establishments providing showering facilities shall promote limitation of showering time and post a Notice of Drought Condition;

f) Draining and refilling up to one third of the volume of a pool per year is allowed as necessary to maintain suitable pool water quality. Draining and refilling in excess of one third per year is prohibited, except in the event the General Manager or designee determines that such further draining is required to make needed repairs, or to prevent equipment damage or voiding of warranties;

g) Commercial, Industrial, and Public Authority properties, such as campuses, golf courses, driving ranges, and cemeteries, immediately implement water efficiency measures to reduce potable water usage by 25% for each month as compared to the amount used in the same month in 2013.

h) Landscape irrigation by Residential, Commercial, Public Authority and Industrial customers shall be limited to no more than two (2) days a week.

BE IT FURTHER ORDAINED that pursuant to Governor Brown's Executive Order B-29-15, the Carpinteria Valley Water District restricts the following uses of non-District water:

Commercial, Industrial, and Public Authority facilities with an independent non-District source of water supply shall limit outdoor irrigation to no more than two days per week.

BE IT FURTHER ORDAINED that increasingly significant administrative penalties to create a disincentive to commit future violations of the aforementioned District potable water and non-District water use prohibitions and restrictions, shall be:

a) a letter to the District customer of record indicating a violation of one or more of the aforementioned water use prohibitions or restrictions; and

b) a letter to the District customer of record indicating a second violation of one or more of the aforementioned water use prohibitions or restrictions and a fine of twenty-five dollars ($25.00) added to the customer's next bill for the second offense;

c) a letter to the District customer of record indicating a third violation of one or more of the aforementioned water use prohibitions or restrictions and a fine of one hundred dollars ($100.00) added to the customer's next bill for the third; and

d) a letter to the District customer of record indicating additional incidences of violation of one or more of the aforementioned water use prohibitions or restrictions and further fines with a limit up to five hundred dollars ($500.00) for each day a violation occurs at the discretion of the Board of Directors.

BE IT FURTHER ORDAINED that a customer, in accordance with District Rules and Regulations may appeal the imposition of a monetary penalty by submitting a letter to the District within seven (7) days of the District's mailing of a notice of violation; and

BE IT FURTHER ORDAINED that a customer, in accordance with District Rules and Regulations, may appeal the General Manager's or Assistant General Manager's rejection of the appeal by submitting a letter to the Board of Directors within seven (7) days of the General Manager's or Assistant General Manager's rejection of said appeal.

BE IT FURTHER ORDAINED that to the extent that the terms and provisions of this Ordinance are inconsistent or in conflict with the terms and provisions of any prior District ordinance, resolution, rule or regulation, the terms of this Ordinance shall prevail, and inconsistent and conflicting provisions of prior ordinances, resolutions, rules and regulations shall be suspended during the effective period of this Ordinance.

BE IT FURTHER ORDAINED that in the event the State adopts mandatory water conservation measures requiring implementation by the District during a water shortage emergency, and such State mandate measures require additional water conservation actions beyond the District's currently enforceable conservation measures, such State-mandated measures shall automatically be deemed to be fully incorporated and part of this Ordinance and enforceable by the District.

BE IT FURTHER ORDAINED that if any section, subsection, sentence, clause or phrase of this Ordinance is for any reason held to be unconstitutional or invalid, such decision shall not affect the validity of the remaining portions of this ordinance. The Board hereby declares that it would have passed this Ordinance and each section, subsection, sentence, clause or phrase thereof irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases be unconstitutional or invalid.

BE IT FURTHER ORDAINED that this Ordinance is an urgency ordinance. It is necessary that the restrictions set forth in this Ordinance be adopted as set forth herein in order to protect the supply of water for human consumption, sanitation and fire protection.

BE IT FURTHER ORDAINED that this Ordinance shall take effect on May 13, 2015 and terminate on July 1, 2016.

Vote on Ordinance No. 15-2 by roll call resulted as follows:

AYES: Forde, Holcombe, Orozco, Roberts, Van Wingerden
NOES: none
ABSENT: none
ABSTAIN: none

PASSED AND ADOPTED by the Board of Directors of the Carpinteria Valley Water District, this 13th day of May, 2015.

APPROVED:

Alonzo E. Orozco

Alonzo Orozco, President

ATTEST:

Charles B. Hamilton

Charles B. Hamilton, Secretary

Attachment C

Measurement Device Documentation

Master Meter's Multi-Jet meter exceeds the AWWA C708 standard. With sensitivity to measure water flowing as low as 1/8 gallon per minute and accuracy unaffected by common particulates and build-up that would freeze other types, you can count on our Multi-Jet technology.

Technical Specifications:

AWWA Standard -Meets or exceeds all sections of AWWA Standard C-708, most recent revision. Compliant with SDWA, NSF ANSI 372 and NSF ANSI 61 standards.

Register - Standard Direct Read, DIALOG® 3G AMR System registers, AccuLinx Encoder, and IP 68 Electrical Output registers available. Together, an integrated and migratable technology environment is attained; direct, proximity (touch), mobile AMR, and Fixed Network AMI.

Register Sealing - Direct Read and DIALOG registers are permanently sealed with a scratch resistant glass lens, stainless steel base and wrap-around gasket to prevent intrusion of dirt or moisture.

Features & Benefits:

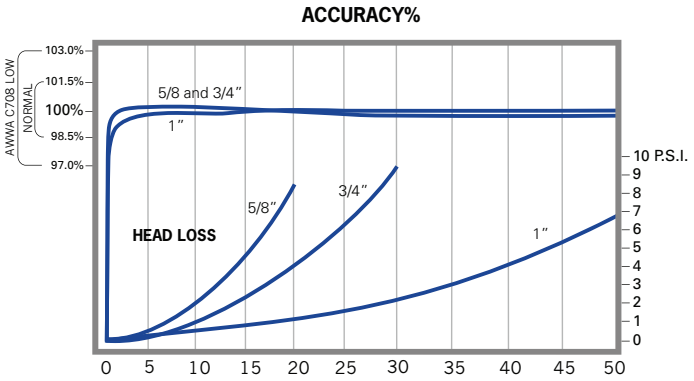
- Rugged basket strainer built from advanced polymer materials for superior wear mitigation.
- Proprietary design produces smooth, laminar flow profile for improved accuracy
- Award-winning DIALOG 3G register design houses all vital components — encoder, RF transmitter, battery and antennae — safely within the register's stainless steel and tempered glass enclosure. Free of external wires, components and connections — the #1 cause of field related issues on competitive designs.
- Assures compliance with the Safe Drinking Water Act (SDWA).
- Measures with only one moving part that is hydro-dynamically balanced on a sapphire bearing to preserve accuracy and promote a positive bottom line.
- Exceptional performance in passing entrained solids and operating in environments with high mineral content.
- Clean, elegant measurement design is highly sensitive to leaks and low flow while limiting wear for excellent revenue protection.

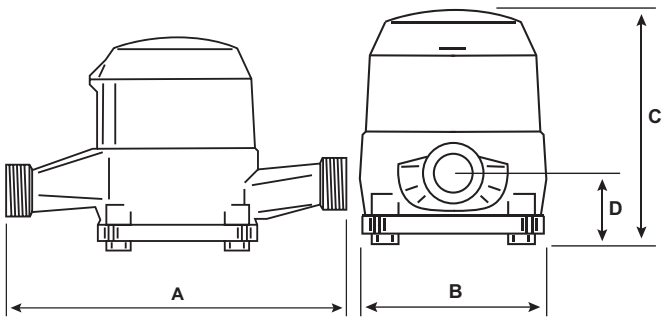
Technical Specs (Cont'd):

- **Register Unit** - Registration available in U.S. gallons, cubic feet or cubic meters.
- **Test Circle** - Large center sweep hand with one hundred (100) clearly marked gradations on the periphery of the dial face (available on Direct Read and DIALOG 3G registers).
- **Design/Operation** - Velocity-type flow measurement. Water that is evenly distributed by multiple converging inlet ports flows past an impeller in the measuring chamber, creating an impeller velocity directly proportional to water flow rate. The meter's register integrates that velocity into totalized flow. An inherent advantage for this design is unparalleled wear mitigation leading to sustained revenues. The register assembly is removable under line pressure permitting seamless, simplified upgrades in reading technology.
- **Strainer** - A rugged, 360-degree advance polymer basket strainer protects the critical measuring element from damage. The unique strainer design smoothes the flow of water entering into the meter creating a laminar flow that is gentle on the meter's internal components. Tough materials operating in a smooth, balanced environment enable the meters to perform more accurately over time. Utilities' investments last longer while capturing more revenue.
- **Measuring Chamber** - The measuring chamber housing and measurement element are built with an advanced synthetic polymer. Measurement surfaces are not wear surfaces, providing sustained accuracy despite the presence of entrained solids in the water. A long life, synthetic sapphire bearing serves as a wear surface with radially balanced water flows. The chamber housing is constructed in two parts to allow access to the impeller. Bottom plates available in Bronze, Cast Iron (CI) or Engineered Plastic.

METER OPERATING CHARACTERISTIC/DIMENSION	*5/8"*	*3/4" x 7-1/2"*	*3/4" x 9"*	*3/4" x 9" x 1"*	*1"*
Flow Rating (gpm)	**20**	**30**	**30**	**30**	**50**
Continuous Flow (gpm)	**15**	**20**	**20**	**20**	**30**
Normal Flow Range (gpm)	**1-20**	**2-30**	**2-30**	**2-30**	**3-50**
Extended Low Flow (gpm)	**1/4**	**1/2**	**1/2**	**1/2**	**3/4**
Maximum Working Pressure (psi)	**150**	**150**	**150**	**150**	**150**
Maximum Working Temperature (F)	**120**	**120**	**120**	**120**	**120**
Length (A below)	**7-1/2"**	**7-1/2"**	**9"**	**9"**	**10-3/4"**
Width (B below)	**3-5/8"**	**3-5/8"**	**3-5/8"**	**3-5/8"**	**4"**
Height, standard register with lid (C below)	**5"**	**5"**	**5"**	**5"**	**5-1/4"**
Height, bottom to center line (D below)	**1-1/2"**	**1-1/2"**	**1-1/2"**	**1-1/2"**	**1-3/4"**
Weight (lbs)	**3.95**	**4.0**	**4.1**	**4.6**	**5.25**
Packed To Carton	**6**	**6**	**6**	**4**	**4**
Carton Weight (lbs)	**25.1**	**25.4**	**26**	**19.8**	**22.4**

Accuracy and Head Loss Chart





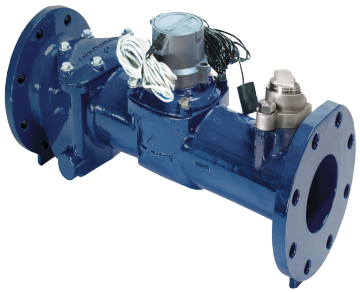
OMNI™ T²

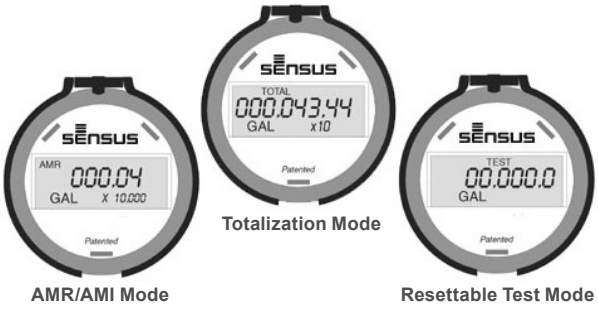
1-1/2”, 2”, 3”, 4”, 6”, 8” and 10” OMNI T² Meter

Description

1-1/2”, 2”, 3”, 4”, 6”, 8” and 10” Sizes

The OMNI T² meter operation is based on advanced Floating Ball Technology (FBT).





AMR/AMI Mode

Totalization Mode

Resettable Test Mode

Features

CONFORMANCE TO STANDARDS

The OMNI T² meter meets and far exceeds the most recent revision of AWWA Standard C701 class II standards. Each meter is performance tested to ensure compliance. All OMNI meters are NSF/ANSI Standard 61, Annex F and G approved.

PERFORMANCE

The patented measurement principles of the OMNI T² meter assure enhanced accuracy ranges, an overall greater accuracy, and a longer service life than any other comparable class meter produced. The OMNI T² meter has no restrictions as to sustained flow rates within its continuous operating range. The floating ball measurement technology allows for flows up to its rated maximum capacity without affecting undue wear or accuracy degradation when installed in any orientation.

CONSTRUCTION

The OMNI T² meter consists of two basic assemblies; the maincase and the measuring chamber. The measuring chamber assembly includes the “floating ball” impeller with a coated titanium shaft, hybrid axial bearings, integral flow straightener and an all electronic programmable register with protective bonnet. The maincase is made from industry proven Ductile Iron with an approved NSF epoxy coating. Maincase features are; easily removable measuring chamber, unique chamber seal to the maincase using a high pressure o-ring, testing port and a convenient integral strainer.

OMNI ELECTRONIC REGISTER

The OMNI T² electronic register consist of a hermetically sealed register with an electronic pickup containing no mechanical gearing. The large character LCD displays AMR, Totalization and a Resettable Test Totalizer. OMNI register features; AMR resolution units that are fully programmable, Pulse output frequency that are fully programmable, Integral customer data logging capability, Integral resettable accuracy testing feature compatible with the UniPro Testing Assistant Program, Large, easy-to-read LCD also displays both forward and reverse flow directions and all with a 10-year battery life guarantee.

MAGNETIC DRIVE

Meter registration is achieved by utilizing a fully magnetic pickup system. This is accomplished by the magnetic actions of the embedded rotor magnets and the ultra sensitive register pickup probe. The only moving component in water is the “floating ball” impeller.

MEASURING ELEMENT

The revolutionary thermoplastic, hydro dynamically balanced impeller floats between the bearings. The Floating Ball Technology (FBT) allows the measuring element to operate virtually without friction or wear, thus creating the extended upper and lower flow ranges capable on only the OMNI T² meter.

STRAINER

The OMNI T² with the “V” shaped integral strainer using a stainless steel screen along with Floating Ball Technology (FBT) create a design that gives far improved accuracy even in those once thought questionable settings. A removable strainer cover permits easy access to the screen for routine maintenance.

MAINTENANCE

The OMNI T² meter is designed for easy maintenance. Should any maintenance be required, the measuring chamber and / or strainer cover can be removed independently. Parts and or a replacement measuring chamber may be utilized in the event repairs are needed. Replacement Measuring Chambers Exchange are available for the OMNI T² meters and may also be utilized for retrofitting to competitive meters to achieve increased accuracy and extended service life.

AMR / AMI SYSTEMS:

Meters and encoders are compatible with current Sensus AMR/AMI systems.

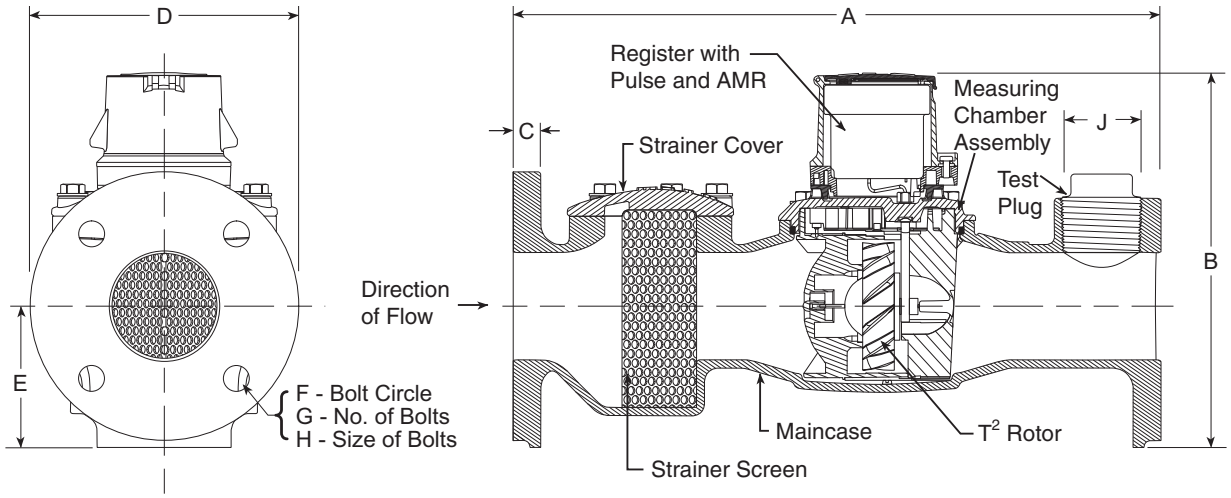
GUARANTEE:

Sensus OMNI T² Meters are backed by “The Sensus Guarantee.” Ask your Sensus representative for details or see Bulletin G-500.

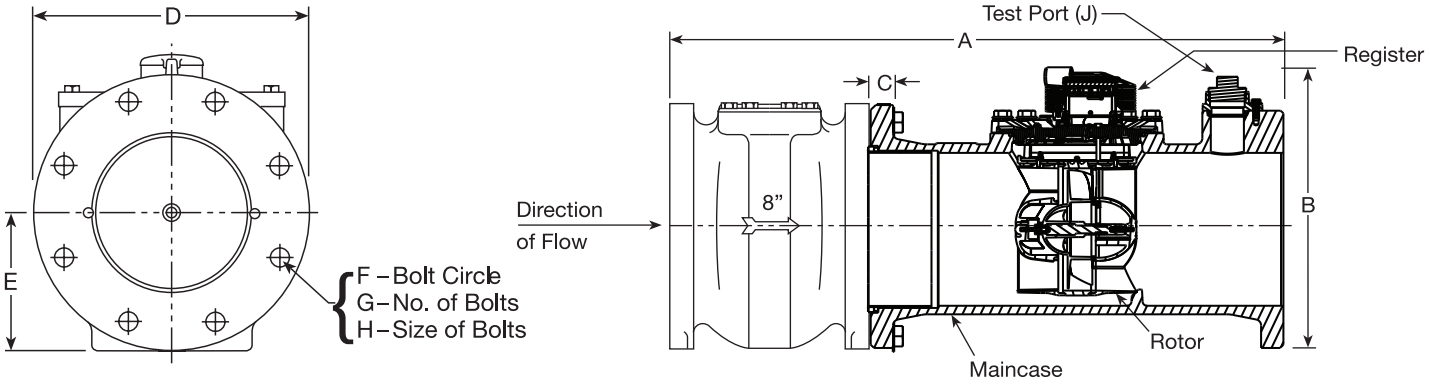
sensus

OMNI T²: 1-1/2”, 2”, 3”, 4”, 6”, 8” and 10” Sizes

OMNI T²: 1 1/2” - 6”



OMNI T²: 8” - 10”



DIMENSIONS AND NET WEIGHTS

Meter and Pipe Size	Normal Operating Range		Connections	A	B	C	D	E	F	G	H	J	Net Weight	Shipping Weight
1-1/2” DN 40mm	1.25 gpm .28 m³/hr	200 gpm 45 m³/hr	Flanged	13” 330mm	7-7/8” 200mm	15/16” 24mm	5-1/8” 130mm	2-5/16” 59mm	4” 102mm	2	5/8” 16mm	1” 25mm	18.8 lbs. 8.53 kg..	22.5 lbs. 10.20 kg.
2” DN 50mm	1.5 gpm .34 m³/hr	250 gpm 57 m³/hr	Flanged	17” 432mm	7-7/8” 200mm	1” 25mm	5-3/4” 146mm	2-5/16” 59mm	4-1/2” 114mm	2	3/4” 19mm	1-1/2” 40mm	27.4 lbs. 12.42 kg.	34.5 lbs. 15.65 kg.
2” without Strainer DN 50mm	1.5 gpm .34 m³/hr	250 gpm 57 m³/hr	Flanged	10” 254mm	7-7/8” 200mm	1” 25mm	5-3/4” 146mm	2-5/16” 59mm	4-1/2” 114mm	2	3/4” 19mm	N/A	17.4 lbs. 7.9 kg.	24.5 lbs. 11.11 kg.
3” DN 80mm	2.5 gpm .57 m³/hr	650 gpm 148 m³/hr	Flanged	19” 432mm	8-3/4” 222mm	3/4” 19mm	7-7/8” 200mm	4-1/8” 105mm	6” 153mm	4	5/8” 16mm	2” 50mm	48.5 lbs. 22.00 kg.	57.4 lbs. 26.04 kg.
4” DN 100mm	3.0 gpm .68 m³/hr	1250 gpm 284 m³/hr	Flanged	23” 584mm	11-3/16” 284mm	15/16” 24mm	9-1/8” 232mm	4-3/4” 121mm	7-1/2” 191mm	8	5/8” 16mm	2” 50mm	67.9 lbs. 30.80 kg.	75.8 lbs. 34.38 kg.
6” DN 150mm	4 gpm .91 m³/hr	2500 gpm 568 m³/hr	Flanged	27” 685mm	13-1/4” 336mm	15/16” 24mm	11” 279mm	5-3/4” 146mm	9-1/2” 242mm	8	3/4” 19mm	2” 50mm	140 lbs. 52.3 kg.	165 lbs. 61.6 kg.
8” DN 200mm	5 gpm 1.1 m³/hr	3500 gpm 795 m³/hr	Flanged	30-1/8” 765 mm	15” 381 mm	11/16” 17 mm	13-1/2” 343 mm	6-3/4” 172 mm	11-3/4” 300 mm	8	3/4” 19 mm	2” NPT	471 lbs. 214 kg.	521 lbs. 236 kg.
10” DN 250mm	6 gpm 1.4 m³/hr	5500 gpm 1249 m³/hr	Flanged	41-1/8	19” 485mm	11/16” 17mm	16” 406mm	8-1/2” 216mm	14-1/4” 362mm	12	7/8” 22mm	2” NPT	685 lbs. 311 kg.	745 lbs. 338 kg.

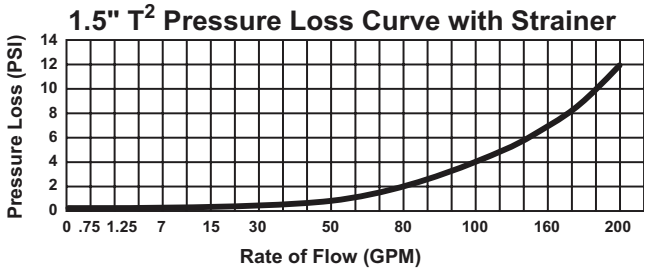
OMNI T²: 1-1/2", 2", 3", 4", 6", 8" and 10" Sizes

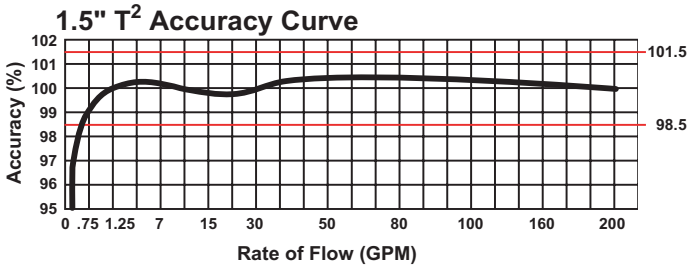
SPECIFICATIONS

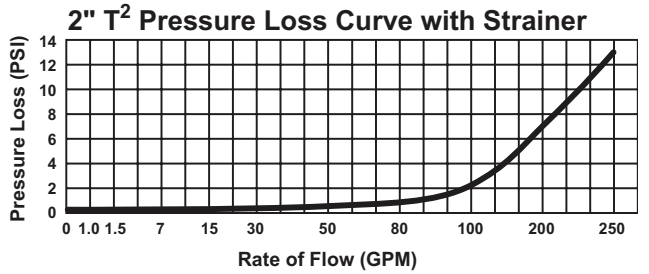
SERVICE	Measurement of potable and reclaim water. Operating temperature range of 33 ºF (56 ºC) - 150 ºF (65.6 ºC)
OPERATING RANGE (100% ± 1.5%)	1-1/2": 1.25 – 200 GPM (.28 - 45 m^3/hr) 2" and 2" without Strainer: 1.5 – 250 GPM (.34 – 57 m^3/hr) 3": 2.5 – 650 GPM (.57 – 148 m^3/hr) 4": 3 – 1250 GPM (.68 – 284 m^3/hr) 6": 4 – 2500 GPM (.91 – 568 m^3/hr) 8": 5 – 3500 GPM (1.1-795 m^3/hr) 10": 6 – 5500 GPM (1.4 - 1249 m^3/hr)
LOW FLOW (95% – 101.5%)	1-1/2": .75 GPM (.17 m^3/hr) 2" and 2" without Strainer: 1.0 GPM (.23 m^3/hr) 3": 1.5 GPM (.34 m^3/hr) 4": 2.0 GPM (.45 m^3/hr) 6": 2.5 GPM (.57 m^3/hr) 8": 4 GPM (0.9 m^3/hr) 10": 5 GPM (1.1 m^3/hr)
MAXIMUM CONTINUOUS OPERATION	1-1/2": 160 GPM (36 m^3/hr) 2" and 2" without Strainer: 200 GPM (45 m^3/hr) 3": 500 GPM (114 m^3/hr) 4": 1000 GPM (227 m^3/hr) 6": 2000 GPM (454 m^3/hr) 8": 3500 GPM (795 m^3/hr) 10": 5500 GPM (1249 m^3/hr)
MAXIMUM INTERMITTENT OPERATION	1-1/2": 200 GPM (45 m^3/hr) 2" and 2" without Strainer: 250 GPM (57 m^3/hr) 3": 650 GPM (148 m^3/hr) 4": 1250 GPM (284 m^3/hr) 6": 2500 GPM (568 m^3/hr) 8": 4700 GPM (1067 m^3/hr) 10": 7000 GPM (1590 m^3/hr)
PRESSURE LOSS	1-1/2": 6.9 psi @ 160 GPM (48 bar @ 36 m^3/hr) 2" and 2" without Strainer: 7.0 psi @ 200 GPM (.48 bar @ 45 m^3/hr) 3": 5.1 psi @ 500 GPM (.35 bar @ 114 m^3/hr) 4": 8.7 psi @ 1000 GPM (.60 bar @ 227 m^3/hr) 6": 8.2 psi @ 2000 GPM (.56 bar @ 454 m^3/hr) 8": 5.1 psi @ 3500 GPM (.35 bar @ 795 m^3/hr) 10": 7.2 psi @ 5500 GPM (.50 bar @ 1249 m^3/hr)
MAXIMUM OPERATING PRESSURE	200 PSI (13.8 bar)
FLANGE CONNECTIONS	U.S. ANSI B16.1 / AWWA Class 125
REGISTER	Fully electronic sealed register with programmable registration (Gal. /Cu.Ft./ Cu. Mtr. / Imp.Gal / Acre Ft.) Programmable AMR/AMI reading and pulse outputs Guaranteed 10 year battery life
NSF APPROVED MATERIALS	**Maincase:** Coated Ductile Iron **Measuring Chamber:** Thermoplastic **Rotor "Floating Ball":** Thermoplastic **Radial Bearings:** Hybrid Thermoplastic **Thrust Bearings:** Sapphire/Ceramic Jewel **Magnets:** Ceramic Magnet **Strainer Screen:** Stainless Steel **Strainer Cover:** Coated Ductile Iron **Test Plug:** Coated Ductile Iron

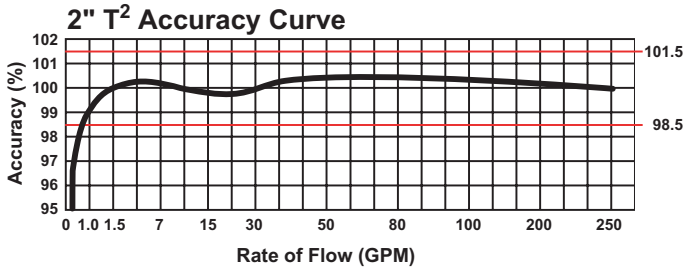
OMNI T²: 1-1/2”, 2”, 3”, 4”, 6”, 8” and 10” Sizes

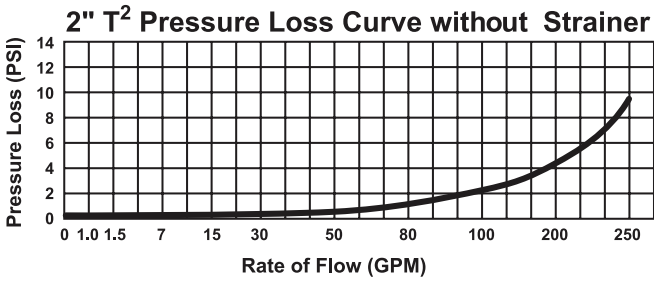
Headloss Curves

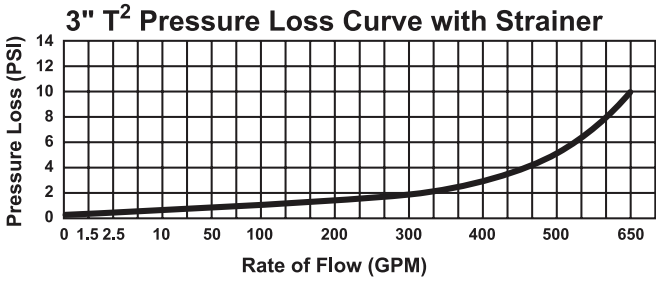


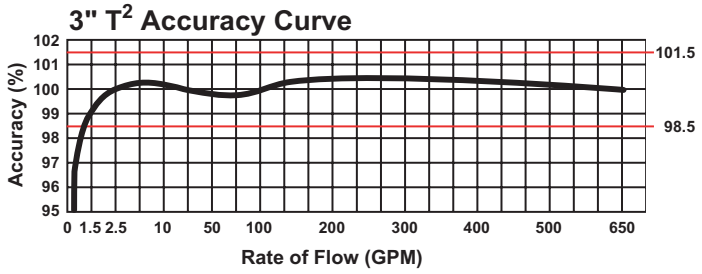


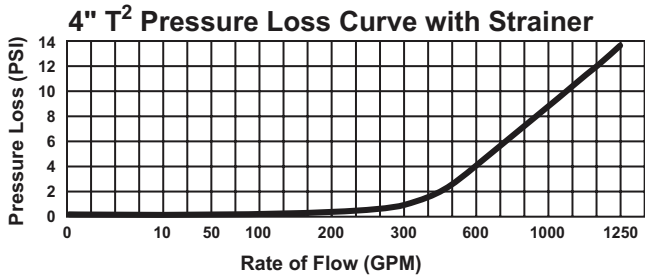


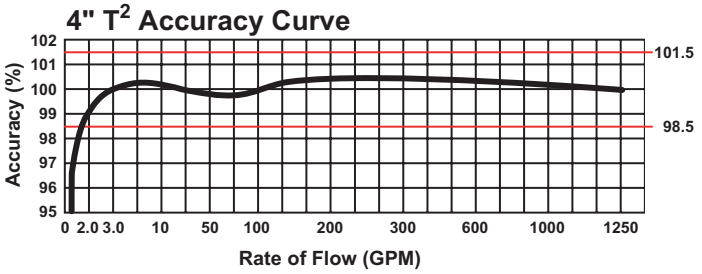






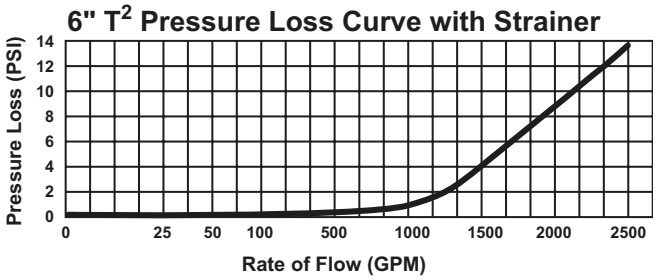


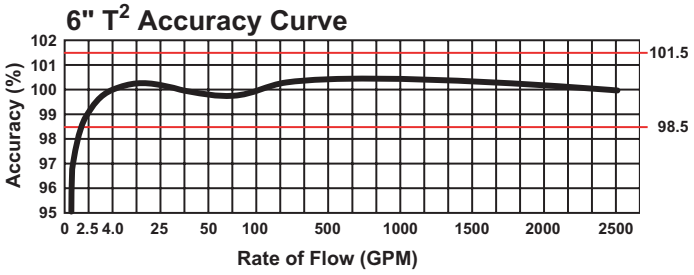


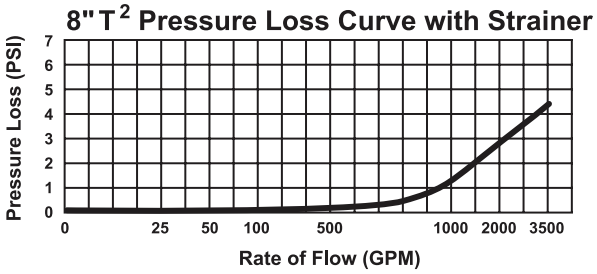


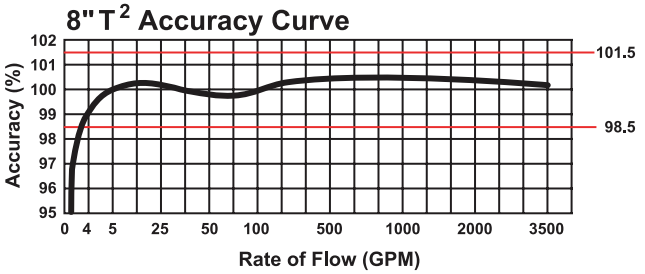
OMNI T²: 1-1/2”, 2”, 3”, 4”, 6”, 8” and 10” Sizes

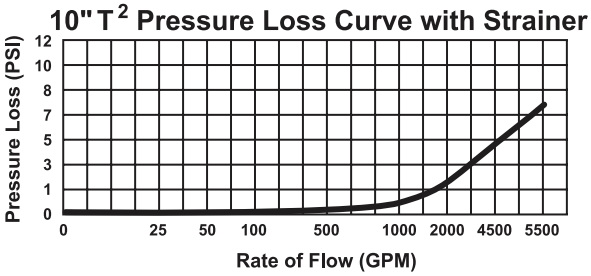
Headloss Curves

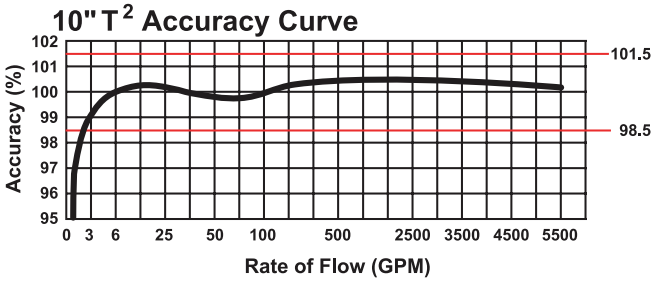












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SIEMENS

Meter Testing Process and Procedures: Small Meters 5/8” to 2”

The Siemens team follows the AWWA Manual of Practice (MOP) M6 for the development of all of our projects. The MOP outlines the steps to be taken for testing meters to determine accuracy of the system.

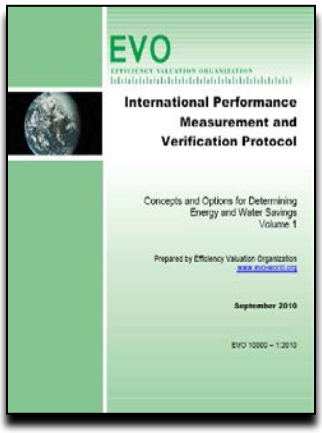
The following steps describe the development methodology used for this project.

Step 1 – Determine desired confidence level.

For Performance Contracting projects, this desired confidence level is governed by the Federal Energy Management Program (FEMP) Guidelines or the International Performance Measurement and Verification Protocol (IPMVP)

For Pre-measurements testing, this value is typically set to 90%

Siemens adheres to the FEMP Guidelines to ensure that the revenue increases calculated are as accurate and robust as possible.



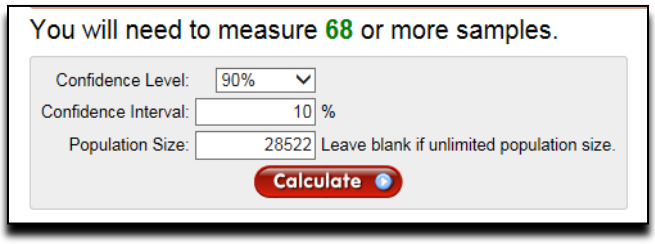
Step 2 – Determine appropriate sample lot size for the confidence level.

In addition to confidence level, the desired sample lot size is calculated using two other parameters, the error tolerance, as governed by FEMP and IPMVP, and the total population size of the meters in the test group.

The IPMVP recommended error tolerance for measurement of existing conditions (“pre-measurement testing”) is 10%.

For the Carpinteria Valley Water District, the residential/light commercial population of 4,446 meters was used in the calculations.

Using the confidence level, error tolerance and population, an online calculator can be used to determine the sample size. For the District the sample size equaled 68 meters as shown below. The sample size was increased to 70 to ensure we had meters from each of the sizes 2” and smaller.



Step 3 – Determine criteria for testing (size, age, volume, type).

For water meter projects, the criteria for testing is set in step 2 and is based on the volume/usage pattern of the meters. All residential/light commercial usage meters (2" and smaller meters) are included in the same sample population, because there is not enough variation in usage patterns and/or meter types to separate the meters into more than one group.

Step 4 – Randomly select and retrieve.

Random Sample Test Lists were created and sent to the District for approval. The lists consisted of a main list and an alternate list in case the installation team encountered a difficult installation (i.e. possible broken pipe, difficult resident, bad dog, etc.)

The test lists were approved by District staff on XX,XX, 2016.

Replacement meters were ordered and the meter change-outs were completed. The residential meters are removed from service and replaced with a like size and type meter. All critical meter swap out data is collected at the time of the replacement and can include:

- Old Meter Reading
- New Meter Reading
- New Meter Serial Number

Step 5 – Test and document.

The removed meters are shipped to a third-party test lab. Tests were performed on September 23, 2016 on calibrated test benches and using the appropriate flow rates and durations as outlined in the AWWA Manual as shown below:

Table 5-3 Test requirements for new, rebuilt, and repaired cold–water meters*

Displacement Meters (AWWA C700 and C710)													
	Maximum Rate (All Meters)				Intermediate Rate (All Meters)				Minimum Rate (New and Rebuilt)				Minimum (Repaired)
Size	Flow Rate†	Test Quantity††		Accuracy Limits	Flow Rate**	Test Quantity††		Accuracy Limits	Flow Rate	Test Quantity††		Accuracy Limits	Accuracy Limits
in.	*gpm*	*gal*	*ft³*	*percent*	*gpm*	*gal*	*ft³*	*percent*	*gpm*	*gal*	*ft³*	*percent*	*percent (min)*
½	8	100	10	98.5–101.5	2	10	1	98.5–101.5	¼	10	1	95–101	90
½ × ¾	8	100	10	98.5–101.5	2	10	1	98.5–101.5	¼	10	1	95–101	90
⅝	15	100	10	98.5–101.5	2	10	1	98.5–101.5	¼	10	1	95–101	90
⅝ × ¾	15	100	10	98.5–101.5	2	10	1	98.5–101.5	¼	10	1	95–101	90
¾	25	100	10	98.5–101.5	3	10	1	98.5–101.5	½	10	1	95–101	90
1	40	100	10	98.5–101.5	4	10	1	98.5–101.5	¾	10	1	95–101	90
1½	50	100	10	98.5–101.5	8	100	10	98.5–101.5	1½	100	10	95–101	90
2	100	100	10	98.5–101.5	15	100	10	98.5–101.5	2	100	10	95–101	90

Step 6 – Analyze test data.

For 5/8" x ¾" Residential Meters the AWWA Guidelines for Usage is as follows:

Low Flow – 15% (0.25 gpm)

Medium Flow – 70% (2.00 gpm)

High Flow – 15% (15.00 gpm)

Meters are tested to determine the accuracy at each flow rate. The accuracy percentages are then used to calculate a weighted average accuracy for the meter, as shown in the sample calculation below. This sample calculation also demonstrates the importance of using the weighted accuracy, rather than only the accuracies associated with higher flows. The calculation also correctly shows that, for positive displacement meters, it is the low flow accuracy that will degrade first, with the meter remaining more accurate at higher flows.

Test Results from the test lab show:

- *Low Flow = 10.1%*
- *Medium Flow = 97.4%*
- *High Flow = 98.1%*
- *Looks Good Right?*

The Weighted Average Accuracy is then calculated as:

- *= (10.1% x 15%) + (97.4% x 70%) + (98.1% x 15%)*
- *= 84.4%*
- *= Lost Revenue!*

Weighted averages for all small meter sizes are provided below, followed by the meter-by-meter test results.

Meter Size	Number in Population	Number Pulled for Testing	Weighted Tested Accuracy	AWWA New Meter Accuracy
5/8"x 3/4"	3,408	53	94.7%	98.0%
1"	427	7	94.2%	98.0%
1 1/2"	241	4	92.9%	98.0%
2"	370	6	94.2%	98.0%
Total	4,446	70		

SIEMENS

0.625 X 0.75 (5/8” x 3/4”) Positive Displacement Meter Test Results

				Minimum Flow		Intermediate Flow		High Flow			
Ref #	Manufacturer	Serial #	Reading (kgal)	Rate (gpm)	Accuracy (%)	Rate (gpm)	Accuracy (%)	Rate (gpm)	Accuracy (%)	Weighted Average Accuracy (%)	Remarks
1	ROCKWELL	45557386	259,275	0.50	88.0%	3.00	100.0%	25.00	99.0%	98.1%	PD
2	ROCKWELL	55762096	290,075	0.50	71.0%	3.00	94.0%	25.00	97.0%	91.0%	PD
3	ROCKWELL	25275188	206,220	0.50	46.0%	3.00	96.0%	25.00	101.0%	89.3%	PD
4	ROCKWELL	43741258	339,844	0.50	93.0%	3.00	99.0%	25.00	99.0%	98.1%	PD
5	ROCKWELL	30132887	574,030	0.50	0.0%	3.00	95.0%	25.00	94.0%	80.6%	PD
6	ROCKWELL	19335634	202,886	0.50	73.0%	3.00	98.0%	25.00	97.0%	94.1%	PD
7	ROCKWELL	19840360	257,746	0.50	75.0%	3.00	99.0%	25.00	97.0%	95.1%	PD
8	ROCKWELL	26977328	370,677	0.50	81.0%	3.00	100.0%	25.00	97.0%	96.7%	PD
9	ROCKWELL	26977567	151,549	0.50	77.0%	3.00	96.0%	25.00	94.0%	92.9%	PD
10	ROCKWELL	22053423	288,541	0.50	62.0%	3.00	97.0%	25.00	97.0%	91.8%	PD
11	ROCKWELL	48831720	267,439	0.50	94.0%	3.00	99.0%	25.00	99.0%	98.3%	PD
12	ROCKWELL	48194539	504,283	0.50	75.0%	3.00	100.0%	25.00	98.0%	96.0%	PD
13	ROCKWELL	21161710	344,594	0.50	60.0%	3.00	97.0%	25.00	97.0%	91.5%	PD
14	ROCKWELL	58847824	197,145	0.50	86.0%	3.00	97.0%	25.00	96.0%	95.2%	PD
15	ROCKWELL	29925567	411,383	0.50	25.0%	3.00	92.0%	25.00	95.0%	82.4%	PD
16	ROCKWELL	53653190	304,122	0.50	88.0%	3.00	98.0%	25.00	97.0%	96.4%	PD
17	ROCKWELL	40495503	266,701	0.50	78.0%	3.00	99.0%	25.00	98.0%	95.7%	PD
18	ROCKWELL	59773105	242,021	0.50	73.0%	3.00	95.0%	25.00	96.0%	91.9%	PD
19	ROCKWELL	28764195	796,041	0.50	87.0%	3.00	99.0%	25.00	99.0%	97.2%	PD
20	ROCKWELL	34755053	591,448	0.50	86.0%	3.00	98.0%	25.00	98.0%	96.2%	PD
21	ROCKWELL	50497088	99,083	0.50	92.0%	3.00	99.0%	25.00	99.0%	98.0%	PD
22	ROCKWELL	44618656	162,819	0.50	92.0%	3.00	100.0%	25.00	99.0%	98.7%	PD
23	ROCKWELL	48831719	496,127	0.50	82.0%	3.00	99.0%	25.00	99.0%	96.5%	PD
24	ROCKWELL	29926504	150,452	0.50	0.0%	3.00	89.0%	25.00	92.0%	76.1%	PD
25	ROCKWELL	26977309	155,441	0.50	71.0%	3.00	97.0%	25.00	96.0%	93.0%	PD
26	ROCKWELL	20746047	381,108	0.50	84.0%	3.00	100.0%	25.00	96.0%	97.0%	PD
27	ROCKWELL	26255512	276,653	0.50	67.0%	3.00	0.0%	25.00	96.0%	24.5%	PD
28	ROCKWELL	19335640	576,547	0.50	78.0%	3.00	100.0%	25.00	99.0%	96.6%	PD
29	ROCKWELL	57313167	242,728	0.50	83.0%	3.00	97.0%	25.00	97.0%	94.9%	PD
1	SENSUS	66216278	213,837	0.50	0.0%	2.00	99.0%	25.00	99.0%	84.2%	MJ
2	SENSUS	73051471	13,554	0.50	99.0%	2.00	100.0%	25.00	100.0%	99.9%	MJ
3	SENSUS	73185110	32,573	0.50	97.0%	2.00	100.0%	25.00	100.0%	99.6%	MJ
4	SENSUS	73051651	11,995	0.50	98.0%	2.00	101.0%	25.00	97.0%	100.0%	MJ
5	SENSUS	73051648	45,505	0.50	99.0%	2.00	99.0%	25.00	101.0%	99.3%	MJ
6	SENSUS	68409298	31,733	0.50	98.0%	2.00	99.0%	25.00	100.0%	99.0%	MJ
7	SENSUS	62606275	173,557	0.50	98.0%	2.00	100.0%	25.00	100.0%	99.7%	MJ
8	SENSUS	68409201	52,191	0.50	99.0%	2.00	100.0%	25.00	99.0%	99.7%	MJ
9	SENSUS	64856201	135,857	0.50	88.0%	2.00	99.0%	25.00	99.0%	97.4%	MJ
10	SENSUS	61832413	177,296	0.50	96.0%	2.00	100.0%	25.00	99.0%	99.3%	MJ
11	SENSUS	54856066	235,484	0.50	96.0%	2.00	101.0%	25.00	100.0%	100.1%	MJ
12	SENSUS	64856255	144,468	0.50	100.0%	2.00	101.0%	25.00	100.0%	100.7%	MJ
13	SENSUS	64653667	300,636	0.50	97.0%	2.00	100.0%	25.00	99.0%	99.4%	MJ
14	SENSUS	68931605	89,733	0.50	97.0%	2.00	101.0%	25.00	100.0%	100.3%	MJ
15	SENSUS	64011065	117,647	0.50	98.0%	2.00	100.0%	25.00	99.0%	99.6%	MJ
16	SENSUS	66456514	595,383	0.50	97.0%	2.00	99.0%	25.00	99.0%	98.7%	MJ
17	SENSUS	65651982	103,403	0.50	98.0%	2.00	100.0%	25.00	100.0%	99.7%	MJ
18	MASTER METER	10209578	24,769	0.50	98.0%	2.00	101.0%	25.00	100.0%	100.4%	MJ
19	MASTER METER	9459861	28,566	0.50	99.0%	2.00	100.0%	25.00	101.0%	100.0%	MJ
20	MASTER METER	9575134	12,374	0.50	99.0%	2.00	101.0%	25.00	101.0%	100.7%	MJ
21	MASTER METER	9575156	15,322	0.50	98.0%	2.00	101.0%	25.00	92.0%	99.2%	MJ
22	MASTER METER	9575159	26,622	0.50	99.0%	2.00	100.0%	25.00	101.0%	100.0%	MJ
23	MASTER METER	10572146	806	0.50	99.0%	2.00	100.0%	25.00	101.0%	100.0%	MJ
24	MASTER METER	10231030	1,823	0.50	99.0%	2.00	101.0%	25.00	100.0%	100.6%	MJ
										94.7%	

SIEMENS

1” Positive Displacement Meter Test Results

				Minimum Flow		Intermediate Flow		High Flow			
Ref #	Manufacturer	Serial #	Reading (kgal)	Rate (gpm)	Accuracy (%)	Rate (gpm)	Accuracy (%)	Rate (gpm)	Accuracy (%)	Weighted Average Accuracy (%)	Remarks
1	BADGER	96665573	315,826	0.75	91.0%	4.00	98.0%	40.00	98.0%	97.0%	PD
2	SENSUS	32196745	935,853	0.75	0.0%	4.00	88.0%	40.00	95.0%	75.9%	PD
3	SENSUS	32196764	20,712	0.75	47.0%	4.00	95.0%	40.00	97.0%	88.1%	PD
1	SENSUS	71975251	191,879	0.75	99.0%	3.00	101.0%	35.00	100.0%	100.6%	MJ
2	SENSUS	62558929	398,552	0.75	98.0%	3.00	101.0%	35.00	101.0%	100.6%	MJ
3	MASTER METER	88466162	115,237	0.75	98.0%	3.00	99.0%	35.00	98.0%	98.7%	MJ
4	MASTER METER	8429455	16,068	0.75	99.0%	3.00	99.0%	35.00	98.0%	98.9%	MJ
										94.2%	

1 1/2” Positive Displacement Meter Test Results

				Minimum Flow		Intermediate Flow		High Flow		
Ref #	Manufacturer	Serial #	Reading (kgal)	Rate (gpm)	Accuracy (%)	Rate (gpm)	Accuracy (%)	Rate (gpm)	Accuracy (%)	Weighted Average Accuracy (%)
1	NEPTUNE	21215212	308,200	1.50	99.0%	8.00	99.0%	50.00	101.0%	99.3%
2	SENSUS	1580464	21,402	1.50	0.0%	8.00	99.0%	50.00	100.0%	84.3%
3	SENSUS	66173193	44,270	1.50	99.0%	8.00	94.0%	50.00	99.0%	95.5%
4	SENSUS	65652804	27,594	1.50	90.0%	8.00	92.0%	50.00	98.0%	92.6%
										92.9%

2” Positive Displacement Meter Test Results

				Minimum Flow		Intermediate Flow		High Flow		
Ref #	Manufacturer	Serial #	Reading (kgal)	Rate (gpm)	Accuracy (%)	Rate (gpm)	Accuracy (%)	Rate (gpm)	Accuracy (%)	Weighted Average Accuracy (%)
1	SENSUS	66884251	100,934	2.00	99.0%	15.00	94.0%	100.00	98.0%	95.4%
2	SENSUS	64485520	31,329	2.00	99.0%	15.00	96.0%	100.00	98.0%	96.8%
3	SENSUS	76216064	1,410,853	2.00	98.0%	15.00	100.0%	100.00	99.0%	99.6%
4	NEPTUNE	31634498	33,188	2.00	98.0%	15.00	98.0%	100.00	99.0%	98.2%
5	NEPTUNE	17221486	153,648	2.00	0.0%	15.00	92.0%	100.00	98.0%	79.1%
6	SENSUS	1377412	162,580	2.00	90.0%	15.00	97.0%	100.00	100.0%	96.4%
										94.2%

Attachment D

District Sample Bills

Carpinteria Valley Water District
1301 Santa Ynez Avenue
Carpinteria, CA 93013

Hours: 8:00 am to 5:00 pm, Monday through Friday
Office and 24 Hour Emergency Service: (805) 684-2816
Fax: (805) 755-2351 | Website: www.cvwd.net

Account Statement

CVK1102A AUTO SCH 5-DIGIT 93013
7000002014 00.0006.0129 2014/1

[redacted]

[redacted]
CARPINTERIA CA 93013-3013

ACCOUNT INFORMATION

ACCOUNT NUMBER	[redacted]
SERVICE ADDRESS	[redacted]
SERVICE FROM	09/21/2017 TO 10/24/2017
LAST PAYMENT DATE & AMOUNT	10/09/2017 -122.95 CR
BILLING DATE	10/28/2017
CUSTOMER CLASS	AGRICULTURAL

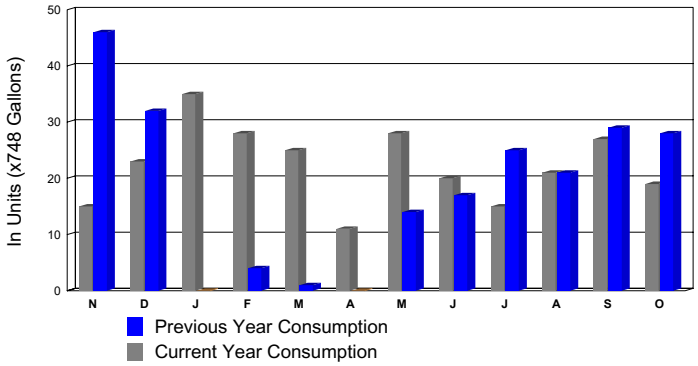
METER READ INFORMATION

Meter #	Dwelling Unit	Meter Size	Previous Read	Current Read	HCF
[redacted]	1	1	1013	1032	19

CHARGES

Description		Amount
WATER SALES	(19 UNITS @ 1.91)	36.29
BASIC CHARGE		16.38
STATE WATER PROJECT		50.00
METER SURCHARGE		5.00
TOTAL CURRENT CHARGES		**107.67**

2 YEAR MONTHLY WATER USAGE



1 UNIT= 100 CUBIC FEET (HCF) = 748 GALLONS

Bill Period	Days	Units	Gallons	Gallons/Day
Current Year	33	19	14,212	430.67
Previous Year		28	20,944	

ACCOUNT BALANCE

CREDIT BALANCE		0.00
CURRENT CHARGES DUE BY	11/28/2017	107.67
TOTAL AMOUNT DUE		**107.67**

SPECIAL MESSAGE:
Pedal Valves, a District sub-contractor, will commence ¾" meter replacements this month as part of the District's Advanced Metering Infrastructure (AMI) Program. If you have any questions please contact the District. *Please note the District office will be closed Thursday, November 23rd & Friday, November 24th in observance of the Thanksgiving Holiday.*

*** PAYMENTS DUE UPON RECEIPT ***

*** SEE REVERSE SIDE FOR ADDITIONAL INFORMATION ***

KEEP THE ABOVE PORTION FOR YOUR RECORDS.
PLEASE DO NOT FOLD, STAPLE OR PAPERCLIP CHECK TO COUPON.

Payment Coupon

PLEASE RETURN THIS PORTION WITH YOUR PAYMENT.
MAKE YOUR CHECKS PAYABLE TO:

Carpinteria Valley Water District

ACCOUNT NUMBER	[redacted]
SERVICE ADDRESS	[redacted]
SERVICE FROM	09/21/2017 TO 10/24/2017
BILLING DATE	10/28/2017

[redacted]
CARPINTERIA CA 93013-3013

PAST DUE BALANCE	0.00	**BY:** 11/13/2017
CURRENT AMOUNT	107.67	**BY:** 11/28/2017
TOTAL BALANCE	**107.67**	
AMOUNT ENCLOSED		

REMIT PAYMENT TO:

CARPINTERIA VALLEY WATER DISTRICT
PO BOX 36
CARPINTERIA CA 93014-0036

[redacted]

[redacted]

DESCRIPTION OF CHARGES

MONTHLY SERVICE CHARGE, is payable whether or not any water is used.

Tiered **WATER RATES** fund District operations.

BASIC CHARGE component funds District capital projects and capital expenditures.

The **STATE WATER PROJECT** component funds the District's share of State Water Project construction costs, authorized by District voters in 1991. By utilizing a comprehensive California-wide network of reservoirs, canals, pipelines and pumping facilities, the project is a supplemental water source for Carpinteria, accessed when other sources of supply are reduced due to drought or other shortages. The District increases its annual Cachuma Project yield by exchanging State Water Project water with Improvement District # 1 in the Santa Ynez Valley.

CAPITAL IMPROVEMENT PROGRAM component funds major safe drinking water capital projects.

DWELLING UNIT EQUIVALENCY CHARGE (for Master Meter accounts only) is the difference between the State Water Project (SWP) service charge for a single-family account with a 3/4" meter and the SWP component charges associated with a given master-meter account divided by the number of residential accounts. All Dwelling Unit Equivalency Charges are for the State Water Project.

RESIDENTIAL EQUIVALENCY CHARGE (for Agricultural accounts only) is the difference between 12 HCF of water at the Residential rate and 12 HCF of water at the Agricultural rate. The REQ is adjusted every year based on a rolling 5 year average. This fee is charged to all residential dwellings receiving the agricultural water rate.

PAST DUE BILLS

PAYMENTS: Payments are due upon receipt of monthly invoice and must be paid no later than the Past Due date printed on the front of this billing statement. It is important to know that failure to pay the charges in full prior to the due date may result in disconnection of water service.

DOOR TAG CHARGE: If the District does not receive payment by the Penalty Date, a late payment charge is assessed and service may be discontinued for non-payment.

PAYING YOUR WATER BILL

The following payment options are available for your convenience:

ONLINE: Visit www.cvwd.net.

BY U.S. MAIL: P.O. Box 36, Carpinteria, CA 93014-0036.

BY BANK DRAFT: Visit www.cvwd.net to sign up for Direct Payment or call to request form.

IN PERSON: 1301 Santa Ynez Avenue during business hours.

DROP BOX: District office located at 1301 Santa Ynez Avenue.

BUSINESS HOURS

Monday-Friday 8:00 a.m. to 5:00 p.m. excluding Holidays

BOARD MEETINGS

CVWD is a public agency governed by a five member board that are elected by the Carpinteria Valley's registered voters. The Board typically meets twice a month on the second & fourth Wednesdays of the month at 5:30 p.m. at Carpinteria City Hall at 5775 Carpinteria Avenue, Carpinteria. The public is encouraged to attend. Please call the District to confirm dates.

MORE INFORMATION

Please call at least 24 hours prior to terminating service.

For more information about water service and the District, contact customer service at (805) 684-2816 or visit us online at: www.cvwd.net

COMMENTS/SUGGESTIONS: _____

_____

_____

If you wish to be contacted please provide a phone number ( ) _____

Change of mailing address, phone, or email.
For all other changes to your account contact Customer Service at (805) 684-2816.

Mailing Address: _____

Email: _____

Daytime Phone: _____ Evening/Alt. Phone: _____

Carpinteria Valley Water District
1301 Santa Ynez Avenue
Carpinteria, CA 93013

Hours: 8:00 am to 5:00 pm, Monday through Friday
Office and 24 Hour Emergency Service: (805) 684-2816
Fax: (805) 755-2351 | Website: www.cvwd.net

CVK1102A
9000000098 00.0000.0098 98/1

[redacted]

[redacted]
CARPINTERIA CA 93013-1701

Account Statement

ACCOUNT INFORMATION

ACCOUNT NUMBER	[redacted]
SERVICE ADDRESS	[redacted]
SERVICE FROM	09/21/2017 TO 10/24/2017
LAST PAYMENT DATE & AMOUNT	10/20/2017 -93.51 CR
BILLING DATE	10/28/2017
CUSTOMER CLASS	RESIDENTIAL

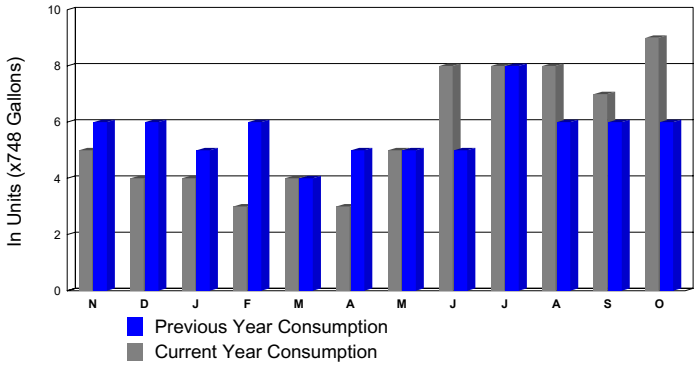
METER READ INFORMATION

Meter #	Dwelling Unit	Meter Size	Previous Read	Current Read	HCF
[redacted]	1	3/4	1303	1312	9

CHARGES

Description		Amount
WATER SALES	(6 UNITS @ 3.63)	21.78
WATER SALES	(1 UNITS @ 4.75)	4.75
WATER SALES	(2 UNITS @ 4.75)	9.50
BASIC CHARGE		9.83
STATE WATER PROJECT		30.00
CAPITAL IMPROVEMENT PROG		19.25
METER SURCHARGE		3.00
VOLUME SURCHARGE		4.90
TOTAL CURRENT CHARGES		**103.01**

2 YEAR MONTHLY WATER USAGE



1 UNIT= 100 CUBIC FEET (HCF) = 748 GALLONS

Bill Period	Days	Units	Gallons	Gallons/Day
Current Year	33	9	6,732	204.00
Previous Year		6	4,488	

ACCOUNT BALANCE

CREDIT BALANCE		0.00
CURRENT CHARGES DUE BY	11/28/2017	103.01
TOTAL AMOUNT DUE		**103.01**

THANK YOU FOR KEEPING YOUR ACCOUNT CURRENT.

[redacted]

SPECIAL MESSAGE:
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Payment Coupon

PLEASE RETURN THIS PORTION WITH YOUR PAYMENT.
MAKE YOUR CHECKS PAYABLE TO:

Carpinteria Valley Water District

ACCOUNT NUMBER	[redacted]
SERVICE ADDRESS	[redacted]
SERVICE FROM	09/21/2017 TO 10/24/2017
BILLING DATE	10/28/2017

[redacted]
CARPINTERIA CA 93013-1701

PAST DUE BALANCE	0.00	**BY:** 11/13/2017
CURRENT AMOUNT	103.01	**BY:** 11/28/2017
TOTAL BALANCE	**103.01**	
AMOUNT ENCLOSED	[redacted]	

REMIT PAYMENT TO:

CARPINTERIA VALLEY WATER DISTRICT
PO BOX 36
CARPINTERIA CA 93014-0036

[redacted]

[redacted]

DESCRIPTION OF CHARGES

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COMMENTS/SUGGESTIONS: _____

_____

_____

If you wish to be contacted please provide a phone number ( ) _____

Change of mailing address, phone, or email.
For all other changes to your account contact Customer Service at (805) 684-2816.

Mailing Address: _____

Email: _____

Daytime Phone: _____ Evening/Alt. Phone: _____

Attachment E

District Water Shortage Plan

SECTION 6: WATER SHORTAGE CONTINGENCY PLANNING

6.1 UWMP REQUIREMENTS

This section will include the following requirements:

- Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage. (CWC, 10632(a) and 10632(a)(1))
- Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies. (CWC, 10632(a)(3))
- Identify mandatory prohibitions against specific water use practices during water shortages. (CWC, 10632(a)(4))
- Specify consumption reduction methods in the most restrictive stages. (CWC, 10632(a)(5))
- Indicated penalties or charges for excessive use, where applicable. (CWC, 10632(a)(6))
- Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts. (CWC, 10632(a)(7))
- Provide a draft water shortage contingency resolution or ordinance. (CWC, 10632(a)(8))
- Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis. (CWC, 10632(a)(9))

6.2 PROHIBITIONS, CONSUMPTION REDUCTION METHODS, AND PENALTIES

6.2.1 Mandatory Prohibitions on Water Wasting

Prohibition on waste of water usage was originally enacted in Ordinance No. 90-1 (copy provided in **Appendix H**) and has been restated in Ordinance No. 15-2 (copy provided in **Appendix H**).

Examples of specific restrictions and prohibited wasteful practices include, but not limited to, the following: no use of running water for hosing or washing down driveways, walkways, and buildings; restaurants are to refrain from serving water unless requested by customers; no outside watering between 10:00 a.m. and 4:00 p.m. by hand or moveable landscape irrigation system; no outside watering between 8:00 a.m. and 6:00 p.m. by a fixed landscape irrigation system; no watering after measurable rainfall events; controls on boat and vehicle washing; no use of water which results in runoff beyond the immediate area of use; and leaks must be repaired within seventy-two (72) hours of discovery or notification by the District.

6.2.2 Consumption Reduction Methods

Under normal water supply conditions, potable water production and deliveries figures are recorded monthly. Total deliveries are compared monthly with available supplies. A water supply report is generated for the Manager showing how the supply compares to the estimated demand for the year. This report is then presented to the Board its regular meeting each month.

During a Stage I or Stage II water shortage, weekly production will be collected and reported to the District Engineer. The Engineer compares the weekly production to the target weekly production to verify that the reduction goal is being met. Weekly reports are forwarded to the Manager. Monthly reports are presented to the Board of Directors at their regular meetings. If reduction goals are not met, the Engineer will determine where allotments are being exceeded and contact that customer directly in an effort to correct the problem. During a Stage III water shortage, the procedure listed above will be followed, with the addition of a daily production report to the Manager.

6.2.3 Water Allotment Methods

The District has established the allotment methods for each customer type as noted in **Table 6-1** below.

TABLE 6-1
WATER ALLOCATION METHOD BY CUSTOMER TYPE

Customer Type	Allocation Method
Agricultural	Percentage Reduction - vary by efficiency
Residential	Percentage Reduction – can vary by occupants per household
Commercial	Percentage Reduction
Industrial	Percentage Reduction
Public Authority	Percentage Reduction
New Customers	Estimate of similar uses apply
New Developments	No new services for new development during a declared water shortage of Stage III

Notes:
Source: CVWD, 2016.

Table 6-2 below indicates the proposed water allocated to each customer type by rationing stage during a declared water shortage. Individual customer allotments are based on a 5-year period. This gives the District a more accurate view of the usual water needs of each customer and provides additional flexibility in determining allotments and reviewing appeals. However, no allotment may be greater than the amount used in the most recent year of the five-year base period.

The District General Manager shall calculate each customer's allotment according to the established rationing allotment method. The allotment shall reflect seasonal patterns. Each customer shall be notified of his or her classification and allotment by mail before the effective date of the Water Shortage Emergency. New customers will be notified at the time the application for service is made. In a disaster, prior notice of allotment may not be possible; notice will be provided by other means. Any customer may appeal the assigned water allotment on the basis of incorrect calculation or health and safety.

TABLE 6-2
WATER USE RESTRICTION (ALLOTMENTS)

	Allotments		
User Type	**Stage I**	**Stage II**	**Stage III**
Agriculture	85%	70%	50%
Residential (1)	85%	70%	50%
Commercial	85%	70%	50%
Industrial	85%	70%	50%
Public Authority	85%	70%	50%

Notes:
(1) Exceptions may be made on a case by case basis for high occupancy dwellings. (CVWD, 2016)

6.2.4 Excessive Use Penalties

Excessive use penalties are not included in the current District policies and regulations. However, the District may impose excessive use penalties if additional conservation measures are deemed necessary.

6.3 EMERGENCY RESPONSE PLAN

In 1997, in accordance with the requirements of Assembly Bill 11X, the District developed its Emergency Response Plan (ERP). A copy of this Plan is provided in **Appendix F**. The District's plan contains procedures for the distribution of potable water in a disaster. These procedures are consistent with guidelines prepared by the California State Office of Emergency Services. The District's ERP identifies various levels of natural and man-caused emergencies and provides examples of actions for a number of given emergencies, including earthquake and power failure.

The District owns and operates sufficient groundwater production capacity to meet demands during a water supply shortage. In addition, specific water-critical customers (such as hospitals, schools, and a few individual customers with medical conditions dependent on continuous water availability) have been identified. Emergency potable water distribution sites have been identified as City Hall, Carpinteria Middle School, Carpinteria Valley Water District offices, and Carpinteria High School. Standby procurement documents are being developed for emergency bulk purchase of bottled water. Standby arrangements with several local trucking firms to

provide tankers to distribute potable water (certified by the California Division of Drinking Water) for safe transportation of potable water are being developed. All existing water supply storage, treatment, and distribution, facilities are now inspected weekly.

In the event of a major earthquake the District's Emergency Response Plan (**Appendix F**) includes procedures for assessment of damage, public notification and procedures to determine appropriate actions to restore service as quickly as possible. It is likely in such an event that District customers will be required to ration water to some degree. The District would implement its Water Shortage Contingency Plan, defined below, if necessary.

In the event of a flood that knocks out transmission or distribution lines the District staff will assess the damage and re-valve to get water to where it is needed. This type of disaster will probably result in isolated damage that can be worked around until the damage can be repaired. The District distribution is looped and in most cases water could be rerouted to any area of the District.

In the event of a power outage, the District has generators with automatic transfer switches on all the major booster stations and a portable 300 kW generator to run the wells. Critical treatment equipment is all run from an uninterruptible power supply (UPS). All future treatment equipment will be equipped with an automatic transfer switch and emergency generator.

To offset future potential water shortages due to drought or disaster, the District is considering additional water supplies. These supplemental water supplies are summarized in **Section 4**.

6.4 WATER SHORTAGE CONTINGENCY PLANNING

In order to plan for a reliable water supply District staff examined both the possibility of short-term and long-term shortages. A short-term water shortage could result from a disaster such as an earthquake, flood, or even a widespread power outage. A long-term water shortage would most likely result from a long period of drought in the region. Durations of severe droughts in this region have historically lasted 3 to 5 years.

Costs of demand management or supply augmentation options to reduce the frequency and severity of shortages are now high enough that planners must look more carefully at the costs of not having reliable supplies to make the best possible estimate of the net benefit of taking specific actions, hence the term “reliability planning.” To plan for long-term water supply reliability, planners examine an increasingly wide array of supply augmentation and demand reduction options to determine the best courses of action for meeting water service needs. Such options are generally evaluated using the water service reliability planning approach. Reliability planning requires information about the following: (1) expected frequency and severity of shortages; (2) how additional water management measures are likely to affect the frequency and severity of shortages; (3) how available contingency measures can reduce the impact of shortages when they occur.

The District Board of Directors has declared a water shortage emergency in response to significant drought-related cutbacks in supply from Lake Cachuma. A summary of District drought related ordinances is provided below. Copies of selected District Resolutions are provided in **Appendix H**.

6.4.1 Water Shortage Contingency Ordinance/Resolution

The District adopted Resolution No. 547 in 1990 to address water shortage emergency (copy provided in **Appendix H)**. The District adopted Ordinance No. 90-1 in 1990 to address drought regulations and water conservation standards (copy provided in **Appendix H**). Ordinance No. 90-2, also adopted in 1990, addresses restrictions on uses of water within the District (copy provided in **Appendix H**). Ordinance No. 90-3, adopted in 1990, addresses restriction upon the delivery of water within the District (copy provided in **Appendix** H).

On February 12, 2014, the District adopted Resolution 972, declaring a Stage One (1) Drought Emergency to address drought conditions and request a 20 percent voluntary reduction in consumption from District customers. Resolution 980 was adopted in August 2014, incorporating prohibited activities defined by the State Water Resources Control Board's (SWRCB) Drought Emergency Water Conservation Regulation, and financial penalties for infraction of those prohibited activities. Ordinance 14-1, consolidating Resolutions 972 and 980, adding new requirements, and establishing enforcement measures was adopted in October 2014 (copy provided in **Appendix H**). Ordinance 15-2 was adopted in May 2015 which declared a Stage Two (2) Drought Condition with mandatory water use restrictions to achieve an immediate reduction in local municipal and industrial (M&I) water consumption by 20 percent in order to comply with the mandated state-wide reduction in water usage by 25 percent. In addition, Ordinance 15-2 incorporates additional prohibited activities and watering restrictions (copy provided in **Appendix H**).

The District is well prepared to operate effectively in the face of a catastrophic water supply interruption using the Emergency Response Plan (**Appendix F**) and the District Ordinances (**Appendix H**) for guidance.

6.4.2 Stages of Action and Reduction Goals

The District will use a three-stage rationing plan to invoke during declared water shortages. The rationing plan includes voluntary and mandatory rationing, depending on the causes, severity, and anticipated duration of the water supply shortage. **Table 6-3** summarizes the District's water rationing stages and reduction goals which range from 15 percent to 50 percent. The District will consider adding additional stages (i.e., up to total of 5 stages) in the near future.

6.4.3 Priority by Use

In the event of a water shortage emergency, water allotments will be established for all customers on a percentage basis. All customers will be required to reduce use at the same percentage. First priority is given to health and safety in all cases. It is not believed that a stage 3 shortage will jeopardize the health or safety of any District customers. If a customer chooses to protest their allotment due to hardship, they may file a claim at the District for review by the

General Manager and, if appropriate, by the Board of Directors. A decision to adjust an allotment will be based primarily on a health and safety basis.

TABLE 6-3
WATER SHORTAGE STAGES AND GOALS

Shortage Condition	Stage	Customer Reduction Goal	Type of Rationing Program
Up to 15 Percent	1	15%	Voluntary
15 to 30 Percent	2	25%	Voluntary
30 to 50 Percent	3	50%	Mandatory

Notes:
Source: CVWD, 2016.

6.4.4 Health and Safety Requirements

In Stage 1 and 2 shortages, customers may adjust either interior or outdoor water use (or both), in order to meet the voluntary water reduction goal. However, under Stage 3 mandatory rationing programs, the District established a health and safety allotment of 55 gallons per capita per day (gpcd) and as low as 43 gpcd for short-term severe water shortages. This value equals 2,684 cubic feet per person per year for long-term water shortages. Stage 3 mandatory rationing, which is likely to be declared only as the result of a prolonged water shortage or as a result of a disaster, would require that customers eliminate outdoor landscape watering and make changes in their interior water use habits (for instance, not flushing toilets unless "necessary" or taking less frequent showers).

6.4.5 Water Shortage Stages and Triggering Mechanisms

The water shortage response is designed to provide a minimum of 50 percent of normal supply during a severe or extended water shortage (Stage 3). The rationing program triggering levels shown below were established to ensure that this goal is met. Water shortage stages are provided in **Table 6-4**.

The District's potable water sources include local groundwater, local surface water from Lake Cachuma, and imported State Water Project water. Rationing stages may be triggered by a supply shortage in one source or a combination of sources. Shortages may overlap Stages, therefore triggers automatically implement the more restrictive Stage. Criteria for triggering the rationing stages are shown in **Table 6-4** below. A decision by the General Manager and ratification by the Board of Directors will be the mechanism by which the District will declare stage 1, 2 or 3 rationing requirements.

TABLE 6-4
WATER SHORTAGE STAGES AND TRIGGERING MECHANISMS

Percent Reduction of Supply	Stage 1 Up to 15%	Stage 2 15 - 30%	Stage 3 30-50%
Water Supply Condition			
Supply Deficit	(1) Estimated demand is projected to exceed total supply by up to 15%. And (2) Below "normal" year is declared. Or	(1) Estimated demand is projected to exceed total supply by 15-30%. And (2) Below "normal" year is declared. Or	(1) Estimated demand is projected to exceed total supply by over 30%. And (2) Fourth consecutive below "normal" year is declared and carryover water is depleted. Or
Water Quality	(1) Contamination of up to 15% of water supply (exceeds primary drinking water standards). Or	(1) Contamination of 15-30% of water supply (exceeds primary drinking water standards). Or	(1) Contamination of over 30% of water supply (exceeds primary drinking water standards). Or
Disaster Loss	As Necessary.	As Necessary.	As Necessary.

Notes:
Source: CVWD, 2016.

The General Manager shall report to the Board of Directors as needed with an assessment of the current water supplies, current water use trends, predicted weather conditions, and recommended water shortage stage. The Board of Directors may declare that a water shortage condition exists and implement the appropriate demand reduction goals and measures in response to current and/or predicted water availability conditions. During implementation of the water shortage stages, the District will perform water use/demand monitoring procedures. The District routinely monitors water use throughout the service area and can detect irregularly high water use. In general, monitoring of water use is performed during each water shortage stage, but may be intensified if conditions warrant.

6.4.6 Current Stage

The District Board of Directors approved Ordinance 15-2 on May 13, 2015, which authorized staff to implement Water Shortage Stage 2 measures. A copy of Ordinance 15-2 is provided in **Appendix H**. The District will select from a menu of options to achieve the Stage 2 demand reduction goal as provided in **Table 6-3**.

6.5 REVENUE AND EXPENDITURE IMPACTS AND MEASURES TO OVERCOME IMPACTS

Surplus revenues that the District collects are put into reserves for Capital Improvements and for emergencies. The District has a policy to maintain approximately 6 months of operating expenses in reserves. Since the District rates are structured such that 36 percent of revenue is collected through sales, 59 percent through service charge and 5 percent through other sources, a decrease in sales has a limited impact on revenues. Given District reserve policy, immediate rate increases would not be necessary to meet expenses. Under the current conditions the District could withstand an estimated 14-month period under a Stage 3 condition with existing expenditure levels before exhausting its reserves. No adjustments are anticipated in short-term expenditures as the result of water shortage stages.

Attachment F

Groundwater Management Plan

Groundwater Management Plan

Carpinteria Valley Water District

August 14, 1996

Adopted and approved by the Board of Directors of the Carpinteria Valley Water District at a regular Board meeting held on August 14, 1996, by Resolution No. 670

Charles B. Hamilton, Secretary

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Introduction

Assembly Bill 3030 (AB3030), passed by the California Legislature in 1992, provides for management of groundwater basins in order to maintain and protect water quality, maximize water supply, and to eliminate protracted legal battles over groundwater. The bill encourages local agencies to create and adopt groundwater management plans for their groundwater basins.

Based upon current information about the volume and quality of groundwater available in the Carpinteria Valley basin, there appears to be no compelling reason for an aggressive groundwater management effort by the Carpinteria Valley Water District (CVWD). There is, however, a clear need for the systematic monitoring and analysis of groundwater levels as well as water quality in the Carpinteria Valley. There is a ***growing use*** of the basin by private landowners as a source of irrigation water and the ***continuing need*** to maintain the basin as a major sustainable drinking water resource for all. Systematic monitoring, analysis and reporting will provide an early warning/detection system, should the growing use of the basin begin to adversely affect the basin. As a management tool, the use of such a system allows for informed decision-making relative to other possible management actions relative to other possible elements of a groundwater management plan identified in the legislation.

Responding to the AB3030 initiative, and the desire to accept the groundwater management challenge, Carpinteria Valley Water District's Board of Directors adopted a Resolution of Intention to draft a Groundwater Management Plan on September 14, 1994.

Description of the Groundwater Basin

The Carpinteria Groundwater Basin extends from a small area located in Ventura County, east of the Santa Barbara County line, across the Carpinteria Valley, to and including the small Toro Canyon area on the west. The areal extent of the basin is about 12 square miles (Figure 1).

Estimated Storage

Geotechnical Consultants, Inc. (GCI) estimated in 1986 that of the total basin storage, 700,000 acre feet, about 27%, or 170,000 acre feet is located in Storage Unit No. 1, in four major aquifers within the area of confined groundwater. Safe yield of the basin is estimated to be about 5,000 acre feet (GCI, 1986).

Historical Monitoring and Reports

Collection of data and evaluation of the groundwater resources in the Carpinteria Valley area have historically been performed by the United States Geological Survey (USGS) in conjunction with the Santa Barbara County Water Agency and the Carpinteria Valley Water District (District). Data collection was begun by USGS in 1941. In 1972 the USGS monitored 19 wells. Data from the monitoring of wells were supplemented with a survey conducted in 1973 in conjunction with a test hole drilling program conducted by the District and Geotechnical Consultants, Inc. Reports on the hydrogeology and surface water hydrology of the basin were published by the USGS in 1949, 1951 and 1962. Detailed hydrogeologic investigation reports were prepared by Geotech Consultants, Inc. in 1972, 1976 and 1986. A detailed description of the basin with an emphasis on aquifer characteristics and well yields was also prepared by Richard Slade in 1975. Limited water quality data was available for about 25% of the wells in the basin in 1976, as is the case in 1996.

Rain gauges within the Carpinteria Valley have been maintained since 1941 at the Middle School and at the Carpinteria Reservoir since 1957. The USGS has collected data on streamflow measurements on Carpinteria Creek since 1941.

Since 1976 the District and the USGS have had a cooperative agreement providing for groundwater level measurements and other water quality data from 41 wells in the Valley. The agreement also provides for continued operation and maintenance of the stream gauging station for Carpinteria Creek.

Historical Variations in Groundwater Levels

At the time of the District's formation in 1941, groundwater levels were declining. Hydrographs for the basin indicate that from 1947 to 1951, prior to the importation of surface water from Lake Cachuma, groundwater levels fell below sea level. Hydrographs since 1951 show rising water levels leading up to artesian conditions in 1979. Since the 1986-91 drought, when levels declined as well production increased, water levels have nearly returned to the historic high level brought about the very wet winter of 1983.

Historical Variations in Groundwater Pumpage

Groundwater pumpage has varied greatly over the last 60 years depending upon the availability of surface water, precipitation and land use. Both irrigation acreage and total pumpage doubled after World War II. Following the introduction of Cachuma Project water in the early 50's, pumpage declined. Toward the end of the most recent 1987-91 drought, as many as 60 additional private wells were drilled, bringing the total number of private wells to about 100. Estimated private pumpage that once averaged about 1,600 acre feet/year, reached a new high in 1994 of 2,780 acre feet. District pumping historically averaged about 2,200 acre feet/year, but in 1994 totaled 1,305 acre feet. Total 1994 pumpage (District and private) was 4085 acre feet, or about 82 % of the conservatively estimated 5,000 acre feet safe yield of the basin.

Water Quality

There are no known contamination problems in the Carpinteria Valley groundwater basin. Chloride, a common sea water constituent, is generally low in samples taken from the basin. Total Dissolved Solids (TDS) concentrations range from a low 450 to moderate 980 PPM. It is believed that the Rincon Thrust fault acts as a barrier to sea water intrusion.

Action Elements

1. Inventory of Wells

The profile of each drilled well in the Plan area shall include the following:

a. Location
b. Size of well casing (diameter)
c. Size of pump (horsepower)
d. Depth
e. Sanitary seal: yes / no depth
f. Meter: yes / no
g. Active / inactive/ abandoned / destroyed
h. Secured: yes / no
i. Other data if available: drillers log, electric log, chemical analysis, etc.

Note: This information will be treated as confidential information in the same way that customer account information is treated and released only with written permission of the well owners.

2. Monitoring of Groundwater Levels and Quality.

Groundwater levels shall be measured (frequency to be determined), and aquifer characteristics calculated annually, in conjunction with the USGS. The scope of this effort will be expanded as needed to encompass the whole basin.

Annually, wells (number to be determined) shall be sampled for nitrate, chloride, total dissolved solids (TDS), and boron. A second sample (number to be determined) of wells shall be tested for general mineral and inorganic characteristics. A third sample (number to be determined) of wells shall be tested on an "as needed" basis for trace contaminants such as VOCs (volatile organic chemicals). Frequency of sampling for water quality may increase if a problem is identified. It is anticipated that water quality information produced by the private pumpers will also be shared with the District.

Note: Participation in this effort by well owners, whether solely by providing the District with well information (Element 1), or by allowing sampling and water level measurements (Element 2), or both, is entirely voluntary. Results of District water quality testing and water level measurements will be shared with well owners. Water quality testing by the District may result in benefits to all well owners through pooled purchasing power, and this opportunity will be explored.

3. Creation of a Database and Reporting System.

All water level and water quality information shall be obtained and correlated by the District. The District will prepare an annual summary report of the data and findings, entitled Carpinteria Valley Groundwater Basin Report.

4. Identification and Monitoring of Recharge Areas

In monitoring recharge areas, the Manager will include in the annual Basin Report, a status report on recharge areas in the watershed. The status report will identify the major recharge areas of the watershed and identify significant potential and/or actual threats caused by pollution or reduction of recharge area.

5. Implementation of a Sanitary Seal Retrofit Program

Wells identified as being contaminated or polluted, or subject to a material or substantial contamination or pollution risk (in accordance with the definitions of contamination and pollution provided in State Water Code Section 13050, attached as Exhibit A) and identified as not having a sanitary seal, shall be fitted with sanitary seals or remedied by other actions as determined by the District, at the owners expense, in accordance with State and County standards, incorporated in this Plan as Exhibit B, County Ordinance No. 3458, Exhibit C, Water Well Standards: State of California Bulletin 74-81, and Exhibit D, California Well Standards Bulletin 74-90.

Examples of a "material or substantial risk" would include but not be limited to the following:

1) a septic tank in close proximity to a well
2) storage of hazardous materials in close proximity to a well
3) a well located within a drainage channel or in a floodplain
4) a leach field in close proximity to a well
5) a horse or other livestock corral in close proximity to a well.

6. Implementation of a Well Abandonment and Destruction Program

All abandoned and/or improperly secured wells shall be identified and at the owner's expense, abandoned and secured in accordance with current State and County requirements, attached as Exhibits B, C and D.

All wells that need to be destroyed shall be identified and at the owner's expense, destroyed in accordance with current State and County requirements attached as Exhibits B, C and D.

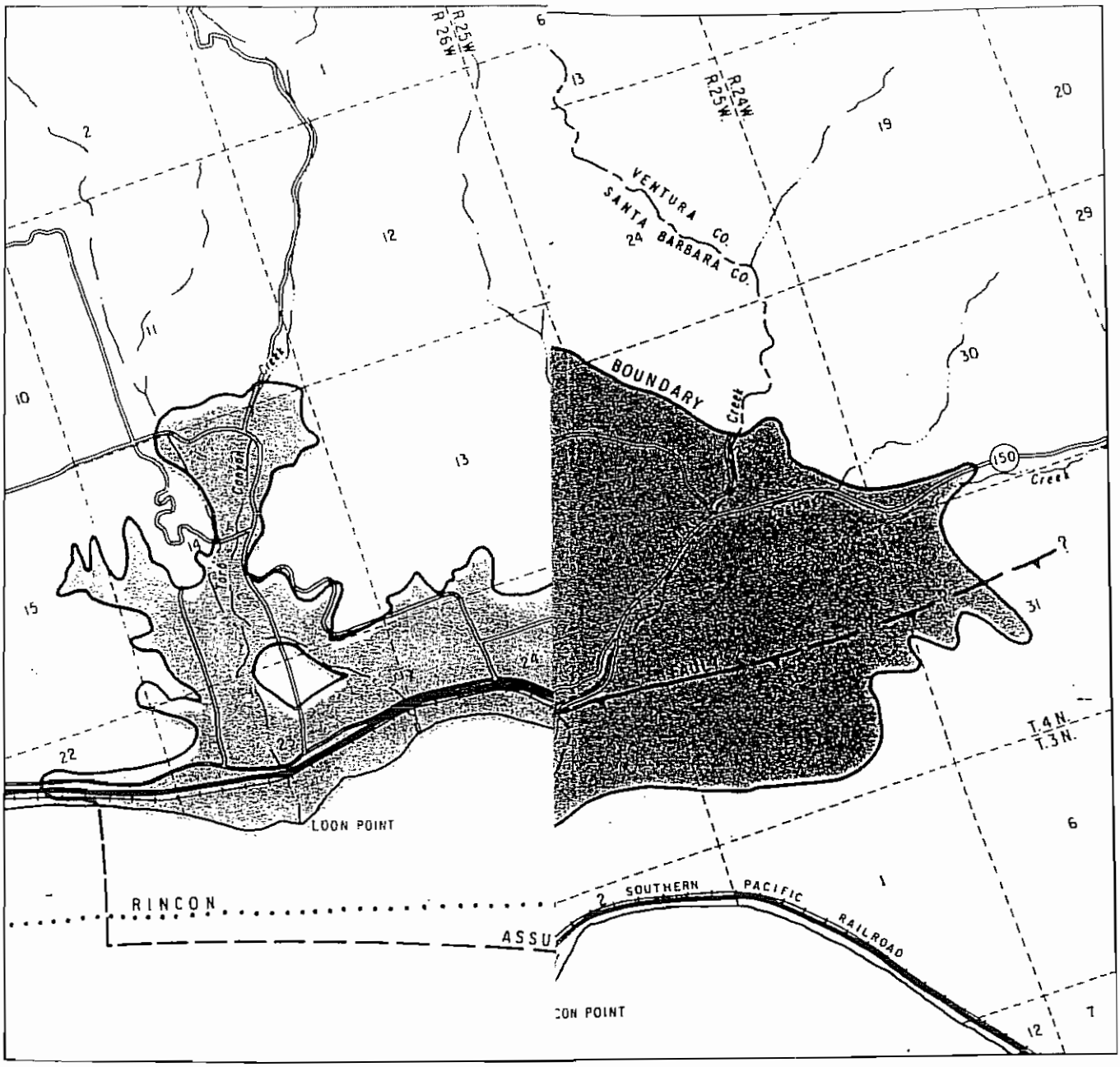
7. Dissemination of Public Information Relative to the Plan

The District shall prepare a well owners handbook, including information and regulations about well drilling, the dangers of open and/or improperly secured wells, and well abandonment and destruction procedures.

8. Procedure for Changes in Plan

Material or substantial changes to the Board approved Plan will necessitate a complete review and public participation process as set forth in AB3030.

FIGURE 1



GEOTECH CONSULTANTS, INC.

CARPINTERIA
GROUND WATER BASIN BOUND.

BOUNDARY BETWEEN AREA OF
AND CONFINED GROUND WATE

PLATE 1 AREA OF RECHARGE

V85037 JULY,1986

Chapter 1

POLICY

Law Review Commentaries

From elephants to mice: The development of EBMUD's program to control small source wastewater discharges. Raoul Stewardson, 20 Ecology L.Q. 441 (1993).

§ 13000. Conservation, control, and utilization of water resources; quality; statewide program; regional administration

Cross References

Hazardous substance release sites, revision of investigation and cleanup policies, see Health and Safety Code § 25355.7.

Law Review Commentaries

Nuisance law and petroleum underground storage tank contamination: Plugging the hole in the statutes. James B. Brown and Glen C. Hansen, 21 Ecology L.Q. 643 (1994).

Notes of Decisions

Construction with other law 9

9. Construction with other law

Existence of substantial statutory law applicable to predecessors' contamination of property through unlawful hazardous discharges did not bar subsequent owner from advancing common-law claims of nuisance, trespass, and negligence. Newhall Land and Farming Co. v. Superior Court (Mobil Oil Corp.) (App. 5 Dist. 1993) 23 Cal.Rptr.2d 377, 19 Cal.App.4th 334, review denied.

§ 13001. Legislative intent

Notes of Decisions

Water erosion 2

2. Water erosion

Although initial study found that housing development project, as proposed, would increase water erosion, city, as lead agency under California Environmental Quality Act (CEQA), was not required to send proposed negative declaration to regional water quality control board; although state Water Quality Control Board and various regional boards had statutory jurisdiction over water quality, they had no particular authority over water erosion. Gentry v. City of Murrieta (McMillin Communities) (App. 4 Dist. 1995) 43 Cal.Rptr.2d 170, 36 Cal.App.4th 1359, modified on denial of rehearing.

Chapter 1.5

SHORT TITLE

§ 13020. Title of division

Law Review Commentaries

Nuisance law and petroleum underground storage tank contamination: Plugging the hole in the statutes. James B. Brown and Glen C. Hansen, 21 Ecology L.Q. 643 (1994).

Chapter 2

DEFINITIONS

Section
13050. Definitions.

§ 13050. Definitions

As used in this division:

(a) "State board" means the State Water Resources Control Board.

(b) "Regional board" means any California regional water quality control board for a region as specified in Section 13200.

(c) "Person" includes any city, county, district, the state, and the United States, to the extent authorized by federal law.

(d) "Waste" includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal.

(e) "Waters of the state" means any surface water or groundwater, including saline waters, within the boundaries of the state.

(f) "Beneficial uses" of the waters of the state that may be protected against quality degradation include, but are not limited to, domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.

(g) "Quality of the water" refers to chemical, physical, biological, bacteriological, radiological, and other properties and characteristics of water which affect its use.

(h) "Water quality objectives" means the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area.

(i) "Water quality control" means the regulation of any activity or factor which may affect the quality of the waters of the state and includes the prevention and correction of water pollution and nuisance.

(j) "Water quality control plan" consists of a designation or establishment for the waters within a specified area of all of the following:

(1) Beneficial uses to be protected.

(2) Water quality objectives.

(3) A program of implementation needed for achieving water quality objectives.

(k) "Contamination" means an impairment of the quality of the waters of the state by waste to a degree which creates a hazard to the public health through poisoning or through the spread of disease. "Contamination" includes any equivalent effect resulting from the disposal of waste, whether or not waters of the state are affected.

(*l*)(1) "Pollution" means an alteration of the quality of the waters of the state by waste to a degree which unreasonably affects either of the following:

(A) The waters for beneficial uses.

(B) Facilities which serve these beneficial uses.

(2) "Pollution" may include "contamination."

(m) "Nuisance" means anything which meets all of the following requirements:

(1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property.

(2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.

(3) Occurs during, or as a result of, the treatment or disposal of wastes.

(n) "* * * Recycled water" means water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur and is therefor considered a valuable resource.

(o) "Citizen or domiciliary" of the state includes a foreign corporation having substantial business contacts in the state or which is subject to service of process in this state.

(p)(1) "Hazardous substance" means either of the following:

(A) For discharge to surface waters, any substance determined to be a hazardous substance pursuant to Section 311(b)(2) of the Federal Water Pollution Control Act (33 U.S.C. Sec. 1251 et seq.).

(B) For discharge to groundwater, any substance listed as a hazardous waste or hazardous material pursuant to Section 25140 of the Health and Safety Code, without regard to whether the substance is intended to be used, reused, or discarded, except that "hazardous substance" does not include any substance excluded from Section 311(b)(2) of the Federal Water Pollution Control Act because it is within the scope of Section 311(a)(1) of that act.

(2) "Hazardous substance" does not include any of the following:

(A) Nontoxic, nonflammable, and noncorrosive stormwater runoff drained from underground vaults, chambers, or manholes into gutters or storm sewers.

(B) Any pesticide which is applied for agricultural purposes or is applied in accordance with a cooperative agreement authorized by Section 2426 of the Health and Safety Code, and is not discharged accidentally or for purposes of disposal, the application of which is in compliance with all applicable state and federal laws and regulations.

(C) Any discharge to surface water of a quantity less than a reportable quantity as determined by regulations issued pursuant to Section 311(b)(4) of the Federal Water Pollution Control Act.

(D) Any discharge to land which results, or probably will result, in a discharge to groundwater if the amount of the discharge to land is less than a reportable quantity, as determined by regulations adopted pursuant to Section 13271, for substances listed as hazardous pursuant to Section 25140 of the Health and Safety Code. No discharge shall be deemed a discharge of a reportable quantity until regulations set a reportable quantity for the substance discharged.

(q)(1) "Mining waste" means all solid, semisolid, and liquid waste materials from the extraction, beneficiation, and processing of ores and minerals. Mining waste includes, but is not limited to, soil, waste rock, and overburden, as defined in Section 2732 of the Public Resources Code, and tailings, slag, and other processed waste materials, including cementitious materials that are managed at the cement manufacturing facility where the materials were generated.

(2) For the purposes of this subdivision, "cementitious material" means cement, cement kiln dust, clinker, and clinker dust.

(r) "Master recycling permit" means a permit issued to a supplier or a distributor, or both, of recycled water, that includes waste discharge requirements prescribed pursuant to Section 13263, and water recycling requirements prescribed pursuant to Section 13523.1.

(Amended by Stats.1992, c. 211 (A.B.3012), § 1; Stats.1995, c. 28 (A.B.1247), § 17; Stats.1995, c. 847 (S.B.206), § 2.)

Historical and Statutory Notes

1995 Legislation

Section affected by two or more acts at the same session of the legislature, see Government Code § 9605.

Cross References

Pipes carrying reclaimed water, special markings, reclaimed water defined, see Health and Safety Code § 116815.

Law Review Commentaries

Nuisance law and petroleum underground storage tank contamination: Plugging the hole in the statutes. James B. Brown and Glen C. Hansen, 21 Ecology L.Q. 643 (1994).

Notes of Decisions

Nuisance 8

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4. Mining waste

People v. New Penn Mines, Inc. (App. 3 Dist. 1963) 28 Cal.Rptr. 337, [main volume] 212 Cal.App.2d 667.

5. Silt or sediment

Lake Madrone Water Dist. v. State Water Resources Control Bd. (App. 3 Dist. 1989) 256 Cal.Rptr. 894, 209 Cal.App.3d 163, modified, [main volume] review denied.

8. Nuisance

Pollution of water constitutes public nuisance, and water pollution occurring as result of unlawful treatment or discharge of wastes is public nuisance per se. Newhall

Land and Farming Co. v. Superior Court (Mobil Oil Corp.) (App. 5 Dist. 1993) 23 Cal.Rptr.2d 377, 19 Cal. App.4th 334, review denied.

Property owner's allegations that predecessors in title discharged hazardous substances in violation of California law that leached through soil and polluted groundwater supported existence of public nuisance, and owner's additional allegations that he used water from property for farming, that he was unable to sell property because of contamination, and that he spent money investigating pollution stated claim for private nuisance. Newhall Land and Farming Co. v. Superior Court (Mobil Oil Corp.) (App. 5 Dist. 1993) 23 Cal.Rptr.2d 377, 19 Cal.App.4th 334, review denied.

Chapter 3

STATE WATER QUALITY CONTROL

Article 1

STATE WATER RESOURCES CONTROL BOARD

§ 13100. Creation of state and regional boards; duties of state board

Federal Environmental Laws

National environmental policy, 42 U.S.C.A. §§ 4321 to 4370a.

Safety of public water systems, 42 U.S.C.A. §§ 300f to 300j-11.

Water pollution prevention and control, 33 U.S.C.A. §§ 1251 to 1376.

Water resources research, 42 U.S.C.A. §§ 10301 to 10309.

Article 3

STATE POLICY FOR WATER QUALITY CONTROL

Section
13142. Principles and guidelines.
13142.5. Coastal marine environment.

§ 13140. Adoption of statewide policy for water quality control

Law Review Commentaries

Assessing point source discharge permit trading: Case study in controlling selenium discharges to the San Francisco Bay Estuary. Alexandra Teitz, 21 Ecology L.Q. 79 (1994).

§ 13142. Principles and guidelines

State policy for water quality control shall consist of all or any of the following:

(a) Water quality principles and guidelines for long-range resource planning, including ground water and surface water management programs and control and use of recycled water.

(b) Water quality objectives at key locations for planning and operation of water resource development projects and for water quality control activities.

(c) Other principles and guidelines deemed essential by the state board for water quality control.

The principles, guidelines, and objectives shall be consistent with the state goal of providing a decent home and suitable living environment for every Californian.

(Amended by Stats.1995, c. 28 (A.B.1247), § 18.)

§ 13142.5. Coastal marine environment

In addition to any other policies established pursuant to this division, the policies of the state with respect to water quality as it relates to the coastal marine environment are that:

(a) Wastewater discharges shall be treated to protect present and future beneficial uses, and, where feasible, to restore past beneficial uses of the receiving waters. Highest priority shall be given to improving or eliminating discharges that adversely affect any of the following:

(1) Wetlands, estuaries, and other biologically sensitive sites.

(2) Areas important for water contact sports.

EXHIBIT B

ORDINANCE NO. 3458

26 1996

AN ORDINANCE REGULATING THE CONSTRUCTION, MODIFICATION OR REPAIR, DESTRUCTION AND INACTIVATION OF WELLS WITHIN THE UNINCORPORATED AREA OF THE COUNTY OF SANTA BARBARA BY MODIFYING CERTAIN PROVISIONS OF CHAPTER 34A OF THE COUNTY CODE AND ADOPTING BY REFERENCE THE STANDARDS CONTAINED IN BULLETIN 74-81 WATER WELL STANDARDS: STATE OF CALIFORNIA OF THE CALIFORNIA DEPARTMENT OF WATER RESOURCES.

The Board of Supervisors of the County of Santa Barbara do ordain as follows:

SECTION 1

Chapter 34A of the Santa Barbara County Code is hereby repealed and a new Chapter 34A is hereby added as follows:

SEC. 34A-1. PURPOSE

It is the purpose of this ordinance to regulate the (1) construction, (2) modification or repair, (3) destruction, (4) inactivation of wells in such a manner that the groundwater of the County will not be contaminated or polluted, and that water obtained from wells will be suitable for beneficial use and will not jeopardize the health, safety or welfare of the people of this County.

SEC. 34A-2. ACTS PROHIBITED, PERMIT REQUIRED

(a) It shall be unlawful for any person to construct, modify or repair, destroy or inactivate any well unless such person has (1) obtained a permit issued from the County for the specific work to be performed, or (2) in the case of an emergency, fully complied with the provisions of this ordinance relating to emergencies.

(b) It shall be unlawful for any person to construct, modify or repair, destroy or inactivate any well unless such construction modification or repair, destruction or inactivation is in accordance with the standards set forth in this ordinance.

SEC. 34A-3. DEFINITIONS

(a) Applicant. Applicant shall mean (1) the legal owner(s) of the property on which the well is to be constructed, modified or repaired or destroyed, or (2) that owner's agent authorized in writing to make this application, or (3) a licensed well drilling contractor who shall perform the work on the well.

(b) Contamination and Pollution. Contamination and pollution shall have the meanings ascribed to them by California Water Code, Section 13050.

(c) County. County shall mean the County of Santa Barbara, acting through its Board of Supervisors or the Santa Barbara County Health Officer, as the duly authorized representative of the Board of Supervisors.

(d) Destruction. Destruction of wells shall consist of the complete filling of the well in accordance with the procedures outlined in Bulletin 74-81, "Water Well Standards: State of California: of the California Department of Water Resources.

(e) Emergency. Emergency shall mean a circumstance which is either (1) and imminent threat of or is actually contaminating or polluting the groundwater of this County, or (2) jeopardizes the health or safety of the people of the County, or (3) will cause a substantial or immediate loss of property, crops, or livestock.

(f) Inactivate Well of Inactivation. An inactive well is one not routinely operating but capable of being made operable with a minimum of effort. It shall be considered abandoned and proper destruction required when it has not been used for a period of one year, unless the owner demonstrates his intention to use the well again. Inactivation of a well shall be accomplished by filing a permit stating the intention to reuse the well and properly maintain the well as inactive per the requirements of Bulletin 74-81.

(g) Modification or Repair. Modification or repair shall only mean the deepening of a well, reperforation, sealing or replacement of a well casing.

(h) Nuisance. Nuisance shall mean a well which threatens to or which contaminates or pollutes the groundwater of this County in such a way that it jeopardizes the health and safety of the public. A nuisance also means anything which creates and unsanitary or unsafe condition resulting from water well drilling activity.

(i) Person. Person shall mean any individual, firm, partnership, general corporation, association or governmental entity. Governmental entity, as used herein, shall not include any local agency exempt form the application of this ordinance pursuant to State Law.

(j) Well or Water Well. The term "well" or "water well" means any artificial excavation constructed by any method for the purpose of extracting water from, or injecting water into the ground. It shall also include "cathodic protection wells", as defined in California Water Code, Section 13711. This definition shall not include:

(1) Oil and gas wells, or geothermal wells constructed under the jurisdiction of the California State Department of Conservation, except those wells converted to use as water wells: or

(2) Wells used for the purpose of:

a) Dewatering excavation during construction, or

b) Stabilizing hillsides or earth embankments.

(k) Words not otherwise defined in this ordinance shall have the meaning ascribed to them in Chapter II of the California Department of Water Resources Bulletin No. 74-81 (Water Well Standards) and Chapter II of 74-1 (Cathodic Protection Well Standards), as each may be amended.

SEC. 34-A. PERMITS

Application for the permit required by this ordinance shall be (1) made in writing to the County on such forms as may be prescribed by the County, (2) signed by the applicant, and, (3) accompanied by a fee established by this Ordinance (no part of said fee shall be refundable) and, (4) shall include but no be limited to the following:

(a) Applicant's name and address; a statement that the person drilling the well is licensed under the provisions of Chapter 9 of Division 3 of the Business and Professions Code as a well drilling contractor and such license is in full force and effect; the number of such license; or, in lieu of the two latter enumerated matters, a statement that the applicant is exempt from the provisions of Chapter 9 of Division 3 of the Business and Professions Code and the basis for the alleged exemption.

(b) Estimated or proposed depth of the well, casing material, sealing material, sealing method, use of the well, and drilling method to be used.

(c) Location of the property and well site including street address and/or Assessor's Parcel Number; and the legal owner of the property.

(d) A plot plan indicating the location of the well with respect to the following items:

(1) Property lines.

(2) Sewage disposal systems or works carrying or containing sewage or industrial wastes within a 200-foot radius of the proposed well.

(3) All perennial, seasonal, natural, or artificial water bodies or watercourses, including location of 100-year floodplain, if applicable.

(4) Drainage pattern of the property.

(5) Existing wells within a 100 ft. radius of the proposed well.

(6) Access roads and easements (water, sewer, utility, roadway).

(7) Existing and/or proposed structures.

(8) Animal or fowl enclosures, pens, paddocks, stockyards within a 100 foot radius of proposed well site.

(e) Permits shall be issued subject to the terms, conditions and standards of this ordinance and may be denied only if the specific work to be performed of construction, modification or repair, destruction or inactivation as proposed would violate the terms, conditions or standards of this Ordinance.

(f) The issuance of a permit hereunder shall be deemed to be an administrative ministerial, non-discretionary act, and if an applicant complies with the terms, conditions, and standards of this Ordinance, said permit shall be issued within five (5) working days.

(g) A permit issued for construction of a well covers the construction of one (1) completed well. I the well driller proposes to change the site of the well from that shown on the site plan of a permit, the change in site must be approved by the County prior to drilling. The County shall give approval or disapproval of the change in site within 24 hours of notification by the well driller.

(h) Every permit issued pursuant to this ordinance shall expire upon completion of the task authorized thereby; however, in any even such permit shall expire one (1) year from date of issuance.

(i) Guarantee of Performance. Prior to the issuance of a permit, the person drilling the well shall post with the County a cash deposit or bond to guarantee compliance with the terms of this Ordinance and the applicable permit. such cash or bond to be in any amount deemed necessary by the Health Officer to include but not be limited to the remedy of improper work, but not in excess of the total estimated cost of such work. Licensed Well Drilling contractors shall not be required to post a bond or deposit guaranteeing performance. 85 percent of the deposit or bond shall be returned to the permittee when the work has been completed to the satisfaction of the Health Officer; the remaining 15 percent of the bond shall be returned after one (1) year of satisfactory well operation as determined by the Health Officer. These percentages may vary to cover special conditions and circumstances in order to guarantee performance and compliance with the Ordinance.

SEC. 34A-5. STANDARDS

Standards for construction, repair or modification, destruction or inactivation are set forth in Chapter II of the California Department of Water Resources Bulletin No. 74-81, Water Well Standards, and Bulletin 74-1, Cathodic Protection Well Standards, and are hereby adopted as a part of this Ordinance, with the following additional clarification and requirements for well construction.

(a) Annular Space. Gravity installation of the sealant in an annular space of a well is acceptable if the interval to be sealed is dry and the interval depth is 50 feet or less. Sealant shall be pumped into the space using a tremie or grout pipe when there is water in the annulus, or the annulus exceeds 50 feet.

(b) Disinfection Tube. Every well shall be equipped with an adequately sized opening by which disinfecting agents may be conveniently introducted directly into the well casing. This opening shall be protected against entrance of contaminants by installation of a watertight cap or plug.

(c) Drilling Waste. Drilling waste must be controlled and may not be discharged so as to create conditions which violate Water Quality Control Board Regulations, other State Laws, Federal Regulations or Local Ordinances.

(d) Mud Pits. Mud pits created to confine drilling mud shall be maintained during the well drilling operation so as not to be a safety hazard. It shall be the well driller's responsibility to properly earth fill the mud pit(s) upon completion of the job.

(e) Set-up Time. The minimum time that must be allowed for annular seals containing Type II and III (6-sack) cement to se shall be 16 hours before construction operations on the well may be resumed. When additives to shorten setting time are used with the cement, this set-up time may be reduced to a minimum of 12 hours before air jetting, bailing, swabbing, test pumping or further construction on the well may be resumed.

(f) Log of Well. Any person who has drilled, dug, excavated or bored a well subject to this Ordinance, shall within thirty (30) days after completing of the work, furnish the County with a copy of the State driller's report. The well driller shall notify the County if submission of the log is to be delayed.

(g) Horizontal Wells. The location and design of horizontal or lateral wells shall be approved by the County on a case-by-case basis prior to approval to construct or reconstruct such wells.

(h) Administrative Variance. The Health Officer may grant an administrative variance to the provisions of this Ordinance where written evidence is submitted that a modification of the standards will not endanger the health or safety of the public and strict compliance would be unreasonable in view of all the circumstances.

SEC. 34A-7. EMERGENCY

In the event of an emergency, a person may construct, modify or repair, destroy or inactivate a well without the permit required by this Ordinance providing that (1) such work is performed in conformance with the standards set forth herein, (2) the County is notified of such emergency work by the following County working day, and (3) an application for the required permit is made within three (3) County working days after initiation of such emergency work.

SEC. 34A-7. ENFORCEMENT

(a) The County may suspend or revoke a well permit issued under the Ordinance whenever the County determines that a condition resulting from any work performed under such a permit constitutes a nuisance as defined herein, or when the applicant, his agents, employees or the licensed well drilling contractor performing the work (1) violates any provision of this ordinance or any terms and conditions of the permit or (2) misrepresents any material facts in the application for a permit.

(b) Except in emergency situations, before the County suspends or revokes a well permit, the County shall make reasonable effort to notify the applicant and the licensed well driller performing work under the permit if he is not the applicant and to provide an opportunity for each to show cause why the permit should not be suspended or revoked.

(c) Upon notification by the County that the permit is suspended or revoked, or finding that no valid permit has been issued, no further work shall be performed until such violation has been abated.

(d) Rules and Regulations. The Health Officer may adopt rules and regulations to implement and administer this Ordinance.

SEC. 34A-8. NUISANCE

Upon finding by the County that well or well drilling activity constitutes a nuisance, as defined herein, the County may take the necessary action to abate such nuisance. The property owner where the well is located and/or the person causing the nuisance thereof shall be jointly liable for the reasonable costs incurred by or at the request of the County for abatement of the nuisance.

SEC. 34A-9. APPEAL

Any person whose application for a permit has been suspended, revoked or denied or whose request for an administrative variance has been denied may appeal to the Board of Supervisors of the County of Santa Barbara in writing within ten (10) days after the notice of such suspension, revocation or denial. Said appeal shall specify the reasons therefore and shall be accompanied by a filing fee, if any, as established by the Board of Supervisors of the County of Santa Barbara. The Clerk of the Board of Supervisors shall set the appeal for the hearing and shall give notice to the appellent and the appropriate County personnel of the time and place of the hearing.

SEC. 34A-10. INSPECTION

The County shall be notified at least twenty-four (24) hours in advance to make an inspection of, 1) the sealing of the annular space on a well, 2) the destruction of wells, and 3) any other operation which may be stipulated on the permit by the County to cope with special or unusual conditions. The County shall have the right to enter upon any property at any reasonable time to make inspections and examinations for the purpose of enforcement of this Ordinance, subject to the provisions of Code of Civil Procedure Section 1822.50 et seq.

SEC. 34A-11. APPLICATION FEES

(a) Each application for a well construction or modification permit shall be accompanied by a permit fee of $155.00.

(b) Each application for a well destruction or inactivation permit shall be accompanied by a permit fee of $95.00.

(c) An additional fee of $30 per hour shall be charged to the permittee for any inspection service by the Health Officer which exceeds five (5) hours on-site for witnessing annular seals, and the abatement of nuisances or hazards resulting from the well drilling operation. These application fees may be modified by Resolution of the Board of Supervisors.

SEC. 34A-12. PENALTIES

Any person who violates any provision of this Article is guilty of a misdemeanor. Each offense shall be punishable by a fine of not less than twenty-five dollars ($25.00) or more than one thousand dollars ($1,000.00) or by imprisonment in the County jail for a term not exceeding six months, or by both such fine and imprisonment. Each day such offense continues shall constitute a separate offense.

SECTION 2

This Ordinance shall take effect and be in force at the expiration of thirty days from the date of it passage; and before the expiration of fifteen days after its passage it, or a summary of it, shall be published once, with the names and the members of the Board of Supervisors voting for and against in the Santa Barbara News Press, a newspaper of general circulation published in the County of Santa Barbara, State of California.

EXHIBIT C

Department of
Water Resources

Bulletin 74-81

Water Well Standards: State of California

December 1981

Huey D. Johnson
Secretary for Resources
The Resources
Agency

Edmund G. Brown Jr.
Governor
State of
California

Ronald B. Robie
Director
Department of
Water Resources

Section 5. Special Standards.

A. In locations where existing geologic or ground water conditions require standards more restrictive than those described herein, such special additional standards may be prescribed by the enforcing agency.

B. Special standards are necessary for the construction of recharge or injection wells,1/ horizontal wells and other unusual types of wells. Design of these wells is subject to the approval of the enforcing agency.

Section 6. Well Drillers.

The construction, alteration, or destruction of wells shall be performed by contractors licensed in accordance with the provisions of the Contractors License Law (Chapter 9, Division 3, of the Business and Professions Code) unless exempted by that act.

Section 7. Reports.

Reports concerning the construction, alteration, or destruction of water wells shall be filed with the California Department of Water Resources in accordance with the provisions of Sections 13750 through 13755 (Division 7, Chapter 10, Article 3) of the California Water Code.2/

Part II. Well Construction

Section 8. Well Location with Respect to Contaminants and Pollutants.

A. All wells shall be located an adequate horizontal distance from potential sources of contamination and pollution.3/

1/ A program to protect underground drinking water sources from endangerment by the subsurface emplacement of fluids through well injection is required under the Federal Safe Drinking Water Act. (Public Law 93-523) signed into law December 16, 1974. On June 24, 1980, the U. S. Environmental Protection Agency issued rules and regulations establishing technical criteria and standards governing the construction of injection wells. Revisions were made August 27, 1981, and October 1, 1981. These regulations are Part 146 of Title 40, Protection of Environment, of the Code of Federal Regulations (40CFR146).

2/ Information about the report is contained in "Guide to the Preparation of the Water Well Drillers Report", Department of Water Resources, October 1977.

3/ Such potential sources of contamination and pollution include: sewers, both sanitary and storm sewers, leaching fields (from septic tanks), sewage and industrial waste ponds, barnyard and stable areas, feedlots, solid waste disposal sites, tanks and pipelines (both above ground and buried) for storage and conveyance of petroleum products or chemicals, etc.

Most of the factors involved in determining safe distances in a particular area are usually not known. Based on past experience and general knowledge, the following horizontal distances are considered safe where dry upper unconsolidated formations, less permeable than sand, are encountered:1/2/

Sewer, watertight septic tank, or pit privy	50 feet (15 metres)
Subsurface sewage leaching field	100 feet (30 metres)
Cesspool or seepage pit	150 feet (45 metres)
Animal or fowl enclosure	100 feet (30 metres)

Where in the opinion of the enforcing agency adverse conditions exist, the above distances shall be increased or special means of protection, particularly in the construction of the well, shall be provided.

B. In addition, if possible, the well shall be located up the ground water gradient (upstream) from the specified sources of contamination. By doing so this provides assurance that potential contamination would be moving naturally away from the area of production. However, in an unconfined aquifer consideration shall also be given to the possibility of reversal of gradient near the well due to pumping (see Figure 3), the pumping of nearby wells, or general decline of the water table.3/

C. The top of the casing shall terminate above grade or above any known conditions of flooding by drainage or runoff from the surrounding land. For community water supply wells this level is defined as above the

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1/ Because of the many variables involved in the determination of the safe horizontal distance of a well from potential sources of contamination and pollution, no one set of distances will be adequate and reasonable for all conditions. In areas where adverse conditions exist, the distances listed should be increased. Conversely, where especially favorable conditions exist or where special means of protection, particularly in construction of the well are provided, lesser distances may be acceptable if approved by the enforcing agency.

2/ If the well is a radial collector well, these distances apply to the furthest extended points of the well.

3/ When water is pumped from a well a drawdown "cone of depression" is formed in the water surface surrounding the well and ground water in the area of the cone flows toward the well. Similar cones formed by nearby wells can influence the shape of the cone or enlarge the area being drawn upon resulting in a change in direction of flow.

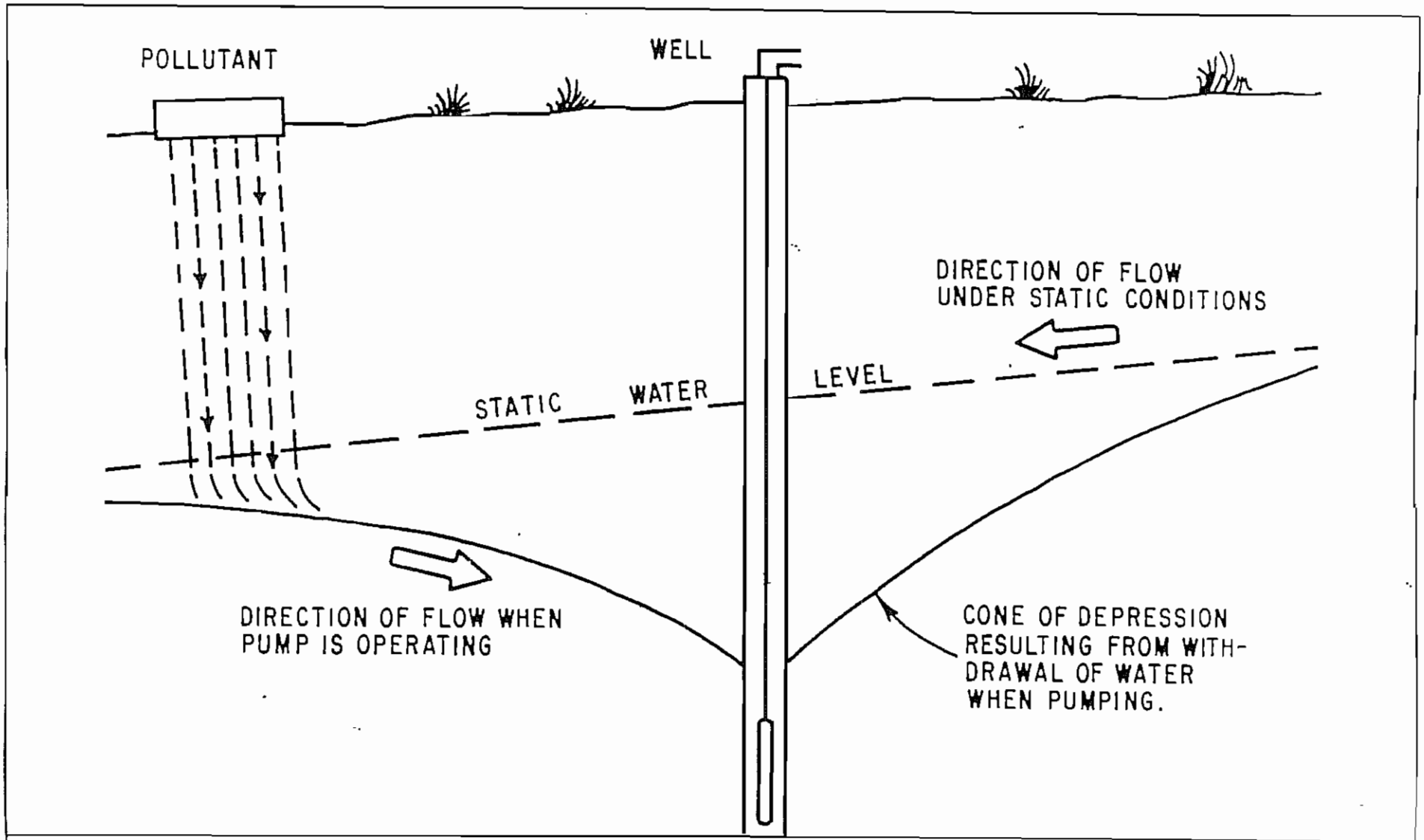

Figure 3. EFFECT OF REVERSAL OF GROUND WATER GRADIENT

EXHIBIT C

"...floodplain of a 100 year flood..." or above "...any recorded high tide, ...", (Section 64417, "Siting Requirements", Title 22 of the California Administrative Code).1/

In addition, the area around the well shall slope away from the well and surface drainage shall be directed away from the well.

D. Where a well is to be near a building, the well shall be far enough from the building so that the well will be accessible for repair, maintenance, etc.

Section 9. Sealing the Upper Annular Space.

The space between the well casing and the wall of the drilled hole (the annular space) shall be effectively sealed to protect it against contamination or pollution by entrance of surface and/or shallow, subsurface waters.2/

A. Minimum depth of seal below ground surface for various uses of wells:

Types	Minimum Depth3/ of Seal (below ground surface)
Community Water Supply Wells	50 feet (15 metres)
Individual Domestic Wells	20 feet4/ (6.1 metres)
Industrial Wells	50 feet4/ (15 metres)
Agricultural Wells	20 feet4/5/ (6.1 metres)
Air-Conditioning Wells	20 feet4/ (6.1 metres)
Observation and Monitoring Wells	20 feet6/ (6.1 metres)

1/ If compliance with this requirement for community water supply wells is not possible, the enforcing agency should be contacted regarding alternative means for protection.

2/ Annular seals are also installed to provide protection for the casing against corrosion, to assure structural integrity of the casing, and to stabilize the upper formation.

3/ In those cases where it is not possible to meet or, when necessary, increase, the lateral distances from pollution sources described in Section 8 of these standards, an alternative (or special) means of protection for the well is to increase the depth of the seal.

4/ Exceptions are shallow wells where the water to be developed is at a depth less than 20 feet (6 metres). In this instance, the depth of seal may be reduced but in no case less than 10 feet (3 metres) and special precautions taken in locating the well with respect to sources of pollution.

5/ The annular space shall be sealed to a depth of 50 feet (15 metres) from the surface when the well is close to sources of pollution listed in Section 8.

6/ Because they are constructed to measure specific conditions, the annular space in such wells is usually sealed to make the intake section "depth-discrete". Depending on the circumstances, this depth may be very shallow.

In areas[1/] where freezing is a potential problem, the top of the seal may be below ground surface but in no case more than 4 feet (1.2 metres) below ground surface.

B. Sealing Conditions.[2/] Following are requirements to be observed in sealing the annular space:

1. Wells situated in unconsolidated, caving material. An oversized hole, at least 4 inches (100 millimetres) greater in diameter than the production casing, shall be drilled and a conductor casing installed to the depth of seal specified in Part A of this section. The space between the conductor casing and the production casing shall be filled with sealing material. The conductor may be withdrawn as the sealing material is placed (see Figure 4A).

2. Wells situated in unconsolidated material stratified with significant clay layers. If a clay formation is encountered within 5 feet (1.5 metres) of the bottom of the seal described in Part A of this section, the seal should be extended 5 feet (1.5 metres) into the clay formation (thus the depth of seal could be as much as another 10 feet or 3 metres). An oversized hole at least 4 inches (100 millimetres) greater in diameter than the production casing, shall be drilled and the annular space filled with sealing material (see Figure 4B).

If caving material is present, a conductor casing shall be installed and the annular space sealed as described in 1, above.

3. Wells situated in soft consolidated formations (extensive clays, sandstones, etc.). An oversized hole, at least 4 inches (100 millimetres) greater in diameter than the production casing, shall be drilled to the depth of seal specified in Part A of this section and the space between the production casing and the drilled hole shall be filled with sealing material (see Figure 4C).

If a conductor casing is to be installed (to establish a foundation for the construction of the remainder of the well) the oversized hole shall be at least 4 inches (100 millimetres) greater in diameter than the conductor

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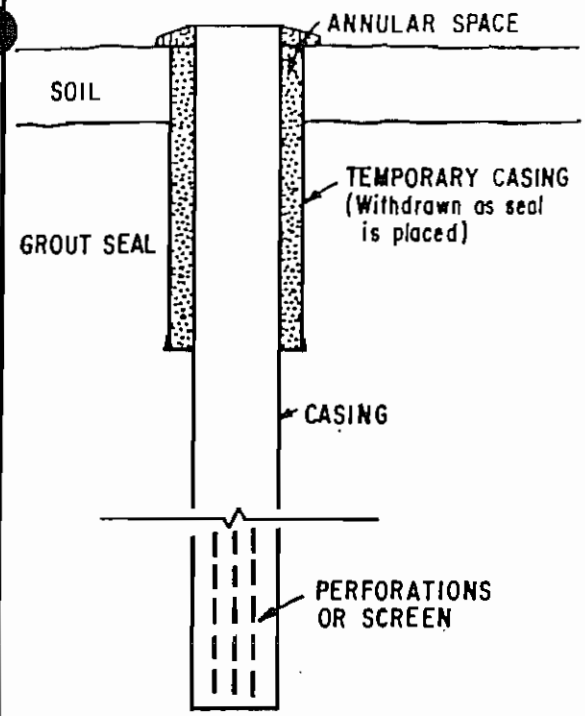
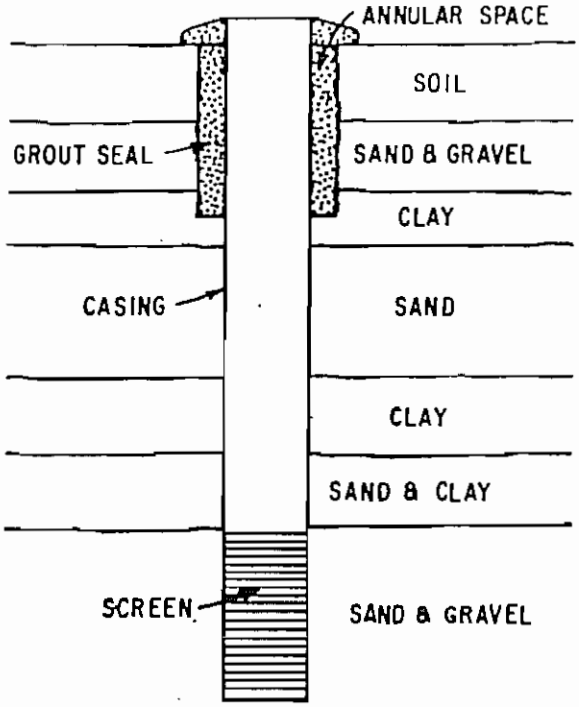
1/ Defined here as those areas in which the mean length of freeze-free period as described by the National Weather Service is less than 100 days, i.e., temperatures at or below 32°F (0°C) are likely to occur on any day during a period of 265 or more days each year. In general geographic terms, these areas are the northeastern part of the State (parts of Modoc, Lassen, and Siskiyou Counties), the north Lahontan area (essentially the eastern slopes of the Sierra Nevada and subsidiary valleys north of Mount Whitney and Mono Lake) and at Lake Arrowhead in the San Bernardino Mountains.

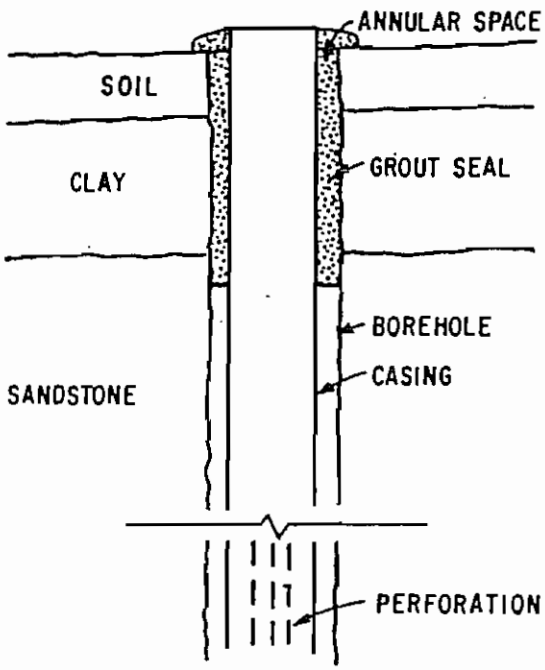
2/ Methods of sealing are described in Appendix B.



A. WELL DRILLED IN UNCONSOLIDATED CAVING MATERIAL



B. WELL IN UNCONSOLIDATED STRATIFIED FORMATIONS



C. WELL IN SOFT CONSOLIDATED FORMATIONS

Figure 4. SEALING CONDITIONS FOR UPPER ANNULAR SPACE-UNCONSOLIDATED AND SOFT, CONSOLIDATED FORMATIONS

casing and the annular space between the conductor casing and the drilled hole filled with sealing material to the depth specified in Part A of this section.

4. Wells situated in "hard" consolidated formations (crystaline or metamorphic rock). An oversized hole shall be drilled to the depth specified in Part A of this section and the annular space filled with sealing material. If there is significant overburden, a conductor casing may be installed to retain it. If the material is heavily fractured, the seal should extend into solid material. If the well is to be open-bottomed (lower section uncased), the casing shall be seated in the sealing material (see Figure 5A).

5. Gravel packed wells.

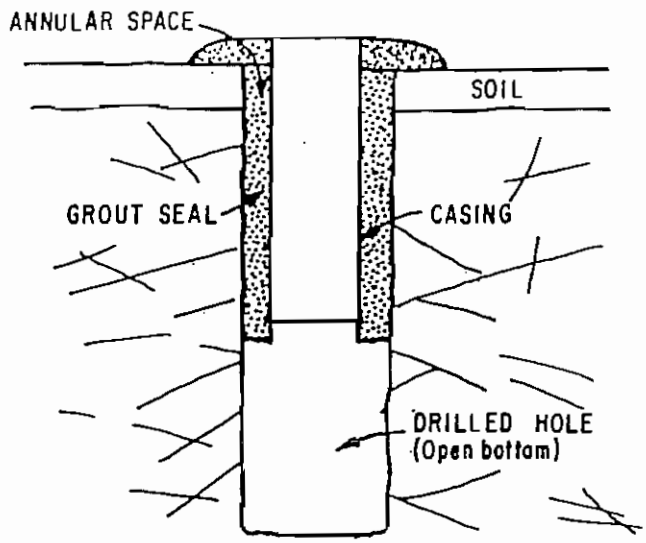
a. With conductor casing. An oversized hole, at least 4 inches (100 millimetres) greater than the diameter of the conductor casing, shall be drilled to the depth specified in Part A of this section and the annular space between the conductor casing and drilled hole filled with sealing material. (In this case the gravel pack may extend to the top of the well but to prevent contamination by surface drainage, a welded cover shall be installed over the top in the space between the conductor casing and the production casing, see Figure 5B).

b. Without conductor casing. An oversized hole at least 4 inches (100 millimetres) greater in diameter than the production casing, shall be drilled to the depth specified in Part A of this section and the annular space between the casing and drilled hole filled with sealing material. If gravel fill pipes are installed through the seal, the annular seal shall be of sufficient thickness to assure that there is a minimum of 2 inches (50 millimetres) between the gravel fill pipe and the wall of the drilled hole. The gravel pack shall terminate at the base of the seal (see Figure 5C). If a temporary conductor casing is used, it shall be removed as the sealing material is placed.

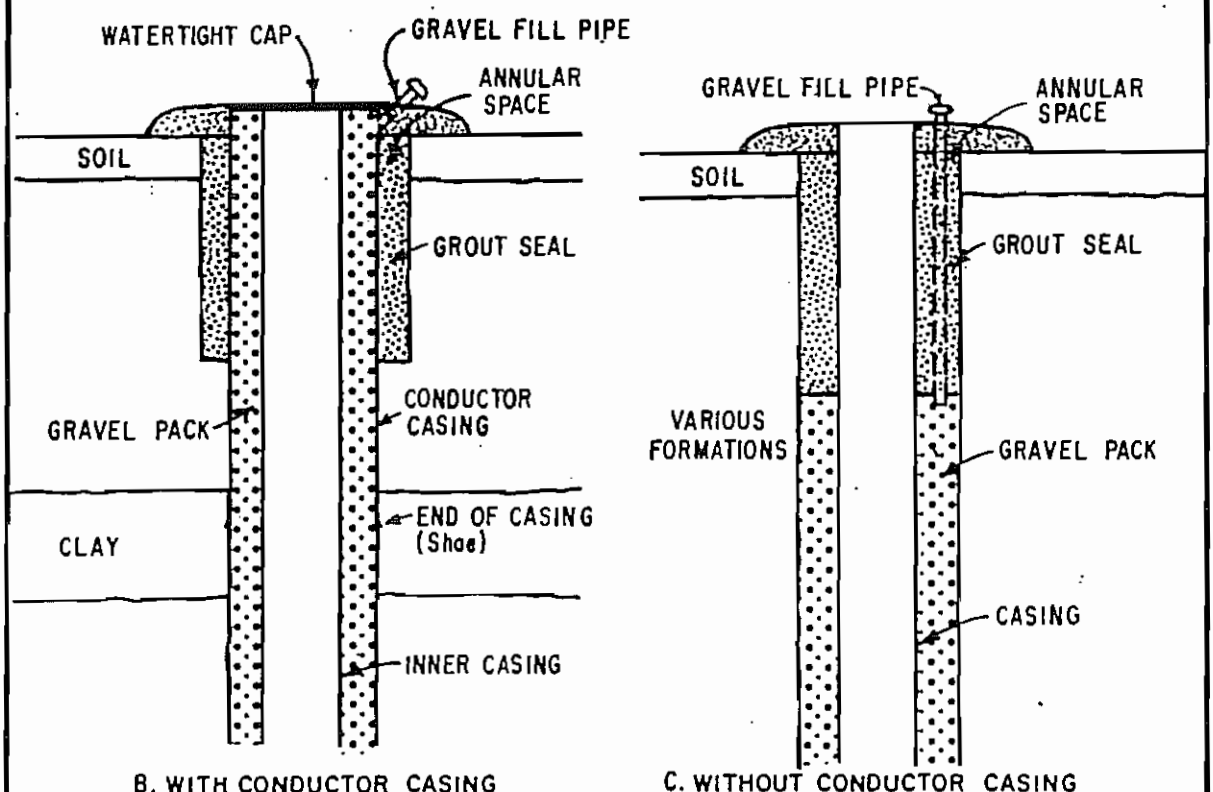
6. For wells situated in circumstances differing from those described above, the sealing conditions shall be as prescribed by the enforcing agency.

7. Converted wells. Wells converted from one use to another, particularly those constructed in prior years without annular seals, shall have annular seals installed to the depth required in Part A of this section and at the thickness described in Part E. Where it is anticipated that a well will be converted to another use, the enforcing agency may require the installation of a seal to the depth specified for community water supply wells.1/

1/ This statement presumes that land use planning has taken place and that zoning requirements are in effect.



A. WELL DRILLED IN ROCK FORMATION



B. WITH CONDUCTOR CASING

C. WITHOUT CONDUCTOR CASING

GRAVEL PACKED WELLS

Figure 5. SEALING CONDITIONS FOR UPPER ANNULAR SPACE-HARD ROCK FORMATIONS AND GRAVEL PACKED WELLS

C. Conductor Casing. For community water supply wells, the minimum thickness of steel conductor casing shall be 1/4 inch (6 millimetres) for single casing or a minimum of No. 10 U. S. Standard Gage for double casing. Steel used for conductor casing shall conform to the specifications for steel casing described in Section 12.

D. Sealing Material. The sealing material shall consist of neat cement grout, sand-cement grout, bentonite clay, or concrete. Cement used for sealing mixtures shall meet the requirements, including the latest revision thereof, of ASTM1/ C150 "Standard Specification for Portland Cement" types I (common construction cement) III (high early strength) and V (for high sulfate resistance, i.e., corrosive waters).2/ Water used for sealing mixtures shall be clean and of a potable quality. Materials used as additives for Portland cement mixtures in the field shall meet the requirements, and latest revision thereof, of ASTM C494 "Standard Specification for Chemical Admixtures for Concrete".

1. Neat cement grout shall be composed of one sack of Portland cement (94 pounds or 43 kilograms) to 4-1/2 to 6-1/2 (depending on cement type and additives used) gallons (17 to 25 litres) of clean water.

2. Sand-cement grout shall be composed of not more than two parts by weight of sand and one part of Portland cement to 4-1/2 to 6-1/2 (depending on cement type and additives used) gallons (17 to 25 litres) of clean water per sack of cement.

3. Concrete3/ used shall be "Class A" (6 sacks of Portland cement per cubic yard or 0.76 cubic metre) or "Class B" (5 sacks per cubic yard or 0.76 cubic metre).4/ Aggregates shall meet the requirements, including the latest revision thereof, of ASTM C33 "Standard Specification for Concrete Aggregates".

4. Special quick-setting cement, retardents to setting, and other additives, including hydrated lime to make the mix more fluid (up to 10 percent of the volume of cement), and bentonite (up to 5 percent) to make the mix more fluid and to reduce shrinkage, may be used.

1/ American Society for Testing and Materials.

2/ Corresponding API (American Petroleum Institute) cement classes are: Type I - API Class A, Type III - API Class C.

3/ Concrete is useful in sealing large-diameter wells where the volume of annular seals required is likely to be substantial. However, unless care is exercised during placement, the coarse aggregate may become separated from the cement.

4/ A popular concrete mix among drillers consists of 8 sacks of Portland cement per cubic yard (0.76 cubic metre) and uniform aggregate of 3/8 inch (9.5 millimetres) diameter.

5. Bentonite clay[1/] mixtures shall be composed of bentonite clay and clean water thoroughly mixed before placement so that there are no balls, clods, etc.

6. Used drillers' mud or cuttings or chips from drilling the borehole shall not be used as sealing material.

7. The minimum time that must be allowed for materials containing cement to "set" before construction operations on the well may be resumed shall be:

a. Type I cement - 72 hours
b. Type III cement - 48 hours
c. Type V cement - 6 hours

When necessary these times may be reduced by the use of "accelerators", i.e., additives designed specifically to shorten setting time.

8. Where thermoplastic casing is used, caution should be exercised to control the heat generated during the curing of the cement (called "heat of hydration"). This is of special concern where casing of thinner wall thicknesses are to be installed. The addition of bentonite to the cement mixture (up to 8 percent) or circulating water inside the casing will lower the temperature of the cement. Additives which accelerate the curing process also tend to increase the heat generated and should not be used where thermoplastic casing is installed.

E. Thickness of Seal. The thickness of the seal shall be at least a nominal 2 inches,[2/] and not less than three times the size of the largest coarse aggregate used in the sealing material.

F. Placement of Seal.

1. Before placing the seal all loose cuttings, drilling mud, or other obstructions shall be removed from the annular space by flushing.

1/ Clay in the form of a mud-laden fluid is similar to and has the advantages of neat cement and sand-cement grout. There is a disadvantage in that clay may separate from the fluid. Clay should not be used where structural strength or stability of the seal is required, where flowing or moving water might break it down, or where it might dry out. Although there are other types of clay available, none have the sealing properties (particularly the ability to expand dramatically) comparable to bentonite. Therefore, only bentonite clays are recommended.

2/ In other words, the borehole shall be nominally 4 inches (100 millimetres) larger in diameter than the nominal casing diameter (thus creating a 2-inch, or-50 millimetre annular space).

2. Before sealing commences a packer or similar retaining device or a small quantity of sealant may be placed and permitted to set at the bottom of the interval to be sealed to form a foundation for the seal.

3. The sealing material shall be applied, when possible, in one continuous operation from the bottom of the interval to be sealed to the top. Where the seal is to be very deep (i.e., greater than 100 feet or 30 metres) a short segment at least 10 feet (3 metres) in length may be installed first, allowed to "set" or partially "set" and then the remainder of the seal placed in one continuous operation.

4. Gravity installation of sealant without the aid of a tremie or grout pipe shall not be used unless the interval to be sealed is dry and in no case where the interval is over 30 feet (9 metres) in depth.

Section 10. Surface Construction Features.

A. Openings. Openings into the top of the well which are designed to provide access to the well, i.e., for measuring, chlorinating, adding gravel, etc., shall be protected against entrance of surface waters or foreign matter by installation of watertight caps or plugs. Access openings designed to permit the entrance or egress of air or gas (air or casing vents) shall terminate above the ground and above known flood levels and shall be protected against the entrance of foreign material by installation of down-turned and screened "U" bends (see Figures 6 and 7).

All other openings (holes, crevices, cracks, etc.) shall be sealed.

A "sounding tube",[1/] taphole with plug, or similar access (see Figure 6) for the introduction of water level measuring devices shall be affixed to the casing of all wells. For wells fitted with a "well cap" the cap shall have a removable plug for this purpose.

1. Where the pump is installed directly over the casing, a watertight seal (gasket) shall be placed between the pump head and the pump base (slab), or a water-tight seal (gasket) shall be placed between the pump base and the rim of the casing, or a "well cap" shall be installed to close the annular opening between the casing and the pump column pipe (see Figures 6 and 7).

1/ A "sounding tube" or similar access is necessary so that the water level in the well can be periodically determined. Knowledge of the water level, both static and pumping levels, is vital to the maintenance of the well and pump and for determining the efficiency of pump. Such information will lead to few and less costly repairs and reduce operating costs.

During prolonged interruptions (i.e., one week or more), a semipermanent cover shall be installed. For wells cased with steel, a steel cover, tack-welded to the top of the casing, is adequate.

Part III. Destruction of Wells

Section 20. Purpose of Destruction.

A well that is no longer useful[1/] (including exploration and test holes) must be destroyed in order to:

1. Assure that the ground water supply is protected and preserved for further use.

2. Eliminate the potential physical hazard.

Section 21. Definition of "Abandoned" Well.

A well is considered "abandoned" when it has not been used for a period of one year, unless the owner demonstrates his intention to use the well again for supplying water or other associated purpose[2/] (such as an observation well or injection well). The well shall then be considered "inactive". As evidence of his intentions for continued use, the owner shall properly maintain the well in such a way that:

1. The well has no defects which will allow the impairment of quality of water in the well or in the water-bearing formations penetrated.

2. The well is covered such that the cover is watertight and cannot be removed except with the aid of equipment or the use of tools.

3. The well is marked so that it can be clearly seen.

4. The area surrounding the well is kept clear of brush or debris.

1/ Very often wells are prematurely abandoned and destroyed. However, proper maintenance will ensure that they will continue to produce for many years. The maintenance program should include regular measurement of the water level (depth to water from ground surface), determination of water quality, pump tests (for determination of pump and well efficiency) and cleaning.

2/ Although it should be obvious, the reader is reminded that an "abandoned" well should never be used for the disposal of trash, garbage, sewage (except where sewage is reclaimed for recharging the ground water basin, and then only in accordance with the provisions of Section 4458 of the California Health and Safety Code and Section 13540 of the Water Code).

If the pump has been removed for repair or replacement, the well shall not be considered "abandoned". During the repair period, the well shall be adequately covered to prevent injury to people and to prevent the entrance of undesirable water or foreign matter.

Observation or test wells used in the investigation or management of ground water basins by governmental agencies or engineering or research organizations are not considered "abandoned" so long as they are maintained for this purpose. However, such wells shall be covered with an appropriate cap, bearing the label, "Observation Well", and the name of the agency or organization, and preferably shall be locked when measurements are not being made. When these wells are no longer used for this purpose or for supplying water, they shall be considered "abandoned".

Section 22. General Requirement.

All "abandoned" wells and exploration or test holes shall be destroyed. The objective of destruction is to restore as nearly as possible those subsurface conditions which existed before the well was constructed taking into account also changes, if any, which have occurred since the time of construction. (For example, an aquifer which may have produced good quality water at one time but which now produces water of inferior quality, such as a coastal aquifer that has been invaded by seawater.)

Destruction of a well shall consist of the complete filling of the well in accordance with the procedures described in Section 23 (following).

Section 23. Requirements for Destroying Wells.

A. Preliminary Work. Before the well is destroyed, it shall be investigated to determine its condition, details of construction, and whether there are obstructions that will interfere with the process of filling and sealing. This may include the use of downhole television and photography for visual inspection of the well.

1. If there are any obstructions, they shall be removed, if possible, by cleaning out the hole.

2. Where necessary, to ensure that sealing material fills not only the well casing but also any annular space or nearby voids within the zone(s) to be sealed, the casing should be perforated or otherwise punctured.

3. In some wells, it may be necessary or desirable to remove a part of the casing. However, in many instances this can be done only as the well is filled. For dug wells, as much of the lining as possible (or safe) should be removed prior to filling.

B. Filling and Sealing Conditions. Following are requirements to be observed when certain conditions are encountered:

1. Well wholly situated in unconsolidated material in an unconfined ground water zone (Figure 9A). If the ground water supplies are within 50 feet (15 metres) of the surface, the upper 20 feet (6 metres) shall be sealed with impervious material and the remainder of the well shall be filled with clay, sand, or other suitable inorganic material (see item D, this section).

2. Well penetrating several aquifers or formations. In all cases the upper 20 feet (6 metres) of the well shall be sealed with impervious material.

In areas where the interchange of water between aquifers will result in a significant1/ deterioration of the quality of water in one or more aquifers, or will result in a loss of artesian pressure, the well shall be filled and sealed so as to prevent such interchange. Sand or other suitable inorganic material may be placed opposite the producing aquifers and other formations where impervious sealing material is not required. To prevent the vertical movement of water from the producing formation, impervious material must be placed opposite confining formations above and below the producing formations for a distance of 10 feet (3 metres) or more. The formation producing the deleterious water shall be sealed by placing impervious material opposite the formation, and opposite the confining formations for a sufficient vertical distance (but no less than 10 feet or 3 metres) in both directions, or in the case of "bottom" waters, in the upward direction. (See Figure 9B.)

In locations where interchange is in no way detrimental, suitable inorganic material may be placed opposite the formations penetrated. When the boundaries of the various formations are unknown, alternate layers of impervious and pervious material shall be placed in the well.

1/ Determining the significance of interchange of waters whose qualities vary and of the loss of artesian pressures, requires extensive knowledge of the ground water basin in question. The Department of Water Resources has over the years, and frequently in cooperation with agencies such as the U. S. Geological Survey, undertaken a number of ground water studies and amassed considerable information and data about the subject. Although much is known about the State's ground water supplies, detailed studies sufficiently accurate to define interchange problems have been made only in certain areas. In still other areas, there is only partial definition of the problem. Examples of areas where definition has been made are the coastal plain of Los Angeles County and the eastern part of the Santa Clara Valley in Alameda County. An excellent example of a "bottom" water is the saline connate water underlying the Central Valley at varying depths.

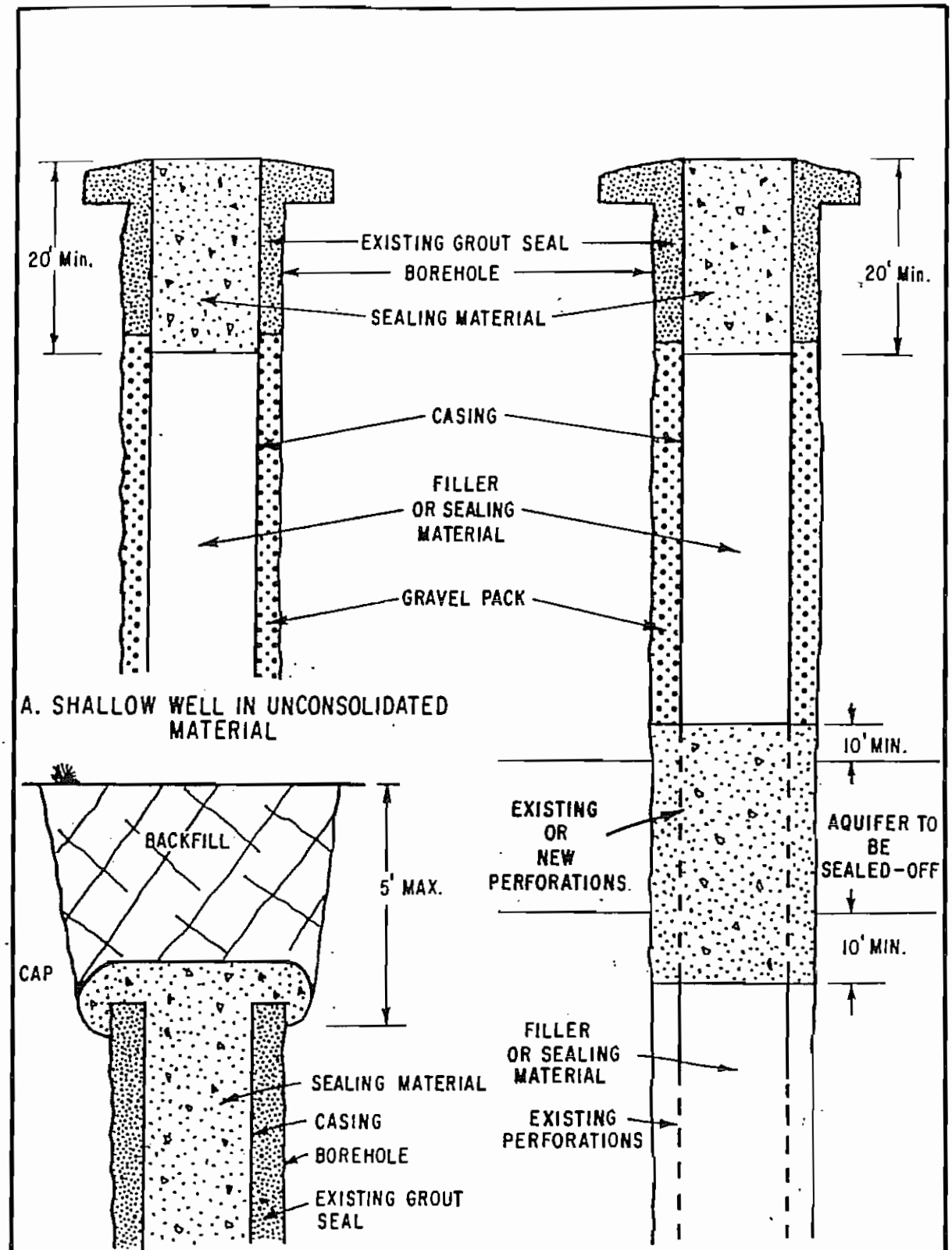


Figure 9. PROPERLY DESTROYED WELLS

3. Well penetrating creviced or fractured rock. If creviced or fractured rock formations are encountered just below the surface, the portions of the well oposite this formation shall be sealed with neat cement, sand-cement grout, or concrete. If these formations extend to considerable depth, alternate layers of coarse stone1/ and cement grout or concrete may be used to fill the well. Fine grained material shall not be used as fill material for creviced or fractured rock formations.

4. Well in noncreviced, consolidated formation. The upper 20 feet (6.1 metres) of a well in a noncreviced, consolidated formation shall be filled with impervious material. The remainder of the well may be filled with clay or other suitable inorganic material.

5. Well penetrating specific aquifers, local conditions. Under certain local conditions, the enforcing agency may require that specific aquifers or formations be sealed off during destruction of the well.

C. Placement of Material. The following requirements shall be observed in placing fill or sealing material in wells to be destroyed:

1. The well shall be filled with the appropriate material (as described in item D of this section) from the bottom of the well up.

2. Where neat cement grout, sand-cement grout, or concrete is used, it shall be poured in one continuous operation.

3. Sealing material shall be placed in the interval or intervals to be sealed by methods that prevent free fall, dilution, and/or separation of aggregates from cementing materials.

4. Where the head (pressure) producing flow is great, special care and methods must be used to restrict the flow while placing the sealing material. In such cases, the casing must be perforated opposite the area to be sealed and the sealing material forced out under pressure into the surrounding formation.

5. In destroying gravel-packed wells, the casing shall be perforated or otherwise punctured opposite the area to be sealed. The sealing material shall then be placed within the casing, completely filling the portion adjacent to the area to be sealed and then forced out under pressure into the gravel envelope.

6. When pressure is applied to force sealing material into the annular space, the pressure shall be maintained for a length of time sufficient for the cementing mixture to set.

1/ The limiting dimensions of coarse stone are usually considered to range between 1/4 and 4 inches (6.3 to 100 millimetres).

7. To assure that the well is filled and there has been no jamming or "bridging" of the material, verification shall be made that the volume of material placed in the well installation at least equals the volume of the empty hole.

D. Materials. Requirements for sealing and fill materials are as follows:

1. Impervious Sealing Materials. No material is completely impervious. However, sealing materials shall have such a low permeability that the volume of water passing through them is of small consequence.

Suitable impervious materials include neat cement, sand-cement grout, concrete, and bentonite clay, all of which are described in Section 9, paragraph D, "Sealing Material" of these standards; and well-proportioned mixes of silts, sands, and clays (or cement), and native soils that have a coefficient of permeability of less than 10 feet (3 metres) per year.1/ Used drilling muds are not acceptable.

2. Filler Material. Many materials are suitable for use as a filler in destroying wells. These include clay, silt, sand, gravel, crushed stone, native soils, mixtures of the aforementioned types, and those described in the preceding paragraph. Material containing organic matter shall not be used.

E. Additional Requirements for Wells in Urban Areas.

In incorporated areas or unincorporated areas developed for multiple habitation, to make further use of the well site, the following additional requirements must be met (see Figure 9C):

1. A hole shall be excavated around the well casing to a depth of 5 feet (1.5 metres) below the ground surface and the well casing removed to the bottom of the excavation.

2. The sealing material used for the upper portion of the well shall be allowed to spill over into the excavation to form a cap.

3. After the well has been properly filled, including sufficient time for sealing material in the excavation to set, the excavation shall be filled with native soil.

F. Temporary Cover. During periods when no work is being done on the well, such as overnight or while waiting for sealing material to set, the well and surrounding excavation, if any, shall be covered. The cover shall be sufficiently strong and well enough anchored to prevent the introduction of foreign material into the well and to protect the public from a potentially hazardous situation.

1/ Examples of materials of this type are: very fine sand with a large percentage of silt or clay, inorganic silts, mixtures of silt and clay, and clay. Native materials should not be used when the sealing operation involves the use of pressure.

APPENDIX B

SUGGESTED METHODS FOR SEALING THE ANNULAR SPACE AND FOR SEALING-OFF STRATA

Sealing the Annular Space

The annular space is the space between the well casing and wall of the drilled hole created during construction. This space must be adequately sealed to prevent the entrance of surface drainage or poor quality subsurface water, which may contaminate or pollute the well. This seal will also protect the casing against corrosion and possible structural failure.

A number of acceptable sealing methods are presented in this appendix. Other methods may be suggested by individual well drillers on the basis of their experience and availability of equipment. An acceptable method should provide for the complete filling of the sealing interval with the appropriate sealing material to the specified depth.

General

Prior to sealing, the annular space should be flushed to remove any loose formation material or drilling mud that might obstruct the operation. The use of centralizers -- devices which are affixed to the casing at regular intervals to prevent it from touching the walls of the hole, thereby keeping the casing centered in the borehole -- are recommended.. This assures that the seal is not less than the desired minimum thickness. It is particularly significant for large diameter wells where the casing exceeds 10 inches (250 millimetres) in diameter.

The use of a tremie or grout pipe for the introduction of the sealing material into the annular space is preferred. Where a tremie or grout pipe is used, the minimum annular space should be 2 inches (50 millimetres) and the minimum tremie size should be a nominal 1-1/2 inches (38 millimetres) in diameter.

Gravity installation without a grout pipe or tremie should not be attempted when the sealing interval contains water or cannot be visually inspected (with the aid of a mirror or light). Where sealing material is to be introduced under water or the interval cannot be observed from the surface, methods involving "positive" placement (by a tremie or grout pipe, pumping or other application of pressure) must be used.

The sealing material must always be introduced at the bottom of the interval to be sealed. This prevents "bridging" (jamming) or segregation (separation of large aggregate from the mixture in sand-cement or concrete grouts) of the sealing material and eliminates gaps.

Sealing should be accomplished in one continuous operation. Where the sealing interval will exceed 100 feet (30.5 metres) in length, consideration must be given to the collapse strength of the casing. Further, because of the weight of such extensive seals, consideration must also be given to the installation of stronger retaining devices and to staging the placement of the seal (as, for example, the installation of a short segment of rapid-setting sealant in advance of the main body of sealing material; the former becomes a foundation to support the extensive seal).

Sealing Methods

The following methods can be used to seal the upper portion of the annular space. Except for the first, these methods are illustrated on Figure 10. The first method is frequently used where short seals, under 20 feet (6 metres) deep, are placed in dry material.

Gravity Installation (Without Tremie). In this method sealing material is poured into the annular space without the use of a tremie or grout pipe. It cannot be used where the annular space contains water and is limited to intervals less than 30 feet (9 metres) deep. When used, visual observation (with the aid of a mirror or light) should be made during placement of the seal.

Grout Pipe Method. In this method, the seal is placed in the annular space by gravity through a grout pipe (or tremie) suspended in the annular space (see Figure 10).

1. Drill the hole large enough to accommodate the grout pipe (at least 4 inches or 100 millimetres, greater in diameter than the diameter of the casing).

2. In caving formations, install a conductor casing.

3. Provide a packer or grout retainer in the annular space below the interval to be sealed.

4. Extend the grout pipe down the annular space between the casing and the wall or conductor to near the bottom of the interval to be sealed just above the retainer.

5. Add grout in one continuous operation, beginning at the bottom of the interval to be sealed. The bottom end of the grout pipe should remain submerged in the sealing material during the entire time it is being placed. The grout pipe is gradually withdrawn as the sealing material is placed. Where a conductor casing is used to hold back caving material, it may be withdrawn as the sealing material is placed.

Pumping-Exterior Placement. For this method the same procedure as described for the Grout Pipe Method (above) is followed except that the material is placed by pumping instead of by gravity flow. The grout pipe must always be full of sealing material and its bottom end must remain submerged in the sealing material until the interval has been filled.

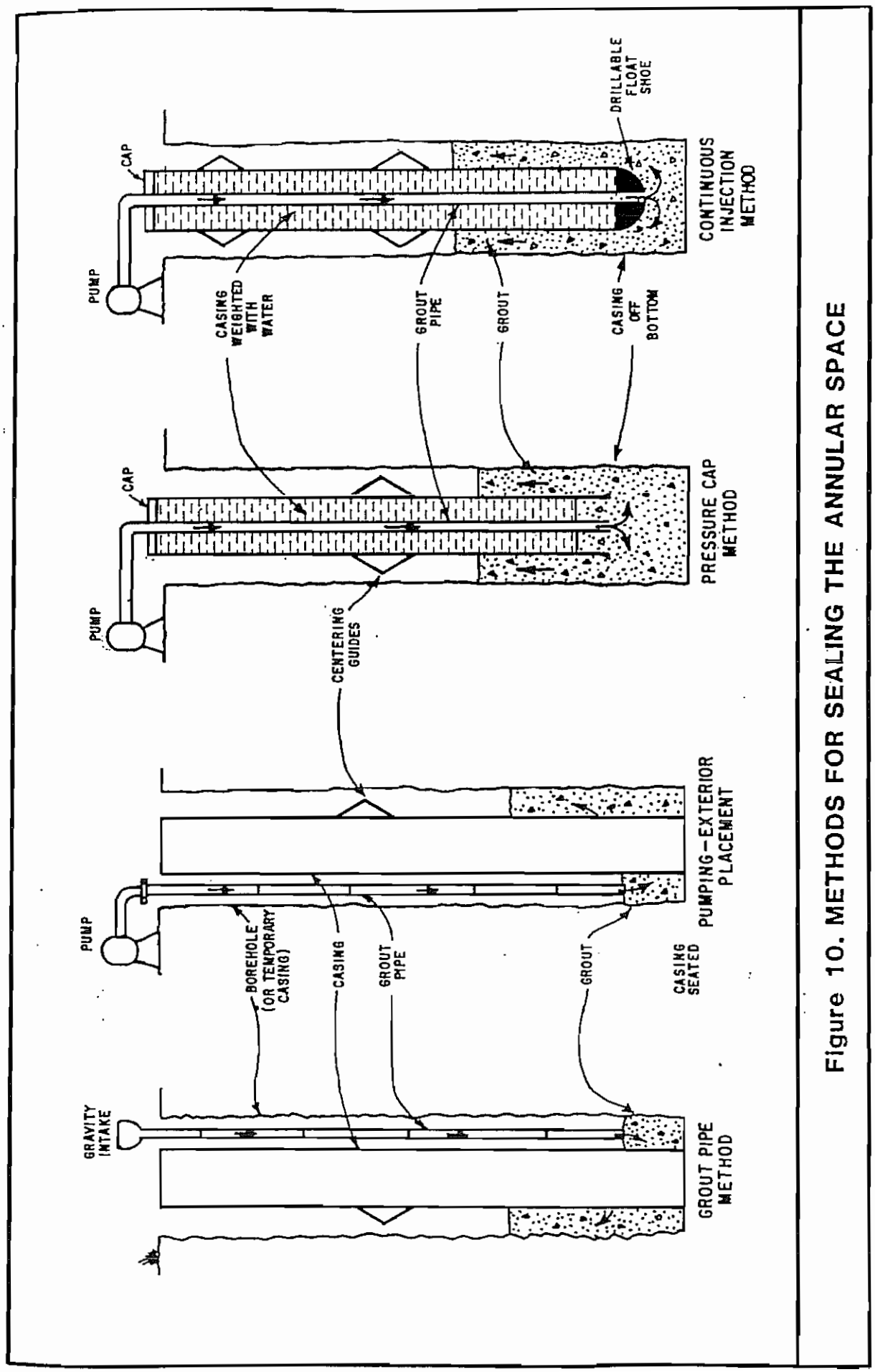


Figure 10. METHODS FOR SEALING THE ANNULAR SPACE

Pressure Cap Method. In the pressure cap method, the grouting is done with the hole drilled about 2 feet (0.6 metre) below the bottom of the conductor casing and the remainder of the well drilled after the grout is in place and set. The grout is placed through a grout pipe set inside the conductor casing.

1. The casing is suspended about 2 feet (0.6 metre) above the bottom of the drilled hole and filled with water.

2. A pressure cap is placed over the conductor casing and grout pipe extended through the cap and casing to the bottom of the hole.

3. The grout is forced through the pipe, up into the annular space around the outside of the conductor casing, to the ground surface.

4. When the grout has set, the pressure cap and the plug formed during grouting are removed and drilling of the rest of the well is continued.

Because there is the possibility that coarse aggregate will "jam" the grout pipe, concrete cannot be used as a sealant when this method is used.

Continuous Injection. This method, called the Normal Displacement Method in the oil industry (which developed it), involves pumping grout through a tube or pipe centered in the casing via a "float shoe" fitted at the bottom of the casing. The grout is forced up into the annular space to the ground surface as is the case with the pressure cap method (above). The tube is detached and flushed. The float shoe, which has a back pressure valve, is drilled out. Because there is the possibility that coarse aggregate will "jam" the grout pipe, concrete cannot be used with this method.

Sealing-off Strata

When the hole for a well is drilled, a strata may be found that produces water of undesirable quality. To prevent the movement of this water into other strata and to maintain the quality of the water to be produced by the well, such strata must be sealed-off. Also, where a highly porous non-water producing strata is encountered, it too must be sealed-off to prevent the loss of water or hydraulic pressure from the well.

The following methods can be used in sealing-off strata or zones (see Figure 11). In addition, several of the methods described for sealing the upper annular space can also be used.

Pressure-Grouting Method. This method can be employed where a substantial annular space exists between the well casing and the wall of the drilled hole.

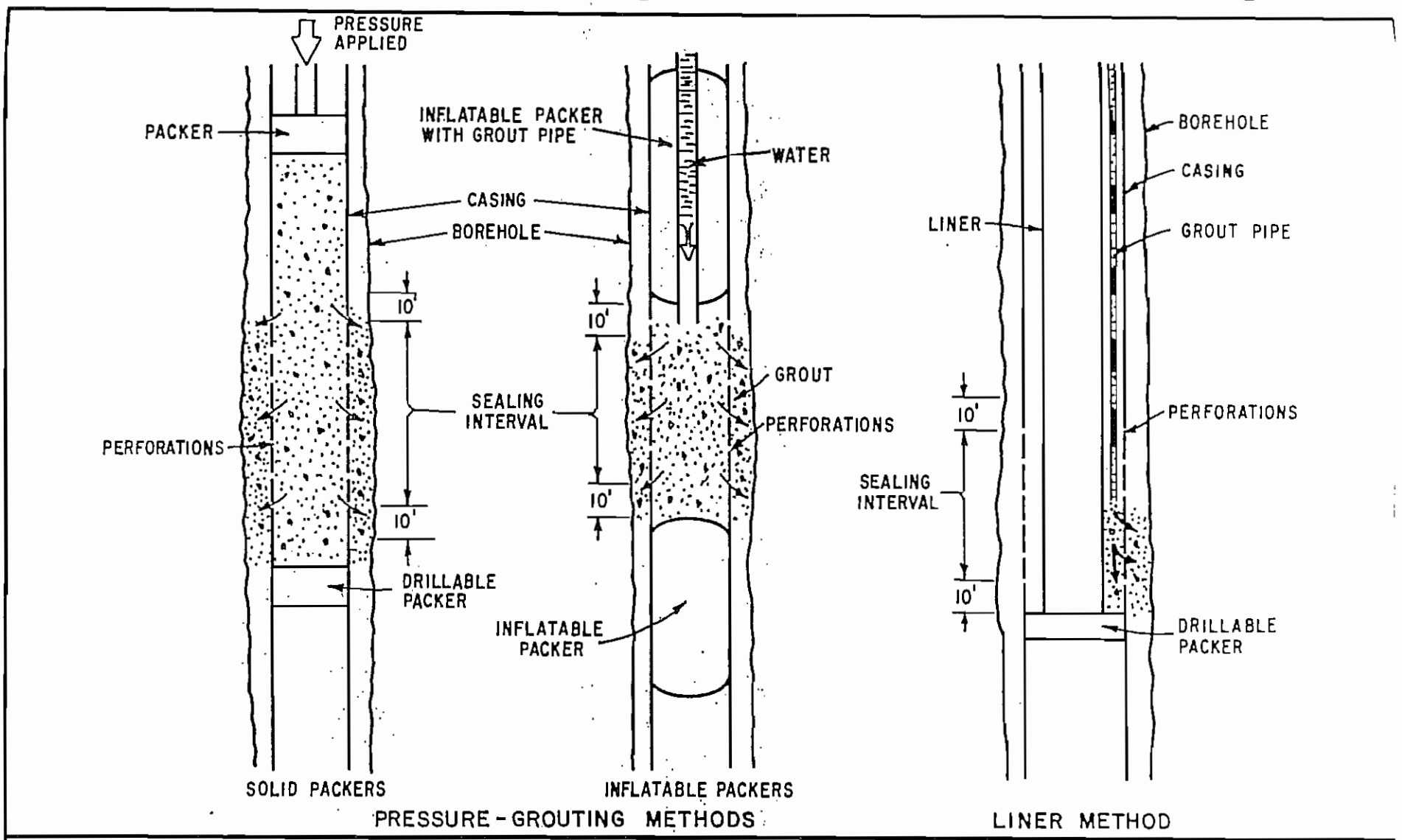


Figure 11. METHODS FOR SEALING-OFF STRATA

1. Perforate the casing opposite the interval to be sealed.

2. Place a packer or other sealing device in the casing below the bottom of the perforated interval.

3. Use a dump bailer or grout pipe to place grout in the casing opposite the interval to be sealed. Sufficient grout shall be placed to fill the annular space and extend out into the strata to be sealed-off.

4. Place a packer or other sealing device in the casing above the perforations.

5. Apply pressure to the top packer to force the grout through the perforations into the interval to be sealed.

6. Maintain pressure until the material has set.

7. Drill out the packers and other material remaining in the well.

Frequently, an assembly consisting of inflatable (balloon) packers and grout pipe is used. The packers are placed to enclose the interval to be sealed, they are inflated and the grout pumped down the hose (which passes through the upper packer) into the interval to be sealed. Water is then pumped into the interval, squeezing the grout through the perforations. When the grout is sufficiently hardened, the packers are deflated and removed.

Liner Method. Where the annular space between the casing and the wall of the drilled hole is minimal, the liner method can be employed.

1. Perforate the casing opposite the interval to be sealed.

2. Place a smaller diameter metal liner, about 2 inches (50 millimetres) less in diameter, inside the casing opposite the perforated interval to be sealed, and extend it at least 10 feet (3 metres) above and below the perforated interval.

3. Provide a grout retaining seal at the bottom of the annular space between the liner and the well casing.

4. Extend the grout pipe into the opening between the liner and casing, and fill the annular space with grout in one continuous operation.

5. The botton end of the grout pipe should remain submerged in the sealing material during the entire time it is being placed. The grout pipe is gradually withdrawn as the sealing material is placed.

EXHIBIT D

California Well Standards

Water wells • Monitoring wells • Cathodic protection wells

Bulletin 74-90

(Supplement to Bulletin 74-81)

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Part II. Well Construction

Section 8. Well Location With Respect to Pollutants and Contaminants, and Structures.

Note: The title of Section 8 has been revised.

Section 8 (page 26 of Bulletin 74-81) has been revised to read as follows:

"A. Separation. All water wells shall be located an adequate horizontal distance from known or potential sources of pollution and contamination. Such sources include, but are not limited to:

- sanitary, industrial, and storm sewers;
- septic tanks and leachfields;
- sewage and industrial waste ponds;
- barnyard and stable areas;
- feedlots;
- solid waste disposal sites;
- above and below ground tanks and pipelines for storage and conveyance of petroleum products or other chemicals; and,
- storage and preparation areas for pesticides, fertilizers, and other chemicals.

Consideration should also be given to adequate separation from sites or areas with known or suspected soil or water pollution or contamination.

The following horizontal separation distances are generally considered adequate where a significant layer of unsaturated, unconsolidated sediment less permeable than sand is encountered between ground surface and ground water. These distances are based on present knowledge and past experience. Local conditions may require greater separation distances to ensure ground water quality protection.

Potential Pollution or Contamination Source	Minimum Horizontal Separation Distance Between Well and Known or Potential Source
Any sewer line (sanitary, industrial, or storm; main or lateral)	50 feet
Watertight septic tank or subsurface sewage leaching field	100 feet
Cesspool or seepage pit	150 feet
Animal or fowl enclosure	100 feet

If the well is a radial collector well, minimum separation distances shall apply to the furthest extended point of the well.

Many variables are involved in determining the "safe" separation distance between a well and a potential source of pollution or contamination. No set separation distance is adequate and reasonable for all conditions. Determination of the safe separation distance for individual wells requires detailed evaluation of existing and future site conditions.

Where, in the opinion of the enforcing agency adverse conditions exist, the above separation distances shall be increased, or special means of protection, particularly in the construction of the well, shall be provided, such as increasing the length of the annular seal.

Lesser distances than those listed above may be acceptable where physical conditions preclude compliance with the specified minimum separation distances and where special means of protection are provided. Lesser separation distances must be approved by the enforcing agency on a case-by-case basis.

B. Gradients. Where possible, a well shall be located up the ground water gradient from potential sources of pollution or contamination. Locating wells up gradient from pollutant and contaminant sources can provide an extra measure of protection for a well. However, consideration should be given that the gradient near a well can be reversed by pumping, as shown in Figure 3 (page 28 of Bulletin 74-81), or by other influences.

C. Flooding and Drainage. If possible, a well should be located outside areas of flooding. The top of the well casing shall terminate above grade and above known levels of flooding caused by drainage or runoff from surrounding land. For community water supply wells, this level is defined as the:

> "...floodplain of a 100 year flood..." or above "...any recorded high tide...", (Section 64417, *Siting Requirements*, Title 22 of the California Code of Regulations.)

If compliance with the casing height requirement for community water supply wells and other water wells is not practical, the enforcing agency shall require alternate means of protection.

Surface drainage from areas near the well shall be directed away from the well. If necessary, the area around the well shall be built up so that drainage moves away from the well.

D. Accessibility. All wells shall be located an adequate distance from buildings and other structures to allow access for well modification, maintenance, repair, and destruction, unless otherwise approved by the enforcing agency."

Section 9. Sealing the Upper Annular Space.

Note: Sealing requirements are also described in Appendix B, page 67 of Bulletin 74-81.

Section 9 (page 29 of Bulletin 74-81) has been revised to read as follows:

"The space between the well casing and the wall of the drilled hole, often referred to as the annular space, shall be effectively sealed to prevent it from being a preferential pathway for movement of poor-quality water, pollutants, or contaminants. In some cases, secondary purposes of an annular seal are to protect casing against corrosion or degradation, ensure the structural integrity of the casing, and stabilize the borehole wall.

A. Minimum Depth of Annular Surface Seal. The annular surface seal for various types of water wells shall extend from ground surface to the following minimum depths:

Well Type	Minimum Depth Seal Must Extend Below Ground Surface
Community Water Supply	50 feet
Industrial	50 feet
Individual Domestic	20 feet
Agricultural	20 feet
Air-Conditioning	20 feet
All Other Types	20 feet

1. Shallow ground water. Exceptions to minimum seal depths can be made for shallow wells at the approval of the enforcing agency, where the water to be produced is at a depth less than 20 feet. In no case shall an annular seal extend to a total depth less than 10 feet below land surface. The annular seal shall be no less than 10 feet in length.

   Caution shall be given to locating a well with a 'reduced' annular seal with respect to sources of pollution or contamination. Such precautions include horizontal separation distances greater than those listed in Section 8, page 12, above.

2. Encroachment on known or potential sources of pollution or contamination. When, at the approval of the enforcing agency, a water well is to be located closer to a source of pollution or contamination than allowed by Section 8, page 12, above, the annular space shall be sealed from ground surface to the first impervious stratum, if possible. The annular seal for all such wells shall extend to a minimum depth of 50 feet.

3. Areas of freezing. The top of an annular surface seal may be below ground surface in areas where freezing is likely, but in no case more than 4 feet below ground surface. 'Freezing' areas are those where the mean length of the freeze-free period described by the National Weather Service is less than 100 days. In other words, 'freezing' areas are where temperatures at or below 32 degrees Fahrenheit are likely to occur on any day during a period of 265 or more days each year. In general, these areas include:

   - portions of Modoc, Lassen, and Siskiyou Counties;
   - portions of the North Lahontan area including the eastern slope of the Sierra Nevada and related valleys north of Mount Whitney and Mono Lake; and,
   - the area of Lake Arrowhead in the San Bernardino Mountains.

4. Vaults. At the approval of the enforcing agency, the top of an annular surface seal and well casing can be below ground surface where traffic or other conditions require, if the seal and casing extend to a watertight and structurally sound subsurface vault, or equivalent feature. In no case shall the top of the annular surface seal be more

than 4 feet below ground surface. The vault shall extend from the top of the annular seal to at least ground surface.

The use of subsurface vaults to house the top of water wells below ground surface is rare and is discouraged due to susceptibility to the entrance of surface water, pollutants, and contaminants. Where appropriate, pitless adapters should be used in place of vaults.

B. Sealing Conditions. The following requirements are to be observed for sealing the annular space.

1. Wells drilled in unconsolidated, caving material. An 'oversized' hole, at least 4 inches greater in diameter than the outside diameter of the well casing, shall be drilled and a conductor casing temporarily installed to at least the minimum depth of annular seal specified in Subsection A, page 14, above. Permanent conductor casing may be used if it is installed in accordance with Item 3, page 16, below, and Item 5 (page 32 of Bulletin 74-81) and if it extends at least to the depth specified in Subsection A, above. One purpose of conductor casing is to hold the annular space open during well drilling and during the placement of the well casing and annular seal.

Temporary conductor casing shall be withdrawn as sealing material is placed between the well casing and borehole wall, as shown in Figure 4A (page 31 of Bulletin 74-81). Sealing material shall be placed at least within the interval specified in Subsection A, above. The sealing material shall be kept at a sufficient height above the bottom of the temporary conductor casing as it is withdrawn to prevent caving of the borehole wall.

Temporary conductor casing may be left in place in the borehole after the placement of the annular seal only if it is impossible to remove because of unforeseen conditions and not because of inadequate drilling equipment, or if its removal will seriously jeopardize the integrity of the well and the integrity of subsurface barriers to pollutant or contaminant movement. Temporary conductor casing may be left in place only at the approval of the enforcing agency on a case-by-case basis.

Every effort shall be made to place sealing material between the outside of temporary conductor casing that cannot be removed and the borehole wall to fill any possible gaps or voids between the conductor casing and the borehole wall. At least two inches of sealing material shall be maintained between the conductor casing and well casing. At a minimum, sealing material shall extend through intervals specified in Subsection A, above.

Sealing material can often be placed between temporary conductor casing that cannot be removed and the borehole wall by means of pressure grouting techniques, as described below and in Appendix B (page 67 of Bulletin 74-81). Other means of placing sealing material between the conductor casing and the borehole wall can be used, at the approval of the enforcing agency.

Pressure grouting shall be accomplished by perforating temporary conductor casing that cannot be removed, in place. The perforations are to provide passages for sealing material to pass through the conductor casing to fill any spaces and voids between the casing and borehole wall. Casing perforations shall be a suitable size and density to allow the passage of sealing materials through the casing and the proper distribution

of sealing material in spaces between the casing and borehole wall. At a minimum, the perforations shall extend through the intervals specified in Subsection A, above, unless otherwise approved by the enforcing agency.

Temporary conductor casing that must be left in place shall be perforated immediately before sealing operations begin to prevent drilling or well construction operations from clogging casing perforations. Once the casing has been adequately perforated, sealing material shall be placed inside the conductor casing and subjected to sufficient pressure to cause the sealing material to pass through the conductor casing perforations and completely fill any spaces or voids between the casing and borehole wall, at least within the intervals specified in Subsection A, above. Sealing material shall consist of neat cement, or bentonite prepared from powdered bentonite and water, unless otherwise approved by the enforcing agency.

Sealing material must also fill the annular space between the conductor casing and the well casing within required sealing intervals.

2. Wells drilled in unconsolidated material with significant clay layers. An 'oversized' hole, at least 4 inches greater in diameter than the outside diameter of the well casing, shall be drilled to at least the depth specified in Subsection A, page 14, above, and the annular space between the borehole wall and the well casing filled with sealing material in accordance with Subsection A, above (see Figure 4B, page 31 of Bulletin 74-81). If a significant layer of clay or clay-rich deposits of low permeability is encountered within 5 feet of the minimum seal depth prescribed in Subsection A, above, the annular seal shall be extended at least 5 feet into the clay layer. Thus, the depth of seal could be required to be extended as much as another 10 feet. If the clay layer is less than 5 feet in total thickness, the seal shall extend through its entire thickness.

If caving material is present within the interval specified in Subsection A, a temporary conductor casing shall be installed to hold the borehole open during well drilling and placement of the casing and annular seal, in accordance with the requirements of Item 1, page 15, above. Permanent conductor casing may be used if it is installed in accordance with Item 3, below and Item 5 (page 32 of Bulletin 74-81) and it extends to at least the depth specified in Subsection A, above.

3. Wells drilled in soft consolidated formations (extensive clays, sandstones, etc.). An 'oversized' hole, at least 4 inches greater in diameter than the outside diameter of the well casing, shall be drilled to at least the depth specified in Subsection A, page 14, above. The space between the well casing and the borehole shall be filled with sealing material to at least the depth specified in Subsection A, above, as shown by Figure 4C (page 31 of Bulletin 74-81).

If a permanent conductor casing is to be installed to facilitate the construction of the well, an oversized hole, at least 4 inches greater in diameter than the outside surface of the permanent conductor casing, shall be drilled to the bottom of the conductor casing or to at least the depth specified in Subsection A, above, and the annular space between the conductor casing and the borehole wall filled with sealing material. In some cases, such as in cable tool drilling, it may be necessary to extend permanent conductor casing beyond the depth of the required depth of the annular surface seal in order to maintain the borehole. Sealing material is not required between conductor

casing and the borehole wall other than the depths specified in Subsection A, above, and Section 13, below (page 46 of Bulletin 74-81)."

Items 4 through 7 (page 32 of Bulletin 74-81) are unchanged. Item 8 has been added, as follows:

"8. Wells that penetrate zones containing poor-quality water, pollutants, or contaminants. If geologic units or fill known or suspected to contain poor-quality water, pollutants, or contaminants are penetrated during drilling, and, the possibility exists that poor-quality water, pollutants, or contaminants could move through the borehole during drilling and well construction operations and significantly degrade ground water quality in other units before sealing material can be installed, then precautions shall be taken to seal off or 'isolate' zones containing poor-quality water, pollutants, and contaminants during drilling and well construction operations. Special precautions could include the use of temporary or permanent conductor casing, borehole liners, and specialized drilling equipment. The use of conductor casing is described in Item 1, page 15, above."

Subsection C (page 34 of Bulletin 74-81) is unchanged. Subsections D, E, and F (page 34 of Bulletin 74-81) have been changed to read as follows:

"D. Sealing Material. Sealing material shall consist of neat cement, sand cement, concrete, or bentonite. Cuttings from drilling, or drilling mud, shall not be used for any part of the sealing material.

1. Water. Water used to prepare sealing mixtures should generally be of drinking water quality, shall be compatible with the type of sealing material used, be free of petroleum and petroleum products, and be free of suspended matter. In some cases water considered nonpotable, with a maximum of 2,000 milligrams per liter chloride and 1,500 mg/l sulfate, can be used for cement-based sealing mixtures. The quality of water to be used for sealing mixtures shall be determined where unknown.

2. Cement. Cement used in sealing mixtures shall meet the requirements of American Society for Testing and Materials C150, *Standard Specification for Portland Cement*, including the latest revisions thereof.

Types of Portland cement available under ASTM C150 for general construction are:

Type I - General purpose. Similar to American Petroleum Institute Class A.

Type II - Moderate resistance to sulfate. Lower heat of hydration than Type I. Similar to API Class B.

Type III - High early strength. Reduced curing time but higher heat of hydration than Type I. Similar to API Class C.

Type IV - Extended setting time. Lower heat of hydration than Types I and III.

Type V - High sulfate resistance.

Special cement setting accelerators and retardants and other additives may be used in some cases. Special field additives for Portland cement mixtures shall meet the requirements of ASTM C494, *Standard Specification for Chemical Admixtures for Concrete*, and latest revision thereof.

Hydrated lime may be added up to 10 percent of the volume of cement used to make the seal mix more fluid. Bentonite may be added to cement-based mixes, up to 6 percent by weight of cement used, to improve fluid characteristics of the sealing mix and reduce the rate of heat generation during setting.

Dry additives should be mixed with dry cement before adding water to the mixture to ensure proper mixing, uniformity of hydration, and an effective and homogeneous seal. The water demand of additives shall be taken into account when water is added to the mix.

Minimum times required for sealing materials containing Portland cement to set and begin curing before construction operations on a well can be resumed are:

- Types I and II cement - 24 hours
- Type III cement - 12 hours
- Type V cement - 6 hours

Type IV cement is seldom used for annular seals because of its extended setting time.

Allowable setting times may be reduced or lengthened by use of accelerators or retardants specifically designed to modify setting time, at the approval of the enforcing agency.

More time shall be required for cement-based seals to cure to allow greater strength when construction or development operations following the placement of the seal may subject casing and sealing materials to significant stress. Subjecting a well to significant stress before a cement-based sealing material has adequately cured can damage the seal and prevent proper bonding of cement-based sealants to casing(s).

If plastic well casing is used, care shall be exercised to control the heat of hydration generated during the setting and curing of cement in an annular seal. Heat can cause plastic casing to weaken and collapse. Heat generation is a special concern if thin-wall plastic well casing is used, if the well casing will be subject to significant net external pressure before the setting of the seal, and/or if the radial thickness of the annular seal is large. Additives that accelerate cement setting also tend to increase the rate of heat generation during setting and, thus, should be used with caution where plastic casing is employed.

The temperature of a setting cement seal can be lowered by circulating water inside the well casing and/or by adding bentonite to the cement mixture, up to 6 percent by weight of cement used.

Cement-based sealing material shall be constituted as follows:

a. Neat Cement. For Types I or II Portland cement, neat cement shall be mixed at a ratio of one 94-pound sack of Portland cement to 5 to 6 gallons of 'clean' water. Additional water may be required where special additives, such as bentonite, or 'accelerators' or 'retardants' are used.

b. Sand Cement. Sand-cement shall be mixed at a ratio of not more than 188 pounds of sand to one 94-pound sack of Portland cement (2 parts sand to 1 part cement, by weight) and about 7 gallons of clean water, where Type I or Type II Portland cement is used. This is equivalent to a '10.3 sack mix.' Less

water shall be used if less sand than 2 parts sand per one part cement by weight is used. Additional water may be required when special additives, such as bentonite, or 'accelerators' or 'retardants' are used.

c. Concrete. Concrete is often useful for large volume annular seals, such as in large-diameter wells. The proper use of aggregate can decrease the permeability of the annular seal, reduce shrinkage, and reduce the heat of hydration generated by the seal.

Concrete shall consist of Portland cement and aggregate mixed at a ratio of at least six-94 pound sacks of Portland cement per cubic yard of aggregate. A popular concrete mix consists of eight-94 pound sacks of Type I or Type II Portland cement per cubic yard of uniform 3/8-inch aggregate.

In no case shall the size of the aggregate be more than 1/5 the radial thickness of the annular seal. Water shall be added to concrete mixes to attain proper consistency for placement, setting, and curing.

d. Mixing. Cement-based sealing materials shall be mixed thoroughly to provide uniformity and ensure that no 'lumps' exist.

Ratios of the components of cement-based sealing materials can be varied depending on the type of cement and additives used. Variations must be approved by the enforcing agency.

3. Bentonite. Bentonite clay in 'gel' form has some of the advantages of cement-based sealing material. A disadvantage is that the clay can sometimes separate from the clay-water mixture.

Although many types of clay mixtures are available, none has sealing properties comparable to bentonite clay. Bentonite expands significantly in volume when hydrated. Only bentonite clay is an acceptable clay for annular seals.

Unamended bentonite clay seals should not be used where structural strength of the seal is required, or where it will dry. Bentonite seals may have a tendency to dry, shrink and crack in arid and semi-arid areas of California where subsurface moisture levels can be low. Bentonite clay seals can be adversely affected by subsurface chemical conditions, as can cement-based materials.

Bentonite clay shall not be used as a sealing material if roots from trees and other deep rooted plants might invade and disrupt the seal, and/or damage the well casing. Roots may grow in an interval containing a bentonite seal depending on surrounding soil conditions and vegetation.

Bentonite-based sealing material shall not be used for sealing intervals of fractured rock or sealing intervals of highly unstable, unconsolidated material that could collapse and displace the sealing material, unless otherwise approved by the enforcing agency. Bentonite clay shall not be used as a sealing material where flowing water might erode it.

Bentonite clay products used for sealing material must be specifically prepared for such use. Used drilling mud and/or cuttings from drilling shall not be used in sealing material.

Bentonite used for annular seals shall be commercially prepared, powdered, granulated, pelletized, or chipped/crushed sodium montmorillonite clay. The largest dimension of pellets or chips shall be less than 1/5 the radial thickness of the annular space into which they are placed.

Bentonite clay mixtures shall be thoroughly mixed with clean water *prior to placement.* A sufficient amount of water shall be added to bentonite to allow proper hydration. Depending on the bentonite sealing mixture used, 1 gallon of water should be added to about every 2 pounds of bentonite. Water added to bentonite for hydration shall be of suitable quality and free of pollutants and contaminants.

Bentonite preparations normally require 1/2 to 1 hour to adequately hydrate. Actual hydration time is a function of site conditions and the form of bentonite used. Finely divided forms of bentonite generally require less time for hydration, if properly mixed.

Dry bentonite pellets or chips may be placed directly into the annular space below water, where a short section of annular space, up to 10 feet in length, is to be sealed. Care shall be taken to prevent bridging during the placement of bentonite seal material.

E. Radial Thickness of Seal. A minimum of two inches of sealing material shall be maintained between all casings and the borehole wall, within the interval to be sealed, except where temporary conductor casing cannot be removed, as noted in Subsection B, page 15, above. A minimum of two inches of sealing material shall also be maintained between each casing, such as permanent conductor casing, well casing, gravel fill pipes, etc., in a borehole within the interval to be sealed, unless otherwise approved by the enforcing agency. Additional space shall be provided, where needed, for casings to be properly centralized and spaced and allow the use of a tremie pipe during well construction (if required), especially for deeper wells.

F. Placement of Seal.

1. Obstructions. All loose cuttings, or other obstructions to sealing shall be removed from the annular space before placement of the annular seal.

2. Centralizers. Well casing shall be equipped with centering guides or 'centralizers' to ensure the 2-inch minimum radial thickness of the annular seal is at least maintained. Centralizers need not be used in cases where the well casing is centered in the borehole during well construction by use of removable tools, such as hollow-stem augers.

   The spacing of centralizers is normally dictated by the casing materials used, the orientation and straightness of the borehole, and the method used to install the casing.

   Centralizers shall be metal, plastic, or other non-degradable material. Wood shall not be used as a centralizer material. Centralizers must be positioned to allow the proper placement of sealing material around casing within the interval to be sealed.

   Any metallic component of a centralizer used with metallic casing shall consist of the same material as the casing. Metallic centralizer components shall meet the same metallurgical specifications and standards as the metallic casing to reduce the potential for galvanic corrosion of the casing.

3. Foundation and Transition Seals. A packer or similar retaining device, or a small quantity of sealant that is allowed to set, can be placed at the bottom of the interval to be sealed before final sealing operations begin to form a foundation for the seal.

A transition seal, up to 5 feet in length, consisting of bentonite, is sometimes placed in the annular space to separate filter pack and cement-based sealing materials. The transition seal can prevent cement-based sealing materials from infiltrating the filter pack. A short interval of fine-grained sand, usually less than 2 feet in length, is sometimes placed between the filter pack and the bentonite transition seal to prevent bentonite from entering the filter pack. Also, fine sand is sometimes used in place of bentonite as the transition seal material.

Fine-sized forms of bentonite, such as granules and powder, are usually employed for transition seals if a transition seal is to be placed above the water level in a well boring. Coarse forms of bentonite, such as pellets and chips, are often used where a bentonite transition seal is to be placed below the water level.

Transition seals should be installed by use of a tremie pipe, or equivalent. However, some forms of bentonite may tend to bridge or clog in a tremie pipe.

Bentonite can be placed in dry form or as slurry for use in transition seals. Water should be added to the bentonite transition seal prior to the placement of cement-based sealing materials where bentonite is dry in the borehole. Care should be exercised during the addition of water to the borehole to prevent displacing the bentonite.

Water should be added to bentonite at a ratio of about 1 gallon for every 2 pounds of bentonite to allow for proper hydration. Water added to bentonite for hydration shall be of suitable quality and free of pollutants and contaminants.

Sufficient time should be allowed for bentonite transition seals to properly hydrate before cement-based sealing materials are placed. Normally, 1/2 to 1 hour is required for proper hydration to occur. Actual time of hydration is a function of site conditions.

The top of the transition seal shall be sounded to ensure that no bridging has occurred during placement.

4. Timing and Method of Placement. The annular space shall be sealed as soon as practical after completion of drilling or a stage of drilling. In no case shall the annular space be left unsealed longer than 14 days following the installation of casing.

Sealing material shall be placed in one continuous operation from the bottom of the interval to be sealed, to the top of the interval. Where the seal is more than 100 feet in length, the deepest portion of the seal may be installed first and allowed to set or partially set. The deep initial seal shall be no longer than 10 feet in length. The remainder of the seal shall be placed above the initial segment in one continuous operation.

Sealing material shall be placed by methods (such as the use of a tremie pipe or equivalent) that prevent freefall, bridging, or dilution of the sealing material, or separation of sand or aggregate from the sealing material. Annular sealing materials

shall not be installed by freefall unless the interval to be sealed is dry and no deeper than 30 feet below ground surface.

5. Ground Water Flow. Special care shall be used to restrict the flow of ground water into a well boring while placing material, where subsurface pressure causing the flow of water is significant.

6. Verification. It shall be verified that the volume of sealing material placed at least equals or exceeds the volume to be sealed.

7. Pressure. Pressure required for placement of sealing materials shall be maintained long enough for cement-based sealing materials to properly set."

Section 10. Surface Construction Features.

Subsection A, Item 5; Subsection B; and Subsection F (page 39 of Bulletin 74-81) have been changed. The remainder of Section 10 (page 36 of Bulletin 74-81) is unchanged.

"A. Openings.

5. Bases. A concrete base or pad, sometimes called a pump block or pump pedestal, shall be constructed at ground surface around the top of the well casing and contact the annular seal, unless the top of the casing is below ground surface, as provided by Subsection B, page 23, below.

The base shall be free of cracks, voids, or other significant defects likely to prevent water tightness. Contacts between the base and the annular seal, and the base and the well casing, must be water tight and must not cause the failure of the annular seal or well casing. Where cement-based annular sealing material is used, the concrete base shall be poured before the annular seal has set, unless otherwise approved by the enforcing agency.

The upper surface of the base shall slope away from the well casing. The base shall extend at least two feet laterally in all directions from the outside of the well boring, unless otherwise approved by the enforcing agency. The base shall be a minimum of 4 inches thick.

A minimum base thickness of 4 inches is normally acceptable for small diameter, single-user domestic wells. The base thickness should be increased for larger wells. Shape and design requirements for well pump bases vary with the size, weight, and type of pumping equipment to be installed, engineering properties of the soil on which the base is to be placed, and local environmental conditions. A large variety of base designs have been used. The Vertical Turbine Pump Association has developed a standard base design for large lineshaft turbine pumps. This design consists of a square, concrete pump base whose design is dependent on bearing weight and site soil characteristics.

Where freezing conditions require the use of a pitless adapter, and the well casing and annular seal do not extend above ground surface or into a pit or vault, a concrete base or pad shall be constructed as a permanent location monument for the covered well. The base shall be 3 feet in length on each side and 4 inches in thickness, unless

Part III. Destruction of Wells

Section 21. Definition of "Abandoned" Well.

Section 21 (page 52 of Bulletin 74-81) has been revised as follows:

"A well is considered 'abandoned' or permanently inactive if it has not been used for one year, unless the owner demonstrates intention to use the well again. In accordance with Section 24400 of the California Health and Safety Code, the well owner shall properly maintain an inactive well as evidence of intention for future use in such a way that the following requirements are met:

"(1) The well shall not allow impairment of the quality of water within the well and ground water encountered by the well.

(2) The top of the well or well casing shall be provided with a cover, that is secured by a lock or by other means to prevent its removal without the use of equipment or tools, to prevent unauthorized access, to prevent a safety hazard to humans and animals, and to prevent illegal disposal of wastes in the well. The cover shall be watertight where the top of the well casing or other surface openings to the well are below ground level, such as in a vault or below known levels of flooding. The cover shall be watertight if the well is inactive for more than five consecutive years. A pump motor, angle drive, or other surface feature of a well, when in compliance with the above provisions, shall suffice as a cover.

(3) The well shall be marked so as to be easily visible and located, and labeled so as to be easily identified as a well.

(4) The area surrounding the well shall be kept clear of brush, debris, and waste materials."

If a pump has been temporarily removed for repair or replacement, the well shall not be considered 'abandoned' if the above conditions are met. The well shall be adequately covered to prevent injury to people and animals and to prevent the entrance of foreign material, surface water, pollutants, or contaminants into the well during the pump repair period."

Section 23. Requirements for Destroying Wells.

Subsection A, Item 1 (page 53 of Bulletin 74-81) and Subsection B, Item 1, (page 54, of Bulletin 74-81) have been changed. The remainder of Section 23 is unchanged.

Subsection A, Item 1 has been revised as follows:

"1. Obstructions. The well shall be cleaned, as needed, so that all undesirable materials, including obstructions to filling and sealing, debris, oil from oil-lubricated pumps, or pollutants and contaminants that could interfere with well destruction are removed for disposal.

The enforcing agency shall be notified as soon as possible if pollutants and contaminants are known or suspected to be in a well to be destroyed. Well destruction operations may then proceed only at the approval of the enforcing agency.

The enforcing agency should be contacted to determine requirements for proper disposal of materials removed from a well to be destroyed."

Subsection B, Item 1 has been revised as follows:

"1. Wells situated in unconsolidated material in an unconfined ground water zone. In all cases the upper 20 feet of the well shall be sealed with suitable sealing material and the remainder of the well shall be filled with suitable fill, or sealing material. (See Figure 9A, page 55 of Bulletin 74-81.)"

Attachment G

Groundwater Banking Plan

DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

JUN 2 3 2017

Ms. Fray A. Crease
Water Resources Planning Manager
Santa Barbara County Flood Control
and Water Conservation District
130 East Victoria Street, suite 200
Santa Barbara, California 93101-2019

Mr. Jeffrey Kightlinger
General Manager
The Metropolitan Water District of
Southern California
Post Office Box 54153
Los Angeles, California 90054-0153

This Letter Agreement, SWPAO #17001 ("Agreement") is in response to Central Coast Water Authority's (CCWA) request, on behalf of Santa Barbara County Flood Control and Water Conservation District's (Santa Barbara) for approval of exchange of up to 1,000 acre-feet of Santa Barbara's approved 2017 State Water Project (SWP) Table A water with the Metropolitan Water District of Southern California (MWDSC), for Irvine Ranch Water District (IRWD), who has a banking program in Kern County Water Agency's (KCWA) service area. DWR, Santa Barbara, and MWDSC may be referred to individually by name or collectively as "Parties". This Agreement may be referred to as SWPAO #17001.

IRWD receives SWP supplies through MWDSC's member agency, Municipal Water District of Orange County (MWDOC). IRWD owns property in Kern County known as "Strand Ranch," which was integrated into a water banking program operated by Rosedale-Rio Bravo Water Storage District (RRBWSD), a member agency of KCWA. MWDSC has requested that the water received from Santa Barbara be delivered to Strand Ranch for storage and future return to MWDSC's service area, rather than directly from the Delta to MWDSC's service area. DWR, KCWA, and MWDSC are concurrently entering into a change in point of delivery agreement to allow the storage in Strand Ranch and future return of the water to MWDSC (SWPAO #17002).

Under this Agreement, MWDSC will return to Santa Barbara one-half of the total amount of MWDSC's future approved SWP Table A water, less 15 percent losses. For example, if Santa Barbara delivers 1,000 acre-feet of its approved 2017 SWP Table A water to MWDSC, MWDSC will return to Santa Barbara 425 acre-feet of its future approved SWP Table A water.

CCWA and IRWD entered into a six-year exchange program on March 9, 2017 entitled, "2017 Short Term Exchange Program," hereafter referred to as "Exchange Program". The Exchange Program provides the terms and conditions for the delivery of up to 1,000 acre-feet of Santa Barbara's approved SWP Table A water to Strand Ranch.

In compliance with the California Environmental Quality Act (CEQA), CCWA, as lead agency, filed a Notice of Exemption (NOE) with the State Office of Planning and Research (OPR) (SCH #2017018371) on January 26, 2017. DWR, as a responsible agency, will file an NOE based on CEQA Guidelines Section 15301 (Existing Facilities) upon execution of this Agreement.

DWR is willing to approve an exchange of up to 1,000 acre-feet of Santa Barbara's approved 2017 SWP Table A water with MWDSC and for the return of a portion of MWDSC's future approved SWP Table A water to Santa Barbara equal to one-half of the total amount delivered to MWDSC, less 15 percent losses, under the following terms and conditions:

GENERAL PROVISIONS

1. DWR's approval under this Agreement is unique and shall not be considered a precedent for future agreements or DWR activities.

2. This Agreement shall become effective upon execution by all parties and shall provide the delivery of a portion of Santa Barbara's approved SWP Table A water to MWDSC by December 31, 2017. Notwithstanding the terms of the Exchange Program, the return of MWDSC's future approved SWP Table A water to Santa Barbara shall be completed by December 31, 2023. This Agreement shall remain in effect until all the water is returned, or upon final payment to DWR by Santa Barbara and MWDSC of all costs attributable to this Agreement, whichever occurs later. However, the liability, hold harmless and indemnification obligations in this Agreement shall remain in effect until December 31, 2027, or until any claim or litigation concerning this Agreement asserted to DWR, Santa Barbara, or MWDSC as of December 31, 2027 is finally resolved, whichever occurs later.

3. The delivery and return of water under this Agreement shall be contingent upon, and subject to, any necessary approvals and shall be governed by the terms and conditions of such approvals and any other applicable legal requirements. Santa Barbara and MWDSC shall be responsible for complying with all applicable laws and legal requirements and for securing any required consent, approvals, permits, or orders. Santa Barbara and MWDSC shall furnish to DWR copies of all approvals and agreements required for the delivery and return of water under this Agreement.

WATER EXCHANGE FROM SANTA BARBARA TO MWDSC

4. DWR will deliver up to 1,000 acre-feet of Santa Barbara's 2017 approved SWP Table A water, that would normally be delivered to MWDSC's service area, to Strand Ranch, under the terms and conditions of the change in point of delivery agreement among DWR, KCWA, and MWDSC (SWPAO #17002) and this Agreement

5. The water delivery under this Agreement shall be in accordance with a schedule approved by DWR. DWR's approval is dependent upon the times and amounts of the delivery and the overall delivery capability of the SWP. DWR shall not be obligated to deliver water at times and locations when such delivery would adversely impact SWP operations, facilities, or other SWP contractors.

6. In coordination with and approval of Santa Barbara, MWDSC shall be responsible for scheduling delivery of water under this Agreement.

7. The sum of deliveries scheduled to MWDSC under this Agreement, plus scheduled MWDSC SWP water deliveries, plus deliveries to MWDSC pursuant to any other agreements, shall not exceed the quantities on which the Proportionate Use of Facilities factors are based pursuant to MWDSC's long-term Water Supply Contract unless DWR determines that these deliveries will not adversely impact SWP operations or facilities, or other SWP contractors' Table A water deliveries.

RETURN OF EXCHANGE WATER FROM MWDSC TO SANTA BARBARA

8. The return water shall be from MWDSC's future approved SWP Table A water allocated to MWDSC in the year that water is returned and shall be equal to one-half of the total amount of Santa Barbara's water, less 15 percent losses, delivered to Strand Ranch on behalf of MWDSC. The delivery of return water to Santa Barbara shall be completed by December 31, 2023.

9. The delivery of a portion of MWDSC's approved SWP Table A water to Santa Barbara under this Agreement shall be in accordance with a schedule approved by DWR. DWR's approval is dependent upon the times and amounts of the delivery and the overall delivery capability of the SWP. DWR shall not be obligated to deliver water at times and locations when such delivery would adversely impact SWP operations, facilities, or other SWP contractors.

10. In coordination with and approval of Santa Barbara, MWDSC shall be responsible for scheduling with DWR the delivery of its return water to Santa Barbara's service area.

11. The sum of deliveries scheduled to Santa Barbara under this Agreement, plus scheduled Santa Barbara SWP water deliveries, plus deliveries to Santa Barbara pursuant to any other agreements, shall not exceed the quantities on which the Proportionate Use-of-Facilities factors are based pursuant to Santa Barbara's Water Supply Contract unless DWR determines that these deliveries will not adversely impact SWP operations or facilities, or other SWP contractors' Table A deliveries.

WATER DELIVERY SCHEDULES

12. All water delivery schedules and revisions shall be in accordance with Article 12 of Santa Barbara's and MWDSC's respective Water Supply Contracts with DWR.

13. Santa Barbara and MWDSC shall be responsible for coordinating and scheduling the water delivery with DWR as described in this Agreement. After all approvals have been obtained and before water is delivered under this Agreement, Santa Barbara and MWDSC shall submit for DWR's approval a revised water delivery schedule showing the anticipated change to the monthly delivery pattern to accommodate the water delivery under this Agreement.

14. Santa Barbara and MWDSC shall submit revised monthly water delivery schedules for approval to the State Water Project Water Analysis Office (SWPAO), Water Deliveries Section, indicating timing and point of delivery requested pursuant to this Agreement with reference to SWPAO #17001. Revised schedules shall be sent by electronic mail to SWPDeliveries@water.ca.gov or by FAX to (916) 653-9628, Attention: Chief, Water Deliveries Section.

15. Santa Barbara and MWDSC shall submit weekly water schedules for the delivery of water under this Agreement to the San Joaquin Field Division, indicating timing and point of delivery requested with reference to SWPAO #17001. Schedules shall be sent by electronic mail to SJFDwaterschedule@water.ca.gov or by FAX to (661) 858-0203, Attention: Chief, Water Operations Section.

16. All weekly water delivery schedules described above shall be submitted by 10:00 a.m. Wednesday, for the following week, Monday through Sunday, to the appropriate field division Water Operations Section for the SWP contractor.

17. Weekly water schedules shall also be concurrently sent by electronic mail or faxed to the State Water Project Operations Control Office:

    a. Water Management Branch
    Water_deliv_sched@water.ca.gov
    FAX (916) 574-2785
    Attention: Chief, Water Management Branch

    b. Power Management and Optimization Branch
    POCOptimization@water.ca.gov
    FAX (916) 574-2785
    Attention: Chief, Power Management and Optimization Branch

    c. Pre-Scheduling Section
    Presched@water.ca.gov
    FAX (916) 574-2782
    Attention: Chief, Pre-Scheduling Section

WATER DELIVERY RECORDS

18. DWR will maintain monthly records documenting the water delivery under this Agreement. MWDSC shall certify to SWPAO the quantity of water delivered to Strand Ranch under a separate agreement SWPAO #17002. MWDSC and Santa Barbara shall certify the quantity of the return water to Santa Barbara by January 31st of the year following the actual delivery.

SWP ALLOCATION

19. Water deliveries under this Agreement shall not be considered by DWR in the determination of approved annual Table A deliveries or allocation of other SWP water to Santa Barbara and MWDSC under Article 18 of Santa Barbara's and MWDSC's respective Water Supply Contracts with DWR.

NO IMPACT

20. This Agreement shall not be administered or interpreted in any way that would cause adverse impacts to SWP approved Table A water or to any other SWP approved water allocations, water deliveries, or SWP operations or facilities. Santa Barbara and MWDSC shall be responsible, jointly and severally, as determined by DWR, for any adverse impacts that may result from the delivery of water under this Agreement.

CHARGES

21. Santa Barbara and MWDSC shall pay the following charges, including all future adjustments, which shall be calculated in the same manner as charges are calculated for SWP Table A deliveries, and shall be in accordance with the provisions of Santa Barbara's and MWDSC's long-term Water Supply Contracts with DWR. Charges shall be determined for the year the water is delivered, as well as the year the water is returned.

    a. When a portion of Santa Barbara's approved SWP water is provided to MWDSC for subsequent delivery to KCWA's turnouts, MWDSC shall pay to DWR the charges associated with the delivery of the water from the Delta to KCWA's turnouts in Reach 12E of the California Aqueduct pursuant to the terms and conditions in SWPAO #17002.

b. In any year that a portion of MWDSC's future approved SWP Table A water is returned to Santa Barbara under this Agreement, Santa Barbara shall pay to DWR the charges associated with the delivery of the return water from the Delta to Santa Barbara's turnouts located in the Coastal Branch of the California Aqueduct. Santa Barbara shall pay the Variable Operation, Maintenance, Power, and Replacement Component of the Transportation Charge and the Off-Aqueduct Power Facilities costs for each acre-foot of water delivered in effect for the year in which water is returned to Santa Barbara's turnouts.

22. In addition to the charges identified above, Santa Barbara and MWDSC agree to pay to DWR any identified demonstrable increase in costs that would otherwise be borne by the SWP contractors not signatory to this Agreement or by DWR as a result of activities under this Agreement.

23. Payment terms shall be in accordance with Santa Barbara's and MWDSC's respective Water Supply Contracts with DWR.

LIABILITY

24. DWR is not responsible for the use, effects or disposal of water under this Agreement once the water is delivered to the designated turnout(s). Responsibility shall be governed by Article 13 of Santa Barbara's and/or MWDSC's Water Supply Contracts, as applicable, with responsibilities under the terms of that article shifting from DWR to Santa Barbara and MWDSC when the water is delivered to the designated turnout(s).

25. Santa Barbara and MWDSC agree to defend and hold DWR, its officers, employees and agents harmless from any direct or indirect loss, liability, lawsuit, cause of action, judgment or claim, and shall indemnify DWR, its officers, employees and agents from all lawsuits, costs, damages, judgments, attorneys' fees, and liabilities that DWR, its officers, employees and agents incur as a result of DWR providing services under this Agreement, except to the extent resulting from the sole negligence or willful misconduct of DWR, its officers, employees and agents.

26. If uncontrollable forces preclude DWR from delivery of water under this Agreement, either partially or completely, then DWR is relieved from the obligation to deliver the water to the extent that DWR is reasonably unable to complete the obligation due to the uncontrollable forces. Uncontrollable forces shall include, but are not limited to, earthquakes, fires, tornadoes, floods, and other natural or human caused disasters. Santa Barbara and MWDSC shall not be entitled to recover any administrative costs or other costs associated with delivery of water under this Agreement if uncontrollable forces preclude DWR from delivering the water.

EXECUTION

27. This Agreement may be executed in counterpart. The Parties agree to accept facsimile or electronically scanned signatures as original signatures. The Agreement shall take effect as soon as all parties have signed.

28. Immediately after execution, Santa Barbara and MWDSC shall transmit a copy of the executed Agreement by facsimile or electronic file to Pedro Villalobos, Chief, State Water Project Analysis Office at (916) 653-9628, or swpao-chief@water.ca.gov and to each other at:

    Santa Barbara: (805) 568-3434 or fcrease@co.santa-barbara.ca.us
    MWDSC: (213) 217-6890 or jkightlinger@mwdh2o.com

29. If Santa Barbara and MWDSC require a Board of Directors' approval of this Agreement, that Party shall send a facsimile or electronic file of the board approval to the other Parties.

If you have any questions or need additional information, you may contact Geoff Shaw of my staff at (916) 653-9593 and refer to SWPAO #17001.

Sincerely,

Pedro Villalobos, Chief
State Water Project Analysis Office

cc: (See attached list.)

ACCEPTED:

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Signature

GENERAL MANAGER
Title

Sep. 19, 2017
Date

SANTA BARBARA FLOOD CONTROL AND WATER CONSERVATION DISTRICT

Signature

Deputy Public Works Director
Title

July 24, 2017
Date

cc:

Jennifer Pierre, General Manager
State Water Contractors
1121 L Street, Suite 1050
Sacramento, CA 95814

Eric Chapman
State Water Contractors
1121 L Street, Suite 1050
Sacramento, California 95814

Holly Melton
Water Resources Manager
Kern County Water Agency
Post Office Box 58
Bakersfield, CA 93302-0058

Attachment H

Annual Potable Water Quality Report – Urban

CARPINTERIA VALLEY WATER DISTRICT

2016 CONSUMER CONFIDENCE REPORT

Vital Information on Water Quality for Residents of the Carpinteria Valley

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

June 2017

Dear Carpinteria Valley Residents,

Carpinteria Valley Water District is pleased to present you with this Annual Drinking Water Consumer Confidence Report for the 2016 calendar year.

The District in 2016 met and currently meets or exceeds all state and federal drinking water standards.

As we begin to see signs that the historic state-wide drought may be over, such as heavy precipitation in Northern California and enough locally to refill the almost empty **Lake Cachuma to 50%,** we can breathe a sigh of relief. I am cautiously optimistic that the wet conditions we saw last winter will return this winter, alleviating our region of drought conditions as well. However, I dare not count on it. The fact remains, that **all local water supplies have been strained** for the last 6 years and need to recover. Some supplies, such as groundwater, may take several years to recover. For this reason, the District is planning to take more State Water this year, allowing the local groundwater basin to rest and hasten its recovery.The Division of Drinking Water reviews the District's drinking water quality data on a regular basis and issues the water supply permit under which the District may deliver drinking water.

Water conservation is also an essential part of the solution to recovery and sustainability. Although I'm relieved and even excited that the drought may come to an end soon, I am convinced that there will be another drought in the coming years. Water conservation, now and into the future, is a vital part of adapting to our semi-arid climate. I would encourage you all to continue to work to sustain Carpinteria's water supplies by fixing leaks, shortening shower times and considering drought tolerant landscaping among other things. These small actions really do help toward the recovery of local supplies as well as prepare for the inevitable future droughts. My sincerest thanks to all the Carpinterians that did and continue to do such an incredible job of cutting water use throughout the drought. **Great job Carpinteria!** For tips and advice on ways to conserve contact Conservation Specialist Rhonda Gutierrez at the District.

If you have any questions or concerns about this report please call me or Operations & Maintenance Manager Greg Stanford at the District office at (805) 684-2816.

Sincerely,

Bob McDonald
General Manager

WHERE YOUR DRINKING WATER COMES FROM

DEFINITIONS

Groundwater: All subsurface water found underground in cracks and spaces in soil, sand and rock. The area where water fills these spaces is the saturated zone, the top of this zone is called the water table.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs (SMCL) are set to protect the odor, taste, and appearance of drinking water.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.

Maximum Residual Disinfectant Level (MRDL): The level of a disinfectant (chlorine) added for water treatment that may not be exceeded at the customer's tap.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a disinfectant (chlorine) added for water treatment at which there is no known or expected risk to health. MRDLGs are set by the USEPA.

Notification Level (NL): Notification levels are health-based levels established by CDPH for chemicals in drinking water that lack MCLs.

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

Primary Drinking Water Standards (PDWS): MCLs for contaminants that affect health along with their monitoring and reporting requirements and water treatment requirements.

Regulatory Action Level (AL): The concentration of a contaminant which, if exceeded, triggers a treatment or other requirement which a water system must follow.

Secondary Drinking Water Standards (SDWS): MCLs for contaminants that affect taste, odor, or appearance of drinking water. Secondary Contaminants are not based on health effects at MCL levels.

Surface Water: All water open to the atmosphere and subject to surface runoff such as lakes, reservoirs and rivers. Water from Lake Cachuma and Gibraltar Reservoir is treated at the William B. Cater Water Treatment Plant.

Treatment Technique (TT): A required process intended to reduce the level of contaminant in drinking water.

LEGEND

Symbol "<"	denotes 'less than'
ppb	parts per billion
ppm	parts per million
µmho/cm	Micro mhos per centimeter
ng/L	nanogram per liter (parts per trillion)
pCi/L	Picocuries per liter (a measure of radiation)
NA	Not Applicable
ND	Not detected at testing limit
NTU	Nephelometric Turbidity Units
None	None Required

BOARD MEETINGS

Carpinteria Valley Water District is governed by a five member Board of Directors elected by you, the customers. The Board meetings may be held on the second and fourth Wednesday of every month at 5:30 p.m. at Carpinteria City Hall, 5775 Carpinteria Avenue.

The Board may also hold regular meetings other Wednesdays of the month at 5:30 p.m. at the District Offices, 1301 Santa Ynez Avenue.

The Board agenda is posted by the front door of the office three days prior to the meeting and on the District website, **cvwd.net.**

Carpinteria Valley Water District's Annual Water Quality Report 2016

The data noted in the tables identifies all the drinking water contaminants that were detected during the 2016 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table are from testing done January 1 through December 31, 2016. The State allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

PRIMARY STANDARDS

REGULATED CONTAMINANTS WITH PRIMARY MCLS, MRDLS OR NLS				GROUNDWATER CVWD WELLS				SURFACE WATER CITY OF SANTA BARBARA CATER TREATMENT PLANT			MAJOR SOURCES OF CONTAMINATION IN DRINKING WATER
CONTAMINANTS	Units	PHG (MCLG)	MCL (MRDL) NL	Range Detected		Reporting Value[1]	Last Date Sampled	Range Detected		Reporting Value[1]	Footnote
Monitored at Water Source				Low	High			Low	High		
Turbidity	NTU	NA	TT=1 NTU TT=95% of samples ≤0.3 NTU	NA	NA	NA	NA	0.00	0.08	**Highest Single Measurement** 0.08 **Samples ≤ 0.3 NTU** 100%	4
Cryptosporidium	oocysts/L	NA	TT	NA	NA	NA	NA	NA	NA	ND	25
INORGANIC CONTAMINANTS											
Aluminum	ppm	0.6	1	ND	ND	ND	2015	ND	0.03	0.1	5
Arsenic	ppb	0.004	10	ND	ND	ND	2015	1.0	30	6.9	5
Barrium	ppm	2	1	0.06	0.09	0.08	2015	ND	ND	ND	5
Fluoride (F)	ppm	1	2	0.20	0.30	0.27	2016	0.39	0.52	0.45	5
Nitrate as N (nitrogen)	ppm	10	10	2.1	3.3	2.8	2016	ND	ND	ND	5, 24
Perchlorate	ppb	1	6	ND	ND	ND	2015	ND	ND	ND	22
Hexavalent Chromium CrVI	ppb	0.02	10	ND	ND	ND	2016	NA	NA	ND	5, 23
Chromium (Total Cr)	ppb	(100)	50	ND	ND	ND	2015	ND	1.7	0.54	5,6
RADIOACTIVE CONTAMINANTS											
Gross Alpha Particle Activity	pCi/L	(0)	15	2.30	2.30	2.30	2016	NA	NA	ND	5
Uranium	pCi/L	0.43	20	NA	NA	NA	NA	NA	NA	1.5	5
VOLATILE ORGANIC CONTAMINANTS											
Methyl *tert* Butyl Ether (MTBE)	ppb	13	5	ND	ND	ND	2015	ND	ND	ND	20
MONITORED IN THE DISTRIBUTION SYSTEM OR AT DESIGNATED POINTS OF USE											
MICROBIOLOGICAL CONTAMINANT SAMPLES											
Total Coliform Bacteria	Sample	0	5% of monthly samples test positive	ND	ND	ND	2016	NA	NA	Highest % of Positives 0.05%	10
DISINFECTION BYPRODUCTS, DISINFECTION RESIDUALS, AND DISINFECTION BYPRODUCT PRECURSORS System Wide Average											
Total Trihalomethanes - $TTHM_2$	ppb	NA	80	9.1	91.6	50.7	2016	NA	NA	NA	11
Haloacetic Acids 5 - $HAA5_2$	ppb	NA	60	1	32	16.8	2016	NA	NA	NA	11
Chlorine Residual	ppm	4.0	4	0.7	2.2	1.2	2016	NA	NA	NA	12
Bromate	ppb	0.1	10	NA	NA	NA	NA	4.3	8.4	5.6	11
Control of Disinfection Byproducts Precursors (DBP) Total Organic Carbon (TOC)	ppm	NA	TT	NA	NA	NA	NA	2.52	3.12	2.79	8,9

Carpinteria Valley Water District's Annual Water Quality Report 2016

SECONDARY STANDARDS

REGULATED CONTAMINANTS WITH SECONDARY MCLS, MRDLS, OR NLS				GROUNDWATER CVWD WELLS				SURFACE WATER CITY OF SANTA BARBARA CATER TREATMENT PLANT			MAJOR SOURCES OF CONTAMINATION IN DRINKING WATER
CONTAMINANTS	Units	PHG (MCLG)	MCL (MRDL) NL	Range Detected		Reporting Value	Last Date Sampled	Range Detected		Reporting Value	Footnote
Monitored at Water Source				Aesthetic Standards Established by the State of California Department of Public Health.							
				Low	High			Low	High		
Chloride (Cl)	ppm	NA	500	27	41	35	2016	46.1	71.0	56.5	14
Color	units	NA	15	ND	ND	ND	2016	NA	NA	ND	15
Copper	ppm	NA	1	ND	ND	ND	2016	0.004	0.02	0.01	5,13
Iron	ppb	NA	300	ND	120	24	2016	NA	NA	ND	14
Manganese	ppb	NA	50	ND	ND	ND	2016	NA	NA	ND	15,16, causes discoloration
Methylene Blue Active Substances - MBAS	ppb	NA	500	ND	ND	ND	2015	ND	ND	ND	21
Specific Conductance	us/cm	NA	1600	863	926	890	2016	990	1045	1010	17
Sulfate (SO4)	ppm	NA	500	111	146	129	2016	229	246	238	18
Odor	TON	NA	3	ND	ND	ND	2016	3	12	6	15,16 causes objectionable taste and odor
Total Dissolved Solids	ppm	NA	1000	560	580	570	2015	630	694	669	17
Turbidity, Laboratory	NTU	NA	5	0.3	0.4	0.3	2016	0.04	0.11	0.06	4
Zinc	ppm	NA	5	ND	ND	ND	2016	NA	NA	ND	19
UNREGULATED CONTAMINANTS WITH NO MCLS											
Boron	ppm	NA	NL=1	0.1	0.1	0.1	2015	NA	NA	0.39	5
ph	Std Units	NA	NA	7.4	7.6	7.5	2016	7.55	7.97	7.77	Varies in water 0-6=acidic, 7=neutral 8-14=alkaline
Total Hardness as CaCO3	ppm	NA	NA	304	356	333	2016	328	344	337	14
Total Alkalinity as CaCO3	ppm	NA	NA	230	330	290	2016	160	193	179	14
Calcium	ppm	NA	NA	84	100	92	2016	68.0	74.5	72.1	14
Magnesium	ppm	NA	NA	23	26	25	2016	39	45	43	14
Sodium	ppm	NA	NA	34	57	48	2016	74	90	82	14
Potassium	ppm	NA	NA	1	1	1	2016	4.2	4.7	4.5	14

LEAD AND COPPER RULE

Monitored at the Customer's Tap

30 sites sampled in 2016
0 samples exceeded the action levels for copper and lead. Reporting level is equal to 90th percentile of all 30 samples

CONTAMINANTS	Units	PHG (MCLG)	AL	Range Detected		Reporting Value	Last Date Sampled	Footnote
				Low	High			
Lead	ppb	NA	AL=15	ND	3.20	1.13	2016	13
Copper	ppb	NA	AL=1.3	0.003	0.540	0.207	2016	13

LEAD IN PLUMBING: If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Carpinteria Valley Water District is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the **Safe Drinking Water Hotline at 1-800-426-4791. It is also available on the EPA's website at: http://www.epa.gov/safewater/lead.**

Carpinteria Valley Water District's Annual Water Quality Report 2016

UNREGULATED CONTAMINANTS MONITORING (UCMR3) LIST 1				GROUNDWATER CVWD WELLS			
CONTAMINANTS	Units	PHG (MCLG)	MCL (MRDL) NL	Range Detected		Reporting Value	Last Date Sampled
				Low	High		
Chlorate	ppb	NA	NL=800	86	410	225	2015
Molybdenum	ppb	NA	NA	1.2	13.0	5.2	2015
Strontium 90	pCi/L	NA	NA	720	870	803	2015
1,2,3-Trichloropropane	ppt	NA	NL=5	ND	ND	ND	2016
Vanadium	ppb	NA	NL=50	ND	ND	ND	2015

FOOTNOTES: Listed in the tables are substances detected in the District's drinking water or of special interest to certain consumers. Not listed are approximately 139 constituents which were below the laboratory detection levels.

1. Reporting values are determined by methods set by the State depending on the constituent. Most constituent reporting values are determined by simple averaging.
2. Disinfection by-products including Haloacetic acids (HAA5) and Total Trihalomethanes (TTHM) form when naturally occurring organic materials found in potable water react with disinfectants such as Chlorine. In particular, elevated HAA5 or TTHM levels in drinking water pose the following health risk: Some people who drink water containing Bromate, HAA5 or TTHM in excess of the MCL over many years may develop an increased risk of getting cancer.
3. The State requires that we monitor for certain contaminants less frequently than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. As a result, some of the data, though representative of water quality, is more than one year old.
4. Natural Sediment; soil runoff.
5. Erosion of natural deposits.
6. Discharge from steel and pulp mills and chrome plating.
7. Natural deposit; fertilizer.
8. TOC has no known adverse health effects and provides a medium for the formation of disinfection by-products. Sources include plant decay and other natural processes.
9. Sample taken at City of Santa Barbara Cater Treatment Plant.
10. Naturally present in the environment.
11. By-product of water chlorination.
12. Used to disinfect potable water.
13. Internal corrosion of household water, plumbing, and erosion of natural deposits.
14. Leaching of natural deposits.
15. Natural occurring organic materials.
16. An aesthetic concern.
17. Runoff/Leaching of natural deposits.
18. Substances that form ions in water.
19. Industrial waste.
20. Leaking from underground gasoline storage tanks, discharge from petroleum and chemical factories.
21. Foaming agents found in detergents.
22. Municipal and industrial waste discharges. Environmental contamination from aerospace or industrial operations that used, stored, or dispose of perchlorate and its salts.
23. Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities
24. Runoff and leaching from fertilizer use; leaching from septic tanks and sewage.
25. **Cryptosporidium** is a microbial pathogen found in surface water throughout the U.S. Although filtration removes Cryptosporidium, the most commonly-used filtration methods cannot guarantee 100 percent removal. The City of Santa Barbara monitoring indicates the presence of these organisms in its source water and/or finished water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people, infants and small children, and the elderly are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

WATER SOFTENER SETTINGS: The District's water has a hardness range of ***18 to 21 grains per gallon***. One grain per gallon equals ***17*** milligrams per liter.

SOURCE WATER ASSESSMENT: The Source Water Assessment for Carpinteria Valley Water District was completed in 2012. A copy of the complete assessment is available at the Carpinteria Valley Water District Office, 1301 Santa Ynez Ave., Carpinteria, CA 93013.

FREQUENTLY ASKED QUESTIONS

Is my drinking water pure?
Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at 1-800-426-4791.

How can I know that my drinking water is safe?
In order to ensure that tap water is safe to drink, USEPA and the State Water Resources Control Board (SWRCB) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. SWRCB regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

Is there a risk to Immuno-compromised persons?
Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791.

What types of contaminants can be found in drinking water, including bottled water?
The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water (prior to treatment) include:

Microbial contaminants, such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Pesticides and herbicides, that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

Inorganic contaminants, such as salts and metals, that can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, animal waste, fertilizer and farming operations.

Organic chemical contaminants, including synthetic and volatile organic chemicals that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

DROUGHT CONTINUES, KEEP CONSERVING CARPINTERIA!

The Carpinteria Valley continues to experience drought conditions. As a result, the District's Stage Two Regulations remain in effect. If you are not already doing so, please take the following actions:

- Attach pressure activated spray nozzles to garden hoses.
- Irrigate landscapes no more than two (2) days per week.
  - Fixed System Irrigating Hours: 6 p.m. to 8 a.m.
  - Handwater Irrigating Hours: 4 p.m. to 10 a.m.
- Eliminate run-off from landscape irrigation onto hardscape.
- Install drought tolerant or native shurbs and trees.
- Convert sprinkler to drip irrigation in plant beds.
- Mulch plant beds to keep soil moist and minimize evaporation.
- Capture the cold water in a bucket before you shower to water plants.
- Fix leaking or broken plumbing and landscape irrigation fixtures ASAP.
- Replace inefficienct plumbing fixtures or appliances.

For a complete summary of the Stage Two Regulations and rebate information, **visit cvwd.net**

Let's Save Together
waterwise
Carpinteria Valley Water District

Attachment I

Notices of District Education Programs Available to Customers

PAY YOUR BILL ONLINE

SIGN UP FOR E-BILLING

In case of emergency, please call 805-684-2816. If you do not reach a live person, please call 805-564-2577.

DROUGHT INFORMATION

REBATES

REPORT WATER WASTE

Follow us!

RESIDENTIAL

CVWD encourages all Carpinteria residents to conserve water both inside and outside the home. Listed below are tips, resources and programs to help you save water and money without a major lifestyle change.

How-To Videos
Check out the California Urban Water Conservation Council's video library for landscaping ideas.

Free Water Check-ups!
CVWD offers residential customers free water check-ups to help identify ways to improve water efficieny, eliminate water waste and save money. As part of the check-up, the District also provides free low-flow faucet aerators and showerheads to replace existing high-volume fixtures.

Please call (805) 684-2816 ext 116 or email rhonda@cvwd.net to schedule your free check-up today!

Conservation Rebate Programs - The District offers rebates on several water conserving items. For more information, visit the District's Rebate Page.

Conservation Tips
- Turn off the water when you brush your teeth - saves between 1 - 2 gallons per minute.
- Shorten your showers by two minutes - saves 5 gallons per shower.
- Replace an older, high water using clothes washing machine with a high efficiency model - saves approximately 20 – 30 gallons per load.
- Water your landscape early in the morning or late at night
- Adjust sprinklers to prevent overspray and runoff.
- Place mulch throughout your garden to reduce evaporation, even soil temperature and reduce weed growth – save hundreds of gallons per year
- Plant low water using plants such as California Natives - save hundreds of gallons per year

For more great ideas on how to save water around the house, visit WaterWiseSB.org.

Conservation Programs
Green Gardener Program – Locate a gardener trained on water efficient and sustainable gardening practices.

Conservation Resources
WaterWise in Santa Barbara County
Water-Wise Gardening in Santa Barbara County
Landscape Watering Calculator
Sprinkler to Drip Retrofit
Sprinkler to Rotary Nozzle

http://cvwd.net/water_conservation/residential.htm

PAY YOUR BILL ONLINE

SIGN UP FOR E-BILLING

In case of emergency, please call 805-684-2816. If you do not reach a live person, please call 805-564-2577.

DROUGHT INFORMATION

REBATES

REPORT WATER WASTE

Follow us!

COMMERCIAL

Residental | Commercial | Agriculture

Water efficiency can reduce business costs while also helping to reduce environmental impacts. Below are water saving tips, programs and resources available to help you save water and money!

Free Water Check-Ups

CVWD offers commercial customers free water check-ups to help identify ways to improve efficiencies, eliminate water waste and save money. As part of the check-up, the District also provides free low-flow faucet aerators and showerheads to replace existing high-volume fixtures.

Please call (805) 684-2816 ext 116 or email rhonda@cvwd.net to schedule your free check-up today!

Conservation Tips

- Regularly check for and repair all leaks
- Install low flow devices such as High Efficiency Toilets, faucet aerators and low water using pre-rinse spray valves
- Use "dry sweeping" to clean concrete or asphalt surfaces instead of using water to wash down surfaces or use a water efficient "Waterbroom"
- Eliminate all irrigation by planting native and very water wise plants that need irrigation only to be established

Conservation Programs

Restaurant – Serve Water On Request Table Tent Program

CVWD encourages area restaurants to **serve water on request only** and is happy to provide table tents that educate your customers about your water saving efforts.

Green Business Program of Santa Barbara County – Become a Certified Green Business! The Green Business Program of Santa Barbara County aims to recognize, through certification, local businesses going beyond required measures to serve as models of sustainable business.

Green Gardener Program – Locate a gardener trained on water efficient and sustainable gardening practices.

Conservation Resources

WaterSmart Guidebook: A Water Use Efficiency Plan and Review Guide
Water Savings Calculator by Multi-housing Laundry Association
Water-Wise Gardening in Santa Barbara County
Landscape Watering Calculator

http://www.cvwd.net/water_conservation/commercial.htm

PAY YOUR BILL ONLINE

SIGN UP FOR E-BILLING

In case of emergency, please call 805-684-2816. If you do not reach a live person, please call 805-564-2577.

DROUGHT INFORMATION

REBATES

REPORT WATER WASTE

Follow us!

AGRICULTURE

Water availability and costs are an important consideration in the Carpinteria Valley. Efficient irrigation methods and scheduling are instrumental to maximizing water use efficiency. The following programs and services are available to CVWD Agricultural customers to help them attain maximum water use efficiency and eliminate water waste.

CVWD Soil Map

Free Agriculture Irrigation Evaluations
For a limited time, the Cachuma Resource Conservation District Mobile Irrigation Lab Program is offering free onsite assessments of agricultural operation irrigation systems. An irrigation specialist will review the system and provide recommendations to improve performance. View or download flyer here.

Free Technical Assistance for Avocado & Citrus Growers
The Cachuma Resource Conservation District is offering free technical assistance and funding is available for qualified improvement projects. View or download flyer here.

State Water Efficiency and Enhancement Program (SWEEP) Grants
This grant helps to implement on-farm irrigation savings that reduce energy use resulting in greenhouse gas (GHGs) emission reductions and water savings. View or download flyer here for more information. **Download application and view Frequently Asked Questions** here.

For Ag Irrigation Evaluation or Technical Assistance Programs, contact Jamie Whiteford **at (805) 764-5132 or** Anna Olsen **at (805) 868-4013.**

California Irrigation Management Information System (CIMIS)
CIMIS is an integrated network of over 140 automated active weather stations located throughout California. CIMIS provides reference evapotranspiration (ETo) data to assist growers in managing their water resources and maintaining efficient irrigation scheduling. Log on to the CIMIS **website for ETo data or to sign up for automatic emails.**

Free Hydraulic Pump Tests
Southern California Edison offers free hydraulic pump tests. For information on pumps and SCE's Pump Test Program, click here.

Rquest a Pump Test.

For more information about water conservation, email info@cvwd.net **or call (805) 684-2816 ext. 116.**

USDA Natural Resources Conservation Service - California
NRCS works with landowners through conservation planning and assistance designed to benefit the soil, water, air, plants, and animals that result in productive lands and healthy ecosystems. For more information, click here.

Hillside Orchard Drainage Video
Solutions to manage stormwater, irrigation and erosion issues throughout hillside farm.

http://www.cvwd.net/water_conservation/agriculture.htm

DROUGHT STILL ON - CONSERVE WATER

Save the Date for a Greywater 101 Class:

Wednesday, April 27th, 7:00 - 8:30 pm
Carpinteria Library, Multi-Purpose Room.
Class taught by Sweetwater Collaborative.
Co-sponsored by CVWD and City of Carpinteria.
For more information visit, sweetwatercollaborative.org

Call Rhonda at 684-2816 ext. 116 for a free water check-up.
The District is here to help. For more information, visit www.cvwd.net

Let's Save Together waterwise Carpinteria Valley Water District

Coastal View News - 04/07/2016

DROUGHT STILL ON - CONSERVE WATER

New Green Gardener classes start next week! Perfect for gardeners, landscapers, homeowners, and anyone interested in sustainable landscaping. For more info and to enroll in advance, visit the Green Gardener webpage at WaterWiseSB.org

Call Rhonda at 684-2816 ext. 116 for a free water check-up.
The District is here to help. For more information, visit www.cvwd.net

Let's Save Together waterwise Carpinteria Valley Water District

Coastal View News - 01/21/2016

DROUGHT STILL ON - CONSERVE WATER

The District has rebate programs to help you replace high water use toilets, clothes washers, and landscapes. Visit cvwd.net or contact Rhonda for more information and to schedule a landscape pre-qualification site visit.

Call Rhonda at 684-2816 ext. 116 for a free water check-up.
The District is here to help. For more information, visit www.cvwd.net

Let's Save Together waterwise Carpinteria Valley Water District

Coastal View News - 03/24/2016

DROUGHT STILL ON - CONSERVE WATER

CALLING ALL LANDSCAPE PROFESSIONALS!

U.S. EPA WATERSENSE CERTIFICATION PROGRAM

Two day training workshop: May 16 & 17, 2016, 7:30 AM - 5:30 PM
The Grange #644, 2374 Alamo Pintado Ave, Los Olivos, CA
Info and registration: www.WaterWiseSB.org/Workshops

Call Rhonda at 684-2816 ext. 116 for a free water check-up.
The District is here to help. For more information, visit www.cvwd.net

Let's Save Together waterwise Carpinteria Valley Water District

Coastal View News - 05/05/2016

DROUGHT STILL ON - CONSERVE WATER

HOMEOWNERS LANDSCAPE WORKSHOP SERIES!

JUNE 4 - YOUR HOME AS A MINI WATERSHED

LEARN TO CREATE GARDENS THAT USE RESOURCES WISELY & CAPTURE RAINWATER

JUNE 11 - LANDSCAPE DESIGN SEMINAR

LEARN KEY DESIGN PRINCIPLES FOR PLANT SELECTION & PLACEMENT

FOR MORE INFORMATION AND TO REGISTER, VISIT **WATERWISESB.ORG**

Call Rhonda at 684-2816 ext. 116 for a free water check-up.
The District is here to help. For more information, visit www.cvwd.net

Let's Save Together waterwise Carpinteria Valley Water District

Coastal View News - 05/05/2016

DROUGHT STILL ON - CONSERVE WATER

LANDSCAPE DESIGN SEMINAR

JUNE 11, 2016 • 9AM -12PM
WESTSIDE COMMUNITY CENTER, SANTA BARBARA
423 W. VICTORIA ST.

LEARN KEY DESIGN PRINCIPLES FOR PLANT SELECTION AND PLACEMENT. FOR MORE INFORMATION AND TO REGISTER, VISIT WATERWISESB.ORG

Call Rhonda at 684-2816 ext. 116 for a free water check-up.
The District is here to help. For more information, visit www.cvwd.net

Let's Save Together waterwise Carpinteria Valley Water District

Coastal View News - 05/05/2016

Carpinteria Valley Water District
congratulates

1st & 2nd place winners of the 2016 WaterWise High School Video Contest

Carpinteria High School students
Jeanette Fantone and Bryan Taira

View the videos at WaterWiseSB.org/hsvc.wwsb

Let's Save Together
waterwise
Carpinteria Valley Water District

FREE

RAINWATER HARVESTING GARDEN
HANDS-ON EARTHWORKS WORKSHOP

SATURDAY, SEPTEMBER 10, 2016
10:00 A.M. - 3:00 P.M.
AT CARPINTERIA VALLEY WATER DISTRICT
1301 SANTA YNEZ AVE, CARPINTERIA

Learn through doing!

- Shape the earth to collect and hold rain water
- Direct water from rooftop and channel to plants
- Slow water to prevent from running off-site
- Build a rich soil environment

Be a part of forming the foundation of a beautiful rain garden.
Lunch, Snacks and Drinks provided.

For more information and to register, visit sweetwatercollaborative.org

Let's Save Together
waterwise
Carpinteria Valley Water District

CARPINTERIA VALLEY WATER DISTRICT
Incorporated 1944

Sweetwater Collaborative

FREE

RAINWATER HARVESTING GARDEN
HANDS-ON PLANTING WORKSHOP

SATURDAY, NOVEMBER 19, 2016
10:00 A.M. - 3:00 P.M.
AT CARPINTERIA VALLEY WATER DISTRICT
1301 SANTA YNEZ AVE, CARPINTERIA

- We have over fifty plants to put into our landscape plan
- If there is a particular succulent you love, bring it and add your imprint to the garden
- Especially needed are Fox Tail or Velvet Agaves (Agave attenuata)

Lunch, Snacks and Drinks provided

For more information and to register, visit sweetwatercollaborative.org

Let's Save Together
waterWise
Carpinteria Valley Water District

Carpinteria Valley Water District

Sweetwater Collaborative

Attachment J

Job Descriptions Relating to Water Conservation Coordinator

Carpinteria Valley Water District

Job Description Form

Division/Department: Engineering

Location: 1301 Santa Ynez Ave.

Job title: District Engineer

Reports to: Robert T. McDonald

Title: General Manager

Certification Requirement:	**Type of position:**	**Hours__40__/week**
	X Full-time	
D3	**☐ Part-time**	**X Exempt**
T3	**☐ Contractor**	**☐ Nonexempt**
	☐ Intern	

General Description:

Under general direction performs difficult engineering work; supervises, assigns, directs and assumes the responsibility for the work activities of those engaged in engineering, drafting, and inspection of construction work. Assists in matters relating to administrative policy, and budget preparation; assists in the preparation of various reports and analysis; assists in the coordination of office and field activities. Performs related duties as required.

Duties and Responsibilities:

- ❖ Develops designs, plans, specifications and bid documents for the construction and development of District water system improvements.
- ❖ Provides project coordination and direction for technical engineering support staff.
- ❖ Assists staff with the processing of new water service applications.
- ❖ Prepares estimates of materials and quantities in the development of plans, profiles, maps, and drawings for construction projects.
- ❖ Prepares proposal requests for the advertisement of consulting services and construction projects.
- ❖ Performs construction project administration for Carpinteria Valley Water District projects.
- ❖ Oversees District's cross-connection and corrosion control activities.
- ❖ Prepares environmental assessment reviews.
- ❖ Meets with developers and outside engineers to discuss concepts and general requirements for new projects.
- ❖ Assists outside engineers with design of District water facilities, such as distribution piping, pump stations, pressure reducing stations, tanks, etc.
- ❖ Serves as resident engineer on construction projects.
- ❖ Assists contractors and the general public with questions regarding water pressure, water quality, sprinkler system design, water well design, and irrigation

system design.

- Represents the District in coordination with other utilities, regulatory agencies, governmental bodies, planning agencies, trade and professional associations, technical groups, and developers.
- Prepares various statistical and other reports required by State and Federal Agencies.
- Prepares correspondence related to engineering functions.
- Represents the General Manager at meetings and conferences as delegated.
- Provides support to the General Manager in making presentations regarding engineering issues to the Board of Directors.

Physical Activities:

- Regularly uses a telephone and voice mail communication.
- Regularly uses office equipment such as computer terminals, calculators, personal computers, copiers, faxes, mailing equipment and printers.
- Frequently walks in uneven terrain, in an outdoor environment, making inspections and overseeing/administering District facilities and construction projects.
- Sits, stands and walks for extended time periods.
- Hearing and vision within normal ranges.
- Must be able to carry, push, pull, reach and lift up to 50 lbs., walking, some bending, reaching, stooping and squatting.
- May occasionally travel by airplane and automobile in conducting District business.

Ability to:

- Communicate in a clear, understandable fashion orally and in writing.
- Work in a positive, harmonious, professional, and competent manner with the public, customers, developers, and contractors, outside agencies and District employees.
- Accurately and effectively represent to customers, the content of District Rules, Regulations, and Ordinances controlling water service.
- Plan, carry out, and coordinate District engineering projects, particularly as they affect irrigation, water distribution system development and water conservation.
- Coordinate assigned engineering projects with District activities and services.
- Prepare and monitor project budgets.
- Prepare and develop plans, specifications, and District engineering standards.
- Ensure proper completion and inspection of major construction projects.
- Prepare and review a variety of engineering studies and reports.
- Use and operate computer systems and software packages in a proficient, competent manner related to engineering analysis and functions.
- Effectively represent the District's engineering functions with the public, other government agencies, contractors, developers, and professional engineering consultants.
- Carry out all duties in a manner that demonstrates positive concern for the District, its customers and its employees.
- Work in a fast paced, multi-tasked environment, performing work accurately.

Knowledge of:

- Principles and practices of civil engineering with particular emphasis on the design and construction of water system improvements such as distribution piping, storage, pump stations, treatment facilities, etc.
- Principles of engineering and their practical application to cross-connection and corrosion control programs.
- Laws, rules, ordinances, and regulatory processes governing water distribution and treatment.
- Contract development and administration.

Education and Experience:

Registered Civil Engineer in the state of California.

Five years experience in design of water system facilities including preparation of plans, specifications, and bid documents using AutoCAD, Civil 3D, Arcgis and/or other engineering computer software.

License Certification Requirements:

Possession of valid California Motor Vehicle Operator's License issued by the State Department of Motor Vehicles is required. Possession and proof of a good driving record as evidenced by freedom from multiple or serious traffic violations or accidents for at least two (2) years duration.

Possession of CA Department of Health Services Water Distribution License D3 and Water Treatment License T3 is required.

Possession of a valid and current certificate of registration as a Civil Engineer issued by the State of California.

Carpinteria Valley Water District

Job Description Form

Division/Department: Engineering

Location: 1301 Santa Ynez Ave.

Job title: Engineering Technician

Reports to: District Engineer

Certification Requirement:	**Type of position:**	**Hours__25__/week**
Distribution III **Treatment II**	**× Full-time** **Part-time** **Contractor** **Intern**	**☐ Exempt** **X Nonexempt**

General Description:

Under general supervision of the District Engineer, the Engineering tech performs routine engineering office work; has primary responsibility of the management of the District's water conservation and public information programs. Conducts research and develops recommendations on various water conservation issues, assists in the development and implementation of public information programs, and provides varied engineering administrative support.

This is a technical, sub-professional level class that will perform tasks of an engineering nature related to the management, supply and conservation of the District's water resources.

Duties and Responsibilities:

- ❖ Develop, implement and promote water efficient landscape program including demonstration garden, media promotions, and green gardener program; provide assistance to public on landscape program.
- ❖ Promote water awareness and conservation through local media, and coordinate activities with water purveyors, schools and other public and private organizations.
- ❖ Research, develop and propose updates to water conservation standards, policies, ordinances and code.
- ❖ Plan, write, edit and distribute informational pamphlets, brochures and newsletters, describing District functions and programs.
- ❖ Provide consultation on communications for District Board Members, management, and staff as it relates to water conservation.
- ❖ Represent District services and programs with the public, community groups, and other organizations on topics of water conservation.
- ❖ Perform water use surveys.
- ❖ Responsible for processing local and state surveys, questionnaires, and reports, and for development of documents and reports regarding water use, conservation, and related matters.

- Provide written and oral presentations on various water management issues, as assigned.
- Prepare Annual Budget for Water Conservation Activities
- Interpret, explain and apply related District policies, procedures and standards.
- Develop and maintain a comprehensive water conservation program. This includes implementation of Best Management Practices, monitoring and reporting.
- Prepare and update content for District Website, social media channels and all other digital media.
- Establishes, organizes and coordinates communications between various news media and the District.
- Establish relationships with local community groups and business groups for the purpose of establishing messaging channels.
- Research and apply for funding opportunities for District Water efficiency water efficiency program.
- Performs graphic design and layout work for District messaging infographics.
- Takes photographs and retouches digital photographs for use in District Communications
- Works with Staff of other agencies in coordinated public relations efforts
- Work with other staff to prepare public information slides, fliers, surveys and reports
-

Physical Activities:

- Regularly uses a telephone, voice mail and email communication.
- Regularly uses office equipment such as computer terminals, calculators, personal computers, copiers, faxes, mailing equipment and printers.
- Occasionally walks in uneven terrain, in an outdoor environment
- Sits, stands and walks for extended time periods.
- Hearing and vision within normal ranges.
- Must be able to carry, push, pull, reach and lift up to 25 lbs., walking, some bending, reaching, stooping and squatting.
- May occasionally travel by automobile in conducting District business.
- Communicates orally, in writing and with drawings with District management, co-workers and the public.
- Writes in clear and legible manner.
- Demonstrates alertness and flexibility to changing demands.

Ability to:

- Exercise initiative, take personal responsibility and follow through on assigned work.
- Communicate in a clear, understandable fashion orally and in writing.
- Work in a positive, harmonious, professional, and competent manner with the public, customers, developers, and contractors, outside agencies and District employees.
- Accurately and effectively represent to customers the content of District Rules, Regulations, and Ordinances controlling water service.
- Carry out, and coordinate District engineering projects, particularly as they affect water conservation.
- Establish, interact and maintain a positive and cooperative working relationship with others.
- Coordinate assigned engineering projects with District activities and services.
- Use and operate computer systems and software packages in a proficient, competent manner related to engineering analysis and functions.
- Carry out all duties in a manner that demonstrates positive concern for the District, its customers and its employees.
- Understand and follow oral and written directions.
- Complete assignments in a timely manner.
- Learn, read, understand, explain and apply job-related District rules, practices and procedures.
- Work in a fast paced, multi-tasked environment, performing work accurately.
- Use specialized computer applications to prepare, update, maintain and retrieve documents and information related to assigned duties.

- Research, compile and summarize technical data; prepare a variety of technical and statistical reports.
- Adhere to workplace safety rules and regulations.
- Safely operate motorized vehicles.

Knowledge of:

- Principles and practices of water supply development, chemical and biological aspects of water pollution, and local water problems, including their relationships to State and regional plans.
- Word processing and spreadsheet applications specific to engineering functions.
- Research and report preparation principles and techniques; development of reference materials; training principles and techniques.
- Customer service principles, practices and techniques.
- District rules, regulations, policies and procedures related to water use rules and procedures for reviewing and approving water service applications.
- Principles, practices and techniques of distributing information for mass media communications.
- Principles of research, writing, editing and preparing a variety of informational publications.
- Speech preparation and writing.

Education and Experience:

Equivalent to a Bachelor's degree from an accredited college or university in Communications, Business or similar field of study. Practical experience in an equivalent position is preferred.

License Certification Requirements:

Possession of a valid California Operator's license issued by the State Department of Motor Vehicles is required. Possession and proof of a good driving record as evidenced by freedom from multiple or serious traffic violations or accidents for at least two (2) year's duration.

Attachment K

2015 CUWCC BMP Coverage Report

CUWCC BMP Retail Coverage Report 2015

Foundational Best Managemant Practices for Urban Water Efficiency

BMP 1.1 Operation Practices

ON TRACK

36 Carpinteria Valley Water District

1. Conservation Coordinator provided with necessary resources to implement BMPs?

Name: Brian King

Title: District Engineer

Email: brian@cvwd.net

2. Water Waste Prevention Documents

WW Document Name	WWP File Name	WW Prevention URL	WW Prevention Ordinance Terms Description
Option A Describe the ordinances or terms of service adopted by your agency to meet the water waste prevention requirements of this BMP.			Rules & Regulations #29, Prohibits Wrongful Use or Waste of Water;Ordinance 15 -2, adopted 5/13/2015 declaring a Stage Two (2) Drought Condition - outlines prohibited water waste and required water saving actions as well as enforcement measures.
Option B Describe any water waste prevention ordinances or requirements adopted by your local jurisdiction or regulatory agencies within your service area.			
Option C Describe any documentation of support for legislation or regulations that prohibit water waste.			
Option D Describe your agency efforts to cooperate with other entities in the adoption or enforcement of local requirements consistent with this BMP.			
Option E Describe your agency support positions with respect to adoption of legislation or regulations that are consistent with this BMP.			
Option F Describe your agency efforts to support local ordinances that establish permits requirements for water efficient design in new development.			

At Least As effective As No

CUWCC BMP Retail Coverage Report 2015

Foundational Best Managemant Practices for Urban Water Efficiency

BMP 1.1 Operation Practices **ON TRACK**

Exemption No

Comments:

CUWCC BMP Coverage Report 2015

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.2 Water Loss Control **ON TRACK**

36 Carpinteria Valley Water District

Completed Standard Water Audit Using AWWA Software?	Yes
AWWA File provided to CUWCC?	Yes
AWWA-WAS-v5-09152014_CVWD_2014-15.xls	
AWWA Water Audit Validity Score?	83
Complete Training in AWWA Audit Method	Yes
Complete Training in Component Analysis Process?	Yes
Component Analysis?	Yes
Repaired all leaks and breaks to the extent cost effective?	Yes
Locate and Repar unreported leaks to the extent cost effective?	Yes
Maintain a record keeping system for the repair of reported leaks, including time of report, leak location, type of leaking pipe segment or fitting, and leak running time from report to repair.	Yes

Provided 7 Types of Water Loss Control Info

Leaks Repairs	Value Real Losses	Value Apparent Losses	Miles Surveyed	Press Reduction	Cost Of Interventions	Water Saved (AF)
126				False		

At Least As effective As No

Exemption No

Comments:

The FY2014-15 AWWA water audit worksheet uploaded was completed prior to the TAP validation workshops in 2016-2017. If necessary, the water audit for FY 2016-17 will be available at the end of Sept 2017.

CUWCC BMP Coverage Report 2015

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.3 Metering With Commodity

ON TRACK

36 Carpinteria Valley Water District

Numbered Unmetered Accounts	No
Metered Accounts billed by volume of use	Yes
Number of CII Accounts with Mixed Use Meters	297
Conducted a feasibility study to assess merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters?	Yes
Feasibility Study provided to CUWCC?	Yes

Date: 9/5/2013

Uploaded file name: BMP1_3_Feasibility_Study_090513.xls

Completed a written plan, policy or program to test, repair and replace meters	Yes
At Least As effective As	No
Exemption	No

Comments:

CUWCC BMP Coverage Report 2015

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.4 Retail Conservation Pricing

ON TRACK

36 Carpinteria Valley Water District

Implementation (Water Rate Structure)

Customer Class	Water Rate Type	Conserving Rate?	(V) Total Revenue Comodity Charges	(M) Total Revenue Fixed Carges
Single-Family	Increasing Block	Yes	1215773.76	1358899.68
Multi-Family	Increasing Block	Yes	1315492.34	1126418.57
Commercial	Increasing Block	Yes	725585.46	204886.72
Industrial	Increasing Block	Yes	110436.74	202701.3
Institutional	Increasing Block	Yes	258823.02	100586.7
Dedicated Irrigation	Increasing Block	Yes	159901.87	58907.55
Agricultural	Increasing Block	Yes	1761911.78	836474.61
			5547924.97	**3888875.13**

Calculate: V / (V + M) **59 %**

Implementation Option: Use Canadian Water Wastewater Association Rate Design Model

☐ Use 3 years average instead of most recent year

Canadian Water and Wastewater Association

Upload file:

Agency Provide Sewer Service: No

At Least As effective As Yes

CVWD's Option 3 Matrix Score is 32

Exemption No

Comments:

CVWD's BMP 1.4 Option 3 Matrix Score is 32. BMP 1.4 Option 3 spreadsheet will be emailed to bmp@cuwcc.org as directed on BMP Help Known Issues page.

CUWCC BMP Coverage Report 2015

Foundational Best Management Practices For Urban Water Efficiency

BMP 2.1 Public Outreach

ON TRACK

36 **Carpinteria Valley Water District** **Retail**

Does your agency perform Public Outreach programs? Yes

The list of wholesale agencies performing public outreach which can be counted to help the agency comply with the BMP

Santa Barbara County Water Agency

The name of agency, contact name and email address if not CUWCC Group 1 members

Did at least one contact take place during each quater of the reporting year? Yes

Public Outreach Program List	Number
General water conservation information	260
Flyers and/or brochures (total copies), bill stuffers, messages printed on bill, information packets	21575
Landscape water conservation media campaigns	2
Website	6
Total	**21843**

Did at least one contact take place during each quater of the reporting year? Yes

Number Media Contacts	Number
Online Advertisings	62
Newspaper contacts	56
Total	**118**

Did at least one website update take place during each quater of the reporting year? Yes

Public Information Program Annual Budget

Annual Budget Category	Annual Budget Amount
Public Outreach	13000
Total Amount:	**13000**

Public Outreah Additional Programs
Carpinteria Valley Water Security Symposium
Rotary Club Speaking Events
Lions Club Speaker Contest - Water Conservation Theme

Description of all other Public Outreach programs

Comments:

CUWCC BMP Coverage Report 2015

Foundational Best Management Practices For Urban Water Efficiency

BMP 2.1 Public Outreach

ON TRACK

CVWD provides funding & sponsor of several programs under the direction of the Santa Barbara Co. Water Agency, including WaterWise Landscape Workshops conducted in the spring 2015. CVWD also participated in a Sustainable Landscape Fair in fall 2014.

At Least As effective As	No

Exemption	No	0

CUWCC BMP Coverage Report 2015

Foundational Best Management Practices For Urban Water Efficiency

BMP 2.2 School Education Programs

ON TRACK

36 Carpinteria Valley Water District **Retail**

Does your agency implement School Education programs? Yes

The list of wholesale agencies performing public outreach which can be counted to help the agency comply with the BMP

Santa Barbara County Water Agency

Agencies Name	ID number
Santa Barbara County Water Agency	200

Materials meet state education framework requirements? Yes

Materials downloaded from waterwisesb.org include language arts, math and science standards. Contact Shows That Teach for education framework requirements for the school assemblies.

Materials distributed to K-6? Yes

Student workbooks/worksheets, resource books, board games, hands-on water activities for teachers, and students in grades k-8, focusing on water issues can be downloaded from the regional website, waterwisesb.org.

Materials distributed to 7-12 students? Yes (Info Only)

Water Activities Manual for grades 6-8 can be downloaded by teachers from waterwisesb.org. Manual contains lesson plans, student activities, worksheets, and tests.

Annual budget for school education program: 600.00

Description of all other water supplier education programs

Large group assembly - Shows That Teach , science fair award, high school video contest

Comments:

At Least As effective As No

Exemption No 0

ON TRACK

CUWCC BMP Coverage Report 2015

BMP3 - Residential

Agency **Carpinteria Valley Water District** Date Agency Signed MOU: 5/15/1996

Coverage Option: Flextrack

Total Measured Water Savings (AF/Year)

TRADITIONAL	FLEXTRACK	ACTUAL	TARGET	Prior Activities Credit
4.28	0	4.28	2.91	4.850

Residential Assistance

	Single Family Accounts	Single Family Target	Multi Family Units	Multi Family Target
Total Number Of Accounts/Units	3216		348	
Total Participants during Reporting				
Number of Leak Detection Surveys or Assistance on Customer Property	41	24.12	1	2.61
Number of Faucet Aerators Distributed	18		0	
Number of WSS Showerheads Distributed	21		7	
Landscape Water Surveys	25	24.12	0	

Has agency reached a 75% market saturation for showerheads? No

High Efficiency Clothes Washers	Single Family Accounts	Single Family Target
Number of installations for HECW	23	19.30
Are financial incentives provided for HECWs?	Yes	
Has agency completed a HECW Market Penetration Study?	No	

Water Sense Specification Toilets

Retrofit 'On Resale' Ordinance exists No

75% Market Penetration Achieved No

	Single Family Units	Multi Family Units
Five year average Resale Rate	0.00	0.00
Number Toilets per Household	2	1.5
Number WSS Toilets Installed	45	4
Target Number of WSS Toilets	0.00	0.00

WSS for New Residential Development

Does an Ordinance Exists Requiring WSS Fixtures and Appliances in new SF and MF residences?	Single Family Units	Multi Family Units
	No	No
Number of new SF & MF units built	47	0
Incentives		

CUWCC BMP Coverage Report 2015

BMP3 - Residential

Unique Conservation Measures

Residential Assistance / Landscape Water Survey unique water savinigs

Measured water savings (AF/YR) 0

ON TRACK

Uploaded file name:

High Efficiency Clothes Washers unique water savinigs

Measured water savings (AF/YR) 0

Uploaded file name:

WaterSense Specification toilets unique water savinigs

SF Measured water savings (AF/YR) MF Measured water savings (AF/YR)

Uploaded file name:

WaterSense Specification toilets for New Residential development unique water savinigs

Measured water savings (AF/YR) 0

Uploaded file name:

High bill contact with single-family and multi-family customers

Measured water savings (AF/YR)

Uploaded file name:

Educate residential customers about the behavioral aspects of water conservation

Measured water savings (AF/YR) 0

Uploaded file name:

Notify residential customers of leaks on the customer's side of the meters

Measured water savings (AF/YR) 0

Uploaded file name:

Provide bill or surcharge refunds for customers to repair leaks on the customer's side of the meters

Measured water savings (AF/YR) 0

Uploaded file name:

Provide unique water savings fixtures that are not included in the BMP list above

Measured water savings (AF/YR) 0

Uploaded file name:

Install residence water use monitors

Measured water savings (AF/YR) 0

Uploaded file name:

Participate in programs that provide residences with school water conservation kits

Measured water savings (AF/YR) 0

Uploaded file name:

Implement in automatic meter reading program for residential customers

CUWCC BMP Coverage Report 2015

BMP3 - Residential

Measured water savings (AF/YR) 0

Uploaded file name:

OTHER Types of Measures

Measured water savings (AF/YR) 0

ON TRACK

Uploaded file name:

Traditional Water Savings Calculation result:

Measures	Target Water Savings (AF):	Actual Water Savings (AF):
SF Leak Detection Surveys	0.54	0.92
MF Leak Detection Surveys	0.03	0.01
Landscape Water Surveys	0.54	0.56
SF WSS Toilets Installed	0.00	1.30
MF WSS Toilets Installed	0.00	0.20
HECW	1.80	1.29

Comments:

A market saturation study for showerheads or HETs has yet to be done. CVWD will investigate the feasibility of conducting such a study in the near future.

At Least As Effective As No

Exemption No

CUWCC BMP Coverage Report 2015

NOT ON TRACK

BMP4 - Commercial Industrial Institutional

Agency **Carpinteria Valley Water District** Date Agency Signed MOU: 5/15/1996

Coverage Option: Flextrack

CII Baseline Water Use (AF): 685.00 CII Water Use Reduction(AF): 68.5

Total Measured Water Savings (AF/Year)

TRADITIONAL	FLEXTRACK	ACTUAL	TARGET	Prior Activities Credit
0.3	0	0.3		-23.970

Water Efficiency Measures:	Quantity Installed:	Water Savings:	Accept Council's default value
1 High Efficiency Toilets (1.2 GPF or less)	10	0.29	Yes
2 High Efficiency Urinals (0.5 GPF or less)	0		No
3 Ultra Low Flow Urinals	0.00		No
4 Zero Consumption Urinals	0.00		No
5 Commercial High Efficiency Single Load Clothes Washers	0.00		No
6 Cooling Tower Conductivity Controllers	0.00		No
7 Cooling Tower pH Controllers	0.00		No
8 Connectionless Food Steamers	0.00		No
9 Medical Equipment Steam Sterilizers	0.00		No
10 Water Efficient Ice Machines	0.00		No
11 Pressurized Water Brooms	0.00		No
12 Dry Vacuum Pumps	0.00		No
Total Water Savings:		**0.29**	

Unique Conservation Measures

Industrial Process Water Use Reduction

Measured water savings (AF/YR)

Uploaded file name:

Commercial Laundry Retrofits

Measured water savings (AF/YR)

Uploaded file name:

Industrial Laundry Retrofits

Measured water savings (AF/YR)

Uploaded file name:

Filter Upgrades (for pools, spas and fountants)

CUWCC BMP Coverage Report 2015

NOT ON TRACK

BMP4 - Commercial Industrial Institutional

Measured water savings (AF/YR)

Uploaded file name:

Car Wash Reclamation Systems

Measured water savings (AF/YR)

Uploaded file name:

Wet Cleaning

Measured water savings (AF/YR)

Uploaded file name:

Water Audits (to avoid double counting, do not include device/replacement water savings

Measured water savings (AF/YR)

Uploaded file name:

Clean In Place (CIP)Technology (such as bottle sterilization in a beverage processing plant)

Measured water savings (AF/YR)

Uploaded file name:

Waterless Wok

Measured water savings (AF/YR)

Uploaded file name:

Alternative On-site Water Sources

Measured water savings (AF/YR)

Uploaded file name:

Sub-metering

Measured water savings (AF/YR)

Uploaded file name:

High Efficiency Showerheads

Measured water savings (AF/YR)

Uploaded file name:

Faucet Flow Restrictors

Measured water savings (AF/YR)

Uploaded file name:

Water Efficiency Dishwashers

Measured water savings (AF/YR)

Uploaded file name:

Hor Water on Demand

Measured water savings (AF/YR)

Uploaded file name:

Pre-rinse spray Valves of 1.3 gpm (gallons per minute) or less

CUWCC BMP Coverage Report 2015

BMP4 - Commercial Industrial Institutional

NOT ON TRACK

Measured water savings (AF/YR)

Uploaded file name:

Central Flush Systems

Measured water savings (AF/YR)

Uploaded file name:

IOther Measures chosen by the Agency

Measured water savings (AF/YR)

Uploaded file name:

Comments:

At Least As Effective As	No
Exemption	No

CUWCC BMP Coverage Report 2015

BMP5 - Landscape **ON TRACK**

Agency **Carpinteria Valley Water District** Date Agency Signed MOU: 5/15/1996

Coverage Option: Flextrack

Total Measured Water Savings (AF/Year)

TRADITIONAL	FLEXTRACK	ACTUAL	TARGET	PRIOR ACTIVITIES CREDIT
20.44	8	28.44	12.86	-13.75

1) Accounts with Dedicated Irrigation Meters

a) Number of dedicated irrigation meter accounts	85
b) Number of dedicated irrigation meter accounts with water budgets	85
c) Aggregate water use for all dedicated non-recreational landscape accounts with water budgets	115.63
d)Aggregate acreage assigned water budgets for dedicated non-recreational landscape accounts with budgets	
Aggregate acreage of recreational areas assigned water budgets for dedicated recreational landscape accounts with budgets	0
Preserved water use records and budgets for customers with dedicated landscape irrigation accounts for at least four years	Yes
Unique measured water Savings (AF/YR) in this measure	
Uploaded the backup data if there are unique measured water savings?	No

Technical Assistance

Number of Accounts 20% over-budget	19
Number of Accounts 20% over-budget offered technical assistance	0
Number of Accounts 20% over-budget accepting technical assistance	0
Unique measured water Savings (AF/YR) in technical assistance	
Uploaded the backup data if there are unique measured water savings?	No

2) Commercial / Industrial / Institutional Accounts without Meters or with Mixed-Use Meters

Number of mixed use and un-metered accounts.	297		
Number of irrigation water use surveys offered	4		
Number of irrigation water use surveys accepted	4		
Type: Incentives numbers received by customers:	0	$ Value:	0
Type: Rebates numbers received by customers:	0	$ Value:	0
Type No- or low-Interest loan offered numbers received by customers:	0	$ Value:	0
Annual water savings by customers receiving irrigation water savings surveys and implementing recomendations			
Estimated annual water savings by customers receiving surveys and implementing recommendations			

CUWCC BMP Coverage Report 2015

BMP5 - Landscape **ON TRACK**

Unique measured water Savings (AF/YR) in this measure

Uploaded the backup data if there are unique measured water savings? No

Financial Incentives

Unique measured water Savings (AF/YR) inFinancial incentives

Uploaded the backup data if there are unique measured water savings? No

Unique Conservation Measures

1. Monitor and report on landscape water use

1a. Measure landscapes and develop water budgets for customers with dedicated landscape meters. Provide timely water use reports with comparisons of water use to budget that provide customers the information they need to adjust irrigation schedules.

Uploaded file name:

1b. Measure landscapes and develop water budgets for customers with Mixed Use meters. Provide timely water use reports with comparisons of water use to budget that provide customers the information they need to adjust irrigation schedules.

Uploaded file name:

1c. Establish agency-wide water budget. (Include in Help notes: ETo based water budget in the MWELO changed in 2010 from .8ETo to .7ETo.)

Uploaded file name:

1d. Establish agency-wide, sector-based irrigation goal to reduce water use, based on season.

Uploaded file name:

2. Provide technical landscape resources and training

2a. Upon customer requests, provide landscape irrigation management and landscape design information and resources: provide assistance, answer customer questions, respond to run-off and high-bill calls.

Uploaded file name:

2b. Perform landscape & irrigation audits: including irrigation scheduling, plant information, and landscape area measurement.

Uploaded file name:

2c. Sponsor, co-sponsor, promote, or support landscape workshops, training, presentations and other technical educational events for homeowners and professionals: design, installation, maintenance, water management.

Uploaded file name:

2d. Establish time-of-day irrigation restrictions.

Uploaded file name:

2e . Establish day-of-week irrigation restrictions.

Uploaded file name:

3. Provide incentives

CUWCC BMP Coverage Report 2015

BMP5 - Landscape **ON TRACK**

3a. Establish landscape budget-based rates.

Uploaded file name:

3b. Provide incentives for conversions from mixed-use meters to dedicated landscape meters.

Uploaded file name:

3c. Provide incentives for irrigation equipment upgrades that improve distribution uniformity, irrigation efficiency, or scheduling capabilities.

Uploaded file name:

3d. Provide incentives for the reduction of water use over an irrigated area, or reduction in the size of the irrigated area due to replacement of turf or other high water-using plants with low water-using plants, artificial turf, or permeable surfaces.

Uploaded file name:

3e. Provide incentives for conversions from potable to recycled water.

Uploaded file name:

3f. Provide incentives for the use of alternative sources of water in the landscape (i.e. gray water, rainwater, cisterns, etc.)

Uploaded file name:

4. Participate in local and regional planning and regulatory activities

4a. Collaborate with planning agencies at the local and regional level, other water suppliers in the area and stakeholders in response to state or federal requirements such as the State Model Water Efficient Landscape Ordinance and AB 1881. Participate in the development, review, implementation, and enforcement of requirements for new developments. Provide water use data to planning agencies.

4b. Establish or participate in a water conservation advisory committee or other community outreach effort to drive market transformation and exchange information about landscape water conservation with developers, community-based organizations, homeowners associations, residential customers, landscape professionals, educators, other water suppliers in region.

4c. Participate in regional efforts: integrated water resource management, watershed management, NPDES permit agencies, etc.

5. Develop a holistic approach to landscape water use efficiency

5a. Develop and implement a comprehensive landscape water conservation program for all customers. Target marketing efforts to those most likely to result in benefits to both customer and Agency.

Uploaded file name:

6. Other Measures

Other Landscape Measures. 8

Uploaded file name: WaterWise Landscape Rebate Data Sheet_FY2014-2015.xlsx

Comments:

CUWCC BMP Coverage Report 2015

BMP5 - Landscape **ON TRACK**

CVWD has chosen the Traditional option but has participated activities outlined under the Flex Track reporting criteria

At Least As Effective As	No
Exemption	No

Attachment L

2016 CUWCC BMP Coverage Report

CUWCC BMP Retail Coverage Report 2016

Foundational Best Managemant Practices for Urban Water Efficiency

BMP 1.1 Operation Practices

ON TRACK

36 Carpinteria Valley Water District

1. Conservation Coordinator provided with necessary resources to implement BMPs?

Name: Brian King

Title: District Engineer

Email: brian@cvwd.net

2. Water Waste Prevention Documents

WW Document Name	WWP File Name	WW Prevention URL	WW Prevention Ordinance Terms Description
Option A Describe the ordinances or terms of service adopted by your agency to meet the water waste prevention requirements of this BMP.	Rules_Regs29_Ordinance 15-2.pdf		Rules & Regulations #29, Prohibits Wrongful Use or Waste of Water;Ordinance 15 -2, adopted 5/13/2015 declaring a Stage Two (2) Drought Condition - outlines prohibited water waste and required water saving actions as well as enforcement measures.
Option B Describe any water waste prevention ordinances or requirements adopted by your local jurisdiction or regulatory agencies within your service area.			
Option C Describe any documentation of support for legislation or regulations that prohibit water waste.			
Option D Describe your agency efforts to cooperate with other entities in the adoption or enforcement of local requirements consistent with this BMP.			
Option E Describe your agency support positions with respect to adoption of legislation or regulations that are consistent with this BMP.			
Option F Describe your agency efforts to support local ordinances that establish permits requirements for water efficient design in new development.			

At Least As effective As No

CUWCC BMP Retail Coverage Report 2016

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BMP 1.1 Operation Practices **ON TRACK**

Exemption No

Comments:

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Foundational Best Management Practices For Urban Water Efficiency

BMP 1.2 Water Loss Control **ON TRACK**

36 Carpinteria Valley Water District

Completed Standard Water Audit Using AWWA Software?	Yes
AWWA File provided to CUWCC?	Yes
AWWA-WAS-v5-09152014_CVWD_FY2015-2016.xls	
AWWA Water Audit Validity Score?	70
Complete Training in AWWA Audit Method	Yes
Complete Training in Component Analysis Process?	Yes
Component Analysis?	Yes
Repaired all leaks and breaks to the extent cost effective?	Yes
Locate and Repar unreported leaks to the extent cost effective?	Yes
Maintain a record keeping system for the repair of reported leaks, including time of report, leak location, type of leaking pipe segment or fitting, and leak running time from report to repair.	Yes

Provided 7 Types of Water Loss Control Info

Leaks Repairs	Value Real Losses	Value Apparent Losses	Miles Surveyed	Press Reduction	Cost Of Interventions	Water Saved (AF)
24	35296	282002		False		

At Least As effective As No

Exemption No

Comments:

The number of leaks reported in FY2015-16 does not include customer-owned section of piping leaks which were previously collected and included in FY2014-15 reporting data. Leaks reported for FY2015-16 reflect District owned sections of piping.

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Foundational Best Management Practices For Urban Water Efficiency

BMP 1.3 Metering With Commodity

ON TRACK

36 Carpinteria Valley Water District

Numbered Unmetered Accounts	No
Metered Accounts billed by volume of use	Yes
Number of CII Accounts with Mixed Use Meters	297
Conducted a feasibility study to assess merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters?	Yes
Feasibility Study provided to CUWCC?	Yes

Date: 9/5/2013

Uploaded file name:

Completed a written plan, policy or program to test, repair and replace meters	Yes

At Least As effective As No

Exemption No

Comments:

CUWCC BMP Coverage Report 2016

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.4 Retail Conservation Pricing

ON TRACK

36 Carpinteria Valley Water District

Implementation (Water Rate Structure)

Customer Class	Water Rate Type	Conserving Rate?	(V) Total Revenue Comodity Charges	(M) Total Revenue Fixed Carges
Single-Family	Increasing Block	Yes	2435423.29	1310745.42
Multi-Family	Increasing Block	Yes	1338201.48	1100345.99
Commercial	Increasing Block	Yes	737344.35	193425.73
Industrial	Increasing Block	Yes	197184.37	115953.67
Institutional	Increasing Block	Yes	261858.72	97551
Dedicated Irrigation	Increasing Block	Yes	160921.92	56182.38
Agricultural	Increasing Block	Yes	1852732.84	744503.43
Fire Lines	Uniform	Yes	271.51	239321.21
Other	Uniform	Yes	8181.86	20534.02
			6992120.34	**3878562.85**

Calculate: V / (V + M) **64 %**

Implementation Option: Use Canadian Water Wastewater Association Rate Design Model

☐ Use 3 years average instead of most recent year

Canadian Water and Wastewater Association

Upload file:

Agency Provide Sewer Service: No

At Least As effective As Yes

CVWD's Option 3 Matrix Score is 32

Exemption No

Comments:

CUWCC BMP Coverage Report 2016

Foundational Best Management Practices For Urban Water Efficiency

BMP 2.1 Public Outreach

ON TRACK

36 **Carpinteria Valley Water District** **Retail**

Does your agency perform Public Outreach programs? Yes

The list of wholesale agencies performing public outreach which can be counted to help the agency comply with the BMP

Santa Barbara County Water Agency

The name of agency, contact name and email address if not CUWCC Group 1 members

Did at least one contact take place during each quater of the reporting year? Yes

Public Outreach Program List	Number
General water conservation information	208
Flyers and/or brochures (total copies), bill stuffers, messages printed on bill, information packets	450
Landscape water conservation media campaigns	2
Website	1901
Total	**2561**

Did at least one contact take place during each quater of the reporting year? Yes

Number Media Contacts	Number
Online Advertisings	59
Newspaper contacts	56
Articles or stories resulting from outreach	4
Total	**119**

Did at least one website update take place during each quater of the reporting year? Yes

Public Information Program Annual Budget

Annual Budget Category	Annual Budget Amount
Public Outreach	13000
Total Amount:	**13000**

Public Outreah Additional Programs
Chamber of Commercie

Description of all other Public Outreach programs

Comments:

CVWD provides funding and sponsorship of several programs under the direction of the Santa Barbara County Water Agency. These programs included WaterWise Landscape Workshops conducted in the spring of 2015.

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BMP 2.1 Public Outreach

ON TRACK

At Least As effective As	No	
Exemption	No	0

CUWCC BMP Coverage Report 2016

Foundational Best Management Practices For Urban Water Efficiency

BMP 2.2 School Education Programs

ON TRACK

36 Carpinteria Valley Water District **Retail**

Does your agency implement School Education programs? Yes

The list of wholesale agencies performing public outreach which can be counted to help the agency comply with the BMP

Santa Barbara County Water Agency

Agencies Name	ID number
Santa Barbara County Water Agency	200

Materials meet state education framework requirements? Yes

Materials downloaded from waterwisesb.org include language arts, math, and science standards. Contact Shows That Teach for education framework requirements for the school assemblies.

Materials distributed to K-6? Yes

Student workbooks/worksheets, resource books, board games, hands-on water activities for teachers, and students in grades k-8, focusing on water issues can be downloaded from the regional website, waterwisesb.org.

Materials distributed to 7-12 students? Yes (Info Only)

The Jr. High Water Activities Manuel, can be downloaded from the regional website, waterwisesb.org. This manual was developed cooperatively with the Santa Barbara County Water Agency and other local water purveyors.

Annual budget for school education program: 600.00

Description of all other water supplier education programs

Large group assemblies, science fair award and annual high school video contest.

Comments:

For FY2015-2015, CVWD School Education Expenditures was $1362.00, $762 over budget. The additional funds allowed the District, with the SB County Water Agency, to increase the number of school assemblies in Carpinteria.

At Least As effective As No

Exemption No 0

CUWCC BMP Coverage Report 2016

BMP3 - Residential

ON TRACK

Agency **Carpinteria Valley Water District** Date Agency Signed MOU: 5/15/1996

Coverage Option: Flextrack

Total Measured Water Savings (AF/Year)

TRADITIONAL	FLEXTRACK	ACTUAL	TARGET	Prior Activities Credit
7.8	0	7.8	2.02	6.030

Residential Assistance

	Single Family Accounts	Single Family Target	Multi Family Units	Multi Family Target
Total Number Of Accounts/Units	3233		351	
Total Participants during Reporting				
Number of Leak Detection Surveys or Assistance on Customer Property	38	24.25	3	2.63
Number of Faucet Aerators Distributed	6		0	
Number of WSS Showerheads Distributed	72		6	
Landscape Water Surveys	38	24.25	1	

Has agency reached a 75% market saturation for showerheads? No

High Efficiency Clothes Washers	Single Family Accounts	Single Family Target
Number of installations for HECW	5	19.40
Are financial incentives provided for HECWs?	Yes	
Has agency completed a HECW Market Penetration Study?	No	

Water Sense Specification Toilets

Retrofit 'On Resale' Ordinance exists No

75% Market Penetration Achieved No

	Single Family Units	Multi Family Units
Five year average Resale Rate	0.00	0.00
Number Toilets per Household	2	1.5
Number WSS Toilets Installed	81	8
Target Number of WSS Toilets	0.00	0.00

WSS for New Residential Development

Does an Ordinance Exists Requiring WSS Fixtures and Appliances in new SF and MF residences?	Single Family Units	Multi Family Units
	Yes	Yes
Number of new SF & MF units built	5	0
Incentives		

CUWCC BMP Coverage Report 2016

BMP3 - Residential

ON TRACK

Unique Conservation Measures

Residential Assistance / Landscape Water Survey unique water savinigs

Measured water savings (AF/YR) 0

Uploaded file name:

High Efficiency Clothes Washers unique water savinigs

Measured water savings (AF/YR) 0

Uploaded file name:

WaterSense Specification toilets unique water savinigs

SF Measured water savings (AF/YR) MF Measured water savings (AF/YR)

Uploaded file name:

WaterSense Specification toilets for New Residential development unique water savinigs

Measured water savings (AF/YR) 0

Uploaded file name:

High bill contact with single-family and multi-family customers

Measured water savings (AF/YR)

Uploaded file name:

Educate residential customers about the behavioral aspects of water conservation

Measured water savings (AF/YR) 0

Uploaded file name:

Notify residential customers of leaks on the customer's side of the meters

Measured water savings (AF/YR) 0

Uploaded file name:

Provide bill or surcharge refunds for customers to repair leaks on the customer's side of the meters

Measured water savings (AF/YR) 0

Uploaded file name:

Provide unique water savings fixtures that are not included in the BMP list above

Measured water savings (AF/YR) 0

Uploaded file name:

Install residence water use monitors

Measured water savings (AF/YR) 0

Uploaded file name:

Participate in programs that provide residences with school water conservation kits

Measured water savings (AF/YR) 0

Uploaded file name:

Implement in automatic meter reading program for residential customers

CUWCC BMP Coverage Report 2016

BMP3 - Residential

ON TRACK

Measured water savings (AF/YR) 0

Uploaded file name:

OTHER Types of Measures

Measured water savings (AF/YR) 0

Uploaded file name:

Traditional Water Savings Calculation result:

Measures	Target Water Savings (AF):	Actual Water Savings (AF):
SF Leak Detection Surveys	0.54	1.59
MF Leak Detection Surveys	0.03	0.04
Landscape Water Surveys	0.54	1.30
SF WSS Toilets Installed	0.00	3.63
MF WSS Toilets Installed	0.00	0.60
HECW	0.91	0.78

Comments:

A market saturation study for showerheads or HETs has yet to be done. CVWD will investigate the feasibility of conducting such a study in the near future.

At Least As Effective As No

Exemption No

ON TRACK

CUWCC BMP Coverage Report 2016

BMP4 - Commercial Industrial Institutional

Agency **Carpinteria Valley Water District** Date Agency Signed MOU: 5/15/1996

Coverage Option: Flextrack

CII Baseline Water Use (AF): 685.00 CII Water Use Reduction(AF): 68.5

Total Measured Water Savings (AF/Year)

TRADITIONAL	FLEXTRACK	ACTUAL	TARGET	Prior Activities Credit
2.75	0	2.75	43.84	25.650

Water Efficiency Measures:	Quantity Installed:	Water Savings:	Accept Council's default value
1 High Efficiency Toilets (1.2 GPF or less)	89	2.58	Yes
2 High Efficiency Urinals (0.5 GPF or less)	0		No
3 Ultra Low Flow Urinals	0.00		No
4 Zero Consumption Urinals	4.00	0.08	Yes
5 Commercial High Efficiency Single Load Clothes Washers	0.00		No
6 Cooling Tower Conductivity Controllers	0.00		No
7 Cooling Tower pH Controllers	0.00		No
8 Connectionless Food Steamers	0.00		No
9 Medical Equipment Steam Sterilizers	0.00		No
10 Water Efficient Ice Machines	0.00		No
11 Pressurized Water Brooms	0.00		No
12 Dry Vacuum Pumps	0.00		No
Total Water Savings:		**2.66**	

Unique Conservation Measures

Industrial Process Water Use Reduction

Measured water savings (AF/YR)

Uploaded file name:

Commercial Laundry Retrofits

Measured water savings (AF/YR)

Uploaded file name:

Industrial Laundry Retrofits

Measured water savings (AF/YR)

Uploaded file name:

Filter Upgrades (for pools, spas and fountants)

ON TRACK

CUWCC BMP Coverage Report 2016

BMP4 - Commercial Industrial Institutional

Measured water savings (AF/YR)

Uploaded file name:

Car Wash Reclamation Systems

Measured water savings (AF/YR)

Uploaded file name:

Wet Cleaning

Measured water savings (AF/YR)

Uploaded file name:

Water Audits (to avoid double counting, do not include device/replacement water savings

Measured water savings (AF/YR)

Uploaded file name:

Clean In Place (CIP)Technology (such as bottle sterilization in a beverage processing plant)

Measured water savings (AF/YR)

Uploaded file name:

Waterless Wok

Measured water savings (AF/YR)

Uploaded file name:

Alternative On-site Water Sources

Measured water savings (AF/YR)

Uploaded file name:

Sub-metering

Measured water savings (AF/YR)

Uploaded file name:

High Efficiency Showerheads

Measured water savings (AF/YR) 0.01

Uploaded file name:

Faucet Flow Restrictors

Measured water savings (AF/YR)

Uploaded file name:

Water Efficiency Dishwashers

Measured water savings (AF/YR)

Uploaded file name:

Hor Water on Demand

Measured water savings (AF/YR)

Uploaded file name:

Pre-rinse spray Valves of 1.3 gpm (gallons per minute) or less

ON TRACK

CUWCC BMP Coverage Report 2016

BMP4 - Commercial Industrial Institutional

Measured water savings (AF/YR)

Uploaded file name:

Central Flush Systems

Measured water savings (AF/YR)

Uploaded file name:

IOther Measures chosen by the Agency

Measured water savings (AF/YR)

Uploaded file name:

Comments:

At Least As Effective As	No
Exemption	No

CUWCC BMP Coverage Report 2016

BMP5 - Landscape **NOT ON TRACK**

Agency **Carpinteria Valley Water District** Date Agency Signed MOU: 5/15/1996

Coverage Option: Flextrack

Total Measured Water Savings (AF/Year)

TRADITIONAL	FLEXTRACK	ACTUAL	TARGET	PRIOR ACTIVITIES CREDIT
14.86	0	14.86	56.78	1.83

1) Accounts with Dedicated Irrigation Meters

a) Number of dedicated irrigation meter accounts	86
b) Number of dedicated irrigation meter accounts with water budgets	75
c) Aggregate water use for all dedicated non-recreational landscape accounts with water budgets	96.22
d)Aggregate acreage assigned water budgets for dedicated non-recreational landscape accounts with budgets	
Aggregate acreage of recreational areas assigned water budgets for dedicated recreational landscape accounts with budgets	0
Preserved water use records and budgets for customers with dedicated landscape irrigation accounts for at least four years	Yes
Unique measured water Savings (AF/YR) in this measure	
Uploaded the backup data if there are unique measured water savings?	No

Technical Assistance

Number of Accounts 20% over-budget	18
Number of Accounts 20% over-budget offered technical assistance	0
Number of Accounts 20% over-budget accepting technical assistance	0
Unique measured water Savings (AF/YR) in technical assistance	
Uploaded the backup data if there are unique measured water savings?	No

2) Commercial / Industrial / Institutional Accounts without Meters or with Mixed-Use Meters

Number of mixed use and un-metered accounts.	297		
Number of irrigation water use surveys offered	4		
Number of irrigation water use surveys accepted	3		
Type: Incentives numbers received by customers:	0	$ Value:	0
Type: Rebates numbers received by customers:	3	$ Value:	2456
Type No- or low-Interest loan offered numbers received by customers:	0	$ Value:	0
Annual water savings by customers receiving irrigation water savings surveys and implementing recomendations			
Estimated annual water savings by customers receiving surveys and implementing recommendations			

CUWCC BMP Coverage Report 2016

BMP5 - Landscape

NOT ON TRACK

Unique measured water Savings (AF/YR) in this measure

Uploaded the backup data if there are unique measured water savings? No

Financial Incentives

Number Of Incentives	Dollar Value Of Incentives	Incentive Types

Unique measured water Savings (AF/YR) inFinancial incentives

Uploaded the backup data if there are unique measured water savings? No

Unique Conservation Measures

1. Monitor and report on landscape water use

1a. Measure landscapes and develop water budgets for customers with dedicated landscape meters. Provide timely water use reports with comparisons of water use to budget that provide customers the information they need to adjust irrigation schedules.

Uploaded file name:

1b. Measure landscapes and develop water budgets for customers with Mixed Use meters. Provide timely water use reports with comparisons of water use to budget that provide customers the information they need to adjust irrigation schedules.

Uploaded file name:

1c. Establish agency-wide water budget. (Include in Help notes: ETo based water budget in the MWELO changed in 2010 from .8ETo to .7ETo.)

Uploaded file name:

1d. Establish agency-wide, sector-based irrigation goal to reduce water use, based on season.

Uploaded file name:

2. Provide technical landscape resources and training

2a. Upon customer requests, provide landscape irrigation management and landscape design information and resources: provide assistance, answer customer questions, respond to run-off and high-bill calls.

Uploaded file name:

2b. Perform landscape & irrigation audits: including irrigation scheduling, plant information, and landscape area measurement.

Uploaded file name:

2c. Sponsor, co-sponsor, promote, or support landscape workshops, training, presentations and other technical educational events for homeowners and professionals: design, installation, maintenance, water management.

Uploaded file name:

2d. Establish time-of-day irrigation restrictions.

Uploaded file name:

2e . Establish day-of-week irrigation restrictions.

Uploaded file name:

CUWCC BMP Coverage Report 2016

BMP5 - Landscape **NOT ON TRACK**

3. Provide incentives

3a. Establish landscape budget-based rates.

Uploaded file name:

3b. Provide incentives for conversions from mixed-use meters to dedicated landscape meters.

Uploaded file name:

3c. Provide incentives for irrigation equipment upgrades that improve distribution uniformity, irrigation efficiency, or scheduling capabilities.

Uploaded file name:

3d. Provide incentives for the reduction of water use over an irrigated area, or reduction in the size of the irrigated area due to replacement of turf or other high water-using plants with low water-using plants, artificial turf, or permeable surfaces.

Uploaded file name:

3e. Provide incentives for conversions from potable to recycled water.

Uploaded file name:

3f. Provide incentives for the use of alternative sources of water in the landscape (i.e. gray water, rainwater, cisterns, etc.)

Uploaded file name:

4. Participate in local and regional planning and regulatory activities

4a. Collaborate with planning agencies at the local and regional level, other water suppliers in the area and stakeholders in response to state or federal requirements such as the State Model Water Efficient Landscape Ordinance and AB 1881. Participate in the development, review, implementation, and enforcement of requirements for new developments. Provide water use data to planning agencies.

4b. Establish or participate in a water conservation advisory committee or other community outreach effort to drive market transformation and exchange information about landscape water conservation with developers, community-based organizations, homeowners associations, residential customers, landscape professionals, educators, other water suppliers in region.

4c. Participate in regional efforts: integrated water resource management, watershed management, NPDES permit agencies, etc.

5. Develop a holistic approach to landscape water use efficiency

5a. Develop and implement a comprehensive landscape water conservation program for all customers. Target marketing efforts to those most likely to result in benefits to both customer and Agency.

Uploaded file name:

6. Other Measures

Other Landscape Measures. 25

Uploaded file name:

Comments:

CUWCC BMP Coverage Report 2016

BMP5 - Landscape **NOT ON TRACK**

At Least As Effective As	No
Exemption	No