

DIRECTORS

CLAUDIA C. ALVAREZ, ESQ.
PHILIP L. ANTHONY
DON BANKHEAD
KATHRYN L. BARR
DENIS R. BILODEAU, P.E.
JAN DEBAY
IRV PICKLER
STEPHEN R. SHELDON
NOBLE J. WAITE
ROGER C. YOH, P.E.



ORANGE COUNTY WATER DISTRICT

ORANGE COUNTY'S GROUNDWATER AUTHORITY

OFFICERS

President
KATHRYN L. BARR

First Vice President
PHILIP L. ANTHONY

Second Vice President
JAN DEBAY

General Manager
MICHAEL R. MARKUS, P.E.

April 2, 2012

Ms. Janice Zinky
Division of Water Quality
State Water Resources Control Board (SWRCB)
1001 I Street, 16th Floor
Sacramento, CA 95814

Re: "Communities that Rely on Contaminated Groundwater"
SWRQB Draft Report to the Legislature – February 2012

Dear Madam/Sir:

The Orange County Water District (OCWD) is an agency formed by the State of California in 1933 to protect and manage the Orange County groundwater basin. The OCWD is located in a highly urbanized area of northern Orange County. There are over 20 water utilities within our basin serving a population of over 2.3 million people. Over 225 drinking water wells are within our basin, which provide approximately 65-70 percent of the drinking water. Imported treated surface water (purchased water from a wholesaler) from northern California and the Colorado River supplies the remainder.

On behalf of our Groundwater Producers, OCWD assumes all monitoring, analytical and reporting responsibilities to comply with state and federal drinking water regulations for groundwater sources. Compliance samples are collected at the wellhead, prior to treatment (i.e., raw water), to assess (1) ambient groundwater quality and (2) concentrations of regulated chemicals with respective regulatory maximum contaminant levels (MCLs). Analyses are performed at OCWD's new state certified Advanced Quality Assurance Laboratory located on-site for inorganic and organic analytes. Radioactivity testing is conducted by state certified laboratories.

OCWD reviewed the State Water Resources Control Board's (SWRCB) draft report to the Legislature on "Communities that Rely on Contaminated Groundwater" dated February 2012. We appreciate the opportunity to review the draft report and provide the following comments for your consideration in finalizing the report to the Legislature.

1.0 Draft Report

1.1 Groundwater Quality: Perspective of Extent of Contamination and Quality of Water Served to the Public

The report will be read by the State Legislature, other agencies and the public summarizing the communities that rely on contaminated groundwater that is used for potable supply, but it does not identify communities where contaminated groundwater sources have treatment and delivering water that meets drinking water maximum contaminant levels (MCLs). Providing information on communities that have groundwater treatment provides perspective on the actual number of communities that have contaminated groundwater and need funding for cleanup or need to seek other source water options. The “Summary of Findings (page 9)” states that 682 communities rely on contaminated groundwater as a primary source of drinking water with 508 relying entirely on groundwater for their drinking water supply. Without the added information of how many communities currently are treating groundwater contamination to meet drinking water standards introduces ambiguity in evaluating the 682 communities. Of the 682 communities, how many have treatment that delivers potable water? Is 10%, 25%, etc. of the communities serving water that does not meet drinking water standards?

The Executive Summary and report clearly states that the findings in the report do not necessarily reflect the quality of water (i.e., finished, treated groundwater) that is delivered to the public as potable supply. The report, as required by the statute, discusses funding sources and other options to address groundwater sources that are contaminated with a contaminant that exceeds a primary MCL. The Legislature (and public) needs additional information to better understand the extent of needed resources (i.e., funding) to address contaminated groundwater.

Recommendation 1: Add a section to the report to provide information and discuss the number of communities and number of groundwater sources that have current treatment to reduce contaminants to levels that meet drinking water standards. This information will be beneficial in better understanding the discussion on funding sources and status of funding.

Recommendation 2: Many of the tables in the report could include a column noting if a community water system currently has groundwater treatment that delivers water meeting drinking water standards:

- Table 1.3
- Table 2.1
- Appendix 8 – priority location to include the additional information

1.2 Principal Contaminants – Radionuclide: Gross Alpha and Appendix 8

The CA Department of Public Health (CDPH) Division of Drinking Water and Environmental Management Water Quality Monitoring database (CDPH database) was used as the source of information to compile data used for the SWRCB report for the time period January 1, 2002 through December 31, 2010. OCWD focused review of Appendix 8 information to communities located in Orange County and identified six groundwater sources that are listed having gross alpha exceeding the primary MCL of 15 pCi/L (see Attachment 3 – Appendix 8, pages 183-184 and OCWD excel file).

OCWD retrieved data from the CDPH database for the report period for groundwater wells listed in Appendix 8 and found that the compliance with the gross alpha MCL did not exclude the gross alpha contribution from uranium to assess compliance with the gross alpha MCL (attached OCWD excel file of CDPH data). The laboratory analysis used to measure total gross alpha excludes the radon contribution but includes the uranium contribution. Therefore, compliance with the gross alpha MCL requires subtracting the alpha particle activity originating from uranium, then comparing the result to the 15 pCi/L MCL. Listed below is an excerpt from the CA Code of Regulations on radioactivity and compliance MCL determination for gross alpha (see Attachment 1):

Article 5. Radioactivity

§64442. MCLs and Monitoring - Gross Alpha Particle Activity, Radium-226, Radium-228, and Uranium

(a) Each community and nontransient-noncommunity water system (system) shall comply with the primary MCLs in Table 64442 in the drinking water supplied to the public and use the DLRs for reporting monitoring results:

**Table 64442
 Radionuclide Maximum Contaminant Levels (MCLs)
 and Detection Levels for Purposes of Reporting (DLRs)**

| <i>Radionuclide</i> | <i>MCL</i> | <i>DLR</i> |
|---|--------------------------------------|------------|
| Radium-226 | 5 pCi/L (combined radium-226 & -228) | 1 pCi/L |
| Radium-228 | | 1 pCi/L |
| Gross Alpha particle activity (excluding radon and uranium) | 15 pCi/L | 3 pCi/L |
| Uranium | 20 pCi/L | 1 pCi/L |

Attachment 3 contains excerpts from Appendix 8 of the report listing the six groundwater sources on pages 183-84 having incorrect reference to exceeding the gross alpha primary MCL. OCWD recommends that the gross alpha exceedances listed for community water systems in Appendix 8 be reviewed and revised, as needed. Revisions to gross alpha MCL discussions in other sections of the report may be needed based on review of Appendix 8 listing and the CDPH database.

1.3 Conclusions

OCWD recommends that an additional bullet in the “Conclusions” section of the draft report (page 18) be included to consider the following:

- Many identified communities that rely on contaminated groundwater for drinking water supply provide raw water treatment resulting in finished treated water that reduces principal contaminants to meet drinking water standards (i.e., MCLs).

2.0 Comments: Appendix 8 and Appendix 1

2.1 Units of Measurement

The tables in Appendix 8 list the public water system, the groundwater well, principal contaminant that has concentrations exceeding the MCL, the numerical MCL, most recent detection exceeding the MCL, etc. Adding a column of “units” will greatly enhance the quality of the data tables and provide the context with the numerical MCL. Since the tables includes a broad range of contaminants with varying units for the MCL, a “units column” will greatly aid the reader in evaluating the data (see Attachment 3, excerpts Appendix 8, pages 182-184). In addition, the listed numerical MCL for nitrate + nitrite is not consistent with CA MCL and should be revised to reflect the MCL in units of mg/L. For example:

| <u>Prin. Contaminant</u> | <u>MCL</u> | <u>Units</u> | <u>Comments</u> |
|---------------------------------|------------|--------------|------------------------------------|
| ○ Nitrate (as NO ₃) | 45 | mg/L | add mg/L |
| ○ Nitrate + Nitrite | 10000 | | revise to same units as regulation |
| ○ Nitrate + Nitrite | 10 | mg/L | |
| ○ Perchlorate | 6 | ug/L | |
| ○ PCE | 5 | ug/L | |

2.2 Bromate – Incorrect Listing as Raw Groundwater

Attachment 3 contains an excerpt from Appendix 8, page 182 showing a public water system groundwater well as having raw, ambient bromate measured in June 2008. The water utility has contacted the analyzing laboratory who will be

sending a written letter to CDHP advising of the error of posting bromate as a constituent analyzed in an ambient groundwater sample. This entry should be removed from the table and reflected in revising Table 1.3 (see Attachment 2).

2.3 Radionuclide: Gross Alpha Exceeding the MCL

As described in Section 1.2 above, OCWD retrieved the CDHP data (attached excel file) for the six groundwater sources listed on the tables in Appendix 8, pages 183-184, and evaluated compliance with the gross alpha MCL (calculations provided in attached excel file). The six listed groundwater wells should be removed from these tables as the gross alpha MCL has not been exceeded.

2.4 Table 1.3: Revision

The number of identified community water systems for Orange County is 10 not 14 as discussed above under bromate and gross alpha listing (see Attachment 1, page 31). Attachment 3 lists the 10 community water systems that should be listed for Orange County.

OCWD appreciates the opportunity to review and comment on the draft report to the Legislature on the “Communities that Rely on Contaminated Groundwater.” If you have questions or require additional information, please contact me at any time. We look forward to the final report to the Legislature.

Sincerely,



Nira Yamachika
Director of Water Quality
Orange County Water District
nyamachika@ocwd.com
Work: (714) 378-3281

Attachments:

- Attachment 1: Excerpt CCR – Radioactivity MCLs
- Attachment 2: Appendix 1: Table 3.1 – revisions
- Attachment 3: Appendix 8: Pages 182-184 – revisions
- Attachment 4: OCWD Excel CDPH database (excerpts for OC area and calculations)

ATTACHMENT 1:
Excerpts from the CA Code of Regulations pertaining to "Radioactivity MCLs"

CA Code of Regulations

Title 22. Social Security

Division 4. Environmental Health

Chapter 15. Domestic Water Quality and Monitoring Regulations

Excerpts on Radioactivity:

Article 5. Radioactivity

§64442. MCLs and Monitoring - Gross Alpha Particle Activity, Radium-226, Radium-228, and Uranium

(a) Each community and nontransient-noncommunity water system (system) shall comply with the primary MCLs in Table 64442 in the drinking water supplied to the public and use the DLRs for reporting monitoring results:

Table 64442
Radionuclide Maximum Contaminant Levels (MCLs)
and Detection Levels for Purposes of Reporting (DLRs)

| <i>Radionuclide</i> | <i>MCL</i> | <i>DLR</i> |
|--|--------------------------------------|------------|
| Radium-226 | 5 pCi/L (combined radium-226 & -228) | 1 pCi/L |
| Radium-228 | | 1 pCi/L |
| Gross Alpha particle activity (<u>excluding radon and uranium</u>) | 15 pCi/L | 3 pCi/L |
| Uranium | 20 pCi/L | 1 pCi/L |

Last updated September 22, 2011—*from Titles 17 and 22 California Code of Regulations
California Regulations Related to Drinking Water*

The gross alpha MCL is 15 pCi/L. Compliance with the gross alpha MCL **excludes the contribution of alpha particle activity from radon and uranium**. The laboratory analysis to measure total gross alpha excludes the radon contribution but includes the uranium contribution. Therefore, compliance with the gross alpha MCL requires subtracting out the alpha particle activity originating from uranium, then comparing the result to 15 pCi/L.

ATTACHMENT 2:

Excerpts from SWRCB draft report "Communities that Rely on Contaminated Groundwater" -- APPENDIX 1

**APPENDIX 1 – COMMUNITIES THAT RELY ON
CONTAMINATED GROUNDWATER**

Excerpt: Table 1.3 (page 31) -
Revisions to table entries.

DRAFT

TABLE 1.3: Community PWS that Rely on Contaminated Groundwater as a Primary Source of Drinking Water, by County and Population Served

| County | Number of Identified Community Water Systems | Number of Identified Community Water Systems Grouped by Population | | | Population of Identified Community Water Systems | Population of Identified Community Water Systems per County | | | Number of Identified Community Water Systems 100% Reliant on Groundwater | Total Population 100% Reliant on Groundwater |
|--------------|--|--|-------------|---------|--|---|-------------|-----------|--|--|
| | | <3,300 | 3,300-9,999 | ≥10,000 | | <3,300 | 3,300-9,999 | ≥10,000 | | |
| ALAMEDA | 1 | 0 | 0 | 1 | 54,496 | 0 | 0 | 54,496 | 0 | 0 |
| AMADOR | 2 | 2 | 0 | 0 | 70 | 70 | 0 | 0 | 2 | 70 |
| BUTTE | 6 | 4 | 1 | 1 | 106,848 | 359 | 6,403 | 100,086 | 6 | 106,848 |
| CALAVERAS | 1 | 1 | 0 | 0 | 150 | 150 | 0 | 0 | 0 | 0 |
| COLUSA | 3 | 3 | 0 | 0 | 1,038 | 1,038 | 0 | 0 | 3 | 1,038 |
| CONTRA COSTA | 7 | 5 | 0 | 2 | 108,729 | 837 | 0 | 107,892 | 5 | 837 |
| EL DORADO | 3 | 2 | 0 | 1 | 63,104 | 3,104 | 0 | 60,000 | 3 | 63,104 |
| FRESNO | 31 | 23 | 2 | 6 | 657,776 | 8,484 | 15,251 | 634,041 | 28 | 101,085 |
| GLENN | 2 | 2 | 0 | 0 | 190 | 190 | 0 | 0 | 2 | 190 |
| INYO | 8 | 8 | 0 | 0 | 923 | 923 | 0 | 0 | 8 | 923 |
| KERN COUNTY | 87 | 63 | 9 | 33 | 771,229 | 28,501 | 53,261 | 689,467 | 76 | 428,905 |
| KINGS | 12 | 8 | 1 | 3 | 111,177 | 7,464 | 0 | 103,713 | 12 | 111,177 |
| LAKE | 3 | 3 | 0 | 0 | 320 | 320 | 0 | 0 | 3 | 320 |
| LASSEN | 2 | 1 | 0 | 1 | 12,450 | 1,500 | 0 | 10,950 | 2 | 12,450 |
| LOS ANGELES | 89 | 20 | 14 | 55 | 8,469,248 | 18,891 | 104,929 | 8,345,428 | 34 | 911,696 |
| MADERA | 30 | 27 | 2 | 1 | 73,694 | 8,716 | 6,800 | 58,178 | 26 | 70,530 |
| MARIN | 2 | 2 | 0 | 0 | 106 | 106 | 0 | 0 | 1 | 55 |
| MARIPOSA | 2 | 2 | 0 | 0 | 865 | 865 | 0 | 0 | 2 | 865 |
| MENDOCINO | 2 | 2 | 0 | 0 | 1,301 | 1,301 | 0 | 0 | 1 | 1,301 |
| MERCED | 2 | 2 | 0 | 0 | 170,603 | 3,020 | 9,250 | 158,333 | 10 | 170,603 |
| MONO | 1 | 1 | 0 | 0 | 9,356 | 1,142 | 8,214 | 0 | 4 | 1,142 |
| MONTEREY | 0 | 0 | 0 | 0 | 248,247 | 4,330 | 6,585 | 237,332 | 16 | 125,755 |
| NAPA | 2 | 2 | 0 | 0 | 225 | 225 | 0 | 0 | 2 | 225 |
| NEVADA | 3 | 2 | 0 | 1 | 14,648 | 348 | 0 | 14,300 | 3 | 14,648 |
| ORANGE | 14 | 5 | 0 | 9 | 1,254,761 | 674 | 5,742 | 1,248,345 | 5 | 674 |
| PLACER | 2 | 2 | 0 | 0 | 170 | 170 | 0 | 0 | 1 | 120 |
| PLUMAS | 5 | 5 | 0 | 0 | 3,540 | 3,540 | 0 | 0 | 5 | 3,540 |
| RIVERSIDE | 36 | 14 | 8 | 14 | 1,584,611 | 14,899 | 24,316 | 1,545,396 | 22 | 283,414 |
| SACRAMENTO | 20 | 12 | 0 | 8 | 767,332 | 3,093 | 0 | 764,239 | 15 | 121,276 |
| SAN BENITO | 5 | 5 | 0 | 0 | 418 | 418 | 0 | 0 | 5 | 418 |

Revise to 10. See comments in Appendix 8 page 184.

Revise to 3. See comments on page 184 Appendix 8 to delete 2 listed CWS because gross alpha MCL is not exceeded. See attached DPH data and explanation for gross alpha determination.

Revise to 3

ATTACHMENT 3:

Excerpts from SWRCB draft report "Communities that Rely on Contaminated Groundwater" -- APPENDIX 8

**APPENDIX 8 – LIST OF COMMUNITIES THAT RELY ON
CONTAMINATED GROUNDWATER AS A SOURCE OF DRINKING
WATER**

Excerpts: Pages 182, 183 and 184 -
revisions to table entries.

Add units or units column for listed analyte (i.e., ug/L, mg/L, etc.)

| County | Primary City | Public Water System Name | PWS Num. | Source of PWS Supply | Pop. Served | Comm. Water System Wells | Wells with Princ. Cont. | State Well Number | Princ. Contaminant | MCL | Most Recent Det. >MCL | Det. >MCL (2002-2010) | Max Conc. (2002-2010) | Avg. Conc. (2002-2010) | Sampling Events (2002-2010) |
|----------|---|---------------------------------|----------|----------------------|-------------|--------------------------|-------------------------|-------------------|-------------------------|-------|-----------------------|-----------------------|-----------------------|------------------------|-----------------------------|
| MONTEREY | Prunedale CDP | OAK HEIGHTS W & R CO INC | 2700665 | 100% GW | 105 | 3 | 1 | 2700665-003 | Nitrate (as NO3) | 45 | 1/15/2008 | 8 | 80 | 39.32 | 19 |
| | | | | | | | | 2700665-003 | Nitrate + Nitrite | 10000 | 1/15/2008 | 2 | 12641 | 8902.00 | 4 |
| MONTEREY | Prunedale CDP | PRUNEDALE MWC | 2700702 | 100% GW | 252 | 4 | 4 | 2700702-001 | Arsenic | 10 | 12/10/2004 | 2 | 12 | 8.02 | 9 |
| | | | | | | | | 2700702-002 | Arsenic | 10 | 12/28/2009 | 8 | 19 | 15.50 | 8 |
| | | | | | | | | 2700702-003 | Arsenic | 10 | 12/26/2009 | 8 | 62 | 49.38 | 8 |
| | | | | | | | | 2700702-004 | Arsenic | 10 | 12/26/2009 | 7 | 68 | 53.71 | 7 |
| MONTEREY | Prunedale CDP | SAN MIGUEL WS #01 | 2700738 | 100% GW | 100 | 2 | 2 | 2700738-001 | Nitrate (as NO3) | 45 | 9/8/2010 | 5 | 59 | 42.64 | 11 |
| | | | | | | | | 2700738-002 | Nitrate (as NO3) | 45 | 9/8/2010 | 4 | 56 | 41.30 | 10 |
| MONTEREY | Prunedale CDP | MORO RD WS #09 | 2701926 | 100% GW | 210 | 3 | 2 | 2701926-003 | Arsenic | 10 | 7/1/2010 | 8 | 25 | 10.32 | 16 |
| | | | | | | | | 2701926-002 | Nitrate (as NO3) | 45 | 4/1/2010 | 6 | 48 | 45.00 | 8 |
| NAPA | City of Vacaville | CALISTOGA FARM WORKER CENTER | 2800039 | 100% GW | 25 | 1 | 1 | 2800039-001 | Arsenic | 10 | 12/1/2010 | 20 | 120 | 88.95 | 21 |
| NAPA | City of Calistoga | TUCKER ACRES MUTUAL WATER CO. | 2800516 | 100% GW | 200 | 1 | 1 | 2800516-002 | Arsenic | 10 | 3/31/2009 | 3 | 27 | 13.88 | 9 |
| NEVADA | City of Truckee | TRUCKEE-DONNER PUD - HIRSCHDALE | 2910010 | 100% GW | 48 | 1 | 1 | 2910010-001 | Arsenic | 10 | 11/4/2010 | 37 | 100 | 43.24 | 37 |
| NEVADA | Truckee town | TRUCKEE-DONNER PUD, MAIN | 2910003 | 100% GW | 14300 | 12 | 3 | 2910003-005 | Arsenic | 10 | 9/9/2009 | 7 | 53 | 17.35 | 16 |
| | | | | 100% GW | | | | 2910003-007 | Arsenic | 10 | 6/15/2009 | 2 | 16 | 11.20 | 6 |
| | | | | 100% GW | | | | 2910003-012 | Arsenic | 10 | 4/27/2005 | 2 | 13 | 11.60 | 3 |
| NEVADA | Kingvale CDP | PLAVADA COMMUNITY ASSOCIATION | 2910011 | 100% GW | 300 | 3 | 2 | 2910011-006 | Arsenic | 10 | 9/20/2010 | 12 | 28.6 | 16.88 | 12 |
| | | | | | | | | 2910011-007 | Arsenic | 10 | 9/20/2010 | 11 | 41.5 | 32.68 | 11 |
| ORANGE | Anaheim city, Fullerton city | CITY OF FULLERTON | 3010010 | >50% GW Mixed | 137367 | 11 | 1 | 3010010-012 | Trichloroethylene (TCE) | 5 | 2/3/2004 | 12 | 6.7 | 3.36 | 67 |
| ORANGE | Costa Mesa city, Fountain Valley city, Santa Ana city | MESA CONSOLIDATED WD | 3010004 | >50% GW Mixed | 108724 | 6 | 1 | 3010004-006 | Bromate | 10 | 6/17/2008 | 2 | 17 | 14.00 | 2 |

1

Delete PWS entry

Treated groundwater - not raw water; laboratory reporting error. PWS has contacted analyzing laboratory. Laboratory will be preparing letter to note reporting error - should be treated water.

Revise to 1 well by deleting the gross alpha reference.

Add units of listed MCL (i.e., PCE = ug/L, perchlorate = ug/L, nitrate as NO3 = mg/L)

2

3

4

Delete gross alpha particle. The MCL not exceeded; see supporting attachment with DPH data and explanation for gross alpha compliance.

The MCL for the nitrate and nitrite is:
 Nitrate (as NO3) = 45 mg/L
 Nitrate + nitrite (as N) = 10 mg/L
 Keep the nitrogen analyte MCLs in same units of measurement for easier review of table and assessment of MCL. Too confusing to list as 10000 (units would be ug/L but missing)

| County | Primary City | Public Water System Name | PWS Num. | Source of PWS Supply | Pop. Served | Comm. Water System Wells | Wells with Princ. Cont. | State Well Number | Princ. Contaminant | MCL | Most Recent Det. >MCL | Det. >MCL (2002-2010) | Max Conc. (2002-2010) | Avg. Conc. (2002-2010) | Sampling Events (2002-2010) |
|--------|---|-------------------------------|----------|----------------------|-------------|--------------------------|-------------------------|------------------------|--|---------------|-----------------------|-----------------------|-----------------------|------------------------|-----------------------------|
| ORANGE | Garden Grove city, Newport Beach city, Orange city, Placentia city, Santa Ana city, Tustin city | CITY OF SANTA ANA | 3010038 | >50% GW Mixed | 353428 | 20 | 1 | 3010038-019 | Nitrate (as NO3) | 45 | 9/17/2003 | 3 | 48.05 | 29.86 | 106 |
| | | | | | | | | 3010038-019 | Nitrate + Nitrite | 10000 | 7/23/2003 | 2 | 10900 | 6442.94 | 32 |
| ORANGE | Irvine city, Lake Forest city, Orange city, Santa Ana city, Tustin city | IRVINE RANCH WATER DISTRICT | 3010092 | >50% GW Mixed | 316000 | 27 | 2 | 3010092-058 | Gross alpha particle activity | 15 | 5/12/2008 | 2 | 17.8 | 11.83 | 13 |
| | | | | | | | | 3010092-015 | Perchlorate | 6 | 1/14/2010 | 8 | 7.9 | 1.90 | 37 |
| | | | | | | | | 3010092-015 | Tetrachloroethylene (PCE) | 5 | 2/12/2003 | 2 | 5.5 | 1.49 | 47 |
| ORANGE | North Tustin CDP, Orange city, Tustin city | CITY OF TUSTIN | | | | | | 3010046-002 | Nitrate (as NO3) | 45 | 8/6/2003 | 2 | 47.92 | 35.15 | 33 |
| | | | | | | | | 3010046-008 | Nitrate (as NO3) | 45 | 5/19/2010 | 33 | 76.4 | 59.92 | 34 |
| | | | | | | | | 3010046-009 | Nitrate (as NO3) | 45 | 11/17/2010 | 32 | 98.04 | 76.68 | 32 |
| | | | | | | | | 3010046-017 | Nitrate (as NO3) | 45 | 2/21/2007 | 6 | 50.85 | 34.02 | 32 |
| | | | | | | | | 3010046-022 | Nitrate (as NO3) | 45 | 11/17/2010 | 32 | 80.8 | 58.99 | 35 |
| | | | | | | | | 3010046-002 | Nitrate + Nitrite | 10000 | 8/6/2003 | 2 | 10800 | 7942.12 | 33 |
| | | | | | | | | 3010046-008 | Nitrate + Nitrite | 10000 | 5/19/2010 | 33 | 17300 | 13538.24 | 34 |
| | | | | | | | | 3010046-009 | Nitrate + Nitrite | 10000 | 11/17/2010 | 32 | 22100 | 17318.75 | 32 |
| | | | | | | | | 3010046-017 | Nitrate + Nitrite | 10000 | 2/21/2007 | 6 | 11500 | 7686.88 | 32 |
| | | | | | | | | 3010046-022 | Nitrate + Nitrite | 10000 | 11/17/2010 | 32 | 18200 | 13326.11 | 35 |
| ORANGE | West Orange | GOLDEN STATE WC - WEST ORANGE | 3010022 | Mixed <50%GW | 108995 | 20 | 1 | 3010022-022 | Perchlorate | 6 | 8/4/2004 | 5 | 7.9 | 5.1294 | 5 |
| | | | | | | | | | | | | | | | |
| ORANGE | Yorba Linda | YORBA LINDA WATER DISTRICT | 3010037 | Mixed <50%GW | 77513 | 10 | 1 | 3010037-001 | Arsenic | 10 | 9/1/2010 | 32 | 83 | 11.786 | 29 |

5

6

Add units to the MCL column (i.e., mg/L, pCi/L, ug/L, etc.)

| County | Primary City | Public Water System Name | PWS Num. | Source of PWS Supply | Pop. Served | Comm. Water System Wells | Wells with Princ. Cont. | State Well Number | Princ. Contaminant | MCL | Most Recent Det. >MCL | Det. >MCL (2002-2010) | Max Conc. (2002-2010) | Avg. Conc. (2002-2010) | Sampling Events (2002-2010) |
|-------------------|---|---|--------------------|-------------------------|------------------|--------------------------|-------------------------|------------------------|--|---------------|-----------------------|-----------------------|-----------------------|------------------------|-----------------------------|
| ORANGE | Yorba Linda | GOLDEN STATE WC - YORBA LINDA | 3010070 | Mixed <50%GW | 5742 | 2 | 1 | 3010070-003 | Gross alpha particle activity | 45 | 4/25/2010 | 43 | 36.8 | 33.36 | 43 |
| | | | | | | | | 3010070-003 | Uranium | 20 | 1/25/2010 | 88 | 29 | 23.525 | 86 |
| | | | | | | | | 3010070-003 | Uranium | 30 | 6/7/2010 | 114 | 43 | 32.537 | 67 |
| ORANGE | Fountain Valley city, Newport Beach city | CITY OF NEWPORT BEACH | 3010023 | Undetermined | 84218 | 4 | 1 | 3010023-005 | Gross alpha particle activity | 15 | 2/28/2007 | 3 | 15.7 | 13.25 | 14 |
| ORANGE | Fullerton city | PAGE AVENUE MUTUAL WATER COMPANY | 3000585 | 100% GW | 104 | 1 | 1 | 3000585-001 | 1,1-Dichloroethylene (1,1-DCE) | 6 | 5/3/2010 | 3 | 6.3 | 3.03 | 44 |
| | | | | | | | | 3000585-001 | Perchlorate | 6 | 10/1/2007 | 5 | 9.1 | 4.21 | 35 |
| ORANGE | Huntington Beach city | LIBERTY PARK WATER ASSOCIATION | 3000010 | 100% GW | 100 | 2 | 2 | 3000010-001 | Gross alpha particle activity | 15 | 3/14/2009 | 3 | 10.7 | 13.00 | 15 |
| ORANGE | Santa Ana city | CATALINA STREET PUMP OWNERS | 3000662 | 100% GW | 150 | 1 | 1 | 3000662-001 | Gross alpha particle activity | 15 | 4/5/2010 | 35 | 36.8 | 33.36 | 36 |
| | | | | | | | | 3000662-001 | Uranium | 20 | 4/5/2010 | 24 | 25.8 | 21.70 | 26 |
| ORANGE | Santa Ana city | DIAMOND PARK MUTUAL WATER CO. | 3000663 | 100% GW | 200 | 1 | 1 | 3000663-001 | Nitrate (as NO3) | 45 | 10/4/2010 | 19 | 49.9 | 39.17 | 61 |
| | | | | | | | | 3000663-001 | Nitrate + Nitrite | 10000 | 11/1/2010 | 22 | 11300 | 8875.30 | 62 |
| ORANGE | Stanton city | HYNES ESTATES MUTUAL WATER CO. | 3000510 | 100% GW | 120 | 2 | 1 | 3000510-001 | Gross alpha particle activity | 15 | 10/5/2009 | 7 | 17.8 | 14.98 | 17 |
| PLACER | | TAHOMA MEADOWS | | | | | 1 | 3100033-001 | Arsenic | 10 | 10/5/2010 | 24 | 246 | 37.95 | 19 |
| PLACER | | | | | | | 1 | 3110032-004 | Arsenic | 10 | 3/19/2007 | 2 | 21 | 14.333 | 2 |
| PLUMAS | | | | | | | 1 | 3200510-001 | Arsenic | 10 | 2/2/2010 | 2 | 12 | 6.60 | 6 |
| PLUMAS | CDP, Portola city | CITY OF PORTOLA | 3210003 | 100% GW | 2500 | 4 | 2 | 3210003-005 | Arsenic | 10 | 7/6/2010 | 12 | 31 | 13.89 | 20 |
| | | | | | | | | 3210003-006 | Arsenic | 10 | 7/6/2010 | 6 | 25 | 8.27 | 20 |
| PLUMAS | Delleker CDP | GRIZZLY LAKE RID-DELLEKER | 3200104 | 100% GW | 657 | 3 | 2 | 3200104-002 | Gross alpha particle activity | 15 | 1/4/2010 | 8 | 32 | 17.45 | 13 |
| | | | | | | | | 3200104-003 | Gross alpha particle activity | 15 | 4/13/2010 | 8 | 39.3 | 18.75 | 12 |
| | | | | | | | | 3200104-002 | Uranium | 20 | 7/27/2010 | 4 | 36.9 | 16.64 | 17 |

7

8

9

10

Delete gross alpha particle as exceeding the MCL for these wells. See supporting attachment with DPH data and explanation for gross alpha compliance determination with the MCL of 15 pCi/L.

10 CWS not 14. See page 31 of report.

See comments on page 183 to revise the Nitrate + nitrite MCL to 10 mg/L not 10000 and without units.