Water Replenishment District
of Southern California

REGIONAL GROUNDWATER MONITORING REPORT WATER YEAR 2011-2012

Central and West Coast Basins
Los Angeles County, California

March 2013

WRD

Cover

Photographs of various groundwater monitoring well sites and equipment utilized by WRD for the Regional Groundwater Monitoring Program

REGIONAL GROUNDWATER MONITORING REPORT
CENTRAL BASIN AND WEST COAST BASIN
LOS ANGELES COUNTY, CALIFORNIA
WATER YEAR 2011-2012

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Executive Summary

The Water Replenishment District of Southern California (WRD or the District) was formed in 1959 to manage the groundwater replenishment and groundwater quality activities for 4 million people in 43 cities that overlie the Central Basin and West Coast Basin (CBWCB) in southern Los Angeles County. These basins currently supply about 40 percent of the water used by the population in the region. Our mission is to protect and preserve high-quality groundwater in the basins through innovative, cost-effective, and environmentally sensitive management practices for the benefit of residents and businesses of the CBWCB.

WRD has been monitoring the CBWCB for over 50 years, and this year's annual report presents the most comprehensive information to date as a result of WRD's growing network of aquifer-specific monitoring wells and in-depth water quality analysis. The Regional Groundwater Monitoring Program currently consists of a network of nearly 300 monitoring wells at over 50 locations throughout the District. To that end, WRD has a dedicated Board and staff that engage in year-round activities to closely monitor groundwater conditions. The District performs extensive collection, analysis, and reporting of groundwater data to ensure proper resource management. The publication of this Regional Groundwater Monitoring Report (RGWMR) is one result of these efforts, which presents information on groundwater levels and groundwater quality for the previous water year which runs from October 1 through September 30 of each year. This current report is for water year 2011-12. Detailed information is presented in the body of the report with a summary below:

Groundwater Levels

Groundwater levels decreased over most of the Central Basin during water year 2011-12. Water levels decreased up to 21 feet and on average about 14.5 feet in the unconfined Montebello Forebay, and remained stable or decreased up to 5 feet across the unconfined Los Angeles Forebay and western Central Basin Pressure Area. Groundwater levels decreased up to 81 feet in the Long Beach Pressure Area. Groundwater levels increased

up to 3 feet in the eastern Central Basin Pressure Area. Water levels did not change significantly over most of the West Coast Basin during water year 2011-12, decreasing up to 2 feet inland of the West Coast Basin Barrier, but increasing up to 2 feet in the Carson and Dominguez Gap areas and up to 30 feet in the Gardena area. The average decrease over the WRD Service area was 7.5 feet. This general decrease was due to the dry winter of 2011/2012, below normal replenishment water, and increased pumping which resulted in 73,200 AF of groundwater removed from storage. Most of this storage loss (63,300 AF of it) occurred in the Montebello Forebay.

Groundwater Quality

Annually, WRD collects nearly 600 groundwater samples from its monitoring well network and analyzes them for over 100 water quality constituents to produce nearly 60,000 individual data points to help track the water quality in the basins. By analyzing and reviewing the results on a regular basis, any new or growing water quality concerns can be identified and managed effectively.

The results of this monitoring and analysis include data tables, water quality maps, and graphs of trends which are presented in Chapters 3 and 4 of this report. Overall, the groundwater in the CBWCB continues to be of high quality, suitable for potable and non-potable uses, and continues to meet our high standards. There are localized areas of marginal to poor water quality that go untapped or may require treatment prior to use. The source of the poor water quality in these areas can be from natural or human causes. WRD will continue to focus on these areas to monitor trends and look for ways to mitigate any contamination that makes the groundwater unsuitable for use.

Analysis for this report uses maps and trend graphs to focus on twelve key water quality constituents to represent overall groundwater quality in the basins, including total dissolved solids (TDS), iron, manganese, nitrate, chloride, trichloroethylene (TCE), tetrachloroethylene (PCE), arsenic, perchlorate, hexavalent chromium, 1,4-dioxane, and 1,2,3-trichloropropane. TDS, where elevated, is typically present along with chloride as an indicator of historic seawater intrusion. The most prevalent water quality issue in the

CBWCB is manganese, a naturally occurring contaminant that impacts the esthetics of groundwater and requires treatment prior to delivery as drinking water. TCE, PCE, and perchlorate that can leak into groundwater from industrial and commercial facilities, have also impacted wells in the District and are closely monitored. Emerging contaminants of concern (COCs) including hexavalent chromium, 1,4-dioxane, and 1,2,3-tichloropropane have new drinking water standards in development by regulators and WRD has begun baseline screening and analysis of these COCs to assess the potential threat to CBWCB groundwater.

Consistent with WRDs mission to provide, protect, and preserve high quality groundwater, and as required by the Recycled Water Policy, a Salt and Nutrient Management Plan (SNMP) is being developed and will be implemented to assure the long-term viability of groundwater in the CBWCB. Through the RGWMP, key WRD nested monitoring wells have been selected to track salt and nutrient water quality trends. Overall, the data show that salt and nutrient concentrations in groundwater are stable with respect to past and current groundwater management practices. Based on the existing water quality of the CBWCB and the future groundwater quality as estimated from the SNMP development process, existing and planned implementation measures appear adequate to manage salt and nutrient loading on a sustainable basis.

Upcoming Activities and Challenges Ahead

WRD remains committed to its statutory charge to protect and preserve the groundwater resources in the CBWCB. To that end, WRD will be installing additional monitoring wells in the upcoming year to enhance its monitoring well network and will perform other projects and programs to meet this charge. One of the biggest challenges currently facing the District is the rising cost of imported water and its unavailability for groundwater replenishment. The District seeks to eliminate this reliance on imported water for replenishment and looks to expand local sources including storm water and recycled water. This initiative is our Water Independence Now (WIN) program – designed to ensure reliable sources of replenishment water to keep the groundwater basins useable and of high quality for all the groundwater users in the WRD service area.

WRD will continue to use the data generated by the RGWMP along with WRD's geographic information system (GIS) capabilities to address current and upcoming issues related to water quality and groundwater replenishment in the CBWCB. WRD staff will be working on refining the hydrogeologic conceptual model of the CBWCB using data from the RGWMP and other data to improve the framework for understanding the dynamics of the groundwater system and use as a planning tool. WRD will continue to be proactively involved in the oversight of the most significant contaminated sites that threaten CBWCB groundwater resources and will continue to fund the Safe Drinking Water Program to address impacted groundwater. WRD will continue efforts under its Groundwater Contamination Prevention Program in order to minimize or eliminate threats to groundwater supplies. This includes continued organization of the Central and West Coast Basin Groundwater Contamination Forum with key stakeholders resulting in a list of high-priority contaminated groundwater sites within the District. Currently, the list includes approximately 46 sites across the CBWCB.

On November 4, 2009 the State Legislature amended the Water Code with SBx7-6, which mandates a statewide groundwater elevation monitoring program to track seasonal and long-term trends in groundwater elevations in California's groundwater basins. In accordance with this amendment to the Water Code, California Department of Water Resources (DWR) developed the California Statewide Groundwater Elevation Monitoring (CASGEM) program. In October 2011 WRD was assigned to be the Designated Monitoring Entity (DME) responsible for collecting and reporting CBWCB groundwater level data to CASGEM. Through the RGWMP, WRD will continue to collect CBWCB groundwater level data, track seasonal and long-term trends and provide data to the CASGEM program.

Further information may be obtained at the WRD web site at *http://www.wrd.org*, or by calling WRD at (562) 921-5521. WRD welcomes any comments or suggestions to this Regional Groundwater Monitoring Report.

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GLOSSARY OF ACRONYMS

AWTF	Advanced Water Treatment Facility
AWWA	American Water Works Association
BGS	Below Ground Surface
CASGEM	California Statewide Groundwater Elevation Monitoring
CDPH	California Department of Public Health (formerly California Department of Health Services)
CEQA	California Environmental Quality Act
COC	Contaminant of Concern
CSDLAC	County Sanitation Districts of Los Angeles County
CBWCB	Central Basin and West Coast Basin
DME	Designated Monitoring Entity
DWR	California Department of Water Resources
ESR	Engineering Survey and Report
GIS	Geographic Information System
GPS	Global Positioning System
LACDPW	Los Angeles County Department of Public Works
LARWQCB	Los Angeles Regional Water Quality Control Board
LAX	Los Angeles International Airport
MCL	Maximum Contaminant Level
mg/L	Milligram per Liter
µg/L	Microgram per Liter
MWD	Metropolitan Water District of Southern California
NDMA	N-Nitrosodimethylamine
NL	Notification Level
OEHHA	Office of Environmental Health Hazard Assessment
PCE	Perchloroethylene or Tetrachloroethylene
PHG	Public Health Goal
Policy	Recycled Water Policy
RGWMP	Regional Groundwater Monitoring Program
RGWMR	Regional Groundwater Monitoring Report
RL	Response Level

GLOSSARY OF ACRONYMS (continued)

SMCL	Secondary Maximum Contaminant Level
SNMP	Salt and Nutrient Management Program
S/N	Salt/Nutrient
SWRCB	State Water Resources Control Board
TCE	Trichloroethylene
TDS	Total Dissolved Solids
TITP	Terminal Island Treatment Plant
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VOC	Volatile Organic Compounds
WBMWD	West Basin Municipal Water District
WIN	Water Independence Now
WQO	Water Quality Objective
WRD	Water Replenishment District of Southern California
WRP	Water Reclamation Plant
WY	Water Year (October 1 – September 30)

SECTION 1
INTRODUCTION

The Water Replenishment District of Southern California (WRD or the District) manages groundwater replenishment and water quality activities for the Central Basin and West Coast Basin (CBWCB) in southern Los Angeles County (**Figure 1.1**). Our mission is to protect and preserve high-quality groundwater in the basins through innovative, cost-effective, and environmentally sensitive management practices for the benefit of residents and businesses of the CBWCB.

As part of accomplishing this mission, WRD maintains a thorough and current understanding of groundwater conditions in the CBWCB and strives to predict and prepare for future conditions. This is achieved through groundwater monitoring, modeling, and planning, which provide the necessary information to determine the "health" of the basins. This information in turn provides WRD, the pumpers in the District, other interested stakeholders, and the public with the knowledge necessary for responsible water resources planning and management.

1.1 BACKGROUND OF THE REGIONAL GROUNDWATER MONITORING PROGRAM

Since its formation in 1959, WRD has been actively involved in groundwater replenishment, water quality monitoring, contamination prevention, data management, and data publication. Historical over pumping of the CBWCB caused overdraft, seawater intrusion and other groundwater management problems related to supply and quality. Adjudication of the basins in the early 1960s set a limit on allowable groundwater production in order to control the over pumping. Concurrent with adjudication, WRD was formed to address issues of groundwater recharge and groundwater quality. The Regional Groundwater Monitoring Program (RGWMP) is an important District program which tracks water levels and water quality in the CBWCB to ensure the usability of this groundwater reservoir.

Prior to 1995, WRD relied heavily upon groundwater monitoring data collected, interpreted, and presented by other entities such as the Los Angeles County Department of Public Works (LACDPW), the California Department of Water Resources (DWR), and the private sector for understanding basin conditions. However, these data were collected primarily from production wells, which are typically screened across multiple aquifers to maximize water inflow. The result is a mixing of the waters from the different aquifers connected by a single well casing, causing an averaging of water levels and water quality.

In order to obtain more accurate data for specific aquifers from which to infer localized water level and water quality conditions, depth-specific (nested) monitoring wells that tap discrete aquifer zones are necessary. **Figure 1.2** illustrates the capabilities of nested monitoring wells to assess individual aquifers compared to typical production wells.

Data are generally provided for a water year, which occurs from October 1 to the following September 30. During water year 1994-95, WRD and the United States Geological Survey (USGS) began a cooperative study to improve the understanding of the geohydrology and geochemistry of the CBWCB. The initial study was documented in USGS Water Resources Investigations Report 03-4065, *Geohydrology, Geochemistry and Ground-Water Simulation-Optimization of the Central Basin and West Coast Basin, Los Angeles County, California* (Reichard et al. 2003). This study was the nucleus of the ongoing Regional Groundwater Monitoring Program. In addition to compiling existing available data, this study recognized that the sampling of production wells did not adequately characterize the layered multiple aquifer systems of the CBWCB. The study focused on new data collection through drilling and construction of nested groundwater monitoring wells and conducting depth-specific water quality monitoring.

Figure 1.3 shows the locations of wells in the resultant WRD nested monitoring well network. Currently, WRD has nearly 300 wells at over 50 locations. A listing and well depth details for the WRD wells are presented in **Table 1.1.** WRD and the USGS are currently expanding the nested monitoring well network. Three new wells are scheduled

to be completed in upcoming year. These wells will fill current data gap areas and address significant groundwater management issues.

An *Annual Report on the Results of Water Quality Monitoring* (*Annual Report*) was published by WRD each year for water years 1972-73 through 1994-95, and was based on a basinwide monitoring program outlined in the *Report on Program of Water Quality Monitoring* (Bookman-Edmonston Engineering, Inc., January 1973). The latter report recommended a substantial expansion of the then-existing program, particularly the development of a detailed and intensive program of monitoring the quality of groundwater in the Montebello Forebay. The Regional Groundwater Monitoring Program was designed to serve as an expanded, more representative basinwide monitoring program for the CBWCB. This Regional Groundwater Monitoring Report is published in lieu of the previous *Annual Reports*.

1.2 CONCEPTUAL HYDROGEOLOGIC MODEL

As described above, the RGWMP changes the focus of groundwater monitoring efforts in the CBWCB from production wells with averaged groundwater level and groundwater quality information, to a layered multiple aquifer system with individual zones of groundwater quality and groundwater levels. WRD views each aquifer as a significant component of the groundwater system and recognizes the importance of the interrelationships between water-bearing zones. The most accepted hydrogeologic description of the basin and the names of water-bearing zones were provided in California Department of Water Resources, *Bulletin No. 104: Planned Utilization of the Ground Water Basins of the Coastal Plain of Los Angeles County, Appendix A – Ground Water Geology* (DWR, 1961). WRD generally follows the naming conventions of this report (Bulletin 104), redefining certain aspects when new data become available.

The locations of idealized geologic cross-sections AA’ and BB’ through the CBWCB are shown on **Figure 1.3**. Cross-sections AA’ and BB’ are presented on **Figures 1.4** and **1.5**, respectively. These cross-sections are modified versions of cross-sections presented in Bulletin 104 as well as recent data from the RGWMP, and illustrate a simplified aquifer

system in the CBWCB. The main potable production aquifers are shown, including the deeper Lynwood, Silverado, and Sunnyside aquifers of the lower Pleistocene San Pedro Formation. Other shallower aquifers, which locally produce potable water, include the Gage and Gardena aquifers of the upper Pleistocene Lakewood Formation. Also shown on the geologic sections are the aquitards separating aquifers. Throughout this report the aquifers shown on the geologic sections are referred to as discrete groundwater zones. Many references are made to the Silverado aquifer which is typically the main producing aquifer in the CBWCB. Substantial production can come from the Lynwood and Sunnyside aquifers as well.

1.3 GIS DEVELOPMENT AND IMPLEMENTATION

WRD uses a sophisticated Geographic Information System (GIS) as a tool for CBWCB groundwater management. Much of the GIS was compiled during the WRD/USGS cooperative study. The GIS links spatially-related information (e.g., well locations, geologic features, cultural features, contaminated sites) to data on well production, water quality, water levels, and replenishment amounts. WRD uses industry standard ArcGIS® software for data analysis and preparation of spatially-related information (maps and graphics tied to data). WRD utilizes Global Positioning System (GPS) technology to survey the locations of basinwide production wells, nested monitoring wells and other geographic features for use in the GIS database.

WRD is constantly updating the GIS with new data and newly-acquired archives of data acquired by staff or provided by pumpers and other agencies. The GIS is a primary tool for WRD and other water-related agencies to more accurately track current and past use of groundwater, track groundwater quality, and project future water demands, thus allowing improved management of the basins.

In early 2003, WRD completed the development of its Internet-based GIS and Interactive Well Search Tool, which was made available to the public for access to CBWCB groundwater information. WRD's Internet-based GIS can be accessed through our GIS web site at *http://gis.wrd.org*. The web site provides the public with access to much of the

water level and water quality data contained in this report. The well information can be accessed through interactive map or text searches and the results can be displayed in both tabular and graphical formats.

1.4 SCOPE OF REPORT

This report updates information on groundwater conditions in the CBWCB for water year 2011-12, and discusses the status of the RGWMP. Section 1 provides an overview of WRD and its RGWMP. Section 2 discusses groundwater levels for water year 2011-12. Section 3 presents water quality data for the WRD nested monitoring wells, basinwide production wells, and replenishment water. Section 4 summarizes Salt and Nutrient Management in the CBWCB and presents water quality trends for key constituents. Section 5 presents the findings of this report. Section 6 describes future regional groundwater monitoring and related activities. Section 7 lists the references used in this report. Tables and figures are presented at the end of the report. WRD Regional Groundwater Monitoring Reports can be viewed online and can be downloaded in PDF format from the WRD web site at *http://www.wrd.org*.

SECTION 2
GROUNDWATER LEVELS

Groundwater levels are an indication of the amount of groundwater in the basins. The levels indicate areas of recharge and discharge from the basins. They suggest which way the groundwater is moving so that recharge water or contaminants can be tracked. WRD uses groundwater levels to determine when additional replenishment water is required and to calculate groundwater storage changes. Groundwater levels can also be used to demonstrate possible source areas for seawater intrusion or show the effectiveness of seawater barrier injection wells.

WRD tracks groundwater levels throughout the year by measuring the depth to water in monitoring wells and production wells located throughout the CBWCB. **Table 2.1** presents groundwater level measurements collected from the District's nested monitoring wells during water year 2011-12. In order to capture the daily and seasonal variations in water levels, WRD has installed automatic data-logging equipment in numerous wells to collect water levels daily. WRD also obtains water level data from cooperating entities such as the pumpers, DWR, and LACDPW, who collect water levels from their wells. These data are entered into WRD's GIS water level database for archiving and analysis.

From the water level database, a groundwater elevation contour map, change in groundwater level map, and groundwater elevation hydrographs for key wells are prepared to illustrate the current and historical groundwater conditions in the basins. These are presented and explained in the following sections.

2.1 GROUNDWATER ELEVATION CONTOURS

Figure 2.1 is a contour map showing the groundwater elevations measured across the CBWCB in the deeper, main producing aquifers. The levels were measured at the end of the water year during Fall 2012. The Fall Contour Map shows that in the Central Basin, the highest water levels are in the Montebello Forebay; water levels decrease to the south

and west towards the Long Beach area, the Newport-Inglewood Uplift, and the Los Angeles Forebay, respectively.

In the West Coast Basin, water levels are highest along the West Coast Basin Barrier Injection Project, and decrease to the east where they are at their lowest elevation in Gardena between the Charnock Fault and Newport-Inglewood Uplift, both of which are geologic structural features that partially restrict groundwater flow.

2.2 CHANGES IN GROUNDWATER LEVELS

The results of groundwater level changes observed over the water year are illustrated in **Figure 2.2**, which is a groundwater level change map. Groundwater levels decreased over most of the Central Basin during water year 2011-12. Water levels decreased up to 21 feet and on average about 14.5 feet in the unconfined Montebello Forebay, and remained stable or decreased up to 5 feet across the unconfined Los Angeles Forebay and western Central Basin Pressure Area. Groundwater levels decreased up to 81 feet in the Long Beach Pressure Area. Groundwater levels increased up to 3 feet in the eastern Central Basin Pressure Area. Groundwater levels did not change significantly over most the West Coast Basin during water year 2011-12, decreasing up to 2 feet inland of the West Coast Basin Barrier, but increasing up to 2 feet in the Carson and Dominguez Gap areas and up to 30 feet in the Gardena area. The average decrease over the WRD service area was about 7.5 feet. This general decrease was due to the dry winter of 2011-12, below normal replenishment water, and increased pumping which resulted in 73,200 AF of groundwater removed from storage. Most of this storage loss (63,300 AF of it) occurred in the Montebello Forebay (ESR, 2013).

2.3 GROUNDWATER LEVEL HYDROGRAPHS

WRD also uses hydrographs to track the changes in water levels in wells over time. Hydrographs reveal the seasonal fluctuations of water levels caused by variations in natural and artificial recharge, and the effects of pumping and other basin discharge. Historical hydrographs of water level data going back to the 1930s and 1940s in the Montebello Forebay, Los Angeles Forebay, Central Basin Pressure Area, and West Coast

Basin are presented in the WRD Engineering Survey and Report (ESR). The ESR hydrographs illustrate the general history of groundwater conditions in the CBWCB: 1) Steep water level declines occurred in the 1930s through 1950s as a result of excessive pumping (overdraft); 2) In the mid-1950s to early 1960s, there was a reversal in this downward trend due to initiation of groundwater management policies. Water levels increased through the 1970s and 1980s in response to reduced pumping, artificial replenishment by WRD, and seawater barrier construction and injection; and 3) Over the past 10 to 15 years water levels have remained relatively stable as replenishment has been in closer balance to withdrawals.

Hydrographs for WRD nested monitoring wells that track water level changes through time from individual aquifer zones provide WRD with detailed, aquifer-specific water level information. The data for these annual hydrographs are collected from WRD's network of nested monitoring wells. **Figures 2.3 through 2.12** are historical hydrographs of key WRD nested monitoring wells, three in the Montebello Forebay, one in the Los Angeles Forebay, three in the Central Basin Pressure Area, and three in the West Coast Basin, respectively. These hydrographs illustrate there can be distinct ground water elevation differences, up to 90 feet, between individual aquifers at a nested well location. The differences in elevation are influenced by variable discharge (i.e. pumping from wells) and recharge (i.e. injection, percolation, or underflow) and the degree of hydraulic communication between aquifers. These hydrographs are particularly useful in identifying which zones are in the main flow system when corresponding zones show the greatest depths and seasonal fluctuations in groundwater levels during the water year. Observations from **Figures 2.3 through 2.12** are explained in the following sections.

2.4 GROUNDWATER LEVELS IN THE MONTEBELLO FOREBAY

Figure 2.3 is a hydrograph for WRD's Rio Hondo #1 key nested monitoring well located in the Montebello Forebay at the Rio Hondo Spreading Grounds. It has six individual wells (zones) that are screened in the following aquifers (from shallowest to deepest): Gardena, Lynwood, Silverado, and Sunnyside (3 deepest zones), with depths ranging from 140 feet below ground surface (BGS) to 1,130 feet BGS. Because this well is in the

Montebello Forebay, where the aquifers are in general hydraulic communication with each other, water level responses in all of the aquifers are similar and seasonal highs and lows are in response to recharge and pumping. Groundwater elevations are lowest in Zone 4, the Silverado Aquifer, suggesting that this aquifer is the most heavily pumped in the area. Water levels in Zone 4 decreased about 18 feet over the past water year and about 10 feet over the past 13 years.

Figure 2.4 is a hydrograph for WRD's Pico #2 key nested monitoring well located in the Montebello Forebay adjacent to the San Gabriel River and south of the San Gabriel River Spreading Grounds. It has six individual wells (zones) that are screened in the following aquifers (from shallowest to deepest): Gaspur, Lynwood, Silverado, and Sunnyside (3 deepest zones), with depths ranging from 100 feet BGS to 1,200 feet BGS. This well, in the Montebello Forebay where the aquifers are in general hydraulic communication with each other, shows water level responses in all of the aquifers are similar and seasonal highs and lows are in response to recharge and pumping. Groundwater elevations are lowest in Zones 1 and 2, both in the Sunnyside Aquifer, suggesting that this aquifer is the most heavily pumped in the area. Water levels in Zones 1 and 2 decreased about 21 feet over the past water year and by about 12 feet over the past 13 years.

Figure 2.5 is a hydrograph for WRD's Norwalk #2 key nested monitoring well located in the Montebello Forebay 3.5 miles south of the San Gabriel Spreading Grounds. It has six individual wells (zones) that are screened in the following aquifers (from shallowest to deepest): Exposition, Gardena, Lynwood, Silverado, and Sunnyside (2 deepest zones), with depths ranging from 236 feet BGS to 1,480 feet BGS. This is the third key well representing the Montebello Forebay and like those previously discussed, unlike Rio Hondo #1 and Pico #2, water levels respond somewhat differently in the various zones in responds to the seasonal discharge and recharge influences. Groundwater elevations are lowest in Zone 3, the Silverado Aquifer, suggesting that this aquifer is the most heavily pumped in the area. Water levels in Zone 3 decreased over the past water year by about 17 feet.

2.5 GROUNDWATER LEVELS IN THE LOS ANGELES FOREBAY

Figure 2.6 is a hydrograph for WRD's Huntington Park #1 nested monitoring well located in the Los Angeles Forebay near the intersection of Slauson Avenue and Alameda Street. It has five individual zones that are screened in the following aquifers (from shallowest to deepest): Gaspur, Exposition, Gage, Jefferson, and Silverado, with depths ranging from 114 feet BGS to 910 feet BGS. Only four of the zones are shown on the hydrograph because the shallowest well (screened from 114 feet to 134 feet in the Gaspur Aquifer) is dry and perforated above the water table, and therefore no water elevations can be shown on the graph. There is a large separation in water levels between Zone 4 and the deeper three zones suggesting the presence of a low permeability aquitard(s) above zone 3 that hydraulically isolates the Exposition aquifer from the deeper aquifers. Water levels in the deepest 2 zones, in the Silverado and Jefferson aquifers, were generally similar and decreased by about 2 feet over the past water year. In general water levels in the Los Angeles Forebay have remained relatively stable over the past 14 years.

2.6 GROUNDWATER LEVELS IN THE CENTRAL BASIN PRESSURE AREA

Figure 2.7 is a hydrograph for WRD's South Gate #1 nested monitoring well**.** South Gate #1 is located in the Central Basin Pressure Area, just outside of the Montebello and Los Angeles Forebay areas. It has 5 individual zones that are screened, from shallowest to deepest, in the Exposition, Lynwood, Silverado, Sunnyside Aquifers, and the Pico Formation, with depths ranging from 220 feet BGS to 1,460 feet BGS. Water levels in Zone 1 through 4 generally behave similarly and respond to seasonal discharge and recharge. The upper zone has shallower water levels show little seasonal response and is isolated from the aquifers below by a pressure area aquitard resulting in the observed hydraulic separation. South Gate #1 water levels decreased about 8 feet in the deeper aquifers over water year 2011-12, and have generally declined about 10 feet over the past 12 years.

Figure 2.8 is a hydrograph for WRD's Willowbrook #1 nested monitoring well**.** Willowbrook #1 is located in the Central Basin Pressure Area, away from the Montebello

Forebay, about 7 miles to the southwest. It has 4 individual zones that are screened in the Gage, Lynwood, Silverado, and Sunnyside Aquifers, with depths ranging from 200 feet BGS to 905 feet BGS. Water levels in Zone 1 show the greatest response to seasonal changes. The upper three zones have generally shallower water levels than Zone 1. The upper 2 zones track very closely. These trends suggest some aquifer separation (aquitards) between Zones 1 and 2 and between zone 2 and 3. Zones 3 and 4 likely have little hydraulic separation. Willowbrook water levels in all zones remained relatively stable over water year 2011-12, and have generally declined 10 to 20 feet over the past 12 years.

In another region of the Central Basin Pressure Area, **Figure 2.9** is the historical water level hydrograph for key nested monitoring well Long Beach #6 located in the Central Basin Pressure Area, on Spring Street near the Long Beach Airport. It has 6 individual zones that are screened in the following (from shallowest to deepest): Gage, Lynwood, Silverado, Sunnyside (2 zones), and Pico Formation with depths ranging from 220 feet BGS to 1,510 feet BGS. Because this area in the Central Basin Pressure Area has multiple confined aquifers separated by substantial aquitards and experiences heavy seasonal pumping cycles, water level fluctuations can be larger than in other areas. For example, water levels in Zones 4 and 5, representing the Silverado and Lynwood Aquifers, have varied over 110 feet through a seasonal cycle, from a high of 5 feet below sea level in April 2006 to lows of greater than 120 feet below sea level in recent years. Water levels of the other zones generally show significant seasonal variation also, with typical seasonal lows in the late summer and fall and highs in spring. Seasonal pumping cycles have changed in recent years and many production wells in the area near the Long Beach #6 monitoring well pump groundwater year-round when imported surface water is unavailable or expensive. When year-round pumping takes place, the typical fall water level rebound does not occur and groundwater levels can remain at the low levels as seen during water year 2008-09. In contrast, between November 2010 and the end of that water year ending in 2011, the City of Long Beach turned off their pumping for many of these months resulting in a nearly year-long rebound of groundwater levels. **Figure 2.9** shows the groundwater level increase that occurred in all zones over the past water year

with water levels in zones 4 and 5 ending the year over 90 feet lower than the previous year.

2.7 GROUNDWATER LEVELS IN THE WEST COAST BASIN

Figure 2.10 is a nested hydrograph for WRD's PM-4 Mariner nested monitoring well. This well is located in the City of Torrance, in the coastal area inland from the West Coast Basin Seawater Barrier. It has 4 individual zones that are screened in the following aquifers (from shallowest to deepest): Lynwood (2 zones), Silverado, and Sunnyside, with depths ranging from 200 feet BGS to 710 feet BGS. All four zones respond similarly to seasonal fluctuations. Water levels in Zone 1 (Sunnyside Aquifer) are deepest, separated from Zone 2 (Silverado Aquifer) which is several feet higher. Water levels in Zones 3 and 4 (Lynwood and Gage Aquifers) are both about 2 feet above those in Zone 2. Water levels did not change significantly at PM-4 Mariner in 2011-12 and have been generally stable, increasing 2 to 6 feet over the past 14 years.

Figure 2.11 is a hydrograph for WRD's Carson #1 nested monitoring well located in the inland region of the West Coast Basin about 1.5 miles northwest of the intersection of the 405 Freeway and Alameda Street. It has 4 individual zones that are screened in the following aquifers (from shallowest to deepest): Gage, Lynwood, Silverado, and Sunnyside, with depths ranging from 250 feet BGS to 1,110 feet BGS. Water levels in Zone 1 track very similar to Zone 2 throughout the year, and Zone 3 tracks similar to Zone 4. Groundwater elevations currently differ by about 35 feet between the upper and lower zones which suggest the presence of a low permeability aquitard(s) between them that hydraulically isolate the shallow aquifers from the deeper ones. Water levels in Zones 1 and 2 decreased about 1 foot over the past water year and have generally increased over 20 feet over the past 13 years. Water levels in zones 3 and 4 have both been relatively stable over the past water year but have generally increased 12 feet over the past 13 years.

Figure 2.12 is a hydrograph for WRD's Hawthorne #1 nested monitoring well located in the inland region of the West Coast Basin about 0.2 miles south of the intersection of the

405 Freeway and El Segundo Blvd. It has 6 individual zones that are screened in the following aquifers (from shallowest to deepest): Gage, Lynwood, Silverado (2 zones), and Sunnyside (2 zones), with depths ranging from 110 feet BGS to 950 feet BGS. The water level in Zone 1 is up to 90 feet lower than Zones 2 through 5 which generally track together and within 8 feet of each other. Water levels in Zone 6 are 8 to 10 feet above Zones 2 through 5. Groundwater level in Zone 1 shows the greatest seasonal fluctuation and increased about 6 feet over the past water year. Groundwater levels in Zones 2 through 5 show only slight seasonal fluctuations and decreased 4 to 6 feet over the past water year. Groundwater levels in Zone 6 show very little seasonal fluctuation and decreased about 2 feet over the past water year. Ground water levels in Zone 1 have generally increased 20 feet over the past 12 years. Water levels in zones 2 through 6 have increased 4 to 8 feet over the same period.

SECTION 3
GROUNDWATER AND REPLENISHMENT WATER QUALITY

This section discusses the vertical and horizontal distribution of water quality constituents in the CBWCB based on data from WRD's monitoring wells, the quality of water from purveyor's production wells, and the quality of source waters used for CBWCB groundwater replenishment. Regional groundwater quality maps summarize water quality constituents of interest in WRD nested monitoring wells and purveyors production wells.

Comparison of water quality results to various regulatory standards are made throughout this section. A brief discussion describing the regulatory standards used in the report follows. A Primary Maximum Contaminant Level (MCL) is an enforceable drinking water standard that the California Department of Public Health (CDPH) establishes after health effect, risk assessment, detection capability, treatability, and economic feasibility are considered. A secondary maximum contaminant level (SMCL) is established for constituents that impact aesthetics of the water, such as taste, odor, and color, and do not impact health. Various other criteria are used in discussing water quality. A Public Health Goal (PHG) is an advisory level that is developed by the Office of Environmental Health Hazard Assessment (OEHHA) after a thorough review of health effects and risk assessment studies. A Notification Level (NL) and Response Level (RL) are non-enforceable health-based advisory levels established by the CDPH based on preliminary review of health effects studies for which enforceable levels have not been established. NLs and RLs replaced State Action Levels effective January 1, 2005 per California Health and Safety Code Section 116455. It should also be noted that constituents with NLs often are considered unregulated contaminants for which additional monitoring may be required to determine the extent of exposure before MCLs and PHGs are established.

3.1 QUALITY OF GROUNDWATER

The focus of this section is groundwater quality from samples collected from WRD nested monitoring wells and purveyors production wells. Section 1 previously described the value of data from aquifer specific nested monitoring wells and these data provide the most valuable insight into CBWCB groundwater quality. Semi-annual groundwater samples from WRD nested wells were collected and submitted to a CDPH certified laboratory for analytical testing for general water quality constituents and known or suspected natural and man-made contaminants. **Table 3.1** presents water quality analytical results from WRD nested monitoring wells in the Central Basin during water year 2011-12. **Table 3.2** presents water quality analytical results from WRD nested monitoring wells in the West Coast Basin during water year 2011-12. Supplementing the data from the nested monitoring well network, data for CBWCB production wells were obtained from the CDPH based on results submitted over the past three years by purveyors for their Title 22 compliance.

Water quality maps for nested monitoring wells and production wells are presented for twelve water quality constituents and emerging contaminants of concern (COCs). The twelve constituents include Total Dissolved Solids (TDS), iron, manganese, nitrate, chloride, trichloroethylene (TCE), tetrachloroethylene (PCE), arsenic, perchlorate, hexavalent chromium, 1,4-dioxane, and 1,2,3-trichlorlpropane (1,2,3-tcp). The maps illustrate areal and vertical differences in water quality between the different aquifers and compare the aquifer specific water quality data from WRDs nested monitoring wells to the averaged water quality data collected from purveyor's production wells.

3.1.1 Total Dissolved Solids (TDS)

TDS is a measure of the total mineralization of water and is indicative of general water quality. In general, the higher the TDS, the less desirable a given water supply is for beneficial uses. The SMCL for TDS ranges from 500 milligrams per liter (mg/L), which is the recommended level, to an upper level of 1,000 mg/L, and to 1,500 mg/L, which is the level allowed for short-term use. WRD uses the 1,000 mg/L upper level SMCL for water quality comparisons and analyses.

WRD nested monitoring well data for water year 2011-12 indicate relatively low TDS concentrations for groundwater in the deeper producing aquifers of the Central Basin (**Figure 3.1**). In the Central Basin, 28 out of 31 (90%) WRD nested monitoring wells had a Silverado zone with TDS concentrations below the SMCL of 1,000 mg/L and 25 out of 31 (81%) were below 500 mg/L. In contrast, West Coast Basin nested monitoring well data show generally higher TDS concentrations. Twelve out of 20 (60%) nested wells had a Silverado zone with TDS below 1,000 mg/L, and 8 out of 20 (40%) had a zone below 500 mg/L. Elevated TDS concentrations in the West Coast Basin are observed along the coastal margin from Redondo Beach to Los Angeles International Airport (LAX), in the Inglewood area, and the Dominguez Gap area.

Figure 3.2 presents CDPH water quality data for TDS in production wells across the CBWCB for the period spanning water years 2009-12. In the Central Basin, TDS was below the Upper Level SMCL in 231 out of 236 wells (98%) and 172 wells (73%) were below 500 mg/L.

Data from West Coast Basin production wells indicate that most drinking water wells had TDS concentrations below 1000 mg/L. TDS did not exceed the Upper Level SMCL in 27 out of 30 wells (90%) tested and 20 wells (67%) were below 500mg/L. Production wells with higher levels of TDS are generally located along the coastal margin of the West Coast Basin while further inland production wells had generally lower TDS. The elevated TDS may be caused by seawater intrusion, connate brines, or possibly oil field brines.

3.1.2 Iron

Iron occurs naturally in groundwater. Additionally, it is leached from minerals or steel pipes. Sufficient concentrations of iron in water can affect the water's suitability for domestic or industrial purposes. Some industrial processes cannot tolerate more than 0.1 mg/L. The SMCL for iron in drinking water is 0.3 mg/L. High concentrations of iron in water stains plumbing fixtures and clothing, encrusts well screens, clogs pipes, and may impart a salty taste. While these problems are recognized, iron is considered an

essential nutrient, important for human health, and does not pose significant health effects except in special cases.

Nested monitoring well data do not indicate iron to be a widespread water quality problem in groundwater in the CBWCB. **Figure 3.3** shows iron data in WRD nested monitoring wells for water year 2011-12. In the Central Basin, iron was below the SMCL in Silverado zones in 28 out of the 31 (90%) nested wells tested. In zones above or below the Silverado, iron was detected above the SMCL in only 5 out of the 31 (16%) Central Basin nested wells.

At nested monitoring wells in the West Coast Basin, elevated iron occurs. Iron was below the SMCL in Silverado zones in 18 out of 20 well locations (90%). Nine well locations had iron concentrations above the SMCL in zones above or below the Silverado.

Figure 3.4 presents CDPH water quality data for iron in production wells across the CBWCB for the period spanning water years 2009-12. Data from CDPH indicate 211 of 236 (89%) Central Basin production wells tested have iron concentrations in groundwater below the SMCL. In the West Coast Basin, 20 production wells out of 30 (67%) tested have iron concentrations below the SMCL.

3.1.3 Manganese

Manganese, like iron, is also naturally occurring and is objectionable in water in the same general way as iron. Stains caused by manganese are black and are more unsightly and harder to remove than those caused by iron. The SMCL for manganese is 50 micrograms per liter (µg/L). Like iron, it is considered an essential nutrient for human health.

Manganese concentrations in the WRD nested monitoring wells (**Figure 3.5**) exhibit widespread vertical and horizontal variations across the CBWCB. In the southern portion of the basin, elevated manganese typically occurs in shallower aquifers above the Silverado producing zones. In the northern portion of the Central Basin, manganese is present in shallow zones, the Silverado zones, and the deeper zones. Nine out of 31

(29%) nested monitoring wells in the Central Basin had a zone with manganese concentrations exceeding the SMCL in the Silverado Aquifer. In the West Coast Basin manganese was above the SMCL in the Silverado aquifer zones of nested monitoring wells at 11 out of 20 nested wells (55%).

Figure 3.6 presents CDPH water quality data for manganese in production wells across the CBWCB for the period spanning water years 2009-12. In the Central Basin, data show a number of wells having elevated manganese concentrations with 44 out of 236 production wells (19%) tested exceeding the SMCL. The production wells with elevated manganese are not limited to a specific area but tend to be widespread. There does appear to be an area around and south of the Montebello Forebay Spreading Grounds and a second area at the southern end of the Central Basin where manganese is consistently below the SMCL or not detected at all. In the West Coast Basin 15 out of 30 production wells (50%) tested had concentrations of manganese exceeding the SMCL.

3.1.4 Chloride

Chloride at elevated levels causes water to taste salty and chloride is the characteristic constituent used to identify seawater intrusion. The recommended level SMCL for chloride is 250 mg/L with an upper level SMCL of 500 mg/L, and a short term SMCL of 600 mg/l. **Figure 3.7** presents water quality data for chloride in WRD nested monitoring wells in the CBWCB during water year 2011-12. In the Central Basin the Silverado zones of the nested monitoring wells contain generally low chloride concentrations. No Central Basin nested wells exceeded the upper level SMCL in the Silverado aquifer. In the West Coast Basin chloride concentrations exceeded the upper level SMCL limit in the Silverado zones in 7 of the 20 (35%) nested wells, primarily in areas where seawater intrusion could be the source, or from sources yet to be identified. Numerous wells in the West Coast Basin show chloride impacts above and below the Silverado aquifer.

Figure 3.8 presents CDPH water quality data for chloride in production wells in the CBWCB for the period spanning water years 2009-12. Chloride was not detected above the SMCL in any of the Central Basin production wells. In the West Coast Basin,

available CDPH data indicate that one production well on the west side of the basin had chloride concentrations above the recommended level SMCL.

3.1.5 Nitrate

CDPH Primary MCLs limit two forms of nitrogen in drinking water, nitrate and nitrite. Nitrate cannot exceed a concentration of 45 mg/L (measured as Nitrate), corresponding to 10 mg/L nitrate as nitrogen. Nitrite is limited to 1 mg/L as nitrogen. The combined total of the nitrate and nitrite, measured as total nitrogen cannot exceed 10 mg/L. These constituents are regulated because they present possible acute health risks and can cause anoxia in infants. When consumed in excess of these limits, they reduce the uptake of oxygen causing shortness of breath, lethargy, and a bluish color. Nitrate itself is not harmful; however, it can be converted back to nitrite, which can be harmful.

Nitrate concentrations in groundwater are a concern because their presence indicates that a degree of contamination has occurred due to the degradation of organic matter. Native groundwater typically does not contain nitrate. It can be introduced into groundwater from agricultural practices such as fertilizing crops or lawns and leaching of animal wastes. Low concentrations of nitrogen compounds, including nitrate and nitrite, are in treated recycled water below regulatory and permitted levels and may contribute nitrate to groundwater. Typically, organic nitrogen and ammonia are the initial byproducts of the decomposition of human or animal wastes. Upon oxidation, the organic nitrogen and ammonia are converted first to nitrite and then nitrate ions in the subsurface. A portion of the nitrate and nitrite are converted to nitrogen gas and hence, are returned to the atmosphere.

Figure 3.9 presents nitrate (as nitrogen) water quality data for nested monitoring wells in the CBWCB during water year 2011-12. In the Central Basin, nitrate did not exceed the MCL in the Silverado zone of any nested monitoring well. Nitrate above the MCL was limited to the shallowest zones at 2 of the 31 (7%) nested well locations. Nested monitoring wells in the very near vicinity of the Montebello and Los Angeles Forebay areas typically have nitrate in upper zones. Some wells downgradient from the

Montebello Forebay have middle zones above detection limits but below the MCL. Nested wells more distant from the forebay areas do not generally have detectable concentrations of nitrate. The detectable but relatively low concentrations of nitrate at and near the forebay areas may be due to the local water and/or recycled water component of recharge at the spreading grounds. The generally widespread shallow occurrences of nitrate around the Central Basin may be attributed to local surface recharge impacted by agricultural activities prior to extensive land development.

In the West Coast Basin nested monitoring wells, nitrate was present above the MCL in the shallowest zones of 2 out of the 20 (10%) nested monitoring wells. Nitrate did not exceed the MCL in the Silverado aquifer. Similar to the Central Basin, shallow occurrences of nitrate with deeper zones below detection limits may be attributable to local surface recharge impacted by agricultural activities prior to extensive land development.

Figure 3.10 presents CDPH water quality data for nitrate in production wells across the CBWCB for the period spanning water years 2009-12. The nitrate MCL was exceeded in one Central Basin production well. The nitrate MCL was not exceeded in any production well in the West Coast Basin during the 2009-12 period.

3.1.6 Trichloroethylene (TCE)

TCE is a solvent used in metal degreasing, textile processing, and dry cleaning. Because of its potential health effects, it has been classified as a probable human carcinogen. The Primary MCL for TCE in drinking water is 5 µg/L. If present in water, it can be removed easily by common treatment processes, including air stripping or granular activated carbon.

TCE (**Figure 3.11**) was below the MCL in 29 out of 31 (94%) WRD nested monitoring well locations in the Central Basin. In the West Coast Basin, TCE was below the MCL in 19 out of 20 (95%) nested monitoring wells. No CBWCB nested well contained a detectable TCE concentration in the Silverado aquifer.

Figure 3.12 presents CDPH water quality data for TCE in production wells across the CBWCB the period spanning water years 2009-12. In the Central Basin, a total of 248 wells were tested for TCE. The data show that over the past three years, TCE was not detected in 194 of 248 (78%) of the production wells in the Central Basin. TCE was detected in 54 production wells and 17 of the 54 detections were above the MCL. Wells impacted by TCE are generally located in the northern portion of the Central Basin, within or near the Montebello and Los Angeles Forebay areas. In the West Coast Basin, TCE was not detected in any production wells.

3.1.7 Tetrachloroethylene (PCE)

PCE (also known as tetrachloroethylene, perc, perclene, and perchlor) is a solvent used commonly in the dry cleaning industry, as well as in metal degreasing and textile processing. Like TCE, PCE is a probable human carcinogen. The MCL for PCE in drinking water is 5 µg/L. Like TCE, PCE can be easily removed from water using common treatment processes.

During water year 2011-12, PCE (**Figure 3.13**) was detected at 7 out of 31 (23%) nested well locations tested. No detections were in a Silverado zone. PCE was not detected above the MCL at any nested well locations in the Central Basin or the West Coast Basin.

Figure 3.14 presents CDPH water quality data for PCE in production wells across the CBWCB for the period spanning water years 2009-12. In the Central Basin, PCE was below the detection limit in 221 out of the 279 (79%) production wells tested. PCE was detected in 58 production wells and 14 out of the 58 were above the MCL. Production wells with detectable PCE are primarily located within the vicinity of the Los Angeles and Montebello Forebays and extend southwestward and southward into the Central Basin Pressure Area. PCE was not detected in any production wells tested in the West Coast Basin.

3.1.8 Arsenic

Arsenic is an element that occurs naturally in the earth's crust and accordingly, there are natural sources of exposure. Natural sources of arsenic include weathering and erosion of rocks, deposition of arsenic in water bodies, and uptake of the metal by animals and plants. Consumption of food and water are the major sources of arsenic exposure for the majority of U.S. citizens. Over 90% of commercial arsenic is used as a wood preservative in the form of chromate copper arsenate to prevent dry rot, fungi, molds, termites, and other pests. People may also be exposed from industrial applications, such as semiconductor manufacturing, petroleum refining, animal feed additives, and herbicides. Arsenic is classified as a known human carcinogen by the United States Environmental Protection Agency (USEPA), and also causes other health effects, such as high blood pressure and diabetes. The CDPH established a primary MCL of 10 µg/L for arsenic.

Figure 3.15 presents water quality data for arsenic in WRD nested monitoring wells during water year 2011-12. Arsenic concentrations greater than the MCL in the Central Basin were found at 10 out of 31 (32%) nested wells and three (9%) Central Basin wells exceeded the MCL in the Silverado aquifer. In the West Coast Basin, arsenic was detected above the MCL at 8 out of 20 (40%) nested monitoring well locations, five (25%) were in a Silverado aquifer zone.

Figure 3.16 presents CDPH water quality data for arsenic in production wells across the CBWCB for the period spanning water years 2009-12. Ten production wells out of 235 (4%) tested in the Central Basin contained arsenic concentrations above the MCL. Arsenic did not exceed the MCL in any of the West Coast Basin production wells tested.

3.1.9 Perchlorate

Perchlorate is used in a variety of defense and industrial applications, such as rockets, missiles, road flares, fireworks, air bag inflators, lubricating oils, tanning and finishing leather, and the production of paints and enamels. Under certain conditions perchlorate is also reported to occur naturally in groundwater (Trumpolt, 1995). When ingested, it can inhibit the proper uptake of iodide by the thyroid gland, which causes a decrease in

hormones for normal growth and development and normal metabolism. In October 2007, the CDPH finalized a new primary MCL of 6 µg/L for perchlorate.

Figure 3.17 presents perchlorate water quality data for WRD nested monitoring wells during water year 2011-12. In the Central Basin, perchlorate was detected in 16 nested monitoring wells. Six of the detections were in Silverado zones. Perchlorate was not detected above the MCL in the Silverado zone of any Central Basin nested monitoring well. In the West Coast Basin perchlorate was detected in 6 nested monitoring wells and was above the MCL in two nested monitoring wells. Perchlorate was not detected in the Silverado zone of any nested monitoring well in the West Coast Basin.

Figure 3.18 presents CDPH water quality data for perchlorate in production wells across the CBWCB for the period spanning water years 2009-12. Fourteen production wells out of 244 (6%) sampled had detectable perchlorate in the Central Basin, 2 production wells had perchlorate concentrations above the MCL. Perchlorate was not detected in any of the West Coast Basin production wells sampled.

3.1.10 Hexavalent Chromium

Hexavalent chromium or chrome 6 is one of two forms of the metal chromium along with trivalent chromium or chrome 3. Together, these forms of chromium are designated “total chromium”. The MCL for total chromium is 50 µg/L. Both forms of chromium occur naturally in groundwater and are also introduced to soil and groundwater through disposal practices from commercial and industrial operations. Only hexavalent chromium is considered a health risk at naturally occurring levels. It has been known to increase cancer risk when inhaled and recently shown to increase cancer risk if ingested. CDPH has established a PHG at 0.002 µg/L for hexavalent chromium and is developing an MCL. As a result of these recent regulatory activities, WRD has conducted basinwide baseline sampling for hexavalent chromium to make an assessment of the general distribution and threat of both the natural and commercial/industrial occurrence and distribution of this emerging chemical of concern.

Figure 3.19 shows hexavalent chromium concentrations in WRD nested monitoring wells in the CBWCB. In the Central Basin, 28 out of 31 (90%) nested well locations had less than 5 µg/L of hexavalent chromium in all zones. Concentrations greater than 5 µg/L were limited to shallow zones at three nested wells, all located in or near the Los Angeles Forebay. In the West Coast Basin, hexavalent chromium was detected at less than 5 µg/L or below detection in 19 out of 20 (95%) nested monitoring wells. One nested well in the West Coast Basin had hexavalent chromium between 5 and 10 µg/L in the shallowest zone.

Figure 3.20 shows hexavalent chromium in CBWCB production wells from limited sampling between 2009 and 2012. Over the three year period, 63 production wells were sampled for hexavalent chromium. Hexavalent chromium was not detected in 53 out of 63 (84%) production wells. Ten Central Basin production wells had detectable hexavalent chromium, six between the detection limit and 5 µg/L, and four between 5 and 10 µg/L.

3.1.11 1,4-Dioxane

The chemical 1,4-dioxane has been used as a stabilizer for solvents (in particular, 1,1,1- trichloroethane) and as a solvent itself in a number of industrial and commercial applications. The chemical causes cancer in laboratory animals and is reasonably anticipated to be a human carcinogen. In 1988, 1,4-dioxane was added to California's list of chemicals known to cause cancer. Additionally, the USEPA also considers it to pose a cancer risk. 1,4-dioxane is considered an emerging contaminant, and in CDPH's draft regulations for groundwater replenishment using recycled water for indirect potable reuse, it's a chemical for which additional monitoring may be appropriate. CDPH has a drinking water notification level of 1 µg/L for 1,4-dioxane.

WRD collected two rounds of samples for 1,4-dioxane during WY 2011-12 to determine whether this emerging contaminant of concern is present at significant levels in the CBWCB. **Figure 3.21** shows the results of 1,4-dioxane sampling in WRD nested monitoring wells. In the Central Basin, 1,4-dioxane was detected a 12 out of 30 nested monitoring well locations between 1 and 10 µg/L and was detected in a Silverado zone at

6 nested well locations. Most of the Central Basin detections are in and around the Montebello Forebay area. In the West Coast Basin, 1,4-dioxane was detected at one nested monitoring location in the shallowest zone.

Figure 3.22 shows 1,4-dioxane in CBWCB production wells sampled between 2009 and 2012. In the Central Basin, 1,4-dioxane was detected in 86 out of 235 production wells sampled. In West Coast Basin, 1,4-dioxane was not detected in any of the 28 production wells sampled.

3.1.12 1,2,3-Trichloropropane

1,2,3-trichloropropane (1,2,3-tcp) was used historically as a paint and varnish remover, cleaning and degreasing agent, and a cleaning and maintenance solvent. Additionally, it has various industrial uses and historic pesticide uses. In 1999, CDPH established a NL for 1,2,3-tcp of 0.005 micrograms per liter (µg/L). CDPH is currently developing an MCL for 1,2,3-tcp, which is expected to be released for public comment in the latter half of 2013 or early 2014, as part of the formal regulations adoption process. 1,2,3-tcp is routinely analyzed along with common VOCs, however the typical laboratory detection limit (0.5 µg/L) is three orders of magnitude greater than the NL . Modified laboratory methods are available to achieve a lower level of detection at or near the NL.

WRD collected two rounds of samples and performed low-level analysis for 1,2,3-tcp during WY 2011-12 to determine whether this emerging contaminant of concern is present at significant levels in the CBWCB. **Figure 3.23** shows the results of low-level 1,2,3-tcp sampling in nested monitoring wells. In the Central Basin, 1,2,3-tcp was detected in shallow zones at two nested monitoring locations. No 1,2,3-tcp was detected by low-level analysis in the West Coast Basin production wells.

Figure 3.24 shows 1,2,3-tcp in CBWCB production wells sampled between 2009 and 2012. No 1,2,3-tcp was detected in 84 production wells tested. Only 9 of the samples were tested using the lower level analysis; however, viewed together with the comprehensive results of lower level analysis in WRD nested monitoring wells, it

appears that there is not a significant threat to CBWCB groundwater from 1,2,3-tcp.

3.2 QUALITY OF REPLENISHMENT WATER

This section discusses water quality data for key water quality constituents in WRD replenishment water and local surface water. Although numerous constituents are monitored, the constituents discussed and reported here are the ones found to be most prevalent at elevated levels or are of current regulatory interest. The data are classified according to their sources. The key water quality parameters of this discussion are the same as those discussed for the WRD nested monitoring wells: TDS, iron, manganese, nitrate, chloride, TCE, PCE, arsenic, perchlorate, hexavalent chromium, and 1,4-dioxane. Monitoring of these constituents is necessary for an understanding of the general chemical nature of the recharge source, and its suitability for replenishing the groundwater basins.

3.2.1 Quality of Imported Water

Both treated and untreated imported water are used for groundwater recharge in the CBWCB. Only treated imported water is used at the seawater barriers. Treated imported water meets all drinking water standards and is suitable for direct injection. Average water quality data for treated imported water are presented in **Table 3.3**. Untreated imported water ("raw water") is used for recharge at the Montebello Forebay spreading grounds. The untreated imported water can be State Project Water, Colorado River Water, or a blend of the two imported waters.

In 2011 the average TDS concentration of untreated Colorado River water was 576 mg/L and the average TDS concentration of untreated State Project Water was 213 mg/L.

Average concentrations of nitrate were below detection limits in untreated Colorado River Water and the average nitrate concentration of State Project Water was 0.4 mg/L. Recently and historically, both Colorado River and State Project Water nitrate concentrations have remained far below the MCL.

The average iron and manganese concentrations of untreated Colorado River Water were below the detection limit. The average iron concentration in State Project Water was 120 µg/L and manganese was below detection limits. Both Colorado River and State Project Water iron and manganese concentrations have historically been below the MCL.

The average chloride concentrations of Colorado River Water and State Project Water have not changed significantly over the past several years. State Project Water and Colorado River Water chloride concentrations have historically been below the SMCLs for chloride.

According to the Metropolitan Water District of Southern California (MWD), TCE and PCE have not been detected in Colorado River Water or State Project Water during the calendar year 2011 reporting period. Perchlorate was below the MCL in untreated Colorado River Water and was not detected in State Project Water during calendar year 2011. Hexavalent chromium was detected at relatively low levels in imported waters.

3.2.2 Quality of Recycled Water

Recycled water is used for groundwater recharge in the CBWCB through spreading grounds percolation and barrier injection. In the Montebello Forebay, recycled water from the Whittier Narrows Water Reclamation Plant (WRP), San Jose Creek East WRP, San Jose Creek West WRP, and Pomona WRP is diverted into spreading basins where it percolates into the subsurface. The water quality from these WRPs is carefully controlled and monitored, as required by permits, and typically shows little variation over time. Average water quality data from these WRPs is shown in **Table 3.3**. All constituents listed have remained stable over recent water years. Furthermore, TCE, PCE, and perchlorate have either not been detected or have been detected well below their respective MCLs in recycled water from the four WRPs.

Recycled water from the West Basin Municipal Water District WRP undergoes advanced treatment using microfiltration, reverse osmosis, ultraviolet light, and advanced oxidation with hydrogen peroxide, and is blended with imported water, then injected at the West

Coast Barrier. This water is treated to comply with all drinking water standards and is suitable for direct injection. The blend of recycled water and imported water is injected to prevent the intrusion of seawater and to replenish the groundwater basins. The West Basin Municipal Water District received approval from the Los Angeles Regional Water Quality Control Board (LARWQCB) to use up to 100 percent recycled water at the West Coast Barrier. **Table 3.3** presents average water quality data for this injected recycled water.

The Alamitos Seawater Barrier receives a blend of treated imported water and recycled water from the Leo J. Vander Lans Treatment Facility, owned by WRD. The recycled water is disinfected tertiary effluent from the Long Beach Water Reclamation Plant of the County Sanitation Districts of Los Angeles County (CSDLAC) which is further treated with microfiltration, reverse osmosis, and ultraviolet light by WRD. The water meets drinking water quality standards and other stringent requirements of regulatory agencies for injection into a seawater barrier. This project began deliveries in October 2005. **Table 3.3** presents average water quality of the recycled water prior to blending with imported water.

Tertiary effluent from the City of Los Angeles Terminal Island Treatment Plant (TITP) is treated at the Advanced Water Treatment Facility (AWTF) with microfiltration, reverse osmosis, and disinfection with chlorine to produce recycled water. The water meets drinking water quality standards and other stringent requirements by regulatory agencies for injection into a seawater barrier. Deliveries began in February 2006. The TITP AWTF was shut down for upgrades and extensive maintenance from November 1, 2011 through December 21, 2012. **Table 3.3** presents average water quality data of the recycled water from the TITP AWTF.

3.2.3 Quality of Stormwater

Stormwater infiltrates to some degree throughout the District. It is also intentionally diverted from the major storm channels and percolated along with imported and recycled water at the Montebello Forebay Spreading Grounds. Periodic stormwater quality

analyses have been performed by LACDPW throughout the history of operations at the Montebello Forebay Spreading Grounds. Average stormwater quality data for water year 2011-12 are presented on **Table 3.3**. The average TDS, manganese, nitrate, chloride, arsenic, TCE, PCE, and perchlorate in stormwater spread in the Montebello Forebay are relatively low. Metals including iron and lead exceeded drinking water standards. However, due to elevated turbidity it is possible that sediment suspended in the stormwater samples were dissolved by the nitric acid used as a preservative between sample collection and analysis, which would result in the observed metals concentrations.

3.3 MINERAL CHARACTERISTICS OF GROUNDWATER IN THE CBWCB

Major minerals data obtained from laboratory analyses were used to characterize groundwater from discrete vertical zones of each WRD well (**Table 3.4**). Research by the USGS has provided three distinct groupings of groundwater compositions. Group A groundwater is typically calcium bicarbonate or calcium bicarbonate/sulfate dominant. Group B groundwater has a typically calcium-sodium bicarbonate or sodium bicarbonate character. Group C has a sodium chloride character. A few of the WRD wells yield groundwater samples which do not fall into one of the three major groups and are classified separately in Group D.

Groundwater from Group A likely represents recent recharge water containing a significant percentage of imported water. Groundwater from Group B represents older native groundwater replenished by natural local recharge. Groundwater from Group C represents groundwater impacted by seawater intrusion or connate saline brines. **Table 3.4** lists the groundwater group for each WRD nested monitoring well. Comparison of groundwater groups with well locations indicates that, in general, Group A groundwater is found at and immediately downgradient from the Montebello Forebay Spreading Grounds in all but the deepest zones. Group B groundwater is found farther down the flow path of the Central Basin and inland of the salt water wedge and injected water in the West Coast Basin. Group C water is generally found near the coastlines or in deeper zones. Several wells, grouped as “Other” on **Table 3.4**, exhibit a

chemical character range different from Group A, B, and C ranges and represents unique waters not characteristic of the dominant flow systems in the basins. The USGS is conducting ongoing research on trace element isotopes in water from these wells to identify their hydrogeologic source(s).

The major mineral compositions of water from the WRD nested monitoring wells sampled this water year have not changed substantially from previous years. It is expected that continued analysis will show gradual changes in major mineral compositions over time, as older native water is extracted from the basins and replaced by younger naturally and artificially replenished water.

SECTION 4
SALTS AND NUTRIENTS IN GROUNDWATER

In February 2009, the State Water Resources Control Board (SWRCB) adopted Resolution No. 2009-0011, which established a statewide Recycled Water Policy (Policy). This Policy encourages increased use of recycled water and local stormwater. It also requires local water and wastewater entities, together with local salt/nutrient contributing stakeholders to develop a Salt and Nutrient Management Plan (SNMP) for each groundwater basin in California by May 2014. Each SNMP will be adopted by the Regional Water Quality Control Board as a Basin Plan Amendment.

A SNMP Workplan was jointly prepared by the CBWCB stakeholders and approved by the LARWQCB in December 2011. The CBWCB stakeholders are currently preparing technical memorandums discussing major elements of the SNMP and these technical memorandums will be used to prepare the SNMP. A draft SNMP is expected to be submitted to the Los Angeles Regional Water Quality Control Board (LARWQCB) for their review by mid-2013. Additional information regarding the CBWCB SNMP can be found at *http://www.wrd.saltnutrient.com*.

The objective of the SNMP is to manage salts and nutrients from all sources "… on a basin-wide or watershed-wide basis in a manner that ensures attainment of water quality objectives and protection of beneficial uses." Future groundwater quality and assimilative capacity will be calculated based on predicted salt and nutrient loading through 2025. Accordingly, current and proposed projects through 2025 will be identified and used to develop strategies to manage salt and nutrient loading. Ultimately, the SNMP will include the following:

- Stormwater and Recycled Water Use/Recharge Goals and Objectives,
- Characterization of the Hydrogeologic Conceptual Model/Water Quality,
- Estimation of Current and Future Salt and Nutrient Loading,
- A Basin-Wide Water Quality Monitoring Plan,
- Estimation of Salt and Nutrient Assimilative Capacity,
- An Anti-degradation Analysis,

- Implementation Measures to Manage Salt and Nutrient Loading, and
- California Environmental Quality Act (CEQA) Analysis of the SNMP.

The RGWMP and the groundwater data documented in annual RGWMRs serve as components of the basin-wide monitoring plan that is required by the Policy and is consistent with the SNMP. Historical trend graphs at key monitoring well locations, as described in the following sections, were used to assess S/N concentrations in groundwater.

4.1 KEY SALT AND NUTRIENT MONITORING LOCATIONS

The RGWMP is a comprehensive program to monitor the health of the CBWCB. As discussed in the SNMP Workplan and technical memorandums, TDS, chloride, and nitrate were identified as the most appropriate indicators of salts and nutrients in the CBWCB. These constituents, as well as other constituents of concern identified in the SNMP, are monitored in all the WRD nested monitoring wells as well as production wells located throughout the CBWCB.

To directly address the components of the SNMP, ten key monitoring well locations in the CBWCB were designated to establish past and current baseline S/N concentrations in groundwater with respect to applicable water quality objectives (WQOs). As established in the Basin Plan, the WQO for TDS in the Central Basin is 700 mg/L and 800 mg/L in the West Coast Basin; the WQO for chloride in the Central Basin is 150 mg/L and 250 mg/L in the West Coast Basin.

As discussed previously, ten existing nested well locations were selected because they provided S/N water quality throughout the most critical areas of the basins, including four sub-areas of the CBWCB; three in the Montebello Forebay, one in the Los Angeles Forebay, three in the Central Basin Pressure Area, and three in the West Coast Basin. Some of these wells monitor basin water quality proximate to large water recycling projects, particularly groundwater recharge projects, while other wells focus on water quality in distal portions of the basin away from projects. Monitoring locations in the

Montebello and Los Angeles Forebays target groundwater where connectivity with adjacent surface waters is expected.

The ten key well locations are shown on Figure 1.3. These ten locations include 51 individual monitoring zones screened in specific CBWCB aquifers. The depths and aquifer designation for these key monitoring wells are included in Table 1.1.

4.2 SALT AND NUTRIENT MONITORING RESULTS AND EVALUATION

Concentrations of salts and nutrients are closely monitored in all WRD nested monitoring wells and purveyor production wells and results are discussed in Section 3. Concentrations of TDS **(Figures 3.1 and 3.2)**, chloride **(Figures 3.7 and 3.8)**, and nitrate **(Figures 3.9 and 3.10)** for all WRD nested monitoring wells sampled during WY 2011-12 are shown on maps and summarized along with other monitored constituents identified in **Tables 3.1 and 3.2**. TDS, chloride and nitrate in production wells, along with 9 other constituents sampled WYs 2009-12 are presented on maps and discussed. Trends for TDS and chloride in the ten key wells discussed in Section 4.1 are plotted on graphs and compared to SMCLs and WQOs (**Figures 4.1 through 4.10**). Nitrate is generally not detected in the monitoring wells or is at very low concentrations and thus, trend graphs are not plotted at this time but will continue to be monitored and reported in Section 3 of the RGWMRs.

In the Montebello Forebay, TDS and chloride concentration trends for the key wells Rio Hondo #1, Pico #2, and Norwalk #2 are presented on **Figures 4.1 through 4.3,** respectively. TDS and chloride concentrations have historically been and remain below the SMCLs and WQOs. Several middle zones at Rio Hondo #1 and Pico #2 show slight increasing trends for TDS and chloride while corresponding shallow zones fluctuate more and have decreased historically. Otherwise, trends do not indicate significant increasing S/N concentrations in the Montebello Forebay.

The Los Angeles Forebay key well is Huntington Park #1 (4 zones), and TDS and chloride concentration trend graphs are shown on **Figure 4.4**. The deeper two zones of this key well show stable trends for TDS and chloride below the SMCLs and WQOs. The

upper two zones may indicate slight increases in TDS and chloride over the past four or five years, but are still below the SMCLs. Chloride concentrations in the upper two zones are below WQOs, but TDS concentrations currently exceed the WQO of 700 mg/L.

In the Central Basin Pressure Area, key wells include South Gate #1 (5 zones), Willowbrook #1 (4 zones), and Long Beach #6 (6 zones) with TDS and chloride trends shown on **Figures 4.5 through 4.7** respectively. At the South Gate #1 well, the four deeper zones show TDS and chloride concentrations with flat trends below the SMCLs and WQOs. TDS and chloride concentrations in South Gate #1 zone 5 are increasing but still below the SMCLs and typically below WQOs. At Willowbrook #1 and the upper four zones at Long Beach #6, the data show TDS and chloride concentrations below the SMCLs and WQOs. In the two deepest zones of Long Beach #6, TDS is typically detected at the WQO of 700 mg/L while chloride remains very far below the SMCL and WQO.

In the West Coast Basin, key wells include PM-4 Mariner (4 zones), Carson #1 (4 zones), and Hawthorne #1 (6 zones). TDS and chloride trends are presented on **Figures 4.8 through 4.10**, respectively. PM-4 Mariner zones 1, 3, and 4 show TDS and chloride concentrations with flat trends below the SMCLs and WQOs. However, PM-4 Mariner zone 2 shows TDS and chloride concentrations well above the SMCLs and WQOs and trends have been increasing since monitoring began around 1997. This is due to historic seawater intrusion. At the Carson #1, the three deeper zones show TDS and chloride concentrations trending flat below the SMCLs and WQOs. TDS and chloride concentration trends in Carson #1 zone 4 show a decreasing trend and are below SMCLs and WQOs. At Hawthorne #1, the four deeper zones show TDS and chloride concentrations with flat trends below the SMCLs. Hawthorne #1 zone 5 shows that TDS and chloride have been increasing over the past 12 years and while chloride is still well below the SMCL, TDS is now at or above the SMCL. Hawthorne #1 zone 6 shows that TDS and chloride have been decreasing over the past 12 years and while TDS is still above the SMCL, chloride is now at or below the SMCL. The two shallowest zones of Hawthorne #1 have TDS and chloride concentrations that typically exceed the WQOs and the two deepest zones have TDS that is detected at the WQO of 800 mg/L or slightly

exceed it. Chloride concentrations in zones 1 through 4 of Hawthorne #1 are well below the WQO of 250 mg/L.

4.3 IMPLEMENTATION MEASURES TO MANAGE SALT AND NUTRIENT LOADING

As summarized in the previous section, overall TDS and chloride concentrations are not significantly increasing at the 10 key nested monitoring locations in the CBWCB. While a number of individual zones show increasing trends, a comparable number show decreasing trends. Notably, the two shallowest zones of nested well Rio Hondo #1 and the three shallowest zones at Pico #2, which are beneath and adjacent to Montebello Forebay recharge basins, fluctuate somewhat but show decreasing trends since 1998. The Los Angeles Forebay key well had shallow zones with variable TDS at and just above the WQO, but deeper wells did not show increasing TDS. In the Central Basin Pressure Area, key well South Gate #1 showed the shallowest zone TDS and chloride increasing with the four lower zones stable. These shallow zone increases are possibly due to localized surface infiltration rather than artificial replenishment loading. West Coast Basin key nested monitoring wells PM-4 Mariner and Hawthorne #1 had zones with increasing trends attributed to historic seawater intrusion.

As discussed in the technical memorandums that have been prepared for the SNMP, TDS and chloride concentrations in the Central Basin are not expected to exceed WQOs in the future and current and proposed projects in the basin are not expected to increase S/N concentrations above the assimilative capacity. Some of these projects in the Central Basin include the increased use of advanced treated recycled water for injection at the Alamitos Gap Seawater Intrusion Barrier and the increased use of recycled water at the Montebello Forebay Spreading Grounds through the implementation of the Groundwater Reliability Improvement Project.

In the West Coast Basin, average TDS and chloride concentrations for the entire basin exceed WQOs due to historical seawater intrusion. However, these concentrations are decreasing and are anticipated to achieve WQOs in the future due to implementation

measures such as the increased use of recycled water for injection at the West Coast Basin and the Dominguez Gap Seawater Intrusion Barriers and the continued operation of the desalters.

Nitrate concentrations in the CBWCB remain low and are not expected to increase above the MCL in the future. Overall, the data show that salt and nutrient concentrations in groundwater are stable as a result of past and current groundwater management practices. Based on the existing water quality of the CBWCB and the future groundwater quality as estimated from the SNMP development process, existing and planned implementation measures appear adequate to manage salt and nutrient loading on a sustainable basis.

SECTION 5
SUMMARY OF FINDINGS

This Regional Groundwater Monitoring Report was prepared by WRD to provide a comprehensive review of groundwater conditions in the CBWCB during water year 2011-12. A summary of findings is presented below.

- Artificial replenishment activities combined with natural replenishment and controlled pumping have ensured a sustainable, reliable supply of groundwater in the CBWCB. Artificial replenishment water sources used by WRD include imported water from the MWD, recycled water from the CSDLAC, and recycled water with advanced treatment from WBMWD, the City of Los Angeles, and WRD's Leo J. Vander Lans water treatment facility.
- Groundwater levels (heads) are monitored continuously in the CBWCB during the year. The WRD nested monitoring wells show clear, significant differences in groundwater elevations between the various aquifers. The water level differences in the WRD nested monitoring wells reflect both hydrogeologic and pumping conditions in the CBWCB. Vertical head differences between 1 and 90 feet occur between zones above and within the producing zones. The greatest head differences between aquifers tend to occur in the Long Beach area of the Central Basin and the inland Gardena and Carson areas of the West Coast Basin, while the smallest differences occur in the Montebello Forebay recharge area, and the Torrance area which has merged aquifers.
- Basinwide hydrographs and groundwater elevations measured in nested monitoring wells and key production wells indicate overall decreases in Central Basin groundwater levels during water year 2011-12. Groundwater levels decreased over most of the Central Basin during water year 2011-12. Water levels decreased up to 21 feet and on average 14.5 feet in the unconfined Montebello Forebay, and remained stable or decreased up to 5 feet across the unconfined Los Angeles Forebay and western Central Basin Pressure Area. Groundwater levels decreased up to 81 feet in the Long Beach Pressure Area. Groundwater levels increased up to 3 feet in the

eastern Central Basin Pressure Area. Water levels did not change significantly over most the West Coast Basin during water year 2011-12, decreasing up to 2 feet inland of the West Coast Basin Barrier, but increasing up to 2 feet in the Carson and Dominguez Gap areas and up to 30 feet in the Gardena area. The average decrease over the WRD service area was 7.5 feet.

- Based on data obtained from WRD nested monitoring wells during water year 2011-12, the water quality associated with key constituents in groundwater differs both vertically between aquifers and horizontally across the CBWCB.
- TDS concentrations for WRD nested monitoring wells and production wells located in the Central Basin are relatively low. TDS concentrations for WRD nested monitoring wells and production wells located in the West Coast Basin are elevated in portions of the basin, primarily the coastal margin from Redondo Beach to LAX, and the Inglewood and Dominguez Gap areas. The elevated TDS concentrations may be caused by seawater intrusion, connate brines, or possibly oil field brines.
- The Secondary MCL for iron is 0.3 mg/L. Iron is generally present at low levels in most WRD nested monitoring wells. In the Central Basin concentrations were below the MCL in the Silverado Aquifer zone at 28 of 31 (90%) nested well locations. In the West Coast Basin iron concentrations were below the MCL in the Silverado Aquifer zone at 18 of 20 (90%) nested well locations. Iron was detected below the MCL in 211 of 236 (89%) production wells in the Central Basin and 20 out of 30 (67%) in the West Coast Basin tested.
- The Secondary MCL for manganese is 50 µg/L. Manganese is a natural groundwater contaminant and negatively impacts a number of wells in the CBWCB. Manganese concentrations exceed the MCL in the Silverado zones at 9 out of 31 (29%) nested monitoring wells in the Central Basin and at 11 out of 20 (55%) wells in the West Coast Basin. Manganese concentrations exceeded the MCL in 44 out of 236 (19%) production wells in the Central Basin and 15 out of 30 (50%) production wells sampled in the West Coast Basin
- Chloride concentrations are reasonably low in Central Basin monitoring wells and production wells, as well as in wells in the inland areas of the West Coast Basin. Some coastal areas of the West Coast Basin are impacted by high chloride

groundwater.

- The MCL for nitrate is 10 µg/L. Nitrate concentrations in WRD nested monitoring wells in the CBWCB are generally below MCLs. Concentrations approaching or exceeding the MCL (10 mg/L) tend to be limited to the uppermost zone at a particular nested well and are likely due to localized surface recharge. Concentrations above the MCL were not observed in the Silverado aquifer. CDPH data indicates that one Central Basin production well had nitrate over the MCL. No West Coast Basin production wells had nitrate greater than the MCL.
- The MCL for TCE in drinking water is 5 µg/L. TCE was below the MCL in 29 out of 31 (94%) of nested monitoring wells in the Central Basin and 19 out of 20 (95%) in the West Coast Basin. CDPH data indicate that TCE was detected in 54 production wells in the Central Basin during the period spanning water years 2009-12, 17 out of the 54 (31%) detections exceed the MCL. In the West Coast Basin, TCE was not detected in any production wells.
- The MCL for PCE in drinking water is 5 µg/L. PCE was not detected above the MCL in the Silverado zone in any nested monitoring wells in the Central Basin or the West Coast Basin. CDPH data indicate that PCE was detected in 58 production wells in the Central Basin during the period spanning water years 2009-12. A total of 14 out of the 58 (24%) of the detections exceeded the MCL. PCE was not detected in any of the West Coast Basin production wells.
- The MCL for arsenic, a naturally occurring mineral, in drinking water is 10 µg/L. Arsenic was below the MCL in the Silverado zones in 28 out of 31 (90%) nested monitoring wells in the Central Basin and 15 out of 20 (75%)wells in the West Coast Basin. During the 2009 through 2012 period, 10 production wells out of the 235 (4%) tested in the Central Basin had arsenic concentrations above the MCL. Arsenic was not detected above the MCL in any West Coast Basin production wells.
- The MCL for perchlorate in drinking water is 6 µg/L. Perchlorate was detected above the MCL in 2 out of 31 CBWCB nested monitoring wells. Perchlorate was detected and 2 out of 244 (less than 1%) production wells tested in the Central basin during the 2009 through 2012 period. Perchlorate was not detected in any production wells in the West Coast Basin.

- Hexavalent chromium occurs naturally in groundwater and can be introduced through industrial and commercial activities. It is an emerging groundwater contaminant of concern and the State of California is in the process of establishing an MCL for hexavalent chromium. In anticipation of this new regulatory standard WRD has collected basinwide groundwater samples from its nested monitoring well network. Results indicate relatively low concentrations of below 5 µg/L are generally widespread and are observed at many of the nested monitoring wells. Concentrations detected above 5 µg/L were limited to the shallowest zones at three Central Basin and one West Coast Basin nested well location(s). Sampling in the CBWCB for the 2009-12 period indicate no detectable hexavalent chromium in 53 out of 63 (84%) wells. Six production wells had between 1 and 5 µg/L and four production wells had between 5 and 10 µg/L of hexavalent chromium.
- The water quality associated with key constituents in untreated imported water used at the Montebello Forebay Spreading Grounds and treated imported water used at the Seawater Barriers remains good. Average TDS, hardness, iron, and manganese concentrations in imported water used for recharge comply with their respective MCLs. Meanwhile, TCE and PCE were not detected in either water source. Perchlorate was detected below the MCL in untreated Colorado River water and was not detected in untreated State Project water.
- The water quality associated with key constituents in recycled water used to recharge the Montebello Forebay Spreading Grounds and barrier injection wells also remains in compliance and is monitored regularly to ensure its safe use.
- Stormwater samples are collected and analyzed for water quality parameters by the LACDPW. Recent available data from water year 2011-12 show that average stormwater TDS concentrations are lower than most other sources of replenishment water and other constituent concentrations make stormwater a good replenishment source.
- Consistent with WRDs mission to provide, protect, and preserve high quality groundwater and as required by the State Water Resources Control Board, a Salt and Nutrient Management Plan is being developed and implemented to assure the long-term viability of groundwater in the CBWCB. Through the RGWMP, WRD key

nested monitoring wells have been selected to track water quality trends for TDS and chloride. Nitrate is also closely monitored. These data show that salt and nutrient loads in groundwater are stable as a result of past groundwater management practices and serve as baseline data for future groundwater basin management.

- As shown by the data presented herein, groundwater in the CBWCB is of generally good quality and is suitable for use by the pumpers in the District, the stakeholders, and the public. Groundwater from localized areas with marginal to poor water quality can still be utilized but may require treatment prior to being used as a potable source.

SECTION 6
FUTURE ACTIVITIES

WRD will continue to update and augment its Regional Groundwater Monitoring Program to best serve the needs of the District, the pumpers, and the public. Some of the activities planned or which utilize data generated from this program for the current water year 2011-12 are listed below.

- WRD will continue to maximize recycled water use at the Montebello Forebay Spreading Grounds without exceeding regulatory limits; recycled water is a high quality, reliable, and relatively low-cost replenishment water source. Due to the scarcity of discounted imported replenishment water deliveries from MWD, WRD has developed the Water Independence Now (WIN) initiative, which includes increasing the safe use of recycled water for groundwater recharge and reducing the reliance on imported water supplies.
- WRD will continue to maximize recycled water use at the West Coast Basin Barrier and will promote maximum permitted recycled water injection at the Dominguez Gap and Alamitos Gap Barriers. Extensive monitoring of these recycled water injection projects will be performed by WRD Staff to comply with applicable permit conditions and to track subsurface movement of the recycled water.
- WRD will continue to monitor the quality of replenishment water sources to ensure the CBWCB are being recharged with high-quality water.
- WRD continues refining the regional understanding of groundwater occurrence, movement, and quality. Water levels will be recorded using automatic dataloggers to monitor groundwater elevation differences throughout the year. Conductivity sensors are being utilized at selected locations which can track water quality changes to supplement the automated water level data. Telemetry technology is being tested which can send real-time water level data directly to the WRD office and post the information onto the WRD website.
- WRD is currently expanding its network of nested monitoring wells to get a better

understanding of groundwater levels and groundwater quality. Two new wells have been completed in the past year, and three additional wells are scheduled to be completed over the next year. Each year, WRD evaluates the need to fill data gaps in water level data, water quality data, and the hydrogeologic conceptual model with additional geologic data provided from drilling, construction, and monitoring of nested wells.

- WRD will continue to sample groundwater from nested monitoring wells, and analyze the samples for general water quality constituents. In addition, WRD will continue to focus on constituents of interest to WRD, the pumpers, and other stakeholders such as TCE, PCE, arsenic, perchlorate, and hexavalent chromium. Emerging chemicals of concern which have not been comprehensively monitored in the past could include 1,2,3-tcp, pesticides, n-nitrosodimethylamine (NDMA), 1,4-dioxane, pharmaceuticals and personal care products, and other emerging chemicals of concern.
- WRD staff will be working on refining the hydrogeologic conceptual model of the CBWCB using data from the RGWMP and other data to improve the framework for understanding the dynamics of the groundwater system and use as a planning tool.
- WRD will continue efforts under its Groundwater Contamination Prevention Program in order to minimize or eliminate threats to groundwater supplies. The Groundwater Contamination Prevention Program includes several ongoing efforts, including the Central Basin and West Coast Basin Groundwater Contamination Forum with key stakeholders including the Environmental Protection Agency, Department of Toxic Substances Control, Los Angeles Regional Water Quality Control Board, California Department of Public Health, United States Geological Survey, and various cities. Stakeholders meet regularly (meetings are held 3 to 4 times per year at WRD) and share data on contaminated groundwater sites within the District. WRD has acted as the meeting coordinator and data repository/distributor, helping stakeholders to characterize contamination and develop optimal methods for addressing contamination. WRD has developed a list of high-priority contaminated groundwater sites within the District. The list includes approximately 46 sites across the CBWCB.
- WRD will continue to be proactively involved in the oversight of the most significant

contaminated sites that threaten CBWCB groundwater resources including the Regional Perchlorate Investigation in the Northern Central Basin, the Omega Chemical Superfund Site, and others.

- WRD will continue to fund the Safe Drinking Water Program to address VOC impacted groundwater, especially by PCE and TCE in the CBWCB.
- Salt / Nutrient Management Plans are a new State requirement for groundwater basins throughout California. The Plans are required as part of the Recycled Water Policy issued by the State Water Resources Control Board (SWRCB) and effective as of May 14, 2009. The purpose is to "establish uniform requirements for recycled water use and to develop sustainable water supplies throughout the state". The SWRCB therefore "supports and encourages every region…to develop a Salt / Nutrient Management Plan by 2014". With one exception (elevated TDS concentrations near the coast due to historic seawater intrusion, now controlled through freshwater barrier injection), salts and nutrients have not been shown to be a concern in the CBWCB. However, since Salt / Nutrient Management Plans are required, WRD began meeting with other stakeholders and the LARWQCB, the agency responsible for bringing stakeholders' plans to the SWRCB for approval, to initiate development of a Salt / Nutrient Management Plan for the CBWCB. WRD will continue to take the lead in working with the LARWQCB and stakeholders to develop a Plan for the CBWCB.
- On November 4, 2009 the State Legislature amended the Water Code with SBx7-6, mandating a statewide groundwater elevation monitoring program to track seasonal and long-term trends in California's groundwater basins. In accordance with this amendment DWR developed the California Statewide Groundwater Elevation Monitoring (CASGEM) program. In October 2011, WRD was designated the agency responsible for collecting and reporting CBWCB groundwater level data to CASGEM. Through the RGWMP, WRD will continue to collect CBWCB groundwater level data, track seasonal and long-term trends and provide the data to the CASGEM program.
- WRD will continue to use the data generated by the Regional Groundwater Monitoring Program along with WRD's GIS capabilities to address current and upcoming water quality issues and groundwater replenishment in the CBWCB.

SECTION 7
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TABLES

TABLE 1.1
CONSTRUCTION INFORMATION FOR WRD NESTED MONITORING WELLS

Well Name	Zone	WRD ID Number	Depth of Well (feet)	Top of Perforation (feet)	Bottom of Perforation (feet)	Aquifer Designation
Bell #1	1	102041	1750	1730	1750	Pico Formation
	2	102042	1215	1195	1215	Sunnyside
	3	102043	985	965	985	Silverado
	4	102044	635	615	635	Silverado
	5	102045	440	420	440	Hollydale
	6	102046	270	250	270	Gage
Bell Gardens #1	1	101954	1795	1775	1795	Sunnyside
	2	101955	1410	1390	1410	Sunnyside
	3	101956	1110	1090	1110	Sunnyside
	4	101957	875	855	875	Silverado
	5	101958	575	555	575	Lynwood
	6	101959	390	370	390	Gage
Carson #1	1	100030	1010	990	1010	Sunnyside
	2	100031	760	740	760	Silverado
	3	100032	480	460	480	Lynwood
	4	100033	270	250	270	Gage
Carson #2	1	101787	1250	1230	1250	Sunnyside
	2	101788	870	850	870	Silverado
	3	101789	620	600	620	Silverado
	4	101790	470	450	470	Lynwood
	5	101791	250	230	250	Gage
Carson #3	1	102075	1800	1600	1620	Pico Formation
	2	102076	1240	1220	1240	Sunnyside
	3	102077	1100	1080	1100	Sunnyside
	4	102078	890	870	890	Silverado
	5	102079	640	620	640	Silverado
	6	102080	380	360	380	Lynwood
Cerritos #1	1	100870	1215	1155	1175	Sunnyside
	2	100871	1020	1000	1020	Sunnyside
	3	100872	630	610	630	Lynwood
	4	100873	290	270	290	Gage
	5	100874	200	180	200	Artesia
	6	100875	135	125	135	Artesia
Cerritos #2	1	101781	1470	1350	1370	Sunnyside
	2	101782	935	915	935	Silverado
	3	101783	760	740	760	Silverado
	4	101784	510	490	510	Jefferson
	5	101785	370	350	370	Gage
	6	101786	170	150	170	Gaspur
Chandler #3B	1	100082	363	341	363	Gage/Lynwood/Silverado
Chandler #3A	2	100083	192	165	192	Gage/Lynwood/Silverado
Commerce #1	1	100881	1390	1330	1390	Pico Formation
	2	100882	960	940	960	Sunnyside
	3	100883	780	760	780	Sunnyside
	4	100884	590	570	590	Silverado
	5	100885	345	325	345	Hollydale
	6	100886	225	205	225	Exposition/Gage

TABLE 1.1
CONSTRUCTION INFORMATION FOR WRD NESTED MONITORING WELLS

Well Name	Zone	WRD ID Number	Depth of Well (feet)	Top of Perforation (feet)	Bottom of Perforation (feet)	Aquifer Designation
Compton #1	1	101809	1410	1370	1390	Sunnyside
	2	101810	1170	1150	1170	Sunnyside
	3	101811	820	800	820	Silverado
	4	101812	480	460	480	Hollydale
	5	101813	325	305	325	Gage
Compton #2	1	101948	1495	1475	1495	Sunnyside
	2	101949	850	830	850	Sunnyside
	3	101950	605	585	605	Silverado
	4	101951	400	380	400	Hollydale
	5	101952	315	295	315	Gage
	6	101953	170	150	170	Exposition
Downey #1	1	100010	1190	1170	1190	Sunnyside
	2	100011	960	940	960	Silverado
	3	100012	600	580	600	Silverado
	4	100013	390	370	390	Hollydale/Jefferson
	5	100014	270	250	270	Gage
	6	100015	110	90	110	Gaspur
Gardena #1	1	100020	990	970	990	Sunnyside
	2	100021	465	445	465	Silverado
	3	100022	365	345	365	Lynwood
	4	100023	140	120	140	Gage
Gardena #2	1	101804	1335	1275	1335	Sunnyside
	2	101805	790	770	790	Silverado
	3	101806	630	610	630	Silverado
	4	101807	360	340	360	Lynwood
	5	101808	255	235	255	Gardena
Hawthorne #1	1	100887	990	910	950	Sunnyside
	2	100888	730	710	730	Silverado
	3	100889	540	520	540	Silverado
	4	100890	420	400	420	Silverado
	5	100891	260	240	260	Lynwood
	6	100892	130	110	130	Gage
Huntington Park #1	1	100005	910	890	910	Silverado
	2	100006	710	690	710	Jefferson
	3	100007	440	420	440	Gage
	4	100008	295	275	295	Exposition
	5	100009	134	114	134	Gaspur
Inglewood #1	1	100091	1400	1380	1400	Pico Formation
	2	100092	Abandoned Well			
	3	100093	450	430	450	Silverado
	4	100094	300	280	300	Lynwood
	5	100095	170	150	170	Gage
Inglewood #2	1	100824	860	800	840	Pico Formation
	2	100825	470	450	470	Sunnyside
	3	100826	350	330	350	Silverado
	4	100827	245	225	245	Lynwood

TABLE 1.1
CONSTRUCTION INFORMATION FOR WRD NESTED MONITORING WELLS

Well Name	Zone	WRD ID Number	Depth of Well (feet)	Top of Perforation (feet)	Bottom of Perforation (feet)	Aquifer Designation
Inglewood #3	1	102138	1940	1900	1940	Not Interpreted
	2	102139	1460	1440	1460	Not Interpreted
	3	102140	1275	1255	1275	Not Interpreted
	4	102141	910	890	910	Not Interpreted
	5	102142	560	540	560	Not Interpreted
	6	102143	390	370	390	Not Interpreted
	7	102144	265	245	265	Not Interpreted
Lakewood #1	1	100024	1009	989	1009	Sunnyside
	2	100025	660	640	660	Silverado
	3	100026	470	450	470	Lynwood
	4	100027	300	280	300	Gage
	5	100028	160	140	160	Artesia
	6	100029	90	70	90	Bellflower
La Mirada #1	1	100876	1150	1130	1150	Sunnyside
	2	100877	985	965	985	Silverado
	3	100878	710	690	710	Lynwood
	4	100879	490	470	490	Jefferson
	5	100880	245	225	245	Gage
Lomita #1	1	100818	1340	1240	1260	Sunnyside
	2	100819	720	700	720	Sunnyside
	3	100820	570	550	570	Silverado
	4	100821	420	400	420	Silverado
	5	100822	240	220	240	Gage
	6	100823	120	100	120	Gage
Long Beach #1	1	100920	1470	1430	1450	Sunnyside
	2	100921	1250	1230	1250	Sunnyside
	3	100922	990	970	990	Silverado
	4	100923	619	599	619	Lynwood
	5	100924	420	400	420	Jefferson
	6	100925	175	155	175	Gage
Long Beach #2	1	101740	1090	970	990	Sunnyside
	2	101741	740	720	740	Sunnyside
	3	101742	470	450	470	Silverado
	4	101743	300	280	300	Lynwood
	5	101744	180	160	180	Gage
	6	101745	115	95	115	Gaspur
Long Beach #3	1	101751	1390	1350	1390	Sunnyside
	2	101752	1017	997	1017	Silverado
	3	101753	690	670	690	Silverado
	4	101754	550	530	550	Silverado
	5	101755	430	410	430	Lynwood
Long Beach #4	1	101759	1380	1200	1220	Pico Formation
	2	101760	820	800	820	Sunnyside
Long Beach #6	1	101792	1530	1490	1510	Pico Formation
	2	101793	950	930	950	Sunnyside
	3	101794	760	740	760	Sunnyside
	4	101795	500	480	500	Silverado
	5	101796	400	380	400	Lynwood
	6	101797	240	220	240	Gage

TABLE 1.1
CONSTRUCTION INFORMATION FOR WRD NESTED MONITORING WELLS

Well Name	Zone	WRD ID Number	Depth of Well (feet)	Top of Perforation (feet)	Bottom of Perforation (feet)	Aquifer Designation
Long Beach #8	1	101819	1495	1435	1455	Pico Formation
	2	101820	1040	1020	1040	Sunnyside
	3	101821	800	780	800	Silverado
	4	101822	655	635	655	Silverado
	5	101823	435	415	435	Lynwood
	6	101824	185	165	185	Gage
Los Angeles #1	1	100926	1370	1350	1370	Pico Formation
	2	100927	1100	1080	1100	Sunnyside
	3	100928	940	920	940	Silverado
	4	100929	660	640	660	Lynwood
	5	100930	370	350	370	Gage
Los Angeles #2	1	102003	1370	1330	1370	Pico Formation
	2	102004	730	710	730	Sunnyside
	3	102005	525	505	525	Sunnyside
	4	102006	430	410	430	Silverado
	5	102007	265	245	265	Lynwood
	6	102008	155	135	155	Exposition
Los Angeles #3	1	102069	1570	1210	1230	Sunnyside
	2	102070	895	875	895	Silverado
	3	102071	725	705	725	Lynwood
	4	102072	570	550	570	Hollydale
	5	102073	350	330	350	Gage
	6	102074	210	190	210	Expo
Los Angeles #4	1	102131	1780	1740	1780	Not Interpreted
	2	102132	1230	1190	1230	Not Interpreted
	3	102133	740	720	740	Not Interpreted
	4	102134	510	490	510	Not Interpreted
	5	102135	375	355	375	Not Interpreted
	6	102136	255	235	255	Not Interpreted
Manhattan Beach #1	1	102081	1990	1950	1990	Pico Formation
	2	102082	1590	1570	1590	Pico Formation
	3	102083	1270	1250	1270	Sunnyside
	4	102084	885	865	885	Silverado
	5	102085	660	640	660	Silverado
	6	102086	340	320	340	Lynwood
	7	102087	200	180	200	Gage
Montebello #1	1	101770	980	900	960	Pico Formation
	2	101771	710	690	710	Sunnyside
	3	101772	520	500	520	Silverado
	4	101773	390	370	390	Lynwood
	5	101774	230	210	230	Gage
	6	101775	110	90	110	Exposition
Norwalk #1	1	101814	1420	1400	1420	Sunnyside
	2	101815	1010	990	1010	Silverado
	3	101816	740	720	740	Lynwood
	4	101817	450	430	450	Jefferson
	5	101818	240	220	240	Gage

TABLE 1.1
CONSTRUCTION INFORMATION FOR WRD NESTED MONITORING WELLS

Well Name	Zone	WRD ID Number	Depth of Well (feet)	Top of Perforation (feet)	Bottom of Perforation (feet)	Aquifer Designation
Norwalk #2	1	101942	1480	1460	1480	Sunnyside
	2	101943	1280	1260	1280	Sunnyside
	3	101944	980	960	980	Silverado
	4	101945	820	800	820	Lynwood
	5	101946	500	480	500	Gardena
	6	101947	256	236	256	Exposition
Pico #1	1	100001	900	860	900	Pico Formation
	2	100002	480	460	480	Silverado
	3	100003	400	380	400	Silverado
	4	100004	190	170	190	Gardena
Pico #2	1	100085	1200	1180	1200	Sunnyside
	2	100086	850	830	850	Sunnyside
	3	100087	580	560	580	Sunnyside
	4	100088	340	320	340	Silverado
	5	100089	255	235	255	Lynwood
	6	100090	120	100	120	Gaspur
PM-1 Columbia	1	100042	605	555	595	Sunnyside
	2	100043	510	460	500	Silverado
	3	100044	290	240	280	Lynwood
	4	100045	210	160	200	Lynwood
PM-3 Madrid	1	100034	685	640	680	Sunnyside
	2	100035	525	480	520	Silverado
	3	100036	285	240	280	Lynwood
	4	100037	190	145	185	Gage
PM-4 Mariner	1	100038	720	670	710	Sunnyside
	2	100039	550	500	540	Silverado
	3	100040	390	340	380	Lynwood
	4	100041	250	200	240	Lynwood
PM-5 Columbia Park	1	102047	1480	1360	1380	Pico Formation
	2	102048	960	940	960	Pico Formation
	3	102049	790	770	790	Sunnyside
	4	102050	600	580	600	Sunnyside
	5	102051	340	320	340	Silverado
	6	102052	160	140	160	Gage
PM-6 Madrona Marsh	1	102053	1235	1195	1235	Pico Formation
	2	102054	925	905	925	Sunnyside
	3	102055	790	770	790	Sunnyside
	4	102056	550	530	550	Silverado
	5	102057	410	390	410	Lynwood
	6	102058	260	240	260	Gage
Rio Hondo #1	1	100064	1150	1110	1130	Sunnyside
	2	100065	930	910	930	Sunnyside
	3	100066	730	710	730	Sunnyside
	4	100067	450	430	450	Silverado
	5	100068	300	280	300	Lynwood
	6	100069	160	140	160	Gardena

TABLE 1.1
CONSTRUCTION INFORMATION FOR WRD NESTED MONITORING WELLS

Well Name	Zone	WRD ID Number	Depth of Well (feet)	Top of Perforation (feet)	Bottom of Perforation (feet)	Aquifer Designation
Seal Beach #1	1	102062	1485	1345	1365	Sunnyside
	2	102063	1180	1160	1180	Sunnyside
	3	102064	1040	1020	1040	Sunnyside
	4	102065	795	775	795	Silverado
	5	102066	625	605	625	Lynwood
	6	102067	235	215	235	Gage
	7	102068	70	60	70	Gaspur
South Gate #1	1	100893	1460	1440	1460	Pico Formation
	2	100894	1340	1320	1340	Sunnyside
	3	100895	930	910	930	Silverado
	4	100896	585	565	585	Lynwood
	5	100897	250	220	240	Exposition
Westchester #1	1	101776	860	740	760	Pico Formation
	2	101777	580	560	580	Sunnyside
	3	101778	475	455	475	Silverado
	4	101779	330	310	330	Lynwood
	5	101780	235	215	235	Gage
Whittier #1	1	101735	1298	1180	1200	Sunnyside
	2	101736	940	920	940	Sunnyside
	3	101737	620	600	620	Silverado
	4	101738	470	450	470	Lynwood
	5	101739	220	200	220	Gage
Whittier #2	1	101936	1390	1370	1390	Sunnyside
	2	101937	1110	1090	1110	Sunnyside
	3	101938	675	655	675	Silverado
	4	101939	445	425	445	Silverado
	5	101940	335	315	335	Lynwood
	6	101941	170	150	170	Gardena
Whittier Narrows #1	1	100046	810	749	769	Sunnyside
	2	100047	810	609.5	629	Sunnyside
	3	100048	810	462.5	482.5	Sunnyside
	4	100049	810	392.5	402	Silverado
	5	100050	810	334	343.5	Silverado
	6	100051	810	272.5	282.5	Lynwood
	7	100052	810	233.5	243	Jefferson
	8	100053	810	163	173	Gardena
	9	100054	810	95	104.5	Gaspur
Whittier Narrows #2	1	100055	720	659.3	678.4	Pico Formation
	2	100056	720	579.1	598.2	Pico Formation
	3	100057	720	469.0	488.2	Pico Formation
	4	100058	720	418.6	428.2	Pico Formation
	5	100059	720	328.7	338.3	Pico Formation
	6	100060	720	263.2	273.3	Not Interpreted
	7	100061	720	213.7	223.3	Not Interpreted
	8	100062	720	135.7	145.3	Not Interpreted
	9	100063	720	90.8	100.3	Gardena

TABLE 1.1
CONSTRUCTION INFORMATION FOR WRD NESTED MONITORING WELLS

Well Name	Zone	WRD ID Number	Depth of Well (feet)	Top of Perforation (feet)	Bottom of Perforation (feet)	Aquifer Designation
Willowbrook #1	1	100016	905	885	905	Sunnyside
	2	100017	520	500	520	Silverado
	3	100018	380	360	380	Lynwood
	4	100019	220	200	220	Gage
Wilmington #1	1	100070	1040	915	935	Sunnyside
	2	100071	800	780	800	Sunnyside
	3	100072	570	550	570	Silverado
	4	100073	245	225	245	Lynwood
	5	100074	140	120	140	Gage
Wilmington #2	1	100075	1030	950	970	Sunnyside
	2	100076	775	755	775	Silverado
	3	100077	560	540	560	Lynwood
	4	100078	410	390	410	Lynwood
	5	100079	140	120	140	Gage

TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2011-2012

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
Bell #1						Reference Point Elevation: 147.39
Depth of Well	1730-1750	1195-1215	965-985	615-635	420-440	250-270
Aquifer Name	Pico Formation	Sunnyside	Silverado	Silverado	Hollydale	Gage
12/29/2011	-5.36	-17.49	1.34	-0.87	4.34	21.22
3/26/2012	-8.47	-21.75	-2.50	-3.68	1.96	20.87
6/13/2012	-15.30	-25.26	-7.15	-8.89	-2.57	18.96
9/14/2012	-18.12	-29.89	-13.14	-14.15	-7.06	17.41
Bell Gardens #1						Reference Point Elevation: 119.24
Depth of Well	1775-1795	1390-1410	1090-1110	855-875	555-575	370-390
Aquifer Name	Sunnyside	Sunnyside	Sunnyside	Silverado	Lynwood	Gage
12/29/2011	25.35	24.18	24.71	28.52	31.42	28.59
3/26/2012	20.18	19.39	20.80	25.95	29.02	27.29
6/11/2012	17.46	16.15	17.76	23.45	24.97	21.75
6/12/2012	17.36	16.13	18.06	24.36	25.84	22.98
9/21/2012	9.08	7.73	8.46	15.57	18.75	17.67
Carson #1						Reference Point Elevation: 24.16
Depth of Well	990-1010	740-760	460-480	250-270		
Aquifer Name	Sunnyside	Silverado	Lynwood	Gage		
10/20/2011	-53.87	-52.32	-15.75	-14.00		
11/9/2011	-53.16	-51.87	-15.90	-14.14		
12/14/2011	-52.70	-51.25	-16.10	-14.26		
1/18/2012	-51.49	-50.22	-15.86	-14.14		
2/9/2012	-51.67	-50.40	-15.76	-14.06		
3/12/2012	-48.46	-47.49	-15.68	-13.97		
3/16/2012	-47.40	-46.52	-15.54	-13.84		
3/28/2012	-46.95	-46.21	-15.39	-13.79		
4/18/2012	-46.50	-45.75	-15.21	-13.64		
5/17/2012	-46.34	-45.66	-15.19	-13.59		
6/14/2012	-46.99	-46.14	-15.24	-13.62		
8/17/2012	-51.82	-50.24	-15.86	-14.13		
9/18/2012	-52.24	-50.61	-16.10	-14.34		
Carson #2						Reference Point Elevation: 39.81
Depth of Well	1230-1250	850-870	600-620	450-470	230-250	
Aquifer Name	Sunnyside	Silverado	Silverado	Lynwood	Gage	
12/30/2011	-39.27	-34.38	-33.99	-30.19	-27.52	
3/19/2012	-38.10	-32.86	-32.51	-28.93	-26.36	
6/12/2012	-37.17	-32.77	-32.40	-28.88	-26.40	
9/14/2012	-39.00	-34.04	-33.71	-30.05	-27.48	
Carson #3						Reference Point Elevation: 18.36
Depth of Well	1600-1620	1220-1240	1080-1100	870-890	620-640	360-380
Aquifer Name	Pico Formation	Sunnyside	Sunnyside	Silverado	Silverado	Lynwood
12/30/2011	-36.72	-42.85	-45.48	-46.82	-46.74	-18.94
3/16/2012	-36.66	-42.38	-45.07	-45.68	-45.67	-18.79
6/12/2012	-36.23	-41.15	-43.99	-44.70	-44.72	-18.52
9/13/2012	-36.29	-42.44	-44.81	-46.32	-46.17	-18.92
Cerritos #1						Reference Point Elevation: 40.72
Depth of Well	1155-1175	1000-1020	610-630	270-290	180-200	125-135
Aquifer Name	Sunnyside	Sunnyside	Lynwood	Gage	Artesia	Artesia
11/8/2011	-18.38	-23.87	-19.10	18.16	20.68	20.67
12/16/2011	-16.45	-23.57	-13.62	20.31	22.30	22.30
3/21/2012	-17.13	-28.72	-19.55	20.82	22.40	22.41
6/12/2012	-26.60	-37.79	-26.02	19.15	21.08	21.02
9/13/2012	-40.14	-49.96	-35.78	16.23	18.81	18.79
9/20/2012	-41.34	-50.78	-37.47	15.94	18.61	18.55

TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2011-2012

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
Cerritos #2						Reference Point Elevation: 76.82
Depth of Well	1350-1370	915-935	740-760	490-510	350-370	150-170
Aquifer Name	Sunnyside	Silverado	Silverado	Jefferson	Gage	Gaspur
11/3/2011	0.53	-10.53	-16.15	2.99	24.29	31.33
12/20/2011	0.34	-5.80	-11.63	5.64	25.42	31.94
3/13/2012	-1.09	-11.96	-18.79	2.02	24.98	32.04
3/21/2012	-1.64	-10.35	-16.43	2.76	25.22	32.10
6/12/2012	-5.86	-24.55	-23.10	0.12	24.68	31.88
9/20/2012	-16.99	-33.62	-32.06	-5.75	22.64	30.97
Chandler #3						Reference Point Elevation: 153.20
Depth of Well	341-363	165-192				
Aquifer Name	Gage/Lynw/Silv	Gage/Lynw/Silv				
11/17/2011	-17.02	-16.89				
12/27/2011	-16.85	-16.57				
03/23/2012	-16.55	-16.44				
03/27/2012	-16.81	-16.71				
06/14/2012	-17.10	-16.79				
09/13/2012	-17.77	-17.33				
Commerce #1						Reference Point Elevation: 159.60
Depth of Well	1330-1390	940-960	760-780	570-590	325-345	205-225
Aquifer Name	Pico Formation	Sunnyside	Sunnyside	Silverado	Hollydale	Exposition/Gage
12/27/2011	45.76	52.08	49.05	14.10	14.21	43.69
3/22/2012	46.02	47.88	44.88	11.45	12.68	43.59
6/13/2012	45.86	46.62	43.35	8.46	11.73	43.33
9/26/2012	43.26	41.42	37.88	4.17	8.54	42.46
Compton #1						Reference Point Elevation: 67.17
Depth of Well	1370-1390	1150-1170	800-820	460-480	325-345	
Aquifer Name	Sunnyside	Sunnyside	Silverado	Hollydale	Gage	
10/31/2011	-19.65	-19.69	-15.50	-4.06	-1.56	
12/25/2011	-36.87	-36.66	-13.46	0.40	3.01	
1/18/2012	-47.02	-46.74	-14.04	0.39	3.01	
3/12/2012	-50.62	-50.32	-13.61	-1.71	0.58	
3/22/2012	-50.67	-50.38	-14.73	-1.67	1.54	
6/19/2012	-55.53	-55.24	-18.05	-6.48	-5.05	
9/20/2012	-56.99	-56.76	-24.64	-11.57	-7.56	
Compton #2						Reference Point Elevation: 75.11
Depth of Well	1479-1495	830-850	585-605	380-400	295-315	150-170
Aquifer Name	Sunnyside	Sunnyside	Silverado	Hollydale	Gage	Exposition
12/25/2011	-1.48	-34.53	-37.18	-36.07	-28.67	-22.57
3/22/2012	-6.00	-38.54	-37.30	-36.09	-28.76	-22.20
6/12/2012	-10.84	-40.90	-38.10	-38.40	-32.09	-24.56
9/10/2012	-15.02	-48.07	-41.37	-40.50	-33.76	-25.49
9/14/2012	-15.55	-47.95	n/a	-40.59	-32.41	-25.08
Downey #1						Reference Point Elevation: 97.21
Depth of Well	1479-1495	830-850	585-605	380-400	295-315	150-170
Aquifer Name	Sunnyside	Silverado	Silverado	Hollydale	Gage	Gaspur
12/13/2011	14.54	15.26	19.71	18.52	35.94	38.51
3/26/2012	9.85	12.68	17.53	17.77	36.52	39.15
6/13/2012	7.02	9.41	8.63	9.95	35.71	39.62
8/23/2012	-0.45	2.64	4.77	6.12	34.89	39.42
9/11/2012	-1.58	1.44	4.53	6.32	34.92	39.33
Gardena #1						Reference Point Elevation: 82.20
Depth of Well	970-990	445-465	345-365	120-140		
Aquifer Name	Sunnyside	Silverado	Lynwood	Gage		
12/15/2011	-56.96	-138.88	-100.09	-12.09		
3/15/2012	-57.29	-138.39	-99.77	-12.21		
6/15/2012	-56.75	-136.63	-100.22	-12.15		
9/12/2012	-57.21	-104.64	-95.21	-12.54		

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TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2011-2012

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
Gardena #2						Reference Point Elevation: 26.74
Depth of Well	1275-1335	770-790	610-630	340-360	235-255	
Aquifer Name	Sunnyside	Silverado	Silverado	Lynwood	Gardena	
12/16/2011	-44.25	-58.40	-58.65	-24.70	-11.57	
3/20/2012	-44.15	-57.97	-58.24	-24.87	-11.67	
6/14/2012	-43.26	-57.12	-57.41	-24.53	-11.67	
8/27/2012	-43.61	-57.83	-57.99	-25.34	-12.14	
9/19/2012	-43.72	-57.65	-57.94	-24.98	-11.95	
Hawthorne #1						Reference Point Elevation: 86.35
Depth of Well	910-950	710-730	520-540	400-420	240-260	110-130
Aquifer Name	Sunnyside	Silverado	Silverado	Silverado	Lynwood	Gage
12/19/2011	-63.90	-12.01	-10.98	-10.76	-6.63	2.19
3/21/2012	-66.36	-13.04	-12.00	-11.77	-7.42	1.75
6/15/2012	-61.62	-15.99	-14.88	-14.66	-9.26	1.61
9/16/2012	-59.96	-14.76	-13.38	-13.19	-8.69	1.40
9/18/2012	-60.00	-14.35	-13.17	-12.87	-8.55	1.41
Huntington Park #1						Reference Point Elevation: 177.08
Depth of Well	890-910	690-710	420-440	275-295	114-134	
Aquifer Name	Silverado	Jefferson	Gage	Exposition	Gaspur	
10/24/2011	-24.90	-27.39	-18.31	14.44	Dry	
10/31/2011	-24.84	-27.08	-17.97	14.58	Dry	
11/17/2011	-23.96	-25.84	-17.05	14.63	Dry	
12/14/2011	-22.80	-24.96	-16.16	14.74	Dry	
1/17/2012	-23.44	-24.54	-16.16	15.02	Dry	
2/10/2012	-23.97	-26.67	-16.75	14.98	Dry	
3/20/2012	-23.98	-25.01	-15.93	14.87	Dry	
4/19/2012	-24.35	-26.48	-16.21	15.02	Dry	
5/14/2012	-25.05	-27.28	-16.67	14.97	Dry	
6/13/2012	-26.16	-29.20	-18.22	14.43	Dry	
8/17/2012	-27.28	-31.43	-19.08	14.22	Dry	
9/18/2012	-26.67	-31.34	-19.72	13.82	Dry	
Inglewood #1						Reference Point Elevation: 113.36
Depth of Well	1380-1400		430-450	280-300	150-170	
Aquifer Name	Pico Formation	Abandoned	Silverado	Lynwood	Gage	
11/14/2011	-33.29	n/a	-34.77	4.57	9.09	
12/19/2011	-33.26	n/a	-33.87	4.58	9.18	
3/27/2012	-32.91	n/a	-35.07	4.23	9.08	
4/24/2012	-33.26	n/a	-34.77	4.23	9.11	
6/15/2012	-33.43	n/a	-33.19	4.30	9.22	
9/18/2012	-33.09	n/a	-32.50	4.15	9.07	
Inglewood #2						Reference Point Elevation: 217.33
Depth of Well	800-840	450-470	330-350	225-245		
Aquifer Name	Pico Formation	Sunnyside	Silverado	Lynwood		
12/28/2011	-25.63	-17.54	-5.36	-1.81		
3/22/2012	-25.22	-17.20	-5.12	-1.76		
6/15/2012	-24.96	-17.15	-5.11	-1.66		
9/12/2012	-25.00	-17.18	-5.14	-1.63		
Inglewood #3						Reference Point Elevation: 73.00
Depth of Well	1900-1940	1440-1460	1255-1275	890-910	540-560	370-390
Aquifer Name	Not Interpreted	Not Interpreted	Not Interpreted	Not Interpreted	Not Interpreted	Not Interpreted
8/8/2012	-27.66	-38.52	-58.90	-64.38	-62.54	-13.02
8/30/2012	-26.04	-38.84	-58.73	-63.34	-61.18	-13.10
9/13/2012	-25.94	-38.77	-58.56	-63.65	-62.20	-12.70

	ZONE 7
Depth of Well	245-265
Aquifer Name	Not Interpreted
8/8/2012	3.69
8/30/2012	3.52
9/13/2012	3.50

TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2011-2012

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
Lakewood #1						Reference Point Elevation: 53.41
Depth of Well	989-1009	640-660	450-470	280-300	140-160	70-90
Aquifer Name	Sunnyside	Silverado	Lynwood	Gage	Artesia	Bellflower
11/3/2011	-33.38	-21.26	-20.34	-6.51	6.99	27.54
12/15/2011	-40.26	-23.35	-21.42	-4.67	7.72	27.88
3/15/2012	-51.54	-25.92	-23.97	-6.44	6.58	27.88
6/15/2012	-35.75	-25.01	-23.52	-10.29	5.17	28.26
9/19/2012	-43.09	-32.41	-31.13	-14.07	1.84	27.03
La Mirada #1						Reference Point Elevation: 75.85
Depth of Well	1130-1150	965-985	690-710	470-490	225-245	
Aquifer Name	Sunnyside	Silverado	Lynwood	Jefferson	Gage	
11/3/2011	10.17	9.68	-13.15	-28.50	-3.59	
12/21/2011	6.53	9.04	-1.29	-12.59	4.54	
3/21/2012	0.85	4.53	-0.15	-15.96	3.85	
6/19/2012	-0.85	2.64	-15.87	-30.99	-2.62	
9/19/2012	-14.71	-11.29	-29.01	-44.75	-12.17	
Lomita #1						Reference Point Elevation: 76.91
Depth of Well	1240-1260	700-720	550-570	400-420	220-240	100-120
Aquifer Name	Sunnyside	Sunnyside	Silverado	Silverado	Gage	Gage
12/27/2011	-30.98	-18.34	-16.98	-17.61	-15.90	-16.30
3/19/2012	-30.05	-18.34	-16.73	-17.19	-15.80	-16.13
3/27/2012	-29.89	-18.44	-16.77	-17.27	-15.87	-16.15
6/14/2012	-30.40	-20.04	-16.97	-17.56	-15.91	-16.22
9/18/2012	-31.29	-20.95	-17.92	-19.14	-16.40	-16.69
Long Beach #1						Reference Point Elevation: 31.16
Depth of Well	1430-1450	1230-1250	970-990	599-619	400-420	155-175
Aquifer Name	Sunnyside	Sunnyside	Silverado	Lynwood	Jefferson	Gage
11/8/2011	9.11	7.90	-16.84	-14.94	-15.09	-2.60
12/30/2011	-1.68	-4.21	-37.78	-18.71	-16.81	0.14
3/21/2012	-16.67	-19.98	-50.17	-24.78	-22.37	-3.36
6/18/2012	-18.64	-21.65	-54.39	-27.16	-25.75	-7.03
9/14/2012	-26.25	-29.27	-64.39	-38.08	-36.08	-12.01
Long Beach #2						Reference Point Elevation: 44.35
Depth of Well	970-990	720-740	450-470	280-300	160-180	95-115
Aquifer Name	Sunnyside	Sunnyside	Silverado	Lynwood	Gage	Gaspur
12/15/2011	-44.01	-34.43	-36.59	-7.20	2.57	4.22
1/19/2012	-69.82	-37.52	-36.01	-7.10	2.87	4.51
3/19/2012	-70.21	-40.83	-36.68	-7.39	2.71	4.38
6/13/2012	-77.15	-42.35	-36.55	-7.96	2.47	4.40
9/5/2012	-83.63	-47.98	-45.00	-9.93	1.49	3.68
9/24/2012	-69.51	-53.89	-47.25	-10.03	1.35	3.53
Long Beach #3						Reference Point Elevation: 27.68
Depth of Well	1350-1390	997-1017	670-690	530-550	410-430	
Aquifer Name	Sunnyside	Silverado	Silverado	Silverado	Lynwood	
12/27/2011	-37.24	-49.01	-49.01	-49.45	-1.34	
1/19/2012	-37.06	-49.29	-49.28	-49.71	-1.19	
3/22/2012	-36.85	-44.36	-44.41	-44.77	-0.89	
6/18/2012	-35.68	-45.97	-45.97	-46.37	-0.96	
9/13/2012	-36.17	-49.39	-49.38	-49.77	-1.87	
9/14/2012	-36.07	-49.45	-49.43	-49.82	-1.86	
Long Beach #4						Reference Point Elevation: 9.52
Depth of Well	1200-1220	800-820				
Aquifer Name	Pico Formation	Sunnyside				
12/13/2011	-37.28	-18.56				
03/20/2012	-35.67	-16.77				
06/14/2012	-34.74	-16.59				
09/13/2012	-35.86	-17.93				

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TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2011-2012

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
Long Beach #6						Reference Point Elevation: 32.53
Depth of Well	1490-1510	930-950	740-760	480-500	380-400	220-240
Aquifer Name	Pico Formation	Sunnyside	Sunnyside	Silverado	Lynwood	Gage
10/20/2011	-4.23	-4.54	-4.63	-13.19	-13.19	-24.11
10/25/2011	-3.40	-3.77	-3.84	-12.72	-12.73	-23.82
10/31/2011	-2.36	-2.87	-2.96	-13.04	-13.04	-23.47
11/9/2011	-1.29	-5.01	-5.98	-46.48	-46.62	-24.58
12/13/2011	-7.27	-21.06	-21.86	-52.80	-52.76	-27.29
1/17/2012	-17.43	-38.48	-40.13	-94.93	-94.93	-26.84
2/9/2012	-22.92	-44.92	-46.45	-97.73	-97.74	-27.30
3/15/2012	-30.15	-51.81	-51.15	-95.26	-95.26	-29.18
3/16/2012	-30.32	-52.01	-53.30	-95.28	-95.31	-29.27
4/18/2012	-35.35	-51.02	-51.71	-92.76	-93.06	-29.06
5/15/2012	-33.40	-45.89	-46.78	-92.88	-92.99	-29.95
6/14/2012	-35.22	-52.05	-53.20	-102.04	-102.07	-30.23
8/17/2012	-38.66	-60.05	-61.23	-105.93	-105.98	-33.62
8/20/2012	-38.87	-60.31	-61.61	-107.35	-107.37	-33.83
9/6/2012	-41.56	-61.23	-62.52	-107.97	-108.20	-34.72
9/14/2012	-42.41	-60.48	-61.64	-104.69	-104.87	-34.72
Long Beach #8						Reference Point Elevation: 18.24
Depth of Well	1435-1455	1020-1040	780-800	635-655	415-435	165-185
Aquifer Name	Pico Formation	Sunnyside	Silverado	Silverado	Lynwood	Gage
11/8/2011	-17.18	-34.84	-48.19	-45.75	-45.34	2.25
12/15/2011	-17.11	-34.94	-47.75	-45.28	-44.91	2.09
3/22/2012	-17.14	-34.89	-43.10	-41.03	-40.76	2.22
6/18/2012	-16.88	-33.90	-43.56	-40.88	-40.45	2.11
9/14/2012	-16.68	-33.92	-46.11	-43.78	-43.44	1.74
Los Angeles #1						Reference Point Elevation: 173.63
Depth of Well	1350-1370	1080-1100	920-940	640-660	350-370	
Aquifer Name	Pico Formation	Sunnyside	Silverado	Lynwood	Gage	
12/25/2011	-18.97	-17.71	-19.38	-21.29	-13.74	
3/22/2012	-19.11	-18.13	-19.80	-21.81	-14.02	
6/19/2012	-20.80	-19.39	-20.98	-23.16	-14.66	
9/14/2012	-22.84	-20.46	-21.59	-23.81	-15.04	
Los Angeles #2						Reference Point Elevation: 218.59
Depth of Well	1330-1370	710-730	505-525	410-430	245-265	135-155
Aquifer Name	Pico Formation	Sunnyside	Sunnyside	Silverado	Lynwood	Exposition
11/16/2011	48.45	1.22	0.89	-12.34	-21.38	Dry
12/25/2011	48.49	0.78	0.41	-11.98	-21.01	Dry
3/27/2012	48.41	1.04	0.65	-11.45	-20.17	Dry
6/15/2012	48.33	0.50	0.08	-12.61	-20.34	Dry
9/11/2012	48.21	0.10	-0.27	-12.90	-20.87	Dry
Los Angeles #3						Reference Point Elevation: 145.71
Depth of Well	1210-1230	875-895	705-715	550-570	330-350	190-210
Aquifer Name	Sunnyside	Silverado	Lynwood	Hollydale	Gage	Exposition
12/20/2011	-9.32	-3.38	-7.66	-13.27	-11.25	6.90
3/26/2012	-9.18	-3.56	-8.15	-15.56	-12.90	6.91
6/15/2012	-10.04	-3.74	-8.45	-15.12	-12.83	7.23
9/19/2012	-11.84	-3.83	-8.38	-14.21	-11.72	7.29
Los Angeles #4						Reference Point Elevation: 141.00
Depth of Well	1740-1780	1190-1210	720-740	490-510	355-375	235-255
Aquifer Name	Not Interpreted	Not Interpreted	Not Interpreted	Not Interpreted	Not Interpreted	Not Interpreted
5/18/2012	-9.77	-41.89	-31.52	-23.70	-21.91	-10.93
6/13/2012	-10.33	-38.95	-32.67	-24.49	-22.62	-11.26
… 8/30/2012	-12.49	-41.40	-34.23	-25.27	-23.49	-11.41
9/13/2012	-12.95	-38.27	-26.69	-23.09	-22.49	-11.41

TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2011-2012

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
Manhattan Beach #1						Reference Point Elevation: 129.12
Depth of Well	1950-1990	1570-1590	1250-1270	865-885	640-660	320-340
Aquifer Name	Pico Formation	Pico Formation	Sunnyside	Silverado	Silverado	Lynwood
12/30/2011	0.48	-3.83	-36.05	n/a	-5.13	4.37
3/27/2012	-1.08	-3.65	-36.02	n/a	-5.12	4.22
6/18/2012	-0.98	-3.48	-35.78	n/a	-3.92	5.06
9/14/2012	-0.81	-3.26	-35.41	-6.29	-6.44	3.41
	ZONE 7					
Depth of Well	180-200					
Aquifer Name	Gage					
12/30/2011	7.46					
3/27/2012	7.67					
6/18/2012	8.20					
9/14/2012	7.29					
Montebello #1						Reference Point Elevation: 192.60
Depth of Well	960-980	690-710	500-520	370-390	210-230	90-110
Aquifer Name	Pico Formation	Sunnyside	Silverado	Lynwood	Gage	Exposition
10/18/2011	106.26	104.49	103.61	98.65	95.18	Dry
12/20/2011	107.01	104.32	103.52	99.11	96.26	Dry
3/22/2012	104.07	100.46	99.65	95.40	93.87	Dry
6/19/2012	102.87	98.40	97.56	93.29	93.53	Dry
9/27/2012	94.00	87.00	86.20	82.71	85.84	Dry
Norwalk #1						Reference Point Elevation: 95.44
Depth of Well	1400-1420	990-1010	720-740	430-450	220-240	
Aquifer Name	Sunnyside	Silverado	Lynwood	Jefferson	Gage	
10/14/2011	43.79	13.79	25.63	5.24	4.38	
11/3/2011	45.96	15.48	26.44	6.12	4.91	
12/16/2011	47.02	13.72	26.58	7.89	6.20	
3/21/2012	45.35	5.42	23.36	8.04	6.80	
6/13/2012	44.02	0.25	21.95	5.05	5.85	
9/19/2012	38.25	-9.31	14.18	0.60	2.61	
Norwalk #2						Reference Point Elevation: 114.73
Depth of Well	1460-1480	1260-1280	960-980	800-820	480-500	236-256
Aquifer Name	Sunnyside	Sunnyside	Silverado	Lynwood	Gardena	Exposition
11/8/2011	30.88	30.91	29.06	29.20	29.30	32.39
12/7/2011	32.36	32.37	28.69	28.99	30.09	32.83
12/28/2011	32.14	32.18	27.93	28.80	31.41	33.85
3/16/2012	28.29	28.44	21.16	22.59	27.79	32.43
6/19/2012	25.33	25.34	17.77	19.98	22.80	29.71
9/19/2012	18.40	18.32	8.50	10.50	17.73	26.65
Pico #1						Reference Point Elevation: 181.06
Depth of Well	860-900	460-480	380-400	170-190		
Aquifer Name	Pico Formation	Silverado	Silverado	Gardena		
12/15/2011	148.94	140.92	140.79	140.41		
3/15/2012	145.25	137.50	136.15	134.10		
6/15/2012	142.93	135.25	133.96	132.40		
9/15/2012	134.44	123.71	122.07	118.43		
Pico #2						Reference Point Elevation: 149.60
Depth of Well	1180-1200	830-850	560-580	320-340	235-255	100-120
Aquifer Name	Sunnyside	Sunnyside	Sunnyside	Silverado	Lynwood	Gaspur
12/15/2011	88.73	89.02	92.54	102.41	103.48	108.20
3/15/2012	83.36	79.95	86.86	98.64	99.56	103.61
6/15/2012	81.31	77.75	85.25	98.97	99.63	103.97
9/15/2012	68.47	63.14	72.86	89.58	90.22	94.45

TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2011-2012

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
PM-3 Madrid						Reference Point Elevation: 70.68
Depth of Well	640-680	480-520	240-280	145-185		
Aquifer Name	Sunnyside	Silverado	Lynwood	Gage		
12/30/2011	-12.81	-9.84	-9.75	-9.71		
3/19/2012	-12.80	-10.11	-10.00	-9.98		
6/18/2012	-12.84	-10.23	-10.13	-10.11		
9/20/2012	-12.91	-10.09	-9.98	-9.98		
PM-4 Mariner						Reference Point Elevation: 100.59
Depth of Well	670-710	500-540	340-380	200-240		
Aquifer Name	Sunnyside	Silverado	Lynwood	Lynwood		
10/20/2011	-5.45	-2.90	0.27	0.32		
11/3/2011	-5.84	-4.01	-0.90	-0.83		
11/9/2011	-5.96	-4.14	-0.99	-0.92		
12/14/2011	-5.91	-4.24	-1.11	-1.04		
1/18/2012	-5.86	-4.06	-0.88	-0.83		
2/10/2012	-5.72	-3.75	-0.62	-0.55		
3/19/2012	-5.85	-3.75	-0.65	-0.57		
4/18/2012	-5.86	-3.90	-0.87	-0.84		
5/16/2012	-5.81	-3.71	-0.66	-0.58		
6/18/2012	-5.80	-3.84	-0.65	-0.59		
7/19/2012	-6.14	-4.10	-0.93	-0.88		
8/20/2012	-6.28	-4.49	-1.24	-1.20		
9/16/2012	-5.89	-4.31	-0.15	-0.11		
PM-5 Columbia Park						Reference Point Elevation: 76.72
Depth of Well	1195-1235	905-925	770-790	530-550	390-410	240-260
Aquifer Name	Pico Formation	Pico Formation	Sunnyside	Sunnyside	Silverado	Gage
11/3/2011	-36.92	-46.63	-11.32	-9.48	-3.98	-3.67
12/29/2011	-36.83	-46.72	-11.40	-9.39	-3.85	-3.56
3/19/2012	-36.71	-46.45	-11.45	-9.50	-3.60	-3.37
6/19/2012	-36.32	-45.69	-11.47	-9.41	-3.55	-3.31
9/18/2012	-36.37	-46.07	-11.94	-9.69	-3.58	-3.29
PM-6 Madrona Marsh						Reference Point Elevation: 80.88
Depth of Well	1195-1235	905-925	770-790	530-550	390-410	240-260
Aquifer Name	Pico Formation	Sunnyside	Sunnyside	Silverado	Lynwood	Gage
12/30/2011	-35.72	-12.19	-10.74	-3.68	-2.65	-2.18
3/19/2012	-35.22	-11.87	-10.76	-3.62	-2.57	-2.11
6/13/2012	-34.25	-12.01	-10.92	-3.69	-2.71	-2.17
9/13/2012	-35.02	-12.60	-11.36	-3.94	-2.95	-2.41
Rio Hondo #1						Reference Point Elevation: 146.89
Depth of Well	1110-1130	910-930	710-730	430-450	280-300	140-160
Aquifer Name	Sunnyside	Sunnyside	Sunnyside	Silverado	Lynwood	Gardena
10/24/2011	82.75	84.44	83.74	72.94	77.68	80.11
11/9/2011	83.65	85.59	84.78	73.03	77.55	79.98
12/14/2011	85.18	85.31	84.49	73.98	78.85	81.27
1/17/2012	83.84	83.35	82.57	71.58	76.96	79.80
2/9/2012	83.34	82.39	81.60	70.27	76.14	79.15
2/14/2012	83.06	82.91	82.10	70.25	75.90	78.91
3/16/2012	81.65	80.20	79.38	68.23	74.29	77.24
4/18/2012	82.90	83.44	82.62	72.14	77.91	80.32
5/16/2012	82.90	82.50	81.67	70.62	76.50	79.38
5/17/2012	82.88	82.54	81.67	70.04	76.34	79.28
6/14/2012	78.60	77.40	76.65	66.98	74.15	77.02
8/17/2012	71.00	68.50	67.62	54.44	65.09	69.77
9/11/2012	68.90	66.56	65.69	54.50	63.30	67.05

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TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2011-2012

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
Seal Beach #1						Reference Point Elevation: 9.51
Depth of Well	1345-1365	1160-1180	1020-1040	775-795	605-625	215-235
Aquifer Name	Sunnyside	Sunnyside	Sunnyside	Silverado	Lynwood	Gage
12/30/2011	-0.23	-0.60	-0.24	-28.67	-19.95	2.11
3/26/2012	-14.97	-15.65	-15.06	-40.08	-26.08	-0.72
6/14/2012	-16.15	-16.40	-16.25	-41.92	-27.10	-1.29
9/13/2012	-24.24	-24.46	n/a	n/a	n/a	-5.71
9/25/2012	-24.55	-24.75	-24.62	-56.11	-39.56	-6.70
	ZONE 7					
Depth of Well	60-70					
Aquifer Name	Gaspur					
12/30/2011	3.91					
3/26/2012	3.06					
6/14/2012	3.10					
9/13/2012	1.12					
9/25/2012	0.73					
South Gate #1						Reference Point Elevation: 102.73
Depth of Well	1440-1460	1320-1340	910-930	565-585	220-240	
Aquifer Name	Pico Formation	Sunnyside	Silverado	Lynwood	Exposition	
11/14/2011	9.02	11.28	15.11	9.45	42.40	
12/19/2011	10.49	12.65	16.93	14.93	42.78	
3/26/2012	7.34	9.83	14.21	10.93	43.25	
6/19/2012	3.48	5.44	8.15	4.98	42.75	
9/14/2012	-3.27	-0.93	3.55	-0.45	42.15	
9/25/2012	-3.51	-1.11	3.10	0.48	42.17	
Westchester #1						Reference Point Elevation: 124.27
Depth of Well	740-760	560-580	455-475	310-330	215-235	
Aquifer Name	Pico Formation	Sunnyside	Silverado	Lynwood	Gage	
12/28/2011	2.06	8.53	8.76	8.74	8.75	
3/23/2012	1.64	8.50	8.68	8.68	8.76	
9/13/2012	-0.02	8.12	8.42	8.46	8.55	
9/25/2012	0.37	8.22	8.46	8.49	8.57	
Whittier #1						Reference Point Elevation: 217.88
Depth of Well	1180-1200	920-940	600-620	450-470	200-220	
Aquifer Name	Sunnyside	Sunnyside	Silverado	Lynwood	Gage	
11/8/2011	120.49	120.52	114.80	113.65	200.97	
12/21/2011	121.01	121.01	115.42	114.27	200.99	
3/20/2012	121.50	121.45	115.86	114.77	200.83	
6/15/2012	122.03	122.08	116.30	115.08	200.65	
9/7/2012	122.12	122.09	115.76	114.38	200.18	
9/14/2012	122.38	122.07	114.70	114.15	200.01	
Whittier #2						Reference Point Elevation: 165.17
Depth of Well	1370-1390	1090-1110	655-675	425-445	315-335	150-170
Aquifer Name	Sunnyside	Sunnyside	Silverado	Silverado	Lynwood	Gardena
12/20/2011	101.58	101.89	102.93	102.85	115.66	121.12
3/21/2012	99.88	100.20	96.97	95.39	111.39	119.01
6/19/2012	99.20	99.49	94.54	91.44	111.95	119.36
9/14/2012	93.23	93.28	80.49	77.17	103.15	113.07

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TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2011-2012

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
Willowbrook #1						Reference Point Elevation: 96.21
Depth of Well	885-905	500-520	360-380	200-220		
Aquifer Name	Sunnyside	Silverado	Lynwood	Gage		
10/20/2011	-42.68	-36.46	-41.49	-40.94		
11/17/2011	-41.89	-35.94	-40.60	-40.34		
12/14/2011	-38.19	-35.34	-39.59	-39.31		
1/18/2012	-42.78	-36.16	-39.67	-39.29		
2/9/2012	-44.04	-35.92	-39.49	-39.17		
3/20/2012	-45.99	-36.11	-40.02	-39.58		
4/18/2012	-46.24	-36.06	-40.10	-39.57		
5/16/2012	-46.78	-36.29	-40.31	-39.75		
6/13/2012	-48.34	-36.80	-41.59	-40.75		
8/17/2012	-51.65	-38.42	-42.90	-41.98		
9/26/2012	-43.47	-37.38	-42.17	-41.58		
Wilmington #1						Reference Point Elevation: 40.81
Depth of Well	915-935	780-800	550-570	225-245	120-140	
Aquifer Name	Sunnyside	Sunnyside	Silverado	Lynwood	Gage	
12/22/2011	-45.02	-45.67	-45.57	-15.37	-11.95	
3/20/2012	-40.01	-40.60	-40.51	-14.05	-10.95	
6/14/2012	-41.79	-42.38	-42.29	-14.35	-11.11	
9/14/2012	-45.33	-45.92	-45.89	-16.14	-12.74	
Wilmington #2						Reference Point Elevation: 29.78
Depth of Well	950-970	755-775	540-560	390-410	120-140	
Aquifer Name	Sunnyside	Silverado	Lynwood	Lynwood	Gage	
12/22/2011	-34.58	-30.04	-25.66	-24.81	-6.49	
3/20/2012	-31.79	-28.00	-24.04	-23.23	-6.64	
6/13/2012	-32.46	-28.13	-24.46	-23.61	-6.28	
9/18/2012	-34.60	-29.99	-26.22	-25.45	-6.78	
Whittier Narrows #1						Reference Point Elevation: 214.96
Depth of Well	749-769	609.5-629	462.5-482.5	392.5-402	334-343.5	272.5-282.5
Aquifer Name	Sunnyside	Sunnyside	Sunnyside	Silverado	Silverado	Lynwood
3/14/2012	187.29	188.10	189.14	191.05	191.91	192.84
9/12/2012	177.35	178.32	179.63	182.21	183.65	185.14
	ZONE 7	**ZONE 8**	**ZONE 9**			
Depth of Well	233.5-243	163-173	95-104.5			
Aquifer Name	Jefferson	Gardena	Gaspur			
3/14/2012	192.80	192.66	191.54			
9/12/2012	185.27	185.37	185.84			
Whittier Narrows #2						Reference Point Elevation: 209.08
Depth of Well	659-678	579-598	469-488	419-428	329-338	263-273
Aquifer Name	Pico Formation	Pico Formation	Pico Formation	Pico Formation	Pico Formation	Not Defined
3/14/2012	-11.05	-11.05	-9.62	-0.05	115.5	168.89
9/18/2012	-12.85	-12.69	-12.58	-3.11	106.45	156.32
	ZONE 7	**ZONE 8**	**ZONE 9**			
Depth of Well	214-224	136-145	91-100			
Aquifer Name	Not Defined	Not Defined	Gardena			
3/14/2012	169.62	170.70	175.55			
9/18/2012	157.12	164.53	164.79			

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TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Bell #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/1/2012	9/14/2012	5/1/2012	9/14/2012	5/1/2012	9/14/2012	5/1/2012	9/14/2012	5/1/2012	9/14/2012	5/1/2012	9/14/2012
General Minerals															
Alkalinity	mg/l			600	560	160	160	160	150	170	160	180	230	240	170
Anion Sum	meq/l			16	13	5.5	5.4	5.1	5.1	5.7	5.5	7.4	8.5	11	9.5
Bicarbonate as HCO3	mg/l			730	680	200	190	190	190	210	200	210	280	290	200
Boron	mg/l	1	N	**1.5**	**1.6**	0.14	0.14	0.13	0.13	0.15	0.15	0.14	0.15	0.16	0.16
Calcium	mg/l			14	14	52	52	46	46	58	58	76	77	120	120
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			15	9.5	2.8	2	2.2	ND	2.6	ND	2.4	ND	2.6	ND
Cation Sum	meq/l			16	16	5.8	5.8	5.4	5.4	6	6.2	7.7	8	11	12
Chloride	mg/l	500	S	150	58	22	21	29	29	26	26	52	52	110	110
Fluoride	mg/l	2	P	0.42	0.4	0.23	0.22	0.41	0.38	0.43	0.4	0.38	0.35	0.38	0.35
Hardness (as CaCO3)	mg/l			59	62	180	180	160	160	200	210	270	280	430	440
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	0.12	0.13	0.023	0.022	ND	ND	0.022	0.021	ND	ND	ND	ND
Langelier Index - 25 degree	None			1	0.88	0.91	0.76	0.76	0.59	0.92	0.72	0.99	0.75	1.2	0.94
Magnesium	None			5.9	6.1	11	11	11	11	14	15	19	20	32	33
Manganese	ug/l	50	S	33	36	**81**	**76**	**51**	48	**75**	**70**	ND	ND	ND	ND
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	1.8	1.8	2.6	2.6
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			4.9	5.4	2.8	2.9	3.6	3.6	3.3	3.5	3	3.2	2.9	3
Sodium	mg/l			330	350	50	51	48	49	42	45	52	55	58	61
Sulfate	mg/l	500	S	1.9	0.53	77	77	55	55	72	72	110	110	140	140
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	970	990	330	350	320	320	360	350	490	680	690	490
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	1.8	1.8	2.6	2.6
Total Organic Carbon	mg/l			18	20	0.37	0.39	0.55	0.52	ND	ND	ND	ND	0.46	0.71
General Physical Properties															
Apparent Color	ACU	15	S	**150**	**350**	ND	3	ND	3	ND	ND	ND	5	ND	3
pH (Lab)	Units			8.5	8.3	8.3	8.2	8.2	8.1	8.3	8.1	8.2	7.9	8.1	8
Odor	TON	3	S	**4**	**40**	1	**3**	1	2	1	2	1	1	1	1
pH of CaCO3 saturation(25C)	Units			7.4	7.4	7.4	7.4	7.5	7.5	7.4	7.4	7.2	7.1	6.9	7
pH of CaCO3 saturation(60C)	Units			7	7	7	7	7	7.1	6.9	6.9	6.8	6.7	6.4	6.6
Specific Conductance	umho/cm	1600	S	1500	**1600**	530	540	500	510	550	560	710	1100	1000	720
Turbidity	NTU	5	S	1.8	1.2	0.17	0.091	0.15	0.18	0.15	0.16	0.2	**5.6**	2.2	0.09
Metals															
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	ND	1.2	ND	ND	ND	ND	1.2	1.4	3.8	4.2	1.9	2.6
Barium	ug/l	1000	P	14	13	37	37	36	37	70	70	240	230	130	130
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	1	1.2	ND	ND	ND	ND	ND	ND	2.3	1.7	5.1	1.6
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			0.026	ND	ND	ND	ND	ND	ND	ND	2	1.8	4.3	4.2
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	5.4	ND	ND	ND	ND	ND	ND	ND	6.5	5.9	6.8	6.4
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.8	**16**	**23**
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	2.6	2.5	3.6	3.7

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Bell Gardens #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/17/2012	9/21/2012	5/17/2012	9/21/2012	5/17/2012	9/21/2012	5/17/2012	9/21/2012	5/17/2012	9/21/2012	5/17/2012	9/21/2012
General Minerals															
Alkalinity	mg/l			160	160	160	150	120	110	140	130	140	130	150	130
Anion Sum	meq/l			7.3	7.1	4.9	4.6	5.7	5.4	7.3	6.9	5.8	5.5	5.8	5.6
Bicarbonate as HCO3	mg/l			200	190	190	180	140	130	180	160	170	160	180	160
Boron	mg/l	1	N	0.055	0.055	0.13	0.12	0.16	0.15	0.17	0.16	0.16	0.16	0.16	0.16
Calcium	mg/l			92	92	40	39	54	50	76	74	57	54	59	59
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			2.5	ND	2.4	2.5	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			7	7	5	4.9	5.8	5.4	7.3	7.2	5.9	5.7	6	6
Chloride	mg/l	500	S	51	49	32	30	57	54	68	66	47	44	44	45
Fluoride	mg/l	2	P	0.21	0.21	0.31	0.31	0.41	0.42	0.32	0.34	0.23	0.23	0.36	0.35
Hardness (as CaCO3)	mg/l			280	280	130	130	180	160	250	240	190	180	200	200
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	0.042	0.042	ND	0.021	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			1.1	0.99	0.72	0.73	0.43	0.35	0.84	0.61	0.42	0.3	0.54	0.43
Magnesium	None			14	14	8	8	10	9.8	14	14	12	11	12	12
Manganese	ug/l	50	S	**170**	32	43	41	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate	mg/l	10	P	ND	ND	ND	ND	1.7	1.7	2.4	2.4	2.1	2	1.7	1.8
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			2.1	2.2	2.5	2.5	3.2	3.1	3.5	3.5	3.1	3	3.2	3.4
Sodium	mg/l			28	28	53	52	49	46	53	53	47	46	45	46
Sulfate	mg/l	500	S	120	120	39	36	79	76	110	110	71	68	74	73
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S		460		300		350		470		360		370
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	1.7	1.7	2.4	2.4	2.1	2	1.7	1.8
Total Organic Carbon	mg/l			0.35	0.34	0.41	0.38	0.39	0.36	0.96	0.54	0.35	0.34	0.32	0.32
General Physical Properties															
Apparent Color	ACU	15	S	ND	3	ND	5	ND	ND	ND	ND	ND	3	ND	ND
pH (Lab)	Units			8.3	8.2	8.3	8.3	8	8	8.2	8	7.9	7.8	8	7.9
Odor	TON	3	S	1	1	1	1	ND	1	1	1	1	1	1	1
pH of CaCO3 saturation(25C)	Units			7.2	7.2	7.6	7.6	7.6	7.6	7.3	7.4	7.4	7.5	7.4	7.5
pH of CaCO3 saturation(60C)	Units			6.7	6.8	7.1	7.2	7.1	7.2	6.9	6.9	7	7	7	7
Specific Conductance	umho/cm	1600	S	700	700	480	480	570	580	720	730	580	570	580	600
Turbidity	NTU	5	S	0.41	0.26	0.2	0.21	0.34	0.34	0.17	0.54	0.16	0.49	0.12	0.13
Metals															
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	**14**	3.1	ND	ND	2.4	2.4	**14**	2.7	1.3	1.2	2	2
Barium	ug/l	1000	P	480	98	60	63	48	47	620	120	56	54	53	56
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	ND	ND	ND	1	ND	ND	ND	1.1	ND	1	ND
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			ND	ND	ND	ND	0.41	0.4	0.3	0.3	0.57	0.55	0.52	0.52
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	2.1	2	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.54	0.75
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	0.51	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.8	2
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	0.53	ND	ND	ND	ND	ND	ND	2.7	2.9	0.66	0.86
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	0.99	ND	0.52	0.85	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Cerritos #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/12/2012	8/30/2012	4/12/2012	8/30/2012	4/12/2012	8/30/2012	4/12/2012	8/30/2012	4/12/2012	8/30/2012	4/12/2012	8/30/2012
General Minerals															
Alkalinity	mg/l			160	160	150	150	170	150	170	170	180	170	180	180
Anion Sum	meq/l			4.7	4.6	4.2	4.1	5.2	4.9	4.8	4.6	4.5	4.3	4.4	4.4
Bicarbonate as HCO3	mg/l			190	190	190	180	200	190	210	210	210	210	220	220
Boron	mg/l	1	N	0.065	0.081	ND	0.061	0.072	0.086	0.068	0.082	0.066	0.08	0.056	0.071
Calcium	mg/l			34	35	31	30	42	43	45	45	39	39	44	44
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			2.7	2.6	2.2	2.1	2	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			4.6	4.8	4.3	4.4	5.3	5.4	4.8	4.9	4.6	4.6	4.5	4.6
Chloride	mg/l	500	S	15	14	13	11	20	19	14	12	11	9.3	9.9	8.8
Fluoride	mg/l	2	P	0.27	0.24	0.37	0.35	0.39	0.36	0.53	0.5	0.46	0.44	0.32	0.29
Hardness (as CaCO3)	mg/l			100	110	98	98	130	140	160	160	140	140	150	150
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	ND	ND	ND	ND	0.026	0.027	0.076	0.078	0.055	0.06	0.081	0.072
Langelier Index - 25 degree	None			0.71	0.7	0.57	0.55	0.68	0.67	0.64	0.6	0.59	0.57	0.61	0.64
Magnesium	None			4.7	5	5.1	5.2	6.4	6.8	11	11	9.8	10	9	9.4
Manganese	ug/l	50	S	25	24	27	25	42	40	**79**	24	**110**	**110**	**140**	**130**
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			2.1	2.1	2.1	2.1	2	2	2	1.9	1.9	1.8	2	2
Sodium	mg/l			57	60	53	54	59	60	37	38	42	42	34	35
Sulfate	mg/l	500	S	52	48	38	34	62	60	42	39	30	27	24	22
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	320	300	260	260	330	330	300	290	280	280	290	270
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			ND	ND	0.32	0.36	ND	0.36	ND	ND	0.33	ND	ND	0.31
General Physical Properties															
Apparent Color	ACU	15	S	ND	3	ND	3	ND	3	ND	3	ND	5	ND	3
pH (Lab)	Units			8.3	8.3	8.2	8.2	8.2	8.2	8.1	8.1	8.1	8.1	8.1	8.1
Odor	TON	3	S	1	1	1	**3**	ND	2	ND	1	1	2	1	2
pH of CaCO3 saturation(25C)	Units			7.6	7.6	7.7	7.7	7.5	7.5	7.5	7.5	7.5	7.5	7.4	7.4
pH of CaCO3 saturation(60C)	Units			7.2	7.2	7.2	7.2	7.1	7.1	7	7	7.1	7.1	7	7
Specific Conductance	umho/cm	1600	S	450	460	410	420	500	520	450	460	420	430	420	440
Turbidity	NTU	5	S	0.069	0.13	0.13	0.13	0.14	0.11	0.2	0.22	0.2	0.15	0.21	0.24
Metals															
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	**15**	**15**	**11**	9.4	**19**	**17**	5.4	**14**	8.8	8.7	**36**	**34**
Barium	ug/l	1000	P	50	48	96	95	130	130	60	48	80	78	98	98
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Cerritos #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/9/2012	8/30/2012	4/9/2012	8/30/2012	4/9/2012	8/30/2012	4/9/2012	8/30/2012	4/9/2012	8/30/2012	4/9/2012	8/30/2012
General Minerals															
Alkalinity	mg/l			150	150	170	160	160	150	180	180	160	170	340	340
Anion Sum	meq/l			3.6	3.6	8.2	8.1	3.6	3.5	4.1	4	3.7	3.9	15	14
Bicarbonate as HCO3	mg/l			180	180	200	200	190	180	220	210	190	210	420	410
Boron	mg/l	1	N	0.064	ND	0.14	0.14	0.053	0.055	0.066	0.069	0.062	0.068	0.094	0.1
Calcium	mg/l			42	42	90	92	44	43	52	52	50	51	180	180
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	2	ND	ND	ND	2	ND	ND
Cation Sum	meq/l			3.7	3.7	8.1	8.3	3.8	3.8	4.3	4.4	4.1	4.2	15	14
Chloride	mg/l	500	S	5.8	5.8	76	75	5.3	5	6	5.8	5.9	5.6	110	99
Fluoride	mg/l	2	P	0.28	0.26	0.37	0.34	0.3	0.28	0.42	0.39	0.34	0.32	0.36	0.33
Hardness (as CaCO3)	mg/l			130	130	290	300	130	130	160	170	160	160	610	590
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	0.032	0.033	0.09	0.084	0.25	0.25
Langelier Index - 25 degree	None			0.59	0.57	0.66	0.9	0.67	0.69	0.75	0.71	0.64	0.76	1.2	1.2
Magnesium	None			5.5	5.6	17	18	6	6.2	8.6	9	7.2	7.6	36	36
Manganese	ug/l	50	S	9.4	9	ND	ND	38	36	**87**	**84**	**100**	**100**	**560**	**510**
Nitrate	mg/l	10	P	ND	ND	3.1	3.1	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			2.7	2.6	4.2	4.2	2.4	2.4	2.6	2.6	2.7	2.8	4.1	4
Sodium	mg/l			25	25	49	49	24	23	22	22	22	22	55	53
Sulfate	mg/l	500	S	20	20	120	120	17	16	17	16	16	15	230	210
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	230	220	510	520	220	220	260	250	240	250	880	880
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	3.1	3.1	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			ND	ND	0.5	0.42	ND	ND	ND	0.66	ND	ND	1.1	1
General Physical Properties															
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	5	ND	ND	3	3	5	10
pH (Lab)	Units			8.2	8.1	7.8	8.1	8.2	8.2	8.1	8.1	8.1	8.2	7.7	7.8
Odor	TON	3	S	2	ND	2	1	1	1	1	1	1	1	1	1
pH of CaCO3 saturation(25C)	Units			7.6	7.6	7.2	7.2	7.5	7.5	7.4	7.4	7.4	7.4	6.6	6.6
pH of CaCO3 saturation(60C)	Units			7.1	7.1	6.7	6.7	7.1	7.1	7	7	7	7	6.1	6.1
Specific Conductance	umho/cm	1600	S	340	350	800	800	350	360	390	400	380	390	1300	1300
Turbidity	NTU	5	S	0.064	0.076	0.095	0.07	0.52	4.8	0.13	0.14	0.22	0.23	0.14	1.6
Metals															
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	2.3	2.4	2.3	3.2	3.2	3.1	7	7.4	**17**	**16**	6.4	6.8
Barium	ug/l	1000	P	97	100	140	150	110	110	160	160	160	160	78	82
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	ND	1.7	1.3	ND	ND	ND	ND	ND	ND	1.8	1.6
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			0.073	0.082	0.79	0.76	ND	ND	ND	ND	ND	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	4.8	4.5	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	1	1.1	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Commerce #1									
				Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/31/2012	9/26/2012	5/31/2012	9/26/2012	5/31/2012	9/26/2012	5/31/2012	9/26/2012	5/31/2012	9/26/2012
General Minerals													
Alkalinity	mg/l			300	300	220	210	200	200	170	160	160	160
Anion Sum	meq/l			11	15	8.1	8.1	8.2	7.8	7	7	6.8	6.6
Bicarbonate as HCO3	mg/l			370	370	270	250	240	240	210	200	200	190
Boron	mg/l	1	N	0.59	0.69	0.21	0.24	0.27	0.26	0.15	0.15	0.13	0.13
Calcium	mg/l			51	50	61	65	47	44	71	68	66	63
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			3.1	2.7	2.6	2	2.4	ND	ND	ND	ND	ND
Cation Sum	meq/l			12	15	8	8.9	9	8.3	7.6	7.4	7.4	7
Chloride	mg/l	500	S	170	320	99	110	86	80	66	68	69	68
Fluoride	mg/l	2	P	0.39	0.4	0.38	0.38	0.5	0.5	0.38	0.38	0.46	0.45
Hardness (as CaCO3)	mg/l			230	230	240	250	200	180	260	250	260	240
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	ND	0.021	0.083	0.085	0.13	0.096	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.94	0.88	0.95	0.86	0.79	0.59	0.77	0.56	0.73	0.49
Magnesium	None			24	24	20	22	19	18	21	20	22	21
Manganese	ug/l	50	S	6.2	8.5	39	39	**76**	**55**	ND	ND	ND	ND
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	4.1	4	6.9	6.9
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			5.8	6.2	3.1	3.4	3.7	3.3	2.3	2.2	2.1	1.9
Sodium	mg/l			160	240	73	87	110	100	51	52	52	49
Sulfate	mg/l	500	S	10	10	40	40	86	77	70	71	50	51
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	640	880	470	500	510	490	440	440	410	420
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	4.1	4	6.9	6.9
Total Organic Carbon	mg/l			4.4	5.1	0.94	1	1.1	0.84	0.31	0.32	ND	ND
General Physical Properties													
Apparent Color	ACU	15	S	**20**	**25**	3	3	5	5	ND	ND	ND	ND
pH (Lab)	Units			8.1	8	8.2	8.1	8.2	8	8	7.9	8	7.8
Odor	TON	3	S	**17**	1	1	**3**	2	1	1	1	2	1
pH of CaCO3 saturation(25C)	Units			7.2	7.2	7.2	7.2	7.4	7.4	7.3	7.3	7.3	7.4
pH of CaCO3 saturation(60C)	Units			6.7	6.7	6.8	6.8	6.9	7	6.8	6.9	6.9	6.9
Specific Conductance	umho/cm	1600	S	1100	**1600**	800	860	810	820	690	720	680	700
Turbidity	NTU	5	S	1.1	0.51	0.28	0.24	0.4	1.8	0.15	1.2	1.8	1.5
Metals													
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	ND	2.7	ND	ND	1.1	1.1	ND	1.3	ND	1.3
Barium	ug/l	1000	P	70	83	100	110	220	220	73	78	58	59
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	3	ND	1.6	ND	1.8	ND	8.1	6.5	11	9.7
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			ND	ND	ND	ND	ND	ND	7.3	7.6	11	11
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	6.8	17	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	1.9	2	1.3	1.5	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	0.85	0.98	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	3.9	3.6	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	0.58	2.5	2.5	ND	2.8	2.8

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Compton #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				4/25/2012	9/10/2012	4/25/2012	9/10/2012	4/25/2012	9/10/2012	4/25/2012	9/10/2012
General Minerals											
Alkalinity	mg/l			170	150	140	130	160	150	160	160
Anion Sum	meq/l			4	3.8	4.7	4.5	5.1	4.9	5.5	5.4
Bicarbonate as HCO3	mg/l			200	190	170	160	190	180	200	200
Boron	mg/l	1	N	0.16	0.14	0.097	0.092	0.12	0.1	0.092	0.085
Calcium	mg/l			23	21	40	39	53	49	63	62
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	2.5
Carbonate as CO3	mg/l			3.7	2.8	2.5	ND	2.2	ND	2.2	ND
Cation Sum	meq/l			4.4	4.1	4.8	4.7	5.6	5.2	5.8	5.7
Chloride	mg/l	500	S	16	16	23	22	24	24	22	21
Fluoride	mg/l	2	P	0.31	0.31	0.35	0.36	0.29	0.3	0.28	0.28
Hardness (as CaCO3)	mg/l			65	60	120	110	170	160	180	180
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	ND	ND	ND	ND	0.032	0.026	0.077	0.071
Langelier Index - 25 degree	None			0.67	0.52	0.75	0.59	0.82	0.73	0.89	0.74
Magnesium	None			2	1.8	3.4	3.4	9.8	9.2	6.5	6.5
Manganese	ug/l	50	S	3.1	10	18	15	**59**	47	**81**	**75**
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			1.7	1.6	1.7	1.6	3	2.6	2.7	2.5
Sodium	mg/l			71	66	57	56	47	44	47	47
Sulfate	mg/l	500	S	8	10	60	58	60	59	76	75
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	240	260	290	290	320	310	350	340
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			3.2	3.1	0.77	0.76	0.65	0.58	ND	ND
General Physical Properties											
Apparent Color	ACU	15	S	**30**	**30**	5	5	5	5	ND	ND
pH (Lab)	Units			8.4	8.4	8.4	8.2	8.3	8.2	8.2	8.1
Odor	TON	3	S	2	**3**	2	2	2	**3**	1	**4**
pH of CaCO3 saturation(25C)	Units			7.8	7.8	7.6	7.6	7.4	7.5	7.3	7.4
pH of CaCO3 saturation(60C)	Units			7.3	7.4	7.2	7.2	7	7	6.9	6.9
Specific Conductance	umho/cm	1600	S	380	390	460	470	490	510	530	550
Turbidity	NTU	5	S	0.21	0.2	0.12	0.25	0.24	0.19	0.78	0.67
Metals											
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	ND	ND	ND	ND	ND	ND	**22**	**21**
Barium	ug/l	1000	P	2.2	8.5	12	11	60	56	160	160
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Compton #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/25/2012	9/10/2012	4/25/2012	9/10/2012	4/25/2012	9/10/2012	4/25/2012	9/10/2012	4/25/2012	9/10/2012	4/25/2012	9/10/2012
General Minerals															
Alkalinity	mg/l			460	430	280	260	160	150	180	170	180	170	180	170
Anion Sum	meq/l			9.7	9	6	5.5	4.9	4.6	6.1	5.8	6.2	6.2	8	7.4
Bicarbonate as HCO3	mg/l			560	520	340	310	190	180	220	200	220	210	220	200
Boron	mg/l	1	N	0.66	0.69	0.18	0.19	0.11	0.1	0.12	0.12	0.12	0.11	0.17	0.15
Calcium	mg/l			12	12	26	27	45	43	68	69	64	66	84	79
Carbon Dioxide	mg/l			ND	3.8	ND	4.4	ND	ND	ND	2.4	ND	2.3	ND	3.9
Carbonate as CO3	mg/l			12	7.5	3.8	2.4	2.8	2.2	2.3	ND	2.6	2	ND	ND
Cation Sum	meq/l			10	10	6.2	6.1	5.2	5.1	6.4	6.5	6.4	6.6	8.5	7.9
Chloride	mg/l	500	S	15	13	14	13	20	19	30	28	33	35	73	69
Fluoride	mg/l	2	P	0.42	0.43	0.28	0.28	0.24	0.24	0.24	0.25	0.33	0.33	0.38	0.4
Hardness (as CaCO3)	mg/l			39	40	87	90	140	140	220	220	220	230	290	270
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	0.046	0.049	0.044	0.037	ND	ND	0.032	0.03	0.032	0.026	ND	ND
Langelier Index - 25 degree	None			0.89	0.71	0.75	0.55	0.84	0.72	0.93	0.84	0.97	0.87	0.85	0.69
Magnesium	None			2.2	2.3	5.2	5.4	7	6.7	12	12	14	14	20	18
Manganese	ug/l	50	S	12	12	44	34	35	25	44	36	**110**	**91**	29	22
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.43	0.45
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			2.7	3	4.3	4.2	2.8	2.6	2.7	2.6	3.9	4	4.4	4
Sodium	mg/l			210	220	99	97	54	53	45	46	46	46	59	53
Sulfate	mg/l	500	S	ND	0.76	0.5	ND	56	54	80	78	81	83	110	100
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	600	580	350	340	280	300	360	380	370	390	500	500
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.43	0.45
Total Organic Carbon	mg/l			15	15	3.2	3.1	0.84	0.8	0.36	0.31	ND	ND	0.36	0.35
General Physical Properties															
Apparent Color	ACU	15	S	**100**	**160**	**25**	**30**	5	5	ND	3	3	3	ND	ND
pH (Lab)	Units			8.5	8.4	8.2	8.1	8.3	8.3	8.2	8.1	8.3	8.2	8	7.9
Odor	TON	3	S	2	**200**	2	**8**	2	1	2	1	2	1	2	**4**
pH of CaCO3 saturation(25C)	Units			7.6	7.6	7.5	7.5	7.5	7.6	7.3	7.3	7.3	7.3	7.2	7.2
pH of CaCO3 saturation(60C)	Units			7.2	7.2	7	7.1	7.1	7.1	6.8	6.8	6.8	6.8	6.7	6.8
Specific Conductance	umho/cm	1600	S	890	920	560	570	480	490	580	590	590	620	770	770
Turbidity	NTU	5	S	1.7	4.4	1.9	1.7	0.12	0.15	0.14	0.16	3.6	1.4	0.93	3.2
Metals															
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	1.3	4.4	ND	4.7	ND	ND	ND	ND	1.5	1.5	5.4	5
Barium	ug/l	1000	P	13	13	18	18	23	23	33	31	84	83	62	63
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4	ND
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			0.031	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.55	0.56
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.1	5.4
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Downey #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/21/2012	9/11/2012	5/21/2012	9/11/2012	5/21/2012	9/11/2012	5/21/2012	9/11/2012	5/21/2012	9/11/2012	5/21/2012	9/11/2012
General Minerals															
Alkalinity	mg/l			150	140	150	140	170	160	200	180	210	190	330	320
Anion Sum	meq/l			3.6	3.4	6.4	6.2	8.1	7.8	9.8	9	7.2	6.6	15	15
Bicarbonate as HCO3	mg/l			180	170	190	170	200	200	240	220	250	230	400	380
Boron	mg/l	1	N	0.055	0.057	0.063	0.06	0.089	0.095	0.19	0.2	0.088	0.083	0.22	0.21
Calcium	mg/l			40	41	82	82	95	100	100	100	91	85	160	160
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			3.7	3.8	6.5	6.5	7.7	8.4	9.5	9.6	7.3	6.9	15	14
Chloride	mg/l	500	S	5.3	5.3	40	40	71	67	84	81	40	38	94	97
Fluoride	mg/l	2	P	0.35	0.31	0.31	0.28	0.36	0.33	0.41	0.38	0.44	0.41	0.36	0.32
Hardness (as CaCO3)	mg/l			120	130	260	260	310	340	340	340	300	280	550	540
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.56	0.59	0.9	0.8	0.83	0.87	0.76	0.77	0.85	0.84	1.1	1.1
Magnesium	None			6	6.1	14	13	18	20	22	21	18	17	35	34
Manganese	ug/l	50	S	ND	ND	ND	ND	ND	ND	ND	ND	**120**	**110**	**79**	**77**
Nitrate	mg/l	10	P	ND	ND	2.2	2.2	3.4	3.3	1.6	1.8	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			2.8	3	3.7	3.6	3.3	3.6	4.4	4.5	3.6	3.5	5.6	5.5
Sodium	mg/l			25	27	28	28	31	35	59	62	27	26	79	80
Sulfate	mg/l	500	S	18	18	98	97	120	110	160	140	93	84	260	270
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	210	220	370	410	480	530	590	610	450	450	910	910
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	2.2	2.2	3.4	3.3	1.6	1.8	ND	ND	ND	ND
Total Organic Carbon	mg/l			ND	ND	ND	ND	ND	0.34	0.56	0.51	0.31	ND	0.67	0.62
General Physical Properties															
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
pH (Lab)	Units			8.1	8.2	8.2	8.1	8	8	7.8	7.9	7.9	8	7.7	7.8
Odor	TON	3	S	1	1	1	1	ND	1	1	1	1	**3**	1	1
pH of CaCO3 saturation(25C)	Units			7.6	7.6	7.3	7.3	7.2	7.1	7	7.1	7.1	7.2	6.6	6.6
pH of CaCO3 saturation(60C)	Units			7.1	7.1	6.8	6.8	6.7	6.7	6.6	6.6	6.6	6.7	6.2	6.2
Specific Conductance	umho/cm	1600	S	340	350	610	620	760	780	910	900	670	660	1300	1300
Turbidity	NTU	5	S	0.14	0.32	0.19	0.12	0.16	0.11	0.16	0.12	3	0.66	1	0.17
Metals															
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	3	3.2	3.2	3	3.1	4	2.2	2.7	4.1	4.3	2.7	3.2
Barium	ug/l	1000	P	99	100	210	180	130	140	97	92	240	230	63	68
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	3.2	3.5	3.4	1.9	2	1.2	1.3	ND	ND	ND	ND	ND
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	2.3	ND	2.2	ND	ND	ND	4.3
Hexavalent Chromium	ug/l			3.8	3.7	1.9	1.9	1.2	1.2	0.31	0.28	ND	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	3.2	3.1	9.1	9	3.4	3	ND	ND	2.4	2.4
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	0.62	0.59	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	0.7	0.66	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	3.4	3.2	2.6	2.5	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Huntington Park #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				5/14/2012	9/23/2012	5/14/2012	9/23/2012	5/14/2012	9/23/2012	5/14/2012	9/23/2012
General Minerals											
Alkalinity	mg/l			170	170	180	170	250	230	330	320
Anion Sum	meq/l			6.2	5.8	6.1	5.8	11	10	13	12
Bicarbonate as HCO3	mg/l			210	200	220	210	300	280	400	390
Boron	mg/l	1	N	0.13	0.14	0.13	0.14	0.2	0.22	0.17	0.18
Calcium	mg/l			61	64	59	65	120	130	140	150
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			ND	ND	2.9	ND	2.8	ND	2.9	2.1
Cation Sum	meq/l			6.1	6.5	6	6.6	11	12	13	14
Chloride	mg/l	500	S	24	22	23	22	89	84	80	76
Fluoride	mg/l	2	P	0.51	0.49	0.46	0.43	0.35	0.35	0.36	0.36
Hardness (as CaCO3)	mg/l			210	230	210	230	410	450	510	530
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	0.27	**0.3**	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.76	0.64	0.98	0.71	1.2	1.1	1.4	1.2
Magnesium	None			15	16	15	16	30	32	36	38
Manganese	ug/l	50	S	47	44	ND	ND	3.9	4.3	ND	ND
Nitrate	mg/l	10	P	ND	ND	ND	ND	2.8	2.5	4.7	4.3
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			3.1	3.3	3.1	3.4	4.2	4.5	4.7	5
Sodium	mg/l			39	42	40	44	57	63	61	64
Sulfate	mg/l	500	S	96	90	89	83	170	160	180	170
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	**0.91**	**0.9**	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	350	370	360	370	690	740	780	800
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	2.8	2.5	4.7	4.3
Total Organic Carbon	mg/l			ND	ND	ND	ND	4.7	4.8	0.55	0.5
General Physical Properties											
Apparent Color	ACU	15	S	5	10	ND	ND	ND	3	ND	ND
pH (Lab)	Units			8.1	8	8.3	8	8.2	8	8	7.9
Odor	TON	3	S	2	2	1	ND	**3**	**3**	1	**3**
pH of CaCO3 saturation(25C)	Units			7.3	7.3	7.3	7.3	6.9	6.9	6.7	6.7
pH of CaCO3 saturation(60C)	Units			6.9	6.9	6.9	6.9	6.4	6.4	6.2	6.2
Specific Conductance	umho/cm	1600	S	580	590	580	580	1000	1000	1200	1200
Turbidity	NTU	5	S	2.1	2.1	0.17	0.4	0.19	0.17	0.14	0.21
Metals											
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	ND	ND	ND	ND	ND	1.7	ND	1
Barium	ug/l	1000	P	62	65	53	59	120	170	98	100
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	ND	ND	ND	ND	ND	2.7	1.5
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	2.1	ND	ND
Hexavalent Chromium	ug/l			ND	ND	0.74	0.76	0.23	0.22	2	1.9
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	5.1	5
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	0.6	0.77	0.6	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	**4.7**	**4.8**	**4.6**	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND		ND		ND		ND	
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	1	1.1	0.87	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	1.1	1.7	0.9	0.63
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	**12**	**13**	**11**	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	4.5	4.1	2	2.2

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Inglewood #2					
				Zone 1		Zone 2		Zone 3	
				5/1/2012	9/12/2012	5/1/2012	9/12/2012	5/1/2012	9/13/2012
General Minerals									
Alkalinity	mg/l			1400	1300	930	870	220	240
Anion Sum	meq/l			28	27	23	22	5.2	5.3
Bicarbonate as HCO3	mg/l			1700	1600	1100	1000	270	290
Boron	mg/l	1	N	**3.7**	**3.8**	**2.1**	**2.3**	0.28	0.22
Calcium	mg/l			17	17	44	47	33	34
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			9.7	16	9.1	9.7	ND	ND
Cation Sum	meq/l			29	30	23	24	5.6	5.7
Chloride	mg/l	500	S	32	32	170	150	17	19
Fluoride	mg/l	2	P	0.56	0.52	0.27	0.22	0.31	0.26
Hardness (as CaCO3)	mg/l			120	120	190	200	120	130
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	**0.6**	**0.63**	**0.48**	**0.51**	0.22	0.2
Langelier Index - 25 degree	None			0.96	1.2	1.3	1.4	0.41	0.57
Magnesium	None			18	18	20	21	8.4	11
Manganese	ug/l	50	S	27	29	**67**	**78**		**62**
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND
Potassium	mg/l			24	26	15	17	5.8	6.3
Sodium	mg/l			600	620	430	440	72	67
Sulfate	mg/l	500	S	ND	ND	ND	ND	6.6	ND
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	**1700**	**1700**	**1300**	**1300**	310	320
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			41	41	14	14	4	1.5
General Physical Properties									
Apparent Color	ACU	15	S	**200**	**400**	**80**	**100**	**25**	**15**
pH (Lab)	Units			8	8.2	8.1	8.2	7.9	8
Odor	TON	3	S	**8**	**3**	1	**17**	**4**	**4**
pH of CaCO3 saturation(25C)	Units			7	7	6.7	6.7	7.5	7.4
pH of CaCO3 saturation(60C)	Units			6.5	6.6	6.3	6.3	7	7
Specific Conductance	umho/cm	1600	S	**2500**	**2500**	**2100**	**2100**	500	510
Turbidity	NTU	5	S	2.1	2.2	**14**	**5.2**	2	0.84
Metals									
Aluminum	ug/l	1000	P	ND	ND	ND	ND		ND
Antimony	ug/l	6	P	ND	ND	ND	ND		ND
Arsenic	ug/l	10	P	1.5	3.1	ND	4		ND
Barium	ug/l	1000	P	45	46	29	29		22
Beryllium	ug/l	4	P	ND	ND	ND	ND		ND
Cadmium	ug/l	5	P	ND	ND	ND	ND		ND
Chromium	ug/l	50	P	2.1	2.2	ND	1.4		1.3
Copper	ug/l	1300	P	ND	ND	ND	ND		ND
Hexavalent Chromium	ug/l			ND	ND	ND	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND		ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND		ND
Selenium	ug/l	50	P	ND	ND	ND	ND		ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND		ND
Zinc	ug/l	5000	S	ND	ND	ND	ND		ND
Volatile Organic Compounds									
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Lakewood # 1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/10/2012	9/19/2012	5/10/2012	9/19/2012	5/10/2012	9/19/2012	5/10/2012	9/19/2012	5/10/2012	9/19/2012	5/10/2012	9/19/2012
General Minerals															
Alkalinity	mg/l			93	87	140	130	150	140	170	160	170	170	190	180
Anion Sum	meq/l			2.8	2.7	3.3	3.1	3.6	3.4	4.5	4.9	4	4.1	7.2	6.9
Bicarbonate as HCO3	mg/l			110	100	170	160	180	170	200	200	210	210	240	220
Boron	mg/l	1	N	0.053	0.054	ND	ND	0.068	0.066	0.07	0.071	0.086	0.087	0.083	0.083
Calcium	mg/l			9.8	10	34	34	39	39	53	58	48	47	92	92
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			3.3	4.3	3.2	2	3	2	3.2	ND	3.1	ND	3.1	ND
Cation Sum	meq/l			2.8	3	3.5	3.4	3.8	3.8	4.8	5.1	4.3	4.3	7.2	7.2
Chloride	mg/l	500	S	20	21	6.3	6.1	9.2	8.8	30	48	11	11	89	85
Fluoride	mg/l	2	P	0.47	0.45	0.29	0.27	0.33	0.31	0.32	0.29	0.5	0.48	0.24	0.22
Hardness (as CaCO3)	mg/l			26	28	100	100	120	120	160	170	160	150	270	270
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	0.064	0.065	0.1	0.099	0.11	0.1
Langelier Index - 25 degree	None			0.26	0.39	0.77	0.58	0.81	0.64	0.97	0.76	0.91	0.58	1.2	0.78
Magnesium	None			0.37	0.38	3.9	3.9	5.2	5.1	6.6	7.1	9.1	8.9	9.8	9.7
Manganese	ug/l	50	S	5.9	**92**	17	18	24	3.1	**89**	48	**54**	**220**	**240**	ND
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			ND	ND	2	2.1	2.5	2.4	2.8	3	2.6	2.8	3.8	3.8
Sodium	mg/l			53	55	33	32	32	31	35	35	26	25	40	39
Sulfate	mg/l	500	S	17	17	16	16	15	14	13	15	13	13	40	39
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	0.055	ND	ND	0.063	0.062
Total Dissolved Solid (TDS)	mg/l	1000	S	190	170	200	210	220	220	270	300	250	250	430	450
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.86	0.8	ND	ND	ND	0.3	0.54	0.68	ND	0.33	0.74	0.71
General Physical Properties															
Apparent Color	ACU	15	S	10	**15**	ND	3	ND	3	3	5	3	ND	ND	ND
pH (Lab)	Units			8.7	8.8	8.5	8.3	8.4	8.2	8.4	8.2	8.4	8	8.3	7.9
Odor	TON	3	S	1	**3**	1	1	1	2	2	2	1	**3**	1	**4**
pH of CaCO3 saturation(25C)	Units			8.4	8.4	7.7	7.7	7.6	7.6	7.4	7.4	7.4	7.4	7.1	7.1
pH of CaCO3 saturation(60C)	Units			8	8	7.2	7.3	7.1	7.2	7	6.9	7	7	6.7	6.7
Specific Conductance	umho/cm	1600	S	280	290	320	320	350	360	440	510	390	400	700	720
Turbidity	NTU	5	S	0.52	0.52	0.78	0.6	1.3	0.56	1.1	0.3	0.34	0.36	0.5	0.4
Metals															
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	26
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	**13**	9.8	7.3	9.1	ND	**13**	8.9	3.9	3.5	**29**	**28**	2.6
Barium	ug/l	1000	P	18	170	22	24	28	16	150	110	110	250	260	110
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.8
Hexavalent Chromium	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	La Mirada #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				4/17/2012	8/29/2012	4/17/2012	8/29/2012	4/17/2012	8/29/2012	4/17/2012	8/29/2012	4/17/2012	8/29/2012
General Minerals													
Alkalinity	mg/l			150	140	140	130	180	180	190	180	180	170
Anion Sum	meq/l			5.6	5.5	4.2	4.1	5.3	5.2	7	6.9	12	15
Bicarbonate as HCO3	mg/l			180	180	160	160	220	220	230	220	220	210
Boron	mg/l	1	N	0.13	0.13	0.093	0.095	0.13	0.13	0.11	0.12	0.13	0.14
Calcium	mg/l			14	14	9.6	9.5	18	21	48	49	84	120
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			2.8	2.7	3.4	3.5	2.4	2.2	ND	ND	ND	ND
Cation Sum	meq/l			5.6	5.7	4.3	4.3	5.4	5.6	7	7.2	11	15
Chloride	mg/l	500	S	25	24	15	15	17	17	48	47	180	300
Fluoride	mg/l	2	P	0.83	0.84	0.58	0.6	0.76	0.76	0.54	0.55	0.44	0.33
Hardness (as CaCO3)	mg/l			49	50	30	30	68	81	200	200	340	480
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.34	0.34	0.26	0.26	0.39	0.4	0.54	0.54	0.64	0.69
Magnesium	None			3.3	3.3	1.5	1.5	5.4	6.9	18	19	31	43
Manganese	ug/l	50	S	10	9.8	3.2	2.7	14	16	35	35	31	9.1
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	**11**	**20**
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			2	2	1.6	1.6	2.3	2.3	2.9	2.8	3.4	4.1
Sodium	mg/l			110	110	83	84	90	89	68	73	93	120
Sulfate	mg/l	500	S	90	92	47	47	58	57	88	91	97	93
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	350	350	260	250	340	340	420	430	700	980
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	11	20
Total Organic Carbon	mg/l			ND	ND	ND	0.45	0.42	0.45	ND	ND	0.32	0.43
General Physical Properties													
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	5	ND	ND	ND	ND
pH (Lab)	Units			8.4	8.4	8.5	8.5	8.2	8.2	7.9	8	7.8	7.7
Odor	TON	3	S	2	1	1	2	1	2	1	2	1	2
pH of CaCO3 saturation(25C)	Units			8	8	8.2	8.3	7.8	7.8	7.4	7.4	7.2	7
pH of CaCO3 saturation(60C)	Units			7.6	7.6	7.8	7.8	7.4	7.3	7	7	6.7	6.6
Specific Conductance	umho/cm	1600	S	560	580	410	420	520	530	670	690	1200	**1600**
Turbidity	NTU	5	S	0.18	0.1	0.11	0.15	0.16	0.12	0.2	0.2	0.13	0.21
Metals													
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	6.1	6.5	7.6	7.9	7.1	7.3	3	4	2	6.8
Barium	ug/l	1000	P	50	50	23	24	38	39	43	44	75	110
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	2.7	2.7
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	0.57	1.6
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	7.1	16
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	4.5	**7.3**

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Long Beach #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				3/29/2012	8/24/2012	3/29/2012	8/24/2012	3/29/2012	8/24/2012	3/29/2012	8/24/2012	3/29/2012	8/24/2012	3/29/2012	8/24/2012
General Minerals															
Alkalinity	mg/l			150	150	150	140	120	110	130	120	130	130	240	230
Anion Sum	meq/l			3.5	3.4	3.4	3.3	3	2.9	3.7	3.5	12	12	17	16
Bicarbonate as HCO3	mg/l			180	170	180	170	140	130	160	150	160	160	290	280
Boron	mg/l	1	N	0.19	0.19	0.18	0.18	0.079	0.079	0.058	0.057	0.12	0.12	0.09	0.097
Calcium	mg/l			2.3	2.3	2.6	2.4	5.2	5.1	20	22	57	57	190	180
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			12	12	12	12	6.7	6.6	3	2.8	ND	ND	ND	ND
Cation Sum	meq/l			3.6	3.8	3.6	3.5	3.1	3	3.8	3.8	12	12	16	16
Chloride	mg/l	500	S	15	15	15	15	12	12	12	12	180	190	200	210
Fluoride	mg/l	2	P	0.62	0.66	0.6	0.62	0.62	0.65	0.38	0.39	0.24	0.25	0.26	0.27
Hardness (as CaCO3)	mg/l			6.7	6.7	7.1	6.6	14	14	59	64	180	180	600	590
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	0.036	0.045	0.17	0.16
Langelier Index - 25 degree	None			0.2	0.2	0.25	0.19	0.28	0.27	0.53	0.52	0.74	0.68	1.2	1.1
Magnesium	None			0.22	0.23	0.14	0.14	0.27	0.28	2	2.2	8.4	8.8	32	32
Manganese	ug/l	50	S	2.3	2.2	ND	ND	ND	2.4	21	21	**67**	**63**	**410**	**410**
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			ND	ND	ND	ND	ND	ND	1.4	1.3	3.1	2.8	4.2	3.9
Sodium	mg/l			79	84	80	78	66	64	59	57	200	200	100	96
Sulfate	mg/l	500	S	ND	ND	ND	ND	15	14	34	33	220	220	300	300
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.052	0.09
Total Dissolved Solid (TDS)	mg/l	1000	S	240	230	220	230	210	190	230	220	770	780	**1000**	**1000**
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			2.9	2.6	2.9	3.4	1.7	1.5	0.76	0.55	1.4	1.3	1.4	2.3
General Physical Properties															
Apparent Color	ACU	15	S	**60**	**70**	**50**	**70**	**25**	**40**	5	5	3	5	5	5
pH (Lab)	Units			9	9	9	9	8.9	8.9	8.4	8.4	8.2	8.2	7.9	7.9
Odor	TON	3	S	2	2	2	2	2	2	2	1	2	1	2	1
pH of CaCO3 saturation(25C)	Units			8.8	8.8	8.8	8.8	8.6	8.6	7.9	7.9	7.5	7.5	6.7	6.7
pH of CaCO3 saturation(60C)	Units			8.4	8.4	8.3	8.4	8.2	8.2	7.5	7.5	7	7	6.3	6.3
Specific Conductance	umho/cm	1600	S	340	340	340	340	300	300	360	360	1200	1300	1500	**1600**
Turbidity	NTU	5	S	0.25	0.26	0.3	0.56	0.6	1.1	0.82	0.86	2.4	2.3	0.91	0.63
Metals															
Aluminum	ug/l	1000	P	36	34	26	28	ND	ND	ND	ND	ND	22	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	1.6	5.2	8.8	**12**
Barium	ug/l	1000	P	ND	ND	ND	2.3	ND	ND	9.5	9.3	52	49	240	230
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	ND	ND	ND	ND	1.6	ND	ND	ND	2.6	1.4	1.2
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.5	ND	ND
Hexavalent Chromium	ug/l			0.04	0.038	0.034	0.033	0.057	0.049	ND	ND	ND	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.3	ND	5.3
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Long Beach #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/3/2012	9/24/2012	5/3/2012	9/24/2012	5/3/2012	9/24/2012	5/3/2012	9/24/2012	5/3/2012	9/24/2012	5/3/2012	9/24/2012
General Minerals															
Alkalinity	mg/l			300	290	190	180	140	140	140	140	300	290	310	300
Anion Sum	meq/l			6.7	6.4	4.4	4.3	3.7	3.6	5.7	5.5	18	18	21	21
Bicarbonate as HCO3	mg/l			360	350	230	220	180	170	180	170	370	360	380	370
Boron	mg/l	1	N	0.53	0.53	0.2	0.2	0.14	0.14	0.096	0.094	0.3	0.3	0.35	0.35
Calcium	mg/l			7	6.9	16	15	12	13	49	50	200	190	250	240
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			3.1	7	4.3	3.6	4.2	4.2	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			7	6.9	4.8	4.8	3.9	4	5.8	6	18	17	22	22
Chloride	mg/l	500	S	23	21	22	21	25	24	50	48	140	140	190	180
Fluoride	mg/l	2	P	0.64	0.62	0.44	0.43	0.56	0.54	0.31	0.85	0.16	0.16	0.28	0.28
Hardness (as CaCO3)	mg/l			24	24	47	46	36	37	150	150	630	600	790	760
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	0.084	0.14	0.025	0.034	ND	ND	0.02	ND	0.25	0.24	0.25	0.24
Langelier Index - 25 degree	None			0.075	0.43	0.58	0.48	0.45	0.48	0.7	0.74	1.2	1.1	1.4	1.2
Magnesium	None			1.6	1.6	1.9	1.8	1.2	1.2	5.8	6	32	30	41	40
Manganese	ug/l	50	S	14	15	16	16	6.1	6.1	31	6.1	**190**	**190**	**390**	**380**
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			2.3	2.3	1.9	1.7	1.3	1.2	3.1	3.1	5.5	5.1	6.6	6.3
Sodium	mg/l			150	150	88	88	72	75	65	67	130	120	140	140
Sulfate	mg/l	500	S	ND	ND	ND	ND	1.4	1.6	65	62	390	380	460	490
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	0.058	0.062	0.11	0.09
Total Dissolved Solid (TDS)	mg/l	1000	S	420	410	280	260	230	220	340	340	**1100**	**1100**	**1300**	**1300**
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			13	14	3.8	3.8	2.3	2.1	1.4	1.4	1.4	1.3	1.4	1.4
General Physical Properties															
Apparent Color	ACU	15	S	**200**	**250**	**30**	**40**	**25**	**35**	3	3	3	5	3	5
pH (Lab)	Units			8.1	8.5	8.5	8.4	8.6	8.6	8.2	8.3	7.8	7.7	7.8	7.7
Odor	TON	3	S	**3**	**4**	2	**3**	2	2	2	**3**	1	**3**	**3**	**8**
pH of CaCO3 saturation(25C)	Units			8	8.1	7.9	7.9	8.1	8.1	7.5	7.5	6.6	6.6	6.5	6.5
pH of CaCO3 saturation(60C)	Units			7.6	7.6	7.4	7.5	7.7	7.6	7.1	7.1	6.1	6.2	6	6
Specific Conductance	umho/cm	1600	S	630	650	430	430	360	360	560	570	**1600**	**1600**	**1900**	**1900**
Turbidity	NTU	5	S	0.81	0.68	0.45	0.2	0.2	0.16	0.45	0.44	1.9	3.1	3.3	1.9
Metals															
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	ND	2	ND	ND	ND	ND	1.3	ND	5.6	5.6	7.9	7.6
Barium	ug/l	1000	P	6.7	6.7	9.8	10	4.8	5.4	30	5.1	73	78	90	95
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	1.2	ND	ND	ND	ND	ND	ND	1	ND	1.2	ND
Copper	ug/l	1300	P	ND	2.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			0.042	ND	ND	ND	0.032	ND	ND	ND	ND	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.54
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2	2.2
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.6	**6.6**
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**25**	**37**
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5	0.76
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Long Beach #6											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/20/2012	9/6/2012	4/20/2012	9/6/2012	4/20/2012	9/6/2012	4/20/2012	9/6/2012	4/20/2012	9/6/2012	4/20/2012	9/6/2012
General Minerals															
Alkalinity	mg/l			530	500	520	490	170	150	140	150	110	110	130	130
Anion Sum	meq/l			11	10	11	10	4	3.6	3.5	3.6	3.1	2.9	4.4	4.3
Bicarbonate as HCO3	mg/l			640	600	630	600	210	180	170	180	140	130	160	150
Boron	mg/l	1	N	**1.1**	**1.1**	**1.1**	**1.1**	0.23	0.24	0.17	0.2	0.082	0.082	0.053	ND
Calcium	mg/l			8	7.5	8.6	8	4.8	4.8	6	5.6	12	11	46	44
Carbon Dioxide	mg/l			3.4	2.8	3.3	2.8	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			12	14	13	13	5.8	9.5	4.7	8.4	3	4.2	ND	ND
Cation Sum	meq/l			11	11	11	11	3.6	3.8	3.6	3.7	3.1	3.1	4.6	4.5
Chloride	mg/l	500	S	18	17	18	17	17	17	17	17	20	19	52	50
Fluoride	mg/l	2	P	0.72	0.69	0.71	0.68	0.63	0.6	0.64	0.62	0.58	0.54	0.24	0.22
Hardness (as CaCO3)	mg/l			27	26	28	27	13	13	16	16	32	30	140	130
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	0.088	0.084	0.1	0.1	0.027	0.033	ND	0.023	ND	ND	0.057	0.053
Langelier Index - 25 degree	None			0.75	0.76	0.79	0.78	0.19	0.4	0.19	0.42	0.28	0.4	0.68	0.64
Magnesium	None			1.7	1.7	1.6	1.6	0.24	0.26	0.35	0.35	0.78	0.8	4.9	5
Manganese	ug/l	50	S	17	16	23	23	3.9	4.1	14	14	4.9	5	**69**	**67**
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			1.8	1.3	1.8	1.4	ND	ND	ND	ND	1.1	ND	2.2	2.2
Sodium	mg/l			250	250	250	250	76	81	75	77	57	57	43	41
Sulfate	mg/l	500	S	1.1	1	0.52	ND	ND	ND	6.9	4.5	10	10	16	15
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	710	680	710	670	250	220	230	230	210	170	280	260
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			22	24	22	22	4.2	4.3	3.5	4	2	2.1	0.71	0.68
General Physical Properties															
Apparent Color	ACU	15	S	**200**	**180**	**100**	**200**	**100**	**80**	**50**	**60**	**40**	**40**	5	ND
pH (Lab)	Units			8.5	8.6	8.5	8.5	8.6	8.9	8.6	8.9	8.5	8.7	8.3	8.2
Odor	TON	3	S	**4**	**40**	**17**	**17**	**3**	2	**3**	**4**	**3**	**8**	**3**	1
pH of CaCO3 saturation(25C)	Units			7.7	7.8	7.7	7.8	8.4	8.5	8.4	8.4	8.2	8.3	7.6	7.6
pH of CaCO3 saturation(60C)	Units			7.3	7.3	7.3	7.3	8	8	8	8	7.8	7.8	7.1	7.2
Specific Conductance	umho/cm	1600	S	1000	1000	1000	1000	350	360	340	360	300	310	440	450
Turbidity	NTU	5	S	**6.2**	2	**7.2**	4.3	0.45	0.34	0.29	0.28	0.23	0.19	0.16	0.15
Metals															
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	21	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	2.4	2.9	ND	1.1	ND	ND	ND	ND	ND	ND	2.7	2.5
Barium	ug/l	1000	P	7	7.1	12	12	3.8	3.8	7.2	7.3	3	3	18	18
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			0.047	ND	0.049	ND	0.048	ND	0.051	ND	0.05	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Los Angeles #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				5/22/2012	9/20/2012	5/22/2012	9/20/2012	5/22/2012	9/20/2012	5/22/2012	9/20/2012	5/22/2012	9/20/2012
General Minerals													
Alkalinity	mg/l			180	180	180	170	180	180	200	210	210	210
Anion Sum	meq/l			5.6	5.9	5.8	5.9	5.8	6	9.2	10	10	10
Bicarbonate as HCO3	mg/l			220	220	220	210	220	220	250	260	260	250
Boron	mg/l	1	N	0.14	0.15	0.13	0.14	0.14	0.15	0.17	0.19	0.18	0.18
Calcium	mg/l			55	58	60	61	58	60	97	110	110	110
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			2.3	2.2	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			5.8	6.1	6.1	6.2	6	6.1	9.4	11	10	10
Chloride	mg/l	500	S	22	24	20	22	21	22	62	78	74	79
Fluoride	mg/l	2	P	0.3	0.3	0.45	0.44	0.39	0.39	0.43	0.4	0.42	0.4
Hardness (as CaCO3)	mg/l			190	200	210	220	210	210	350	400	390	390
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	ND	ND	0.18	0.17	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.85	0.86	0.68	0.65	0.78	0.71	0.83	0.85	0.91	0.83
Magnesium	None			13	13	16	15	15	15	26	29	29	29
Manganese	ug/l	50	S	31	20	**97**	**58**	16	13	ND	ND	ND	ND
Nitrate	mg/l	10	P	ND	0.2	ND	ND	ND	ND	9.3	**15**	**14**	**15**
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			3.9	4	3.3	3.5	3.2	3.4	4.1	4.4	4.4	4.4
Sodium	mg/l			43	45	40	40	38	40	53	58	57	58
Sulfate	mg/l	500	S	71	78	78	84	79	85	130	130	130	130
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	360	370	360	350	340	370	580	630	630	630
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	0.2	ND	ND	ND	ND	9.3	15	14	15
Total Organic Carbon	mg/l			0.43	0.44	ND	ND	ND	ND	0.41	0.48	0.46	0.5
General Physical Properties													
Apparent Color	ACU	15	S	ND	ND	ND	3	ND	ND	5	**15**	**15**	**15**
pH (Lab)	Units			8.2	8.2	8	8	8.1	8	7.9	7.8	7.9	7.8
Odor	TON	3	S	1	1	ND	1	ND	1	1	1	1	1
pH of CaCO3 saturation(25C)	Units			7.4	7.3	7.3	7.3	7.3	7.3	7.1	7	7	7
pH of CaCO3 saturation(60C)	Units			6.9	6.9	6.9	6.9	6.9	6.9	6.6	6.5	6.6	6.6
Specific Conductance	umho/cm	1600	S	560	580	570	580	570	580	900	1000	1000	1000
Turbidity	NTU	5	S	0.12	0.25	1	0.95	0.067	0.25	0.44	0.4	0.12	0.13
Metals													
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	ug/l	1000	P	29	31	84	46	68	70	130	150	150	150
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	1.3	ND	1.2	ND	ND	ND	**310**	**600**	**710**	**630**
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			ND	0.5	ND	ND	0.2	0.2	290	610	680	640
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	5.5	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	0.65	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	**0.59**	**1.2**	**1**	**1.2**
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	3	4.3	ND	0.78	ND	ND	2.8	3.4	3	2.9
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	**7.4**	**9.5**	ND	ND	ND	ND	**37**	**53**	**48**	**53**
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	3.8	4.8	5.2	4.9

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Los Angeles #2						
				Zone 2		Zone 3		Zone 4		Zone 5
				5/9/2012	9/11/2012	5/9/2012	9/11/2012	5/9/2012	9/11/2012	4/4/2012
General Minerals										
Alkalinity	mg/l			310	300	320	300	340	320	300
Anion Sum	meq/l			20	19	20	19	22	21	23
Bicarbonate as HCO3	mg/l			380	370	380	370	410	390	370
Boron	mg/l	1	N	0.24	0.23	0.23	0.22	0.28	0.27	0.41
Calcium	mg/l			180	200	200	210	200	210	180
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			3.8	ND	2.5	ND	2.9	ND	3.1
Cation Sum	meq/l			18	19	19	19	20	21	22
Chloride	mg/l	500	S	230	220	270	260	340	340	170
Fluoride	mg/l	2	P	0.2	0.2	0.31	0.29	0.3	0.31	0.33
Hardness (as CaCO3)	mg/l			680	720	700	740	740	760	710
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	0.16	0.17	**1.2**	**1.3**	**1.8**	**1.8**	ND
Langelier Index - 25 degree	None			1.6	0.96	1.4	1.1	1.5	1.1	1.5
Magnesium	None			52	54	52	53	55	55	60
Manganese	ug/l	50	S	**360**	**380**	**180**	**180**	**130**	**130**	**680**
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			9.1	9.4	6.6	6.8	7.4	7.6	12
Sodium	mg/l			95	98	100	100	120	120	170
Sulfate	mg/l	500	S	320	310	270	260	250	240	**610**
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	**1200**	**1100**	**1200**	**1100**	**1200**	**1200**	**1400**
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.57	0.66	0.74	0.72	0.87	0.9	3.6
General Physical Properties										
Apparent Color	ACU	15	S	5	5	**15**	**20**	**25**	**30**	3
pH (Lab)	Units			8.2	7.5	8	7.7	8	7.6	8.1
Odor	TON	3	S	1	2	1	2	1	**3**	**3**
pH of CaCO3 saturation(25C)	Units			6.6	6.6	6.6	6.6	6.5	6.5	6.6
pH of CaCO3 saturation(60C)	Units			6.2	6.1	6.1	6.1	6.1	6.1	6.2
Specific Conductance	umho/cm	1600	S	**1700**	**1800**	**1800**	**1800**	**2000**	**2000**	**1900**
Turbidity	NTU	5	S	2.9	2.2	**14**	**15**	**17**	**22**	1.2
Metals										
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	1.1	2.6	1.1	2.6	1.1	2.9	7.9
Barium	ug/l	1000	P	75	82	170	180	200	230	53
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	1.4	ND	1.6	ND	1.7	ND	ND
Copper	ug/l	1300	P	ND	5.4	ND	4.6	ND	4.5	3.7
Hexavalent Chromium	ug/l			ND	ND	ND	ND	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	**2.4**	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	5.8
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds										
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	**0.0051**
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	0.95
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Los Angeles #3											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/3/2012	9/23/2012	4/3/2012	9/23/2012	4/3/2012	9/23/2012	4/3/2012	9/23/2012	4/3/2012	9/23/2012	4/3/2012	9/23/2012
General Minerals															
Alkalinity	mg/l			240	230	180	170	180	170	190	180	210	200	220	210
Anion Sum	meq/l			6.4	6.2	5.8	5.5	6	5.7	6.8	6.4	9.1	8.5	12	11
Bicarbonate as HCO3	mg/l			290	280	210	200	220	210	230	220	250	240	260	250
Boron	mg/l	1	N	0.34	0.37	0.13	0.14	0.13	0.15	0.14	0.15	0.16	0.18	0.18	0.18
Calcium	mg/l			15	16	51	54	56	63	68	73	89	96	120	120
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			4.2	4.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			6.4	6.9	5.8	6	6	6.7	6.8	7.4	8.9	9.6	12	12
Chloride	mg/l	500	S	38	38	24	23	22	21	41	41	57	52	110	110
Fluoride	mg/l	2	P	0.32	0.33	0.33	0.33	0.45	0.46	0.42	0.42	0.33	0.33	0.35	0.36
Hardness (as CaCO3)	mg/l			60	65	180	190	200	220	240	260	320	340	440	440
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	ND	ND	0.042	0.031	ND	ND	0.06	0.06	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.54	0.6	0.63	0.76	0.56	0.7	0.72	0.81	0.72	0.88	0.95	1
Magnesium	None			5.5	6.1	14	14	14	16	16	17	23	24	30	31
Manganese	ug/l	50	S	19	21	**74**	**82**	**50**	**64**	**50**	**51**	ND	ND	ND	ND
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	**10**	9.5	6.6	6.3
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			4.1	4.3	3.6	3.7	3.9	4.3	4.1	4.4	4.4	4.6	4.4	4.4
Sodium	mg/l			120	120	48	46	44	48	46	50	58	61	63	64
Sulfate	mg/l	500	S	25	22	78	73	82	76	84	77	120	110	170	150
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	390	390	340	350	350	360	400	400	540	560	680	720
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	10	9.5	6.6	6.3
Total Organic Carbon	mg/l			2.3	1.9	0.67	ND	0.6	ND	0.6	ND	0.78	0.39	0.69	0.35
General Physical Properties															
Apparent Color	ACU	15	S	ND	**25**	ND	3	ND	3	ND	ND	ND	ND	ND	ND
pH (Lab)	Units			8.3	8.4	8	8.2	7.9	8	8	8	7.8	8	7.9	8
Odor	TON	3	S	1	1	1	1	1	1	1	1	1	ND	1	ND
pH of CaCO3 saturation(25C)	Units			7.8	7.8	7.4	7.4	7.3	7.3	7.2	7.2	7.1	7.1	6.9	6.9
pH of CaCO3 saturation(60C)	Units			7.4	7.3	7	7	6.9	6.9	6.8	6.8	6.6	6.6	6.5	6.5
Specific Conductance	umho/cm	1600	S	620	630	550	560	570	580	640	650	850	860	1100	1100
Turbidity	NTU	5	S	0.47	0.22	0.7	0.45	0.41	0.25	0.25	0.33	0.11	0.34	0.15	0.53
Metals															
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1	ND	1.2
Barium	ug/l	1000	P	7.1	8.2	19	21	41	46	66	73	75	87	120	120
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	2.3	1.5	6.3	5.2
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	1.9	1.9	5.9	5.7
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	12	13
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	2.4	ND	ND	ND	9.3	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.2	2.6
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	1.8	1.7	ND	0.94

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Los Angeles #4					
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
				9/27/2012	9/27/2012	9/27/2012	9/27/2012	9/27/2012	9/27/2012
General Minerals									
Alkalinity	mg/l			1500	160	450	200	140	180
Anion Sum	meq/l			32	3.6	11	6.2	5.4	6.4
Bicarbonate as HCO3	mg/l			1900	190	540	240	170	220
Boron	mg/l	1	N	**5.6**	0.47	0.13	0.14	0.16	0.15
Calcium	mg/l			12	16	54	46	46	61
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			20	2	6	2.4	2	ND
Cation Sum	meq/l			32	9.2	5.9	6.4	7.1	6.6
Chloride	mg/l	500	S	31	8.9	19	20	25	28
Fluoride	mg/l	2	P	0.4	0.3	0.31	0.43	0.44	0.45
Hardness (as CaCO3)	mg/l			60	68	180	160	160	220
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	**0.65**	0.091	ND	ND	0.028	ND
Langelier Index - 25 degree	None			1.1	0.25	1.2	0.78	0.72	0.64
Magnesium	None			7.1	7	12	11	10	15
Manganese	ug/l	50	S	31	36	35	**70**	30	28
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	1.2
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND
Potassium	mg/l			14	10	3.1	4.1	4.4	3.6
Sodium	mg/l			710	170	48	71	89	52
Sulfate	mg/l	500	S	7	9.4	75	78	91	90
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	**2100**	580	340	360	430	410
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	1.2
Total Organic Carbon	mg/l			140	7.9	0.53	1.5	4.2	0.79
General Physical Properties									
Apparent Color	ACU	15	S	**1000**	**60**	ND	3	**20**	**30**
pH (Lab)	Units			8.2	8.2	8.2	8.2	8.3	8
Odor	TON	3	S	**4**	**3**	**3**	2	**3**	2
pH of CaCO3 saturation(25C)	Units			7.1	8	7	7.4	7.6	7.3
pH of CaCO3 saturation(60C)	Units			6.6	7.5	6.5	6.9	7.1	6.9
Specific Conductance	umho/cm	1600	S	**2800**	900	550	590	660	640
Turbidity	NTU	5	S	1.2	**16**	0.86	0.14	4.1	**30**
Metals									
Aluminum	ug/l	1000	P	21	35	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	2.7	**13**	ND	4.7	2.6	1.2
Barium	ug/l	1000	P	34	33	16	30	37	92
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	3.4	ND	ND	ND	ND	1.9
Copper	ug/l	1300	P	ND	ND	ND	ND	2.3	ND
Hexavalent Chromium	ug/l			ND	0.023	ND	ND	ND	2.1
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds									
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Montebello #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				5/31/2012	9/27/2012	5/31/2012	9/27/2012	5/31/2012	9/27/2012	5/31/2012	9/27/2012	5/31/2012	9/27/2012
General Minerals													
Alkalinity	mg/l			880	850	560	560	190	180	190	170	160	160
Anion Sum	meq/l			37	36	14	15	8.4	8.2	8.6	7.8	7.4	7.2
Bicarbonate as HCO3	mg/l			1100	1000	680	680	230	220	230	210	200	190
Boron	mg/l	1	N	**6**	**6**	**2.2**	**2.2**	0.14	0.22	0.11	0.13	0.22	0.21
Calcium	mg/l			13	13	17	17	110	100	110	98	76	71
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			11	12	8.5	7.7	ND	ND	2.4	ND	ND	ND
Cation Sum	meq/l			36	36	15	15	9.1	9.1	9.1	8.7	8.2	7.8
Chloride	mg/l	500	S	**680**	**680**	120	120	63	65	65	60	69	67
Fluoride	mg/l	2	P	0.48	0.46	0.33	0.33	0.17	0.18	0.2	0.24	0.39	0.38
Hardness (as CaCO3)	mg/l			56	57	72	72	340	320	350	320	260	240
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	0.16	0.16	0.18	0.18	0.026	ND	0.088	ND	ND	0.026
Langelier Index - 25 degree	None			0.9	0.95	0.9	0.85	1	1	1.2	0.82	0.85	0.5
Magnesium	None			6	6.1	7.4	7.2	18	18	18	18	16	15
Manganese	ug/l	50	S	8.5	9.1	27	29	**94**	**88**	**63**	41	ND	ND
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	2.6	2.6
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			7.8	6.9	5.2	4.9	3.9	3.9	4	3.7	3.5	3.3
Sodium	mg/l			800	800	310	300	49	58	46	51	69	66
Sulfate	mg/l	500	S	ND	ND	ND	ND	140	120	140	130	97	96
Surfactants	mg/l	0.5	S	0.06	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	**2200**	**2100**	890	890	550	510	580	510	470	460
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	2.6	2.6
Total Organic Carbon	mg/l			35	42	23	24	0.81	1.2	0.73	0.64	0.48	0.47
General Physical Properties													
Apparent Color	ACU	15	S	**250**	**500**	**150**	**250**	3	10	3	ND	ND	ND
pH (Lab)	Units			8.2	8.3	8.3	8.2	8.1	8.1	8.2	8	8.1	7.8
Odor	TON	3	S	1	**4**	2	**4**	1	**3**	1	**3**	1	2
pH of CaCO3 saturation(25C)	Units			7.3	7.3	7.4	7.4	7	7.1	7	7.1	7.3	7.3
pH of CaCO3 saturation(60C)	Units			6.9	6.9	6.9	6.9	6.6	6.6	6.6	6.7	6.8	6.9
Specific Conductance	umho/cm	1600	S	**3500**	**3600**	1400	1400	790	840	810	810	730	750
Turbidity	NTU	5	S	0.82	0.8	1.5	0.34	0.37	1.3	0.5	1.5	0.38	0.56
Metals													
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	3.9	5	ND	2.2	ND	ND	ND	ND	1.9	2
Barium	ug/l	1000	P	33	35	21	22	41	42	91	90	55	56
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	1.9	2.2	ND	1.2	1.1	ND	ND	ND	1.1	ND
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			ND	0.023	ND	ND	ND	ND	ND	ND	0.09	0.19
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	9.7	14	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	6.5	5.4	6.7	4.6	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	0.61	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Norwalk #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				5/24/2012	9/19/2012	5/24/2012	9/19/2012	5/24/2012	9/19/2012	5/24/2012	9/19/2012	5/24/2012	9/19/2012
General Minerals													
Alkalinity	mg/l			260	260	170	160	120	110	130	120	190	180
Anion Sum	meq/l			8.3	8	5.2	4.9	4.2	4	3.4	3.2	7.4	7.1
Bicarbonate as HCO3	mg/l			320	320	210	190	150	140	160	140	240	220
Boron	mg/l	1	N	0.37	0.38	0.19	0.2	ND	ND	ND	ND	0.073	0.078
Calcium	mg/l			13	13	8.8	9.3	24	26	26	28	66	66
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			2.9	3.2	3.3	4.9	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			8	8.5	5	5.3	3.8	4.2	3.4	3.5	7.3	7.4
Chloride	mg/l	500	S	67	61	60	59	54	56	21	20	120	120
Fluoride	mg/l	2	P	0.5	0.48	0.6	0.58	0.31	0.29	0.31	0.31	0.3	0.3
Hardness (as CaCO3)	mg/l			60	62	27	28	67	74	89	91	230	230
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	0.024	0.024	0.12	0.1
Langelier Index - 25 degree	None			0.32	0.38	0.21	0.4	0.41	0.39	0.39	0.4	0.74	0.52
Magnesium	None			6.8	7.1	1.2	1.3	2	2.1	5.5	5.4	15	16
Manganese	ug/l	50	S	2.2	2.4	6.7	6.2	17	15	39	34	**150**	**120**
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			2.2	2.5	1.4	1.4	1.9	2.2	1.7	1.7	3.2	3.4
Sodium	mg/l			160	160	100	110	55	61	35	36	61	63
Sulfate	mg/l	500	S	52	50	ND	ND	9.3	8.4	10	9.9	5.6	5.1
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	0.18	0.16
Total Dissolved Solid (TDS)	mg/l	1000	S	510	500	310	290	260	230	240	190	440	420
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			2.3	2.3	2.8	2.7	0.41	0.47	0.39	0.36	1.5	1.4
General Physical Properties													
Apparent Color	ACU	15	S	**20**	**20**	**20**	**35**	ND	ND	ND	ND	3	**15**
pH (Lab)	Units			8.1	8.2	8.4	8.6	8.3	8.3	8.2	8.2	8	7.8
Odor	TON	3	S	**200**	**200**	**8**	2	1	1	2	2	**17**	1
pH of CaCO3 saturation(25C)	Units			7.8	7.8	8.2	8.2	7.9	7.9	7.8	7.8	7.2	7.3
pH of CaCO3 saturation(60C)	Units			7.4	7.4	7.7	7.7	7.4	7.4	7.4	7.4	6.8	6.8
Specific Conductance	umho/cm	1600	S	830	840	510	520	420	430	330	340	750	760
Turbidity	NTU	5	S	0.13	0.12	0.65	0.44	0.39	0.49	1.3	0.62	4.4	**32**
Metals													
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	ND	ND	ND	ND	5.7	5.5	**20**	**22**	**13**	**12**
Barium	ug/l	1000	P	13	14	6.5	7.5	85	86	100	110	290	290
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	4	ND	2.2	ND	1.7	ND	1.5	ND	2.9	ND
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	49	9	6.4	ND	5.4	ND	ND	ND	5.1	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Norwalk #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/30/2012	9/25/2012	4/30/2012	9/25/2012	4/30/2012	9/25/2012	4/30/2012	9/25/2012	4/30/2012	9/25/2012	4/30/2012	9/25/2012
General Minerals															
Alkalinity	mg/l			190	180	180	170	150	140	160	160	160	150	180	160
Anion Sum	meq/l			7.1	6.7	4.7	4.5	4.1	3.9	5.3	5.4	7.8	7	8	8.1
Bicarbonate as HCO3	mg/l			230	220	210	200	180	170	200	190	190	180	210	200
Boron	mg/l	1	N	0.25	0.27	0.23	0.24	ND	ND	0.054	0.057	0.14	0.14	0.19	0.19
Calcium	mg/l			33	22	12	12	43	43	64	64	85	85	78	82
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			2.5	2.6	4.1	3.8	2.3	2.1	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			7.3	7.2	4.8	4.8	4.2	4.3	5.5	5.6	7.8	7.9	8	8.4
Chloride	mg/l	500	S	70	70	31	30	13	13	22	25	75	58	67	77
Fluoride	mg/l	2	P	0.36	0.37	0.48	0.48	0.21	0.21	0.29	0.38	0.25	0.25	0.39	0.38
Hardness (as CaCO3)	mg/l			110	73	38	40	130	130	200	210	280	290	260	280
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.66	0.5	0.41	0.4	0.73	0.69	0.74	0.67	0.73	0.66	0.62	0.54
Magnesium	None			6.9	4.5	2.3	2.4	5.3	5.4	11	12	18	18	17	18
Manganese	ug/l	50	S	11	8.6	13	13	23	23	ND	ND	27	17	ND	ND
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	1.1	1.2	2.7	1.9	2.4	2.5
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			3.6	3.7	2.4	2.5	2.6	2.9	3.2	3.4	4.1	4.2	3.9	4.1
Sodium	mg/l			110	130	91	92	37	38	31	31	47	48	60	62
Sulfate	mg/l	500	S	66	53	12	12	36	36	66	70	110	110	110	120
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	440	420	290	280	250	230	340	320	490	460	500	500
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	1.1	1.2	2.7	1.9	2.4	2.5
Total Organic Carbon	mg/l			1.5	1.7	1.2	1.2	0.38	0.39	ND	ND	0.48	0.48	0.49	0.47
General Physical Properties															
Apparent Color	ACU	15	S	ND	10	ND	**15**	ND	ND	ND	ND	ND	ND	ND	ND
pH (Lab)	Units			8.2	8.3	8.5	8.5	8.3	8.3	8.1	8	8	7.9	7.8	7.8
Odor	TON	3	S	1	1	1	2	ND	**4**	ND	2	ND	1	ND	1
pH of CaCO3 saturation(25C)	Units			7.6	7.8	8	8.1	7.6	7.6	7.3	7.4	7.2	7.3	7.2	7.2
pH of CaCO3 saturation(60C)	Units			7.1	7.3	7.6	7.6	7.1	7.1	6.9	6.9	6.8	6.8	6.8	6.8
Specific Conductance	umho/cm	1600	S	710	700	460	460	390	400	520	540	750	750	770	810
Turbidity	NTU	5	S	0.18	0.22	0.17	0.14	0.15	0.26	0.17	0.42	0.15	1.6	0.13	0.23
Metals															
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	3.4	4.1	ND	ND	ND	ND	2.3	2.3	2.6	2.8	1.7	2.2
Barium	ug/l	1000	P	47	40	8.7	10	27	32	130	150	72	76	49	56
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	ND	ND	ND	ND	ND	3.4	2.9	1.4	ND	1.2	ND
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			ND	ND	ND	ND	ND	ND	3.4	3.2	0.87	0.87	0.67	0.69
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	5	5.3	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	1.5	1.7	1.1	1.2	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Pico #1						
				Zone 1	Zone 2		Zone 3		Zone 4	
				5/17/2012	4/30/2012	9/24/2012	4/30/2012	9/24/2012	4/30/2012	9/24/2012
General Minerals										
Alkalinity	mg/l			280	160	160	150	200	170	170
Anion Sum	meq/l			5.8	5.7	5.2	9.3	9.5	10	9.9
Bicarbonate as HCO3	mg/l			340	200	190	180	240	210	210
Boron	mg/l	1	N	0.68	0.069	0.069	0.23	0.14	0.22	0.24
Calcium	mg/l			9.6	71	70	78	130	100	100
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			4.4	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			6.6	5.8	5.7	9.1	11	10	10
Chloride	mg/l	500	S	3.2	24	21	100	85	110	110
Fluoride	mg/l	2	P	0.29	0.28	0.28	0.25	0.33	0.3	0.3
Hardness (as CaCO3)	mg/l			39	230	230	270	420	340	350
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	0.12	**0.3**	**0.3**	**0.34**	**0.44**	ND	ND
Langelier Index - 25 degree	None			0.37	0.68	0.56	0.16	0.71	0.6	0.43
Magnesium	None			3.6	13	13	17	24	20	21
Manganese	ug/l	50	S	37	24	24	18	16	ND	25
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	1.8	1.8
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			3.9	3	3	4.7	4.8	5	5.2
Sodium	mg/l			130	24	24	84	51	74	76
Sulfate	mg/l	500	S	1.2	80	74	160	150	160	150
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	360	370	340	580	620	640	640
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	1.8	1.8
Total Organic Carbon	mg/l			3	ND	ND	0.61	0.52	0.56	0.53
General Physical Properties										
Apparent Color	ACU	15	S	**20**	ND	5	ND	10	ND	ND
pH (Lab)	Units			8.3	8	7.9	7.4	7.7	7.7	7.5
Odor	TON	3	S	1	1	1	1	1	1	1
pH of CaCO3 saturation(25C)	Units			7.9	7.3	7.3	7.3	7	7.1	7.1
pH of CaCO3 saturation(60C)	Units			7.5	6.8	6.9	6.8	6.5	6.7	6.6
Specific Conductance	umho/cm	1600	S	550	540	540	890	940	970	1000
Turbidity	NTU	5	S	**19**	2.4	2.6	3.7	**5.7**	0.14	0.083
Metals										
Aluminum	ug/l	1000	P	27	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	5.8	ND	ND	ND	ND	3	ND
Barium	ug/l	1000	P	16	83	88	51	59	58	88
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	ND	ND	ND	ND	1.2	ND
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			ND	ND	ND	ND	ND	0.33	0.35
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds										
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Pico #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/24/2012	9/25/2012	5/24/2012	9/25/2012	5/24/2012	9/25/2012	5/24/2012	9/25/2012	5/24/2012	9/25/2012	5/24/2012	9/25/2012
General Minerals															
Alkalinity	mg/l			210	200	220	210	190	180	130	130	140	120	120	110
Anion Sum	meq/l			9.3	8.7	10	9.6	8.9	8.4	8	8	8.1	6.9	6.6	6.6
Bicarbonate as HCO3	mg/l			260	250	260	250	230	220	160	160	160	150	140	130
Boron	mg/l	1	N	0.051	0.057	0.13	0.15	0.14	0.16	0.22	0.23	0.21	0.2	0.14	0.15
Calcium	mg/l			110	120	120	120	96	100	66	67	57	51	46	51
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			2.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			8.5	9.1	9.7	10	8.5	9.1	7.8	8.1	7.7	7.1	6.2	6.6
Chloride	mg/l	500	S	56	52	86	81	76	73	96	98	97	79	78	86
Fluoride	mg/l	2	P	0.25	0.25	0.28	0.28	0.32	0.32	0.34	0.33	0.38	0.42	0.33	0.29
Hardness (as CaCO3)	mg/l			360	390	400	420	320	340	220	230	210	190	180	200
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			1.1	0.88	1	0.85	0.91	0.68	0.66	0.25	0.39	0.067	0.0061	-0.18
Magnesium	None			20	22	24	26	20	22	15	15	16	15	15	17
Manganese	ug/l	50	S	ND	ND	ND	ND	ND	ND	ND	ND	25	20	ND	ND
Nitrate	mg/l	10	P	3.4	3.2	2.7	2.5	3.1	3	3.6	3.3	3.5	2.6	3.1	3.3
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			3.5	3.9	3.8	4.1	4.1	4.3	3.9	3.9	4.3	4	6.6	6.7
Sodium	mg/l			24	26	37	41	45	48	74	77	76	74	58	58
Sulfate	mg/l	500	S	150	140	160	140	130	120	120	110	110	96	86	82
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	520	540	600	610	520	520	470	490	470	430	380	380
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	3.4	3.2	2.7	2.5	3.1	3	3.6	3.3	3.5	2.6	3.1	3.3
Total Organic Carbon	mg/l			ND	0.34	0.39	0.39	0.34	0.36	0.6	0.61	0.77	0.85	0.96	0.91
General Physical Properties															
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
pH (Lab)	Units			8.1	7.8	8	7.8	8	7.8	8.1	7.7	7.9	7.6	7.6	7.4
Odor	TON	3	S	1	2	1	1	1	1	1	**3**	1	1	1	1
pH of CaCO3 saturation(25C)	Units			7	7	6.9	6.9	7.1	7.1	7.4	7.4	7.5	7.6	7.6	7.6
pH of CaCO3 saturation(60C)	Units			6.5	6.5	6.5	6.5	6.6	6.6	7	7	7	7.1	7.2	7.2
Specific Conductance	umho/cm	1600	S	830	850	940	960	830	850	800	810	790	710	660	680
Turbidity	NTU	5	S	0.35	0.23	0.28	0.14	1.7	0.58	0.6	0.27	0.16	0.11	0.86	0.48
Metals															
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	2	2	2.8	2.8	2	2.3	3	3.4	1.3	1.7	**14**	**12**
Barium	ug/l	1000	P	170	170	110	120	95	100	57	61	83	70	120	130
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	4.2	1.1	4	ND	3.6	ND	2	ND	2	ND	2.3	ND
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			1.4	1.5	0.77	0.76	1.1	1.1	0.17	0.41	0.12	0.96	0.37	0.34
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			2.6	2.9	1	1.1	1.7	1.8	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	0.78	0.9	1.5	1.5	3	3.1	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	0.51	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	1.7	1.7	ND	ND	0.79	0.85	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Rio Hondo #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/7/2012	9/11/2012	5/7/2012	9/11/2012	5/7/2012	9/11/2012	5/7/2012	9/11/2012	5/7/2012	9/11/2012	5/7/2012	9/11/2012
General Minerals															
Alkalinity	mg/l			140	140	170	160	180	170	120	110	95	90	93	96
Anion Sum	meq/l			4.4	4.4	7.2	7.4	7.7	7.5	6	6.1	4.8	4.8	3.4	3.8
Bicarbonate as HCO3	mg/l			170	170	200	200	220	200	150	130	120	110	110	120
Boron	mg/l	1	N	0.063	0.057	0.051	ND	0.16	0.15	0.17	0.17	0.13	0.12	0.091	0.089
Calcium	mg/l			41	39	92	91	90	86	55	55	43	40	29	32
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			3.2	ND	3.2	ND	3.4	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			4.6	4.5	7.2	7.2	8.2	8	6.2	6.3	5.1	4.8	3.8	4.2
Chloride	mg/l	500	S	18	19	47	50	64	64	61	66	49	50	25	31
Fluoride	mg/l	2	P	0.27	0.25	0.23	0.21	0.32	0.29	0.38	0.36	0.36	0.34	0.35	0.31
Hardness (as CaCO3)	mg/l			140	130	300	300	290	280	180	180	150	140	110	120
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	ND	ND	0.071	0.068	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.86	0.63	1.2	0.85	1.2	0.78	0.53	0.32	0.25	0.089	-0.098	-0.084
Magnesium	None			8.7	8.5	17	17	17	16	11	11	9.6	9.1	8.3	9.4
Manganese	ug/l	50	S	32	25	33	31	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate	mg/l	10	P	ND	ND	ND	ND	1.8	2	2.1	2.2	1.6	1.6	0.8	1.2
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			2.9	2.8	3.3	3.5	3.9	3.9	3.5	3.6	3.1	3.1	3.2	3.3
Sodium	mg/l			41	40	25	26	50	50	57	58	47	46	37	39
Sulfate	mg/l	500	S	46	50	120	130	100	100	83	90	69	70	36	46
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	0.054	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	260	280	430	480	470	500	370	410	300	310	210	240
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	1.8	2	2.1	2.2	1.6	1.6	0.8	1.2
Total Organic Carbon	mg/l			0.33	0.31	ND	0.31	0.38	0.36	0.43	0.41	0.34	0.32	0.39	0.38
General Physical Properties															
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10
pH (Lab)	Units			8.4	8.2	8.4	8	8.4	8	8.1	7.9	8	7.9	7.8	7.8
Odor	TON	3	S	1	1	1	1	1	1	1	1	1	1	1	1
pH of CaCO3 saturation(25C)	Units			7.6	7.6	7.2	7.2	7.2	7.2	7.5	7.6	7.8	7.8	7.9	7.9
pH of CaCO3 saturation(60C)	Units			7.2	7.2	6.7	6.7	6.7	6.8	7.1	7.1	7.3	7.4	7.5	7.4
Specific Conductance	umho/cm	1600	S	430	430	700	710	760	760	620	630	510	510	350	400
Turbidity	NTU	5	S	1.7	1.1	0.35	0.26	0.18	0.35	0.19	0.76	1.4	1.4	0.85	**17**
Metals															
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	ND	ND	ND	1.7	2.4	3.1	2.9	3.5	1.9	2.6	1.2	1.5
Barium	ug/l	1000	P	20	20	53	56	120	130	48	52	48	50	60	70
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	ND	ND	ND	1.1	ND	ND	ND	ND	ND	ND	ND
Copper	ug/l	1300	P	ND	ND	ND	3.1	ND	2.3	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			ND	ND	ND	ND	0.53	0.51	0.37	0.39	0.42	0.43	0.24	0.25
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	2.2	2.6	1.6	1.5	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	0.58	0.52	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Seal Beach #1													
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Zone 7	
				5/16/2012	9/5/2012	5/16/2012	9/5/2012	5/16/2012	9/5/2012	5/16/2012	9/5/2012	5/16/2012	9/5/2012	5/16/2012	9/5/2012	5/16/2012	9/5/2012
General Minerals																	
Alkalinity	mg/l			210	210	160	160	150	150	180	180	120	110	120	110	200	190
Anion Sum	meq/l			4.7	4.7	3.6	3.6	3.5	3.5	4.3	4.2	3.6	3.3	8	7.7	28	30
Bicarbonate as HCO3	mg/l			250	250	190	190	180	180	220	220	150	140	140	130	250	230
Boron	mg/l	1	N	0.23	0.26	0.13	0.15	0.18	0.21	0.22	0.23	0.088	0.065	0.14	0.13	0.17	0.12
Calcium	mg/l			4.4	4.7	3.4	3.6	3.1	3.8	5.2	5.2	8.1	9.6	64	69	240	280
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			5.9	11	6.2	14	6.4	13	3.4	7.9	3.3	3.9	ND	ND	ND	ND
Cation Sum	meq/l			4.5	4.9	3.5	3.7	3.2	3.8	4.1	4.2	3.8	3.7	7.8	8.2	26	29
Chloride	mg/l	500	S	18	18	16	15	14	14	20	19	14	14	86	86	**690**	**750**
Fluoride	mg/l	2	P	0.45	0.42	0.54	0.5	0.6	0.56	0.81	0.75	0.61	0.51	0.38	0.34	0.48	0.38
Hardness (as CaCO3)	mg/l			14	14	10	11	9.3	11	16	16	25	29	210	220	810	930
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	0.046	0.054	ND	0.05	ND	0.022	0.029	0.036	ND	0.051	ND	ND	0.15	0.18
Langelier Index - 25 degree	None			0.15	0.44	0.071	0.43	0.042	0.44	-0.0043	0.36	0.17	0.31	0.77	0.67	1.2	1.1
Magnesium	None			0.62	0.61	0.45	0.46	0.38	0.42	0.71	0.77	1.2	1.2	12	13	52	59
Manganese	ug/l	50	S	10	8.7	4.7	4.5	3	2.7	10	10	7.6	12	**100**	**88**	**610**	ND
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	1.3	1.4	2.5	2.7	6.5	6.9
Sodium	mg/l			98	110	75	80	70	84	86	89	74	71	81	83	230	220
Sulfate	mg/l	500	S	ND	ND	0.64	ND	ND	ND	ND	ND	33	30	150	150	220	230
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.11	0.059
Total Dissolved Solid (TDS)	mg/l	1000	S	310	290	240	230	260	240	300	300		250	550	500	**1900**	**2200**
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			9.7	10	4.1	4.5	3.5	4.1	5.8	5.3	1.8	1	1.7	1.4	3	1.1
General Physical Properties																	
Apparent Color	ACU	15	S	**200**	**150**	**75**	**120**	**80**	**100**	**180**	**150**	**20**	**40**	3	3	**15**	5
pH (Lab)	Units			8.6	8.8	8.7	9	8.7	9.1	8.4	8.8	8.5	8.6	8.2	8.2	7.9	7.8
Odor	TON	3	S	**3**	1	1	1	2	**3**	2	1	1	1	1	2	1	2
pH of CaCO3 saturation(25C)	Units			8.4	8.4	8.6	8.6	8.7	8.6	8.4	8.4	8.4	8.3	7.5	7.5	6.7	6.6
pH of CaCO3 saturation(60C)	Units			8	7.9	8.2	8.2	8.2	8.2	7.9	7.9	7.9	7.9	7	7	6.2	6.2
Specific Conductance	umho/cm	1600	S	450	450	350	360	330	340	410	420	360	350	770	780	**2700**	**2900**
Turbidity	NTU	5	S	1	0.44	0.82	0.96	0.58	1	1.5	**14**	1.1	**53**	0.26	1.7	1.1	4.2
Metals																	
Aluminum	ug/l	1000	P	38	33	41	34	32	26	22	ND	ND	57	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	1	ND	ND	ND	ND	ND	1.2	1.2	2.2	2	1.8	2.7	5.9	ND
Barium	ug/l	1000	P	6.5	7.1	3.7	4.1	3.7	3.9	5.1	6.6	12	12	86	81	110	ND
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	1	ND	ND	ND	ND	ND	1.2	ND	ND	ND	ND	ND	3.5	ND
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	1.2	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.7
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.6	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds																	
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.0063**	ND
1,4-Dioxane	ug/l			ND		ND		ND		ND		ND		ND		ND	
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	South Gate #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				5/9/2012	9/25/2012	5/9/2012	9/25/2012	5/9/2012	9/25/2012	5/9/2012	9/25/2012	5/9/2012	9/25/2012
General Minerals													
Alkalinity	mg/l			160	160	140	140	160	150	160	160	200	200
Anion Sum	meq/l			5.1	4.8	6.7	6.5	7	6.7	7.4	7.2	9.7	9.6
Bicarbonate as HCO3	mg/l			200	190	170	160	190	180	190	190	240	240
Boron	mg/l	1	N	0.11	0.12	0.14	0.14	0.11	0.12	0.16	0.17	0.13	0.14
Calcium	mg/l			46	50	65	69	71	73	72	75	93	100
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			2.8	ND	ND	ND	ND	ND	2	ND	2.2	ND
Cation Sum	meq/l			5	5.3	6.4	6.7	6.6	6.8	7.2	7.4	9.3	10
Chloride	mg/l	500	S	23	22	54	53	50	48	61	59	110	120
Fluoride	mg/l	2	P	0.33	0.32	0.32	0.31	0.39	0.38	0.39	0.38	0.42	0.41
Hardness (as CaCO3)	mg/l			150	160	220	230	240	250	240	250	340	370
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	0.031	0.038	ND	ND	ND	ND	ND	ND	0.08	0.087
Langelier Index - 25 degree	None			0.86	0.74	0.77	0.57	0.83	0.67	0.91	0.63	1	0.79
Magnesium	None			7.8	8.3	13	13	16	16	15	15	26	28
Manganese	ug/l	50	S	44	39	ND	ND	ND	ND	ND	ND	**120**	**120**
Nitrate	mg/l	10	P	ND	ND	2.2	2.1	2.4	2.3	2	1.9	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			2.4	2.5	3.2	3.3	2.9	2.8	3.2	3.1	3	3.1
Sodium	mg/l			45	47	47	48	40	40	51	52	56	57
Sulfate	mg/l	500	S	56	52	100	100	110	100	110	110	120	110
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	310	290	390	400	420	400	450	430	590	580
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	2.2	2.1	2.4	2.3	2	1.9	ND	ND
Total Organic Carbon	mg/l			ND	ND	0.37	0.32	ND	ND	ND	0.31	0.64	0.76
General Physical Properties													
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
pH (Lab)	Units			8.3	8.2	8.2	8	8.1	8	8.2	7.9	8.2	7.8
Odor	TON	3	S	1	2	1	2	1	1	1	1	1	**4**
pH of CaCO3 saturation(25C)	Units			7.5	7.5	7.4	7.4	7.3	7.3	7.3	7.3	7.1	7
pH of CaCO3 saturation(60C)	Units			7	7	7	6.9	6.9	6.9	6.8	6.8	6.6	6.6
Specific Conductance	umho/cm	1600	S	490	490	640	650	650	660	690	700	920	950
Turbidity	NTU	5	S	0.17	0.15	0.2	0.21	0.14	0.38	0.26	0.24	0.49	0.4
Metals													
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	2.5	2.8	2.8	3.2	2.9	3.1	2	2.4	2.3	3.4
Barium	ug/l	1000	P	120	120	90	93	150	150	69	71	220	240
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	ND	ND	ND	1.5	ND	ND	ND	ND	ND
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			ND	ND	0.1	0.11	1	1	0.52	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	0.52	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	2.6	3	5.1	5.9	1.5	1.7	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	0.78	2.8	4.6	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	0.69	1.1	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	0.81	0.67	2.2	1.9	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Whittier #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				4/18/2012	9/7/2012	4/18/2012	9/7/2012	4/18/2012	9/7/2012	4/18/2012	9/7/2012	4/18/2012	9/7/2012
General Minerals													
Alkalinity	mg/l			260	250	280	270	290	270	250	230	230	220
Anion Sum	meq/l			41	41	39	39	27	28	11	11	11	11
Bicarbonate as HCO3	mg/l			320	300	340	320	350	330	300	280	280	260
Boron	mg/l	1	N	0.88	0.89	0.93	0.94	0.62	0.61	0.19	0.19	0.16	0.15
Calcium	mg/l			210	200	180	190	170	160	78	80	84	80
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	5.9	8.2
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			43	42	38	39	28	28	11	12	12	11
Chloride	mg/l	500	S	280	290	250	250	190	190	80	78	85	83
Fluoride	mg/l	2	P	0.3	0.27	0.31	0.29	0.5	0.46	0.21	0.19	0.33	0.31
Hardness (as CaCO3)	mg/l			1100	1000	970	980	810	790	340	350	380	360
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	**0.6**	**0.58**	**0.42**	**0.46**	**0.31**	**0.32**	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.99	0.98	1.1	1	0.97	1	0.76	0.69	0.82	0.6
Magnesium	None			140	140	120	120	96	94	35	37	41	40
Manganese	ug/l	50	S	**54**	46	**90**	**63**	**72**	**62**	23	20	4.1	3.4
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	3.7	3.9	4.8	5.1
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			11	11	10	10	7.7	7.2	4.1	4.3	3.7	3.5
Sodium	mg/l			470	460	420	440	260	280	100	110	92	90
Sulfate	mg/l	500	S	**1300**	**1300**	**1200**	**1300**	**760**	**830**	190	180	180	170
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	**2700**	**2800**	**2600**	**2600**	**1800**	**1800**	730	710	690	690
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	3.7	3.9	4.8	5.1
Total Organic Carbon	mg/l			1.8	1.9	2.2	2.3	1.3	1.3	ND	ND	ND	ND
General Physical Properties													
Apparent Color	ACU	15	S	**15**	**15**	**15**	**15**	5	5	ND	ND	ND	ND
pH (Lab)	Units			7.6	7.6	7.8	7.7	7.6	7.8	7.8	7.8	7.9	7.7
Odor	TON	3	S	1	1	2	1	2	1	1	1	1	1
pH of CaCO3 saturation(25C)	Units			6.6	6.7	6.6	6.6	6.7	6.7	7.1	7.1	7.1	7.1
pH of CaCO3 saturation(60C)	Units			6.2	6.2	6.2	6.2	6.2	6.3	6.6	6.6	6.6	6.7
Specific Conductance	umho/cm	1600	S	**3400**	**3400**	**3300**	**3300**	**2400**	**2400**	1100	1100	1000	1100
Turbidity	NTU	5	S	4	3.5	2.2	2.6	1.9	1.2	0.063	0.076	0.43	0.34
Metals													
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	1.4	5.1	1.3	ND	1.2	3.6	1.8	2.8	1.2	2.4
Barium	ug/l	1000	P	17	16	17	16	20	19	32	29	26	25
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	2.5	ND	1.9	ND	1.9	ND	1.1	ND	4.2	3
Copper	ug/l	1300	P	8.1	2.1	6.2	3.9	4.4	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	3.3	3.4
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	6	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	9.7	ND	11	ND	5.5	15	13	18	16
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	1.5	1.3	2.4	2.3

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Whittier #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/16/2012	9/4/2012	4/16/2012	9/4/2012	4/16/2012	9/4/2012	4/16/2012	9/4/2012	4/16/2012	9/4/2012	4/16/2012	9/4/2012
General Minerals															
Alkalinity	mg/l			230	240	160	160	200	190	370	360	210	200	330	320
Anion Sum	meq/l			14	14	3.9	3.8	12	12	26	27	12	11	15	15
Bicarbonate as HCO3	mg/l			280	290	200	200	240	230	450	440	260	240	410	390
Boron	mg/l	1	N	0.61	0.59	0.24	0.28	0.22	0.23	0.77	0.81	0.19	0.18	0.32	0.32
Calcium	mg/l			75	91	22	24	85	87	130	130	120	120	140	140
Carbon Dioxide	mg/l			ND	9.7	ND	2.2	ND	5	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			14	14	3.9	4.4	12	12	27	27	12	12	15	15
Chloride	mg/l	500	S	240	220	10	9.6	130	130	230	240	120	120	100	100
Fluoride	mg/l	2	P	0.32	0.29	0.3	0.29	0.3	0.3	0.47	0.46	0.27	0.26	0.31	0.28
Hardness (as CaCO3)	mg/l			280	340	72	81	360	370	660	670	420	400	480	500
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.56	0.66	0.34	0.4	0.76	0.74	0.82	0.86	0.84	0.83	0.89	0.83
Magnesium	None			24	27	4.2	4.8	36	37	83	84	26	25	34	36
Manganese	ug/l	50	S	31	25	41	38	42	39	**170**	**160**	ND	ND	ND	ND
Nitrate	mg/l	10	P	ND	ND	ND	ND	0.62	0.62	2.4	2.4	4.5	4.7	5.9	6.6
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			4.2	4	2.4	2.5	4	3.9	4.4	4.2	4.9	4.6	4.6	4.4
Sodium	mg/l			180	170	55	62	110	110	320	320	78	78	110	120
Sulfate	mg/l	500	S	120	160	15	14	220	220	**590**	**640**	170	170	240	240
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	860	900	270	240	780	780	**1700**	**1800**	690	760	900	980
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	0.62	0.62	2.4	2.4	4.5	4.7	5.9	6.6
Total Organic Carbon	mg/l			0.9	0.84	0.63	0.48	0.48	0.44	0.6	0.59	0.49	0.42	0.55	0.57
General Physical Properties															
Apparent Color	ACU	15	S	ND	ND	3	3	ND	ND	ND	ND	ND	ND	ND	ND
pH (Lab)	Units			7.7	7.7	8.1	8.2	7.9	7.9	7.5	7.6	7.8	7.8	7.6	7.5
Odor	TON	3	S	2	**4**	1	2	1	1	ND	2	1	2	1	**3**
pH of CaCO3 saturation(25C)	Units			7.1	7	7.8	7.8	7.1	7.1	6.7	6.7	6.9	7	6.7	6.7
pH of CaCO3 saturation(60C)	Units			6.7	6.6	7.4	7.3	6.7	6.7	6.2	6.2	6.5	6.5	6.2	6.2
Specific Conductance	umho/cm	1600	S	1400	1400	370	380	1200	1200	**2400**	**2500**	1100	1100	1400	1400
Turbidity	NTU	5	S	0.24	1.1	0.26	0.15	0.23	0.1	0.13	0.18	0.12	0.18	0.26	0.44
Metals															
Aluminum	ug/l	1000	P	ND	25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	1.4	5	ND	ND	2	4	1.4	5.4	1.6	3.4	1.9	3.3
Barium	ug/l	1000	P	22	22	24	21	53	46	13	13	81	74	32	29
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	2.3	1.9	ND	ND	4.5	4	2.2	1.3	3.4	3.3	4.6	4
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	3.3	ND	ND	ND	2.2	ND
Hexavalent Chromium	ug/l			ND	ND	ND	ND	3.2	3.1	0.28	0.096	2.2	2.1	3.7	3.8
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	9.9	ND	ND	ND	ND	7.2	12	ND	ND	ND	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	5.3	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	1.3	0.92	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	1.2	1.5	ND	1.9	2.9	2.4	1.5	2.1

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Whittier Narrows #1								
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Zone 9
				9/12/2012	9/12/2012	9/12/2012	9/12/2012	9/12/2012	9/17/2012	9/17/2012	9/17/2012	9/17/2012
General Minerals												
Alkalinity	mg/l			85	100	120	150	120	140	160	150	140
Anion Sum	meq/l			22	3.2	6.8	8	5.8	8	9	9.6	8.7
Bicarbonate as HCO3	mg/l			100	120	150	180	150	160	200	180	180
Boron	mg/l	1	N	**1.3**	0.15	0.058	0.074	0.066	0.24	0.24	0.28	0.25
Calcium	mg/l			65	11	95	100	74	75	80	88	73
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			21	3.4	7	8	6.1	8.6	9.2	10	9.4
Chloride	mg/l	500	S	**720**	34	70	92	55	100	110	120	110
Fluoride	mg/l	2	P	0.78	0.39	0.23	0.23	0.24	0.22	0.24	0.24	0.3
Hardness (as CaCO3)	mg/l			220	28	280	310	240	250	260	290	250
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	**11**	0.032	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.033	0.011	0.82	0.9	0.84	0.85	0.9	0.9	0.82
Magnesium	None			14	0.46	10	14	13	15	15	16	16
Manganese	ug/l	50	S	**790**	16	ND	11	ND	8.9	21	23	11
Nitrate	mg/l	10	P	ND	ND	1.2	1.3	0.91	0.35	1.5	3	2.3
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	0.28	ND	ND
Potassium	mg/l			4.4	1.5	2.8	4.1	4	5.6	5.5	5.8	5.6
Sodium	mg/l			380	64	32	38	29	78	89	100	99
Sulfate	mg/l	500	S	ND	7.6	110	110	80	110	120	140	130
Surfactants	mg/l	0.5	S	0.074	ND	ND	ND	ND	0.055	0.055	0.055	0.052
Total Dissolved Solid (TDS)	mg/l	1000	S	**1400**	230	470	560	370	530	590	630	560
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	1.2	1.3	0.91	0.35	1.8	3	2.3
Total Organic Carbon	mg/l			15	1	0.48	0.56	0.79	0.97	1.2	1.5	1.3
General Physical Properties												
Apparent Color	ACU	15	S	**230**	3	ND	ND	ND	ND	3	3	3
pH (Lab)	Units			7.6	8.3	8.1	8.1	8.2	8.2	8.2	8.1	8.2
Odor	TON	3	S	**8**	**8**	1	1	1	2	2	2	1
pH of CaCO3 saturation(25C)	Units			7.6	8.3	7.3	7.2	7.4	7.4	7.2	7.2	7.3
pH of CaCO3 saturation(60C)	Units			7.2	7.9	6.8	6.7	7	6.9	6.8	6.8	6.9
Specific Conductance	umho/cm	1600	S	**2400**	340	700	830	600	850	930	1000	920
Turbidity	NTU	5	S	**79**	0.19	0.16	0.34	0.58	0.18	0.29	0.39	0.41
Metals												
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	**11**	2.2	1.9	2.8	2.2	2.8	3.1	2.9	2.6
Barium	ug/l	1000	P	500	26	210	210	180	140	110	80	53
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	ND	2.1	ND	1.2	ND	ND	ND	ND
Copper	ug/l	1300	P	ND	ND	ND	2	ND	ND	2.2	3.2	3.3
Hexavalent Chromium	ug/l			ND	ND	1.8	0.12	0.12	ND	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	12	ND	31	7.7	53	ND
Selenium	ug/l	50	P	13	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	58	ND	ND	24	ND
Volatile Organic Compounds												
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l											
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	Type	Willowbrook #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				5/3/2012	9/26/2012	5/3/2012	9/26/2012	5/3/2012	9/26/2012	5/3/2012	9/26/2012
General Minerals											
Alkalinity	mg/l			220	220	170	160	170	170	180	180
Anion Sum	meq/l			5.9	5.7	5.3	5.1	5.8	5.6	5.7	5.7
Bicarbonate as HCO3	mg/l			270	270	200	200	210	200	220	220
Boron	mg/l	1	N	0.18	0.2	0.12	0.12	0.12	0.13	0.13	0.13
Calcium	mg/l			43	40	55	53	61	59	60	59
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			3.3	2.4	2.2	2	2.3	ND	2.8	ND
Cation Sum	meq/l			6.2	6	5.6	5.4	6.2	5.9	6	5.9
Chloride	mg/l	500	S	20	17	21	20	22	22	27	26
Fluoride	mg/l	2	P	0.29	0.28	0.32	0.31	0.43	0.42	0.4	0.38
Hardness (as CaCO3)	mg/l			150	140	180	170	210	200	200	190
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	0.081	0.079	ND	ND	0.087	0.086	ND	ND
Langelier Index - 25 degree	None			0.9	0.71	0.82	0.77	0.89	0.63	0.97	0.74
Magnesium	None			9.4	8.7	10	10	14	13	11	11
Manganese	ug/l	50	S	**57**	**51**	48	43	31	27	**88**	**85**
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			4.7	4.6	2.7	2.6	3.6	3.4	3	3
Sodium	mg/l			72	74	43	42	43	41	47	46
Sulfate	mg/l	500	S	41	33	63	59	79	77	67	65
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	350	350	320	310	330	350	340	350
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			1.8	2	0.38	0.33	ND	ND	ND	ND
General Physical Properties											
Apparent Color	ACU	15	S	**15**	**15**	ND	ND	ND	ND	ND	ND
pH (Lab)	Units			8.3	8.1	8.2	8.2	8.2	8	8.3	8.1
Odor	TON	3	S	**3**	2	1	1	1	1	1	1
pH of CaCO3 saturation(25C)	Units			7.4	7.4	7.4	7.4	7.3	7.4	7.3	7.3
pH of CaCO3 saturation(60C)	Units			6.9	7	6.9	7	6.9	6.9	6.9	6.9
Specific Conductance	umho/cm	1600	S	560	570	500	510	550	560	550	560
Turbidity	NTU	5	S	0.62	1.5	0.15	0.087	0.33	0.29	3.2	**5.7**
Metals											
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	6.4	5.1	ND	ND	3.3	3.1	5.1	5
Barium	ug/l	1000	P	42	42	50	49	74	75	130	140
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	MCL Type	Carson #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				3/26/12	8/21/12	3/26/12	8/21/12	3/26/12	8/21/12	3/26/12	8/21/12
General Minerals											
Alkalinity	mg/l			140	140	170	170	160	160	180	170
Anion Sum	meq/l			3.5	3.4	4	4	5.2	5.2	6.4	6.2
Bicarbonate as HCO3	mg/l			170	170	210	200	200	200	220	210
Boron	mg/l	1	N	0.086	0.098	0.098	0.11	0.095	0.11	0.11	0.12
Calcium	mg/l			21	21	32	33	42	46	51	52
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			2.8	2.5	3	2.7	2.4	2.2	2.7	ND
Cation Sum	meq/l			3.6	3.8	4.1	4.3	5.1	5.6	6.2	6.5
Chloride	mg/l	500	S	21	21	22	22	22	22	43	44
Fluoride	mg/l	2	P	0.25	0.26	0.21	0.21	0.29	0.3	0.39	0.4
Hardness (as CaCO3)	mg/l			68	71	110	110	160	170	190	190
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	ND	0.02	ND	0.022	ND	ND	0.065	0.074
Langelier Index - 25 degree	None			0.5	0.47	0.73	0.69	0.76	0.74	0.88	0.6
Magnesium	None			4.1	4.3	6.9	7.2	12	14	14	15
Manganese	ug/l	50	S	22	19	17	14	30	27	**92**	**86**
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			2.7	3	2.4	2.6	2.8	3.1	3.5	3.7
Sodium	mg/l			49	52	43	45	44	49	56	59
Sulfate	mg/l	500	S	ND	ND	ND	ND	65	63	74	70
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	200	230	230	240	320	330	390	390
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.81	0.76	0.42	0.46	0.34	0.36	0.44	0.41
General Physical Properties											
Apparent Color	ACU	15	S	5	10	3	5	ND	3	ND	5
pH (Lab)	Units			8.4	8.4	8.4	8.3	8.3	8.2	8.3	8
Odor	TON	3	S	1	2	1	2	1	2	1	2
pH of CaCO3 saturation(25C)	Units			7.9	7.9	7.6	7.6	7.5	7.5	7.4	7.4
pH of CaCO3 saturation(60C)	Units			7.4	7.4	7.2	7.2	7.1	7	6.9	7
Specific Conductance	umho/cm	1600	S	340	340	390	390	500	510	610	620
Turbidity	NTU	5	S	0.24	0.15	0.13	0.16	0.12	0.059	0.65	0.36
Metals											
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	ND	1.1	ND	2.6	ND	ND	ND	1.1
Barium	ug/l	1000	P	17	15	40	36	69	65	170	160
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	MCL Type	Carson #2									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				5/24/12	8/22/12	5/24/12	8/22/12	5/24/12	8/22/12	5/24/12	8/22/12	5/24/12	8/22/12
General Minerals													
Alkalinity	mg/l			160	160	190	190	180	170	180	170	180	170
Anion Sum	meq/l			3.8	3.7	4.5	4.4	4.9	4.7	4.4	4.1	4.6	4.4
Bicarbonate as HCO3	mg/l			200	190	230	220	210	200	220	210	210	200
Boron	mg/l	1	N	0.12	0.14	0.13	0.13	0.12	0.12	0.1	0.11	0.1	0.11
Calcium	mg/l			3.4	3.7	9.8	10	30	29	32	34	40	41
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			2.4	9	5.5	6	4.2	3.2	2.9	2.5	3	2.1
Cation Sum	meq/l			3.5	4	4.2	4.6	4.7	5	4.2	4.6	4.4	4.7
Chloride	mg/l	500	S	20	20	22	22	24	24	24	24	22	22
Fluoride	mg/l	2	P	0.33	0.33	0.27	0.27	0.27	0.3	0.24	0.24	0.3	0.3
Hardness (as CaCO3)	mg/l			11	12	38	40	110	120	120	130	140	140
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	ND	ND	ND	ND	ND	0.15	ND	ND	0.05	0.047
Langelier Index - 25 degree	None			-0.34	0.26	0.47	0.52	0.84	0.72	0.71	0.67	0.83	0.68
Magnesium	None			0.59	0.65	3.4	3.6	9.8	10	11	12	9	9.6
Manganese	ug/l	50	S	3.4	2.5	6.8	5.8	15	13	9.4	8.1	43	39
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			1.6	1.9	3.6	3.8	4.2	4.5	3.6	3.9	2.9	3.1
Sodium	mg/l			75	84	77	84	53	58	38	42	37	40
Sulfate	mg/l	500	S	ND	ND	ND	ND	33	29	ND	ND	22	22
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	250	260	260	270	260	300	250	250	250	280
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			2	1.8	1.1	1	0.58	0.63	0.53	0.46	ND	ND
General Physical Properties													
Apparent Color	ACU	15	S	**30**	**35**	**20**	**20**	5	10	ND	5	ND	3
pH (Lab)	Units			8.3	8.9	8.6	8.6	8.5	8.4	8.3	8.3	8.3	8.2
Odor	TON	3	S	1	2	2	2	1	2	1	**100**	2	2
pH of CaCO3 saturation(25C)	Units			8.6	8.6	8.1	8.1	7.6	7.7	7.6	7.6	7.5	7.5
pH of CaCO3 saturation(60C)	Units			8.2	8.2	7.6	7.6	7.2	7.2	7.1	7.2	7.1	7.1
Specific Conductance	umho/cm	1600	S	360	380	420	440	470	470	420	420	440	450
Turbidity	NTU	5	S	0.22	0.2	0.11	0.13	0.19	0.077	0.32	0.092	0.25	0.26
Metals													
Aluminum	ug/l	1000	P	ND	20	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	ug/l	1000	P	ND	ND	5.9	5.7	14	14	17	16	23	22
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	2	ND	2.2	ND	1	ND	2.1	ND	2.1	ND
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	MCL Type	Carson #3											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/2/12	9/13/12	4/2/12	9/13/12	4/2/12	9/13/12	4/2/12	9/13/12	4/2/12	9/13/12	4/2/12	9/13/12
General Minerals															
Alkalinity	mg/l			350	350	150	150	170	170	170	170	170	170	180	170
Anion Sum	meq/l			7.4	7.4	3.9	3.8	4.1	4	4	4	4.1	4.1	5.3	5.1
Bicarbonate as HCO3	mg/l			420	420	180	180	200	200	200	200	210	210	210	210
Boron	mg/l	1	N	0.66	0.65	0.093	0.1	0.097	0.11	0.079	0.096	0.093	0.11	0.11	0.13
Calcium	mg/l			8.1	7.7	19	20	15	15	21	21	30	32	42	46
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			8	8.9	3	3.2	2.9	3.4	2.8	3.4	2.9	3.4	2.2	2.9
Cation Sum	meq/l			7.7	7.5	3.9	4.2	4.1	4.2	4	4.2	4.1	4.4	5.2	5.6
Chloride	mg/l	500	S	13	12	21	20	23	21	22	21	22	21	21	20
Fluoride	mg/l	2	P	0.54	0.53	0.24	0.23	0.31	0.3	0.28	0.26	0.25	0.25	0.38	0.35
Hardness (as CaCO3)	mg/l			30	29	62	66	50	50	77	77	110	120	150	160
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	0.054	0.062	ND	ND	ND	ND	ND	ND	ND	ND	0.038	0.033
Langelier Index - 25 degree	None			0.56	0.58	0.5	0.54	0.38	0.45	0.52	0.6	0.69	0.78	0.71	0.86
Magnesium	None			2.4	2.3	3.8	4.1	3	3	5.8	5.9	8.2	8.8	11	12
Manganese	ug/l	50	S	18	21	18	17	28	31	29	34	23	22	37	39
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			2.8	2.7	3.1	3.5	3.4	3.4	3.8	4	2.8	3.1	3.6	3.9
Sodium	mg/l			160	160	60	64	69	71	54	60	42	46	49	51
Sulfate	mg/l	500	S	2.4	1.4	14	13	3.6	1.2	1.9	0.95	ND	ND	54	52
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	470	470	250	220	250	250	240	230	240	240	310	310
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			14	13	1.5	0.93	1.8	1.5	1.3	0.93	0.91	0.54	0.84	0.36
General Physical Properties															
Apparent Color	ACU	15	S	**100**	**160**	10	10	15	15	5	10	3	5	ND	3
pH (Lab)	Units			8.5	8.5	8.4	8.4	8.3	8.4	8.3	8.4	8.3	8.4	8.2	8.3
Odor	TON	3	S	3	**4**	1	**4**	1	2	2	**4**	2	1	1	1
pH of CaCO3 saturation(25C)	Units			7.9	7.9	7.9	7.9	8	8	7.8	7.8	7.6	7.6	7.5	7.4
pH of CaCO3 saturation(60C)	Units			7.5	7.5	7.5	7.4	7.5	7.5	7.4	7.4	7.2	7.2	7	7
Specific Conductance	umho/cm	1600	S	700	710	380	390	400	390	390	390	390	400	510	520
Turbidity	NTU	5	S	0.61	1.7	0.19	0.23	0.2	1.1	0.43	0.54	0.51	1	1.6	0.92
Metals															
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	ND	1	ND	ND	ND	ND	ND	ND	ND	ND	1.5	2
Barium	ug/l	1000	P	7	7.4	16	17	15	15	18	17	31	30	62	59
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	MCL Type	Chandler #3			
				Zone 1	Zone 1	Zone 2	Zone 2
				5/10/12	9/13/12	5/10/12	9/13/12
General Minerals							
Alkalinity	mg/l			350	350	400	430
Anion Sum	meq/l			12	12	18	18
Bicarbonate as HCO3	mg/l			420	420	490	520
Boron	mg/l	1	N	0.21	0.22	0.42	0.43
Calcium	mg/l			80	86	150	170
Carbon Dioxide	mg/l			ND	ND	ND	ND
Carbonate as CO3	mg/l			4.4	3.3	3.4	ND
Cation Sum	meq/l			12	12	17	19
Chloride	mg/l	500	S	150	150	210	190
Fluoride	mg/l	2	P	0.25	0.25	0.2	0.19
Hardness (as CaCO3)	mg/l			300	320	560	620
Hydroxide (as OH)	mg/l			ND	ND	ND	ND
Iron	mg/l	0.3	S	0.21	0.22	ND	ND
Langelier Index - 25 degree	None			1.3	1.2	1.4	1.1
Magnesium	None			25	26	44	50
Manganese	ug/l	50	S	**84**	**80**	12	6.6
Nitrate	mg/l	10	P	ND	ND	**17**	**14**
Nitrite	mg/l	1	P	ND	ND	ND	ND
Potassium	mg/l			3.6	3.9	3.5	3.8
Sodium	mg/l			130	130	140	150
Sulfate	mg/l	500	S	24	21	130	140
Surfactants	mg/l	0.5	S	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	670	670	**1100**	**1100**
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	17	14
Total Organic Carbon	mg/l			1.2	1.3	0.89	1
General Physical Properties							
Apparent Color	ACU	15	S	5	10	5	3
pH (Lab)	Units			8.2	8.1	8	7.6
Odor	TON	3	S	1	2	1	2
pH of CaCO3 saturation(25C)	Units			6.9	6.9	6.6	6.5
pH of CaCO3 saturation(60C)	Units			6.5	6.4	6.1	6
Specific Conductance	umho/cm	1600	S	1100	1200	1600	**1700**
Turbidity	NTU	5	S	2.5	2.6	**22**	2.7
Metals							
Aluminum	ug/l	1000	P	ND	ND	21	ND
Antimony	ug/l	6	P	ND	ND	ND	ND
Arsenic	ug/l	10	P	3.6	5.2	3.2	4.8
Barium	ug/l	1000	P	40	36	95	120
Beryllium	ug/l	4	P	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND
Chromium	ug/l	50	P	1.2	ND	4	4
Copper	ug/l	1300	P	ND	ND	ND	2.7
Hexavalent Chromium	ug/l			ND	ND	2.6	4.2
Lead	ug/l	15	P	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	65	64
Selenium	ug/l	50	P	ND	ND	12	10
Silver	ug/l	100	S	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND
Volatile Organic Compounds							
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	3.1	3.5

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	MCL Type	Gardena #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				4/10/12	8/28/12	4/10/12	8/28/12	4/10/12	8/28/12	4/10/12	8/28/12
General Minerals											
Alkalinity	mg/l			270	270	180	180	170	170	190	190
Anion Sum	meq/l			6	5.9	5.2	5.2	5.6	5.4	42	41
Bicarbonate as HCO3	mg/l			330	330	220	220	200	200	230	230
Boron	mg/l	1	N	0.32	0.34	0.11	0.12	0.096	0.11	0.12	0.14
Calcium	mg/l			16	16	50	51	55	52	460	440
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			4.1	3.5	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			5.8	5.9	5.4	5.4	5.6	5.4	40	40
Chloride	mg/l	500	S	18	18	38	38	24	23	**1300**	**1200**
Fluoride	mg/l	2	P	0.2	0.2	0.4	0.42	0.36	0.37	0.16	0.15
Hardness (as CaCO3)	mg/l			69	70	180	180	180	180	1700	1700
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	0.19	0.12	ND	0.05	ND	ND	0.058	ND
Langelier Index - 25 degree	None			0.56	0.48	0.63	0.57	0.78	0.72	0.96	0.82
Magnesium	None			7.3	7.6	12	12	11	11	130	140
Manganese	ug/l	50	S	**52**	**52**	**51**	50	34	32	5.5	ND
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	**23**	**23**
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			10	10	3.4	3.3	3.1	3	7.8	7.3
Sodium	mg/l			94	97	41	41	43	42	140	140
Sulfate	mg/l	500	S	ND	ND	22	26	73	67	48	47
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	0.058	0.096
Total Dissolved Solid (TDS)	mg/l	1000	S	350	340	300	310	340	300	**2800**	**2500**
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	23	23
Total Organic Carbon	mg/l			2.5	2.2	ND	0.34	0.32	0.3	0.5	0.36
General Physical Properties											
Apparent Color	ACU	15	S	**25**	15	ND	10	ND	5	ND	3
pH (Lab)	Units			8.3	8.2	8	8	8.2	8.1	7.4	7.3
Odor	TON	3	S	2	**4**	2	**4**	1	2	1	**17**
pH of CaCO3 saturation(25C)	Units			7.7	7.7	7.4	7.4	7.4	7.4	6.4	6.4
pH of CaCO3 saturation(60C)	Units			7.3	7.3	6.9	7	7	7	6	6
Specific Conductance	umho/cm	1600	S	570	580	510	530	530	540	**4100**	**4100**
Turbidity	NTU	5	S	3.5	**29**	1.9	**16**	**5.1**	2.6	4	2.5
Metals											
Aluminum	ug/l	1000	P	ND	ND	ND	31	ND	ND	29	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	**96**	**81**	ND	1.9	ND	2.1	10	**29**
Barium	ug/l	1000	P	17	16	51	53	27	27	500	510
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	8	1.2	5.1	ND	4.7	21	14
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	6.5
Hexavalent Chromium	ug/l			ND	ND	ND	ND	ND	ND	6.7	7
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	5	ND	ND	ND	ND	5.9	14
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	8.3	47
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	**13**	**11**

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	MCL Type	Gardena #2									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				4/6/12	8/27/12	4/6/12	8/27/12	4/6/12	8/27/12	4/6/12	8/27/12	4/6/12	8/27/12
General Minerals													
Alkalinity	mg/l			280	270	180	170	170	170	170	170	190	180
Anion Sum	meq/l			6	5.8	5.4	5.2	5.1	4.9	4	4	5.1	4.9
Bicarbonate as HCO3	mg/l			340	330	220	210	210	200	200	210	230	220
Boron	mg/l	1	N	0.28	0.31	0.14	0.14	0.11	0.13	0.08	0.089	0.1	0.11
Calcium	mg/l			15	16	37	36	46	48	29	30	47	46
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			5.4	5.9	2	ND	2.3	ND	2.2	ND	2.4	2.5
Cation Sum	meq/l			5.7	6	5.3	5.3	5.1	5.5	4	4.3	5.1	5.2
Chloride	mg/l	500	S	13	13	22	21	22	22	22	22	40	40
Fluoride	mg/l	2	P	0.25	0.26	0.27	0.28	0.38	0.4	0.28	0.3	0.3	0.31
Hardness (as CaCO3)	mg/l			62	66	140	140	160	170	110	120	160	160
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	0.024	0.02	0.038	0.034	0.046	0.046	0.044	0.04	0.046	0.052
Langelier Index - 25 degree	None			0.65	0.71	0.62	0.59	0.76	0.66	0.55	0.52	0.8	0.81
Magnesium	None			6	6.4	12	12	12	13	8.8	9.6	10	11
Manganese	ug/l	50	S	23	23	32	32	41	41	42	44	12	**56**
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			5.2	5.3	5.7	5.6	3.7	3.8	3.1	3.2	3	2.9
Sodium	mg/l			100	100	53	53	41	44	40	44	43	44
Sulfate	mg/l	500	S	ND	ND	56	54	45	44	ND	ND	6.8	6.4
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	370	350	350	340	330	320	260	240	330	310
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			3.6	3.4	0.86	0.6	0.86	0.42	0.93	0.58	0.72	0.32
General Physical Properties													
Apparent Color	ACU	15	S	**25**	**30**	3	5	ND	5	3	10	ND	5
pH (Lab)	Units			8.4	8.4	8.2	8.2	8.2	8.1	8.2	8.2	8.2	8.2
Odor	TON	3	S	3	**4**	2	2	2	3	1	3	**4**	3
pH of CaCO3 saturation(25C)	Units			7.7	7.7	7.5	7.6	7.4	7.4	7.7	7.6	7.4	7.4
pH of CaCO3 saturation(60C)	Units			7.3	7.3	7.1	7.1	7	7	7.2	7.2	7	7
Specific Conductance	umho/cm	1600	S	570	580	520	530	490	500	390	400	510	510
Turbidity	NTU	5	S	0.46	**8.5**	0.094	0.16	0.14	0.17	0.074	0.64	**12**	**12**
Metals													
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4
Barium	ug/l	1000	P	18	20	18	20	21	22	42	43	17	85
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	5.3	ND	4	ND	3.3	ND	2.8	ND	4.8
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.6
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	MCL Type	Hawthorne #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/23/12	9/16/12	5/23/12	9/16/12	5/23/12	9/16/12	5/23/12	9/16/12	5/23/12	9/16/12	5/23/12	9/16/12
General Minerals															
Alkalinity	mg/l			690	640	640	610	500	470	330	300	220	190	310	290
Anion Sum	meq/l			15	14	14	13	11	11	8.2	7.6	16	14	26	26
Bicarbonate as HCO3	mg/l			840	780	780	740	610	570	400	370	270	230	370	350
Boron	mg/l	1	N	**1.4**	**1.4**	**1.1**	1	0.75	0.7	0.36	0.36	0.16	0.14	0.29	0.31
Calcium	mg/l			16	15	13	12	39	37	38	37	140	130	210	220
Carbon Dioxide	mg/l			ND	ND	ND	ND	3.6	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			11	7	14	7.8	11	5.5	5.3	3.6	2.4	ND	ND	ND
Cation Sum	meq/l			16	15	15	14	12	12	8.2	8.2	16	15	26	27
Chloride	mg/l	500	S	46	45	39	39	44	42	54	51	330	320	470	500
Fluoride	mg/l	2	P	0.12	0.11	0.25	0.24	0.22	0.22	0.37	0.36	0.29	0.33	0.24	0.24
Hardness (as CaCO3)	mg/l			96	93	71	68	200	190	170	170	530	500	790	820
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	0.14	0.15	0.15	0.15	0.2	0.2	0.051	0.032	0.027	0.021	0.076	0.072
Langelier Index - 25 degree	None			0.99	0.77	1	0.73	1.4	1	1	0.87	1.2	0.93	1.2	1.1
Magnesium	None			14	13	9.3	9	26	25	18	18	48	45	62	66
Manganese	ug/l	50	S	13	14	**55**	**55**	**62**	**67**	38	32	**180**	**160**	**480**	**460**
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			21	20	14	14	15	14	9.7	9.8	7.4	7	6.8	6.7
Sodium	mg/l			310	300	310	290	180	170	100	110	120	100	230	240
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	ND	ND	ND	100	51	340	310
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.055	0.056	0.059
Total Dissolved Solid (TDS)	mg/l	1000	S	880	920	830	870	610	660	460	460	930	1000	**1500**	**1600**
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			14	13	16	12	6.9	6.9	3.1	2.6	1.2	0.95	1.6	1.8
General Physical Properties															
Apparent Color	ACU	15	S	**150**	**150**	**150**	**150**	**60**	**40**	**25**	**25**	3	3	**20**	10
pH (Lab)	Units			8.3	8.1	8.4	8.2	8.4	8.2	8.3	8.2	8.1	7.9	7.7	7.7
Odor	TON	3	S	2	2	2	2	2	2	1	2	1	2	2	**8**
pH of CaCO3 saturation(25C)	Units			7.3	7.4	7.4	7.5	7.1	7.1	7.3	7.3	6.9	7	6.5	6.6
pH of CaCO3 saturation(60C)	Units			6.9	6.9	7	7	6.6	6.7	6.8	6.8	6.4	6.5	6.1	6.1
Specific Conductance	umho/cm	1600	S	1400	1400	1300	1300	1000	1100	770	750	1600	1400	**2500**	**2400**
Turbidity	NTU	5	S	1	0.28	0.86	0.38	0.66	0.44	0.55	1	0.16	0.23	**28**	**49**
Metals															
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	23
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	ND	ND	ND	3	ND	ND	ND	ND	1.4	2.8	4.6	5.3
Barium	ug/l	1000	P	31	30	24	25	38	38	33	32	150	120	45	57
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	ND	1.5	1.8	ND	ND	ND	ND	3	ND	4	ND
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.3
Hexavalent Chromium	ug/l			ND	ND	ND	0.022	ND	ND	ND	ND	ND	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.5	5.5
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.61	0.59
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.69	0.72
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.8	1.9
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**17**	**18**
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	MCL Type	Inglewood #1							
				Zone 1		Zone 3		Zone 4		Zone 5	
				5/2/12	9/18/12	5/2/12	9/18/12	5/2/12	9/18/12	5/2/12	9/18/12
General Minerals											
Alkalinity	mg/l			1200	1200	320	310	230	220	290	290
Anion Sum	meq/l			64	68	21	22	14	14	21	22
Bicarbonate as HCO3	mg/l			1500	1500	390	380	280	260	360	350
Boron	mg/l	1	N	**8.4**	**8.6**	0.44	0.44	0.2	0.2	0.26	0.25
Calcium	mg/l			120	85	150	150	110	110	190	190
Carbon Dioxide	mg/l			ND	ND	8.1	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			12	9.3	2	ND	ND	ND	ND	ND
Cation Sum	meq/l			64	66	22	22	14	14	22	22
Chloride	mg/l	500	S	**1400**	**1500**	420	440	260	270	390	400
Fluoride	mg/l	2	P	0.3	0.29	0.46	0.44	0.4	0.38	0.24	0.22
Hardness (as CaCO3)	mg/l			500	390	630	650	460	470	760	760
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	**3.7**	**2.7**	**0.52**	**0.52**	**0.37**	**0.38**	ND	ND
Langelier Index - 25 degree	None			1.9	1.6	1.2	0.97	1	0.87	1.1	0.73
Magnesium	None			50	44	61	64	47	48	70	71
Manganese	ug/l	50	S	23	26	**390**	**390**	**210**	**210**	3.1	3.5
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	9.3	9.5
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			26	31	8.1	8.5	9.5	9.9	9	9.1
Sodium	mg/l			1200	1300	200	210	100	100	160	160
Sulfate	mg/l	500	S	1.4	1.8	150	140	94	94	190	190
Surfactants	mg/l	0.5	S	0.088	0.074	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	**3700**	**4000**	**1300**	**1300**	790	760	**1300**	**1200**
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	9.3	9.5
Total Organic Carbon	mg/l			71	74	0.96	1.4	0.71	0.68	0.79	0.8
General Physical Properties											
Apparent Color	ACU	15	S	**250**	**200**	10	15	10	5	ND	ND
pH (Lab)	Units			8.1	8	7.9	7.6	8	7.8	7.7	7.4
Odor	TON	3	S	**40**	**40**	2	2	ND	2	ND	1
pH of CaCO3 saturation(25C)	Units			6.2	6.3	6.7	6.7	7	7	6.6	6.6
pH of CaCO3 saturation(60C)	Units			5.8	5.9	6.2	6.2	6.5	6.5	6.2	6.2
Specific Conductance	umho/cm	1600	S	**6100**	**6500**	**2100**	**2200**	1400	1400	**2100**	**2100**
Turbidity	NTU	5	S	**6.2**	3.4	4	3.5	1.9	2.2	0.15	0.33
Metals											
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	ND	2.4	1.2	3.6	ND	3	1.6	4.6
Barium	ug/l	1000	P	340	270	48	52	110	120	240	240
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	1.3	2.5	ND	1.7	1.3	2.4	2.2
Copper	ug/l	1300	P	ND	ND	ND	3.1	ND	ND	ND	2.6
Hexavalent Chromium	ug/l			ND	ND	ND	ND	ND	ND	0.11	0.12
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	**78**	28	12	11	ND	ND	12	12
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	1.2	1	ND	ND	ND	ND	0.95	0.96
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	2.5	2.4

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	MCL Type	Inglewood #3						
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7
				9/28/12	9/28/12	9/28/12	9/28/12	9/28/12	9/28/12	9/28/12
General Minerals										
Alkalinity	mg/l			670	1100	550	790	340	200	250
Anion Sum	meq/l			44	24	12	17	9.3	8.2	17
Bicarbonate as HCO3	mg/l			810	1300	670	960	410	240	300
Boron	mg/l	1	N	**3.7**	**4.7**	**1.2**	**2.1**	0.28	0.12	0.12
Calcium	mg/l			21	11	6.1	15	65	62	120
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			6.5	15	9.8	8.4	7.2	ND	ND
Cation Sum	meq/l			42	24	12	17	9.5	8.6	16
Chloride	mg/l	500	S	**1100**	49	17	31	88	140	380
Fluoride	mg/l	2	P	0.51	0.51	0.27	0.26	0.18	0.32	0.42
Hardness (as CaCO3)	mg/l			100	55	29	78	250	240	450
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	0.17	**0.59**	0.16	**0.34**	ND	ND	0.088
Langelier Index - 25 degree	None			0.88	0.97	0.52	0.83	1.4	0.76	1
Magnesium	None			12	6.6	3.4	10	22	22	38
Manganese	ug/l	50	S	**60**	33	18	30	28	**76**	**210**
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			17	14	7.7	17	8.4	7.5	7.2
Sodium	mg/l			910	510	260	350	98	81	150
Sulfate	mg/l	500	S	22	13	13	20	ND	17	45
Surfactants	mg/l	0.5	S	0.11	ND	ND	ND	ND	ND	**0.68**
Total Dissolved Solid (TDS)	mg/l	1000	S	**2600**	**1600**	750	**1100**	540	510	1000
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			6.5	110	12	20	1.8	1.8	5.8
General Physical Properties										
Apparent Color	ACU	15	S	**200**	**1500**	**350**	**200**	5	10	5
pH (Lab)	Units			8.1	8.2	8.4	8.1	8.4	8	7.9
Odor	TON	3	S	**8**	**4**	**4**	3	2	2	3
pH of CaCO3 saturation(25C)	Units			7.2	7.3	7.8	7.3	7	7.3	6.9
pH of CaCO3 saturation(60C)	Units			6.8	6.8	7.4	6.8	6.6	6.8	6.4
Specific Conductance	umho/cm	1600	S	**4400**	**2200**	1100	1600	910	880	**1700**
Turbidity	NTU	5	S	1.1	1.3	2.1	3.5	0.19	0.38	1.1
Metals										
Aluminum	ug/l	1000	P	ND	29	72	46	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	3.7	2.4	3.1	4.1	ND	2.3	5
Barium	ug/l	1000	P	49	25	14	36	51	43	160
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	7.1	1.9	2.5	ND	ND	ND
Copper	ug/l	1300	P	ND	5.3	4.2	2.3	ND	ND	ND
Hexavalent Chromium	ug/l			ND	0.065	0.09	0.15	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	29	7.3	ND	ND	ND	ND	6.4
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds										
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	1.1
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	1.3	ND	ND	ND	ND	ND	**26**
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	0.5
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	9
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	**0.51**
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	MCL Type	Lomita #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				4/12/12	8/27/12	4/12/12	8/27/12	4/12/12	8/27/12	4/12/12	8/27/12	4/12/12	8/27/12
General Minerals													
Alkalinity	mg/l			280	270	260	270	320	320	260	260	270	270
Anion Sum	meq/l			30	30	20	24	17	18	14	15	27	26
Bicarbonate as HCO3	mg/l			340	330	320	320	390	390	310	320	330	320
Boron	mg/l	1	N	0.63	0.64	0.44	0.43	0.4	0.39	0.42	0.39	0.52	0.51
Calcium	mg/l			270	240	170	180	120	110	120	110	230	220
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	6.2	ND
Carbonate as CO3	mg/l			ND	ND	ND	ND	3.2	ND	3	ND	ND	ND
Cation Sum	meq/l			31	29	22	22	18	17	16	15	28	27
Chloride	mg/l	500	S	**860**	**850**	**520**	**660**	350	380	300	350	**740**	**730**
Fluoride	mg/l	2	P	0.087	0.11	0.15	0.12	0.14	0.15	0.2	0.2	0.09	0.091
Hardness (as CaCO3)	mg/l			960	860	610	650	450	420	430	400	840	800
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	0.15	0.16	0.11	0.23	0.031	0.022	0.029	ND	0.16	0.15
Langelier Index - 25 degree	None			1.4	1.1	1	1	1.3	0.98	1.3	0.92	1.4	1
Magnesium	None			71	66	47	51	36	33	33	32	64	62
Manganese	ug/l	50	S	**490**	**440**	**250**	**290**	**440**	**170**	**150**	**150**	**370**	**370**
Nitrate	mg/l	10	P	ND	ND	ND	ND	0.27	0.23	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			17	16	14	14	12	11	11	10	16	15
Sodium	mg/l			260	260	210	210	200	180	170	160	240	240
Sulfate	mg/l	500	S	22	17	30	29	31	26	15	15	32	29
Surfactants	mg/l	0.5	S	0.075	ND	ND	ND	ND	ND	ND	ND	0.06	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	**2500**	**2000**	**1500**	**1600**	1000	960	880	900	**2200**	**2000**
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	0.27	0.23	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.96	1.2	1	1.1	2.7	2.9	2.2	2.2	0.86	1
General Physical Properties													
Apparent Color	ACU	15	S	5	10	15	15	15	**20**	**20**	**20**	5	10
pH (Lab)	Units			7.9	7.7	7.8	7.7	8.1	7.8	8.2	7.8	7.9	7.6
Odor	TON	3	S	3	**200**	3	3	3	3	3	3	3	3
pH of CaCO3 saturation(25C)	Units			6.5	6.6	6.7	6.7	6.8	6.8	6.9	6.9	6.6	6.6
pH of CaCO3 saturation(60C)	Units			6	6.1	6.3	6.2	6.3	6.4	6.4	6.4	6.1	6.1
Specific Conductance	umho/cm	1600	S	**3100**	**2900**	**2000**	**2400**	**1700**	**1800**	1400	1600	**2700**	**2800**
Turbidity	NTU	5	S	0.87	4.7	2.8	2.1	3.6	**5.8**	1.8	1.4	1	0.79
Metals													
Aluminum	ug/l	1000	P	ND	ND	ND	ND	45	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	3.9	**16**	2.5	**14**	6.3	8.9	2.1	7.5	3.5	**16**
Barium	ug/l	1000	P	140	130	91	110	170	72	62	68	120	140
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	7	6.4	5.1	6.9	13	8.4	4.5	5.6	6.8	6.8
Copper	ug/l	1300	P	ND	2.8	ND	2.9	ND	2	ND	ND	ND	3.4
Hexavalent Chromium	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	6.5	ND	5.3	ND	ND	ND	31	ND	6.3
Selenium	ug/l	50	P	19	**100**	10	**84**	16	38	6.3	41	14	**100**
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	MCL Type	Long Beach #3									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				3/22/12	8/20/12	3/22/12	8/20/12	3/22/12	8/20/12	3/22/12	8/20/12	3/22/12	8/20/12
General Minerals													
Alkalinity	mg/l			370	360	130	130	150	150	120	120	130	130
Anion Sum	meq/l			7.9	7.6	3.8	3.8	4.1	4	28	27	33	33
Bicarbonate as HCO3	mg/l			440	430	160	160	190	180	150	140	160	160
Boron	mg/l	1	N	0.37	0.38	0.11	0.12	0.12	0.13	0.1	0.11	0.1	0.11
Calcium	mg/l			11	12	16	17	20	21	300	300	380	410
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			8.8	8.5	3.2	3.2	2.9	2.5	ND	ND	ND	ND
Cation Sum	meq/l			7.7	8.3	3.8	4	4.1	4.3	26	27	32	34
Chloride	mg/l	500	S	19	18	22	20	36	35	**850**	**820**	**1000**	**1000**
Fluoride	mg/l	2	P	0.49	0.51	0.35	0.36	0.3	0.3	0.17	0.16	0.16	0.15
Hardness (as CaCO3)	mg/l			41	44	52	56	64	68	1100	1100	1300	1400
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	0.043	0.043	ND	ND	0.028	0.03	0.19	0.2	0.3	**0.32**
Langelier Index - 25 degree	None			0.73	0.73	0.45	0.48	0.5	0.47	1.1	0.97	1.2	1.2
Magnesium	None			3.3	3.8	2.8	3	3.6	3.7	77	80	92	92
Manganese	ug/l	50	S	14	11	9	7.2	12	10	**270**	**250**	**420**	**390**
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			3.4	3.5	2.1	2.2	2.5	2.6	12	12	10	11
Sodium	mg/l			160	170	62	65	64	66	110	120	120	120
Sulfate	mg/l	500	S	ND	ND	25	24	ND	ND	69	64	75	70
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	0.092	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	480	440	250	230	250	230	**2400**	**1900**	**2900**	**2300**
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			7.6	8	1.3	1.3	2.5	2.6	0.71	0.77	0.73	0.78
General Physical Properties													
Apparent Color	ACU	15	S	**60**	**80**	15	**20**	**20**	**20**	3	10	5	10
pH (Lab)	Units			8.5	8.5	8.5	8.5	8.4	8.3	7.9	7.8	7.9	7.8
Odor	TON	3	S	2	2	1	2	2	1	**4**	2	**4**	2
pH of CaCO3 saturation(25C)	Units			7.8	7.7	8	8	7.9	7.9	6.8	6.8	6.6	6.6
pH of CaCO3 saturation(60C)	Units			7.3	7.3	7.6	7.6	7.4	7.4	6.4	6.4	6.2	6.2
Specific Conductance	umho/cm	1600	S	740	750	370	380	400	400	**2800**	**2900**	**3400**	**3400**
Turbidity	NTU	5	S	1.3	0.87	0.25	0.11	0.17	0.15	0.92	1.1	2	2.1
Metals													
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	ND	ND	ND	ND	ND	ND	3.5	**14**	3.9	**18**
Barium	ug/l	1000	P	9.3	8.8	17	15	8.6	8.3	100	100	190	190
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	ND	ND	ND	ND	ND	6.6	ND	6.3	ND
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.4
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	14	26	17	33
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	7.6	8.6	9.9	12
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.8

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	MCL Type	Long Beach #8					
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
				8/7/12	8/6/12	8/6/12	8/7/12	8/7/12	8/7/12
General Minerals									
Alkalinity	mg/l			510	430	590	370	280	200
Anion Sum	meq/l			11	9.5	14	24	18	19
Bicarbonate as HCO3	mg/l			610	520	720	460	340	240
Boron	mg/l	1	N	**1.2**	0.79	**1.3**	**1.1**	0.55	0.2
Calcium	mg/l			7.1	9.5	11	47	58	110
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			12	8.9	12	3.1	2.4	ND
Cation Sum	meq/l			11	10	15	24	18	18
Chloride	mg/l	500	S	21	32	85	**590**	430	500
Fluoride	mg/l	2	P	0.83	0.82	0.6	0.24	0.2	0.46
Hardness (as CaCO3)	mg/l			26	37	48	260	260	430
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	0.18	0.18	0.2	0.19	**1.5**	**1.2**
Langelier Index - 25 degree	None			0.68	0.67	0.87	0.9	0.88	0.63
Magnesium	None			2.1	3.2	5.2	35	27	40
Manganese	ug/l	50	S	18	25	28	20	**100**	**480**
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND
Potassium	mg/l			1.8	3.9	7.2	12	9.2	6.6
Sodium	mg/l			240	220	320	420	280	200
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	22
Surfactants	mg/l	0.5	S	ND	ND	ND	0.07	0.052	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	680	610	890	**1400**	1000	**1300**
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			30	22	38	19	14	1.3
General Physical Properties									
Apparent Color	ACU	15	S	**1000**	**350**	**350**	**100**	**35**	15
pH (Lab)	Units			8.5	8.4	8.4	8	8	7.7
Odor	TON	3	S	**17**	**67**	**67**	**40**	**17**	**17**
pH of CaCO3 saturation(25C)	Units			7.8	7.8	7.6	7.1	7.1	7
pH of CaCO3 saturation(60C)	Units			7.4	7.3	7.1	6.7	6.7	6.6
Specific Conductance	umho/cm	1600	S	1000	940	1400	**2400**	**1800**	**1900**
Turbidity	NTU	5	S	0.55	1.5	1.3	0.38	**21**	**12**
Metals									
Aluminum	ug/l	1000	P	41	21	ND	ND	**1100**	390
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	1.8	1.5	2	1.5	2.4	2.9
Barium	ug/l	1000	P	8.7	8.3	13	22	33	87
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	1.1	1.3	1.6	ND	2	ND
Copper	ug/l	1300	P	2.5	3.6	ND	ND	ND	ND
Hexavalent Chromium	ug/l			ND	ND	ND	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	ND	ND	16	10	6
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds									
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	MCL Type	Manhattan Beach #1						
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7
				8/16/12	8/16/12	8/16/12	8/16/12	8/16/12	8/16/12	8/16/12
General Minerals										
Alkalinity	mg/l			560	420	880	470	120	150	150
Anion Sum	meq/l			130	48	21	10	400	140	10
Bicarbonate as HCO3	mg/l			690	520	1100	580	150	190	180
Boron	mg/l	1	N	**14**	**6.4**	**3.5**	0.4	ND	ND	0.21
Calcium	mg/l			46	29	15	25	1800	940	46
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			3.9	4.5	11	6.8	ND	ND	ND
Cation Sum	meq/l			130	45	21	11	370	140	11
Chloride	mg/l	500	S	**4200**	**1400**	130	32	**13000**	**4500**	130
Fluoride	mg/l	2	P	0.79	0.59	0.37	0.22	0.088	0.15	0.33
Hardness (as CaCO3)	mg/l			260	130	83	100	8400	3500	180
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	**0.56**	0.18	0.21	ND	**4.4**	**1.6**	0.024
Langelier Index - 25 degree	None			1	0.86	0.96	0.97	1.2	1.3	0.55
Magnesium	None			36	13	11	10	950	290	15
Manganese	ug/l	50	S	**74**	**51**	44	34	**800**	**1100**	45
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	2.8
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			22	17	24	9.9	100	40	6.1
Sodium	mg/l			2900	980	440	200	4500	1400	160
Sulfate	mg/l	500	S	0.69	2	7.5	ND	**1500**	**530**	180
Surfactants	mg/l	0.5	S	0.15	0.099	ND	ND	0.081	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	**7300**	**2700**	**1300**	610	**25000**	**9100**	680
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	2.8
Total Organic Carbon	mg/l			3	6.3	44	5.6	2.6	0.61	4
General Physical Properties										
Apparent Color	ACU	15	S	**110**	**200**	**300**	**45**	**30**	**20**	**45**
pH (Lab)	Units			7.9	8.1	8.2	8.3	7.2	7.5	8.1
Odor	TON	3	S	**100**	**100**	**100**	3	3	**17**	2
pH of CaCO3 saturation(25C)	Units			6.9	7.3	7.2	7.3	6	6.2	7.5
pH of CaCO3 saturation(60C)	Units			6.5	6.8	6.8	6.8	5.6	5.8	7.1
Specific Conductance	umho/cm	1600	S	**13000**	**5000**	**2100**	990	**32000**	**13000**	1100
Turbidity	NTU	5	S	0.46	0.82	1	0.34	**29**	**16**	4.5
Metals										
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	ND	ND	2.2	1.8	**210**	**83**	**16**
Barium	ug/l	1000	P	730	200	75	35	200	240	9
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	ND	1.9	4.8	ND	ND	ND
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			ND	ND	ND	ND	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	30	ND	ND
Selenium	ug/l	50	P	**95**	ND	10	ND	**300**	**98**	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	110	ND	ND
Volatile Organic Compounds										
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	**20**	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	MCL Type	PM-3 Madrid							
				Zone 1		Zone 2		Zone 3		Zone 4	
				3/27/12	8/21/12	3/27/12	8/21/12	3/27/12	8/21/12	3/27/12	8/21/12
General Minerals											
Alkalinity	mg/l			310	300	180	180	190	190	200	190
Anion Sum	meq/l			6.9	6.8	9.1	9.5	10	10	16	16
Bicarbonate as HCO3	mg/l			380	370	230	230	240	230	250	230
Boron	mg/l	1	N	0.35	0.36	0.15	0.18	0.18	0.2	0.38	0.42
Calcium	mg/l			12	13	79	83	83	86	120	130
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			5.8	5.9	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			7.1	7.4	9	9.8	9.9	10	16	17
Chloride	mg/l	500	S	24	24	190	200	230	220	380	370
Fluoride	mg/l	2	P	0.3	0.32	0.29	0.3	0.33	0.32	0.3	0.32
Hardness (as CaCO3)	mg/l			70	74	290	310	300	320	470	480
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	0.047	0.054	0.2	0.2	0.095	0.11	**0.41**	**0.44**
Langelier Index - 25 degree	None			0.58	0.62	0.74	0.72	0.74	0.74	0.75	0.73
Magnesium	None			9.6	10	22	25	23	25	38	39
Manganese	ug/l	50	S	27	23	**66**	**60**	**52**	49	**370**	**360**
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			13	13	4.5	4.8	5	5.3	7.1	7.2
Sodium	mg/l			120	130	72	79	86	92	150	160
Sulfate	mg/l	500	S	ND	ND	ND	ND	0.7	ND	76	72
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	400	390	530	640	600	600	940	950
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			3.2	3.2	0.75	0.75	0.85	0.94	1.2	1.2
General Physical Properties											
Apparent Color	ACU	15	S	**25**	**40**	5	10	5	15	10	10
pH (Lab)	Units			8.4	8.4	7.9	7.9	7.9	7.9	7.7	7.7
Odor	TON	3	S	1	2	2	3	2	**4**	2	2
pH of CaCO3 saturation(25C)	Units			7.8	7.8	7.2	7.2	7.2	7.1	7	7
pH of CaCO3 saturation(60C)	Units			7.3	7.3	6.7	6.7	6.7	6.7	6.5	6.5
Specific Conductance	umho/cm	1600	S	650	660	930	1000	1100	1100	**1700**	**1700**
Turbidity	NTU	5	S	0.52	1.1	0.56	0.84	0.51	1.1	3.5	3.9
Metals											
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	ND	ND	ND	3.5	ND	4	5.5	**12**
Barium	ug/l	1000	P	22	19	36	34	60	57	83	84
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	2.8	1.8	ND	2.2	ND	3.2	ND
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	5.4	ND	7.3
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	0.91	0.86
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	1.9	1.9	**16**	**13**
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	0.64	0.7	2.2	2.5
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	1.3	1.2
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	MCL Type	PM-4 Mariner							
				Zone 1		Zone 2		Zone 3		Zone 4	
				5/20/12	9/16/12	5/20/12	9/16/12	5/20/12	9/16/12	5/20/12	9/16/12
General Minerals											
Alkalinity	mg/l			250	240	150	150	190	190	190	170
Anion Sum	meq/l			5.9	5.6	210	260	11	10	11	9.9
Bicarbonate as HCO3	mg/l			300	300	190	180	230	230	230	210
Boron	mg/l	1	N	0.16	0.18	ND	0.24	0.25	0.28	0.23	0.26
Calcium	mg/l			27	29	1400	1500	35	40	71	78
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			4.8	4.2	ND	ND	3.9	3	3.2	ND
Cation Sum	meq/l			5.9	6.4	200	210	10	11	10	11
Chloride	mg/l	500	S	29	27	**6800**	**8600**	120	120	130	120
Fluoride	mg/l	2	P	0.37	0.34	0.11	0.099	0.8	0.7	0.3	0.27
Hardness (as CaCO3)	mg/l			120	120	5400	5600	130	140	260	280
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	0.068	0.071	0.22	0.24	0.023	0.027	0.15	0.17
Langelier Index - 25 degree	None			0.86	0.83	1.8	1.5	0.88	0.82	1.1	0.92
Magnesium	None			12	13	450	480	9.8	11	20	21
Manganese	ug/l	50	S	31	32	**780**	**1000**	27	29	**77**	**76**
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			6.9	7.7	50	62	5.9	6.5	6.2	6.6
Sodium	mg/l			79	86	2100	2200	170	190	110	120
Sulfate	mg/l	500	S	ND	ND	**850**	**810**	180	160	160	150
Surfactants	mg/l	0.5	S	ND	ND	0.093	0.15	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	320	340	**13000**	**14000**	640	680	630	630
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			1.7	1.7	1.3	1.5	1.7	1.4	1	1.1
General Physical Properties											
Apparent Color	ACU	15	S	10	15	5	5	15	15	3	5
pH (Lab)	Units			8.4	8.3	7.8	7.5	8.4	8.3	8.3	8.2
Odor	TON	3	S	1	2	1	2	1	2	1	2
pH of CaCO3 saturation(25C)	Units			7.5	7.5	6	6	7.5	7.5	7.2	7.2
pH of CaCO3 saturation(60C)	Units			7.1	7.1	5.6	5.6	7.1	7	6.8	6.8
Specific Conductance	umho/cm	1600	S	560	560	**19000**	**18000**	1100	1100	1000	1000
Turbidity	NTU	5	S	0.11	0.098	1.8	2.2	0.79	1.1	0.37	0.47
Metals											
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	ND	ND	ND	**38**	ND	1.4	ND	1.5
Barium	ug/l	1000	P	20	22	180	210	67	73	48	48
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	2.3	ND	45	ND	2.3	ND	1.8	ND
Copper	ug/l	1300	P	ND	ND	ND	5.6	ND	ND	ND	ND
Hexavalent Chromium	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	29	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	ND	ND	**65**	ND	ND	ND	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds											
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	MCL Type	PM-5 Columbia Park											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/5/12	8/23/12	4/5/12	8/23/12	4/5/12	8/23/12	4/5/12	8/23/12	4/5/12	8/23/12	4/5/12	8/23/12
General Minerals															
Alkalinity	mg/l			680	640	890	880	410	390	280	270	170	160	220	220
Anion Sum	meq/l			16	16	18	18	9	8.6	6.5	6.4	52	48	13	13
Bicarbonate as HCO3	mg/l			820	780	1100	1100	490	470	340	330	200	190	260	260
Boron	mg/l	1	N	**2.4**	**2.6**	**1.8**	**1.9**	0.34	0.36	0.16	0.17	0.21	0.21	0.17	0.18
Calcium	mg/l			12	13	7.1	7.6	13	14	24	24	400	370	94	93
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			10	7.5	13	13	8	7.2	3.9	3.6	ND	ND	2.5	2
Cation Sum	meq/l			15	17	17	19	8.7	9.3	6.5	6.6	48	46	12	13
Chloride	mg/l	500	S	99	93	14	14	30	28	31	31	**1500**	**1400**	170	180
Fluoride	mg/l	2	P	0.62	0.64	0.32	0.33	0.27	0.28	0.32	0.33	0.14	0.14	0.32	0.33
Hardness (as CaCO3)	mg/l			54	61	38	42	62	65	110	110	1400	1300	330	330
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	0.14	0.16	0.27	0.3	0.045	0.044	0.021	0.023	0.12	0.11	ND	ND
Langelier Index - 25 degree	None			0.83	0.75	0.7	0.74	0.76	0.73	0.71	0.69	1.3	1.1	1.1	1
Magnesium	None			5.7	6.7	5	5.7	7	7.6	12	12	99	95	23	24
Manganese	ug/l	50	S	**57**	**52**	37	35	**170**	33	**98**	22	**350**	**360**	**130**	**140**
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			11	13	9.2	10	14	15	10	10	14	14	6.1	5.9
Sodium	mg/l			310	360	370	420	160	170	93	94	450	440	130	140
Sulfate	mg/l	500	S	ND	ND	0.92	0.91	ND	ND	ND	ND	330	330	180	180
Surfactants	mg/l	0.5	S	ND	0.052	ND	ND	ND	ND	ND	ND	ND	0.057	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	1000	990	**1100**	**1100**	540	520	400	370	**3200**	**3100**	830	820
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			40	41	35	27	6.2	6.4	2.7	2.7	0.72	0.8	1.1	1.1
General Physical Properties															
Apparent Color	ACU	15	S	**200**	**350**	**500**	**800**	**40**	**70**	15	**20**	3	10	ND	5
pH (Lab)	Units			8.3	8.2	8.3	8.3	8.4	8.4	8.2	8.2	7.8	7.7	8.2	8.1
Odor	TON	3	S	**4**	**8**	2	1	1	1	1	ND	1	2	1	2
pH of CaCO3 saturation(25C)	Units			7.4	7.4	7.6	7.5	7.6	7.6	7.5	7.5	6.5	6.6	7	7
pH of CaCO3 saturation(60C)	Units			7	7	7.1	7.1	7.2	7.2	7.1	7.1	6.1	6.1	6.6	6.6
Specific Conductance	umho/cm	1600	S	1500	1600	1600	1600	840	850	620	640	**4800**	**4800**	1300	1300
Turbidity	NTU	5	S	**6.5**	1.8	1.6	0.67	1	0.45	1.5	0.22	0.73	0.63	0.34	0.14
Metals															
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	22	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	ND	1.4	3.9	3.7	ND	1.1	ND	1.4	6.9	**23**	1.6	3.5
Barium	ug/l	1000	P	92	97	25	24	120	26	84	19	160	180	150	170
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	1.1	1.3	3	2.9	ND	ND	ND	3.6	10	ND	2.3	2
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	2.4	3.8	ND	ND
Hexavalent Chromium	ug/l			0.048	ND	0.032	0.021	ND	ND	ND	ND	ND	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	17	ND	ND
Selenium	ug/l	50	P	6.9	7.1	ND	ND	ND	ND	ND	ND	9.7	**280**	ND	48
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	MCL Type	PM-6 Madrona Marsh											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				3/28/12	8/22/12	3/28/12	8/22/12	3/28/12	8/22/12	3/28/12	8/22/12	3/28/12	8/22/12	3/28/12	8/22/12
General Minerals															
Alkalinity	mg/l			470	460	120	120	140	160	240	230	160	160	190	180
Anion Sum	meq/l			26	25	77	77	180	190	6.3	6.2	58	56	14	14
Bicarbonate as HCO3	mg/l			570	560	150	140	160	190	290	280	190	190	230	220
Boron	mg/l	1	N	0.78	0.8	0.5	0.56	0.28	ND	0.23	0.25	0.24	ND	0.17	0.17
Calcium	mg/l			82	83	170	200	990	1000	18	18	370	380	120	110
Carbon Dioxide	mg/l			7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			5	5.3	ND	ND	ND	ND	3.3	3.1	ND	ND	ND	ND
Cation Sum	meq/l			25	26	70	77	180	190	6.6	6.4	54	55	15	14
Chloride	mg/l	500	S	**580**	**570**	**2600**	**2700**	**6500**	**6500**	54	55	**1600**	**1500**	290	280
Fluoride	mg/l	2	P	0.49	0.52	0.082	0.082	0.1	0.1	0.53	0.54	0.13	0.14	0.23	0.24
Hardness (as CaCO3)	mg/l			480	500	800	910	5700	5900	91	90	1400	1400	430	400
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	0.075	0.06	ND	ND	ND	ND	0.04	0.044	**1**	**1.1**	0.25	0.24
Langelier Index - 25 degree	None			1.4	1.4	0.87	0.86	1.8	1.7	0.51	0.48	1	0.94	0.92	0.77
Magnesium	None			67	70	92	100	780	800	12	11	120	120	34	32
Manganese	ug/l	50	S	36	28	**200**	**200**	**280**	**320**	**94**	**84**	**910**	**820**	**190**	**180**
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			14	14	40	44	88	90	5.6	5.4	20	21	7.4	6.9
Sodium	mg/l			350	360	1200	1300	1500	1500	100	100	560	580	150	140
Sulfate	mg/l	500	S	5.6	4.1	ND	ND	7.2	7.1	ND	ND	430	450	130	130
Surfactants	mg/l	0.5	S	ND	ND	0.063	0.11	0.078	0.15	ND	0.052	0.056	0.053	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	**1400**	**1400**	**4500**	**4400**	**12000**	**12000**	390	390	**3400**	**3400**	890	840
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			6.6	10	1.2	1.2	1.3	1.8	2.3	2.4	1.1	1.2	1.3	1.3
General Physical Properties															
Apparent Color	ACU	15	S	**150**	**250**	5	10	**30**	**50**	**20**	**25**	15	**20**	10	10
pH (Lab)	Units			8.1	8.2	7.9	7.9	8.1	7.9	8.2	8.2	7.6	7.5	7.9	7.8
Odor	TON	3	S	**8**	**8**	2	2	**100**	**200**	1	1	1	2	1	ND
pH of CaCO3 saturation(25C)	Units			6.8	6.8	7	7	6.2	6.1	7.7	7.8	6.6	6.6	7	7.1
pH of CaCO3 saturation(60C)	Units			6.3	6.3	6.6	6.6	5.8	5.7	7.3	7.3	6.1	6.1	6.6	6.6
Specific Conductance	umho/cm	1600	S	**2500**	**2500**	**7700**	**7800**	**17000**	**18000**	610	610	**5400**	**5400**	1500	1500
Turbidity	NTU	5	S	**12**	**8.8**	0.5	0.55	**48**	**54**	0.15	0.66	**10**	**11**	1.1	1.1
Metals															
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	ND	1.4	6.7	**54**	**21**	**42**	ND	3.4	7.4	**29**	3.1	8.4
Barium	ug/l	1000	P	230	250	490	500	**2400**	**2700**	27	24	190	180	33	30
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	1.3	1.2	12	ND	32	ND	1.7	ND	7.7	ND	2.4	ND
Copper	ug/l	1300	P	ND	ND	ND	ND	2.4	4	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			0.025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	12	39	ND	ND	ND	7.8	ND	ND
Selenium	ug/l	50	P	8.6	7.5	20	43	**79**	**82**	ND	ND	11	24	ND	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds															
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	3.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	MCL Type	Westchester #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				4/17/12	9/25/12	4/17/12	9/25/12	4/17/12	9/25/12	4/17/12	9/25/12	4/17/12	9/25/12
General Minerals													
Alkalinity	mg/l			520	450	520	510	450	420	340	320	290	280
Anion Sum	meq/l			14	12	12	12	11	10	10	9.7	9.4	8.9
Bicarbonate as HCO3	mg/l			640	540	640	620	540	510	420	400	350	340
Boron	mg/l	1	N	0.83	0.64	0.78	0.81	0.46	0.46	0.22	0.24	0.2	0.23
Calcium	mg/l			67	71	29	30	44	47	69	71	62	66
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	4.2	ND	ND	ND
Carbonate as CO3	mg/l			3.7	3.5	5	5.6	6.2	3.5	4.4	2.4	2.2	2
Cation Sum	meq/l			15	14	12	13	11	11	10	10	9.1	9.7
Chloride	mg/l	500	S	87	75	69	65	63	59	65	60	67	62
Fluoride	mg/l	2	P	0.28	0.27	0.28	0.3	0.27	0.27	0.28	0.27	0.34	0.33
Hardness (as CaCO3)	mg/l			280	310	140	150	200	210	290	300	260	270
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	0.2	0.18	0.12	0.12	0.2	0.21	0.13	0.13	0.27	0.3
Langelier Index - 25 degree	None			1.1	1.1	0.91	0.98	1.2	0.95	1.2	0.98	0.88	0.86
Magnesium	None			28	31	17	18	21	22	29	30	25	27
Manganese	ug/l	50	S	**120**	**120**	47	47	**140**	**130**	**110**	**110**	**160**	**160**
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			11	10	15	15	12	12	9.2	9.2	7.2	7.2
Sodium	mg/l			200	160	210	220	140	150	95	99	87	93
Sulfate	mg/l	500	S	49	54	ND	ND	1.1	2.8	77	72	83	77
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	0.057	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	860	730	740	710	620	590	610	590	560	530
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			15	10	8	7.9	3.9	3.8	1.7	1.7	1.4	1.4
General Physical Properties													
Apparent Color	ACU	15	S	**150**	**100**	**70**	**50**	**30**	**30**	10	10	10	10
pH (Lab)	Units			7.9	8	8.1	8.1	8.2	8	8.2	8	8	8
Odor	TON	3	S	2	1	3	2	3	3	2	1	2	1
pH of CaCO3 saturation(25C)	Units			6.8	6.8	7.2	7.2	7.1	7.1	7	7	7.1	7.1
pH of CaCO3 saturation(60C)	Units			6.4	6.4	6.7	6.7	6.6	6.6	6.5	6.6	6.7	6.6
Specific Conductance	umho/cm	1600	S	1300	1200	1200	1200	1000	1000	960	980	890	900
Turbidity	NTU	5	S	0.39	1.9	0.82	1.1	0.31	0.32	0.29	0.33	0.93	0.91
Metals													
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	ND	3.6	ND	1	ND	1.6	ND	ND	1.5	1.8
Barium	ug/l	1000	P	94	93	120	130	76	74	66	77	61	64
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			0.036	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	MCL Type	Wilmington #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				2/21/12	8/22/12	2/21/12	8/22/12	2/21/12	8/22/12	2/21/12	8/22/12	2/21/12	8/22/12
General Minerals													
Alkalinity	mg/l			140	140	140	140	140	150	140	140	160	160
Anion Sum	meq/l			10	10	30	30	28	28	16	20	15	15
Bicarbonate as HCO3	mg/l			170	170	170	180	170	180	170	180	190	190
Boron	mg/l	1	N	0.24	0.24	0.2	0.2	0.26	0.26	0.23	0.23	0.2	0.19
Calcium	mg/l			60	59	230	210	170	170	74	100	110	110
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			11	10	30	29	28	28	16	19	15	15
Chloride	mg/l	500	S	270	280	**870**	**860**	**820**	**830**	300	440	280	300
Fluoride	mg/l	2	P	0.14	0.14	0.063	0.06	0.084	0.08	0.13	0.12	0.14	0.13
Hardness (as CaCO3)	mg/l			230	230	800	760	600	630	300	410	430	420
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	ND	ND	0.058	0.054	ND	ND	ND	ND	0.2	0.22
Langelier Index - 25 degree	None			0.73	0.69	0.99	0.91	0.58	0.79	0.68	0.77	0.85	0.74
Magnesium	None			20	20	57	55	45	47	28	39	37	37
Manganese	ug/l	50	S	22	22	27	24	ND	6.2	12	16	**80**	**80**
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			8.4	8.1	9.3	9.3	9	8.7	6.6	7.3	7.1	6.9
Sodium	mg/l			130	130	310	310	360	350	220	240	140	140
Sulfate	mg/l	500	S	ND	ND	130	130	85	93	200	200	180	180
Surfactants	mg/l	0.5	S	0.41	0.4	**0.58**	0.45	0.43	0.43	0.13	0.18	0.36	0.47
Total Dissolved Solid (TDS)	mg/l	1000	S	640	670	**2000**	**2000**	**1800**	**1800**	970	**1100**	910	900
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			3.5	3.5	1.9	2.2	2.3	2.6	2.2	2.4	3.6	4.7
General Physical Properties													
Apparent Color	ACU	15	S	3	5	3	5	5	10	ND	5	5	10
pH (Lab)	Units			8.2	8.1	7.8	7.8	7.6	7.7	8	8	8	7.9
Odor	TON	3	S	**17**	**200**	**17**	**200**	**100**	**200**	**8**	**200**	**8**	**200**
pH of CaCO3 saturation(25C)	Units			7.4	7.4	6.8	6.9	7	6.9	7.3	7.2	7.1	7.1
pH of CaCO3 saturation(60C)	Units			7	7	6.4	6.4	6.5	6.5	6.9	6.8	6.7	6.7
Specific Conductance	umho/cm	1600	S	1100	1200	**3100**	**3000**	**3000**	**2900**	1600	**2000**	1500	1600
Turbidity	NTU	5	S	0.11	0.11	0.3	0.43	4.5	0.087	0.17	0.11	4.4	**5.7**
Metals													
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	ND	4.8	ND	**14**	ND	**14**	ND	8.3	ND	6
Barium	ug/l	1000	P	11	11	17	15	23	22	30	39	100	110
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	ND	ND	3.8	ND	ND	ND	ND	ND	ND	ND
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			ND	ND	ND	ND	ND	0.023	ND	ND	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ug/l	50	P	ND	9	ND	12	ND	45	ND	9.1	ND	12
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			5.4	5.8	18	19	12	14	ND	ND	**3**	**3.3**
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	6.1	10
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	**91**	**97**	**100**	**120**	**110**	**120**	**20**	**33**	**56**	**70**
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.2
WEST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2011-12

Constituents	Units	MCL	MCL Type	Wilmington #2									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				2/14/12	8/21/12	3/6/12	8/21/12	2/14/12	8/21/12	2/14/12	8/21/12	2/14/12	8/21/12
General Minerals													
Alkalinity	mg/l			340	330	480	450	160	160	260	270	160	170
Anion Sum	meq/l			8.8	8.8	26	26	8.1	8.4	13	13	85	85
Bicarbonate as HCO3	mg/l			410	400	580	550	190	190	320	330	200	200
Boron	mg/l	1	N	0.62	0.63	**1.7**	**1.7**	0.19	0.17	0.6	0.59	0.58	0.52
Calcium	mg/l			3.3	3.3	29	29	38	37	32	29	260	270
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			12	12	14	5.2	2.1	ND	2.8	2.8	ND	ND
Cation Sum	meq/l			8.8	9.2	25	26	9.1	8.8	13	13	79	82
Chloride	mg/l	500	S	69	73	**600**	**610**	180	190	280	270	**2600**	**2600**
Fluoride	mg/l	2	P	0.92	0.93	0.4	0.43	0.21	0.2	0.7	0.73	0.2	0.2
Hardness (as CaCO3)	mg/l			18	19	160	160	150	150	140	130	1200	1200
Hydroxide (as OH)	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	S	0.083	0.057	ND	ND	0.024	0.026	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.34	0.33	1.4	0.92	0.64	0.6	0.7	0.65	1.1	0.96
Magnesium	None			2.5	2.6	21	22	14	14	14	14	130	130
Manganese	ug/l	50	S	3.4	3	10	9.7	10	10	8.2	6.7	**72**	**59**
Nitrate	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/l			4.9	5	11	11	6.5	6.2	6.4	6.1	25	21
Sodium	mg/l			190	200	500	510	130	130	240	240	1200	1300
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	ND	5.3	6.2	400	380
Surfactants	mg/l	0.5	S	ND	ND	ND	0.057	ND	ND	0.052	0.074	0.1	0.1
Total Dissolved Solid (TDS)	mg/l	1000	S	570	550	**1500**	**1500**	470	510	780	770	**5100**	**4800**
Total Nitrogen (Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			2	14	19	19	2.3	2.2	2.1	11	1.4	1.4
General Physical Properties													
Apparent Color	ACU	15	S	**230**	**300**	**120**	**180**	10	15	**60**	**130**	10	**20**
pH (Lab)	Units			8.7	8.7	8.6	8.2	8.2	8.2	8.1	8.1	7.8	7.7
Odor	TON	3	S	3	**17**	**4**	**4**	1	**4**	2	**200**	2	**40**
pH of CaCO3 saturation(25C)	Units			8.3	8.3	7.2	7.2	7.6	7.6	7.4	7.5	6.7	6.7
pH of CaCO3 saturation(60C)	Units			7.9	7.9	6.8	6.8	7.1	7.2	7	7	6.3	6.2
Specific Conductance	umho/cm	1600	S	860	880	**2600**	**2700**	870	910	1400	1400	**8300**	**8100**
Turbidity	NTU	5	S	0.52	0.43	0.48	0.36	0.71	0.3	2.1	0.38	0.65	0.22
Metals													
Aluminum	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ug/l	10	P	ND	ND	1.1	ND	ND	3.6	ND	ND	6.4	**52**
Barium	ug/l	1000	P	4.5	4.5	47	48	13	14	26	24	78	68
Beryllium	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	ug/l	50	P	1.5	1.1	ND	ND	2.4	ND	ND	ND	8.2	ND
Copper	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	ug/l			0.03	ND	0.021	0.037	ND	ND	0.051	0.062	ND	ND
Lead	ug/l	15	P	ND	ND	ND	ND	ND	ND	.	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.4
Selenium	ug/l	50	P	ND	ND	7.6	16	ND	ND	ND	5.6	20	**58**
Silver	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds													
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	0	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-amyl methyl ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tert-butyl alcohol (TBA)	ug/l	12	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene(Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected

TABLE 3.3
QUALITY OF REPLENISHMENT WATER

Constituent	Units	Regulatory Limit	IMPORTED WATER			RECYCLED WATER							LOCAL WATER
			Treated Blend of Colorado River & State Water Project [A]	Untreated Colorado River [B]	Untreated State Water Project [C]	WBMWD ELWRF [D]	LADWP TITP [E]	WRD LVL AWTF [F]	SDLAC Pomona WRP [G]	SDLAC San Jose Creek East WRP [G]	SDLAC San Jose Creek West WRP [G]	SDLAC Whittier Narrows WRP [G]	Stormwater [H]
			2011	2011	2011	2011	2011	2011	2011-2012	2011-2012	2011-2012	2011-2012	2011-2012
Arsenic	µg/L	MCL = 10	ND / 2.3	2.5	ND	ND	0.32	ND	0.308	1.28	1.03	1.06	1.65
Chloride	mg/L	SMCL = 500	76 [I] / 53 [I]	86 [I]	54 [I]	41 [J]	124 [K]	43.8 [L]	127	133	109	119	76
Hexavalent Chromium	µg/L	None	0.10 / 0.20	0.03	0.09	NA	[NA]	NA	0.01	0.05	0.05	0.08	ND
Iron	µg/L	SMCL = 300	ND / ND	ND	120	ND	7.1	ND	39.4	46	29	31.2	2,169
Manganese	µg/L	SMCL = 50	ND / ND	ND	ND	ND	2.8	ND	4.34	12.3	6.8	11.6	NA
Nitrate (as N)	mg/L	MCL = 10	ND / 0.4	ND	0.4	0.5 [J]	0.78	1.43 [L]	6.56	4.73	8.85	6.55	3.00
Perchlorate	µg/L	MCL = 6	ND / ND	1.1	ND	ND	ND	ND	NA	NA	NA	NA	NA
Tetrachloroethylene (PCE)	µg/L	MCL = 5	ND / ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Trichloroethylene (TCE)	µg/L	MCL = 5	ND / ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Total Dissolved Solids (TDS)	mg/L	SMCL = 1,000	434 [I] / 248 [I]	576 [I]	213 [I]	194 [J]	404 [K]	229 [L]	552	593	525	577	395
Alkalinity	mg/L	None	95 [I] / 78 [I]	125 [I]	72 [I]	58.3	NA	NA	166	173	154	163	100
Boron	µg/L	NL = 1,000	130 / 190	120	130	200 [J]	471 [K]	230 [L]	240	310	330	260	NA
Chromium, Total	µg/L	MCL = 50	ND / ND	ND	ND	0.93	0.47	ND	1.10	0.95	1.10	1.2	4.77
Chromium VI	µg/L	None	0.10 / 0.20	0.03	0.09	NA	NA	NA	0.01	0.05	0.05	0.08	ND
Copper, Total	µg/L	SMCL = 1,000	ND / ND	ND	ND	3.0	1.3	ND	5.80	4.56	6.57	4.72	18.5
1,4-Dioxane	ug/L	NL = 1	NA	NA	NA	ND	0.13	ND	0.9	1.2	1.1	1.2	NA
Hardness	mg/L	None	198 [I] / 106 [I]	275 [I]	90 [I]	40	107	7.6	209	211	188	199	143
Lead, Total	µg/L	AL = 15	ND / ND	ND	ND	ND	0.24	ND	0.31	0.41	0.064	0.19	9.7
Methyl tertiary butyl ether (MTBE)	µg/L	MCL = 5	ND / ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	ND
Nitrite (as N)	mg/L	MCL = 1	ND / ND	ND	ND	0.4 [J]	ND	0.102 [L]	0.216	0.033	0.020	0.19	0.02
n-Nitrosodimethylamne (NDMA)	ng/L	NL = 10	ND / 3	NA	NA	2.9	4.5	3.4	76	217	166	17	ND
pH	pH Units	None	8.0 / 8.2	8.4	8.0	7.8	7.9	8.1	7.3	7.0	7.1	7.4	7.7
Selenium	µg/L	MCL = 50	ND / ND	ND	ND	ND	1.0	ND	ND	ND	ND	ND	1.3
Specific Conductance	µS/cm	SMCL = 1,600	743 [I] / 435 [I]	948 [I]	386 [I]	61.6	568	175	NA	NA	NA	NA	650
Sulfate	mg/L	SMCL = 500	147 [I] / 49 [I]	221 [I]	30 [I]	42.7 [J]	36 [K]	51 [L]	65.0	95.8	79.3	98.3	91.6
Total Organic Carbon (TOC)	mg/L	None	2.4 / 1.9	2.97 I	3.00 I	0.2	0.5	0.51	6.4	6.13	4.94	5.94	8.0
Turbidity	NTU	SMCL = 5	0.04 [I] / 0.04 [I]	0.51 [I]	1.13 [I]	0.07	0.05	ND	0.56	0.63	0.59	0.53	11.48

See footnotes on following page.

TABLE 3.3
QUALITY OF REPLENISHMENT WATER

Notes:

A = Used at the seawater intrusion barriers: generally, Diemer Plant effluent / Jensen Plant effluent

B = Used at the Montebello Forebay spreading grounds (Lake Mathews)

C = Used at the Montebello Forebay spreading grounds (Silverwood Lake)

D = Effluent of Edward C. Little Water Recycling Facility (ELWRF) before blending with treated water from Colorado River/State Water Project; used at the West Coast Basin Seawater Intrusion Barrier

E = Effluent of Terminal Island Treatment Plant (TITP) before blending with treated water from Colorado River/State Water Project; used at the Dominguez Gap Seawater Intrusion Barrier

F = Effluent of Leo J. Vander Lans Advanced Water Treatment Facility (LVL AWTF) before blending with treated water from Colorado River/State Water Project; used at the Alamitos Gap Seawater Intrusion Barrier

G = Effluent of water reclamation plants (WRPs); used at the Montebello Forebay spreading grounds

H = Average of water samples collected from LACDPW San Gabriel River Monitoring Station S14 from October 2011 through March 2012 (4 storm events total)

I = Average concentration for Water Year October 2011 through September 2012

J = Average concentration in blended water (treatment plant effluent & treated water from Colorado River/State Water Project), which is delivered to the West Coast Basin Seawater Intrusion Barrier

K = Average concentration in blended water (treatment plant effluent & treated water from Colorado River/State Water Project), which is delivered to the Dominguez Gap Seawater Intrusion Barrier

L = Average concentration in blended water (treatment plant effluent & treated water from Colorado River/State Water Project); directly used at the Alamitos Gap Seawater Intrusion Barrier

NA = Not Available/Analyzed
ND = Not Detected
mg/L = milligrams per liter
µg/L = micrograms per liter
NTU = Nephelometric Turbidity Units
µS/cm = microSiemen per centimeter

MCL = Maximum Contaminant Level
SMCL = Secondary Maximum Contaminant Level
AL = Action Level
NL = Notification Level
WRP = Water Reclamation Plant

LACDPW = Los Angeles County Department of Public Works
LADWP = Los Angeles Department of Water and Power
MWD = Metropolitan Water District of Southern California
SDLAC = County Sanitation Districts of Los Angeles County
WBMWD = West Basin Municipal Water District
WRD = Water Replenishment District of Southern California

Sources of Data:

2011 Water Quality Report to MWD Member Agencies (Metropolitan Water District of Southern California, March 2012)

Table D, Monthly Analyses of the District Water Supplies (Metropolitan Water District of Southern California, October 2011 - September 2012)

October 2011 - September 2012 Annual Monitoring Report, Montebello Forebay Groundwater Recharge (County Sanitation Districts of Los Angeles County [SDLAC], December 2012)

2011 Annual Report, West Coast Basin Barrier Project, Edward C. Little Water Recycling Facility (West Basin Municipal Water District [WBMWD], March 2012)

2011 - 2012 Annual Stormwater Monitoring Final Report, Los Angeles County (Los Angeles County Department of Public Works [LACDPW], August 2012)

2011 Annual Summary Report, Harbor Water Recycling/Dominguez Gap Barrier Project (Los Angeles Department of Water and Power [LADWP], February 2012)

2011 Annual Monitoring Report, Alamitos Barrier Recycled Water Project, Leo J. Vander Lans Water Treatment Facility (Water Replenishment District of Southern California [WRD], April 2012)

TABLE 3.4
MAJOR MINERAL WATER QUALITY GROUPS

NESTED MONITORING WELL LOCATIONS	GROUP A ZONES Generally Calcium Bicarbonate or Calcium Bicarbonate/Sulfate Dominant	GROUP B ZONES Generally Calcium-Sodium-Bicarbonate or Sodium-Bicarbonate Dominant	GROUP C ZONES Generally Sodium-Chloride Dominant	OTHER ZONES Generally Different Than Groups A, B, and C
CENTRAL BASIN				
Bell #1	2, 3, 4, 5, 6	1		
Bell Gardens #1	1, 2, 3, 4, 5, 6			
Cerritos #1	4, 5, 6	1, 2, 3		
Cerritos #2	1, 2, 3, 4, 5, 6			
Commerce #1	3, 4, 5, 6		1	2
Compton #1	2, 3, 4, 5	1		
Compton #2	2, 3, 4, 5	1		
Downey #1	1, 2, 3, 4, 5, 6			
Huntington Park #1	1, 2, 3, 4			
Inglewood #2		1, 2, 3		
Lakewood #1	2, 3, 4, 5, 6	1		
La Mirada #1	4, 5	1, 2, 3		
Long Beach #1	4	1, 2, 3, 5		6
Long Beach #2	4, 5, 6	1, 2, 3		
Long Beach #6	6	1, 2, 3, 4, 5		
Los Angeles #1	1, 2, 3, 4, 5			
Los Angeles #2	2, 3, 4			
Los Angeles #3	2, 3, 4, 5, 6	1		
Los Angeles #4	3, 4, 5, 6	1, 2		
Montebello #1	3, 4, 5	2		1
Norwalk #1	4, 5	1, 2, 3		
Norwalk #2	3, 4, 5, 6	1, 2		
Rio Hondo #1	1, 2, 3, 4, 5, 6			
Pico #1	2, 3, 4	1		
Pico #2	1, 2, 3, 4, 5, 6			
Seal Beach #1	6	1, 2, 3, 4, 5		7
South Gate #1	1, 2, 3, 4, 5			
Willowbrook #1	2, 3, 4	1		
Whittier #1	3, 4, 5		1, 2	
Whittier #2	1, 3, 4, 5, 6	2		
Whittier Narrows #1	3, 4, 5, 6, 7, 8, 9	2	1	
WEST COAST BASIN				
Carson #1	3, 4	1, 2		
Carson #2	1, 2, 3, 4, 5			
Carson #3	5, 6	1, 2, 3, 4		
Chandler #3	2	1		
Gardena #1	2, 3	1	4	
Gardena #2	2, 3, 4, 5	1		
Hawthorne #1	5, 6	1, 2, 3, 4		
Inglewood #1	3, 4, 5			1
Inglewood #3		1, 2, 3, 4, 5	6, 7	
Lomita #1	2, 3, 4, 5			1
Long Beach #3		1, 2, 3	4, 5	
Long Beach #8		1, 2, 3	6	4, 5
Manhattan Beach #1		3	5,6	7
PM-3 Madrid	3, 4	1, 2		
PM-4 Mariner	4	1	2	3
PM-5 Columbia Park	6	1, 2, 3, 4	5	
PM-6 Madrona Marsh	6	2, 4	3, 5	1
Westchester #1		1, 2, 3, 4, 5		
Wilmington #1			1, 2, 3, 4, 5	
Wilmington #2		1	2, 3, 4, 5	

FIGURES

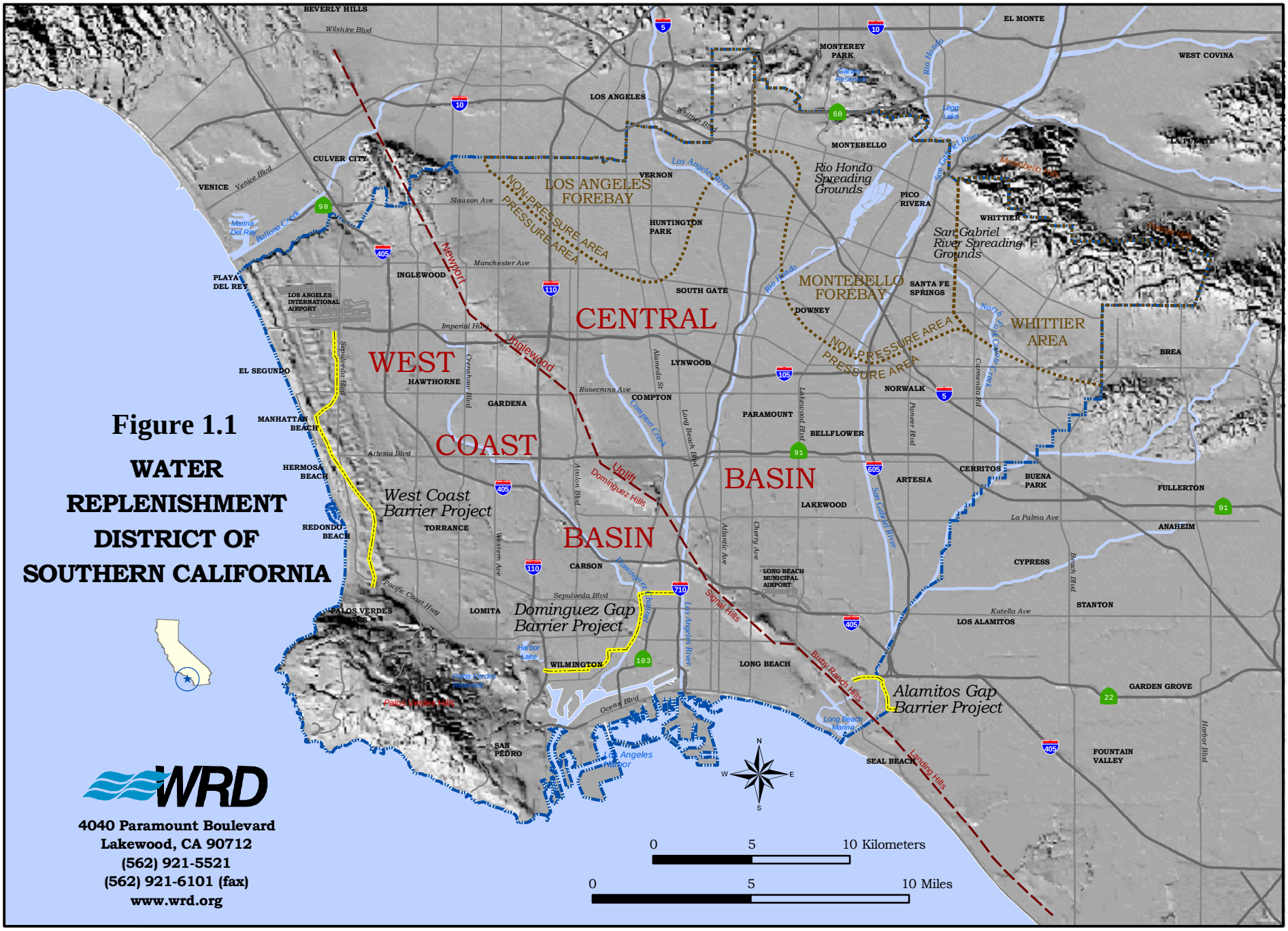


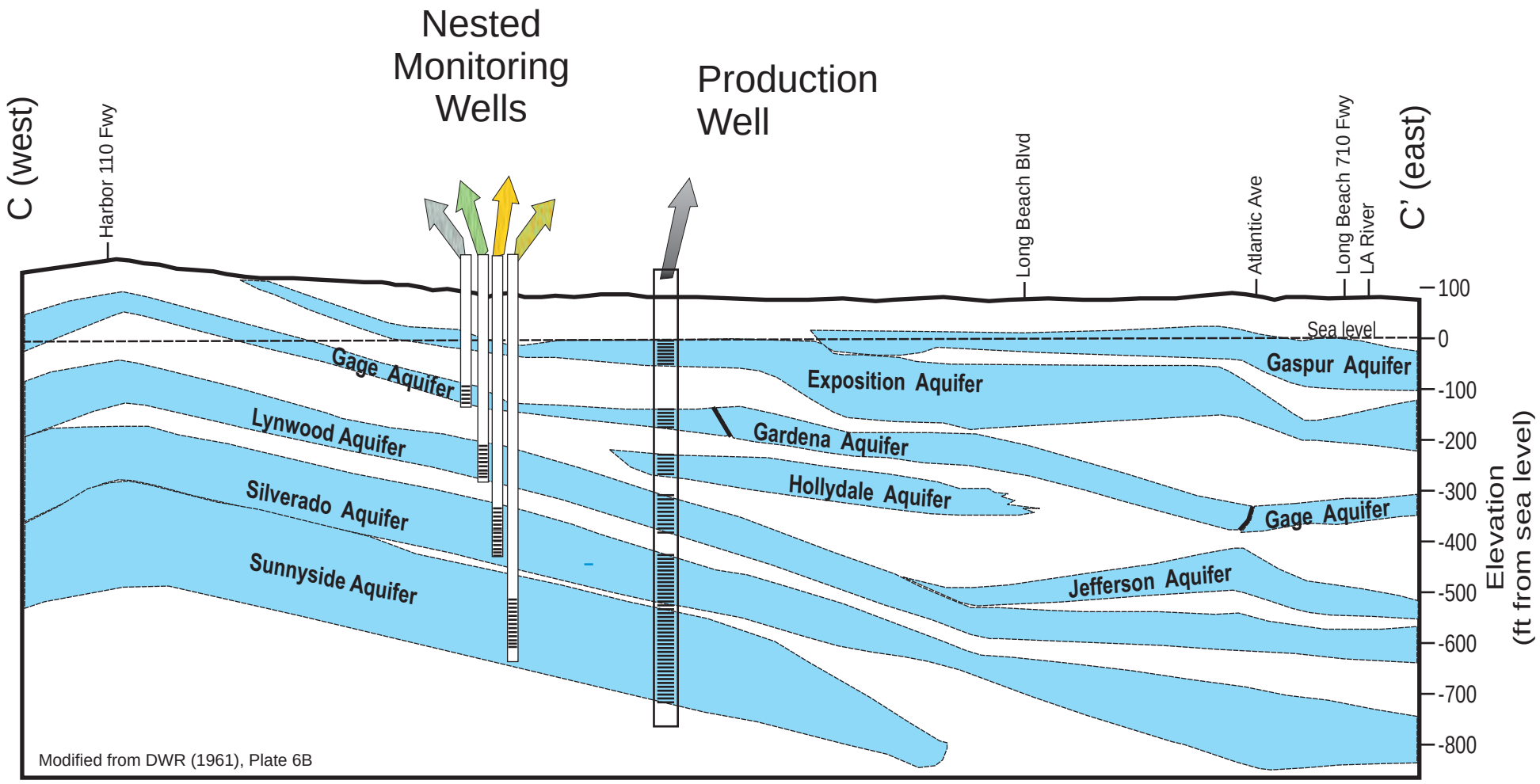
Figure 1.1

WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

WRD

4040 Paramount Boulevard
Lakewood, CA 90712
(562) 921-5521
(562) 921-6101 (fax)
www.wrd.org

FIGURE 1.2
NESTED WELLS vs. PRODUCTION WELLS
FOR AQUIFER-SPECIFIC DATA



Production wells are typically perforated across multiple aquifers producing an average water quality. Nested monitoring wells are screened in a portion of a specific aquifer, providing water quality and water level information for the specific zone.

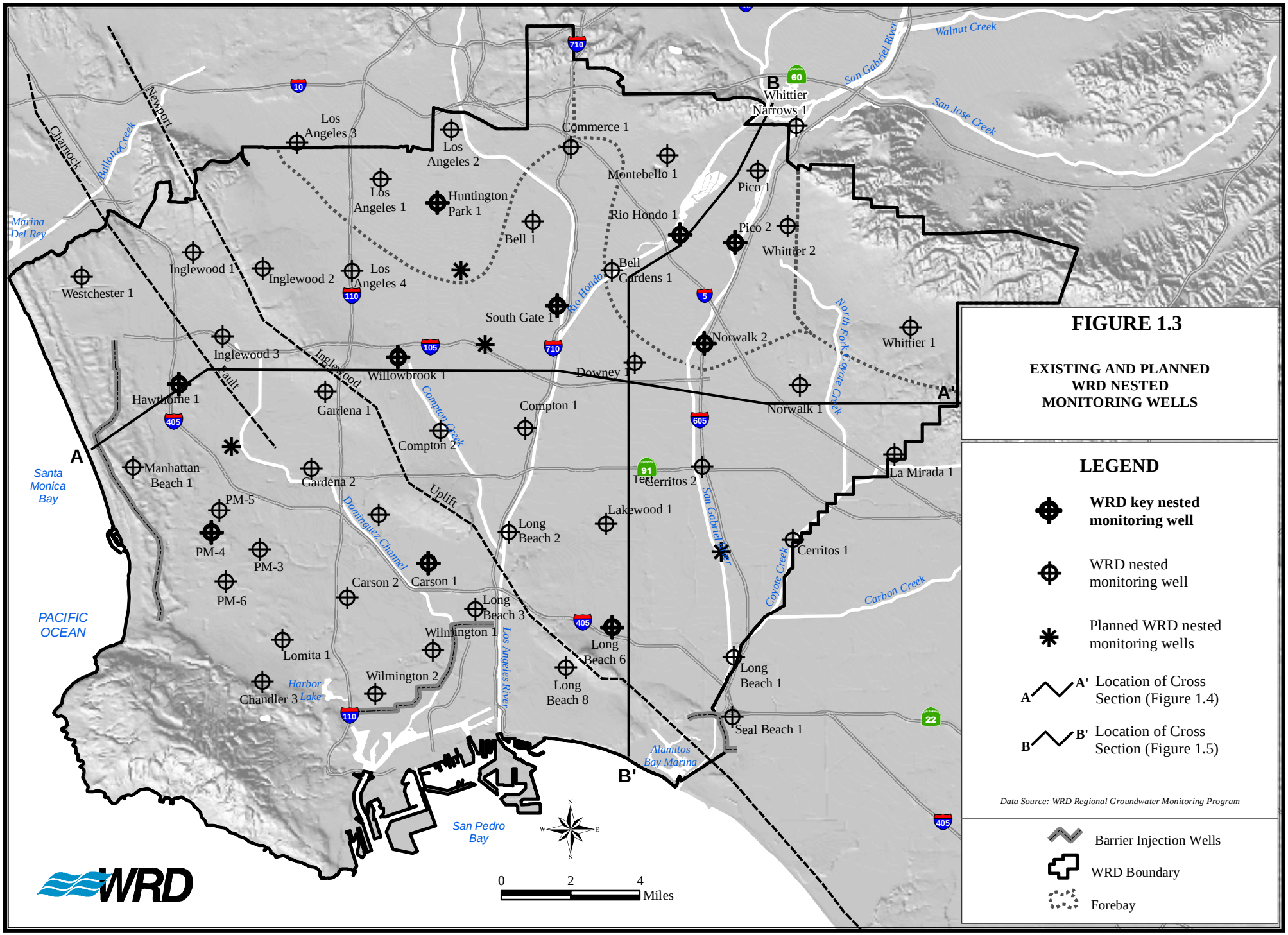
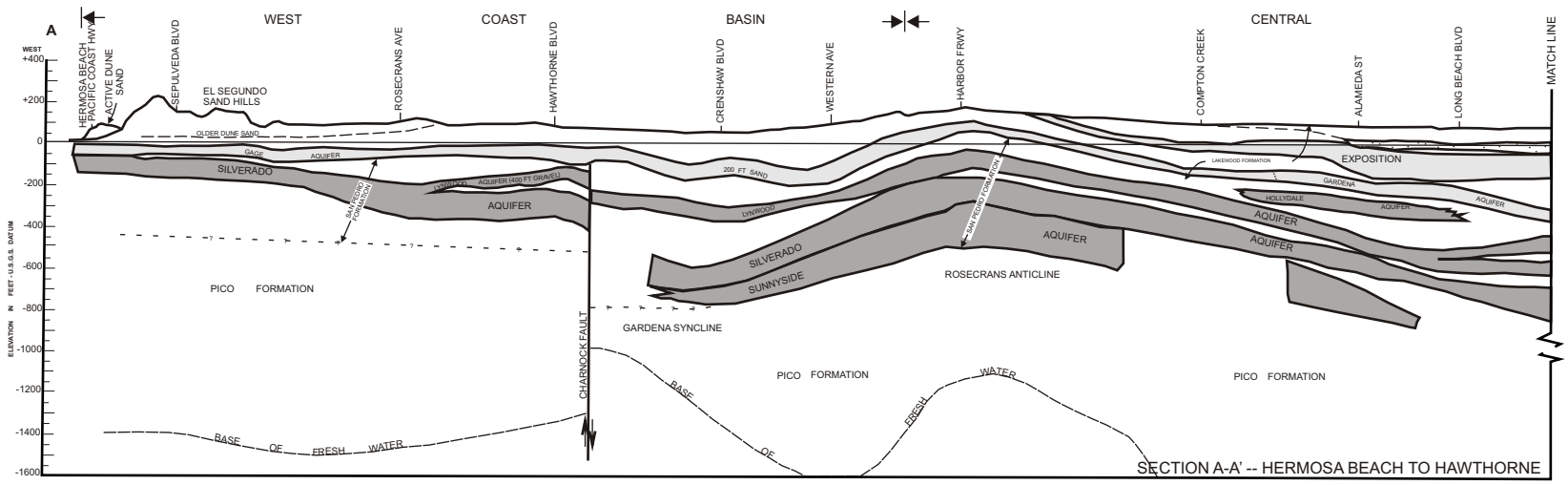
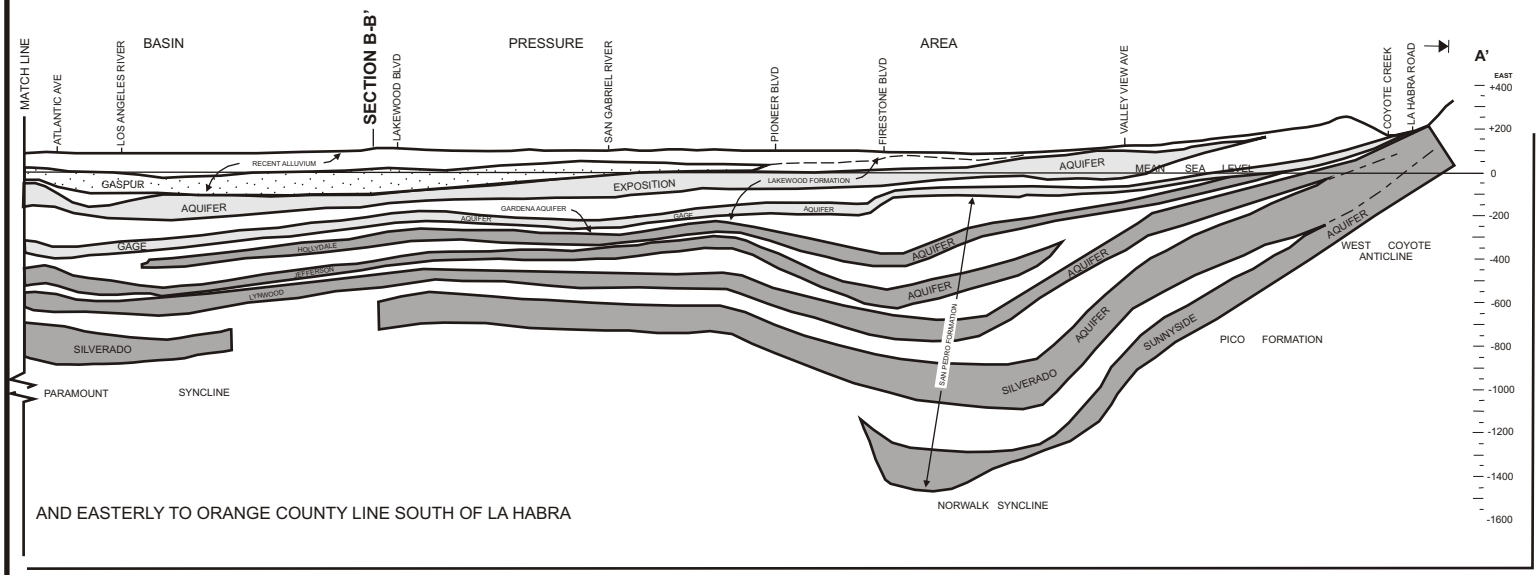


FIGURE 1.3
EXISTING AND PLANNED WRD NESTED MONITORING WELLS
LEGEND
WRD key nested monitoring well
WRD nested monitoring well
Planned WRD nested monitoring wells
A A' Location of Cross Section (Figure 1.4)
B B' Location of Cross Section (Figure 1.5)
Data Source: WRD Regional Groundwater Monitoring Program
Barrier Injection Wells
WRD Boundary
Forebay
Los Angeles 3
Los Angeles 2
Los Angeles 1
Huntington Park 1
Commerce 1
Montebello 1
Rio Hondo 1
Bell 1
Bell Gardens 1
Pico 1
Pico 2
Whittier 2
Whittier Narrows 1
Whittier 1
Norwalk 2
Norwalk 1
Downey 1
South Gate 1
Los Angeles 4
Inglewood 1
Inglewood 2
Inglewood 3
Westchester 1
Willowbrook 1
Hawthorne 1
Gardena 1
Gardena 2
Compton 1
Compton 2
Manhattan Beach 1
PM-5
PM-4
PM-3
PM-6
Carson 1
Carson 2
Long Beach 2
Long Beach 3
Long Beach 6
Long Beach 8
Long Beach 1
Lakewood 1
Cerritos 1
Cerritos 2
La Mirada 1
Wilmington 1
Wilmington 2
Lomita 1
Chandler 3
Seal Beach 1
Inglewood fault
Uplift
Dominguez Channel
Compton Creek
Harbor Lake
Los Angeles River
San Gabriel River
Coyote Creek
North Fork Coyote Creek
Carbon Creek
Rio Hondo
Walnut Creek
San Jose Creek
Ballona Creek
Charnock
Newport
Marina Del Rey
Santa Monica Bay
PACIFIC OCEAN
San Pedro Bay
Alamitos Bay Marina
A
A'
B
B'
0 2 4 Miles
WRD



SECTION A-A' -- HERMOSA BEACH TO HAWTHORNE



AND EASTERLY TO ORANGE COUNTY LINE SOUTH OF LA HABRA

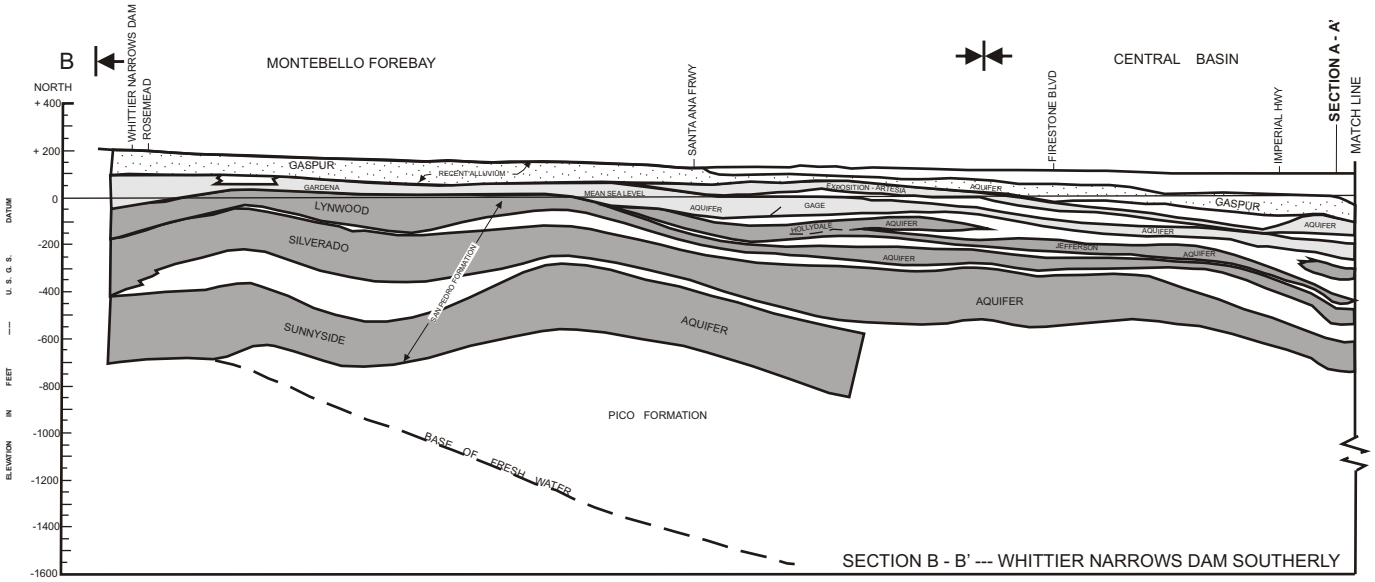
LEGEND

- AQUICLUDES AND DEEPER UNDIFFERENTIATED FORMATIONS
- AQUIFERS IN RECENT ALLUVIUM (INCLUDES THE GASPUR AND BALLONA AQUIFERS)
- AQUIFERS IN LAKEWOOD FORMATION (INCLUDES THE ARTESIA, EXPOSITION, GAGE, AND GARDENA AQUIFERS)
- AQUIFERS IN THE SAN PEDRO FORMATION (INCLUDES THE HOLLYDALE, JEFFERSON, LYNWOOD, SILVERADO AND SUNNYSIDE AQUIFERS)

IDEALIZED GEOLOGIC CROSS SECTION AA'

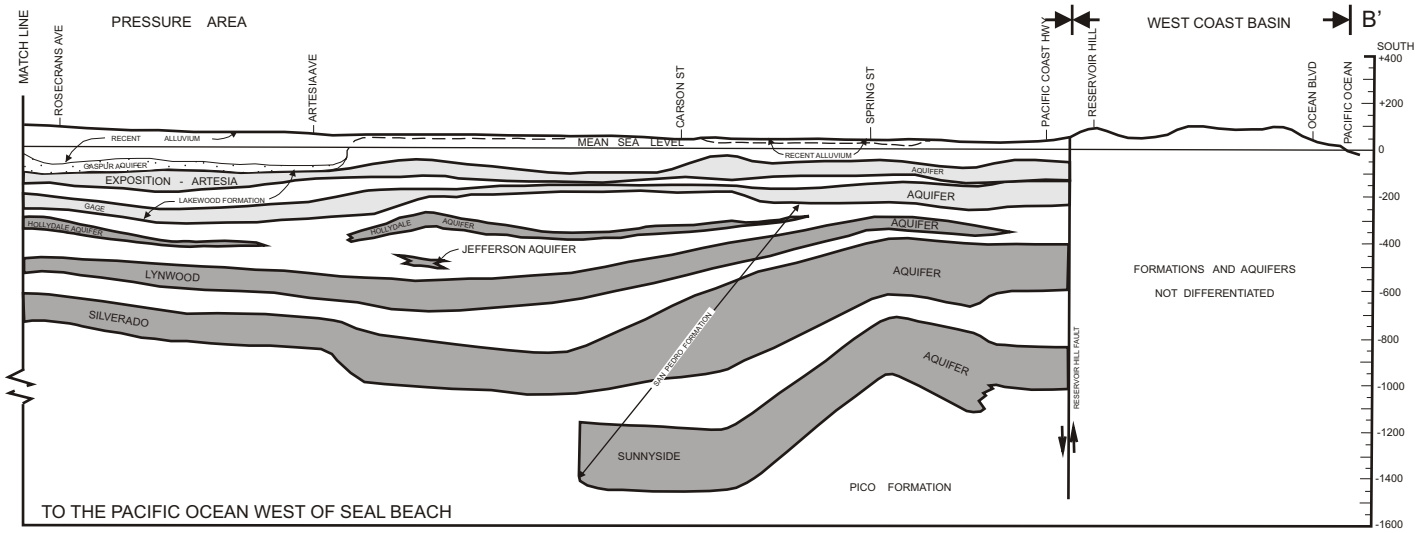
Adapted from
CDWR Bull. 104 App. B

FIGURE 1.4



LEGEND

- AQUICLUDES AND DEEPER UNDIFFERENTIATED FORMATIONS
- AQUIFERS IN RECENT ALLUVIUM (INCLUDES THE GASPUR AND BALLONA AQUIFERS)
- AQUIFERS IN LAKEWOOD FORMATION (INCLUDES THE ARTESIA, EXPOSITION, GAGE, AND GARDENA AQUIFERS)
- AQUIFERS IN THE SAN PEDRO FORMATIO (INCLUDES THE HOLLYDALE, JEFFERSON, LYNWOOD, SILVERADO AND SUNNYSIDE AQUIFERS)



IDEALIZED GEOLOGIC CROSS SECTION BB'

Adapted from
CDWR Bull. 104 App. B

FIGURE 1.5

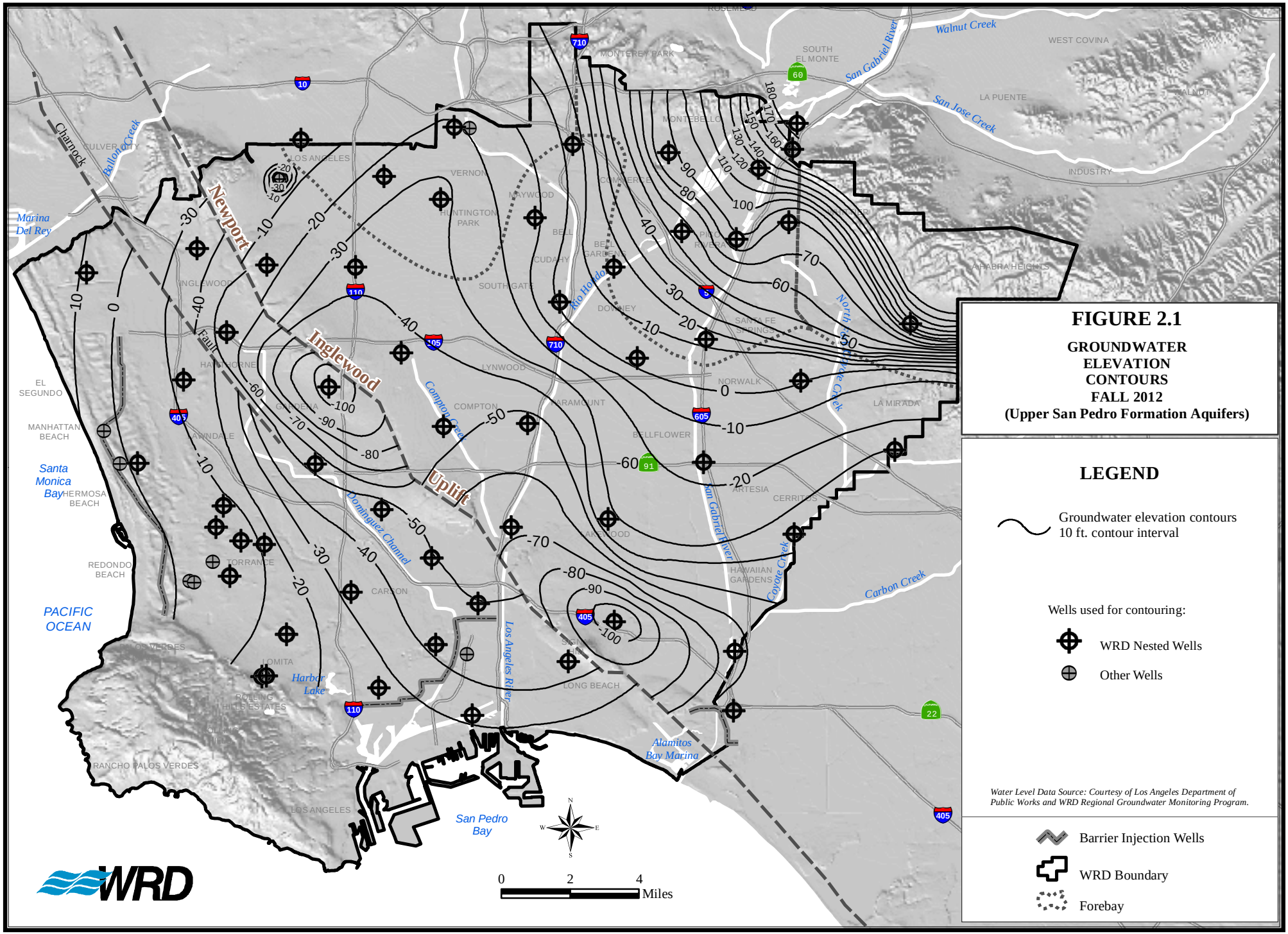


FIGURE 2.1
GROUNDWATER ELEVATION CONTOURS FALL 2012
(Upper San Pedro Formation Aquifers)
LEGEND
Groundwater elevation contours
10 ft. contour interval
Wells used for contouring:
WRD Nested Wells
Other Wells
Water Level Data Source: Courtesy of Los Angeles Department of Public Works and WRD Regional Groundwater Monitoring Program.
Barrier Injection Wells
WRD Boundary
Forebay
Newport
Inglewood
Uplift
Fault
Rio Hondo
San Gabriel River
Coyote Creek
Carbon Creek
Los Angeles River
Dominguez Channel
Common Creek
North Fork Coyote Creek
Walnut Creek
San Jose Creek
Harbor Lake
Alamitos Bay Marina
San Pedro Bay
Marina Del Rey
Santa Monica Bay
PACIFIC OCEAN
Channock
Ballona Creek
0 2 4 Miles
WRD

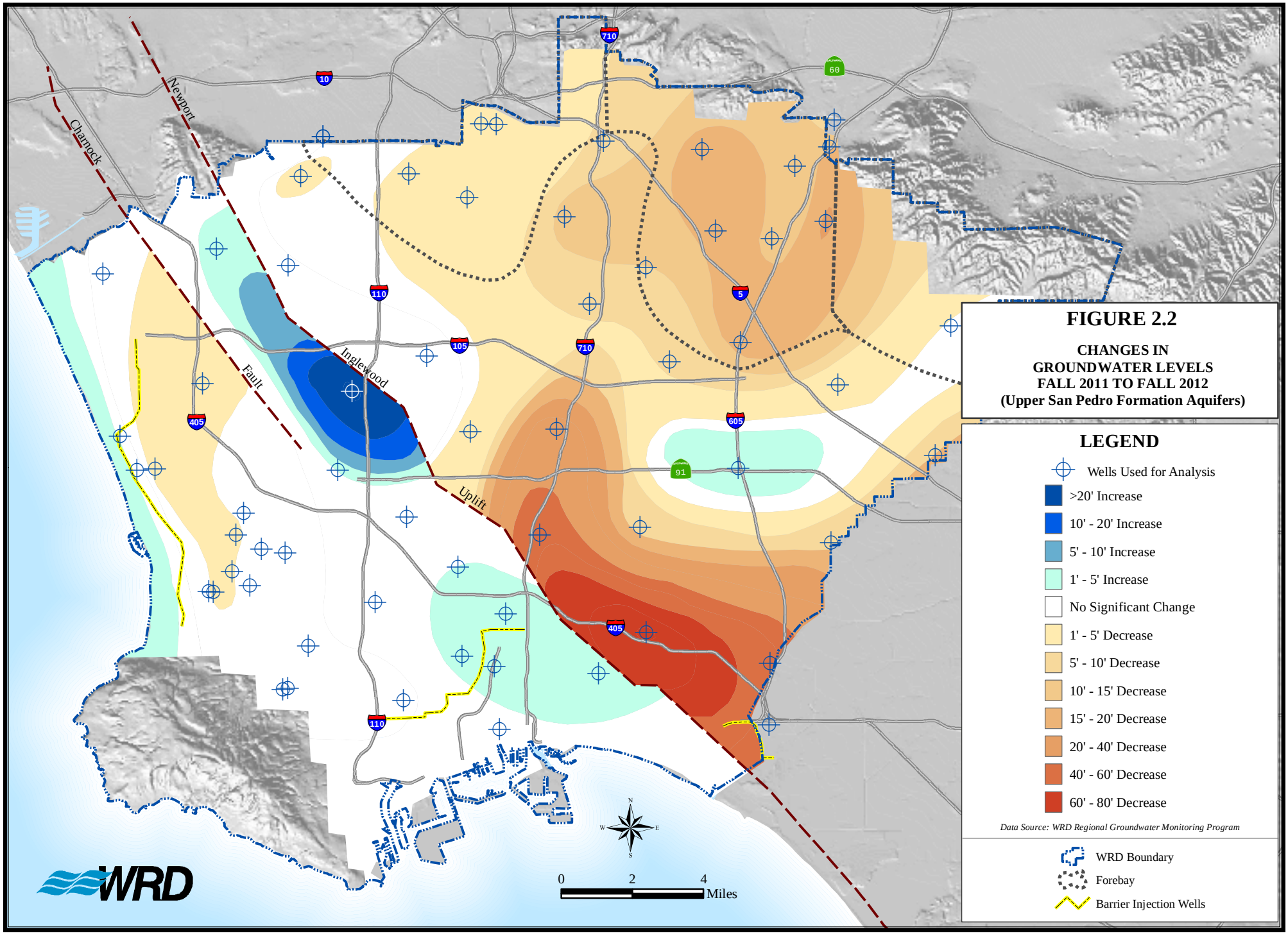


FIGURE 2.2

CHANGES IN GROUNDWATER LEVELS FALL 2011 TO FALL 2012 (Upper San Pedro Formation Aquifers)

LEGEND

- Wells Used for Analysis
- >20' Increase
- 10' - 20' Increase
- 5' - 10' Increase
- 1' - 5' Increase
- No Significant Change
- 1' - 5' Decrease
- 5' - 10' Decrease
- 10' - 15' Decrease
- 15' - 20' Decrease
- 20' - 40' Decrease
- 40' - 60' Decrease
- 60' - 80' Decrease

Data Source: WRD Regional Groundwater Monitoring Program

- WRD Boundary
- Forebay
- Barrier Injection Wells

FIGURE 2.3
WATER LEVELS IN WRD KEY NESTED MONITORING WELL RIO HONDO #1

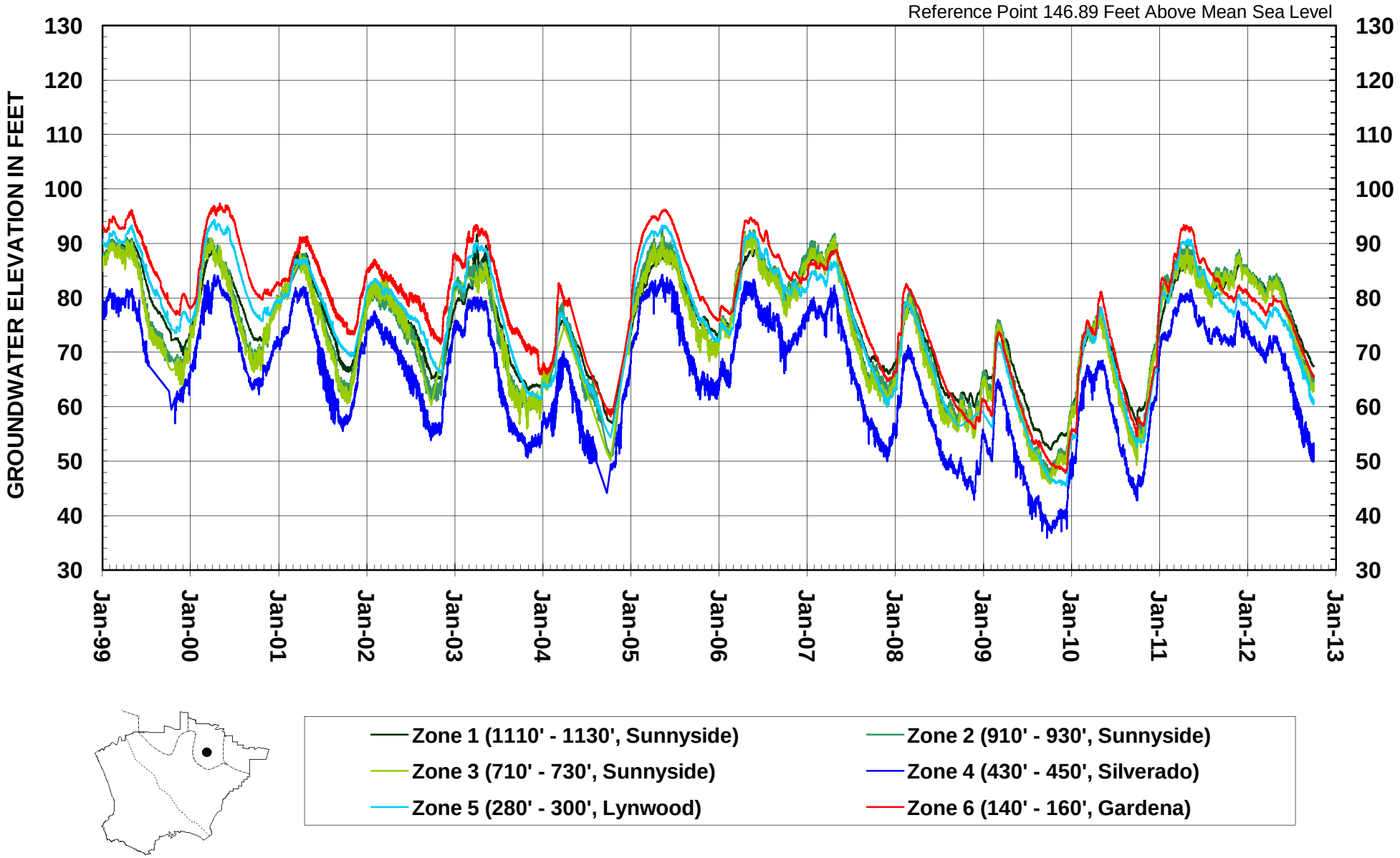


FIGURE 2.4
WATER LEVELS IN WRD KEY NESTED MONITORING WELL PICO #2

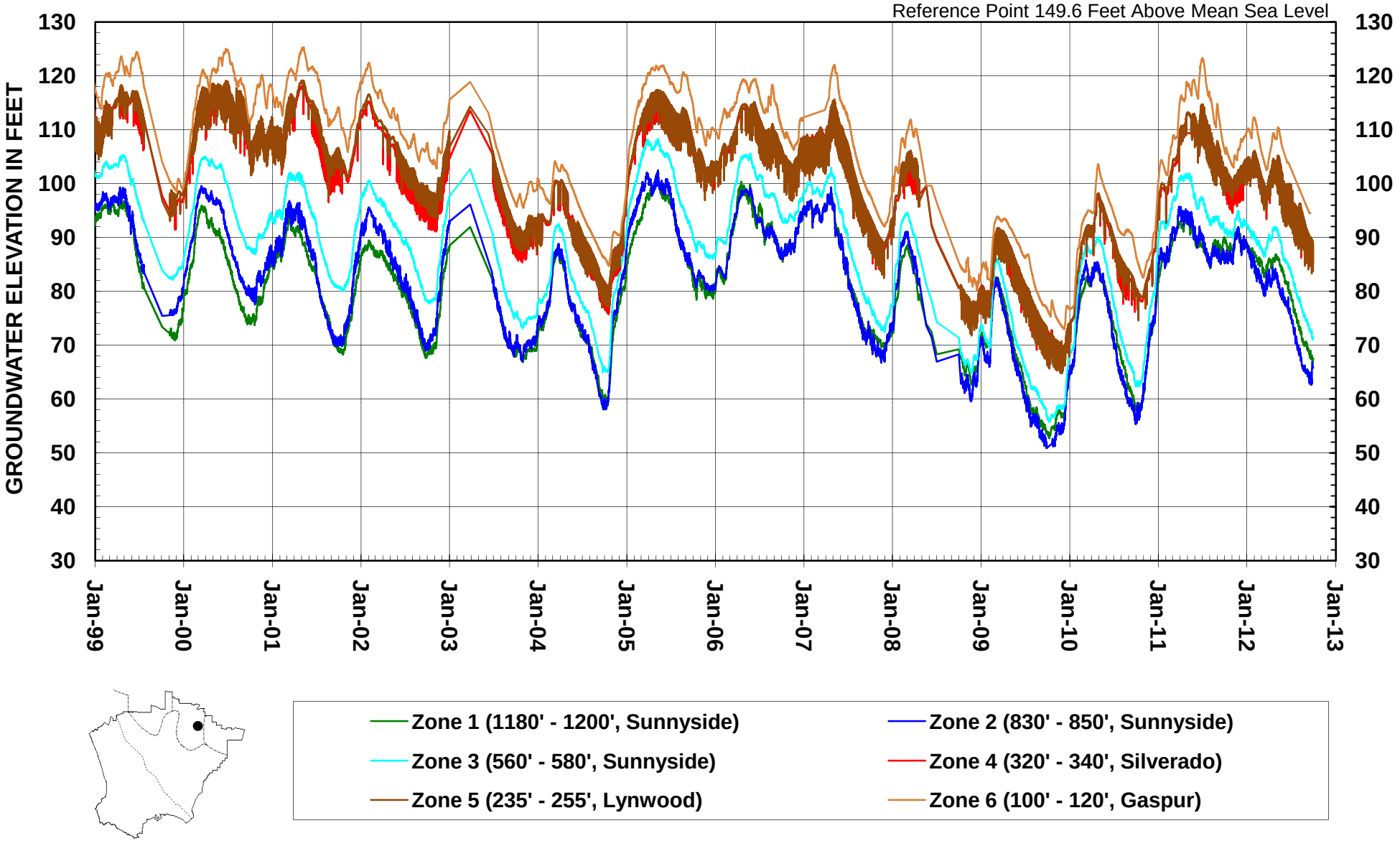


FIGURE 2.5
WATER LEVELS IN WRD KEY NESTED MONITORING WELL NORWALK #2

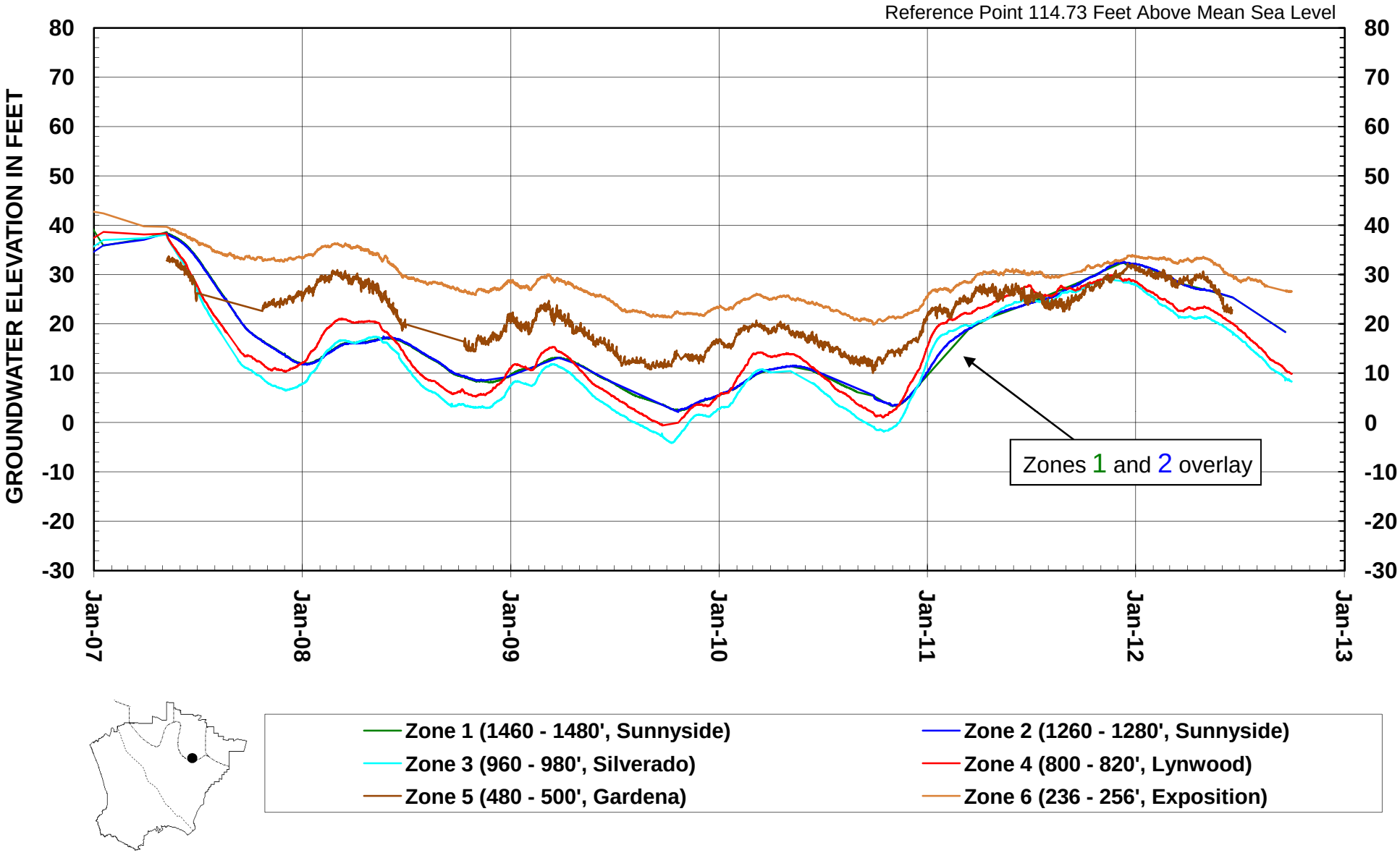


FIGURE 2.6
WATER LEVELS IN WRD KEY NESTED MONITORING WELL HUNTINGTON PARK #1

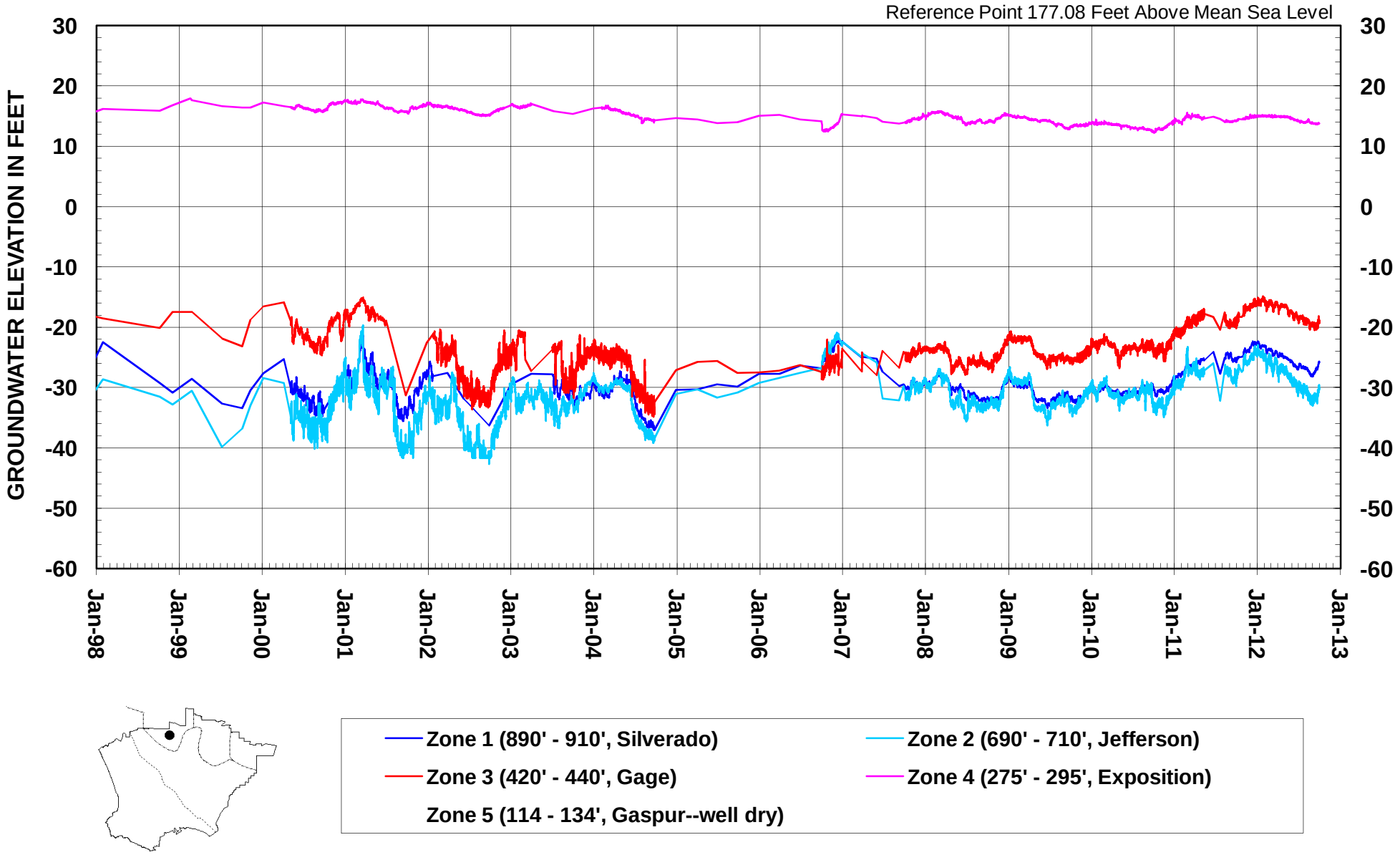


FIGURE 2.7
WATER LEVELS IN WRD KEY NESTED MONITORING WELL SOUTH GATE #1

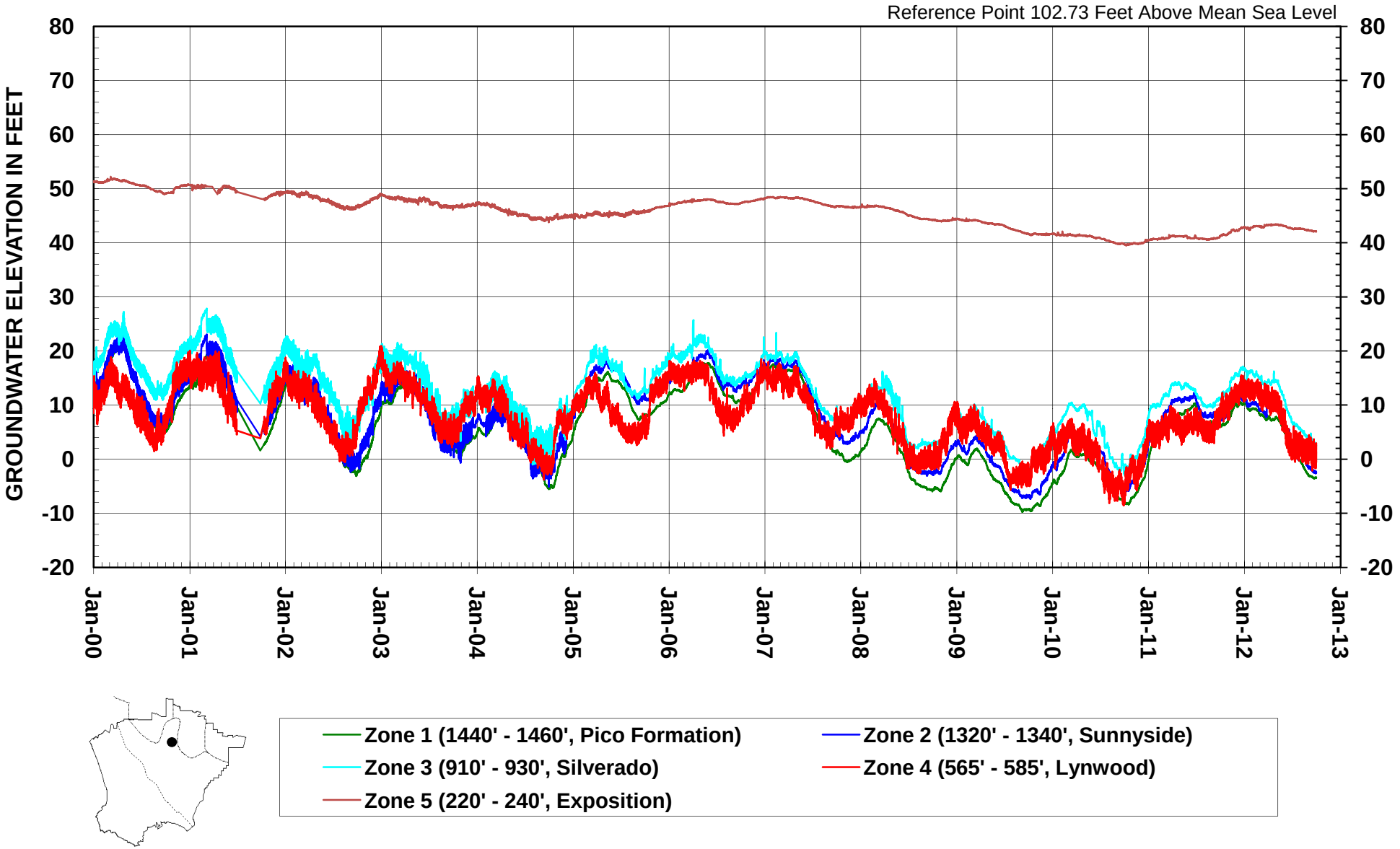


FIGURE 2.8
WATER LEVELS IN WRD KEY NESTED MONITORING WELL WILLOWBROOK #1

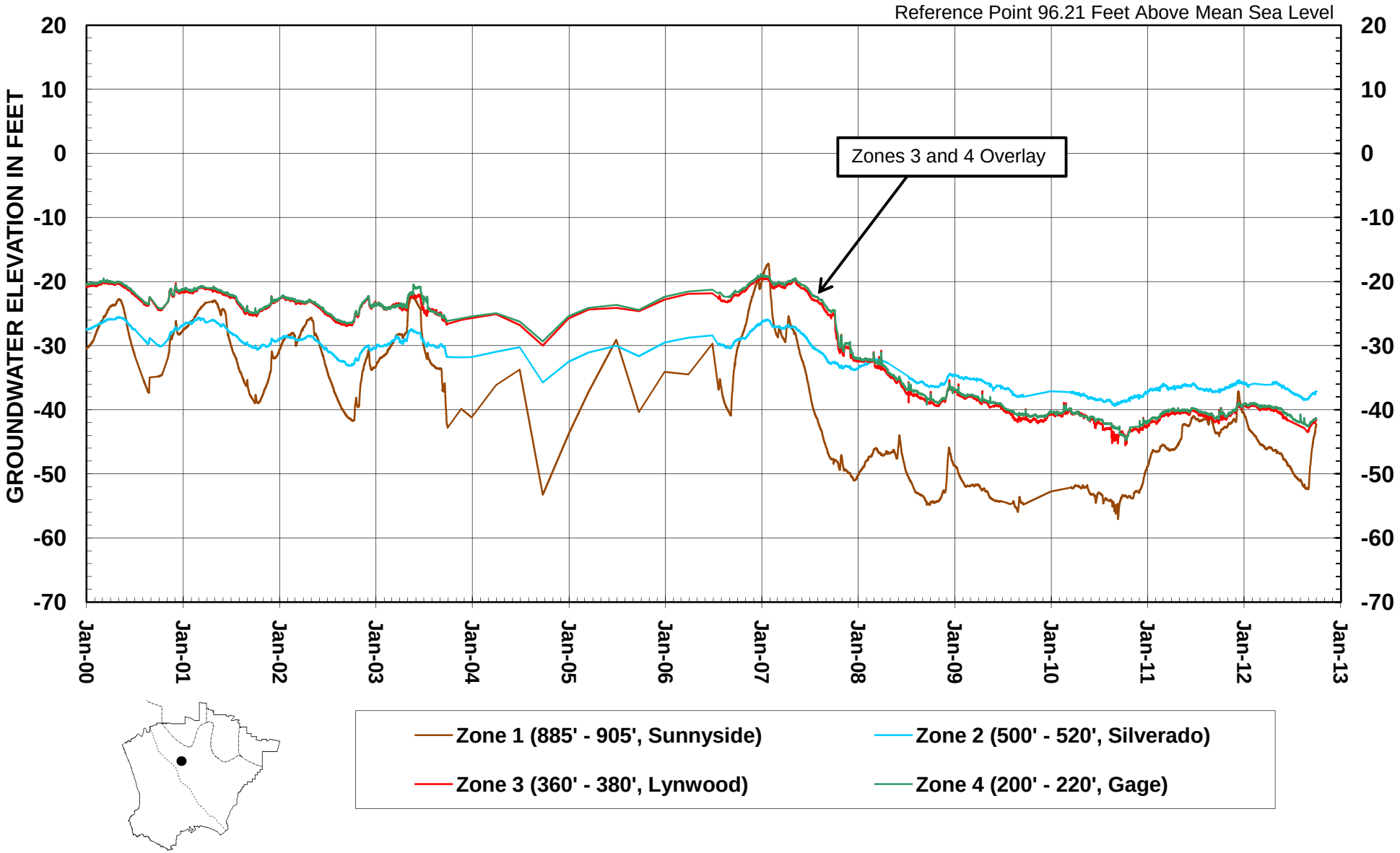


FIGURE 2.9
WATER LEVELS IN WRD KEY NESTED MONITORING WELL LONG BEACH #6

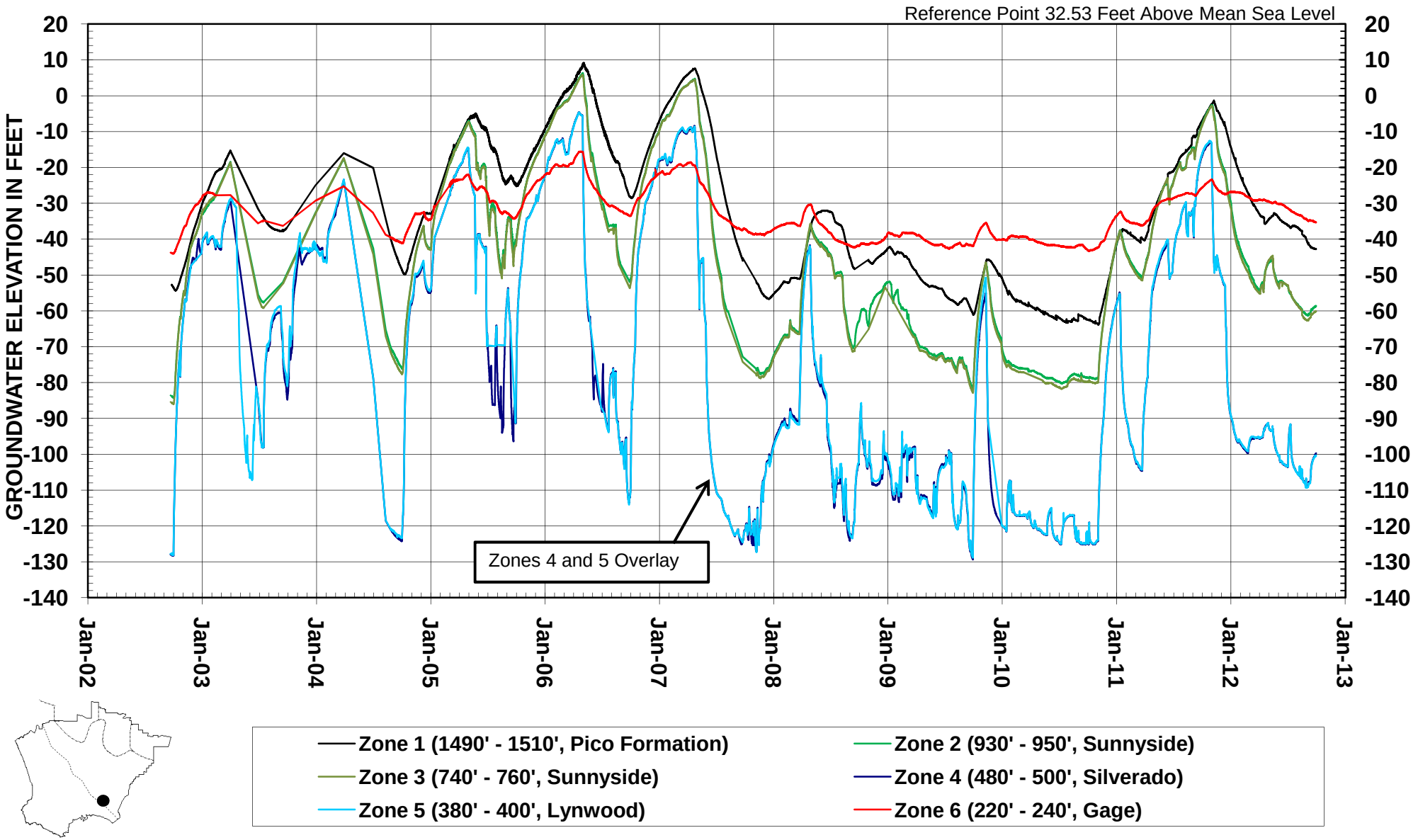


FIGURE 2.10
WATER LEVELS IN WRD KEY NESTED MONITORING WELL PM-4 MARINER

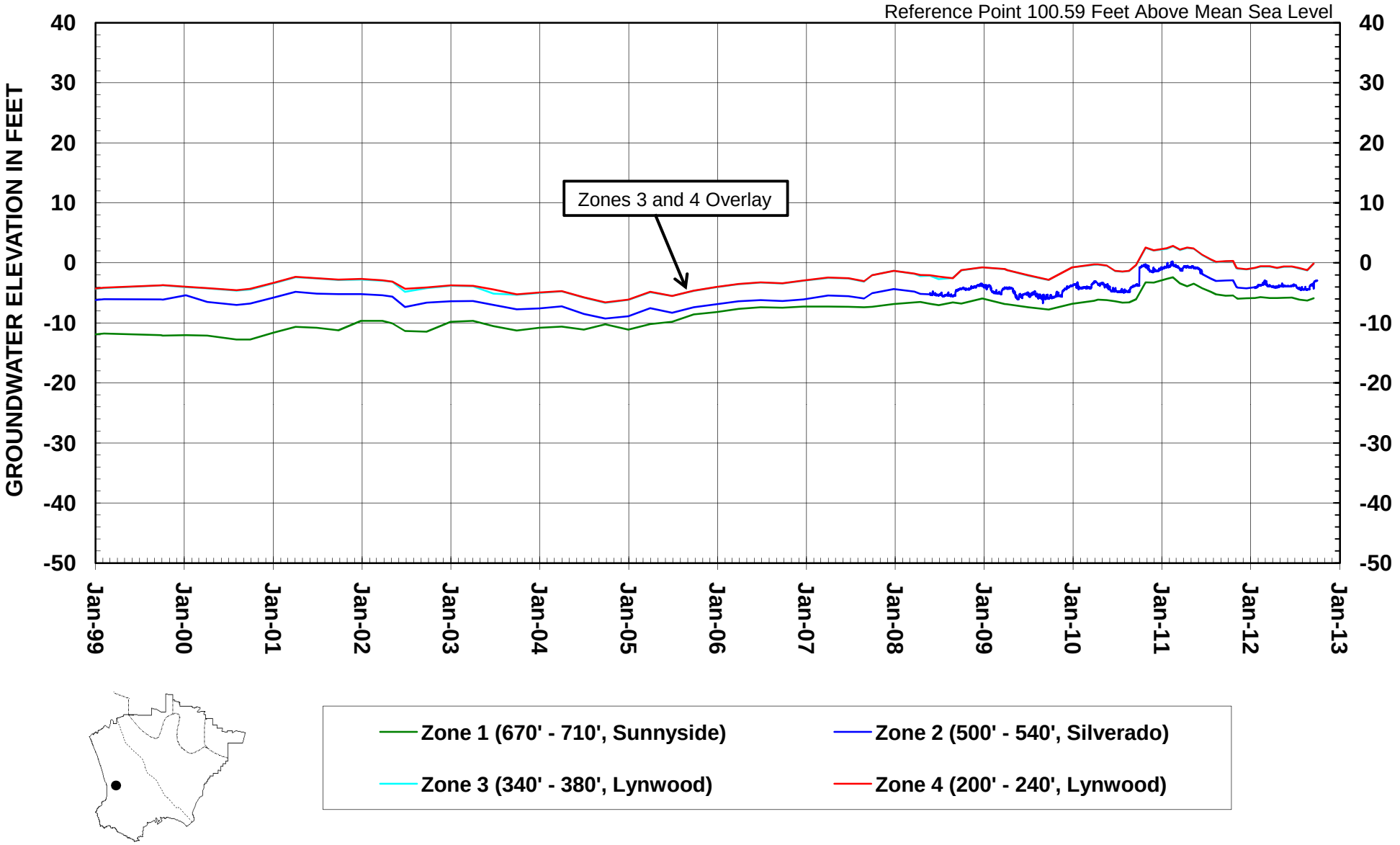


FIGURE 2.11
WATER LEVELS IN WRD KEY NESTED MONITORING WELL CARSON #1

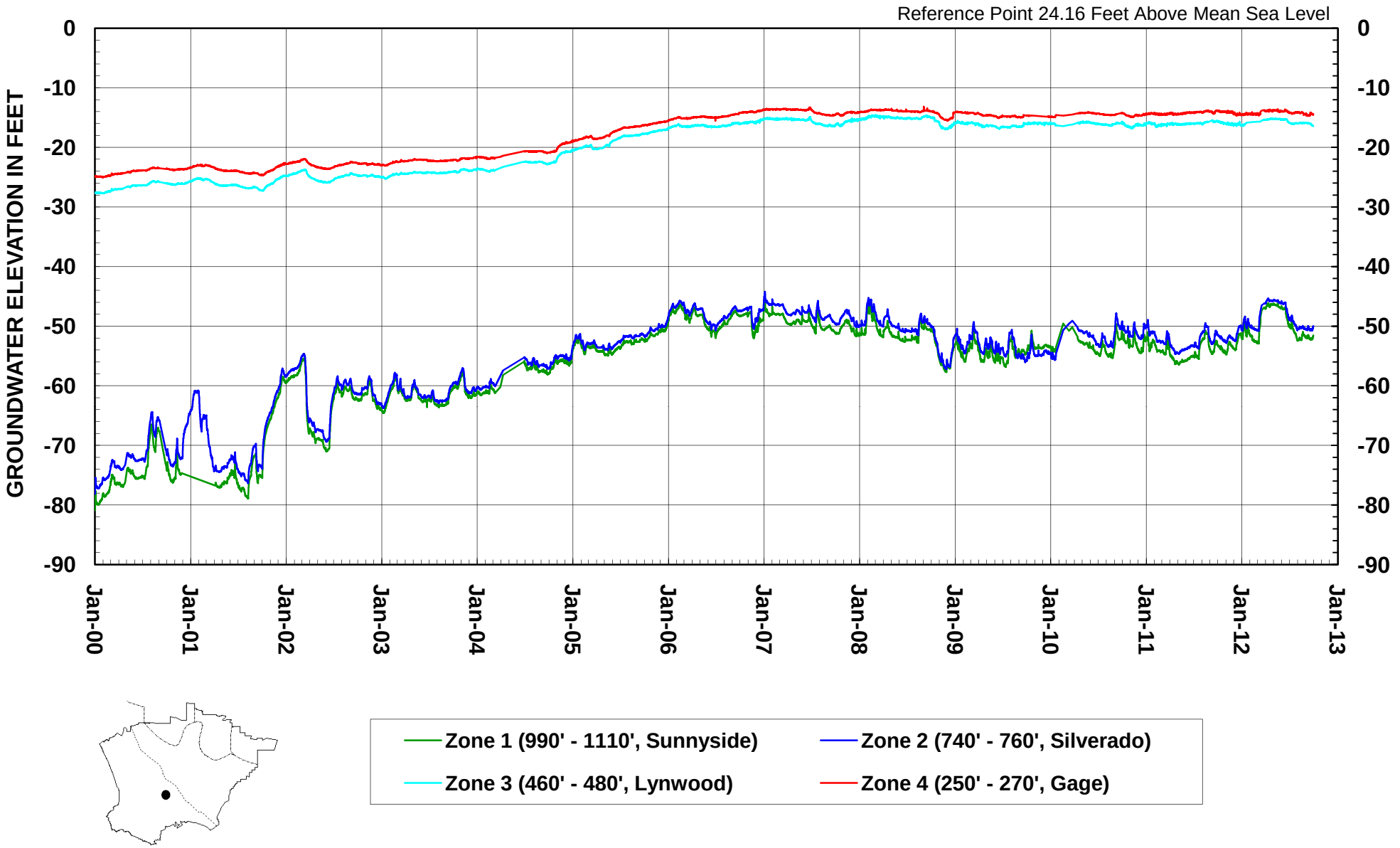
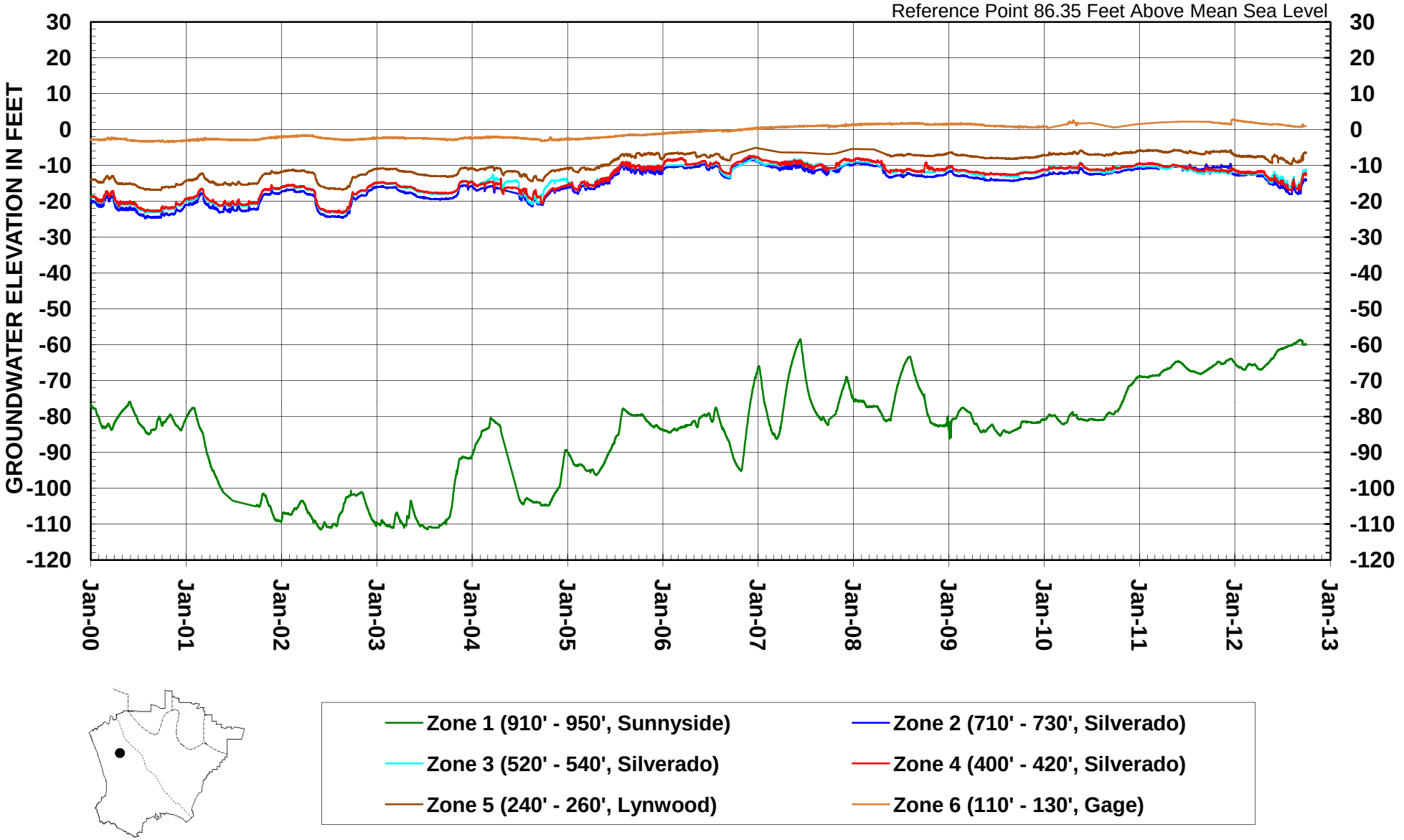


FIGURE 2.12
WATER LEVELS IN WRD KEY NESTED MONITORING WELL HAWTHORNE #1



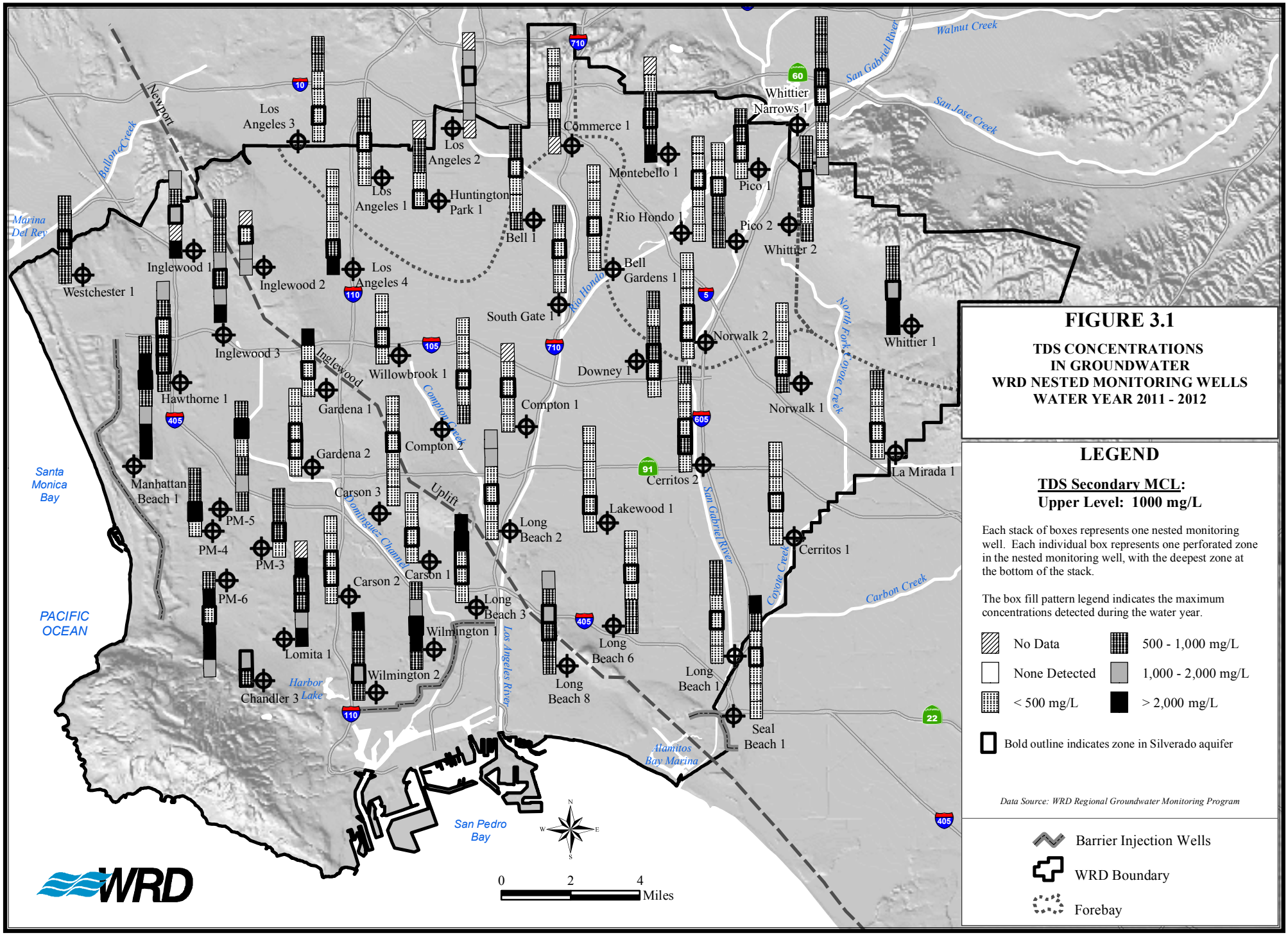


FIGURE 3.1

TDS CONCENTRATIONS IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2011 - 2012

LEGEND

TDS Secondary MCL:
Upper Level: 1000 mg/L

Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.

The box fill pattern legend indicates the maximum concentrations detected during the water year.

- No Data
- None Detected
- < 500 mg/L
- 500 - 1,000 mg/L
- 1,000 - 2,000 mg/L
- > 2,000 mg/L

Bold outline indicates zone in Silverado aquifer

Data Source: WRD Regional Groundwater Monitoring Program

- Barrier Injection Wells
- WRD Boundary
- Forebay

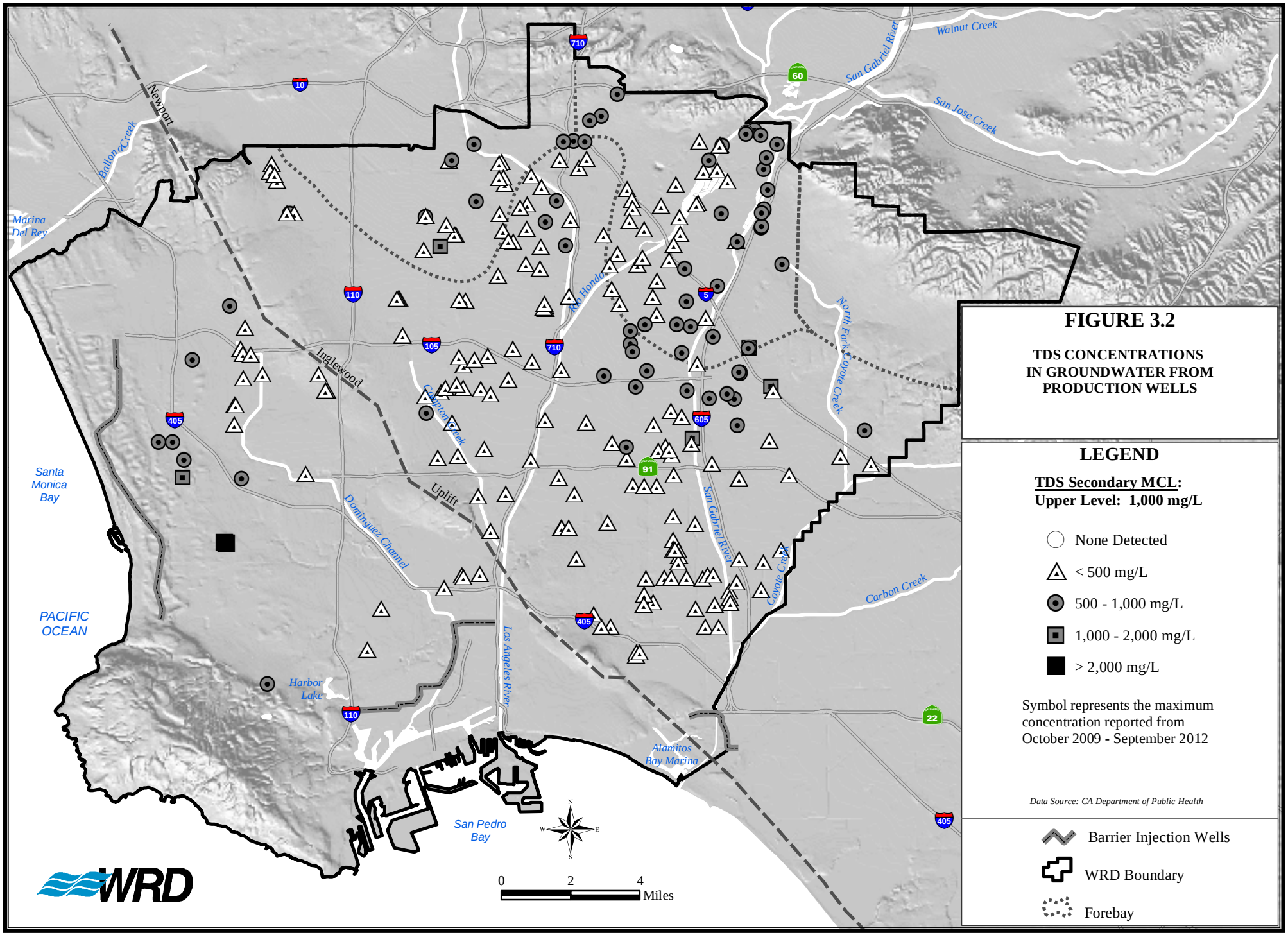


FIGURE 3.2
TDS CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
TDS Secondary MCL:
Upper Level: 1,000 mg/L
None Detected
< 500 mg/L
500 - 1,000 mg/L
1,000 - 2,000 mg/L
> 2,000 mg/L
Symbol represents the maximum concentration reported from October 2009 - September 2012
Data Source: CA Department of Public Health
Barrier Injection Wells
WRD Boundary
Forebay
Newport
Ballona Creek
Marina Del Rey
Santa Monica Bay
PACIFIC OCEAN
Inglewood
Dominguez Channel
Uplift
Centinela Creek
Rio Hondo
Harbor Lake
Los Angeles River
San Pedro Bay
Alamitos Bay Marina
Walnut Creek
San Gabriel River
San Jose Creek
North Fork Coyote Creek
Coyote Creek
Carbon Creek
0 2 4 Miles
WRD

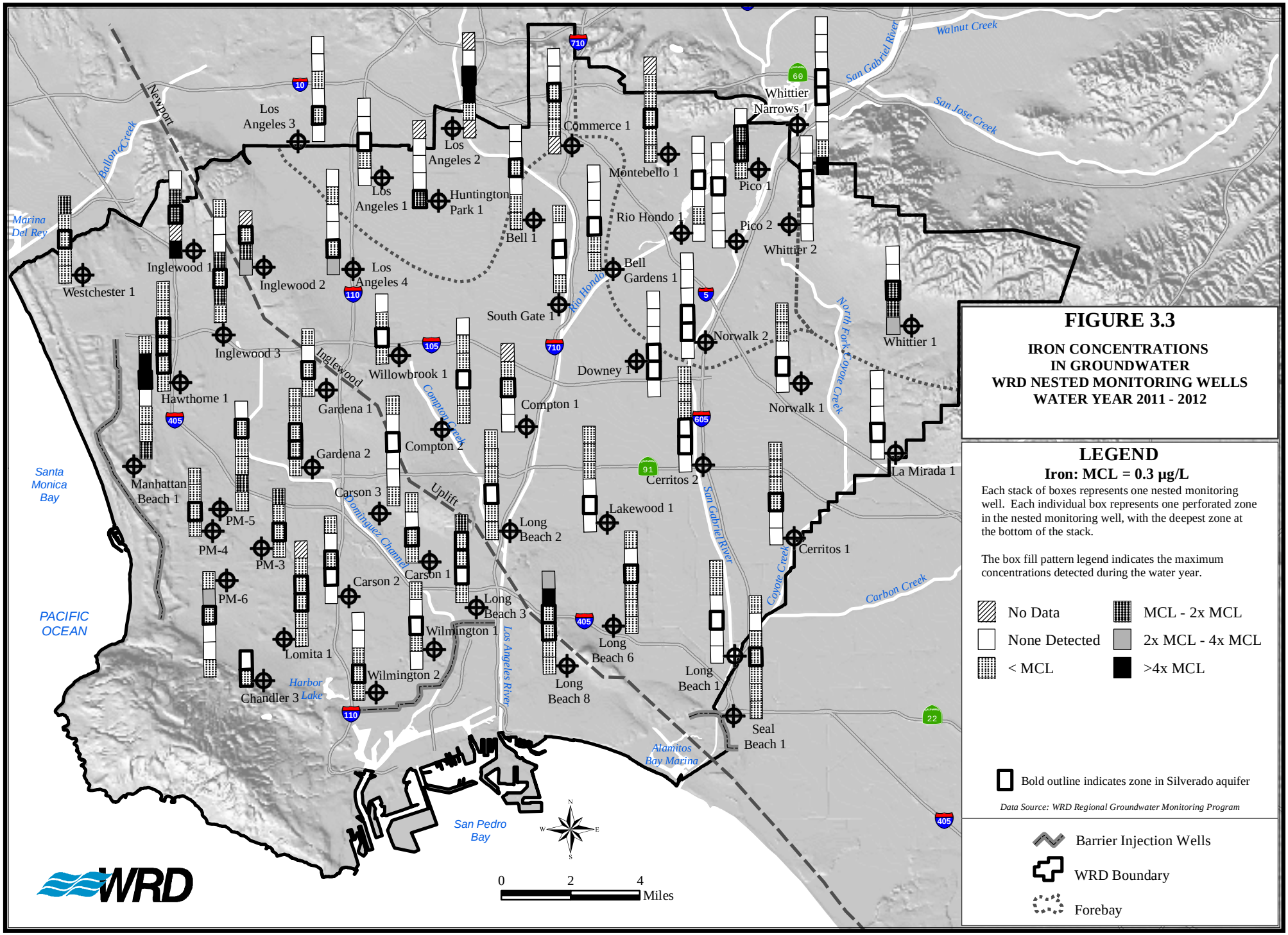


FIGURE 3.3

IRON CONCENTRATIONS IN GROUNDWATER WRD NESTED MONITORING WELLS WATER YEAR 2011 - 2012

LEGEND

Iron: MCL = 0.3 µg/L

Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.

The box fill pattern legend indicates the maximum concentrations detected during the water year.

- No Data
- None Detected
- < MCL
- MCL - 2x MCL
- 2x MCL - 4x MCL
- >4x MCL

Bold outline indicates zone in Silverado aquifer

Data Source: WRD Regional Groundwater Monitoring Program

- Barrier Injection Wells
- WRD Boundary
- Forebay

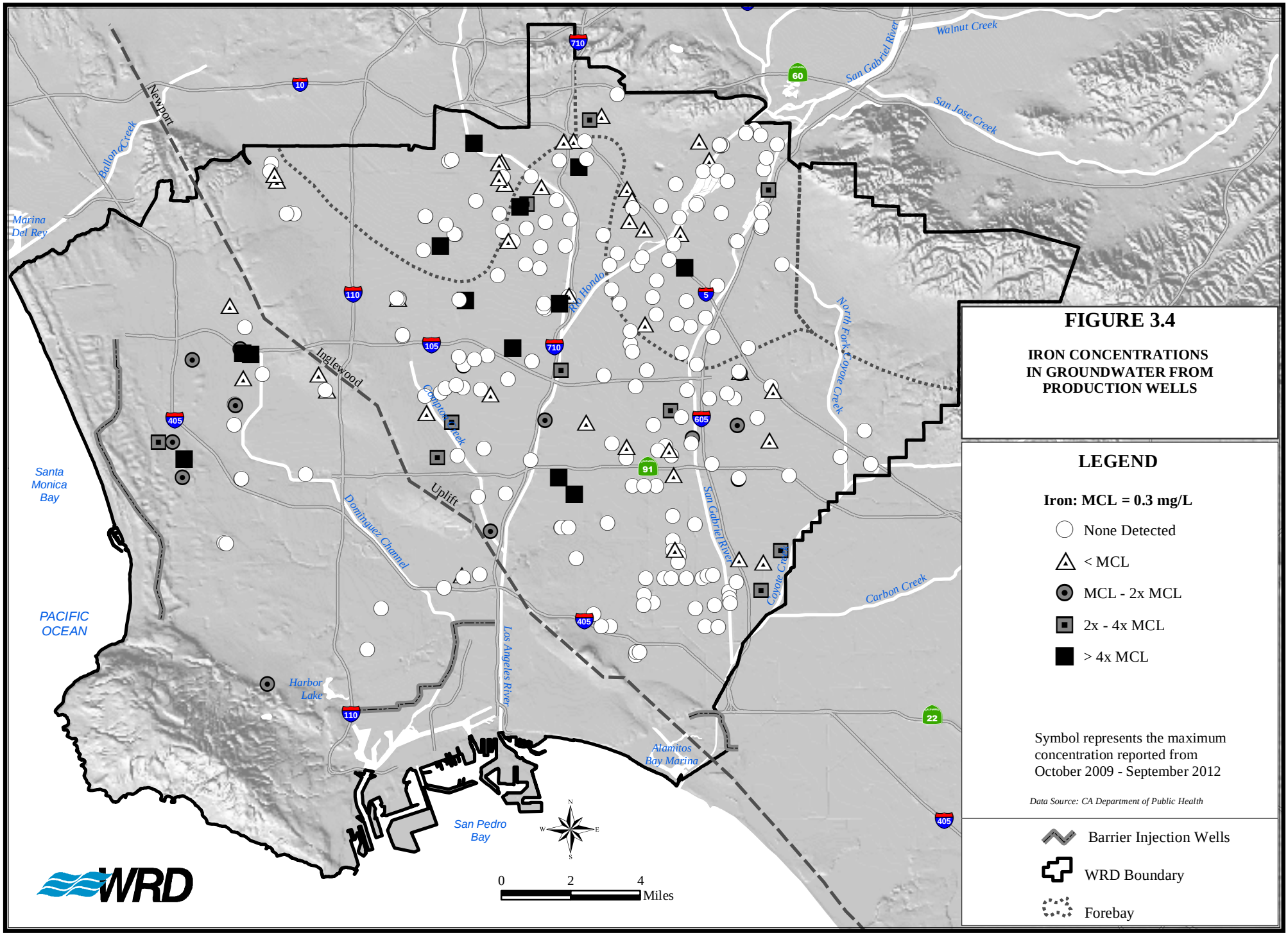


FIGURE 3.4
IRON CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
Iron: MCL = 0.3 mg/L
None Detected
< MCL
MCL - 2x MCL
2x - 4x MCL
> 4x MCL
Symbol represents the maximum concentration reported from October 2009 - September 2012
Data Source: CA Department of Public Health
Barrier Injection Wells
WRD Boundary
Forebay
Newport
Ballona Creek
Marina Del Rey
Inglewood
Rio Hondo
Compton Creek
North Fork Coyote Creek
San Gabriel River
Walnut Creek
San Jose Creek
Uplift
Dominguez Channel
Los Angeles River
Coyote Creek
Carbon Creek
Santa Monica Bay
PACIFIC OCEAN
Harbor Lake
Alamitos Bay Marina
San Pedro Bay
0 2 4 Miles
WRD

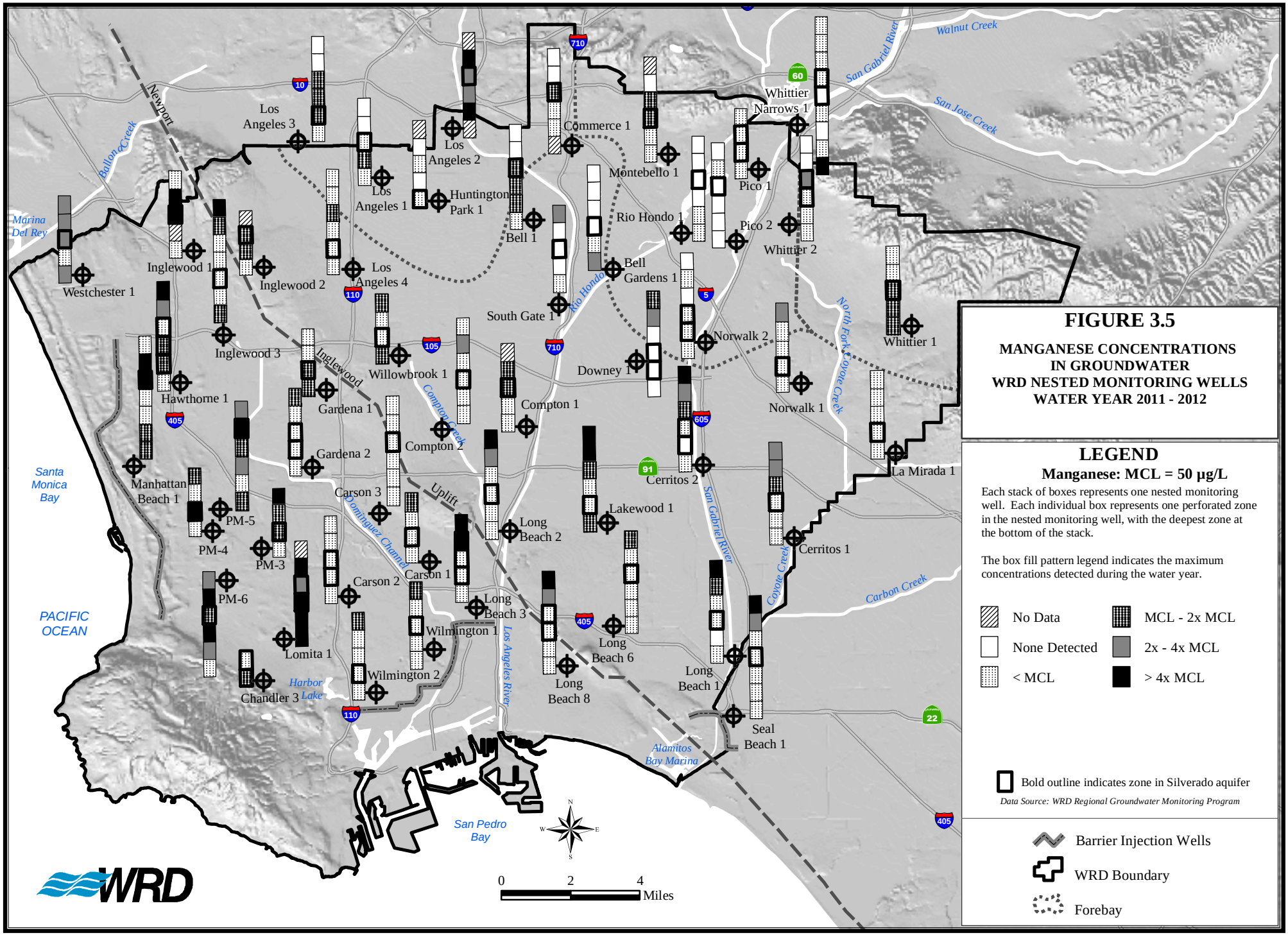


FIGURE 3.5

MANGANESE CONCENTRATIONS IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2011 - 2012

LEGEND

Manganese: MCL = 50 µg/L

Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.

The box fill pattern legend indicates the maximum concentrations detected during the water year.

- No Data
- None Detected
- < MCL
- MCL - 2x MCL
- 2x - 4x MCL
- > 4x MCL

Bold outline indicates zone in Silverado aquifer

Data Source: WRD Regional Groundwater Monitoring Program

- Barrier Injection Wells
- WRD Boundary
- Forebay

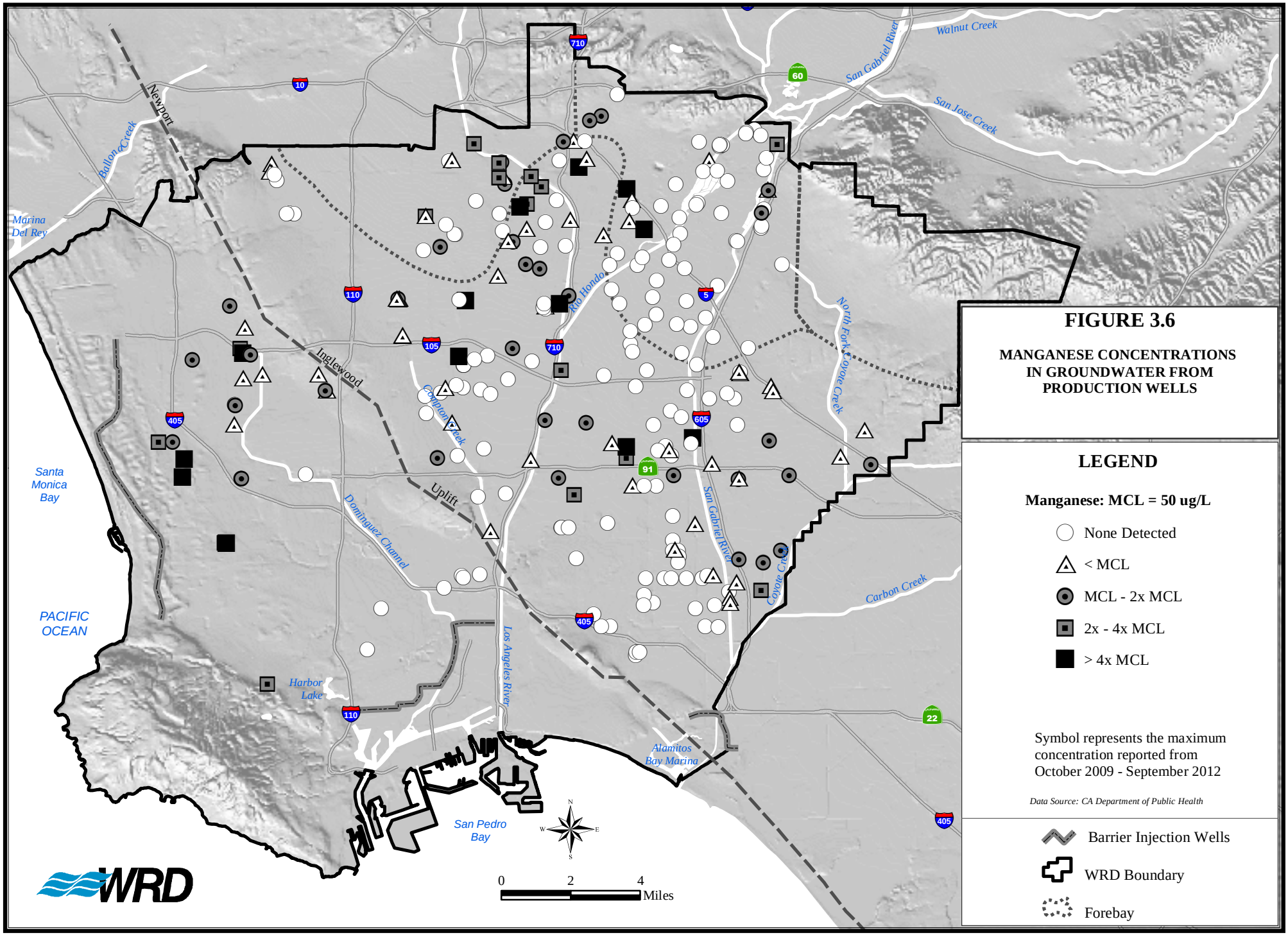


FIGURE 3.6
MANGANESE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
Manganese: MCL = 50 ug/L
None Detected
< MCL
MCL - 2x MCL
2x - 4x MCL
> 4x MCL
Symbol represents the maximum concentration reported from October 2009 - September 2012
Data Source: CA Department of Public Health
Barrier Injection Wells
WRD Boundary
Forebay
Newport
Ballon Creek
Marina Del Rey
Inglewood
Compton Creek
Rio Hondo
San Gabriel River
Walnut Creek
San Jose Creek
North Fork Coyote Creek
Coyote Creek
Carbon Creek
Uplift
Dominguez Channel
Los Angeles River
Harbor Lake
Alamitos Bay Marina
San Pedro Bay
Santa Monica Bay
PACIFIC OCEAN
0 2 4 Miles
WRD

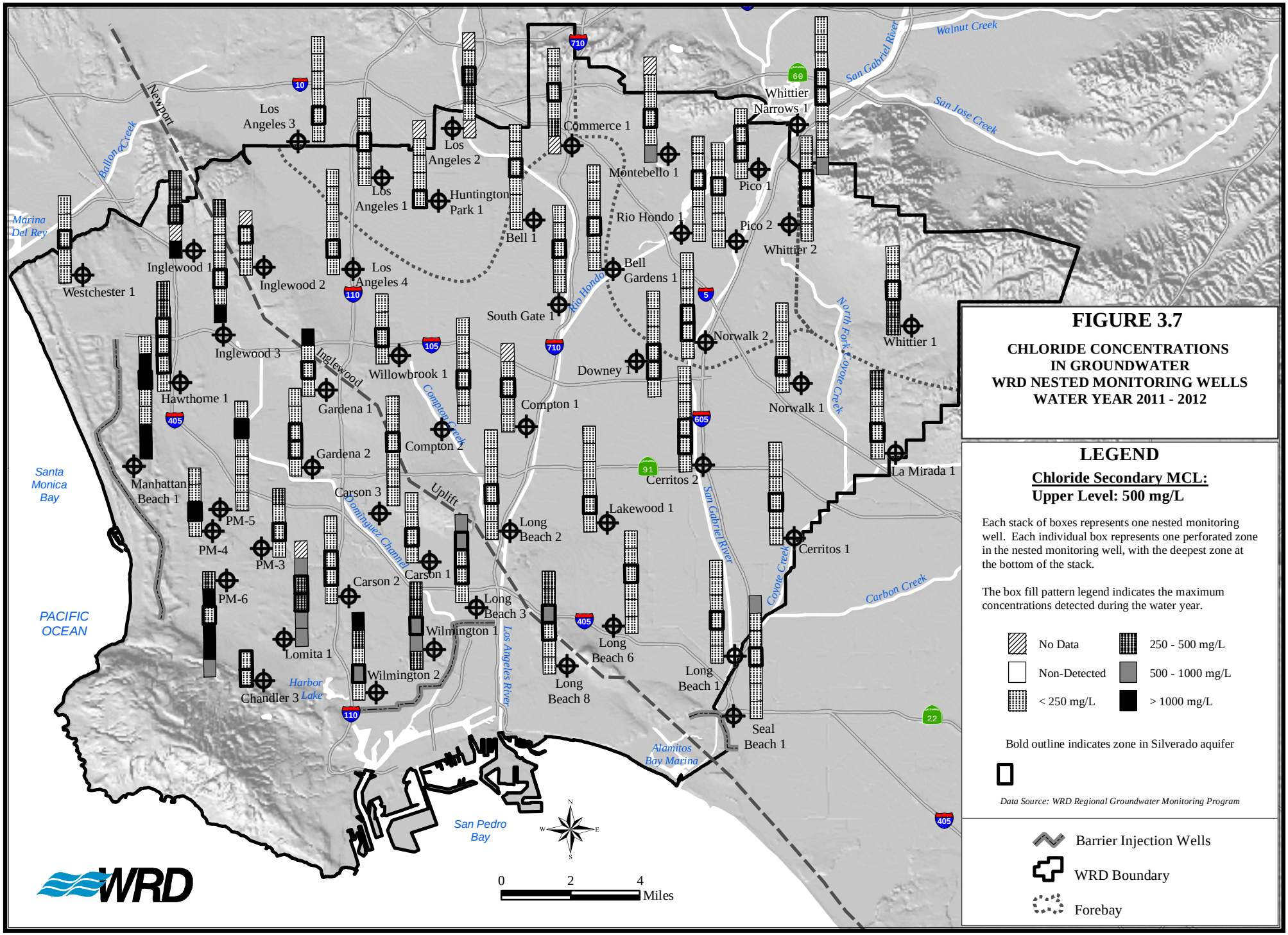


FIGURE 3.7

CHLORIDE CONCENTRATIONS IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2011 - 2012

LEGEND

Chloride Secondary MCL:
Upper Level: 500 mg/L

Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.

The box fill pattern legend indicates the maximum concentrations detected during the water year.

- No Data
- Non-Detected
- < 250 mg/L
- 250 - 500 mg/L
- 500 - 1000 mg/L
- > 1000 mg/L

Bold outline indicates zone in Silverado aquifer

Data Source: WRD Regional Groundwater Monitoring Program

- Barrier Injection Wells
- WRD Boundary
- Forebay

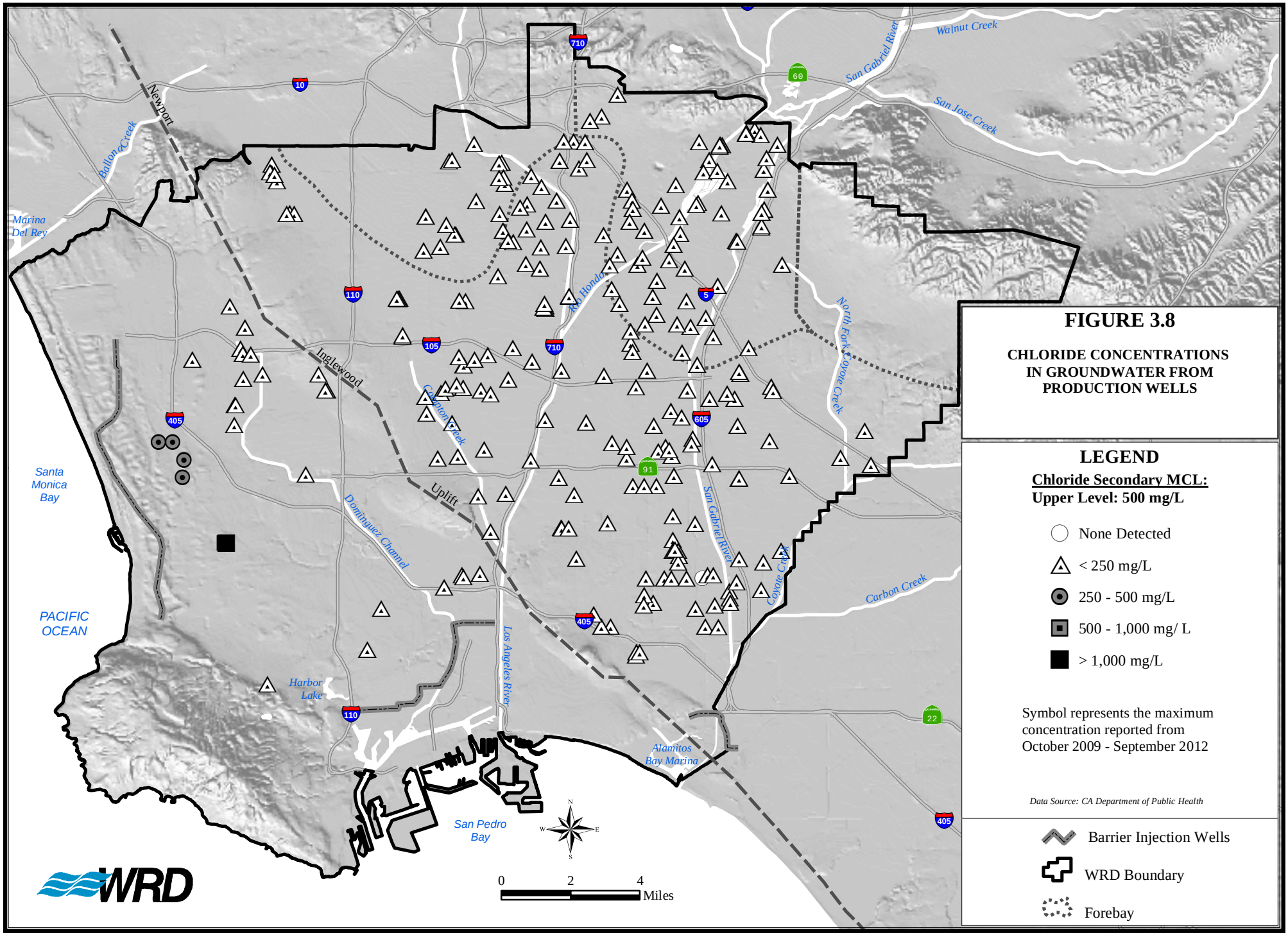


FIGURE 3.8
CHLORIDE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
Chloride Secondary MCL:
Upper Level: 500 mg/L
None Detected
< 250 mg/L
250 - 500 mg/L
500 - 1,000 mg/ L
> 1,000 mg/L
Symbol represents the maximum concentration reported from October 2009 - September 2012
Data Source: CA Department of Public Health
Barrier Injection Wells
WRD Boundary
Forebay
Walnut Creek
San Gabriel River
San Jose Creek
Newport
Ballon Creek
Marina Del Rey
Inglewood
Rio Hondo
North Fork Coyote Creek
Compton Creek
Uplift
Dominguez Channel
Santa Monica Bay
PACIFIC OCEAN
Harbor Lake
Los Angeles River
Coyote Creek
Carbon Creek
Alamitos Bay Marina
San Pedro Bay
0 2 4 Miles
WRD

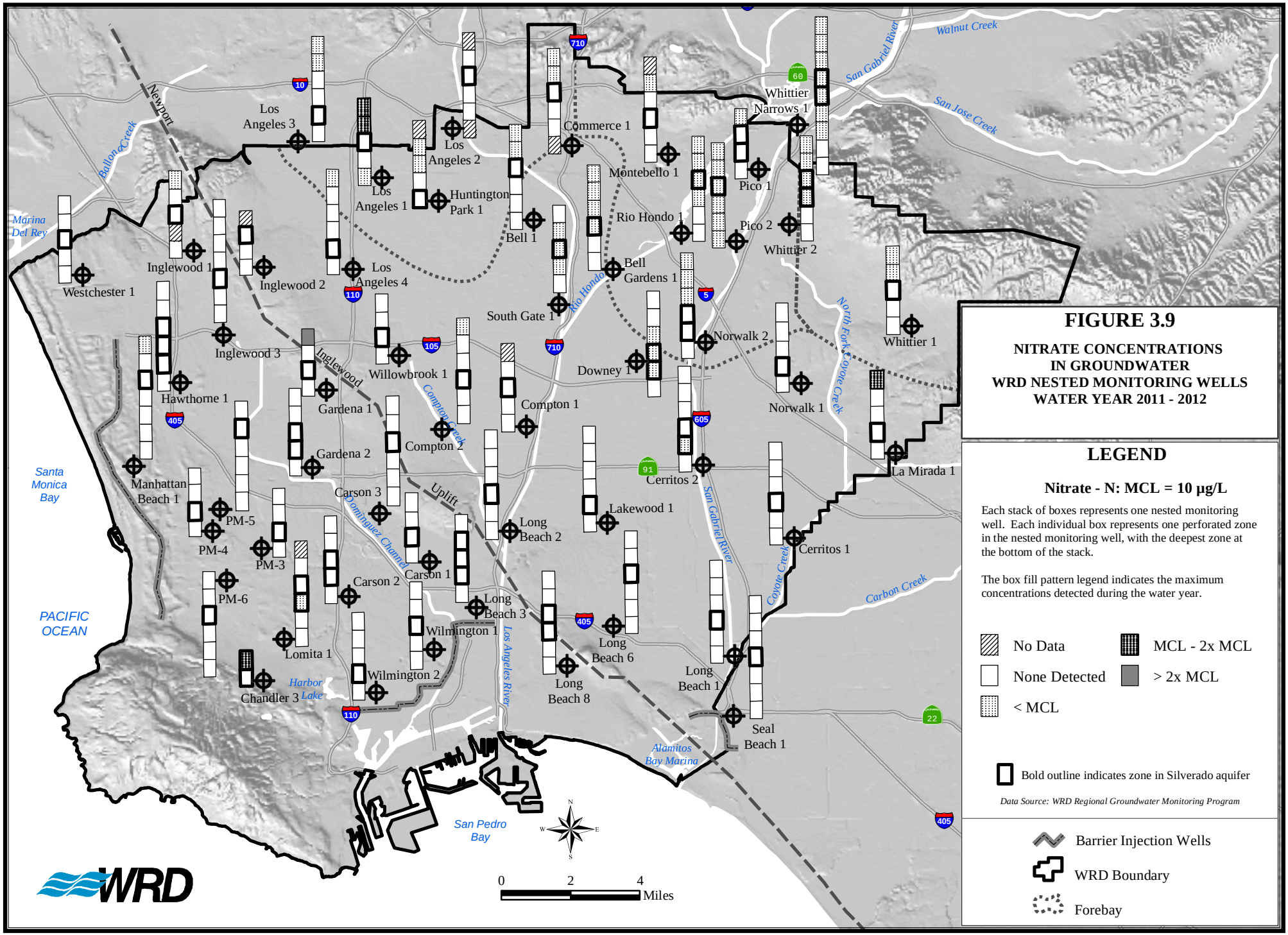


FIGURE 3.9

NITRATE CONCENTRATIONS IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2011 - 2012

LEGEND

Nitrate - N: MCL = 10 µg/L

Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.

The box fill pattern legend indicates the maximum concentrations detected during the water year.

- No Data
- None Detected
- < MCL
- MCL - 2x MCL
- > 2x MCL

Bold outline indicates zone in Silverado aquifer

Data Source: WRD Regional Groundwater Monitoring Program

- Barrier Injection Wells
- WRD Boundary
- Forebay

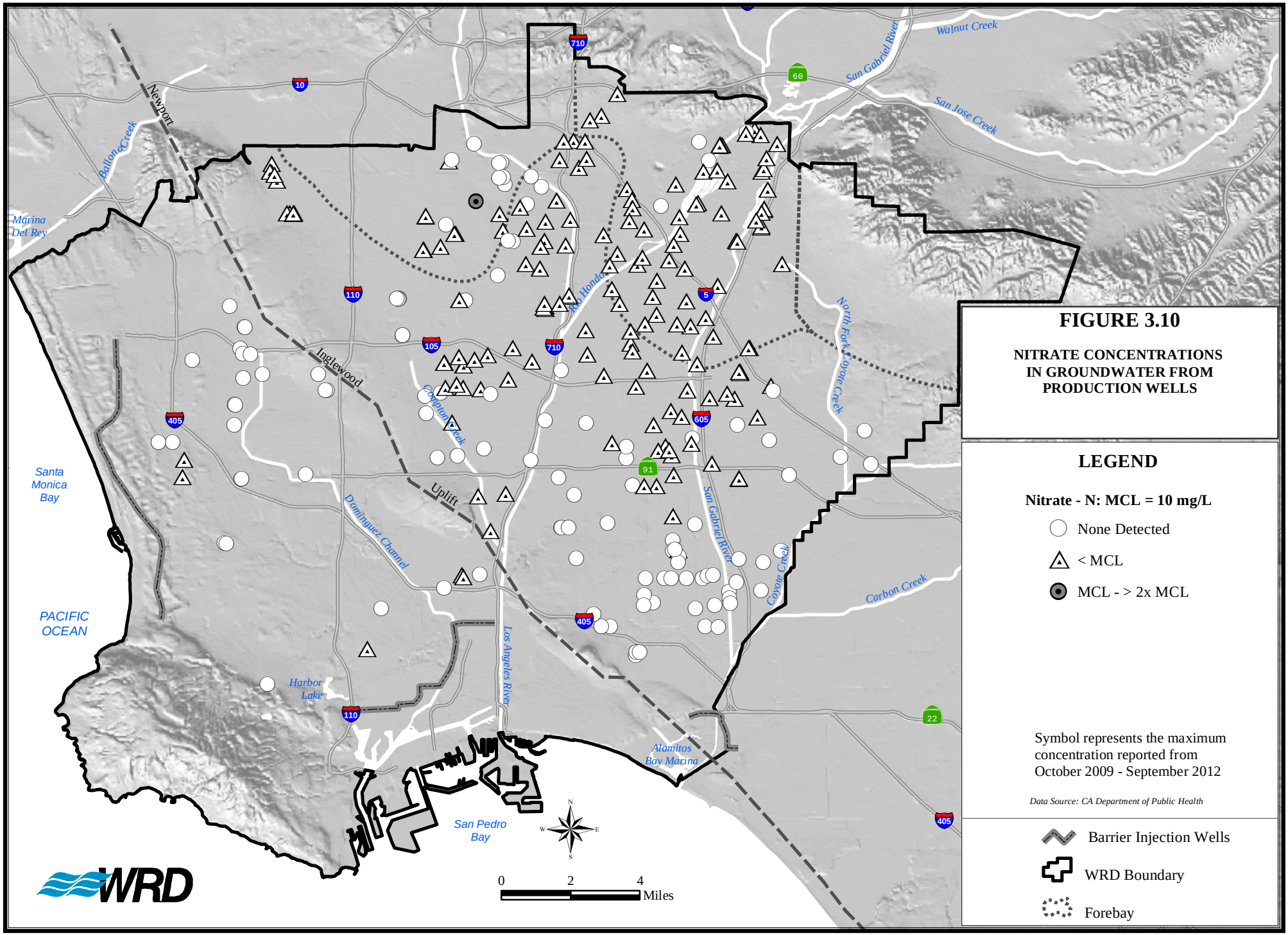


FIGURE 3.10
NITRATE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
Nitrate - N: MCL = 10 mg/L
None Detected
< MCL
MCL - > 2x MCL
Symbol represents the maximum concentration reported from October 2009 - September 2012
Data Source: CA Department of Public Health
Barrier Injection Wells
WRD Boundary
Forebay
Walnut Creek
San Gabriel River
San Jose Creek
Ballon Creek
Newport
Marina Del Rey
Rio Hondo
North Fork Coyote Creek
Inglewood
Compton Creek
Uplift
Dominguez Channel
Santa Monica Bay
PACIFIC OCEAN
Harbor Lake
Los Angeles River
San Gabriel River
Coyote Creek
Carbon Creek
Alamitos Bay Marina
San Pedro Bay
0 2 4 Miles
WRD

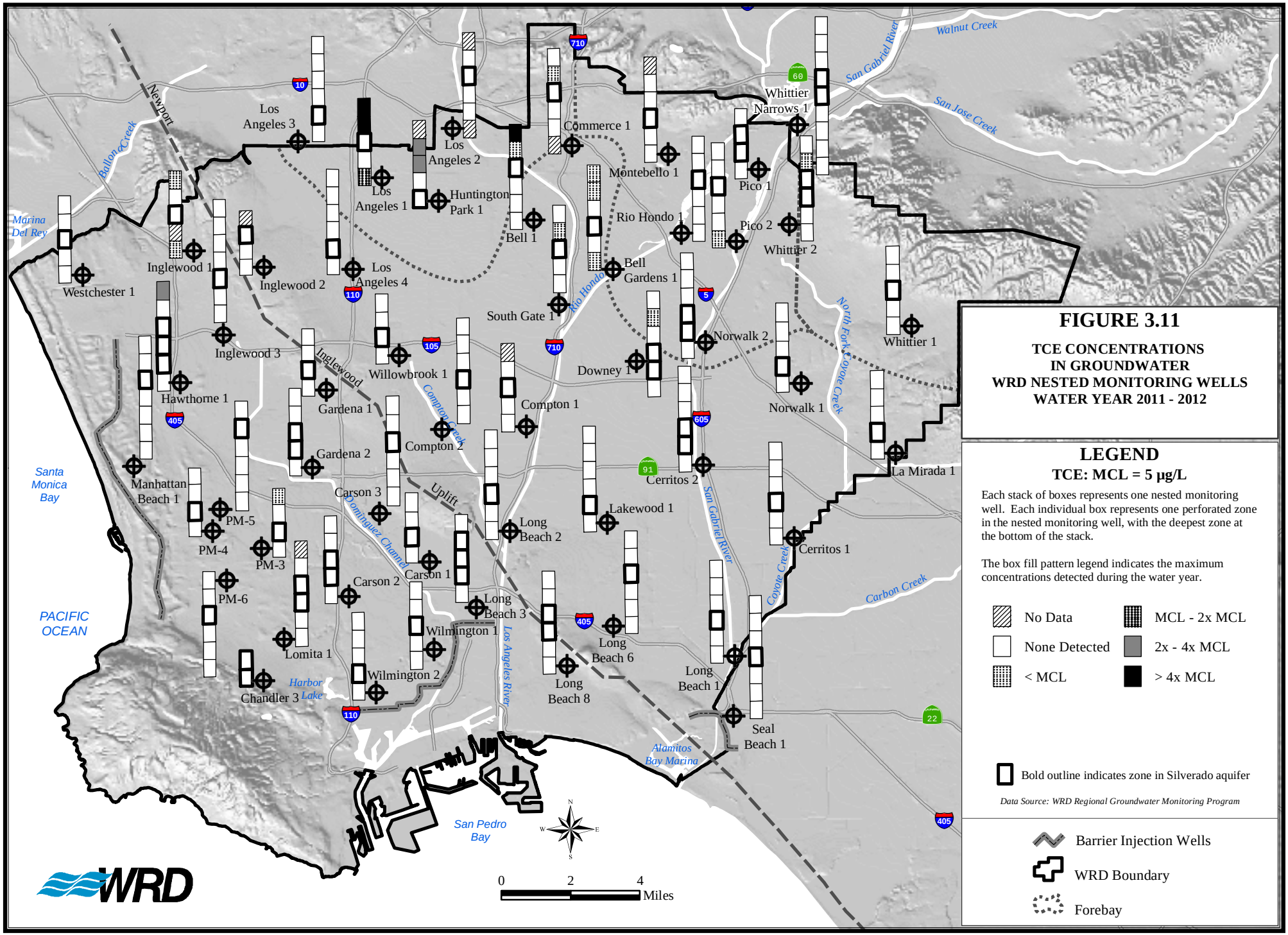


FIGURE 3.11

TCE CONCENTRATIONS IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2011 - 2012

LEGEND

TCE: MCL = 5 µg/L

Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.

The box fill pattern legend indicates the maximum concentrations detected during the water year.

- No Data
- None Detected
- < MCL
- MCL - 2x MCL
- 2x - 4x MCL
- > 4x MCL

Bold outline indicates zone in Silverado aquifer

Data Source: WRD Regional Groundwater Monitoring Program

- Barrier Injection Wells
- WRD Boundary
- Forebay

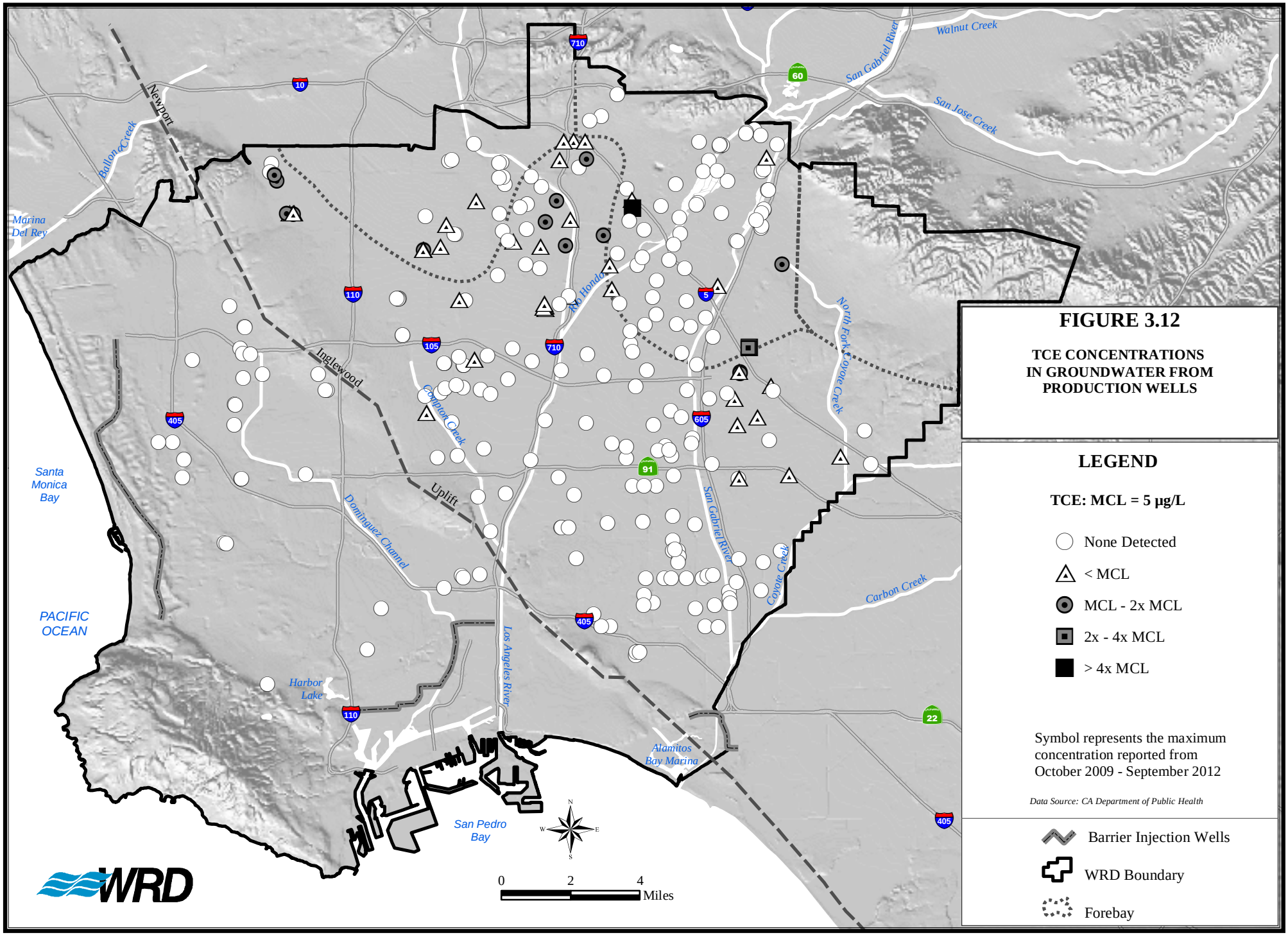


FIGURE 3.12
TCE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
TCE: MCL = 5 µg/L
None Detected
< MCL
MCL - 2x MCL
2x - 4x MCL
> 4x MCL
Symbol represents the maximum concentration reported from October 2009 - September 2012
Data Source: CA Department of Public Health
Barrier Injection Wells
WRD Boundary
Forebay
Newport
Ballona Creek
Marina Del Rey
Inglewood
Rio Hondo
Compton Creek
North Fork Coyote Creek
San Gabriel River
Walnut Creek
San Jose Creek
Santa Monica Bay
PACIFIC OCEAN
Dominguez Channel
Uplift
Los Angeles River
Coyote Creek
Carbon Creek
Harbor Lake
Alamitos Bay Marina
San Pedro Bay
0 2 4 Miles
WRD

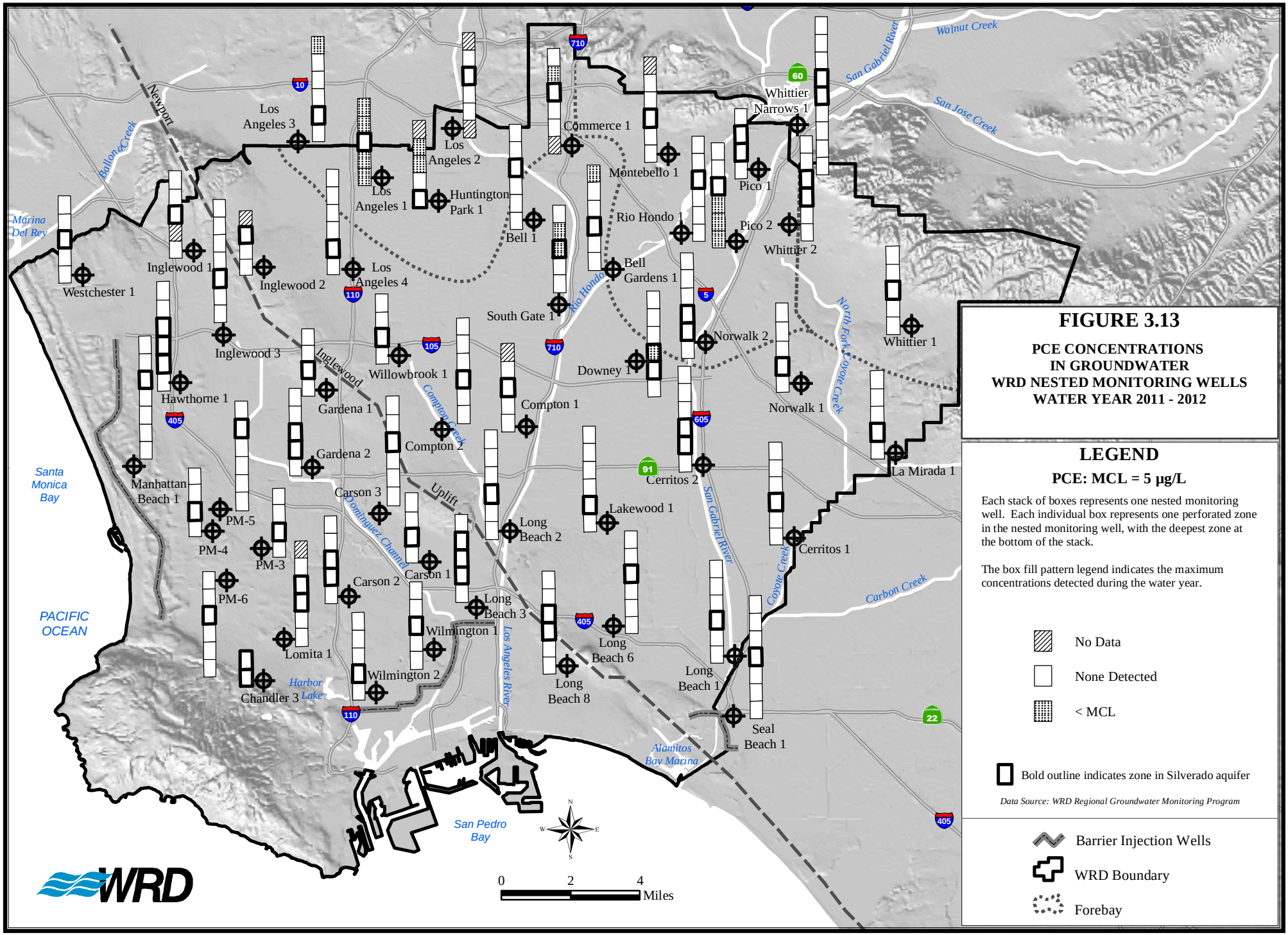


FIGURE 3.13

PCE CONCENTRATIONS IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2011 - 2012

LEGEND

PCE: MCL = 5 µg/L

Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.

The box fill pattern legend indicates the maximum concentrations detected during the water year.

- No Data
- None Detected
- < MCL

Bold outline indicates zone in Silverado aquifer

Data Source: WRD Regional Groundwater Monitoring Program

- Barrier Injection Wells
- WRD Boundary
- Forebay

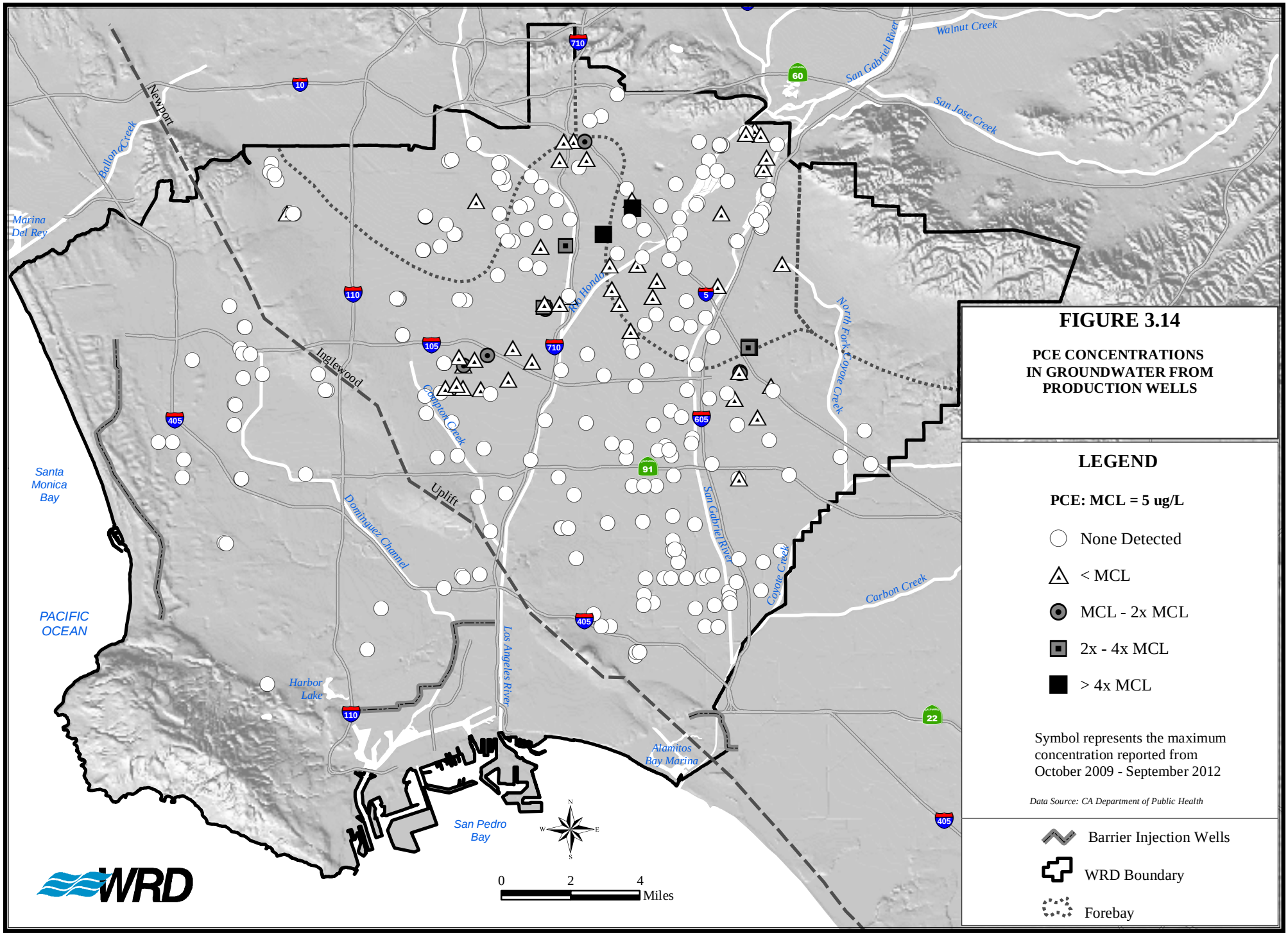


FIGURE 3.14
PCE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
PCE: MCL = 5 ug/L
None Detected
< MCL
MCL - 2x MCL
2x - 4x MCL
> 4x MCL
Symbol represents the maximum concentration reported from October 2009 - September 2012
Data Source: CA Department of Public Health
Barrier Injection Wells
WRD Boundary
Forebay
Newport
Ballon Creek
Marina Del Rey
Santa Monica Bay
PACIFIC OCEAN
Inglewood
Uplift
Dominguez Channel
Compton Creek
Rio Hondo
North Fork Coyote Creek
San Gabriel River
Coyote Creek
Carbon Creek
Los Angeles River
Harbor Lake
Alamitos Bay Marina
San Pedro Bay
Walnut Creek
San Jose Creek
0 2 4 Miles
WRD

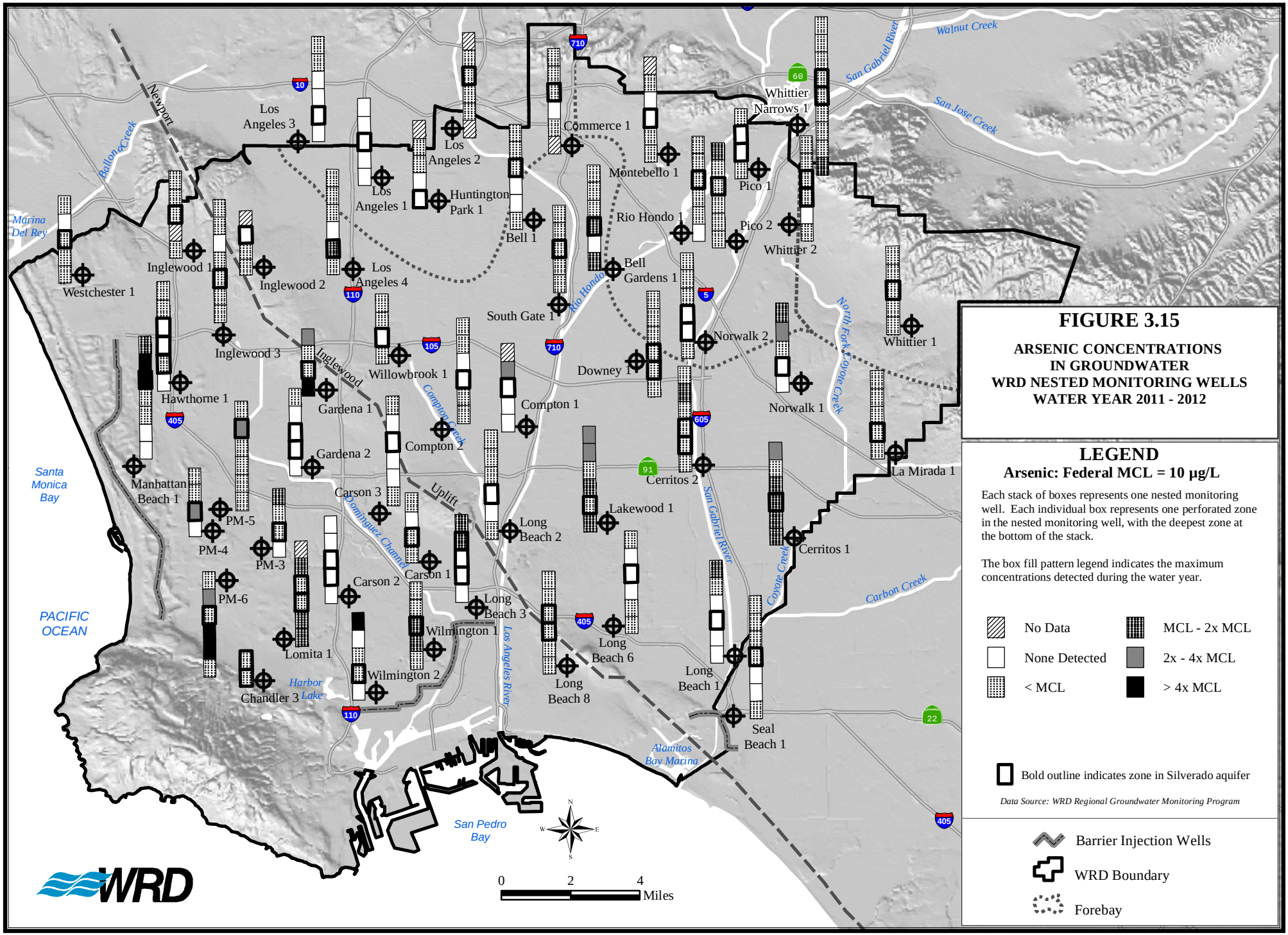


FIGURE 3.15

ARSENIC CONCENTRATIONS IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2011 - 2012

LEGEND

Arsenic: Federal MCL = 10 µg/L

Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.

The box fill pattern legend indicates the maximum concentrations detected during the water year.

- No Data
- None Detected
- < MCL
- MCL - 2x MCL
- 2x - 4x MCL
- > 4x MCL

Bold outline indicates zone in Silverado aquifer

Data Source: WRD Regional Groundwater Monitoring Program

- Barrier Injection Wells
- WRD Boundary
- Forebay

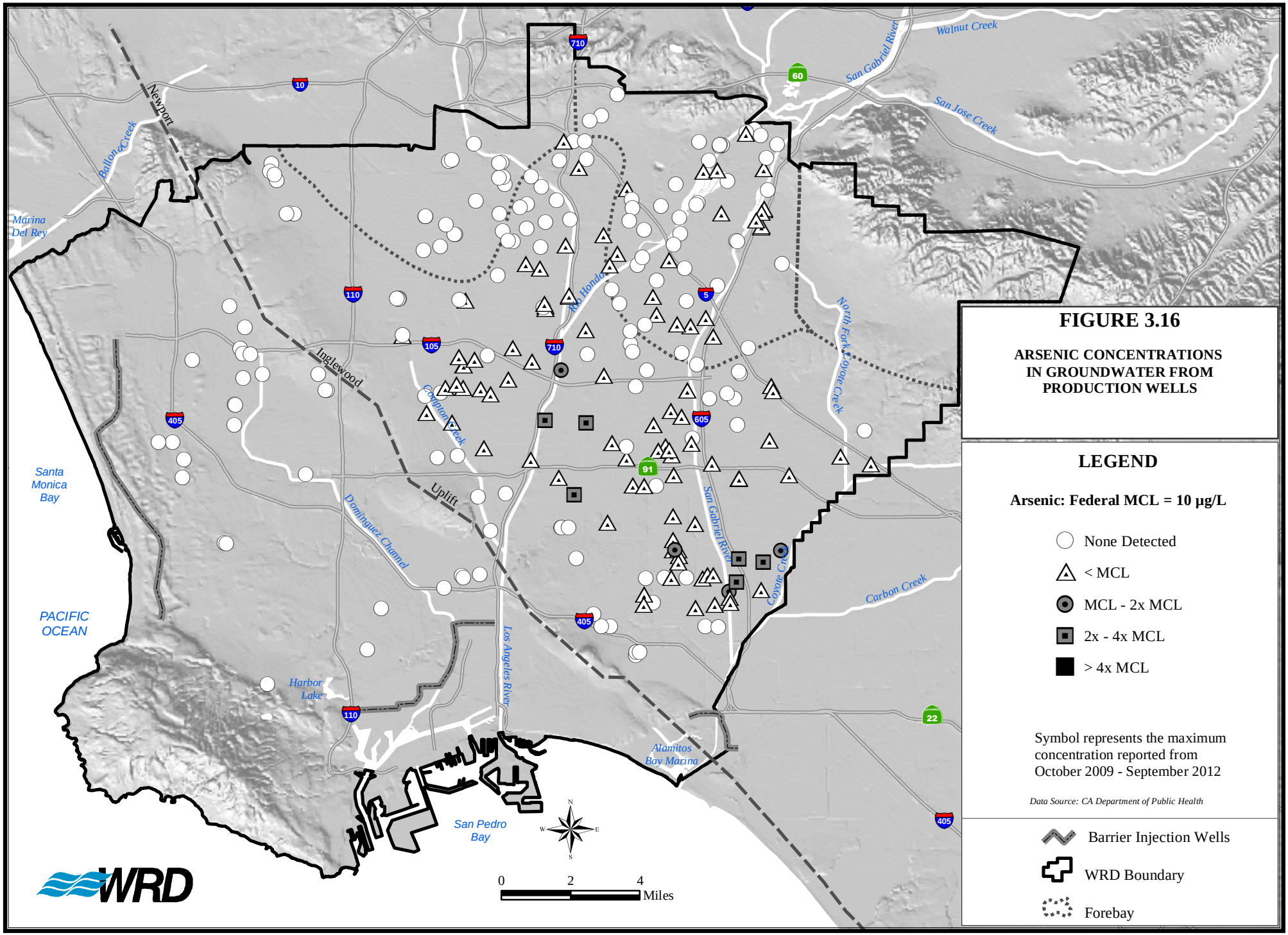


FIGURE 3.16
ARSENIC CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
Arsenic: Federal MCL = 10 µg/L
None Detected
< MCL
MCL - 2x MCL
2x - 4x MCL
> 4x MCL
Symbol represents the maximum concentration reported from October 2009 - September 2012
Data Source: CA Department of Public Health
Barrier Injection Wells
WRD Boundary
Forebay
Newport
Ballona Creek
Marina Del Rey
Inglewood
Rio Hondo
Compton Creek
North Fork Coyote Creek
San Gabriel River
Walnut Creek
San Jose Creek
Santa Monica Bay
PACIFIC OCEAN
Dominguez Channel
Uplift
Los Angeles River
Coyote Creek
Carbon Creek
Harbor Lake
Alamitos Bay Marina
San Pedro Bay
0 2 4 Miles
WRD

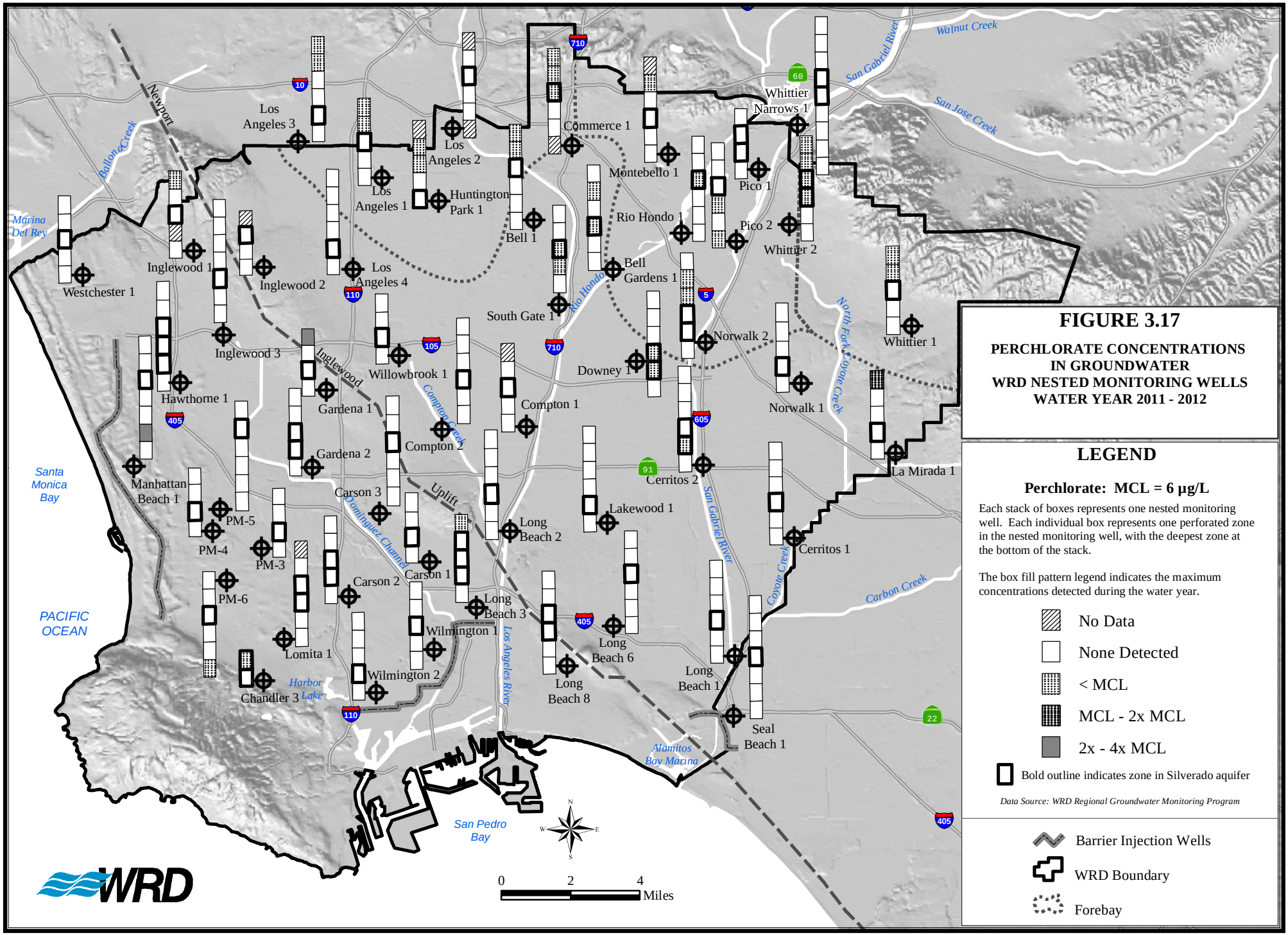


FIGURE 3.17

PERCHLORATE CONCENTRATIONS IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2011 - 2012

LEGEND

Perchlorate: MCL = 6 µg/L

Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.

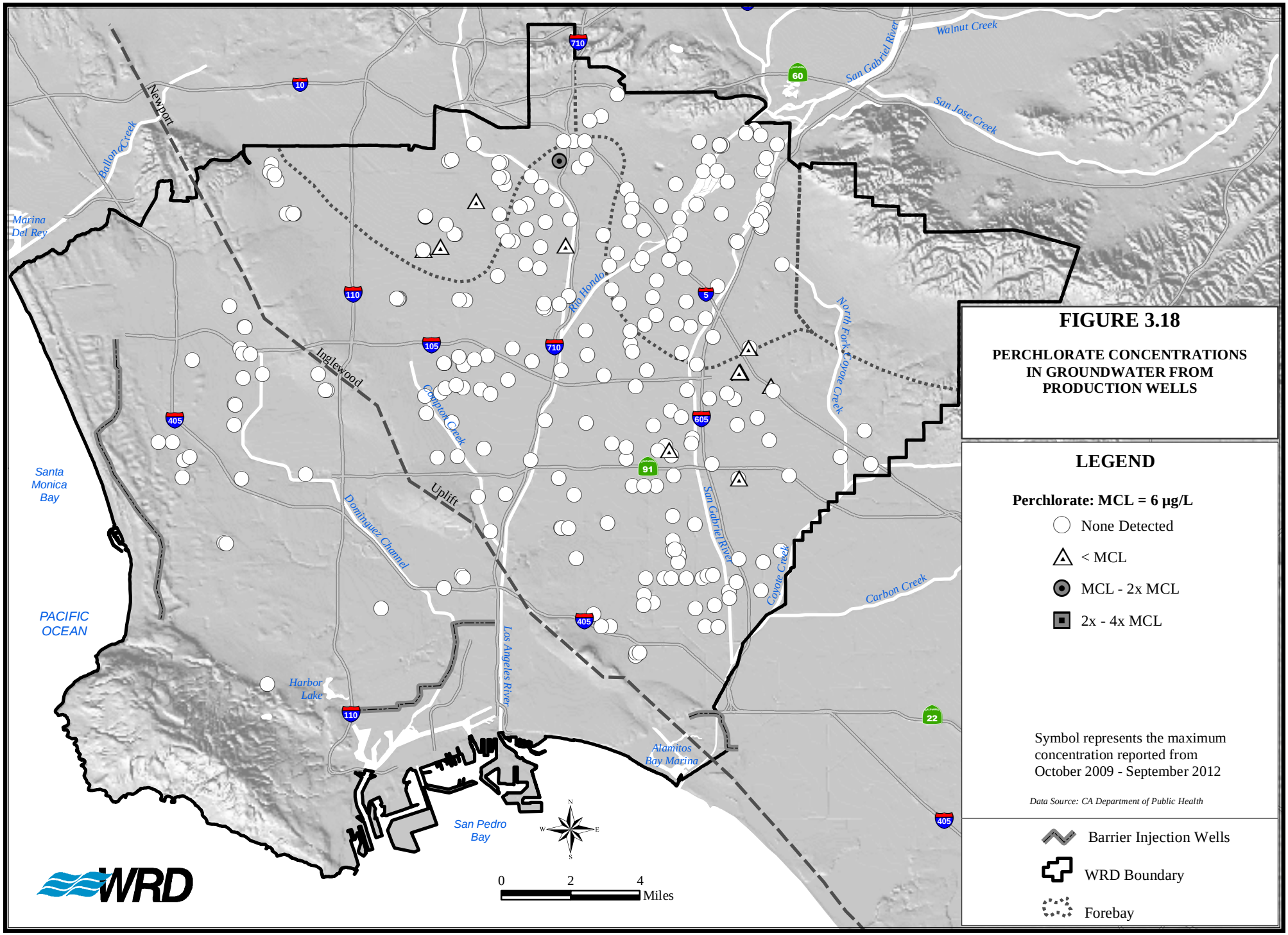
The box fill pattern legend indicates the maximum concentrations detected during the water year.

- No Data
- None Detected
- < MCL
- MCL - 2x MCL
- 2x - 4x MCL

Bold outline indicates zone in Silverado aquifer

Data Source: WRD Regional Groundwater Monitoring Program

- Barrier Injection Wells
- WRD Boundary
- Forebay


Walnut Creek
San Gabriel River
San Jose Creek
Newport
Ballon Creek
Marina Del Rey
Rio Hondo
North Fork Coyote Creek
Inglewood
Compton Creek
Uplift
Dominguez Channel
Santa Monica Bay
PACIFIC OCEAN
San Gabriel River
Coyote Creek
Carbon Creek
Los Angeles River
Harbor Lake
Alamitos Bay Marina
San Pedro Bay
10
710
60
110
105
5
605
91
405
22
0 2 4 Miles
WRD
FIGURE 3.18
PERCHLORATE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
Perchlorate: MCL = 6 µg/L
None Detected
< MCL
MCL - 2x MCL
2x - 4x MCL
Symbol represents the maximum concentration reported from October 2009 - September 2012
Data Source: CA Department of Public Health
Barrier Injection Wells
WRD Boundary
Forebay

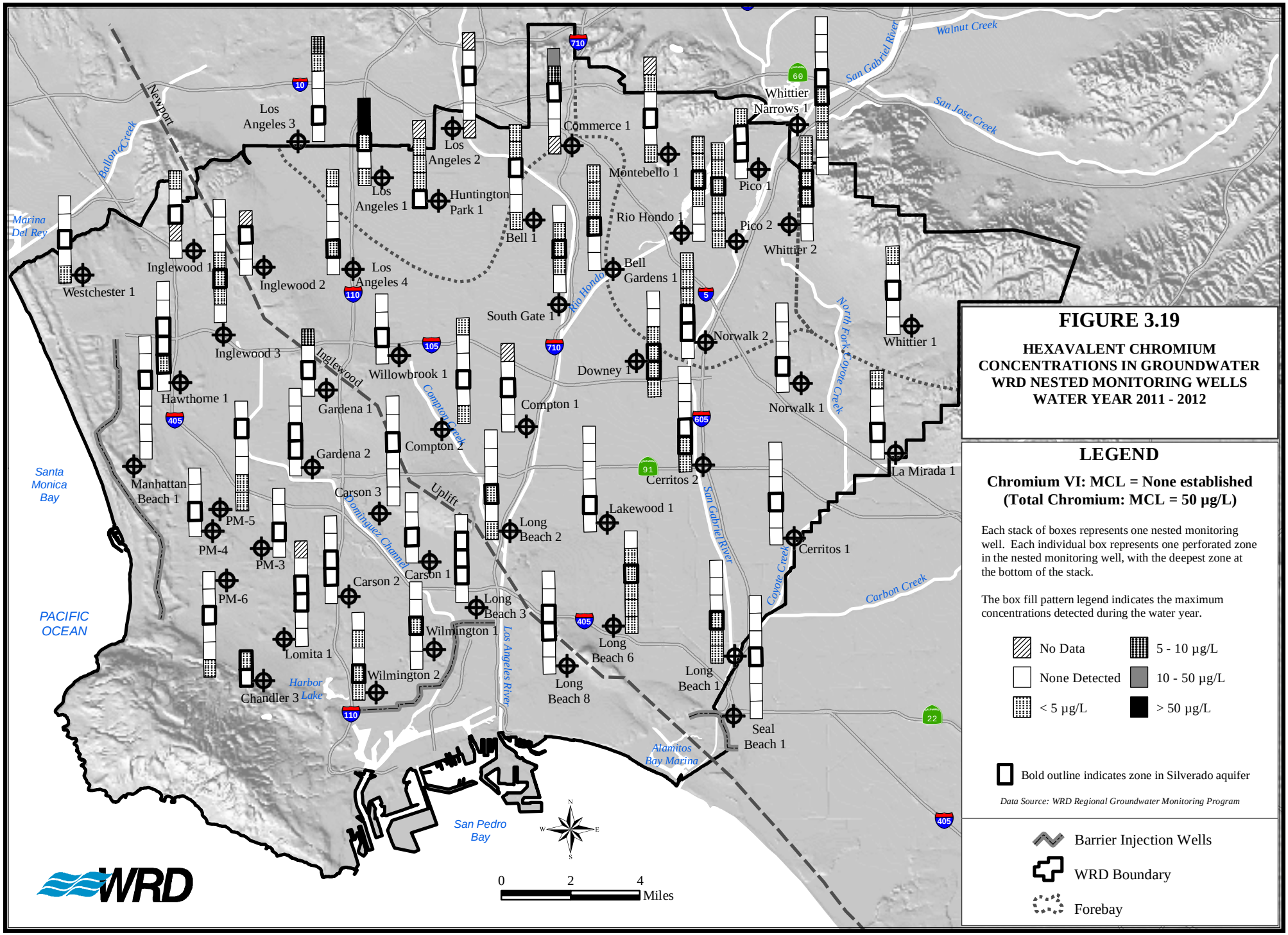


FIGURE 3.19

HEXAVALENT CHROMIUM CONCENTRATIONS IN GROUNDWATER WRD NESTED MONITORING WELLS WATER YEAR 2011 - 2012

LEGEND

Chromium VI: MCL = None established (Total Chromium: MCL = 50 µg/L)

Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.

The box fill pattern legend indicates the maximum concentrations detected during the water year.

- No Data
- None Detected
- < 5 µg/L
- 5 - 10 µg/L
- 10 - 50 µg/L
- > 50 µg/L

Bold outline indicates zone in Silverado aquifer

Data Source: WRD Regional Groundwater Monitoring Program

- Barrier Injection Wells
- WRD Boundary
- Forebay

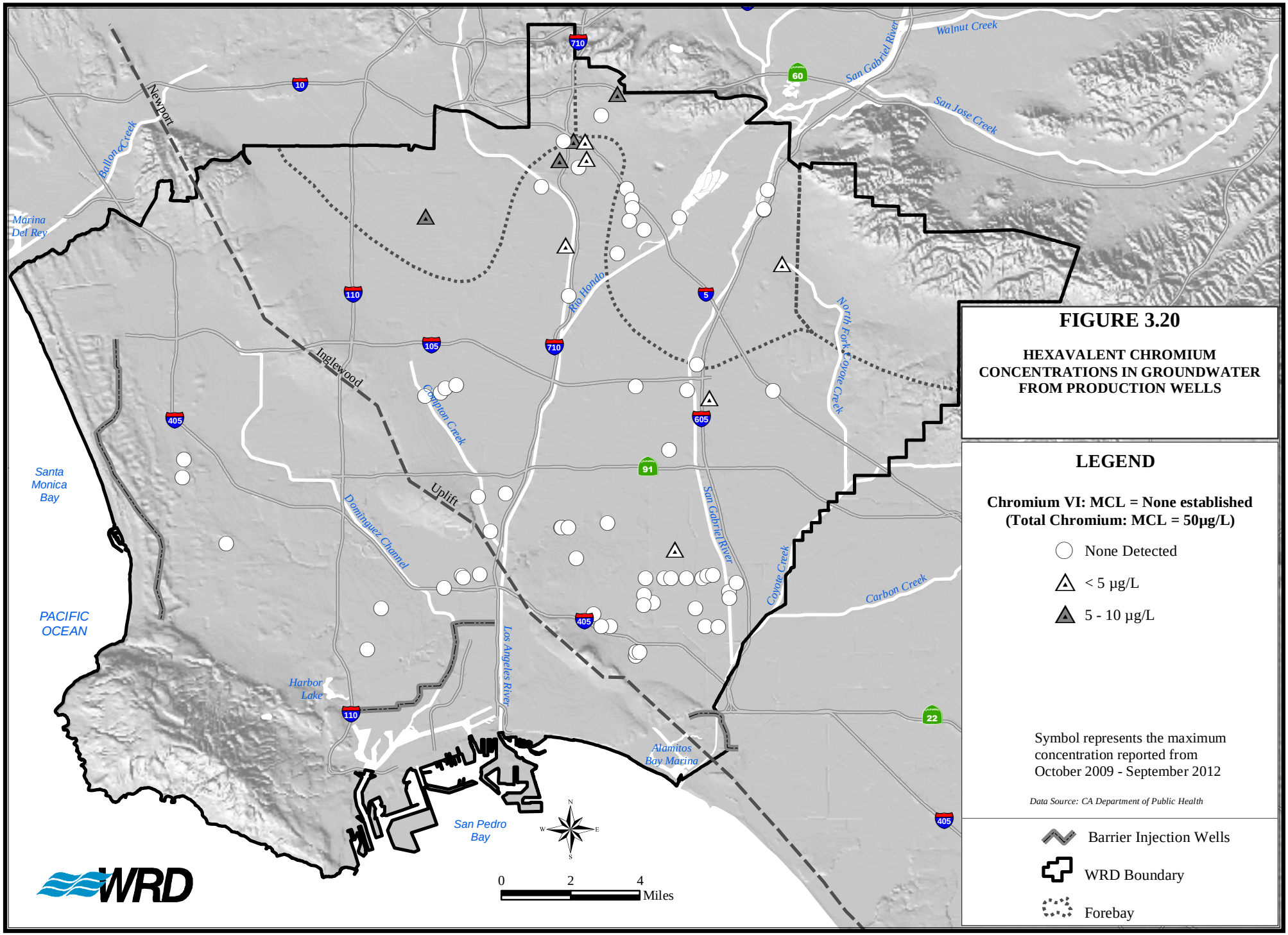


FIGURE 3.20
HEXAVALENT CHROMIUM CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
Chromium VI: MCL = None established
(Total Chromium: MCL = 50µg/L)
None Detected
< 5 µg/L
5 - 10 µg/L
Symbol represents the maximum concentration reported from October 2009 - September 2012
Data Source: CA Department of Public Health
Barrier Injection Wells
WRD Boundary
Forebay
Marina Del Rey
Ballona Creek
Newport
Inglewood
Uplift
Rio Hondo
San Gabriel River
Walnut Creek
San Jose Creek
North Fork Coyote Creek
Coyote Creek
Carbon Creek
Compton Creek
Dominguez Channel
Los Angeles River
Santa Monica Bay
PACIFIC OCEAN
Harbor Lake
Alamitos Bay Marina
San Pedro Bay
0 2 4 Miles
WRD

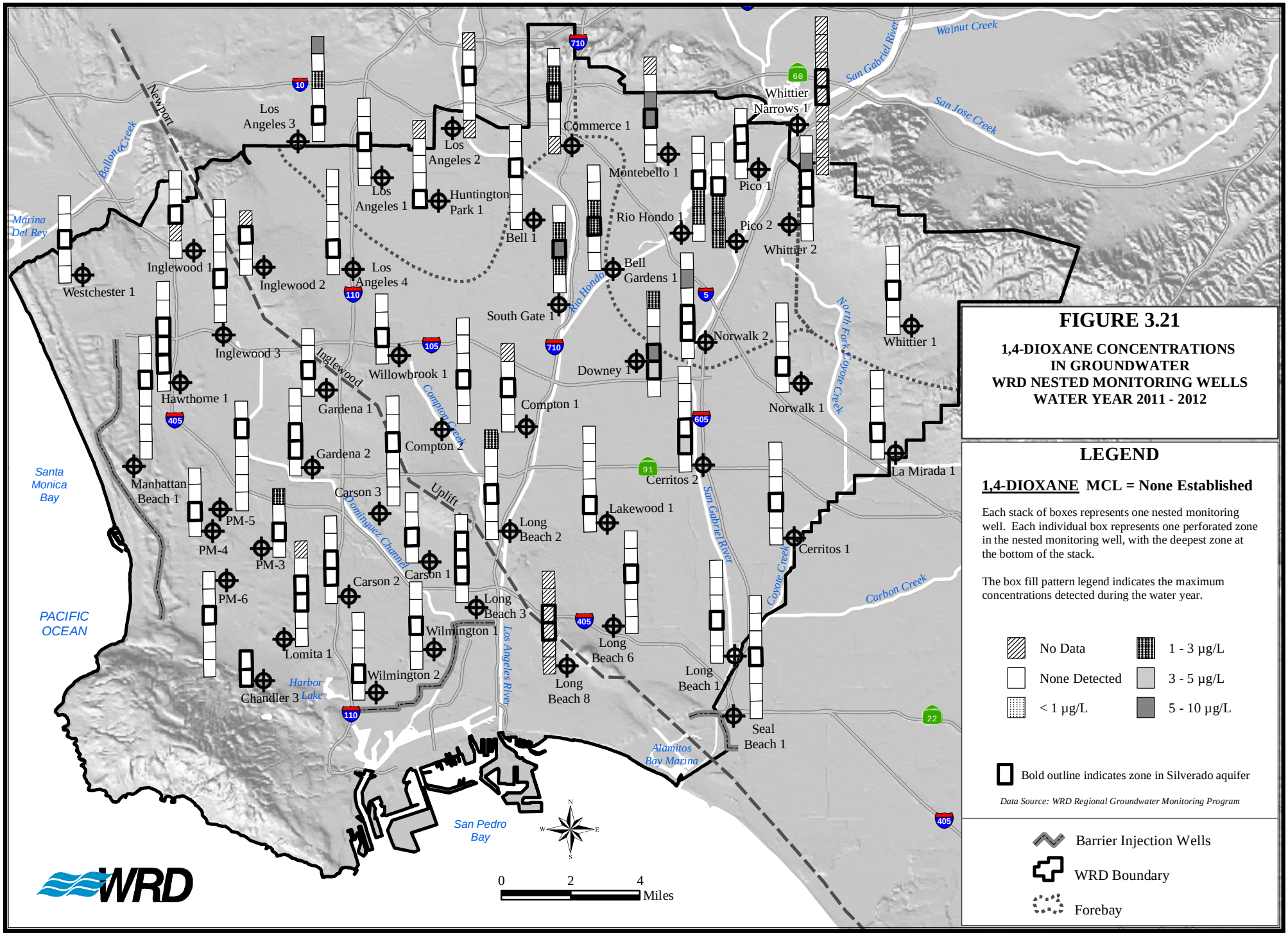


FIGURE 3.21

1,4-DIOXANE CONCENTRATIONS IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2011 - 2012

LEGEND

1,4-DIOXANE MCL = None Established

Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.

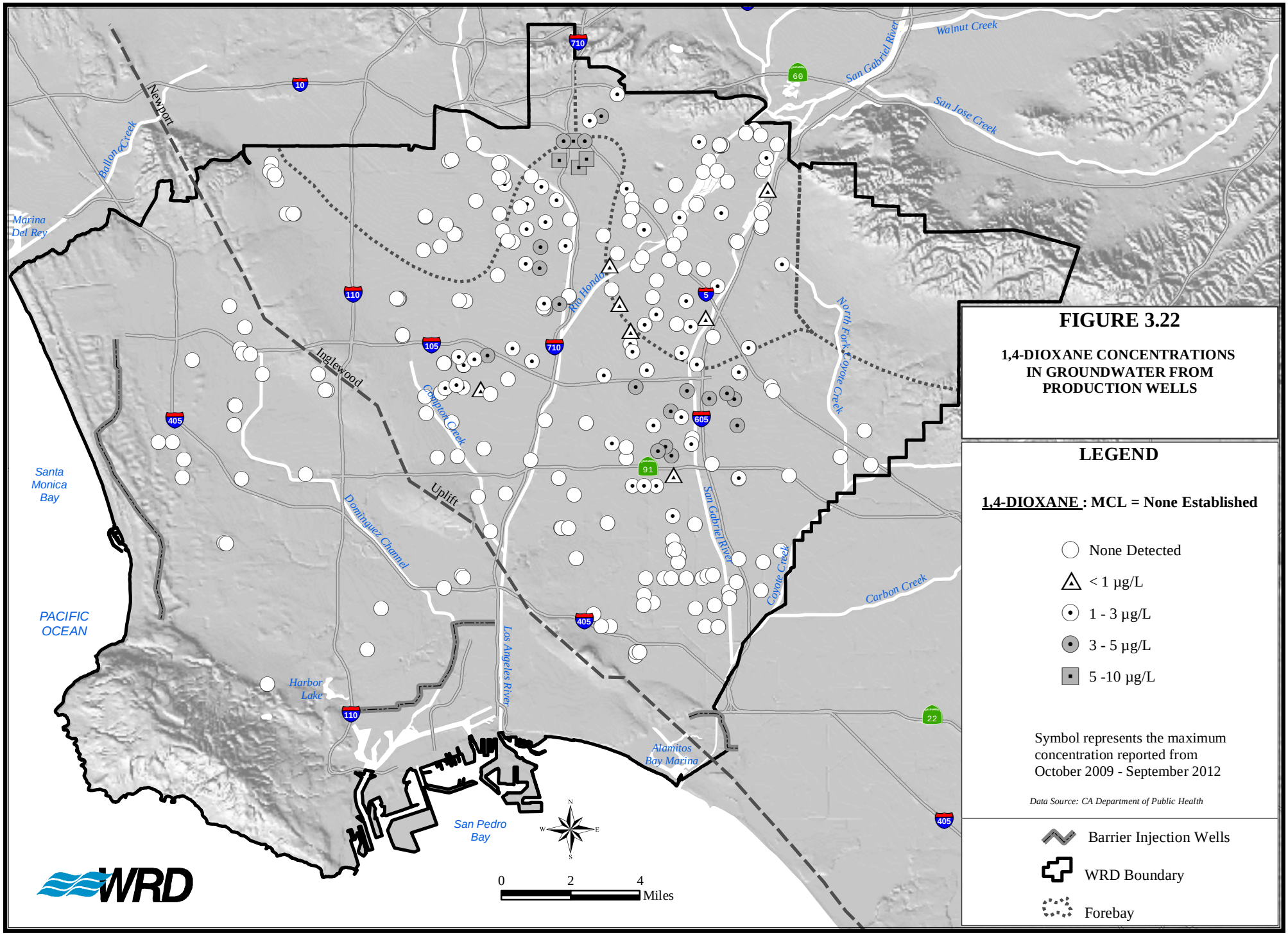
The box fill pattern legend indicates the maximum concentrations detected during the water year.

- No Data
- None Detected
- < 1 µg/L
- 1 - 3 µg/L
- 3 - 5 µg/L
- 5 - 10 µg/L

Bold outline indicates zone in Silverado aquifer

Data Source: WRD Regional Groundwater Monitoring Program

- Barrier Injection Wells
- WRD Boundary
- Forebay


Walnut Creek
San Gabriel River
San Jose Creek
Newport
Ballon Creek
Marina Del Rey
Rio Hondo
North Fork Coyote Creek
Inglewood
Compton Creek
Uplift
Santa Monica Bay
Dominguez Channel
San Gabriel River
Coyote Creek
Carbon Creek
PACIFIC OCEAN
Los Angeles River
Harbor Lake
Alamitos Bay Marina
San Pedro Bay
0 2 4 Miles
WRD
FIGURE 3.22
1,4-DIOXANE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
1,4-DIOXANE : MCL = None Established
None Detected
< 1 µg/L
1 - 3 µg/L
3 - 5 µg/L
5 -10 µg/L
Symbol represents the maximum concentration reported from October 2009 - September 2012
Data Source: CA Department of Public Health
Barrier Injection Wells
WRD Boundary
Forebay

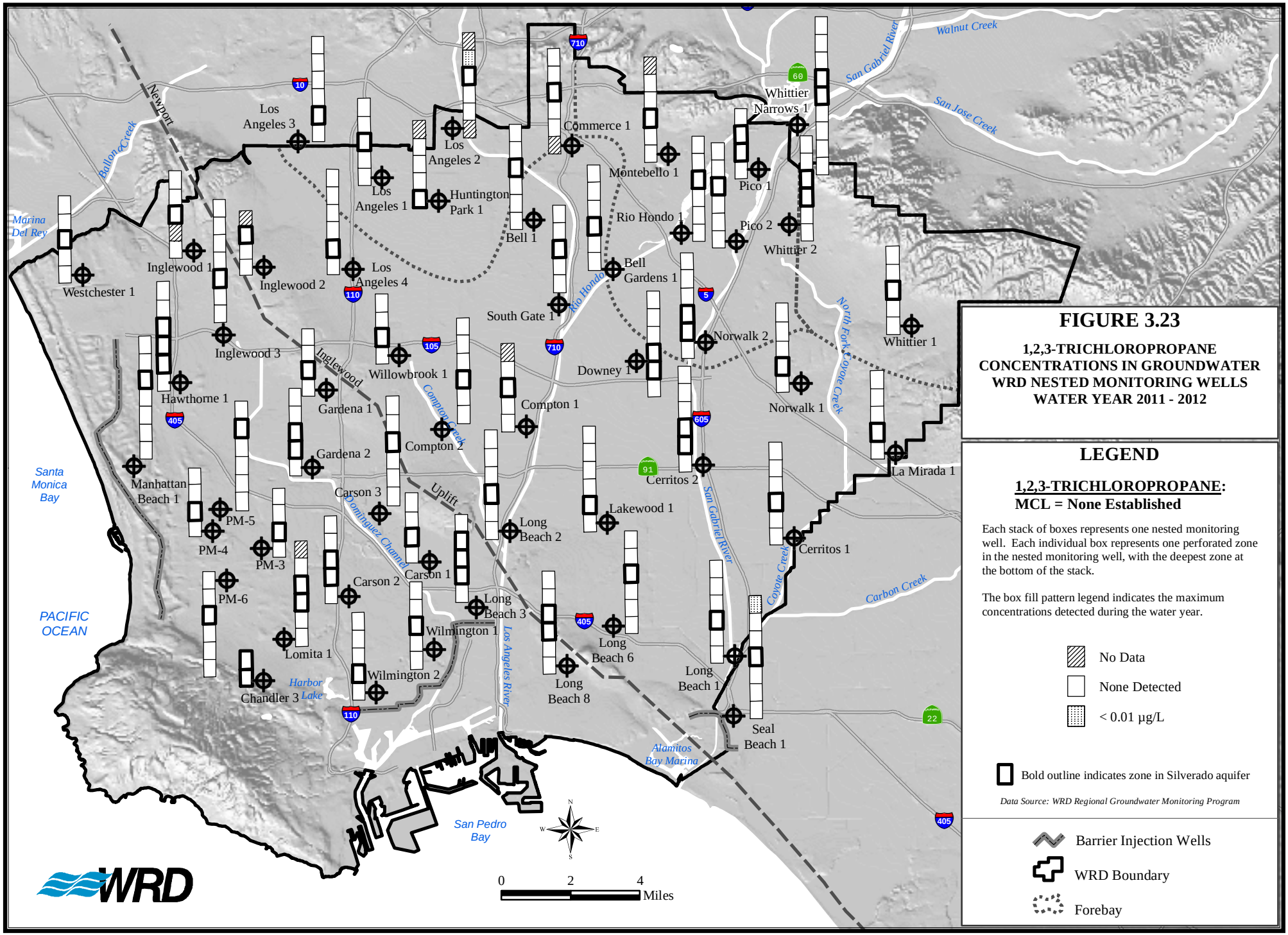


FIGURE 3.23

1,2,3-TRICHLOROPROPANE CONCENTRATIONS IN GROUNDWATER WRD NESTED MONITORING WELLS WATER YEAR 2011 - 2012

LEGEND

1,2,3-TRICHLOROPROPANE:
MCL = None Established

Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.

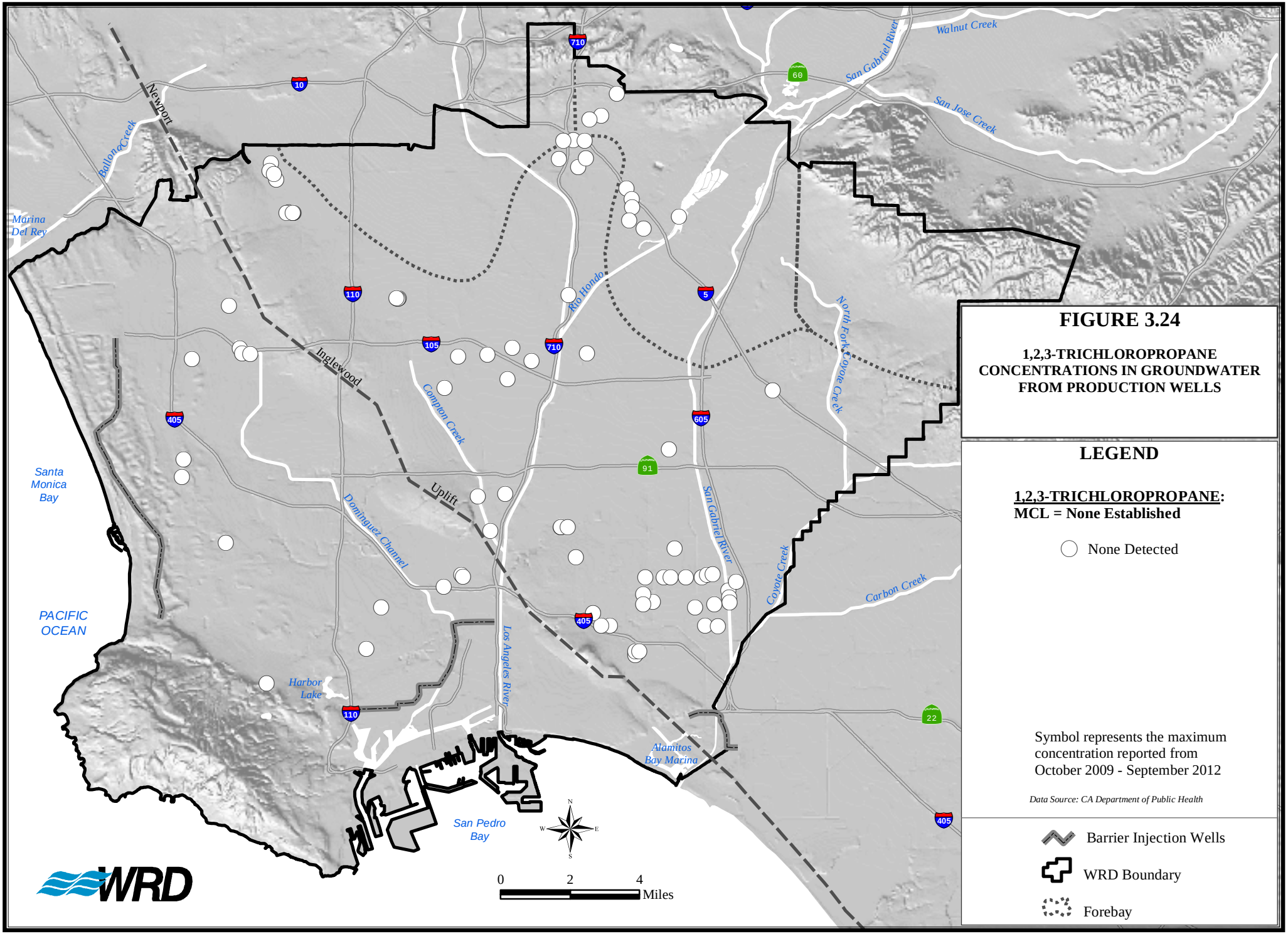
The box fill pattern legend indicates the maximum concentrations detected during the water year.

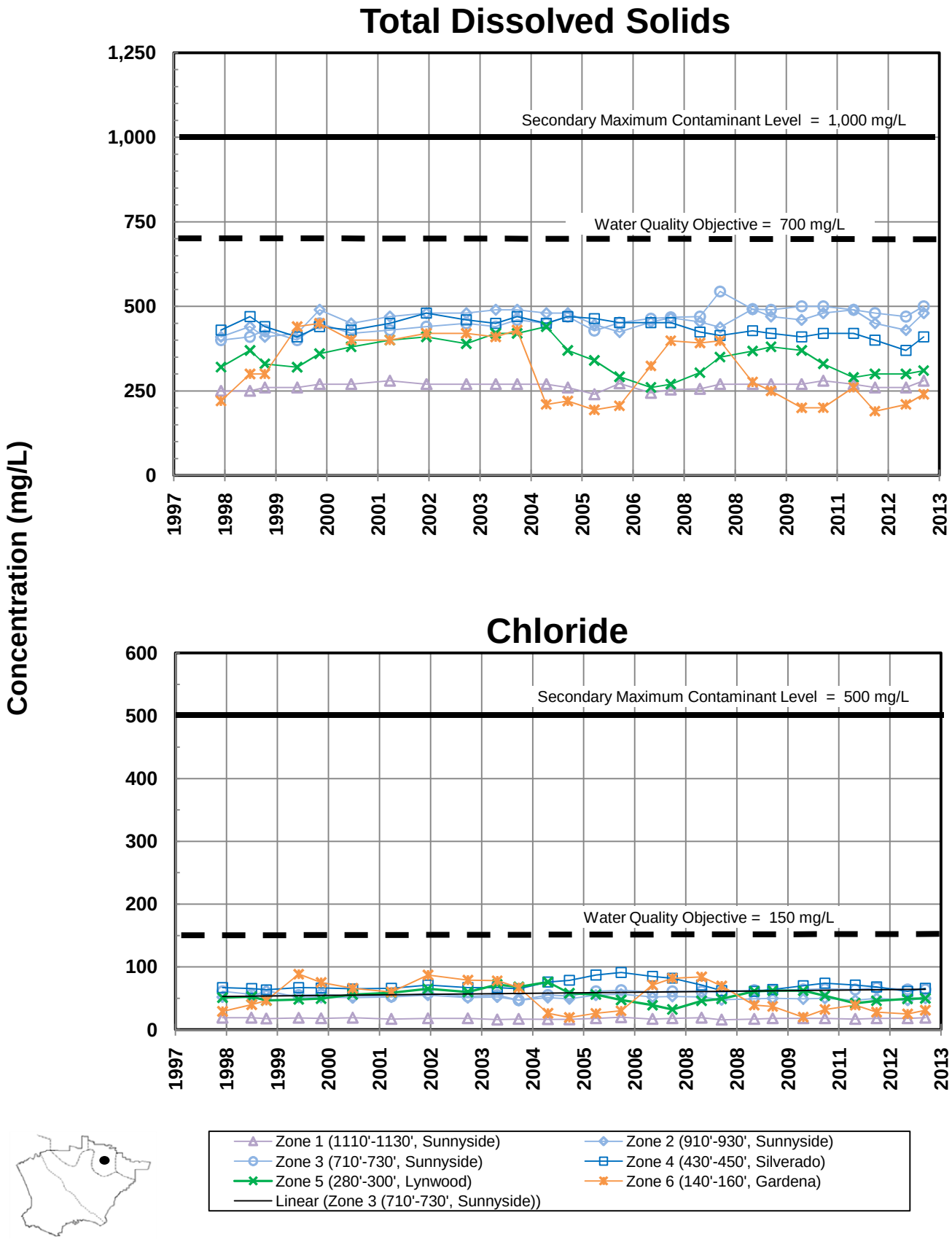
- No Data
- None Detected
- < 0.01 µg/L

Bold outline indicates zone in Silverado aquifer

Data Source: WRD Regional Groundwater Monitoring Program

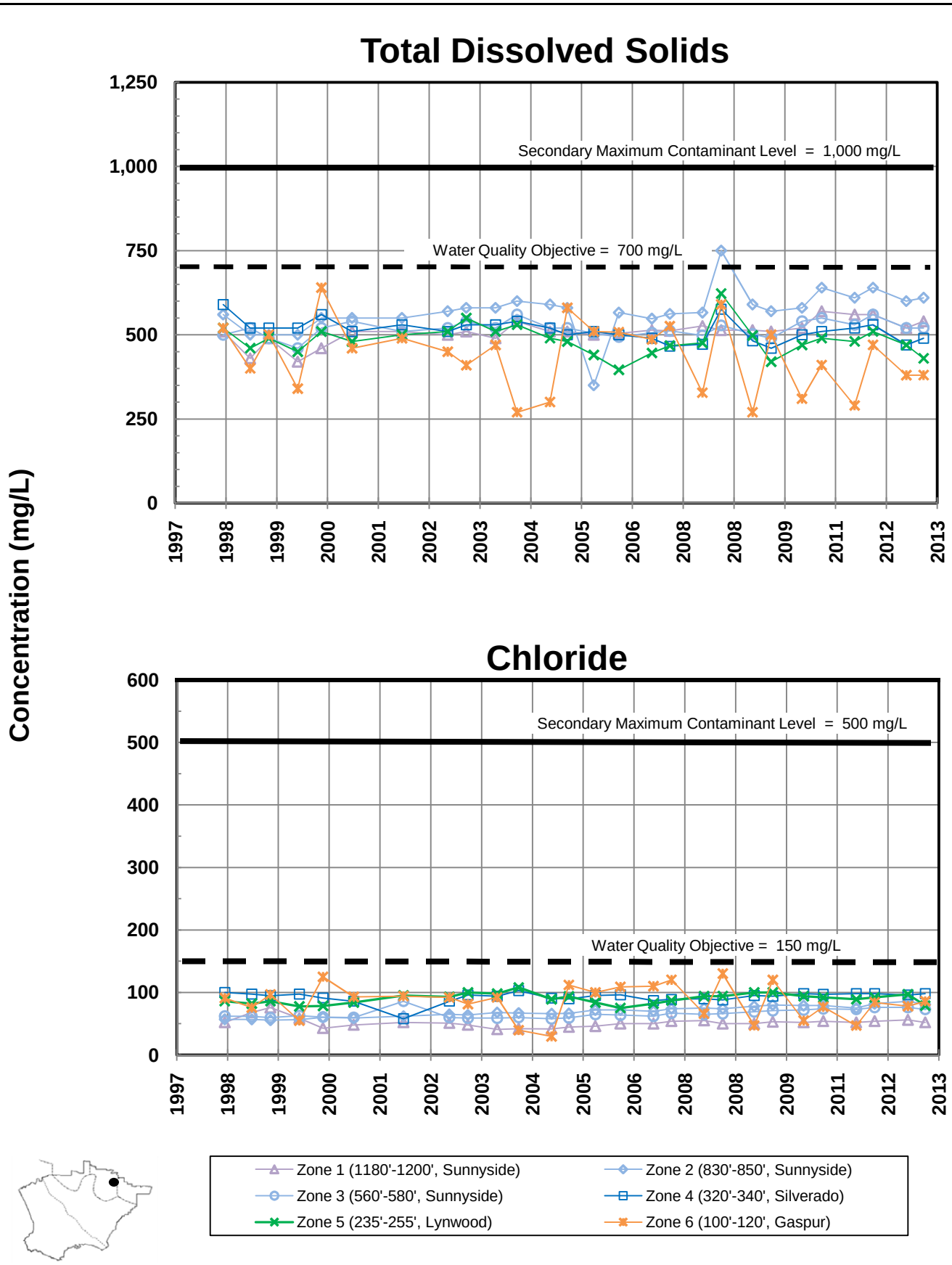
- Barrier Injection Wells
- WRD Boundary
- Forebay


Walnut Creek
San Gabriel River
San Jose Creek
Newport
Ballona Creek
Marina Del Rey
Rio Hondo
North Fork Coyote Creek
Inglewood
Compton Creek
Uplift
Santa Monica Bay
Dominguez Channel
San Gabriel River
Coyote Creek
Carbon Creek
PACIFIC OCEAN
Los Angeles River
Harbor Lake
Alamitos Bay Marina
San Pedro Bay
0 2 4 Miles
FIGURE 3.24
1,2,3-TRICHLOROPROPANE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
1,2,3-TRICHLOROPROPANE:
MCL = None Established
None Detected
Symbol represents the maximum concentration reported from October 2009 - September 2012
Data Source: CA Department of Public Health
Barrier Injection Wells
WRD Boundary
Forebay



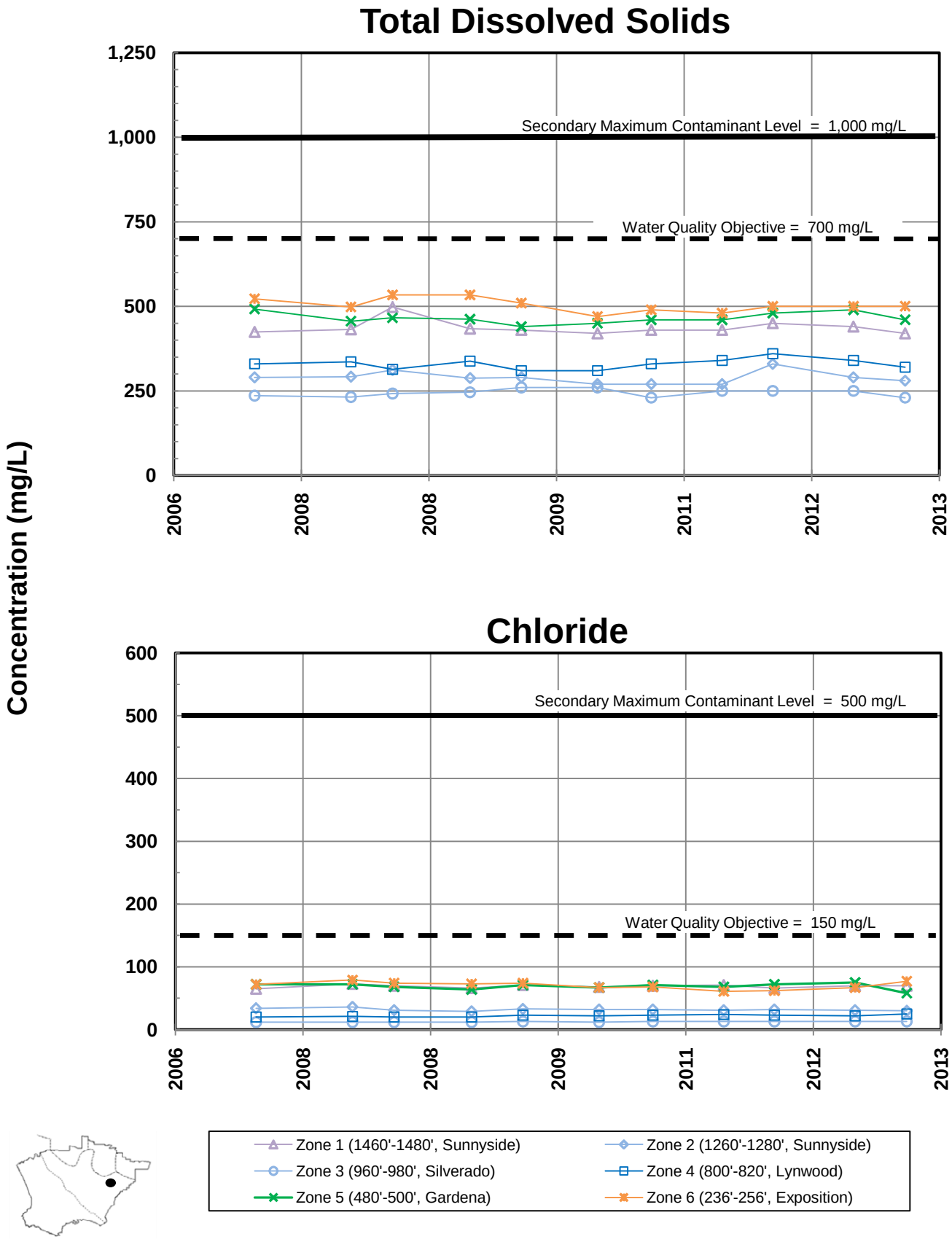
WATER QUALITY CONCENTRATIONS IN WRD KEY MONITORING WELL RIO HONDO #1

FIGURE 4.1



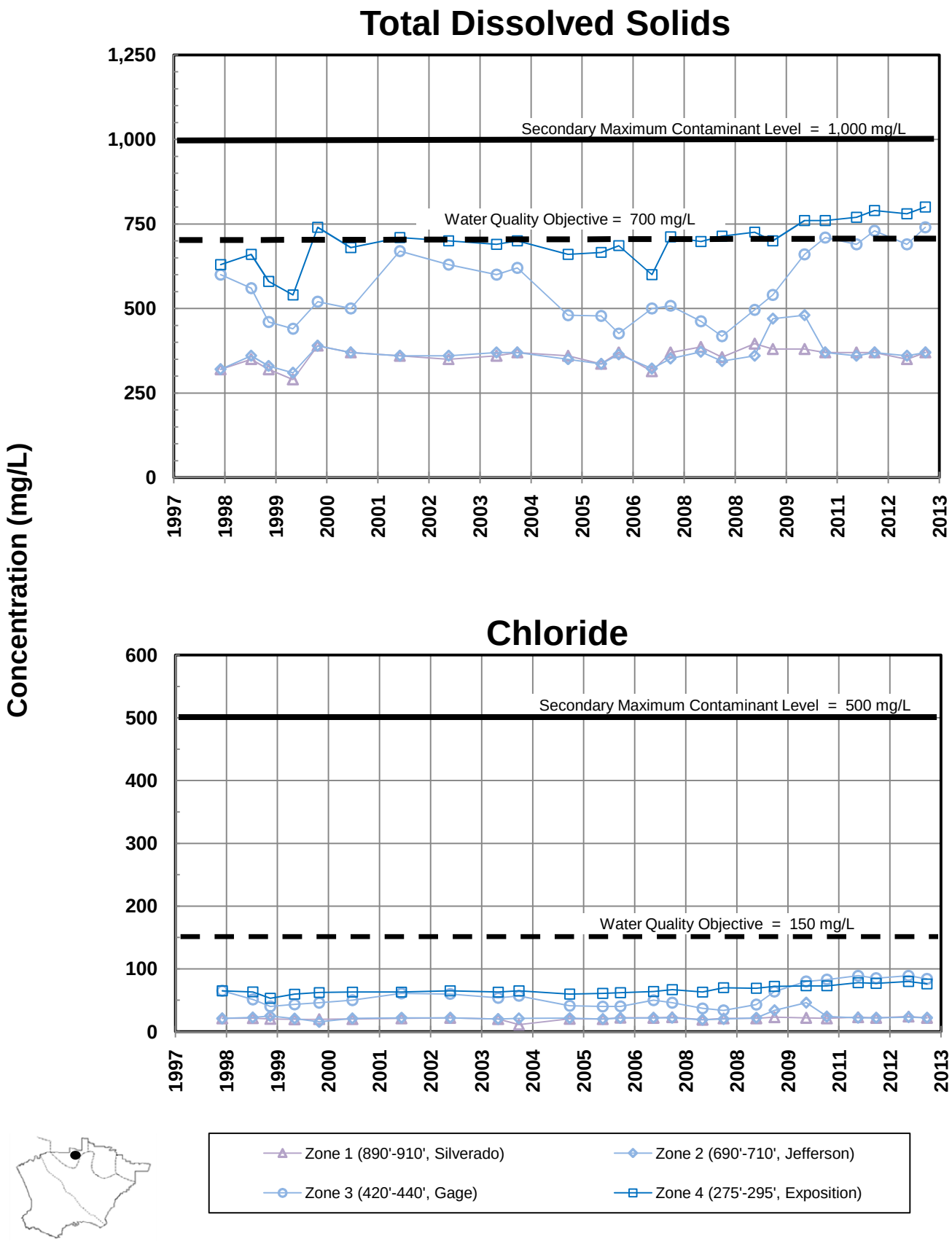
WATER QUALITY CONCENTRATIONS IN WRD KEY MONITORING WELL PICO #2

FIGURE 4.2



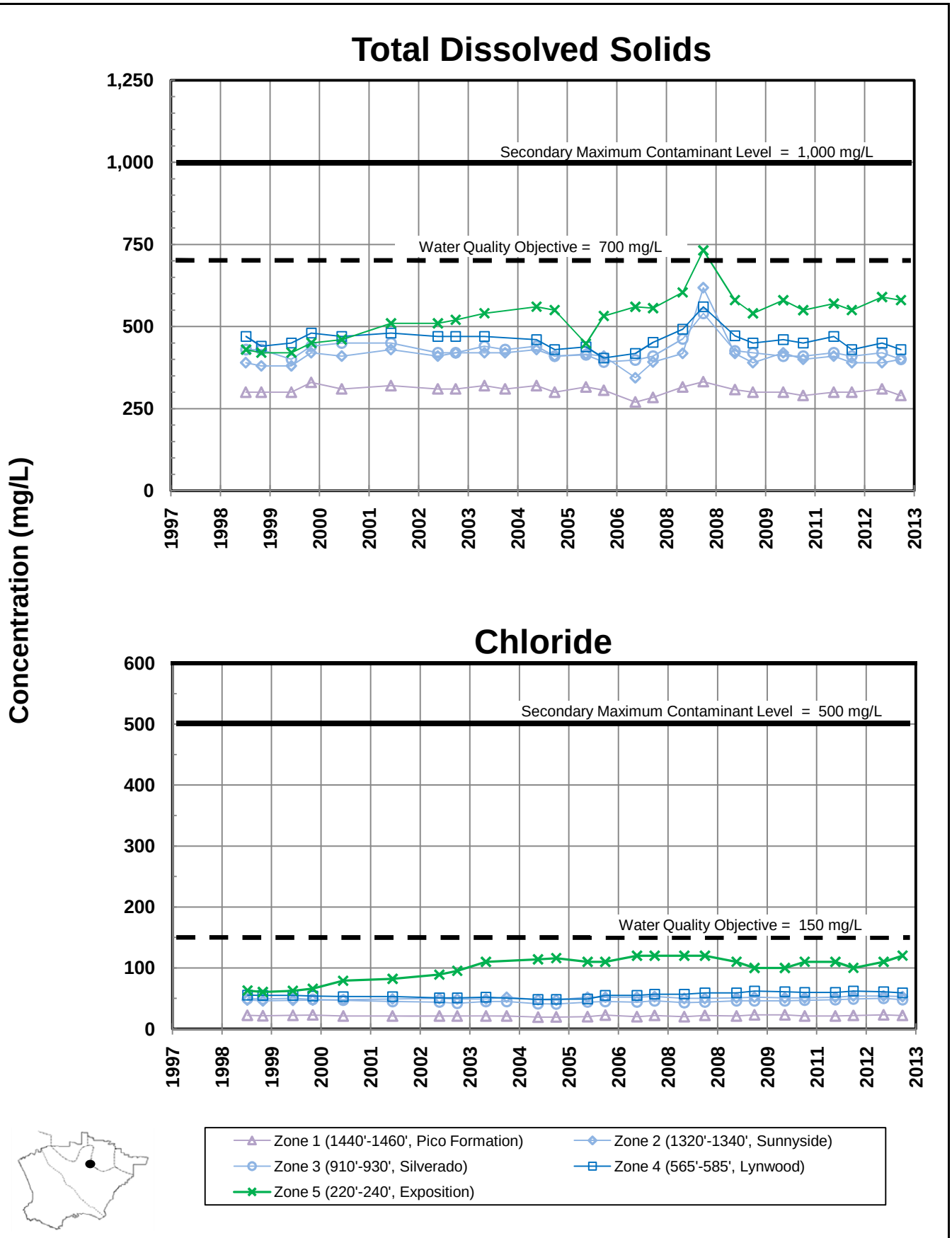
WATER QUALITY CONCENTRATIONS IN WRD KEY MONITORING WELL NORWALK #2

FIGURE 4.3



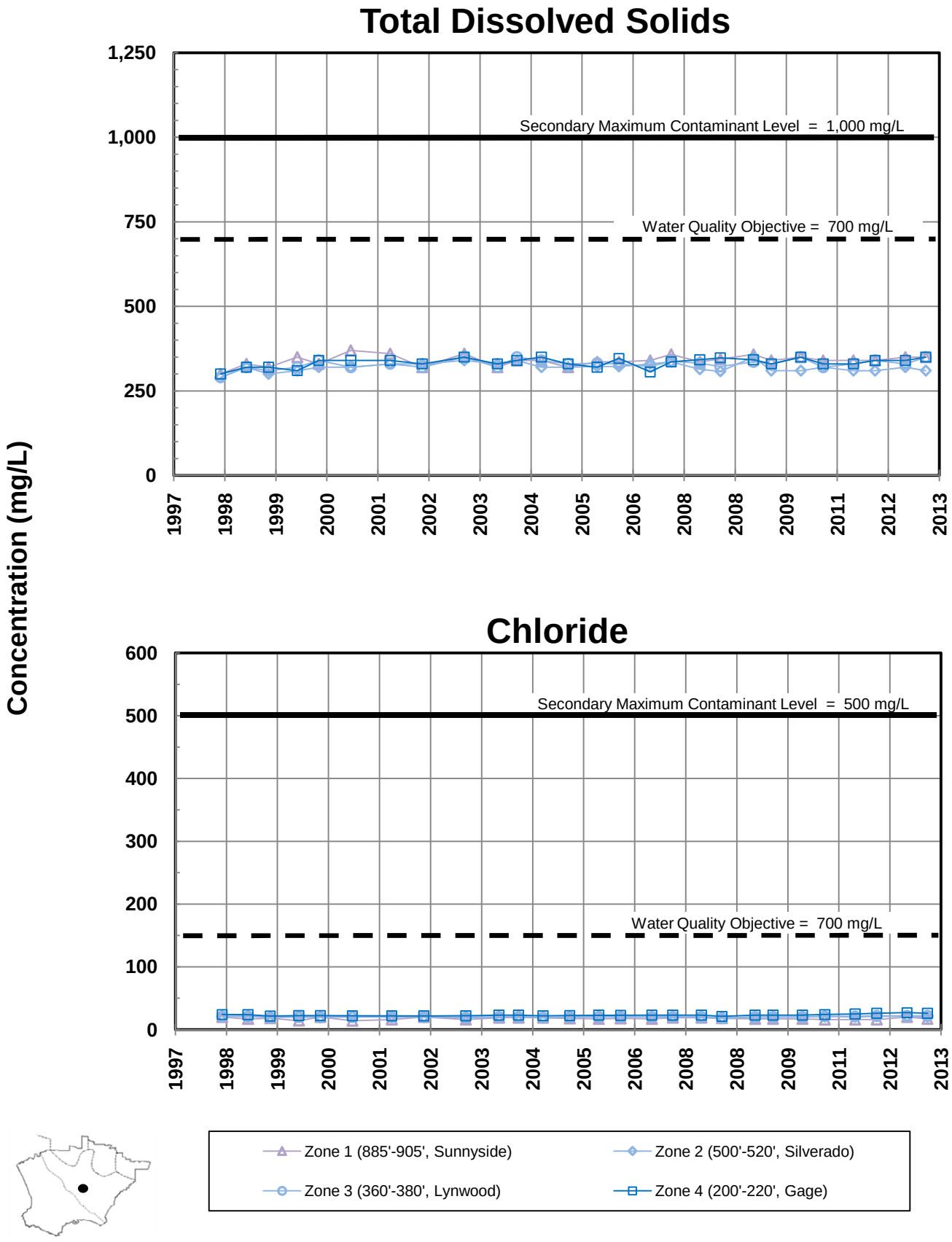
WATER QUALITY CONCENTRATIONS IN WRD KEY MONITORING WELL HUNTINGTON PARK #1

FIGURE 4.4



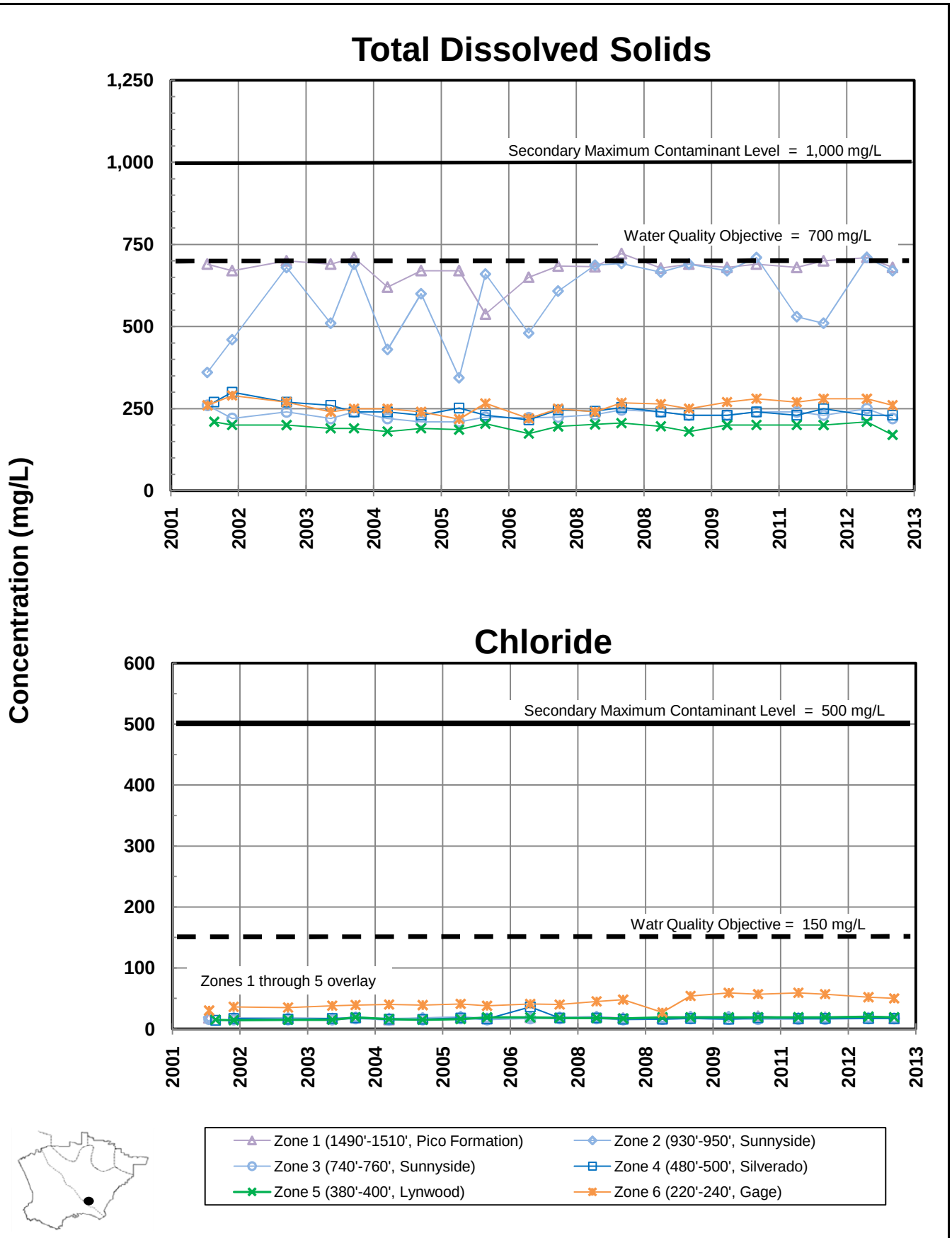
WATER QUALITY CONCENTRATIONS IN WRD KEY MONITORING WELL SOUTH GATE #1

FIGURE 4.5



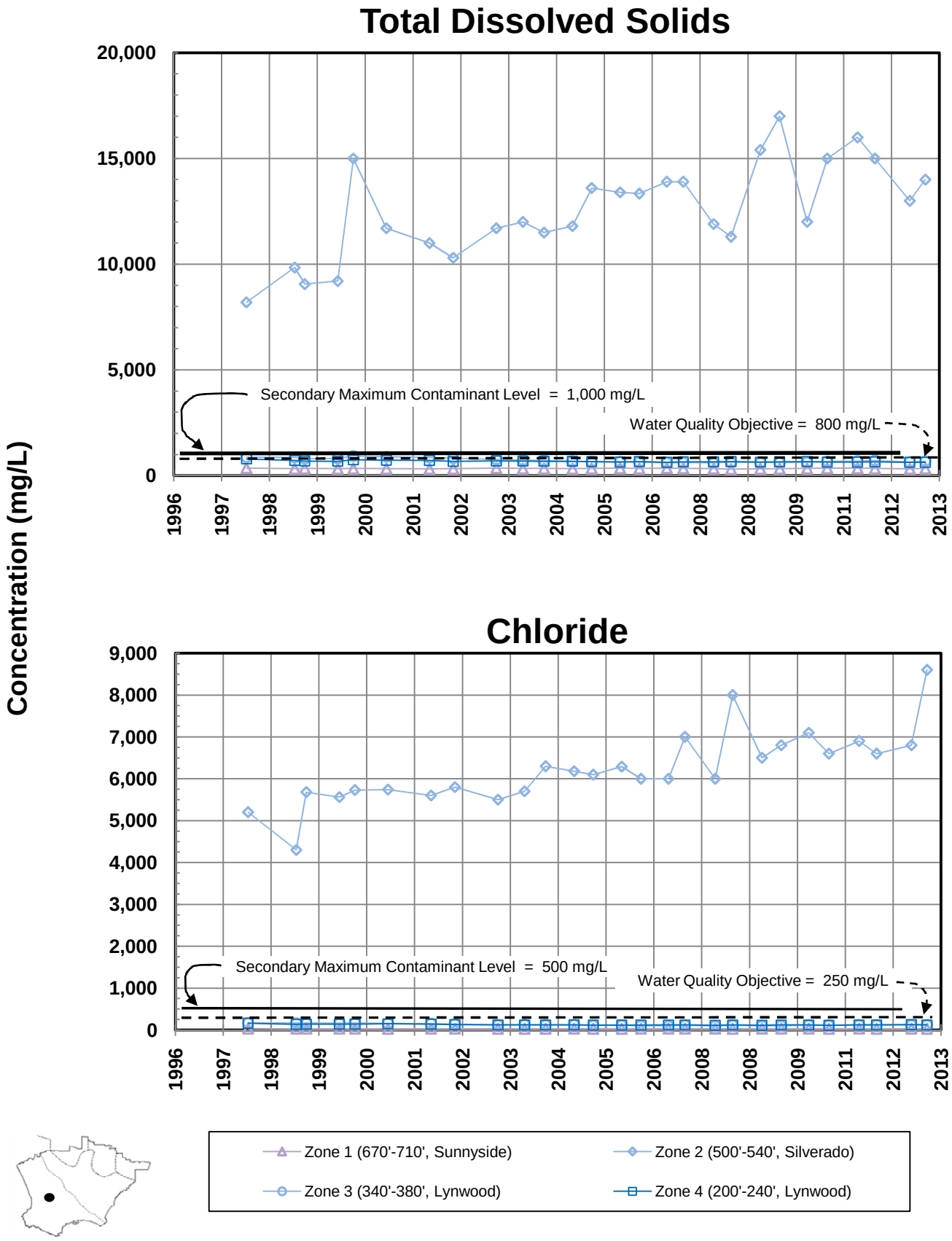
WATER QUALITY CONCENTRATIONS IN WRD KEY MONITORING WELL WILLOWBROOK#1

FIGURE 4.6



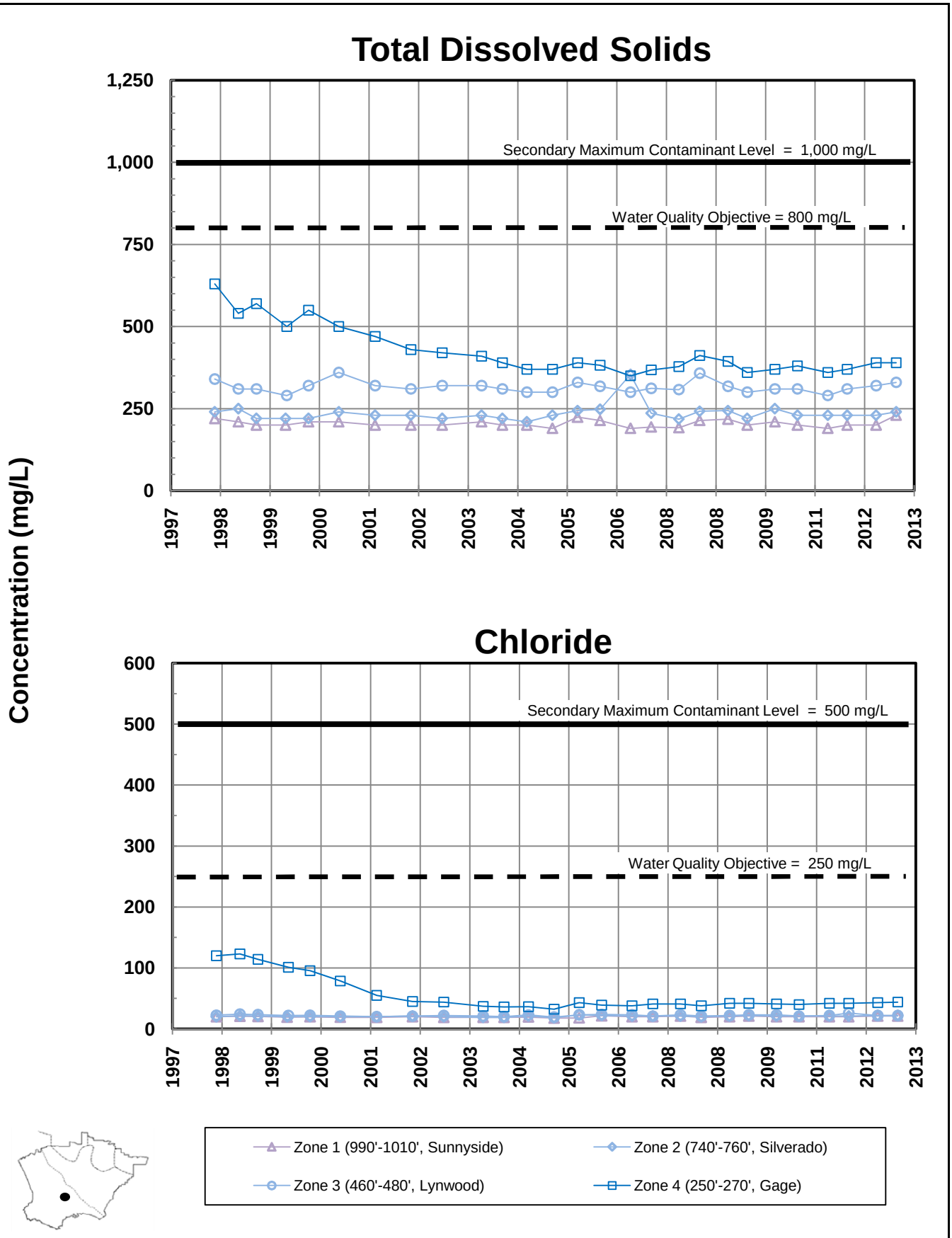
WATER QUALITY CONCENTRATIONS IN WRD KEY MONITORING WELL LONG BEACH #6

FIGURE 4.7



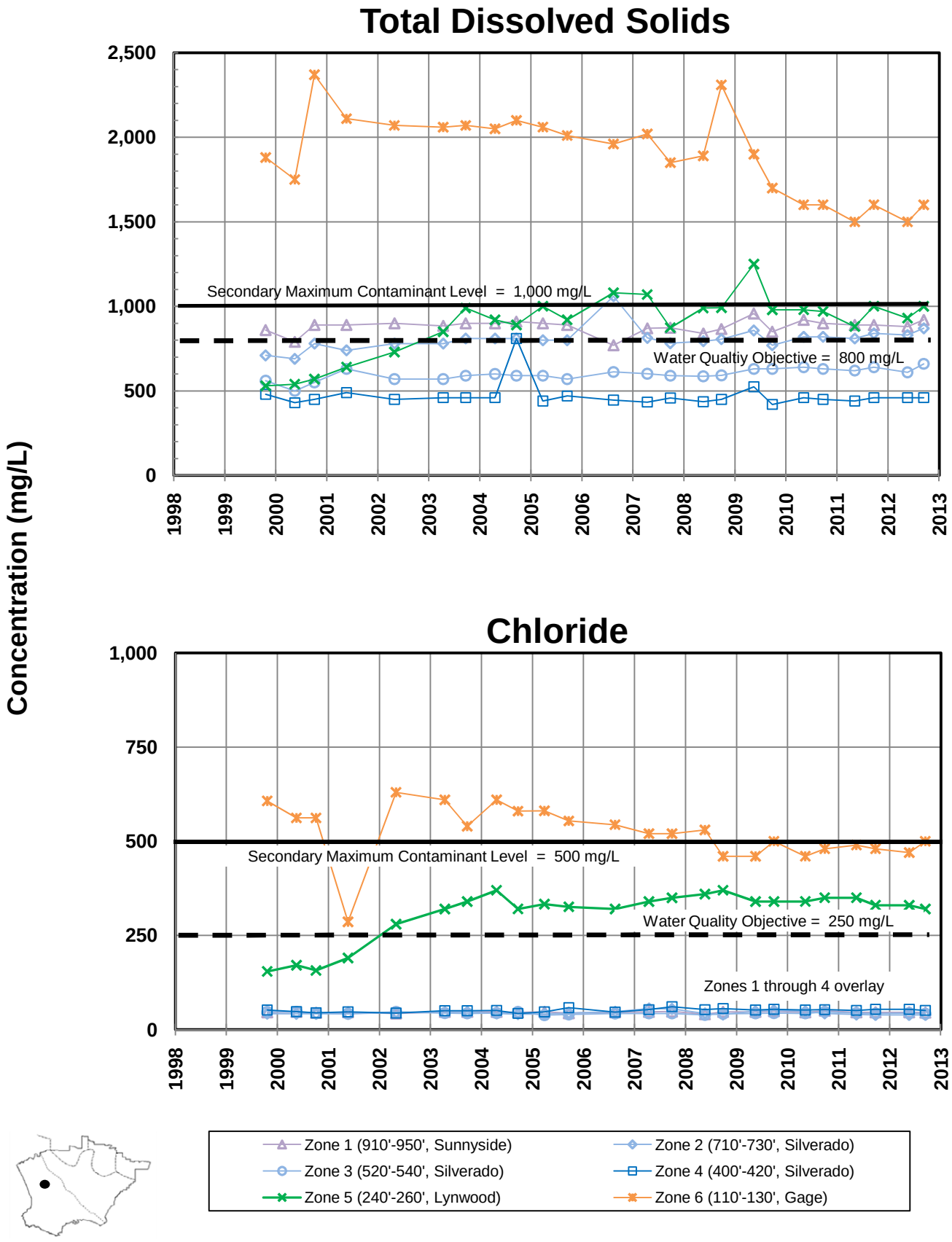
WATER QUALITY CONCENTRATIONS IN WRD KEY MONITORING WELL PM-4 MARINER

FIGURE 4.8



WATER QUALITY CONCENTRATIONS IN WRD KEY MONITORING WELL CARSON #1

FIGURE 4.9



WATER QUALITY CONCENTRATIONS IN WRD KEY MONITORING WELL HAWTHORNE #1

FIGURE 4.10

Mission:

"To provide, protect and preserve high-quality groundwater through innovative, cost-effective and environmentally sensitive basin management practices for the benefit of residents and businesses of the Central and West Coast Basins."

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