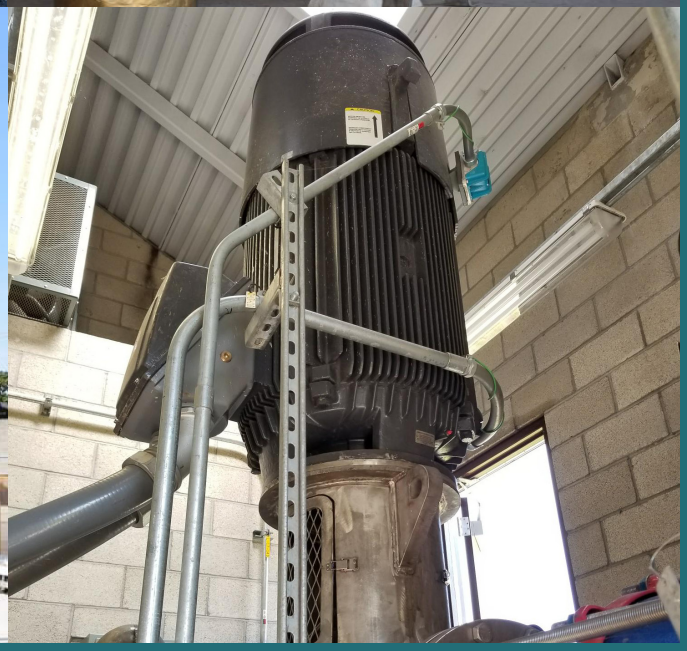
Water Replenishment District
of Southern California



REGIONAL GROUNDWATER MONITORING REPORT WATER YEAR 2016-2017

Central and West Coast Basins
Los Angeles County, California

WRD

March 2018

Water Replenishment District
Of Southern California

REGIONAL GROUNDWATER MONITORING REPORT
CENTRAL BASIN AND WEST COAST BASIN
LOS ANGELES COUNTY, CALIFORNIA
WATER YEAR 2016-2017

MARCH 2018

Management:

Robb Whitaker	**General Manager**
Ken Ortega	**Asst. General Manager/District Engineer**
Ted Johnson	**Chief Hydrogeologist**
Scott Ota	**Chief Financial Officer**
H. Francisco Leal	**Interim District Counsel**

Prepared by:

Mat Kelliher	**Hydrogeologist**
Tony Kirk	**Hydrogeologist**
Everett Ferguson, Jr.	**Senior Hydrogeologist**
Brian Partington	**Senior Hydrogeologist**
Benny Chong	**Associate Hydrogeologist**
Peter Piestrzeniewicz	**Associate Hydrogeologist**
Brittany Liu	**Water Quality & Regulatory Compliance Specialist**
Josi Jenneskens	**GIS Specialist**

Cover photos of the Goldsworthy Desalter in Torrance, CA, which was expanded in 2018 to double the capacity for removing brackish groundwater and turning it into fresh drinking water. Photos show the front of the Goldsworthy facility, a reverse osmosis booster pump within the facility, and the two new extraction wells, one of which is located in the adjacent City Yard and the other about 1,500 feet to the northwest in Delthorne Park.

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. WRD's service area encompasses nearly the entire Central Basin and all of the West Coast Basin. These two basins currently supply over 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 within the WRD service area.

WRD has been monitoring the CBWCB for over 50 years, and this year's annual report presents the most comprehensive information to date utilizing WRD's network of aquifer-specific monitoring wells and in-depth water quality analysis. The Regional Groundwater Monitoring Program (RGWMP) currently consists of a network of 324 monitoring wells at 58 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 those efforts, it presents information on groundwater levels and groundwater quality over the past Water Year (WY) which runs from October 1 through September 30. This current report is for WY 2016-17. Detailed information is presented in the body of the report with a summary below:

Groundwater Levels

Across the WRD service area water levels have generally increased over the water year, although in some areas they have decreased and in others they have remained essentially unchanged. The increase in water levels can be partly attributed to above average precipitation over the WRD service area in WY 2016-17. Water level changes in specific areas is discussed below.

In the Central Basin, groundwater levels have generally increased in WY 2016-17. In the unconfined Montebello Forebay water levels have increased; in the vicinity of the spreading grounds they have increased by as much as 29 feet, along the western and southern reaches of the Forebay they have increased as much as 12 feet, and to the east they have increased by 20 feet. Across much of the unconfined Los Angeles Forebay water levels have increased in WY 2016-17 by about 3 feet; however, in the central portion of the Forebay water levels decreased as much as 3 feet and appear to be influenced by a localized area of groundwater depression. Whittier Area water levels have also increased in WY 2016-17; in the west they have increased by as much as 20 feet, in the east they are essentially unchanged from WY 2015-16.

Water levels have generally increased across the rest of the Central Basin in WY 2016-17. In the north portion of the Central Basin Pressure Area (CBPA) water levels have increased this year by as much as 10 feet; along the eastern edge of the CBPA water levels are as much as 27 feet higher than they were last year. Across most of the rest of the CBPA water levels are about 1 to 3 feet higher than they were last year. In the southern portion of the CBPA, along the Northeast Uplift, water levels are relatively unchanged from WY 2015-16.

In the West Coast Basin, changes in water levels are variable. Water levels increased by as much as 5 feet across most of the coastal area and within much of the Long Beach Plain during WY 2016-17. Water levels did not change significantly over portions of the Carson/Torrance area and north into Lawndale and southwest Los Angeles. However, water levels increased by as much as 5 feet in Lomita and the western portions of Torrance. In the Gardena area a localized pumping hole shows water level decreases of as much as 11 feet; water level decreases of between 1 and 5 feet in the Hawthorne and northern Carson areas appear to be associated with that pumping hole.

District wide, groundwater levels rose more than 7 feet, although across the Montebello

Forebay region water levels rose an average of nearly 17 feet. Overall groundwater storage gain across the District was 84,400 Acre-Feet (AF); 77,400 AF of that storage was gained in the Montebello Forebay. Groundwater storage gain in the Los Angeles Forebay was 2,700 AF, 1,200 AF of storage was gained in the Central Basin Pressure Area, and the Whittier Area saw an increase of 3,100 AF. The West Coast Basin did not have any appreciable change in storage over WY 2016-17.

Groundwater Quality

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

The reporting of this monitoring and analysis include data tables, maps, and trend graphs which are presented in this report. Overall, the groundwater in the WRD service area continues to be of high quality, suitable for potable and non-potable uses, and continues to meet our high standards. There are however, 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 anthropogenic 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 water quality maps and trend graphs to focus on 12 key water quality constituents to represent overall groundwater quality in the basins, including total dissolved solids (TDS), iron, manganese, chloride, nitrate, trichloroethylene (TCE), tetrachloroethylene (PCE), arsenic, perchlorate, hexavalent chromium, 1,4-Dioxane and Tertiary butyl alcohol (TBA). TDS, where elevated, is typically present along with chloride as an indicator of historical seawater intrusion or groundwater from older marine sediments. The most prevalent water quality issue in WRD's service area is manganese, a naturally-occurring element that at elevated concentrations may impact the aesthetics of

groundwater and can require treatment prior to delivery as drinking water. Elevated, naturally-occurring arsenic impacts a number of wells in WRD's service area. TCE and PCE that can leak into groundwater from industrial and commercial facilities, have also impacted wells in the District and are closely monitored. Chemicals of emerging concern (CECs) including hexavalent chromium, perchlorate, 1,4-Dioxane and TBA have relatively new drinking water standards and WRD has performed baseline screening and analysis of these CECs to assess the potential threat to the groundwater in WRD's service area.

Consistent with WRD's mission to provide, protect, and preserve high quality groundwater, and as required by the State's Recycled Water Policy, a Salt and Nutrient Management Plan (SNMP) has been developed and a Basin Plan Amendment was subsequently adopted to ensure the long-term viability of groundwater in the CBWCB. Through the RGWMP, 13 key WRD nested monitoring wells were selected to track salt and nutrient water quality trends throughout the District and in the most critical areas of the basins, including areas near water supply wells and groundwater recharge projects that utilize recycled water (i.e. the seawater intrusion barriers and the Montebello Forebay Spreading Grounds). Overall, the data show that salt and nutrient concentrations in groundwater are stable and in some locations improving which can be attributed to past and current groundwater management practices. Based on the existing water quality of the CBWCB and future groundwater quality as estimated and presented in the SNMP, 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 groundwater resources in its service area. To that end, WRD plans an expansion of its groundwater monitoring well network to fill data gaps in the Central Basin and to install new monitoring points in the North Central Basin. WRD will continue to perform other projects and programs to meet its charge. One of the biggest challenges currently facing the District is the rising cost and unreliability of imported water for groundwater replenishment. The District seeks to eliminate its 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, which includes as a key component, the Albert Robles Center for Water Recycling and Environmental Learning (ARC) (formerly known as the Groundwater Reliability Improvement Project (GRIP)). ARC's main purpose is to ensure reliable sources of high quality replenishment water for 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 potential upcoming issues related to water quality and groundwater replenishment in its service area. WRD staff will be working on refining the hydrogeologic conceptual model of the CBWCB using data from the RGWMP along with an update to the groundwater model, expected to be finalized in 2018, that has been developed by the United States Geological Survey (USGS) to improve the framework for understanding the groundwater system and for use as a planning tool.

WRD will continue to be proactively involved in the oversight of contaminated sites that threaten groundwater within its service area and will 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 including continued administration of the CBWCB Groundwater Contamination Forum, consisting of key stakeholders focused on expediting the investigation and cleanup of high-priority contaminated groundwater sites. Currently, there is a list of 49 high-priority sites across WRD's service area. WRD will continue to monitor the saline plume in the West Coast Basin and will update the saline plume map with new data collected from increased sampling.

On November 4, 2009, the State Legislature amended the Water Code with SBx7-6, mandating a statewide program to track seasonal and long-term trends in groundwater elevations in California's groundwater basins. The California Department of Water Resources (DWR) developed the California Statewide Groundwater Elevation Monitoring

(CASGEM) program to address the Water Code amendment. In October 2011, WRD was assigned as 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.

WRD has worked closely with various stakeholders to comply with the Sustainable Groundwater Management Act (SGMA). SGMA recognizes groundwater as an integral part of the state's water supply and provides a framework for managing groundwater in a sustainable way throughout California. SGMA applies to two areas located within the geologic boundaries of the Central Basin but outside of its adjudicated boundaries. To comply, a working group was formed to conduct a groundwater sustainability analysis with various interested stakeholders including the City of Beverly Hills, City of Culver City, Los Angeles County Department of Public Works (LACDPW), Los Angeles Department of Water and Power (LADWP), Golden State Water Company (GSWC), and WRD. On behalf of the stakeholder group, WRD submitted the required analysis to the California Department of Water Resources (DWR) in the document, "Alternative Analysis for the Central Basin – Los Angeles County, California", dated December 16, 2016. WRD expects to receive an evaluation update from the DWR in 2018.

Further information is available on 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 RGWMR.

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GLOSSARY OF ACRONYMS

ARC	Albert Robles Center for Water Recycling and Environmental Learning
AWTF	Advanced Water Treatment Facility
AF	Acre-Feet
BGS	Below Ground Surface
CASGEM	California Statewide Groundwater Elevation Monitoring
CEC	Chemical of Emerging Concern
CEQA	California Environmental Quality Act
CSDLAC	County Sanitation Districts of Los Angeles County
CBWCB	Central Basin and West Coast Basin
CBPA	Central Basin Pressure Area
DAC	Disadvantaged Communities
DDW	State Water Resources Control Board, Department of Drinking Water
DGSIB	Dominguez Gap Seawater Intrusion Barrier
DME	Designated Monitoring Entity
DWR	California Department of Water Resources
ELWRF	Edmond C. Little Water Recycling Facility
ESR	Engineering Survey and Report
GIS	Geographic Information System
GPS	Global Positioning System
GRIP	Groundwater Reliability Improvement Program
GSWC	Golden State Water Company
LACDPW	Los Angeles County Department of Public Works
LADWP	Los Angeles Department of Water and Power
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
MSL	Mean Sea Level
MTBE	Methyl Tert-Butyl Ether
MWD	Metropolitan Water District of Southern California
NAVD88	North American Vertical Datum of 1988
NDMA	N-Nitrosodimethylamine
NL	Notification Level

GLOSSARY OF ACRONYMS (continued)

OEHHA	Office of Environmental Health Hazard Assessment
PCE	Tetrachloroethylene or Perchloroethylene
PDF	Portable Document Format
PHG	Public Health Goal
Policy	Recycled Water Policy
RGWMP	Regional Groundwater Monitoring Program
RGWMR	Regional Groundwater Monitoring Report
RL	Response Level
SCADA	Supervisory Control and Data Acquisition
SGMA	Sustainable Groundwater Management Act
SMCL	Secondary Maximum Contaminant Level
SNMP	Salt and Nutrient Management Plan
SWRCB	State Water Resources Control Board
TBA	Tertiary Butyl Alcohol
TCE	Trichloroethylene
TDS	Total Dissolved Solids
TIWRP	Terminal Island Water Reclamation Plant
UCMR	Unregulated Contaminant Monitoring Rule
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
WBMWD	West Basin Municipal Water District
WIN	Water Independence Now
WQO	Water Quality Objective
WRD	Water Replenishment District of Southern California
WRF	Water Recycling Facility
WRP	Water Reclamation Plant
WY	Water Year

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**). WRD's service area encompasses nearly the entire Central Basin and all of the West Coast Basin. 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 within WRD's service area.

As part of accomplishing this mission, WRD maintains a thorough and current understanding of groundwater conditions in its service area 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 groundwater pumpers WRD's service area, other interested stakeholders, and the public with the knowledge necessary for responsible water resources planning and management. Each year WRD compiles the most recently collected information into a Regional Groundwater Monitoring Report (RGWMR) that presents the most current understanding of conditions in the basins; the RGWMR is just one of the efforts by WRD to fulfill its mission.

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 extractions 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 groundwater levels and groundwater quality in the WRD service area to ensure the sustainability of this groundwater resource.

Prior to 1995, WRD relied heavily upon groundwater 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 waters from different aquifers into 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 for the RGWMRs are generally provided for a Water Year (WY), which occurs from October 1 to the following September 30. During WY 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). That study is the nucleus of WRD's ongoing RGWMP. In addition to compiling existing available data, that 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 groundwater monitoring.

Figure 1.3 is a District map showing the locations of wells in WRD's nested monitoring well network. Currently, there are 324 wells at 58 locations; these wells allow WRD to comprehensively monitor groundwater conditions in its service area. A listing and depth details for the WRD wells are presented in **Table 1.1.**

An *Annual Report on the Results of Water Quality Monitoring* (*Annual Report*) was published by WRD each year for WYs 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 for the monitoring of groundwater quality in the Montebello Forebay. The RGWMP was designed to serve as an expanded, more representative basinwide monitoring program for the CBWCB. This RGWMR is published in lieu of the previous *Annual Reports*.

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 assigned as the Designated Monitoring Entity responsible for collecting and reporting CBWCB groundwater level data to CASGEM. Through the RGWMP, WRD collects groundwater level data from within its service area, tracks seasonal and long-term trends and provides that data to the CASGEM program.

1.2 CONCEPTUAL HYDROGEOLOGIC MODEL

As described above, the RGWMP has changed the focus of groundwater monitoring efforts in the WRD service area 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 aquifers. The most accepted hydrogeologic description of the basins and the names of water-bearing zones are 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 defined in Bulletin 104; however, in some cases WRD's in-house interpretation has resulted in aquifer classifications that differ from those predicted by that report.

The locations of idealized geologic cross-sections AA' and BB' through the WRD service area are shown on **Figure 1.3**. These cross-sections are presented on **Figures 1.4** and **1.5**, respectively. These cross-sections are modified versions of cross-sections presented in Bulletin 104, and illustrate a simplified aquifer system in the CBWCB. The main potable production aquifers described in Bulletin 104 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, typically thought of as the main producing aquifer in the CBWCB. Substantial pumping can come from the Lynwood and Sunnyside aquifers as well.

1.3 GIS DEVELOPMENT AND IMPLEMENTATION

WRD uses a Geographic Information System (GIS) as a tool for groundwater management in its service area. Much of the GIS data 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 Esri 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 determine and document the locations of basinwide production wells, nested monitoring wells, and other geographic features for use in the GIS database. During WY 2015-16, WRD updated and modernized its database so that a consistent reference surface datum is used when describing the mean sea level elevation at each monitoring well. This update required a re-survey of the measurement reference point at each of WRD's wells relative to the North American Vertical Datum of 1988 (NAVD88) reference plane. This update resulted in adjustment for some of the "reference point elevations" that have previously been used and published by WRD. Current NAVD88 reference point elevations are listed in **Table 2.1**.

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 website at *http://gis.wrd.org*. The website provides the public with access to much of the water level and water quality data contained in this report. The well information on the website can be accessed through interactive maps 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 WRD service area for WY 2016-17, and discusses the status of the RGWMP. Section 1 provides an overview of WRD and its RGWMP. Section 2 discusses district-wide groundwater levels for WY 2016-17. Section 3 presents water quality data for the WRD nested monitoring wells,

basin-wide production wells, and replenishment water. Section 4 summarizes salt and nutrient management in the CBWCB and presents water quality trends for TDS and chloride. Section 5 summarizes findings from the evaluation of data in this report. Section 6 presents future regional groundwater monitoring and related activities. Section 7 lists the references used in this report. Tables and figures are presented in separate sections at the end of the report. This WY 2016-17 WRD RGWMR, along with previously published reports for past WYs, can be viewed online and downloaded in Portable Document Format (PDF) from the WRD website at *http://www.wrd.org.*

SECTION 2
GROUNDWATER LEVELS

Groundwater levels are a direct indication of the amount of groundwater in the basins. Tracking groundwater levels identify areas of recharge and discharge from the basins. Differences in groundwater levels suggest which way 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 identify possible source areas and pathways for seawater intrusion, and to demonstrate the effectiveness of seawater barrier injection wells. Groundwater levels are partly dependent on regional precipitation. Above average rainfall across the WRD service area in WY 2016-17 helped increase the groundwater elevations at many of WRD's nested wells to levels that are much higher than have been measured over the past several years.

WRD tracks groundwater levels throughout the year by measuring the depth to water in monitoring wells and production wells located throughout its service area. Groundwater elevations are calculated by comparing depth to water measurements to the mean sea level elevation at the measuring point of each well. **Table 2.1** presents manual groundwater level measurements collected from the District's nested monitoring wells during WY 2016-17. In order to capture the daily and seasonal variations in water levels, WRD has installed automatic data-logging equipment in most of the nested monitoring wells to collect water levels more frequently than practical for manual measurements. WRD also obtains water level data from cooperating entities such as area 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 were prepared for selected

wells to aid in analysis and illustrate the current and historical groundwater conditions in the basins. These are presented and explained in the following sections.

2.1 GROUNDWATER ELEVATION CONTOURS

A contour map showing the groundwater elevations measured across the WRD service area in the deeper, main producing aquifers during the Fall of 2017 is presented in **Figure 2.1**. The Fall 2017 Contour Map shows that in the Central Basin water levels range from highs in excess of 150 feet above mean sea level (msl) to lows in excess of 100 feet below msl. 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.

In the West Coast Basin, water levels range from highs of nearly 10 feet above msl to lows of about 75 feet below msl. The highest water levels are along the West Coast Basin Seawater Intrusion Barrier; they decrease to the east where they are at their lowest elevation in the City of 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

Groundwater levels measured in Fall 2017 compared to those measured in Fall 2016 are illustrated on **Figure 2.2**, which is a groundwater level change map. During WY 2016-17 groundwater levels across the WRD service area have generally increased, although results vary; in some areas they have decreased and in others they have remained essentially unchanged.

In the Central Basin, groundwater levels have generally increased in WY 2016-17. In the unconfined Montebello Forebay water levels have increased; in the vicinity of the spreading grounds they have increased by as much as 29 feet, along the western and southern reaches of the Forebay they have increased as much as 12 feet, and to the east

they have increased by 20 feet. Across much of the unconfined Los Angeles Forebay water levels have increased in WY 2016-17 by about 3 feet; however, in the central portion of the Forebay water levels decrease as much as 3 feet and appear to be influenced by a localized area of groundwater depression. Whittier Area water levels have also increased in WY 2016-17; in the west they have increased by as much as 20 feet, and in the east they are essentially unchanged from WY 2015-16.

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District wide, groundwater levels rose more than 7 feet, although across the Montebello Forebay region water levels rose an average of nearly 17 feet. Overall groundwater storage gain across the District was 84,400 AF; 77,400 AF of that storage was gained in the Montebello Forebay. Groundwater storage gain in the Los Angeles Forebay was 2,700 AF, 1,200 AF of storage was gained in the Central Basin Pressure Area, and the Whittier Area saw an increase of 3,100 AF. The West Coast Basin did not have any appreciable change in storage over WY 2016-17.

2.3 GROUNDWATER LEVEL HYDROGRAPHS

WRD relies on 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 annual WRD Engineering Survey and Report (ESR). The ESR hydrographs illustrate the general history of groundwater conditions in the CBWCB and results show: 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; 3) Water levels increased through the 1970s and 1980s in response to reduced pumping, artificial replenishment by WRD, and seawater barrier construction and injection; and 4) Over about the past 7 water years , water levels have overall generally decreased in the Montebello Forebay as well as the rest of the Central Basin.

Hydrographs for WRD nested monitoring wells that plot water level measurements from individual aquifer zones against time provide WRD with a graphical method to observe changes in water level and can aid in identifying current and historic trends in aquifer conditions. The data for these annual hydrographs are collected from WRD's network of nested monitoring wells. **Figures 2.3 through 2.15** are hydrographs of 13 key WRD nested monitoring wells, including three in the Montebello Forebay, one in the Los Angeles Forebay, four in the Central Basin Pressure Area, one in the Whittier Area, and four in the West Coast Basin, respectively. Locations of the 13 key nested monitoring wells are shown on **Figure 1.3**. These hydrographs illustrate that there can be distinct groundwater elevation differences, up to 90 feet, between adjacent aquifers at a single 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 the zones that are in the main flow system and the zones that show the greatest depth and seasonal fluctuations in groundwater levels during the WY. A discussion of the hydrographs shown on **Figures 2.3 through 2.15** are presented 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. There are 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 to 1,130 feet below ground surface (BGS). Because this well is located 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. 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 increased about 16 feet over the past WY and are the highest levels recorded in the past three years.

Figure 2.4 is a hydrograph for WRD's Pico #2 key nested monitoring well, also located in the Montebello Forebay adjacent to the San Gabriel River and just south of the San Gabriel River Spreading Grounds. There are 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 to 1,200 feet BGS. Groundwater elevations are lowest in Zones 1 and 2, both in the Sunnyside Aquifer, suggesting that the Sunnyside Aquifer is the most heavily pumped in this area. Water levels in Zone 3 increased about 19 feet over the past WY and are the highest levels recorded in the past five 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 River Spreading Grounds. There are 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 to 1,480 feet BGS. Norwalk #2 is the third key well representing the Montebello Forebay and is at the southern margin of the Forebay where it transitions into the Central Basin Pressure Area. Unlike Rio Hondo #1 and Pico #2, water level responses are less pronounced in response to the seasonal discharge and recharge influences, with seasonal swings of around 20 feet compared to the over 30-foot seasonal swings at Rio Hondo #1 and Pico #2. Groundwater elevations are deepest in Zone 3, the Silverado Aquifer, suggesting that this aquifer is the most heavily pumped in the area. The water level in Zone 3 increased by about 13 feet over the past WY. Water levels in Norwalk #2 are the highest levels recorded in the past three years.

2.5 GROUNDWATER LEVELS IN THE LOS ANGELES FOREBAY

Figure 2.6 is the key 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. There are five individual wells (zones) that are screened in the following aquifers (from shallowest to deepest): Gaspur, Exposition, Gage, Jefferson, and Silverado, with depths ranging from 114 to 910 feet BGS. Only four of the zones are shown on the hydrograph because the shallowest well (screened from 114 to 134 feet BGS in Gaspur Aquifer sediments) is dry and perforated above the water table, and therefore no water elevations are shown on the graph. There is a large separation in water levels between Zone 4 and the three deeper 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 two zones, the Jefferson and Silverado Aquifers, are generally similar. Water levels in the Jefferson Aquifer decreased by about 2.5 feet and in the Silverado Aquifer they decreased by about 2 feet over the past WY. Unlike recent decreases over the past 6 years in the Montebello Forebay, water levels in the Los Angeles Forebay have remained relatively stable over the past 17 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, which is located in the north-central portion of the Central Basin Pressure Area, just outside the Montebello and Los Angeles Forebays. There are five individual wells (zones) that are screened, from shallowest to deepest, in the Exposition, Lynwood, Silverado, and Sunnyside Aquifers; and the Pico Formation, with depths ranging from 220 to 1,460 feet BGS. Water levels in Zones 1 through 4 generally behave similarly in response to seasonal discharge and recharge. The upper zone has much shallower water levels, shows little seasonal response, and is isolated from the aquifers below by an aquitard, resulting in the observed hydraulic separation. South Gate #1 water levels increased by about 7 feet in the deeper aquifers over WY 2016-17, and have generally declined by as much as 17 feet over the past 17 years.

Figure 2.8 is a hydrograph for WRD's Willowbrook #1 nested monitoring well, which is located in the Central Basin Pressure Area, about 7 miles down-gradient of the Montebello Forebay. There are four individual wells (zones) that are screened, from shallowest to deepest, in the Gage, Lynwood, Silverado, and Sunnyside Aquifers, with depths ranging from 200 to 905 feet BGS. Zone 1 is screened in the deepest responding aquifer. The upper three zones have generally shallower water levels than Zone 1. Zones 3 and 4 track very closely. These trends suggest some hydraulic separation (aquitards) between Zones 1 and 2, and between Zones 2 and 3. Zones 3 and 4, have little hydraulic separation. Water levels have increased about 3 feet in Zone 1 and about 0.5 foot in Zone 2 over WY 2016-17. Water levels in Zones 3 and 4 have increased by slightly less than 0.5-foot over the past WY. Water levels in Willowbrook #1 have generally declined over the past 18 years.

Figure 2.9 is a hydrograph for key nested monitoring well Long Beach #6 located in the southern portion of the Central Basin Pressure Area. There are six individual wells (zones) that are screened in the following (from shallowest to deepest): Gage, Lynwood, Silverado, and Sunnyside (two zones) Aquifers, and Pico Formation with depths ranging

from 220 to 1,510 feet BGS. Because this portion of the Central Basin Pressure Area has multiple confined aquifers separated by substantial aquitards, and experiences heavy local seasonal pumping cycles, water level fluctuations can be larger than in other areas. For example, water levels in Zones 4 and 5 are the deepest responders; they are screened in the Lynwood and Silverado Aquifers, rise and fall more than 100 feet through typical seasonal cycles, and occur at elevations ranging from highs at near sea level to lows greater than 120 feet below sea level. Water levels in the other zones also generally show significant seasonal variation. **Figure 2.9** shows minor decreases to slight increases in water levels in Zones 1, 2, 3, and 6 over the past WY; water levels in Zones 4 and 5 have increased about 5 feet from the previous WY.

Seal Beach #1 is included as a key nested monitoring well for the Central Basin Pressure Area due to its proximity inland of the Alamitos Gap Seawater Intrusion Barrier Recycled Water Project. Historical groundwater elevations for Seal Beach #1 are shown on **Figure 2.10**. There are seven individual wells (zones) that are screened in the following aquifers (from shallowest to deepest): Gaspur, Gage, Lynwood, Silverado, and Sunnyside (3 zones), with depths ranging from 60 to 1,365 feet BGS. Zone 4, screened in the Silverado aquifer, is the deepest responding unit at Seal Beach #1. Zone 5 responds similarly to Zone 4, but draws down less during heavily pumped periods. Zones 1, 2, and 3 overlay on the hydrograph and have had a relatively muted seasonal response over the past couple of years. Zones 6 and 7 show a smaller seasonal response than the five lower zones, with groundwater elevations at or slightly below sea level, suggesting partial isolation from the lower aquifer systems. Groundwater levels in Zone 4 increased about 25 feet over WY 2016-17.

2.7 GROUNDWATER LEVELS IN THE WHITTIER AREA

The Whittier Area of the Central Basin extends from the Puente Hills south and southwest to the Santa Fe Springs-Coyote Hills uplift. The western boundary is an arbitrary line separating the Whittier Area from the Montebello Forebay and the eastern boundary is the Orange County line. **Figure 2.11** is a hydrograph from WRD's Whittier #1 nested

monitoring well located in the eastern part of the Whittier Area. There are five individual wells (zones) that are screened in the following aquifers (from shallowest to deepest): Gage, Lynwood, Silverado, and Sunnyside (2 zones), with depths ranging from 200 to 1,200 feet BGS. Groundwater levels in the Whittier Area do not show a seasonal fluctuation typical of other areas of the Central Basin and adjacent Montebello Forebay Area, which suggests limited groundwater discharge and recharge. Zones 1 through 4 have similar groundwater elevations and track very closely over time while the Zone 5 groundwater elevation is over 80 feet higher suggesting substantial isolation by an aquitard(s). The Whittier #1 hydrograph indicates that groundwater levels in the Whittier Area have decreased about 1 foot over the past WY and have decreased 10 to 12 feet over the past 17 years.

2.8 GROUNDWATER LEVELS IN THE WEST COAST BASIN

Figure 2.12 is a hydrograph for WRD's PM-4 Mariner nested monitoring well, which is located in the City of Torrance, in the coastal area inland from the West Coast Basin Seawater Intrusion Barrier. There are four individual wells (zones) that are screened in the following aquifers (from shallowest to deepest): Lynwood (2 zones), Silverado, and Sunnyside, with depths ranging from 200 to 710 feet BGS. All four zones respond similarly to seasonal fluctuations. Water levels in Zone 1 (Sunnyside) are deepest, separated from Zone 2 (Silverado) which is several feet higher. Water levels in Zones 3 and 4 (Lynwood and Gage) are both about 2 feet above those in Zone 2. Water levels have increased between 0.5 and 2 feet at PM-4 Mariner in WY 2016-17 and have increased as much as 8 feet over the past 19 years.

Figure 2.13 is a hydrograph for WRD's Carson #1 nested monitoring well, which is located in the inland region of the West Coast Basin. There are four individual wells (zones) that are screened in the following aquifers (from shallowest to deepest): Gage, Lynwood, Silverado, and Sunnyside, with depths ranging from 250 to 1,110 feet BGS. Water levels in Zone 1 track very similar to Zone 2 throughout the year and are the deep responding aquifers at this location. Zone 3 tracks similar to Zone 4. Groundwater elevations currently

differ by about 35 feet between the upper two and lower two zones, which suggests 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 both have decreased about 1 foot over the past WY, but have generally increased 28 feet over the past 18 years.

Manhattan Beach #1 is a relatively newer WRD nested monitoring well (constructed in 2011) and was designated as a key nested monitoring well for the West Coast Basin due to its proximity one half mile inland of the West Coast Basin Seawater Intrusion Barrier. **Figure 2.14** is a hydrograph for Manhattan Beach #1, which includes seven individual wells (zones) that are screened in the following aquifers (from shallowest to deepest): Gage, Lynwood, Silverado (2 zones), Sunnyside, and Pico Formation (2 zones), with depths ranging from 180 to 1,990 feet BGS. Zone 3 is screened in the Sunnyside Aquifer and has the deepest groundwater levels, up to 30 feet lower than Zones 1, 2, 4, and 5 which generally track together. Water levels in Zones 6 and 7 are six to eight feet above Zones 1, 2, 4, and 5. Seasonal fluctuations are not pronounced at the Manhattan Beach #1 location and groundwater levels did not change significantly over the past water year, however water levels in Zone 3 have increased about 2 feet over the past WY and about 8 feet since this well was installed.

Figure 2.15 is a hydrograph for WRD's Wilmington #2 nested monitoring well, which is located in the West Coast Basin, inland of the Dominguez Gap Seawater Intrusion Barrier. There are five individual wells (zones) that are screened, from shallowest to deepest, in the Gage, Lynwood (2 zones), Silverado, and Sunnyside Aquifers with depths ranging from 120 to 970 feet BGS. Water levels in Zones 1 through 4 are generally deeper and behave similarly in response to seasonal influences. The upper zone has shallower water levels, and shows less seasonal change suggesting hydraulic separation from the lower 4 zones. Wilmington #2 water levels have increased by about 1.0 to 2.5 feet in the deeper aquifers over WY 2016-17, and have increased by as much as 24 feet over the past 19 years.

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 nested monitoring wells, purveyors' production wells, and source waters used for CBWCB groundwater replenishment. Regional groundwater quality maps included herein depict constituents of interest to WRD and District stakeholders in the nested monitoring wells and production wells where water quality data is available.

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 Environmental Protection Agency State Water Resources Control Board, Division of Drinking Water (DDW) establishes after health effects, 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, but 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 DDW based on preliminary reviews 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/or 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 of this report 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 State-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 WY 2016-17. **Table 3.2** presents water quality analytical results from WRD nested monitoring wells in the West Coast Basin during WY 2016-17. Complementing the data from the nested monitoring well network, data for CBWCB production wells were obtained from the DDW based on results submitted over the past three years by purveyors for their DDW Title 22 drinking water compliance.

Water quality maps for nested monitoring wells and production wells are presented herein for 12 water quality constituents (**Figures 3.1 – 3.24**). The 12 constituents include total dissolved solids (TDS), iron, manganese, chloride, nitrate, trichloroethylene (TCE), tetrachloroethylene (PCE), arsenic, perchlorate, hexavalent chromium, 1,4-Dioxane, and tertiary butyl alcohol (TBA). The maps illustrate areal and vertical differences in water quality and compare the aquifer-specific water quality data from WRDs nested monitoring wells to the averaged water quality data collected from purveyors' 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 WY 2016-17 indicate relatively low TDS concentrations for groundwater in the producing aquifers of the Central Basin (**Figure 3.1**). In the Central Basin, 30 out of 33 (91%) WRD nested monitoring wells screened in the Silverado Aquifer had TDS concentrations below the SMCL of 1,000 mg/L and 25 out of 33 (76%) were below 500 mg/L. In contrast, West Coast Basin nested monitoring well data show generally higher TDS concentrations with just 12 out of 22 (55%) nested wells screened in the Silverado Aquifer having TDS concentrations below 1,000 mg/L, and 8 out of 22 (36%) wells below 500 mg/L. Elevated TDS concentrations in the West Coast Basin were observed along the coast from Redondo Beach to Los Angeles International Airport (LAX), in the Inglewood area, and the Dominguez Gap area.

Figure 3.2 presents DDW water quality data for TDS in production wells across the WRD service area for the period spanning WYs 2014-17. In the Central Basin, TDS was not detected above the Upper Level SMCL of 1,000 mg/L in any of the 224 production wells sampled for TDS during this period, and 164 of those wells (73%) had TDS concentrations below 500 mg/L.

West Coast Basin production well data indicate that most drinking water wells had TDS concentrations below 1000 mg/L. TDS was detected below the Upper Level SMCL in 25 out of 28 production wells (89%) sampled for TDS during this period. Fifteen production wells (54%) were below 500 mg/L. Production wells with higher levels of TDS are generally located near the coast within the West Coast Basin, while further inland production wells generally had lower TDS concentrations. The elevated TDS levels may be caused by seawater intrusion, connate brines, or possibly oil field brines.

3.1.2 Iron

Iron occurs naturally in groundwater. Sources for iron in the water supply are both natural and man-made. Iron is leached from sediments in subsurface aquifers and steel pipes used for construction of water wells and distribution systems. Sufficient concentrations of iron in water can affect its suitability for domestic or industrial purposes. Some industrial

processes cannot tolerate more than 0.1 mg/L iron. The SMCL for iron in drinking water is 0.3 mg/L. High concentrations of iron in water can stain plumbing fixtures and clothing, encrust well screens, clog 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 WRD service area. **Figure 3.3** shows iron data in WRD nested monitoring well locations for WY 2016-17. In the Central Basin, iron was detected in 29 of 33 (88%) nested well locations. Iron was detected in concentrations above the MCL at 8 of those 29 locations; however it was only detected at concentrations above the SMCL in Silverado zones at 3 nested well locations.

In the West Coast Basin, iron was detected in the Silverado zones in 20 out of 22 nested well locations (91%). Eleven nested well locations had iron concentrations above the SMCL, four of those were detected in Silverado Zones.

Figure 3.4 presents DDW water quality data for iron in production wells across the WRD service area for the period spanning WYs 2014-17. In the Central Basin, 164 of 224 (73%) production wells have iron concentrations in groundwater that are below the SMCL. In the West Coast Basin, 11 production wells out of 28 (39%) have iron concentrations below the SMCL.

3.1.3 Manganese

Manganese is naturally-occurring and is objectionable in water in the same manner as is iron. Stains caused by manganese are black and are more unsightly and harder to remove than those caused by iron. While manganese is considered an essential nutrient for human health at low levels, an SMCL of 50 micrograms per liter (µg/L) is established for manganese due to its undesirable aesthetic qualities.

Manganese concentrations in the WRD nested monitoring wells (**Figure 3.5**) exhibit widespread vertical and horizontal variations across the WRD service area. In the southern portion of the Central 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. Eight out of 33 (24%) nested monitoring well locations in the Central Basin had a zone with manganese concentrations exceeding the SMCL in the Silverado Aquifer. In the West Coast Basin, manganese was detected above the SMCL in the Silverado zones at 13 out of 22 (59%) nested well locations.

Figure 3.6 presents DDW water quality data for manganese in production wells across the WRD service area for the period spanning WYs 2014-17. In the Central Basin, data show a number of wells having elevated manganese concentrations, but 190 out of 227 production wells (84%) had concentrations below the SMCL. The production wells with elevated manganese levels are not limited to a specific area and 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, 10 out of 28 production wells (36%) had concentrations of manganese below the SMCL.

3.1.4 Chloride

Chloride at elevated levels causes water to taste salty and it is the characteristic constituent used to identify seawater intrusion. The recommended SMCL for chloride is 250 mg/L with an upper 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 WRD service area during WY 2016-17. In the Central Basin, all 33 nested monitoring well locations generally have low chloride concentrations. No Central Basin zone in the Silverado Aquifer exceeded the upper level SMCL. In the West Coast Basin, chloride concentrations exceeded the upper SMCL limit in the Silverado zones in 8 of the 22 (36%) nested well locations, primarily in areas where seawater intrusion could be the source, or

from sources yet to be identified. Eleven nested wells in the West Coast Basin show chloride impacts above the MCL in non-Silverado Zones.

Figure 3.8 presents DDW water quality data for chloride in production wells in the WRD service area for the period spanning WYs 2014-17. Chloride was not detected above the SMCL in any of the 224 Central Basin production wells sampled for chloride during this period. In the West Coast Basin, two of the 28 production wells tested, both located on the west side of the basin, had chloride concentrations above the upper SMCL.

3.1.5 Nitrate

MCLs were established by DDW for two forms of nitrogen in drinking water, nitrate and nitrite. Nitrate (measured as Nitrate) has an MCL of 45 mg/L, which corresponds to 10 mg/L of nitrate as nitrogen. Nitrite (measured as nitrogen) has an MCL of 1 mg/L. The combined total of the nitrate and nitrite, measured as total nitrogen, has an MCL of 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 the MCLs, they reduce the uptake of oxygen causing shortness of breath, lethargy, and a bluish skin color.

Nitrate concentrations in groundwater are also 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 fertilization of crops or lawns and leaching of animal wastes. Low concentrations of nitrogen compounds, including nitrate and nitrite, are present in treated recycled water below regulatory and permitted limits and may be a source of nitrate loading 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 are returned to the atmosphere.

Figure 3.9 presents nitrate (as nitrogen) water quality data for nested monitoring wells in

the WRD service area during WY 2016-17. In the Central Basin, nitrate does not exceed the MCL in the Silverado zone of any nested monitoring well location. Nitrate detections above the MCL were limited to the shallowest zones at 2 of the 33 (6%) nested well locations. Nested monitoring wells in the immediate vicinity of the Montebello and Los Angeles Forebays typically contain nitrate at concentrations below the MCL in upper zones. Some wells downgradient from the Montebello Forebay have middle zones with nitrate detections below the MCL. Nested wells further downgradient from the forebays generally do not have detectable concentrations of nitrate. The detectable but relatively low concentrations of nitrate at and near the forebays may be due to the use of local water and/or recycled water for groundwater recharge at the spreading grounds. The generally widespread shallow occurrences of nitrate throughout the Central Basin may be attributed to local surface recharge impacted by historical agricultural activities, but also could be associated with industrial operations.

In the West Coast Basin nested monitoring wells, nitrate was present above the MCL in the shallowest zones of 2 out of the 22 (9%) nested monitoring well locations. In one of those two nested monitoring wells, the nitrate was detected above the MCL in a Silverado aquifer zone. Similar to the Central Basin, shallow occurrences of nitrate in the West Coast Basin may be attributable to local surface recharge impacted by agricultural activities prior to extensive land development.

Figure 3.10 presents DDW water quality data for nitrate in production wells across the WRD service area for the period spanning WYs 2014-17. One Central Basin production well, located in the Los Angeles Forebay, contained nitrate above the MCL. The nitrate MCL was not exceeded in any production well in the West Coast Basin during WYs 2014-17.

3.1.6 Trichloroethylene (TCE)

TCE is a solvent used in metal degreasing, textile processing, and dry cleaning. In addition to multiple acute health effects, TCE is also classified as a probable human carcinogen. The 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 vapor extraction utilizing granular activated carbon filtration media.

TCE (**Figure 3.11**) was not detected in 23 out of 33 (70%) WRD nested monitoring well locations in the Central Basin. Of the 10 nested wells where TCE was detected in the Central Basin, three locations had TCE above the MCL. One of the 10 nested wells had a detectable TCE concentration in a Silverado Aquifer Zone, however it was detected at a concentration below the MCL. In the West Coast Basin, TCE was not detected in 20 out of 22 (91%) nested monitoring wells. Of the 2 nested wells where TCE was detected in the West Coast Basin, one location had TCE above the MCL. No nested well in the West Coast Basin had a detectable TCE concentration in a Silverado Aquifer zone.

Figure 3.12 presents DDW water quality data for TCE in production wells across the WRD service area for the period spanning WYs 2014-17. In the Central Basin, TCE was not detected in 179 of 234 (76%) of the production wells that were tested. Of the 55 production wells that had detectable TCE levels, 20 wells had concentrations 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 Forebays. In the West Coast Basin, TCE was detected at a concentration below the MCL in one West Coast Basin production well during WYs 2014-17.

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 is readily removed from water using common treatment processes.

During WY 2016-17, PCE (**Figure 3.13**) was not detected at 22 out of 33 (67%) nested well locations in the Central Basin. Of the 11 nested wells where PCE was detected in the Central Basin, three were detected within a Silverado Aquifer zone at concentrations below

the MCL. PCE was detected in two nested wells at concentrations above the MCL; however neither of those detections were in a Silverado Aquifer zone. In the West Coast Basin, PCE was detected at one nested well at a concentration below the MCL. PCE was not detected in any Silverado Aquifer zone in the West Coast Basin during WY 2016-17.

Figure 3.14 presents DDW water quality data for PCE in production wells across the WRD service area for WYs 2014-17. In the Central Basin, PCE was not detected in 181 out of the 234 (77%) production wells that were tested. Of the 53 production wells that had detectable PCE levels, 14 wells had concentrations above the MCL. Production wells with detectable PCE concentrations 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 of the West Coast Basin production wells.

3.1.8 Arsenic

Arsenic is an element that occurs naturally in the earth's crust and accordingly there are natural sources of arsenic, including 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 DDW established an MCL of 10 µg/L for arsenic.

Figure 3.15 presents water quality data for arsenic in WRD nested monitoring wells during WY 2016-17. Arsenic concentrations greater than the MCL in the Central Basin were detected at 8 out of 33 (24%) nested well locations; two of those eight wells had arsenic concentrations that exceeded the MCL in a Silverado Aquifer zone. In the West Coast Basin, arsenic was detected above the MCL at 4 out of 22 (18%) nested monitoring well

locations, two of those detections above the MCL were in a Silverado Aquifer zone.

Figure 3.16 presents DDW water quality data for arsenic in production wells across the WRD service area for the period spanning WYs 2014-17. In the Central Basin, 8 out of 223 (4%) production wells have arsenic concentrations above the MCL. Arsenic did not exceed the MCL in any of the West Coast Basin production wells.

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 DDW established an MCL of 6 µg/L for perchlorate.

Figure 3.17 presents perchlorate water quality data for WRD nested monitoring wells during WY 2016-17. In the Central Basin, perchlorate was detected at 17 out of 33 (52%) nested monitoring well locations; eight of these detections were in a Silverado Aquifer zone, all below the MCL. In the West Coast Basin, perchlorate was detected in six out of 22 (27%) nested monitoring wells, with one nested well containing a concentration above the MCL. Perchlorate was detected at a concentration below the MCL in one of the West Coast Basin nested monitoring wells in the Silverado Aquifer zone.

Figure 3.18 presents DDW water quality data for perchlorate in production wells across the WRD service area for the period spanning WYs 2014-17. In the Central Basin, 6 out of 226 (3%) production wells had detectable perchlorate, with two production wells testing for perchlorate above the MCL. Perchlorate was not detected in any of the West Coast Basin production wells.

3.1.10 Hexavalent Chromium

Hexavalent chromium (chromium-6) and trivalent chromium (chromium-3) are two forms of the metal chromium found in groundwater. Together, these two forms of chromium are designated "total chromium". The MCL for total chromium is 50 µg/L. In 2014 California established an MCL of 10 µg/L for hexavalent chromium; however, on May 31, 2017, a judgement was issued by the Superior Court of California that invalidated the MCL for hexavalent chromium in drinking water. The Court has ordered the SWRCB to adopt a new MCL; in the meantime the MCL for Total Chromium will remain in place The SWRCB will use data collected since the standard was adopted in 2014 to help establish a new MCL; they note that it generally takes between 18 and 24 months to develop regulation. To remain consistent with prior reporting and aid in assessing concentration trends, WRD will continue to discuss hexavalent chromium results in the text and associated Figures below in terms of the historic MCL value of 10 µg/L until a new MCL is established by the SWRCB.

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 to pose health risks. It has been known to increase cancer risk when inhaled and recently shown to increase cancer risk if ingested.

Figure 3.19 shows hexavalent chromium concentrations in WRD nested monitoring wells in the WRD service area. In the Central Basin hexavalent chromium was detected in 32 out of 33 (97%) nested well locations. Only two nested well locations had hexavalent chromium above a concentration of 10 µg/L and neither were in a Silverado Aquifer zone. In the West Coast Basin, hexavalent chromium was not detected above a concentration of 10 µg/L at any nested well location. Hexavalent chromium was detected below 10 µg/L at 21 out of 22 (95%) nested monitoring well locations.

Figure 3.20 shows hexavalent chromium in WRD service area production wells from sampling conducted during WYs 2014-17. In the Central Basin, hexavalent chromium was not detected in 164 of the 213 (77%) production wells that were tested. Of the 67 Central

Basin production wells that had detectable hexavalent chromium levels, none had concentrations above 10 µg/L. Hexavalent chromium was not detected in any of the 22 production wells tested in the West Coast Basin.

3.1.11 1,4-Dioxane

1,4-Dioxane is a synthetic organic compound. It is 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. 1,4-Dioxane is also found in trace amounts in some cosmetic and personal care products such as detergents and shampoos. 1,4-Dioxane is highly soluble in water, does not readily bind to soils, readily leaches to groundwater, and is resistant to naturally occurring biodegradation processes. EPA classifies 1,4-dioxane as a probable human carcinogen and a known irritant, and as a result it is included in the Third Unregulated Contaminant Monitoring Rule (UCMR 3). In November 2010 the State Water Resources Control Board (SWRCB) established a drinking water notification level (NL) of 1 µg/L for 1,4-Dioxane.

Figure 3.21 shows 1,4-Dioxane concentrations in WRD nested monitoring wells in the WRD service area. Testing for 1,4-Dioxane was conducted at 32 of 33 nested well locations in the Central Basin during WY 2016-17. 1,4-Dioxane was not detected in 18 of 32 (56%) nested well locations. Of the 14 nested wells where 1,4-Dioxane was detected, 7 were found in Silverado Aquifer zones; all detections were at concentrations greater than the NL. In the West Coast Basin, testing for 1,4-Dioxane was conducted at 18 of 22 nested well locations. 1-4 Dioxane was detected at 1 of 18 (6%) nested wells locations in a non-Silverado Aquifer zone. 1,4-Dioxane was not detected at or above the Response Level of 35 µg/L in any of the nested well locations.

Figure 3.22 shows 1,4-Dioxane in WRD service area production wells from sampling conducted during WYs 2014-17. In the Central Basin 1,4-Dioxane was detected in 79 of the 107 (74%) production wells that were tested. In the West Coast Basin, testing for 1,4-Dioxane was only conducted on 4 production wells. 1,4-Dioxane was not detected in any of those production wells. 1,4-Dioxane was not detected at or above the Response Level

of 35 µg/L in any of the production wells tested.

3.1.12 Tertiary Butyl Alcohol (TBA)

Tertiary butyl alcohol (TBA) is fuel oxygenate and breakdown by-product of methyl tert-butyl ether (MTBE). TBA is quite mobile in groundwater and is resistant to degradation. Exposure to TBA can lead to irritation of the mucous membranes, nausea, defatting of the skin, and intoxication. TBA is believed to be a potential carcinogen. Currently there is no Federal drinking water standard for TBA, although California has established a drinking water notification level (NL) of 12 µg/L.

Figure 3.23 shows TBA concentrations in WRD nested monitoring wells in the WRD service area. In the Central Basin TBA was not detected in 31 out of 33 (94%) nested well locations. In the two locations where TBA was detected, only one of those contained TBA at a concentration above the NL, and neither of the detections were found in a Silverado Aquifer zone. In the West Coast Basin, TBA was detected in 3 of 22 (14%) nested well locations; two of these detections were at concentrations above the NL, and one of those was detected in a Silverado Aquifer zone.

Figure 3.24 shows TBA in WRD service area production wells from sampling conducted during WYs 2014-17. In the Central Basin, only 3 production wells were tested for TBA; it was not detected in any of those wells. In the West Coast Basin, testing for TBA was conducted on 6 production wells; it was only detected in one of those wells, at a concentration lower than the NL.

3.2 QUALITY OF REPLENISHMENT WATER

This section discusses water quality data for key water quality constituents in CBWCB 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 were also discussed for the WRD nested monitoring wells: TDS, iron, manganese, chloride, nitrate,

TCE, PCE, arsenic, perchlorate, and hexavalent chromium. Monitoring of these constituents helps to understand the general chemical nature of the recharge source, and its suitability for replenishing the groundwater basins.

3.2.1 Quality of Imported Water

Surface water is imported by the Metropolitan Water District of Southern California (MWD) to the WRD service area from the Colorado River and from Northern California via the State Water Project for potable supply and for groundwater recharge. Colorado River water deliveries have been suspended due to the presence of quagga mussels; however, 32,693 AF of State Water Project water was received for replenishment in 2016-17. Currently, treated imported water and advanced treated recycled water are injected into the three seawater intrusion barriers. Treated imported water meets all drinking water standards and thus, is suitable for direct injection. Untreated imported water, when available, is used for recharge at the Montebello Forebay Spreading Grounds. Average water quality data for treated and untreated imported water are presented in **Table 3.3**

In 2016, the average TDS concentration of untreated Colorado River water was 630 mg/L and the average TDS concentration of untreated water from the State Water Project was 180 mg/L. Only untreated State Water Project water was received for recharge in the Montebello Forebay spreading grounds in 2016.

In 2016, average concentrations of nitrate (as nitrogen) were below detection limits in untreated Colorado River water and the average nitrate concentration in water from the untreated State Water Project was 0.8 mg/L. Recently and historically, both Colorado River and State Water Project nitrate concentrations have remained below the MCL.

In 2016, the average iron and manganese concentrations in untreated Colorado River water and State Water Project water were below detection limits. Both Colorado River and State Water Project iron and manganese concentrations have recently and historically been below the SMCL.

The average chloride concentrations in water from the Colorado River and State Water Project have not changed significantly over the past several years. State Water Project and Colorado River chloride concentrations have historically been below the SMCL of 500 mg/L for chloride.

According to the MWD, TCE, PCE, and perchlorate have not been detected in water from the Colorado River or State Water Project during calendar year 2016. Hexavalent chromium was not detected in water from the Colorado River; however it was detected at a concentration of 1.0 µg/L in water from the State Water Project. Both Colorado River and State Water Project hexavalent chromium concentrations have recently and historically been below the historical MCL of 10 µg/L.

3.2.2 Quality of Recycled Water

Recycled water is used for groundwater recharge in the WRD Service Area for percolation through the Montebello Forebay spreading grounds, which is comprised of the Rio Hondo Coastal Spreading Grounds and the San Gabriel Coastal Spreading Grounds, and for injection into the seawater barriers. In the Montebello Forebay, tertiary-treated recycled water produced by the County Sanitation Districts of Los Angeles County (CSDLAC) at their Whittier Narrows Water Reclamation Plant (WRP), San Jose Creek East WRP, San Jose Creek West WRP, and Pomona WRP facilities is diverted into the Montebello Forebay spreading grounds where it percolates into the subsurface to recharge underlying aquifers. The effluent from these WRPs is carefully controlled and monitored, as required by permits and other regulations, and typically shows little water quality variation over time. Average water quality data for the effluent from these WRPs is shown in **Table 3.3**. All constituents listed have remained stable over recent WYs. Furthermore, arsenic, TCE, PCE, perchlorate, and hexavalent chromium have either not been detected or have been detected well below their respective MCLs in recycled water from the four WRPs. 1,4-Dioxane concentrations in recycled water from the Whittier Narrows, San Jose Creek West, and Pomona WRPs are all below the NL; however, recycled water from the San Jose Creek East WRP has an average concentration of 1,4-Dioxane (1.1 µg/L) that slightly exceeds the NL of 1.0 µg/L. N-nitrosodimethylamine (NDMA) has been detected above its NL of 10 µg/L in recycled

water from the Whittier Narrows, San Jose Creek West, San Jose Creek East, and Pomona WRPs.

Currently, both treated imported water and advanced treated recycled water produced by the West Basin Municipal Water District (WBMWD) Edward C. Little Water Recycling Facility (ELWRF) are injected at the West Coast Basin Barrier to prevent the intrusion of seawater and replenish the groundwater basin. Treatment processes at the ELWRF includes microfiltration, reverse osmosis, ultraviolet light, advanced oxidation with hydrogen peroxide, and chemical stabilization. The advanced treated recycled water complies with all drinking water standards and thus, is suitable for direct injection. The ELWRF was expanded in September 2013 and it is expected that advanced treated recycled water will replace nearly all of the imported water used for injection at the West Coast Basin Barrier. **Table 3.3** presents average water quality data for the advanced treated recycled water produced by the ELWRF.

The Alamitos Gap Seawater Intrusion Barrier currently receives both treated imported water and advanced treated recycled water produced by WRD's Leo J. Vander Lans Advanced Water Treatment Facility (Vander Lans AWTF) for injection. The Vander Lans AWTF treats disinfected tertiary effluent from the CSDLAC Long Beach Water Reclamation Plant using microfiltration, reverse osmosis, ultraviolet light, and advanced oxidation using hydrogen peroxide. The advanced treated recycled water meets drinking water quality standards and other stringent regulations for direct injection into the aquifers. The Vander Lans AWTF was expanded in 2014 to allow additional capacity and to replace nearly all of the imported water used for injection at the Alamitos Gap Seawater Intrusion Barrier. **Table 3.3** presents average water quality data for the advanced treated recycled water produced by the Vander Lans AWTF.

The City of Los Angeles Terminal Island Water Reclamation Plant/Advanced Water Treatment Facility (TIWRP) produces advanced treated recycled water using microfiltration, reverse osmosis, and disinfection with chlorine. This water meets drinking water quality standards and other stringent regulations for direct injection into aquifers.

N-nitrosodimethylamine (NDMA) has been detected above its NL of 10 µg/L in recycled water from the TIWRP. Currently treated imported water is blended with advanced treated recycled water from the TIWRP for injection at the Dominguez Gap Seawater Intrusion Barrier (DGSIB). Expansion of the TIWRP was completed in December 2016 and included the installation of an advanced oxidation process into the treatment train. It is anticipated that advanced treated recycled water will replace nearly all of the imported water used for injection into the DGSIB. **Table 3.3** presents average water quality data for the advanced treated recycled water produced by the TIWRP.

3.2.3 Quality of Stormwater

Stormwater infiltrates the subsurface to varying degrees throughout the WRD service area. It is also intentionally diverted from the major storm channels and used for groundwater recharge along with imported and recycled water at the Montebello Forebay Spreading Grounds. Routine stormwater quality analyses are performed by LACDPW and other entities. Average stormwater quality data provided by LACDPW for WY 2015-16 are presented on **Table 3.3**. The average TDS, manganese, chloride, nitrate, TCE, PCE, arsenic, and perchlorate concentrations in stormwater are relatively low. Iron exceeded drinking water standards, and was present in stormwater samples at much higher concentrations than in other sources.

3.3 MINERAL CHARACTERISTICS OF GROUNDWATER IN THE CBWCB

Major minerals data obtained from the WRD nested monitoring wells were used to characterize groundwater of discrete vertical zones (**Table 3.4**). Research by the USGS led to 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 results that do not fall into one of the three major groups and are thus classified separately as Group D.

Groundwater from Group A likely represents recent recharge water containing a significant percentage of imported water. Group B represents older native groundwater replenished by natural local recharge. 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 within the Central Basin and inland of the West Coast Basin Seawater Intrusion Barrier. Group C groundwater 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 Groups A, B, or C and indicate 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 WY 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
SALT AND NUTRIENTS IN GROUNDWATER

In February 2009, the 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 for groundwater recharge across the State. It also requires local entities to develop a Salt and Nutrient Management Plan (SNMP) for each groundwater basin in California to monitor groundwater quality and any impact due to increased recycled water and stormwater recharge.

A SNMP Workplan was jointly prepared by the CBWCB stakeholders and approved by the Los Angeles Regional Water Quality Control Board (LARWQCB) in December 2011. The Final SNMP for the CBWCB was finalized February 12, 2015 and adopted in July 2015. The full text of the "2015 Salt Nutrient Management Plan – 2015" can be found at *http://www.wrd.org/content/other-reports*

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 were calculated based on predicted salt and nutrient loading through 2025 in the CBWCB. Accordingly, current and proposed projects through 2025 were identified and used to develop strategies to manage salt and nutrient loading. The SNMP included 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.

WRD's RGWMP was used to develop the SNMP monitoring program. The groundwater data evaluated in the annual RGWMRs provide an annual assessment of salt and nutrients in groundwater. In addition to the water quality maps generated and discussed in Section 3, historical trend graphs at key monitoring well locations, as described in the following sections, were used to assess salt and nutrient concentrations in groundwater.

4.1 SALT AND NUTRIENT MONITORING LOCATIONS

As discussed in the SNMP, TDS, chloride, and nitrate were identified as the most appropriate indicators of salt and nutrients in the CBWCB. These constituents, as well as other constituents of concern identified in the SNMP, are monitored in the WRD nested monitoring wells along with production wells located throughout the CBWCB.

As part of the SNMP monitoring program, 13 key monitoring well locations in the CBWCB were selected to evaluate past and current salt and nutrient 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 and West Coast Basin is 700 mg/L and 800 mg/L, respectively; the WQO for chloride in the Central Basin and West Coast Basin is 150 mg/L and 250 mg/L, respectively; and the MCL/WQO in both basins for nitrate is 10 mg/L.

In accordance with the Recycled Water Policy, the 13 selected nested well locations are in the most critical areas of the basins, particularly their proximity to water supply wells and groundwater recharge projects that utilize recycled water, including the seawater intrusion barriers (Alamitos Gap Barrier, Dominguez Gap Barrier, and West Coast Basin Barrier) and the Montebello Forebay Spreading Grounds. There are three nested well locations in the Montebello Forebay, one in the Los Angeles Forebay, four in the Central Basin Pressure Area, one in the Whittier Area, and four in the West Coast Basin. Monitoring locations in the Montebello Forebay and Los Angeles Forebay target groundwater where connectivity with adjacent surface waters is possible.

The 13 key nested well locations are shown as a different symbol set on **Figure 1.3**. These locations include 70 individual monitoring zones, screened in specific CBWCB aquifers.

The depths and aquifer designation for these key monitoring wells are provided in **Table 1.1**. WRD is the entity, designated by the SWRCB, responsible for collecting TDS, chloride, and nitrate samples (on a semi-annual basis) from these nested wells.

4.2 SALT AND NUTRIENT MONITORING RESULTS AND EVALUATION

Concentrations of salt and nutrients have been and continue to be closely monitored in all WRD nested monitoring wells and purveyors' production wells and results are discussed in **Section 3**. Concentrations of TDS, chloride, and nitrate for all WRD nested wells sampled during WY 2016-17 are shown on maps (**Figures 3.1, 3.7, and 3.9**, respectively) and summarized along with other monitored constituents identified in **Tables 3.1** and **3.2**. TDS, chloride, and nitrate concentrations in production wells, sampled during WYs 2014-2017 are presented on maps (**Figures 3.2, 3.8**, and **3.10** respectively). Trends for TDS and chloride concentrations at the 13 key well locations discussed above in Section 4.1 are plotted on graphs and compared to SMCLs and WQOs (**Figures 4.1** through **4.13**). Nitrate generally has not been detected in the monitoring wells, or it has been detected only at concentrations significantly below the MCLs and WQOs, and thus, trend graphs for nitrate have not been prepared. However, nitrate will continue to be monitored as part of the RGWMP and will be reported in **Section 3** of the annual RGWMRs.

In the Montebello Forebay, TDS and chloride concentration trends for the key well locations 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 at all three well locations. Several middle zones at Rio Hondo #1 and Pico #2 show slight increasing trends for TDS and chloride, while concentrations in the shallow zones fluctuate more. Otherwise, trends do not indicate significant increasing salt concentrations in the Montebello Forebay.

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

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

In the Central Basin Pressure Area, key wells include South Gate #1 (5 zones), Willowbrook #1 (4 zones), Long Beach #6 (6 zones), and Seal Beach #1 (7 zones). TDS and chloride trends are shown on **Figures 4.5** through **4.8,** respectively. At South Gate #1, the four deeper zones show TDS and chloride concentrations at relatively consistent values below the SMCLs and WQOs. TDS and chloride concentrations in South Gate #1 Zone 5 have increased somewhat since initial sampling but are relatively stable over the past 9 years and are generally below both the WQOs and SMCLs. At all 4 zones of Willowbrook #1 and the upper four zones at Long Beach #6, TDS and chloride concentrations are quite stable and are below both the SMCLs and WQOs. In the two deepest zones of Long Beach #6, TDS is typically detected very close to the WQO of 700 mg/L, while chloride concentrations remain stable and are significantly below the SMCL and WQO. At Seal Beach #1, the deeper six zones contain TDS and chloride at concentrations below the WQOs and SMCLs. Zone 7, the shallowest zone, contains TDS and chloride concentrations that have been generally increasing and are well above the WQOs and SMCLs, likely due to seawater intrusion.

For the Whittier Area, represented by key well Whittier #1 (5 zones), TDS and chloride trends are shown on **Figure 4.9**. TDS in zones 4 and 5 has been stable over the past 15 years, is below the MCL, and meets the WQO. TDS in zones 1, 2, and 3 has historically exceeded the MCL and WQO, and generally shows a stable to slightly increasing trend. Chloride in zones 4 and 5 has been historically below the MCL and meets the WQO. Chloride in zones 1, 2, and 3 has historically exceeded the WQO, but has been historically below the SMCL, and generally shows a stable trend.

In the West Coast Basin, key wells include PM-4 Mariner (4 zones), Carson #1 (4 zones), Manhattan Beach #1 (7 zones), and Wilmington #2 (5 zones). TDS and chloride trends are presented on **Figures 4.10** through **4.13**, respectively. At PM-4 Mariner,

Zones 1, 3, and 4 show TDS and chloride at relatively consistent concentrations below the SMCLs and WQOs. However at PM-4 Mariner Zone 2, TDS and chloride concentrations are well above the SMCLs and WQOs and have increased since monitoring began around 1997. This is attributed to historical seawater intrusion prior to the construction of the West Coast Basin Seawater Barrier. At Carson #1, all four zones contain TDS and chloride concentrations below both the SMCLs and WQOs; here the three deeper zones show relatively stable TDS and chloride concentrations, while concentrations of these constituents in the shallow Zone 4 have decreased since initial sampling in 1998. At Manhattan Beach #1, groundwater in this coastal area indicates impacts from seawater intrusion. While this well was constructed in 2011 and thus only sampled eight times over the past six years, TDS concentrations in 5 of the 7 zones exceed the WQO and SMCL and in four zones the WQO and SMCL for chloride are exceeded. Additional sampling at Manhattan Beach #1 should allow concentration trends to be more clearly identified. At Wilmington #2, TDS in Zones 1 and 3 has historically been below the WQO and SMCL, while Zone 2 has been consistently above the WQO and SMCL. TDS and chloride in Zone 4 were initially above the WQOs and SMCLs, but have steadily decreased since and are now below the WQOs and SMCLs, due to the implementation measures discussed in Section 4.3 below. TDS and chloride in Zone 5 are much higher than the WQOs and SMCLs; however, they have steadily decreased and are currently at concentrations far below those observed during the first years of sampling.

4.3 IMPLEMENTATION MEASURES TO MANAGE SALT AND NUTRIENT LOADING

As summarized in the previous section, overall TDS and chloride concentrations are generally stable at most of the 13 key nested monitoring locations in the CBWCB. While a few individual zones show increasing trends, a comparable number show decreasing trends. Notably, TDS and chloride concentrations in the two shallowest zones at nested well location Rio Hondo #1 and the three shallowest zones at Pico #2, each of which is beneath and adjacent to the Montebello Forebay recharge basins, generally fluctuate within the same concentration range since 1998. At the key well location in the Los Angeles

Forebay, the shallow zones have variable TDS concentrations at and above the WQO, but deeper zones do not show increasing TDS levels. In the Central Basin Pressure Area, TDS concentrations in the shallowest zone at key well location South Gate #1 fluctuate slightly but remain relatively stable, and chloride concentrations have steadily decreased over the past five years. TDS and chloride concentrations in the four lower zones are stable. Key nested monitoring well locations near the coast, including PM-4 Mariner, Manhattan Beach #1, and Seal Beach #1, have zones that show increasing TDS and chloride concentration trends that can be attributed to historical seawater intrusion. In the relatively isolated Whittier Area, historically high TDS and chloride concentrations in the middle depth zones are stable and are not expected to fluctuate in response to anticipated management practices.

As discussed in 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 salt and nutrient concentrations above the available assimilative capacity. Two notable 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 ARC (formerly known as GRIP) which includes tertiary treated and advanced treated recycled waters.

In the West Coast Basin, average TDS and chloride concentrations can 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 advanced treated recycled water for injection at the West Coast Basin and DGSIB and the continued operation of the desalter wells located in Torrance.

Nitrate concentrations in the CBWCB remain low and are not expected to increase above the MCL or WQO 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 analysis, 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 WRD service area during WY 2016-17. 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 WRD service area. Artificial replenishment water sources used by WRD include imported water supplied by the MWD, tertiary-treated recycled water produced by the CSDLAC, and advanced treated recycled water produced by WBMWD, the City of Los Angeles, and WRD.
- Groundwater levels are monitored continuously in the WRD service area throughout the year. The WRD nested monitoring wells show clear, significant differences in groundwater elevations between the various aquifers. The water level differences in these nested wells reflect both hydrogeologic and pumping conditions in the WRD service area. Vertical head differences between 1 and 90 feet occur between zones above and within the producing aquifers. The greatest head differences between aquifers tend to occur in the southern area (Long Beach) of the Central Basin and the inland, eastern areas (Gardena and Carson) of the West Coast Basin, while the smallest differences occur in the recharge area of the Montebello Forebay, and the southern area (Torrance) of the West Coast Basin which has merged aquifers.
- Hydrographs and groundwater elevations measured in basinwide nested monitoring wells and key production wells indicate increases and decreases across the Central and West Coast Basins during WY 2016-17. The increase in water levels can be partly attributed to above average precipitation over the WRD service area in WY 2016-17. In the unconfined Montebello Forebay water levels have increased; in the vicinity of the spreading grounds they have increased by as much as 29 feet, along

the western and southern reaches of the Forebay they have increased as much as 12 feet, and to the east they have increased by 20 feet. Across much of the unconfined Los Angeles Forebay water levels have increased in WY 2016-17 by about 3 feet; however, in the central portion of the Forebay water levels decrease as much as 3 feet and appear to be influenced by a localized area of groundwater depression. Whittier Area water levels have also increased in WY 2016-17; in the west they have increased by as much as 20 feet, in the east they are essentially unchanged from WY 2015-16.

- Water levels have generally increased across the rest of the Central Basin in WY 2016-17. In the north portion of the CBPA water levels have increased this year by as much as 10 feet; along the eastern edge of the CBPA water levels are as much as 27 feet higher than they were last year. Across most of the rest of the CBPA water levels are about 1 to 3 feet higher than they were last year. In the southern portion of the CBPA, along the Northeast Uplift, water levels are relatively unchanged from WY 2015-16. In the West Coast Basin, changes in water levels are variable. Water levels increased by as much as 5 feet across most of the coastal area and within much of the Long Beach Plain during WY 2016-17. Water levels did not change significantly over portions of the Carson/Torrance area and north into Lawndale and southwest Los Angeles. However, water levels increased by as much as 5 feet in Lomita and the western portions of Torrance. In the Gardena area a localized pumping hole shows water level decreases of as much as 11 feet; water level decreases of between 1 and 5 feet in the Hawthorne and northern Carson areas appear to be associated with that pumping hole.
- District wide, groundwater levels rose more than 7.0 feet, although across the Montebello Forebay region water levels rose an average of nearly 17 feet. Overall groundwater storage gain across the District was 84,400 AF; 77,400 AF of that was gained in the Montebello Forebay. Groundwater storage gain in the Los Angeles Forebay was 2,700 AF, 1,200 AF of storage was gained in the Central Basin Pressure Area, and the Whittier Area saw in increase of 3,100 AF. In the West Coast Basin, there was no appreciable change in storage during WY 2016 – 17.
- Based on data obtained from WRD nested monitoring wells during WY 2016-

17, the water quality of key constituents in groundwater varies significantly across the WRD service area.

- TDS concentrations in WRD nested monitoring wells and purveyor production wells located in the Central Basin are relatively low, while those in the West Coast Basin are elevated in certain portions, primarily the coastal areas 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.
- Iron generally is present at low levels in most WRD nested monitoring wells. In the Central Basin, concentrations were below the SMCL in the Silverado Aquifer at 30 of 33 nested well locations. In the West Coast Basin, iron concentrations were below the SMCL in the Silverado Aquifer at 18 of 22 nested well locations. Iron was detected below the SMCL in 164 of 224 production wells in the Central Basin and 11 out of 28 production wells in the West Coast Basin.
- Manganese is a naturally-occurring groundwater contaminant and negatively impacts a number of wells in the CBWCB. Manganese concentrations exceed the SMCL in the Silverado Aquifer at 9 out of 33 nested monitoring well locations in the Central Basin and at 13 out of 22 nested well locations in the West Coast Basin. Manganese concentrations were below the SMCL in 190 out of 227 production wells in the Central Basin and 10 out of 28 production wells sampled in the West Coast Basin.
- Chloride concentrations are reasonably low in Central Basin monitoring wells and production wells, and in wells within the inland areas of the West Coast Basin. Some coastal areas of the West Coast Basin are impacted by seawater intrusion and thus, have high chloride levels in groundwater.
- Nitrate (measured as nitrate) has an MCL of 45 mg/L, which corresponds to 10 mg/L nitrate as nitrogen. Nitrate concentrations in WRD nested monitoring wells in the CBWCB are generally below the MCL. The few nested wells that have nitrate concentrations approaching or exceeding the MCL tend to be limited to the uppermost zone at a given location and are likely due either to localized surface recharge, or isolated areas of shallow impacts from industrial operations. In the

Central Basin nitrate concentrations above the MCL were not observed in the Silverado Aquifer in any nested monitoring well; in the West Coast Basin, nitrate above the MCL in the Silverado Aquifer was only observed in two nested wells. DDW data indicates that one Central Basin production well had nitrate levels over the MCL. No West Coast Basin production wells contained nitrate at concentrations greater than the MCL.

- The MCL for TCE in drinking water is 5 µg/L. TCE was below the MCL in 30 out of 33 nested monitoring well locations in the Central Basin and 20 out of 22 nested well locations in the West Coast Basin. DDW data indicate that TCE was detected in 55 production wells in the Central Basin during the period spanning WYs 2014-17, and 20 of the 55 detections exceed the MCL. In the West Coast Basin, TCE was not detected above the MCL in any of the production wells tested.
- The MCL for PCE in drinking water is 5 µg/L. PCE was detected above the MCL at 2 nested monitoring well locations in the Central Basin. PCE was not detected above the MCL in any nested monitoring well locations in the West Coast Basin. DDW data indicate that PCE was detected in 53 production wells in the Central Basin during the period spanning WYs 2014-17; 14 of the 53 detections exceed the MCL. PCE was not detected in any of the West Coast Basin production wells.
- The MCL for arsenic is 10 µg/L. Arsenic concentrations greater than the MCL were found at 8 out of 33 nested monitoring well locations in the Central Basin and at 4 out of 22 nested well locations in the West Coast Basin. During the three year 2014-17 period, 8 out of 223 production wells 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. In the Central Basin, perchlorate was detected at 17 out of 33 nested monitoring well locations at concentrations below the MCL; eight of the detections were in the Silverado zone. In the West Coast Basin, perchlorate was detected at 6 out of 22 nested monitoring well locations, with perchlorate in one nested well above the MCL. Perchlorate was detected below the MCL in the Silverado zone at one nested monitoring well location in the West Coast Basin. In Central Basin production wells, 6 out

of 226 wells tested had detectable perchlorate; two of these wells had perchlorate concentrations above the MCL. Perchlorate was not detected in any of the West Coast Basin production wells.

- The historic MCL for hexavalent chromium of 10 µg/L was invalidated by the Superior Court of California in May 2017. WRD will continue to discuss hexavalent chromium results with reference to the concentration of 10 µg/L until a new MCL is established by the SWRCB. Hexavalent chromium can occur naturally in groundwater and/or be introduced through industrial and commercial activities. Hexavalent chromium was detected above the MCL in 2 out of 33 nested wells in the Central Basin. Hexavalent chromium was not detected above the MCL at any nested well in the West Coast Basin. Hexavalent chromium was not detected above the MCL in any Central Basin or West Coast Basin production well.
- 1,4-Dioxane is a synthetic organic compound. It is 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. 1,4-Dioxane is also found in trace amounts in some cosmetic and personal care products such as detergents and shampoos. 1,4-Dioxane is highly soluble in water, does not readily bind to soils, readily leaches to groundwater, and is resistant to naturally occurring biodegradation processes. In the Central Basin, 1,4-Dioxane was detected in 14 of 32 nested wells, seven of those detections were in Silverado zones, and all detections were at concentrations above the NL. In the West Coast Basin, 1-4 Dioxane was detected at 1 of 18 nested well locations in a non-Silverado Aquifer zone. In the Central Basin, 1,4-Dioxane was detected in 79 of the 107 production wells that were tested. In the West Coast Basin, testing for 1,4-Dioxane was only conducted on 4 production wells. 1,4-Dioxane was not detected in any of those production wells.
- The NL for TBA is 12 µg/L. TBA is a fuel oxygenate and breakdown by-product of methyl tert-butyl ether (MTBE). TBA was detected above the NL at one nested monitoring well in the Central Basin. In the West Coast Basin, TBA was detected above the NL at two nested well locations. In the Central Basin, only 3 production wells were tested for TBA; it was not detected in any of those wells. In the West Coast Basin, testing for TBA was conducted on 6 production wells. TBA was not

detected above the NL in any of the West Coast Basin production wells.

- The water quality of key constituents in untreated imported water recharged at the Montebello Forebay Spreading Grounds and treated imported water injected at the seawater barriers remains in compliance with regulatory limits. Average TDS, iron, manganese, chloride, nitrate, arsenic, and hexavalent chromium concentrations in imported water used for recharge do not exceed their respective MCLs. Meanwhile, TCE, PCE, and perchlorate were not detected in the untreated imported water.
- The water quality of key constituents in recycled water used for recharge at the Montebello Forebay Spreading Grounds and injection at the seawater intrusion barriers complies with regulatory limits and is monitored regularly to ensure its safe use.
- Stormwater samples are collected and analyzed for various water quality parameters by the LACDPW and other entities in the CBWCB. Available data from LACDPW for WY 2015-16 show that average TDS and other constituent concentrations in stormwater are lower than most other sources of replenishment water and other constituent concentrations confirm that stormwater is a good replenishment source.
- A total of 13 WRD nested groundwater monitoring wells across the CBWCB were designated for salt and nutrient (specifically, TDS, chloride, and nitrate) sampling and reporting as part of the SNMP monitoring program. Based on water quality maps and trend graphs that were evaluated in this report, overall TDS and chloride concentrations are generally stable at most of the 13 key nested monitoring locations in the CBWCB. While a few individual zones show increasing trends, a comparable number show decreasing trends. Nitrate concentrations remain below the MCL at all 13 monitoring locations. In the Central Basin, average TDS and chloride concentrations do not currently exceed WQOs and are not expected to do so in the future. In the West Coast Basin, average TDS and chloride concentrations exceed WQOs locally due to historical seawater intrusion. However, these concentrations are decreasing and are anticipated to achieve WQOs in the future as a result of current groundwater management practices.
- As shown by the data presented herein, groundwater in the WRD service area 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 RGWMP 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 WY 2017-18 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 imported replenishment water deliveries from MWD, WRD developed the Water Independence Now (WIN) initiative, which includes increasing the safe use of recycled water for groundwater recharge and reducing reliance on imported water supplies. A key component of the WIN program is ARC (formerly known as GRIP), which is designed to ensure reliable sources of high quality replenishment water for groundwater users in the WRD service area. ARC is expected to begin operations in late 2018.
- WRD will continue to maximize recycled water use at the West Coast Basin Seawater Intrusion Barrier and will promote maximum permitted recycled water injection at the Dominguez Gap and Alamitos Gap Seawater Intrusion Barriers. All three of these Barriers are now permitted for 100% recycled water injection. Extensive groundwater monitoring of these major recycled water projects will continue to be performed by WRD to comply with permit conditions and applicable regulatory requirements 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 continue to be recorded using automatic dataloggers to monitor groundwater elevation differences throughout the year. Conductivity sensors are being utilized at selected nested monitoring wells to track

water quality changes and supplement the automated water level data. Telemetry technology is being implemented to send real-time water level data to WRD from several locations with a goal of real-time display of water levels on the WRD website. A Supervisory Control and Data Acquisition (SCADA) system is being developed which will allow electronic transfer of water level data from the source of measurement to a centralized location which can be accessed remotely for real-time data observation and analysis.

- WRD continually 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. Two such wells are planned for installation in the North Central Basin to expand WRD's monitoring network into that area as part of CASGEM and SGMA compliance, in addition to providing data needs for groundwater flowing into WRD's service area.
- WRD will continue to sample groundwater from nested monitoring wells, and analyze the samples for general water quality constituents. In addition, the focus will continue on constituents of interest to WRD, the pumpers, and other stakeholders, such as TCE, PCE, manganese, arsenic, perchlorate, and hexavalent chromium. As regulators consider new water quality standards for CECs which have not been comprehensively monitored in the past, WRDs nested monitoring well network is well positioned to screen for emerging CECs in groundwater which may include, pesticides, NDMA, 1,4-dioxane, pharmaceuticals and personal care products, oil and gas field indicators, and other CECs. This year WRD anticipates filling database gaps by analyzing groundwater samples for constituents such as 1,2,3-Trichloropropane (1,2,3-TCP), and NDMA in wells where such data has not been previously collected. WRD will be working on refining the hydrogeologic conceptual model of the CBWCB using data from the RGWMP along with an update to the groundwater model, expected to be finalized in 2018, that has been developed by the USGS to improve the framework for understanding the groundwater system and for 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

CBWCB Groundwater Contamination Forum with key stakeholders that include the USEPA, California Department of Toxic Substances Control, LARWQCB, DDW, USGS, and various cities and other water purveyors. Stakeholders meet regularly and share data on contaminated groundwater sites within the District. WRD acts as the meeting coordinator and data repository/distributor, helping stakeholders to characterize the extent of contamination to identify pathways for contaminants in shallow aquifers to reach deeper drinking water aquifers and develop optimal methods for remediating contaminated groundwater. With input from the Forum members, WRD has developed a list of high-priority contaminated groundwater sites within the District. The list currently includes 49 sites located throughout the CBWCB.

- WRD will continue to be proactively involved in the oversight of the most significant contaminated sites that threaten groundwater resources within its service area including the ongoing regional perchlorate investigation in the Los Angeles Forebay, the Omega Chemical Superfund Site in the eastern portion of the Central Basin, the Montrose/Del Amo site in the eastern West Coast Basin, the Whittier Narrows Operable Unit north of the Montebello Forebay area and others.
- WRD will continue to fund the Safe Drinking Water Program to address impacted groundwater (both naturally occurring and anthropogenic), especially by PCE and TCE in the WRD service area. The WRD Safe Drinking Program now includes special assistance for water systems located in disadvantaged communities within the District's service area. This new extension is the Safe Drinking Water Disadvantaged Communities (DAC) outreach program.
- Consistent with WRD's mission to provide, protect, and preserve high quality groundwater and as required by the State's Recycled Water Policy, a SNMP is now in place and being implemented. Based on the existing water quality of the CBWCB and results from the SNMP analysis, it has been shown that salt and nutrient loading to groundwater is not a concern and that salt and nutrient concentrations overall in groundwater are either stable or improving due to past and current groundwater management practices. Existing and planned implementation measures are protective of groundwater quality and its beneficial uses and the increased use of recycled water in the WRD service area is consistent with the goals of the Recycled Water Policy and

necessary to ensure a sustainable water supply.

- 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 CASGEM program. In October 2011, WRD was assigned as the Designated Monitoring Entity 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 has worked closely with various stakeholders to comply with the Sustainable Groundwater Management Act (SGMA). SGMA recognizes groundwater as an integral part of the state's water supply and provides a framework for managing groundwater in a sustainable way throughout California. SGMA applies to two areas located within the geologic boundaries of the Central Basin but outside of its adjudicated boundaries. To comply, a working group was formed to conduct a groundwater sustainability analysis with various interested stakeholders including the City of Beverly Hills, City of Culver City, LACDPW, LADWP, Golden State Water Company (GSWC), and WRD. On behalf of the stakeholder group WRD submitted the required analysis to the DWR in the document, "Alternative Analysis for the Central Basin – Los Angeles County, California", dated December 16, 2016 (WRD, 2016). WRD expects to receive an evaluation update from the DWR in 2018.
- WRD will continue to use the data generated by the RGWMP along with WRD's GIS capabilities to address current and potential water quality issues and groundwater replenishment in its service area.

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	Gage

* - WRD generally follows the aquifer naming conventions defined in DWR's Bulletin 104; however, in some cases WRD's interpretation has resulted in aquifer classifications different from those predicted by that report.

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	885	865	885	Pico Formation
	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

* - WRD generally follows the aquifer naming conventions defined in DWR's Bulletin 104; however, in some cases WRD's interpretation has resulted in aquifer classifications different from those predicted by that report.

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	Pico Formation
	2	102139	1460	1440	1460	Pico Formation
	3	102140	1275	1255	1275	Pico Formation
	4	102141	910	890	910	Pico Formation
	5	102142	560	540	560	Silverado
	6	102143	390	370	390	Lynwood/Silverado
	7	102144	265	245	265	Gage/Lynwood
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
Lakewood #2	1	102151	2000	1960	2000	Sunnyside
	2	102152	1760	1740	1760	Sunnyside
	3	102153	1320	1300	1320	Sunnyside
	4	102154	1015	995	1015	Silverado
	5	102155	710	690	710	Lynwood
	6	102156	575	555	575	Jefferson
	7	102157	275	255	275	Gage
	8	102158	120	110	120	Artesia
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
Lawndale #1	1	102171	1400	1360	1400	Pico Formation
	2	102172	905	885	905	Pico Formation
	3	102173	635	615	635	Pico Formation
	4	102174	415	395	415	Silverado
	5	102175	310	290	310	Lynwood
	6	102176	190	170	190	Gardena
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

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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 #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
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	Exposition
Los Angeles #4	1	102131	1780	1740	1780	Pico Formation
	2	102132	1230	1190	1230	Pico Formation
	3	102133	740	720	740	Sunnyside
	4	102134	510	490	510	Silverado
	5	102135	375	355	375	Lynwood
	6	102136	255	235	255	Gage
Lynwood #1	1	102211	2900	2880	2900	Pico Formation
	2	102212	2450	2430	2450	Pico Formation
	3	102213	1670	1650	1670	Pico Formation
	4	102214	1465	1445	1465	Pico Formation
	5	102215	1220	1200	1220	Pico Formation
	6	102216	900	880	900	Sunnyside
	7	102217	660	640	660	Lynwood/Silverado
	8	102218	335	315	335	Gardena
	9	102219	180	160	180	Gaspur

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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 *
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
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-2 Police Station	1	102237	665	645	665	Sunnyside
	2	102238	540	520	520	Silverado
	3	102239	390	370	390	Lynwood
	4	102240	260	240	260	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

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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 *
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
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
South Gate #2	1	102180	1760	1740	1760	Pico Formation
	2	102181	1430	1410	1430	Pico Formation
	3	102182	1082	1062	1082	Sunnyside
	4	102183	690	670	690	Silverado
	5	102184	430	410	430	Hollydale
	6	102185	225	205	225	Gaspur
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

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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 *
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	610	629	Sunnyside
	3	100048	810	463	482.5	Sunnyside
	4	100049	810	393	402	Silverado
	5	100050	810	334	343.5	Silverado
	6	100051	810	273	282.5	Lynwood
	7	100052	810	234	243	Jefferson
	8	100053	810	163	173	Gardena
	9	100054	810	95	104.5	Gaspur
Whittier Narrows #2	1	100055	720	659	678.4	Pico Formation
	2	100056	720	579	598.2	Pico Formation
	3	100057	720	469	488.2	Pico Formation
	4	100058	720	419	428.2	Pico Formation
	5	100059	720	329	338.3	Pico Formation
	6	100060	720	263	273.3	Not Interpreted
	7	100061	720	214	223.3	Not Interpreted
	8	100062	720	136	145.3	Not Interpreted
	9	100063	720	91	100.3	Gardena
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

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TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2016-2017

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
Bell #1									Reference Point Elevation: 149.25
Depth of Well	1730-1750	1195-1215	965-985	615-635	420-440	250-270			
Aquifer Name *	Pico Formation	Sunnyside	Silverado	Silverado	Hollydale	Gage			
10/11/2016	-35.07	-32.49	-26.60	-28.43	-19.66	10.95			
12/19/2016	-30.17	-30.92	-22.52	-22.70	-16.04	11.60			
3/13/2017	-23.58	-23.76	-12.62	-13.34	-6.56	14.35			
6/20/2017	-28.71	-25.48	-16.01	-19.01	-12.59	11.96			
9/15/2017	-29.60	-26.10	-17.77	-21.65	-15.30	10.75			
Bell Gardens #1									Reference Point Elevation: 121.03
Depth of Well	1775-1795	1390-1410	1090-1110	855-875	555-575	370-390			
Aquifer Name *	Sunnyside	Sunnyside	Sunnyside	Silverado	Lynwood	Gage			
11/22/2016	-9.99	-9.99	-7.02	-1.75	2.83	3.11			
12/22/2016	-6.51	-5.77	-2.42	1.64	5.92	6.10			
3/13/2017	5.35	8.26	12.47	15.05	16.63	13.48			
4/13/2017	4.78	6.68	10.36	14.26	15.55	12.30			
6/19/2017	0.95	1.83	4.83	9.58	12.42	10.08			
9/15/2017	0.28	-0.06	2.70	6.53	9.18	8.05			
Carson #1									Reference Point Elevation: 26.86
Depth of Well	990-1010	740-760	460-480	250-270					
Aquifer Name *	Sunnyside	Silverado	Lynwood	Gage					
10/11/2016	-43.22	-41.70	-12.52	-11.10					
11/3/2016	-43.90	-42.33	-12.70	-11.26					
12/2/2016	-43.69	-42.35	-12.83	-11.42					
12/16/2016	-42.94	-41.59	-12.72	-11.37					
1/4/2017	-43.35	-41.64	-12.49	-11.18					
2/7/2017	-39.34	-37.93	-11.79	-10.60					
2/28/2017	-40.92	-39.54	-11.95	-10.67					
3/13/2017	-41.01	-39.63	-12.07	-10.73					
4/5/2017	-39.91	-37.94	-11.86	-10.62					
4/13/2017	-39.65	-38.74	-11.79	-10.49					
5/1/2017	-38.89	-37.98	-11.42	-10.26					
6/15/2017	-41.88	-40.84	-11.34	-10.10					
7/12/2017	-42.75	-41.59	-11.44	-10.23					
8/14/2017	-44.85	-43.80	-11.43	-10.12					
9/11/2017	-45.03	-44.03	-12.14	-10.65					
Carson #2									Reference Point Elevation: 43.04
Depth of Well	1230-1250	850-870	600-620	450-470	230-250				
Aquifer Name *	Sunnyside	Silverado	Silverado	Lynwood	Gage				
11/18/2016	-30.11	-20.11	-24.28	-21.86	-20.11				
12/21/2016	-29.99	-24.46	-24.25	-21.97	-20.28				
3/22/2017	-28.53	-24.65	-24.39	-21.73	-19.87				
4/25/2017	-28.16	-23.04	-22.51	-20.61	-18.99				
6/19/2017	-28.53	-24.76	-24.37	-21.37	-19.66				
9/14/2017	-31.11	-26.96	-26.67	-23.42	-21.14				
Carson #3									Reference Point Elevation: 20.18
Depth of Well	1600-1620	1220-1240	1080-1100	870-890	620-640	360-380			
Aquifer Name *	Pico Formation	Sunnyside	Sunnyside	Silverado	Silverado	Lynwood			
11/18/2016	-30.25	-34.34	-33.62	-34.52	-33.77	-14.27			
12/22/2016	-30.04	-34.15	-33.39	-33.97	-33.30	-14.26			
3/20/2017	-29.35	-33.03	-32.57	-33.11	-32.52	-13.92			
6/19/2017	-28.04	-31.96	-31.91	-33.30	-33.00	-13.04			
9/11/2017	-29.77	-34.87	-35.48	-38.31	-38.32	-14.27			
Cerritos #1									Reference Point Elevation: 43.35
Depth of Well	1155-1175	1000-1020	610-630	270-290	180-200	125-135			
Aquifer Name *	Sunnyside	Sunnyside	Lynwood	Gage	Artesia	Artesia			
12/14/2016	-36.70	-41.10	-29.10	13.85	17.50	17.60			
2/10/2017	-26.59	-31.90	-23.87	16.32	19.89	20.26			
3/14/2017	-24.92	-38.18	-19.79	18.08	20.63	21.05			
6/15/2017	-40.29	-47.53	-32.78	15.45	18.80	18.90			
9/12/2017	-37.16	-46.49	-27.75	15.91	18.84	18.90			

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	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
Cerritos #2									Reference Point Elevation: 76.47
Depth of Well	1350-1370	915-935	740-760	490-510	350-370	150-170			
Aquifer Name *	Sunnyside	Silverado	Silverado	Jefferson	Gage	Gaspur			
12/13/2016	-26.18	-33.98	-22.58	-6.48	16.22	22.92			
3/9/2017	-14.55	-28.46	-21.78	-3.34	16.94	24.08			
4/25/2017	-15.47	-31.08	-31.76	-8.67	15.86	23.68			
5/3/2017	-15.88	-34.17	-34.27	-9.98	15.36	23.61			
6/14/2017	-18.82	-36.70	-35.56	-10.27	15.15	23.41			
9/13/2017	-21.48	-41.04	-36.89	-11.46	14.55	22.90			
9/27/2017	-20.04	-38.39	-34.41	-9.86	14.92	23.08			
Chandler #3									Reference Point Elevation: 156.01
Depth of Well	341-363	165-192							
Aquifer Name *	Gage/Lynw/Silv	Gage/Lynw/Silv							
01/04/2017	-13.34	-13.25							
3/23/2017	-13.56	-13.04							
6/14/2017	-13.64	-13.19							
9/25/2017	-14.90	-14.46							
Commerce #1									Reference Point Elevation: 159.30
Depth of Well	1330-1390	940-960	760-780	570-590	325-345	205-225			
Aquifer Name *	Pico Formation	Sunnyside	Sunnyside	Silverado	Hollydale	Gage			
10/31/2016	29.10	16.80	13.06	-16.66	-13.73	30.65			
12/19/2016	27.85	18.74	15.47	-13.95	-10.21	30.51			
1/31/2017	29.01	23.41	20.68	-8.77	-7.00	30.96			
2/16/2017	29.24	25.21	22.82	-7.18	-5.90	31.08			
3/10/2017	29.83	26.65	24.25	-6.80	-6.55	31.12			
5/4/2017	20.35	26.55	23.40	-7.44	-4.61	30.93			
6/19/2017	28.63	25.50	22.10	-8.06	-5.19	30.75			
9/12/2017	28.57	25.35	21.95	-10.40	-9.60	29.80			
Compton #1									Reference Point Elevation: 68.84
Depth of Well	1370-1390	1150-1170	800-820	460-480	305-325				
Aquifer Name *	Sunnyside	Sunnyside	Silverado	Hollydale	Gage				
12/16/2016	-59.41	-59.16	-29.11	-27.46	-14.26				
2/14/2017	-55.31	-55.03	-23.56	-20.95	-9.78				
3/21/2017	-55.23	-54.91	-22.26	-21.82	-10.00				
6/15/2017	-59.64	-59.32	-26.05	-27.57	-13.48				
7/11/2017	-60.54	-60.14	-27.11	-29.84	-15.38				
7/13/2017	-60.37	-60.00	-26.58	-28.76	-14.91				
9/25/2017	-59.92	-59.62	-27.64	-30.37	-15.08				
Compton #2									Reference Point Elevation: 76.97
Depth of Well	1479-1495	830-850	585-605	380-400	295-315	150-170			
Aquifer Name *	Sunnyside	Sunnyside	Silverado	Hollydale	Gage	Exposition			
12/22/2016	-31.89	-47.64	-41.40	-40.85	-34.94	-29.90			
3/22/2017	-29.84	-44.23	-39.71	-39.24	-33.54	-29.01			
4/13/2017	-29.24	-43.81	-38.88	-38.18	-33.43	-28.86			
6/15/2017	-28.25	-46.51	-42.28	-41.90	-35.34	-30.65			
9/12/2017	-28.88	-49.18	-43.98	-43.53	-37.23	-32.43			
Downey #1									Reference Point Elevation: 99.39
Depth of Well	1170-1190	940-960	580-600	370-390	250-270	90-110			
Aquifer Name *	Sunnyside	Silverado	Silverado	Holly/Jeff	Gage	Gaspur			
12/22/2016	-10.16	-7.85	-4.18	0.06	24.84	29.00			
3/16/2017	3.08	4.11	0.92	2.95	25.43	28.83			
6/14/2017	-2.61	-1.19	-2.58	-0.04	24.78	28.70			
9/21/2017	-4.81	-4.08	-5.06	-0.70	24.34	28.43			
Gardena #1									Reference Point Elevation: 84.23
Depth of Well	970-990	445-465	345-365	120-140					
Aquifer Name *	Sunnyside	Silverado	Lynwood	Gage					
12/15/2016	-37.68	-72.14	-49.95	-7.10					
3/15/2017	-36.80	-72.10	-49.65	-6.72					
6/15/2017	-36.49	-73.90	-51.11	-6.46					
9/15/2017	-37.04	-76.00	-51.47	-6.64					

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	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
Gardena #2									Reference Point Elevation: 29.45
Depth of Well	1275-1335	770-790	610-630	340-360	235-255				
Aquifer Name *	Sunnyside	Silverado	Silverado	Lynwood	Gardena				
11/29/2016	-31.35	-34.80	-35.10	-12.95	-5.15				
12/23/2016	-31.19	-34.69	-34.95	-12.91	-4.99				
3/20/2017	-29.87	-33.66	-34.03	-12.62	-4.78				
6/12/2017	-29.90	-35.82	-36.13	-14.03	-4.95				
9/18/2017	-31.32	-45.89	-46.82	-16.58	-5.60				
Hawthorne #1									Reference Point Elevation: 88.98
Depth of Well	910-950	710-730	520-540	400-420	240-260	110-130			
Aquifer Name *	Sunnyside	Silverado	Silverado	Silverado	Lynwood	Gage			
12/19/2016	-39.27	-5.23	-4.83	-4.71	-1.37	4.99			
3/9/2017	-39.03	-1.37	-0.93	-0.85	1.09	5.47			
5/4/2017	-37.64	-0.74	-0.36	-0.26	1.54	5.84			
6/13/2017	-38.10	-8.63	-7.91	-7.74	-3.70	5.70			
9/18/2017	-41.74	-9.91	-9.11	-8.97	-4.15	5.51			
Huntington Park #1									Reference Point Elevation: 179.44
Depth of Well	890-910	690-710	420-440	275-295	114-134				
Aquifer Name *	Silverado	Jefferson	Gage	Exposition	Gaspur				
11/29/2016	-30.31	-36.61	-23.38	12.79	Dry				
12/19/2016	-30.76	-36.01	-23.36	12.62	Dry				
3/14/2017	-27.97	-32.56	-20.71	13.34	Dry				
6/20/2017	-28.36	-34.48	-21.99	12.21	Dry				
9/20/2017	-31.96	-39.99	-22.64	11.54	Dry				
Inglewood #1									Reference Point Elevation: 112.82
Depth of Well	1380-1400	865-885	430-450	280-300	150-170				
Aquifer Name *	Pico Formation	Pico Formation	Silverado	Lynwood	Gage				
12/19/2016	-30	-35.87	-20.93	2.16	6.20				
3/9/2017	-29.28	-34.41	-20.27	2.58	6.37				
6/13/2017	-29.2	-33.86	-19.58	2.32	6.52				
7/3/2017	-29.19	-33.71	-19.90	2.03	6.30				
9/15/2017	-29.73	-33.18	-20.53	1.97	6.38				
Inglewood #2									Reference Point Elevation: 219.82
Depth of Well	800-840	450-470	330-350	225-245					
Aquifer Name *	Pico Formation	Sunnyside	Silverado	Lynwood					
12/29/2016	-25.68	-14.27	-1.61	1.96					
3/9/2017	-24.82	-15.68	-1.87	1.75					
6/13/2017	-24.25	-15.51	-1.86	1.78					
9/19/2017	-23.65	-15.41	-1.85	1.82					
Inglewood #3									Reference Point Elevation: 72.20
Depth of Well	1900-1940	1440-1460	1255-1275	890-910	540-560	370-390	245-265		
Aquifer Name *	Pico Formation	Pico Formation	Pico Formation	Pico Formation	Silverado	Lynw/Silv	Gage/Lynw		
12/23/2016	-30.27	-33.46	-39.35	-41.70	-42.79	-8.96	3.72		
2/1/2017	-30.18	-33.01	-38.90	-42.13	-43.70	-8.37	3.79		
3/17/2017	-30.25	-32.67	-38.57	-40.55	-41.93	-6.24	4.25		
6/13/2017	-30.35	-32.10	-37.83	-40.31	-41.72	-8.94	4.12		
9/19/2017	-30.49	-31.48	-37.66	-42.63	-44.35	-9.45	3.83		
Lakewood #1									Reference Point Elevation: 53.87 (shallow) and 53.14 (deep)
Depth of Well	989-1009	640-660	450-470	280-300	140-160	70-90			
Aquifer Name *	Sunnyside	Silverado	Lynwood	Gage	Artesia	Bellflower			
12/15/2016	-63.23	-37.57	-34.95	-18.20	-2.25	20.38			
3/15/2017	-63.52	-32.11	-28.68	-13.17	0.84	22.23			
6/15/2017	-84.83	-35.00	-32.97	-18.10	-2.79	21.75			
9/15/2017	-132.59	-36.74	-35.23	-20.80	-5.08	20.82			
Lakewood #2									Reference Point Elevation: 40.51
Depth of Well	1960-2000	1740-1760	1300-1320	995-1015	690-710	555-575	255-275	110-120	
Aquifer Name *	Sunnyside	Sunnyside	Sunnyside	Silverado	Lynwood	Jefferson	Gage	Artesia	
12/14/2016	-38.99	-45.02	-47.94	-55.87	-31.04	-17.29	15.01	17.56	
3/9/2017	-25.69	-34.61	-10.82	-53.59	-28.29	-38.45	16.92	19.71	
6/20/2017	-26.51	-40.29	-44.87	-63.60	-37.73	-18.83	15.96	18.81	
9/13/2017	-26.62	-39.89	-43.76	-62.55	-33.34	-16.12	15.51	18.20	

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TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2016-2017

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
La Mirada #1									Reference Point Elevation: 78.24
Depth of Well	1130-1150	965-985	690-710	470-490	225-245				
Aquifer Name *	Sunnyside	Silverado	Lynwood	Jefferson	Gage				
11/11/2016	-33.34	-27.86	-34.74	-51.01	-19.91				
12/27/2016	-28.16	-23.18	-32.25	-38.05	-13.43				
1/31/2017	-20.79	-15.78	-15.11	-25.77	-6.59				
2/15/2017	-18.20	-13.26	-13.28	-14.86	-4.58				
3/13/2017	-13.43	-9.15	-13.90	-22.81	-3.58				
4/19/2017	-13.95	-8.34	-15.19	-31.86	-6.53				
6/21/2017	-19.27	-13.37	-22.36	-41.61	-11.95				
9/12/2017	-13.43	-8.62	-15.19	-34.71	-9.29				
Lawndale #1									Reference Point Elevation: 48.93
Depth of Well	1360-1400	895-905	615-635	395-415	290-310	170-190			
Aquifer Name *	Pico Formation	Pico Formation	Pico Formation	Silverado	Lynwood	Gardena			
10/11/2016	-30.58	-35.98	-4.74	-4.23	-3.16	-4.63			
11/3/2016	-30.47	-36.04	-3.56	-2.89	-2.05	-1.01			
12/12/2016	-30.30	-35.82	-3.70	-3.21	-2.34	-4.24			
1/4/2017	-30.10	-35.61	-3.91	-3.37	-2.24	-0.51			
2/7/2017	-29.72	-35.01	-4.27	-3.61	-2.47	-0.79			
2/28/2017	-29.53	-35.12	-3.56	-3.01	-1.84	-0.37			
3/23/2017	-29.41	-35.00	-3.59	-3.05	-1.91	-0.36			
4/4/2017	-29.30	-35.34	-3.67	-3.10	-1.97	-0.04			
5/1/2017	-29.22	-34.58	-2.13	-1.46	-0.80	-3.02			
6/13/2017	-28.87	-37.60	-7.95	-7.86	-6.09	-4.72			
7/12/2017	-28.56	-40.67	-9.62	-9.15	-7.42	-2.47			
8/14/2017	-28.69	-45.59	-9.15	-8.62	-6.84	-5.51			
9/18/2017	-28.78	-47.54	-9.67	-9.20	-7.43	-5.57			
Lomita #1									Reference Point Elevation: 79.48
Depth of Well	1240-1260	700-720	550-570	400-420	220-240	100-120			
Aquifer Name *	Sunnyside	Sunnyside	Silverado	Silverado	Gage	Gage			
12/23/2016	-24.47	-16.19	-13.10	-14.40	-12.49	-12.43			
3/10/2017	-22.47	-15.01	-11.89	-13.30	-11.68	-11.58			
4/24/2017	-23.29	-15.91	-13.13	-14.22	-11.88	-11.87			
6/14/2017	-22.90	-15.97	-12.77	-15.22	-11.77	-11.64			
9/22/2017	-25.59	-16.87	-13.82	-16.08	-12.24	-12.36			
Long Beach #1									Reference Point Elevation: 30.54
Depth of Well	1430-1450	1230-1250	970-990	599-619	400-420	155-175			
Aquifer Name *	Sunnyside	Sunnyside	Silverado	Lynwood	Jefferson	Gage			
12/14/2016	-45.96	-48.51	-73.58	-39.11	-33.01	-9.66			
1/24/2017	-44.36	-47.01	-66.10	-33.81	-27.87	-5.56			
3/20/2017	-42.88	-45.81	-63.62	-31.20	-27.26	-5.72			
3/30/2017	-42.32	-45.30	-64.30	-31.69	-28.11	-6.49			
6/12/2017	-41.47	-44.46	-71.98	-37.30	-33.21	-10.26			
9/21/2017	-40.51	-43.64	-61.00	-31.64	-27.08	-4.81			
Long Beach #2									Reference Point Elevation: 44.20
Depth of Well	970-990	720-740	450-470	280-300	160-180	95-115			
Aquifer Name *	Sunnyside	Sunnyside	Silverado	Lynwood	Gage	Gaspur			
12/16/2016	-78.95	-47.20	-38.65	-14.85	-3.75	-1.52			
3/10/2017	-76.34	-44.98	-38.16	-13.14	-2.75	-0.82			
4/12/2017	-78.12	-46.12	-40.41	-13.35	-2.81	-0.90			
6/14/2017	-82.94	-48.42	-42.85	-14.22	-3.15	-0.97			
9/21/2017	-82.14	-49.90	-43.43	-15.11	-3.62	-1.30			
Long Beach #3									Reference Point Elevation: 26.67
Depth of Well	1350-1390	997-1017	670-690	530-550	410-430				
Aquifer Name *	Sunnyside	Silverado	Silverado	Silverado	Lynwood				
12/19/2016	-34.18	-44.96	-44.88	-45.48	-7.68				
3/13/2017	-32.74	-42.82	-42.82	-43.44	-6.53				
4/10/2017	-32.61	-42.33	-42.33	-42.89	-5.23				
6/12/2017	-32.24	-44.08	-44.06	-44.64	-2.19				
9/20/2017	-33.07	-43.45	-43.48	-43.92	-5.46				

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GROUNDWATER ELEVATIONS, WATER YEAR 2016-2017

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
Long Beach #4									Reference Point Elevation: 12.34
Depth of Well	1200-1220	800-820							
Aquifer Name *	Pico Formation	Sunnyside							
12/22/2016	-29.96	-13.76							
3/29/2017	-28.66	-12.88							
9/26/2017	-28.88	-10.96							
Long Beach #6									Reference Point Elevation: 34.47
Depth of Well	1490-1510	930-950	740-760	480-500	380-400	220-240			
Aquifer Name *	Pico Formation	Sunnyside	Sunnyside	Silverado	Lynwood	Gage			
12/15/2016	-59.53	-74.58	-75.88	-101.23	-101.28	-36.95			
3/16/2017	-58.58	-75.16	-76.48	-101.37	-101.51	-34.14			
6/12/2017	-57.53	-75.26	-76.73	-106.33	-106.31	-35.73			
9/21/2017	-57.46	-74.63	-76.09	-101.83	-101.81	-35.58			
Long Beach #8									Reference Point Elevation: 21.20
Depth of Well	1435-1455	1020-1040	780-800	635-655	415-435	165-185			
Aquifer Name *	Pico Formation	Sunnyside	Silverado	Silverado	Lynwood	Gage			
12/15/2016	-12.60	-28.45	-39.40	-37.25	-36.85	2.95			
3/10/2017	-12.46	-27.57	-36.22	-34.32	-33.92	3.47			
6/16/2017	-12.29	-26.86	-36.98	-35.11	-34.63	3.90			
9/20/2017	-12.25	-27.20	-38.26	-36.05	-35.72	4.01			
Los Angeles #1									Reference Point Elevation:176.21
Depth of Well	1350-1370	1080-1100	920-940	640-660	350-370				
Aquifer Name *	Pico Formation	Sunnyside	Silverado	Lynwood	Gage				
12/22/2016	-27.02	-23.55	-23.79	-25.91	-16.57				
3/15/2017	-25.34	-21.95	-22.64	-23.86	-15.91				
6/23/2017	-24.67	-21.64	-22.29	-23.37	-15.11				
9/18/2017	-23.53	-21.21	-21.94	-23.74	-14.95				
Los Angeles #2									Reference Point Elevation: 220.33
Depth of Well	1330-1370	710-730	505-525	410-430	245-265	135-155			
Aquifer Name *	Pico Formation	Sunnyside	Sunnyside	Silverado	Lynwood	Exposition			
12/23/2016	50.86	-6.00	-6.49	-19.49	-26.37	Dry			
3/15/2017	46.74	-5.61	-6.01	-19.58	-26.70	Dry			
6/21/2017	46.53	-6.84	-7.39	-19.54	-26.37	Dry			
9/18/2017	46.41	-6.86	-7.37	-18.72	-25.71	Dry			
Los Angeles #3									Reference Point Elevation: 145.35
Depth of Well	1210-1230	875-895	705-725	550-570	330-350	190-210			
Aquifer Name *	Sunnyside	Silverado	Lynwood	Hollydale	Gage	Exposition			
11/28/2016	-17.85	-7.45	-12.55	-18.35	-14.85	5.40			
12/22/2016	-18.11	-7.41	-12.52	-18.60	-14.85	5.41			
3/16/2017	-17.11	-6.69	-11.28	-16.60	-14.27	4.95			
6/23/2017	-16.48	-6.09	-10.53	-14.99	-13.03	4.94			
9/19/2017	-15.77	-6.01	-10.43	-14.19	-12.08	4.94			
Los Angeles #4									Reference Point Elevation: 136.04
Depth of Well	1740-1780	1190-1230	720-740	490-510	355-375	235-255			
Aquifer Name *	Pico Formation	Pico Formation	Sunnyside	Silverado	Lynwood	Gage			
12/22/2016	-27.47	-35.28	-32.27	-30.59	-29.90	-18.51			
3/14/2017	-26.39	-31.83	-29.11	-28.40	-28.36	-18.29			
6/21/2017	-24.12	-31.55	-29.93	-28.13	-28.10	-17.70			
9/19/2017	-24.87	-32.72	-30.72	-28.46	-28.44	-17.77			
Lynwood #1									Reference Point Elevation: 88.64 (shallow) and 89.29 (deep)
Depth of Well	2880-2900	2430-2450	1650-1670	1445-1465	1200-1220	880-900	640-660	315-335	160-180
Aquifer Name *	Pico Formation	Pico Formation	Pico Formation	Pico Formation	Pico Formation	Sunnyside	Lynw/Silv	Gardena	Gaspur
11/21/2016	-27.51	-42.81	-51.14	-46.26	-34.09	-35.44	-35.99	-24.83	37.51
12/22/2016	-27.28	-42.05	-49.47	-44.33	-31.22	-31	-31.37	-22.25	37.58
3/13/2017	-24.70	-40.16	-44.05	-37.83	-22.70	-24.61	-25.45	-18.71	37.57
6/14/2017	-22.96	-39.97	-48.09	-41.99	-28.11	-29.04	-30.11	-22.17	37.2
9/18/2017	-23.09	-40.94	-49.56	-43.62	-29.76	-30.79	-32.05	-24.67	36.66

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GROUNDWATER ELEVATIONS, WATER YEAR 2016-2017

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
Manhattan Beach #1									Reference Point Elevation: 128.71
Depth of Well	1950-1990	1570-1590	1250-1270	865-885	640-660	320-340	180-200		
Aquifer Name *	Pico Formation	Pico Formation	Sunnyside	Silverado	Silverado	Lynwood	Gage		
12/21/2016	0.27	-2.71	-29.80	0.98	-0.57	8.41	10.85		
3/28/2017	-0.16	-2.40	-28.89	2.17	0.76	9.66	12.13		
6/15/2017	8.96	-2.54	-28.54	0.51	0.21	8.96	11.41		
9/18/2017	0.02	-2.26	-28.24	-1.31	-0.27	8.75	10.96		
Montebello #1									Reference Point Elevation: 193.11
Depth of Well	900-960	690-710	500-520	370-390	210-230	90-110			
Aquifer Name *	Pico Formation	Sunnyside	Silverado	Lynwood	Gage	Exposition			
12/27/2016	57.08	55.56	55.12	52.29	43.66	Dry			
3/10/2017	72.60	73.06	72.51	68.69	56.89	Dry			
4/18/2017	72.57	69.96	69.29	65.82	59.91	Dry			
6/20/2017	68.43	61.46	60.70	58.24	59.66	Dry			
9/19/2017	70.99	65.06	64.18	61.04	61.04	Dry			
Norwalk #1									Reference Point Elevation: 96.18
Depth of Well	1400-1420	990-1010	720-740	430-450	220-240				
Aquifer Name *	Sunnyside	Silverado	Lynwood	Jefferson	Gage				
11/23/2016	14.33	-25.47	-3.47	-11.72	-9.47				
12/15/2016	14.83	-24.27	-2.26	-10.57	-8.55				
3/9/2017	21.04	-17.27	7.01	-6.25	-5.30				
6/21/2017	24.83	-16.02	6.54	-8.48	-6.80				
9/12/2017	24.92	-16.43	5.15	-10.49	-8.78				
Norwalk #2									Reference Point Elevation: 116.73
Depth of Well	1460-1480	1260-1280	960-980	800-820	480-500	236-256			
Aquifer Name *	Sunnyside	Sunnyside	Silverado	Lynwood	Gardena	Exposition			
11/23/2016	-4.32	-4.22	-8.67	-5.27	5.78	12.13			
12/14/2016	-3.33	-3.23	-6.10	-2.62	6.18	12.70			
2/1/2017	1.92	2.01	7.43	9.12	13.61	17.50			
3/15/2017	5.85	5.93	8.41	13.14	12.57	18.43			
4/18/2017	7.08	7.20	7.38	11.69	12.60	18.33			
6/21/2017	6.09	6.18	2.68	6.40	8.55	15.99			
9/12/2017	6.21	6.19	2.15	5.44	6.11	14.21			
Pico #1									Reference Point Elevation: 182.89
Depth of Well	860-900	460-480	380-400	170-190					
Aquifer Name *	Pico Formation	Silverado	Silverado	Gardena					
12/15/2016	107.73	98.07	97.54	95.58					
3/15/2017	136.40	132.49	131.95	130.30					
6/15/2017	133.07	119.42	118.72	116.72					
9/15/2017	132.18	118.75	118.08	114.96					
Pico #2									Reference Point Elevation: 151.83
Depth of Well	1180-1200	830-850	560-580	320-340	235-255	100-120			
Aquifer Name *	Sunnyside	Sunnyside	Sunnyside	Silverado	Lynwood	Gaspur			
12/15/2016	47.63	52.97	56.72	78.10	79.43	85.22			
3/16/2017	73.43	77.20	85.08	98.35	99.21	103.02			
6/15/2017	58.96	61.17	68.91	90.43	91.68	97.94			
9/15/2017	59.97	61.72	67.36	83.33	82.99	91.00			
PM-1 Columbia									Reference Point Elevation: 78.42
Depth of Well	555-595	460-500	240-280	160-200					
Aquifer Name *	Sunnyside	Silverado	Lynwood	Lynwood					
1/4/2017	-2.35	-1.67	not measured	-1.28					
3/31/2017	-1.71	-0.92	not measured	-0.43					
6/27/2017	-1.79	-0.82	not measured	0.14					
9/22/2017	-1.91	-0.97	not measured	0.41					
PM-2 Police Station									Reference Point Elevation: 88
Depth of Well	635-665	520-540	370-390	240-260					
Aquifer Name *	Pico Formation	Silverado	Lynwood	Lynwood					
12/15/2016	-3.90	0.69	2.19	2.17					
11/30/2016	-4.05	1.75	2.40	2.55					
3/21/2017	-3.11	2.64	0.95	1.10					
6/16/2017	-1.95	0.45	2.01	0.85					
9/19/2017	-5.12	2.25	0.70	2.36					

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	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
PM-3 Madrid									Reference Point Elevation: 73.12
Depth of Well	640-680	480-520	240-280	145-185					
Aquifer Name *	Sunnyside	Silverado	Lynwood	Gage					
12/15/2016	-6.77	-4.55	-4.44	-4.42					
3/28/2017	-5.99	-3.73	-3.73	-3.73					
6/16/2017	-6.13	-3.58	-3.53	-3.55					
9/25/2017	-6.51	-3.66	-3.55	-3.54					
PM-4 Mariner									Reference Point Elevation: 100.38
Depth of Well	670-710	500-540	340-380	200-240					
Aquifer Name *	Sunnyside	Silverado	Lynwood	Lynwood					
12/23/2016	-0.84	0.69	3.97	4.01					
3/26/2017	-0.35	1.90	5.22	5.24					
6/20/2017	0.48	3.45	6.76	6.81					
9/20/2017	-1.32	1.57	4.94	4.98					
PM-5 Columbia Park									Reference Point Elevation: 78.57
Depth of Well	1360-1380	940-960	770-790	580-600	320-340	140-160			
Aquifer Name *	Pico Formation	Pico Formation	Sunnyside	Sunnyside	Silverado	Gage			
12/13/2016	-29.45	-29.45	-2.74	-1.65	3.16	3.30			
3/21/2017	-28.79	-28.85	-3.28	-1.84	3.95	4.02			
6/16/2017	-27.88	-28.93	-4.21	-2.58	4.09	4.25			
9/22/2017	-28.01	-34.82	-4.71	-2.51	3.70	3.87			
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			
12/15/2016	-28.63	-9.40	-8.78	-1.19	-0.10	0.36			
3/23/2017	-26.93	-8.68	-7.99	-0.04	1.31	1.81			
3/28/2017	-27.61	-8.60	-7.91	0.04	1.44	1.94			
4/13/2017	-27.60	-8.47	-7.85	0.09	1.41	1.88			
6/14/2017	-27.60	-8.52	-7.65	0.38	1.53	2.23			
9/25/2017	-30.98	-9.14	-7.89	0.10	1.52	1.97			
Rio Hondo #1									Reference Point Elevation: 146.51
Depth of Well	1110-1130	910-930	710-730	430-450	280-300	140-160			
Aquifer Name *	Sunnyside	Sunnyside	Sunnyside	Silverado	Lynwood	Gardena			
11/10/2016	34.41	32.56	31.91	26.09	33.41	37.96			
12/27/2016	45.04	49.36	48.75	42.61	45.75	48.28			
3/9/2017	61.73	65.86	65.19	60.58	68.61	72.08			
6/21/2017	51.16	50.16	49.47	43.90	52.53	56.81			
9/19/2017	51.69	50.41	49.71	43.03	49.66	53.26			
9/26/2017	51.03	49.61	48.88	42.15	49.15	52.84			
Seal Beach #1									Reference Point Elevation: 9.06
Depth of Well	1345-1365	1160-1180	1020-1040	775-795	605-625	215-235	60-70		
Aquifer Name *	Sunnyside	Sunnyside	Sunnyside	Silverado	Lynwood	Gage	Gaspur		
12/14/2016	-44.87	-45.04	-44.93	-64.79	-46.41	-5.29	-1.39		
1/25/2017	-43.17	-43.34	-43.24	-56.16	-36.79	-1.83	2.34		
3/14/2017	-41.48	-41.70	-41.56	-51.79	-32.48	-1.31	2.73		
6/12/2017	-39.63	-39.84	-39.70	-61.63	-39.84	-6.96	-0.14		
9/21/2017	-38.72	-38.93	-38.74	-47.34	-30.47	-0.14	6.64		
South Gate #1									Reference Point Elevation: 102.50
Depth of Well	1440-1460	1320-1340	910-930	565-585	220-240				
Aquifer Name *	Pico Formation	Sunnyside	Silverado	Lynwood	Exposition				
12/21/2016	-14.33	-11.98	-7.40	-5.42	30.50				
2/28/2017	-4.08	-1.72	1.50	1.07	31.08				
3/20/2017	-3.49	-1.86	0.79	-2.53	30.98				
6/20/2017	-8.86	-7.18	-4.15	-5.85	30.69				
9/21/2017	-11.14	-9.37	-6.11	-5.93	30.31				
South Gate #2									Reference Point Elevation: 120.29
Depth of Well	1740-1760	1410-1430	1062-1082	670-690	410-430	205-225			
Aquifer Name *	Pico Formation	Pico Formation	Sunnyside	Silverado	Hollydale	Gaspur			
12/23/2016	-33.42	-32.6	-26.23	-18.7	38.87	45.05			
3/15/2017	-27.77	-27.07	-20.51	-15.28	38.82	44.74			
6/20/2017	-31.55	-31.55	-25.72	-21.67	38.30	44.33			
9/29/2017	-32.38	-32.11	-29.42	-21.88	38.61	44.68			

* - WRD generally follows the aquifer naming conventions defined in DWR's Bulletin 104; however, in some cases WRD's interpretation has resulted in aquifer classifications different from those predicted by that report.

TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2016-2017

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
Westchester #1									Reference Point Elevation: 126.95
Depth of Well	740-760	560-580	455-475	310-330	215-235				
Aquifer Name *	Pico Formation	Sunnyside	Silverado	Lynwood	Gage				
12/22/2016	0.77	8.95	9.24	9.47	9.56				
3/9/2017	1.37	9.06	9.46	9.61	9.80				
6/13/2017	0.84	9.18	9.54	9.70	9.87				
9/20/2017	-0.42	8.97	9.34	9.48	9.63				
Whittier #1									Reference Point Elevation: 217.35 and 217.81 (Zone 3)
Depth of Well	1180-1200	920-940	600-620	450-470	200-220				
Aquifer Name *	Sunnyside	Sunnyside	Silverado	Lynwood	Gage				
12/15/2016	103.15	103.16	95.58	93.50	193.35				
3/29/2017	102.81	102.56	96.37	94.81	196.17				
6/15/2017	102.67	102.68	96.73	96.20	195.72				
9/12/2017	102.52	102.54	96.76	95.40	195.10				
Whittier #2									Reference Point Elevation: 167.55
Depth of Well	1370-1390	1090-1110	655-675	425-445	315-335	150-170			
Aquifer Name *	Sunnyside	Sunnyside	Silverado	Silverado	Lynwood	Gardena			
11/10/2016	63.60	64.28	55.87	54.75	87.52	97.35			
12/12/2016	66.70	67.41	64.50	67.16	91.45	99.08			
3/9/2017	81.82	81.91	91.74	93.73	107.41	110.15			
6/20/2017	78.20	78.40	75.27	73.91	103.36	111.03			
9/13/2017	79.30	79.49	75.74	74.99	100.74	108.77			
Whittier Narrows #1									Reference Point Elevation: 214.66
Depth of Well	749-769	610-629	463-483	393-402	334-344	273-283	234-243	163-173	95-105
Aquifer Name *	Sunnyside	Sunnyside	Sunnyside	Silverado	Silverado	Lynwood	Jefferson	Gardena	Gaspur
3/15/2017	166.70	168.99	172.68	179.02	180.02	181.37	181.44	181.49	184.15
9/13/2017	149.47	149.91	152.75	159.23	160.19	161.58	161.42	161.46	162.35
Whittier Narrows #2									Reference Point Elevation: 209.15
Depth of Well	659-678	579-598	469-488	419-428	328-338	263-273	214-223	136-145	91-100
Aquifer Name	Pico Formation	Pico Formation	Pico Formation	Pico Formation	Pico Formation	Not Defined	Not Defined	Not Defined	Gardena
3/15/2017	-16.13	-15.92	-15.51	-5.81	110.77	165.40	166.09	165.80	169.92
9/14/2017	-17.13	-16.92	-16.62	-8.17	101.25	147.18	147.84	148.57	157.88
Willowbrook #1									Reference Point Elevation: 98.87
Depth of Well	885-905	500-520	360-380	200-220					
Aquifer Name	Sunnyside	Silverado	Lynwood	Gage					
11/21/2016	-47.83	-38.58	-43.18	-42.38					
12/22/2016	-45.36	-37.71	-41.77	-41.23					
3/14/2017	-41.04	-36.48	-40.97	-40.43					
6/15/2017	-45.88	-37.14	-42.21	-41.30					
9/18/2017	-47.05	-38.22	-43.08	-42.25					
Wilmington #1									Reference Point Elevation: 40.74
Depth of Well	915-935	780-800	550-570	225-245	120-140				
Aquifer Name	Sunnyside	Sunnyside	Silverado	Lynwood	Gage				
11/3/2016	-40.89	-41.30	-41.34	-15.21	-12.40				
12/21/2016	-39.86	-40.27	-40.35	-14.58	-11.79				
2/23/2017	-37.08	-37.54	-37.64	-13.12	-10.31				
3/13/2017	-37.56	-37.97	-38.17	-14.25	-11.48				
5/22/2017	-37.21	-37.56	-37.82	-12.19	-9.34				
6/23/2017	-40.23	-40.62	-40.85	-12.66	-9.49				
8/7/2017	-41.42	-41.79	-42.01	-12.39	-9.14				
9/14/2017	-40.58	-40.98	-41.19	-13.30	-10.17				
Wilmington #2									Reference Point Elevation: 32.30
Depth of Well	950-970	755-775	540-560	390-410	120-140				
Aquifer Name *	Sunnyside	Silverado	Lynwood	Lynwood	Gage				
42733	-27.8	-23.93	-20.5	-20.24	-3.44				
42759	-26.07	-22.67	-19.38	-18.69	-3.55				
42794	-26.23	-22.76	-19.22	-18.56	-3.67				
3/14/2017	-26.45	-22.97	-19.68	-19.04	-3.56				
5/23/2017	-25.79	-17.35	-18.73	-17.95	-3.51				
5/30/2017	-26.07	-22.51	-18.85	-18.08	-3.68				
6/20/2017	-27.32	-22.12	-19.05	-18.20	-2.88				
8/8/2017	-28.37	-22.12	-19.52	-18.56	-3.22				
9/18/2017	-27.96	-22.12	-19.85	-18.88	-2.92				

* - WRD generally follows the aquifer naming conventions defined in DWR's Bulletin 104; however, in some cases WRD's interpretation has resulted in aquifer classifications different from those predicted by that report.

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2016-17

Constituents	Units	MCL	MCL Type	Bell #1					
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
				9/26/2017	9/26/2017	9/26/2017	9/26/2017	9/26/2017	9/26/2017
General Minerals									
Alkalinity	mg/l			600	170	160	180	180	270
Anion Sum	meq/l			16	5.5	5.2	5.8	7.5	12
Bicarbonate as HCO3	mg/l			720	200	200	220	220	330
Boron	mg/l	1	N	**1.5**	0.13	0.12	0.14	0.14	0.16
Bromide	ug/l			1200	100	150	120	180	400
Calcium, Total	mg/l			22	51	45	56	76	120
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			15	2.6	2	2.3	2.3	2.1
Cation Sum	meq/l			15	5.5	5.2	5.6	7.5	11
Chloride	mg/l	500	S	150	21	28	26	50	100
Fluoride	mg/l	2	P	0.43	0.25	0.42	0.45	0.4	0.38
Hardness (Total, as CaCO3)	mg/l			82	170	150	190	260	430
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Iodide	mg/l			230	22	30	27	ND	ND
Iron, Total	mg/l	0.3	S	0.1	0.021	ND	ND	ND	ND
Langelier Index - 25 degree	None			1.3	0.88	0.73	0.86	0.94	1.2
Magnesium, Total	None			6.5	10	10	13	18	32
Manganese, Total	ug/l	50	S	44	**74**	48	**66**	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	8.8	11
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	2	2.4
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			6.4	2.5	3.4	3.1	2.8	3
Sodium, Total	mg/l			310	48	46	40	49	60
Sulfate	mg/l	500	S	3.2	75	54	70	110	160
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	950	340	320	350	490	700
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	2	2.4
Total Organic Carbon	mg/l			19		0.64	0.33	0.32	2.9
General Physical Properties									
Apparent Color	ACU	15	S	**150**	3	ND	ND	ND	ND
Lab pH	Units			8.5	8.3	8.2	8.2	8.2	8
Odor	TON	3	S	2	1	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	1600	540	510	560	740	1100
Turbidity	NTU	5	S	0.69	0.13	ND	0.26	0.17	0.75
Metals									
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	ND	ND	2.8	ND
Barium, Total	ug/l	1000	P	34	37	34	74	230	130
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	1.1	ND	ND	ND	2.2	4.2
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.16	0.078	0.089	0.093	2.3	4.1
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	5.1
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N	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	**0.61**
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	0.79
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	P	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND	ND	ND
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
Total Trihalomethanes	ug/l	80	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	1.9	**51**
Vinyl chloride (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
Xylenes (Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	2.4	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 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2016-17

Constituents	Units	MCL	MCL Type	Bell Gardens #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/20/2017	9/8/2017	4/20/2017	9/8/2017	4/20/2017	9/8/2017	4/20/2017	9/8/2017	4/20/2017	9/8/2017	4/20/2017	9/8/2017
General Minerals															
Alkalinity	mg/l			160	160	160	160	140	140	110	110	120	120	140	140
Anion Sum	meq/l			7.1	7.1	5.1	5.1	6.9	6.8	5	4.9	5	4.9	5.6	5.5
Bicarbonate as HCO3	mg/l			200	200	200	200	170	170	130	140	150	150	170	170
Boron	mg/l	1	N	0.051	0.052	0.12	0.12	0.15	0.17	0.13	0.14	0.13	0.14	0.13	0.14
Bromide	ug/l			130	120	130	120	140	140	82	79	190	170	130	100
Calcium, Total	mg/l			97	97	42	43	70	74	44	47	46	48	46	56
Carbon Dioxide	mg/l			2.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			2	2	3.3	2.6	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			7.3	7.3	5.2	5.3	6.8	7.1	4.8	5.1	4.9	5	4.8	5.6
Chloride	mg/l	500	S	46	46	34	33	63	62	42	40	35	33	40	42
Fluoride	mg/l	2	P	0.22	0.2	0.31	0.29	0.34	0.32	0.44	0.42	0.26	0.24	0.37	0.35
Hardness (Total, as CaCO3)	mg/l			300	300	140	140	220	230	140	150	150	160	150	180
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			5.8	6.1	12	12	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.038	0.037	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			1.1	1	0.83	0.74	0.82	0.71	0.22	0.42	0.34	0.27	0.19	0.47
Magnesium, Total	None			14	14	8.4	8.1	12	12	8.4	8.4	9.6	9.2	9.4	10
Manganese, Total	ug/l	50	S	30	29	41	40	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
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	9.8	10	6.1	6.3	7.2	7.2	6.8	7.4
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	2.2	2.3	1.4	1.4	1.6	1.6	1.5	1.7
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			2.2	2.4	2.5	2.5	3.3	3.6	3	3.3	2.8	2.9	2.8	3.3
Sodium, Total	mg/l			29	30	55	55	51	52	43	45	40	41	40	42
Sulfate	mg/l	500	S	120	120	43	43	98	97	71	68	67	65	71	69
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	470	290	310	420	450	340	320	310	320	350	350
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	2.2	2.3	1.4	1.4	1.6	1.6	1.5	1.7
Total Organic Carbon	mg/l			0.4	0.36	0.44	0.43	0.44	0.38	0.34	ND	0.32	ND	0.32	ND
General Physical Properties															
Apparent Color	ACU	15	S	ND	ND	3	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lab pH	Units			8.2	8.2	8.4	8.3	8.2	8	7.9	8.1	7.9	7.9	7.7	7.9
Odor	TON	3	S	ND	2	1	ND	ND	ND	ND	ND	1	ND	ND	ND
Specific Conductance	umho/cm	1600	S	710	710	510	510	710	710	510	510	500	500	560	560
Turbidity	NTU	5	S	0.12	0.12	0.11	0.15	0.75	0.2	0.13	0.11	ND	ND	0.18	0.1
Metals															
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	3	3.2	ND	ND	2.4	2.9	2.2	2.6	1.2	1.3	1.2	2
Barium, Total	ug/l	1000	P	100	110	69	70	120	120	48	48	53	52	52	52
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.022	ND	ND	ND	0.3	0.32	0.52	0.53	0.68	0.67	0.54	0.52
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		**1.6**		ND		**1.6**		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		ND		ND		ND		ND		ND		ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3	1.2
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	ug/l	80	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	0.56	ND	ND	ND
Vinyl chloride (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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	0.68	ND	ND	ND	0.56	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 2016-17

Constituents	Units	MCL	MCL Type	Cerritos #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/14/2017	9/12/2017	4/14/2017	9/12/2017	4/14/2017	9/12/2017	4/14/2017	9/12/2017	4/14/2017	9/12/2017	4/14/2017	9/12/2017
General Minerals															
Alkalinity	mg/l			160	160	160	170	170	170	180	180	180	180	190	190
Anion Sum	meq/l			4.6	4.7	4.1	4.1	5.3	5.2	4.9	4.9	4.5	4.5	4.6	4.6
Bicarbonate as HCO3	mg/l			190	200	200	200	210	210	220	220	220	220	230	230
Boron	mg/l	1	N	0.083	0.081	0.053	0.054	0.083	0.083	0.077	0.083	0.079	0.08	0.072	0.075
Bromide	ug/l			46	45	34	34	70	65	52	47	40	37	57	54
Calcium, Total	mg/l			38	35	34	35	45	42	47	47	40	38	46	47
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			3.1	3.3	3.3	2.6	ND	2.7	ND	2.8	2.3	2.8	ND	3.8
Cation Sum	meq/l			5.1	4.6	4.3	4.1	5.6	5.1	5.1	5	4.8	4.4	4.8	4.7
Chloride	mg/l	500	S	14	14	9	8.9	20	19	14	14	9.8	9.8	9.6	9.4
Fluoride	mg/l	2	P	0.29	0.29	0.36	0.35	0.42	0.42	0.54	0.55	0.48	0.48	0.35	0.36
Hardness (Total, as CaCO3)	mg/l			120	110	110	110	140	130	160	160	140	130	150	150
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			8.7	13	13	18	26	38	18	25	15	18	95	95
Iron, Total	mg/l	0.3	S	ND	ND	ND	0.02	0.031	0.03	0.089	0.088	0.064	0.061	0.056	0.082
Langelier Index - 25 degree	None			0.85	0.82	0.78	0.71	0.66	0.84	0.53	0.85	0.72	0.79	0.69	0.94
Magnesium, Total	None			5.2	4.6	5.5	5.2	6.7	6	11	11	9.9	9.1	9.5	9
Manganese, Total	ug/l	50	S	26	26	32	31	47	42	**84**	**82**	**120**	**110**	**130**	**140**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			2.4	2.2	2.3	2.1	2.3	2	2.1	1.9	2.1	1.8	2.3	2
Sodium, Total	mg/l			63	55	48	44	63	56	40	38	44	38	37	36
Sulfate	mg/l	500	S	50	49	24	24	63	60	45	43	29	29	25	24
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	280	270	240	250	320	310	300	290	270	270	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			0.32	ND	0.34	0.32	ND	ND	ND	ND	0.36	0.32	0.38	0.31
General Physical Properties															
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Lab pH	Units			8.4	8.4	8.4	8.3	8.1	8.3	8	8.3	8.2	8.3	8.1	8.4
Odor	TON	3	S	ND	1	2	1	1	ND	1	1	2	ND	1	ND
Specific Conductance	umho/cm	1600	S	460	460	390	400	520	510	470	480	430	440	440	440
Turbidity	NTU	5	S	0.11	ND	0.12	0.1	0.12	0.11	0.28	0.2	0.26	0.16	0.2	0.2
Metals															
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	**15**	**16**	**12**	**13**	**20**	**22**	5.5	5.9	10	10	**37**	**39**
Barium, Total	ug/l	1000	P	51	54	100	110	130	130	63	65	82	85	100	110
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.024	ND	0.038	ND	0.02	ND	0.02	ND	0.031	ND	0.023	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N												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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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 2016-17

Constituents	Units	MCL	MCL Type	Cerritos #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/12/2017	9/13/2017	4/12/2017	9/13/2017	4/12/2017	9/13/2017	4/12/2017	9/13/2017	4/12/2017	9/13/2017	4/12/2017	9/13/2017
General Minerals															
Alkalinity	mg/l			150	150	170	170	160	160	180	180	180	180	330	330
Anion Sum	meq/l			3.6	3.6	7.9	7.9	3.7	3.7	4.2	4.2	4.1	4.1	12	12
Bicarbonate as HCO3	mg/l			180	180	200	210	200	200	220	220	220	220	400	410
Boron	mg/l	1	N	0.05	0.053	0.15	0.17	0.057	0.06	0.07	0.076	0.072	0.075	0.11	0.11
Bromide	ug/l			22	23	150	140	19	17	22	22	22	20	230	220
Calcium, Total	mg/l			43	44	88	92	46	47	54	54	54	54	150	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	2	2.6	2.8	2.3	ND	ND	2.1	2.1
Cation Sum	meq/l			3.8	3.8	8.2	8.4	3.9	3.9	4.4	4.4	4.4	4.4	13	12
Chloride	mg/l	500	S	5.5	5.5	71	72	4.9	4.9	5.8	5.8	5.4	5.4	71	72
Fluoride	mg/l	2	P	0.31	0.3	0.41	0.39	0.33	0.32	0.45	0.46	0.39	0.39	0.39	0.37
Hardness (Total, as CaCO3)	mg/l			130	130	290	300	140	140	170	170	170	160	500	520
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			ND	2.2	ND	1.2	4	5	4.7	5.6	4.8	6	18	20
Iron, Total	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	0.035	0.034	0.079	0.078	**0.38**	**0.37**
Langelier Index - 25 degree	None			0.66	0.57	0.75	0.87	0.75	0.81	0.91	0.86	0.72	0.75	1.3	1.3
Magnesium, Total	None			5.6	5.3	17	17	6.2	5.9	8.9	8.4	7.7	7.3	31	30
Manganese, Total	ug/l	50	S	6.8	6.5	ND	ND	39	37	**89**	**89**	**110**	**110**	**330**	**310**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	12	12	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	2.7	2.8	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			2.9	2.7	4.6	4.4	2.7	2.4	2.9	2.6	3.1	2.8	4.4	4.4
Sodium, Total	mg/l			26	25	52	52	24	23	22	22	23	22	53	51
Sulfate	mg/l	500	S	20	20	110	110	16	16	17	17	16	16	160	160
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	490	490	230	220	260	250	250	250	560	730
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	2.7	2.8	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			1.7	ND	0.48	0.47	ND	ND	0.33	ND	0.33	ND	0.94	0.89
General Physical Properties															
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10	ND
Lab pH	Units			8.2	8.1	7.9	8	8.2	8.3	8.3	8.2	8.1	8.1	7.9	7.9
Odor	TON	3	S	1	1	2	1	2	2	2	1	2	ND	2	2
Specific Conductance	umho/cm	1600	S	350	350	800	800	360	360	400	400	390	400	1100	1100
Turbidity	NTU	5	S	ND	ND	0.11	0.11	0.65	0.6	0.14	0.12	0.25	0.18	2.8	2.1
Metals															
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	2.3	2.6	2.2	2.6	3.1	ND	7.9	8.5	**17**	**19**	4	4.5
Barium, Total	ug/l	1000	P	97	100	130	130	110	120	160	170	160	180	93	100
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.17	0.17	0.66	0.63	0.024	0.023	0.02	ND	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.1
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	23	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
1,4-Dioxane	ug/l	1	N		ND		**3.6**		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	0.79	0.74	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 2016-17

Constituents	Units	MCL	MCL Type	Commerce #1									
				Zone 1	Zone 2		Zone 3		Zone 4		Zone 5		Zone 6
				5/3/2017	5/3/2017	9/19/2017	5/3/2017	9/19/2017	5/3/2017	9/19/2017	5/3/2017	9/19/2017	9/19/2017
General Minerals													
Alkalinity	mg/l			470	310	300	200	230	190	190	180	170	190
Anion Sum	meq/l			220	10	11	7.9	9.1	8.1	8	6.9	7	7.8
Bicarbonate as HCO3	mg/l			580	380	370	250	280	240	230	210	210	230
Boron	mg/l	1	N	**6.2**	0.63	0.69	0.2	0.27	0.22	0.26	0.13	0.15	0.14
Bromide	ug/l			47000	920	1100	650	760	340	350	240	280	320
Calcium, Total	mg/l			190	43	45	46	56	41	42	65	68	74
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	2.4	ND	ND	3
Carbonate as CO3	mg/l			ND	3.9	3	ND	ND	2.5	2.4	ND	ND	ND
Cation Sum	meq/l			230	11	12	7.8	9.2	8.2	8.3	7	7.3	8
Chloride	mg/l	500	S	**7700**	150	180	120	140	81	83	61	69	80
Fluoride	mg/l	2	P	0.21	0.43	0.4	0.33	0.33	0.52	0.51	0.4	0.35	0.44
Hardness (Total, as CaCO3)	mg/l			1100	190	200	180	220	170	170	240	250	280
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			7500	250	280	180	210	63	67	ND	3.4	ND
Iron, Total	mg/l	0.3	S	**1.2**	ND	ND	0.14	0.042	0.11	0.11	ND	ND	ND
Langelier Index - 25 degree	None			1.2	0.94	0.88	0.58	0.78	0.74	0.73	0.77	0.77	0.91
Magnesium, Total	None			160	20	21	16	19	17	17	19	19	24
Manganese, Total	ug/l	50	S	**120**	10	10	**72**	**64**	**56**	**56**	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	18	19	37
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	4.1	4.3	8.4
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			49	5.7	6	3.6	3.6	3.5	3.4	2.3	2.1	1.9
Sodium, Total	mg/l			4800	160	170	93	110	110	110	47	53	54
Sulfate	mg/l	500	S	3.5	3.6	2.5	19	21	93	91	64	61	57
Surfactants	mg/l	0.5	S	0.12	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	**12000**	610	660	460	540	500	510	440	440	480
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	4.1	4.3	8.4
Total Organic Carbon	mg/l			17	5.2	4.8	2.2	1.5	0.89	0.8	0.33	ND	ND
General Physical Properties													
Apparent Color	ACU	15	S	**30**	**35**	**45**	10	5	5	5	ND	ND	ND
Lab pH	Units			7.6	8.2	8.1	8	8	8.2	8.2	8.1	8.1	8.1
Odor	TON	3	S	**17**	**200**	**200**	2	2	2	1	**4**	1	1
Specific Conductance	umho/cm	1600	S	**22000**	1100	1100	810	940	820	820	700	720	800
Turbidity	NTU	5	S	**14**	0.17	0.34	0.42	0.16	0.21	0.18	0.79	0.1	0.42
Metals													
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	4.4	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	8.8	ND	ND	1.7	1	ND	ND	ND	ND	ND
Barium, Total	ug/l	1000	P	680	66	65	83	90	210	210	64	73	67
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	7.6	7.2	11
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	0.1	0.078	ND	0.03	ND	ND	7.9	7.5	**11**
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	26	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N			ND		ND		**4.3**		**1.9**	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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	**12**	**8.2**
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N			ND		ND		ND		ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	0.88	0.8	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1
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	3.8	4.6	ND
Vinyl chloride (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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	2.4	3	4.5

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

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2016-17

Constituents	Units	MCL	MCL Type	Compton #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				4/26/2017	8/28/2017	4/26/2017	8/28/2017	4/26/2017	8/28/2017	4/26/2017	8/28/2017
General Minerals											
Alkalinity	mg/l			130	130	140	140	160	160	180	170
Anion Sum	meq/l			4.1	4.1	4.6	4.5	5.1	5	5.6	5.5
Bicarbonate as HCO3	mg/l			160	160	170	170	190	190	210	210
Boron	mg/l	1	N	0.15	0.15	0.1	0.098	0.11	0.11	0.089	0.089
Bromide	ug/l			110	110	120	110	140	130	120	100
Calcium, Total	mg/l			22	23	38	39	50	50	62	62
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			2.6	2.6	2.2	2.2	2	2	ND	ND
Cation Sum	meq/l			4.2	4.1	4.7	4.6	5.3	5.1	5.8	5.6
Chloride	mg/l	500	S	19	18	22	21	25	23	22	20
Fluoride	mg/l	2	P	0.34	0.31	0.4	0.37	0.33	0.3	0.32	0.29
Hardness (Total, as CaCO3)	mg/l			62	66	110	110	160	160	180	180
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			24	24	24	26	31	33	25	25
Iron, Total	mg/l	0.3	S	ND	ND	ND	ND	0.022	0.021	0.072	0.072
Langelier Index - 25 degree	None			0.51	0.46	0.71	0.69	0.72	0.7	0.8	0.77
Magnesium, Total	None			1.8	2	3.2	3.1	9.1	8.7	6.5	6.1
Manganese, Total	ug/l	50	S	9.6	12	15	15	**51**	50	**81**	**74**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			1.6	1.3	1.7	1.4	2.8	2.4	2.6	2.3
Sodium, Total	mg/l			68	64	58	56	44	42	47	45
Sulfate	mg/l	500	S	44	44	53	51	59	56	70	69
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	280	260	280	290	330	320	360	340
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			2.1	1.9	0.96	0.84	0.67	0.54	0.35	ND
General Physical Properties											
Apparent Color	ACU	15	S	**20**	**25**	5	5	ND	5	ND	ND
Lab pH	Units			8.4	8.4	8.3	8.3	8.2	8.2	8.1	8.1
Odor	TON	3	S	2	2	2	1	2	1	2	ND
Specific Conductance	umho/cm	1600	S	420	420	460	460	500	510	540	550
Turbidity	NTU	5	S	0.15	0.16	0.17	0.12	0.16	0.28	0.68	0.4
Metals											
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	ND	ND	ND	ND	**18**	**20**
Barium, Total	ug/l	1000	P	8.9	10	12	11	65	59	150	140
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.031	0.067	ND	0.042	ND	0.022	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l	12	N		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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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 2016-17

Constituents	Units	MCL	MCL Type	Compton #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/18/2017	9/14/2017	4/18/2017	9/14/2017	4/18/2017	9/14/2017	4/18/2017	9/14/2017	4/18/2017	9/14/2017	4/18/2017	9/14/2017
General Minerals															
Alkalinity	mg/l			470	480	280	280	160	160	180	180	180	190	190	190
Anion Sum	meq/l			9.8	9.9	6	6.1	5	5	6.2	6.2	6.3	6.4	8.2	7.8
Bicarbonate as HCO3	mg/l			570	580	340	340	190	200	220	220	220	230	230	230
Boron	mg/l	1	N	0.62	0.64	0.16	0.18	0.1	0.1	0.11	0.12	0.12	0.12	0.16	0.17
Bromide	ug/l			220	210	99	95	100	99	130	120	160	140	300	290
Calcium, Total	mg/l			12	11	28	27	51	50	69	69	72	72	90	86
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			12	15	5.6	5.6	2.5	3.3	ND	3.6	ND	3.8	ND	2.4
Cation Sum	meq/l			10	9.4	6.4	5.9	5.4	5.2	6.5	6.3	7	6.8	8.8	8.2
Chloride	mg/l	500	S	13	13	13	12	20	19	30	29	34	32	67	64
Fluoride	mg/l	2	P	0.42	0.43	0.29	0.29	0.24	0.24	0.25	0.27	0.33	0.34	0.4	0.41
Hardness (Total, as CaCO3)	mg/l			39	35	92	88	160	150	220	220	240	240	310	290
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			68	62	30	26	23	25	25	28	29	33	ND	1.9
Iron, Total	mg/l	0.3	S	0.055	0.043	0.04	0.036	0.034	ND	0.035	0.032	0.033	0.03	0.034	ND
Langelier Index - 25 degree	None			0.87	0.98	0.91	0.98	0.87	0.98	0.78	1.1	0.87	1.2	0.8	1.1
Magnesium, Total	None			2.2	1.9	5.5	5	7.7	7.1	12	11	16	15	20	18
Manganese, Total	ug/l	50	S	12	13	30	28	30	29	44	45	**110**	**110**	19	24
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.3	2.5
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.74	0.57
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			3	2.8	4.4	4.3	2.8	2.5	2.8	2.5	4.2	4	4.2	4.1
Sodium, Total	mg/l			210	200	100	92	51	47	45	42	47	45	57	53
Sulfate	mg/l	500	S	0.76	ND	ND	ND	60	57	82	78	83	79	120	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	590	570	350	350	310	300	370	370	400	380	510	480
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.74	0.57
Total Organic Carbon	mg/l			15	14	3.2	3.2	0.66	0.62	0.37	0.3	0.32	ND	0.41	0.34
General Physical Properties															
Apparent Color	ACU	15	S	**45**	**120**	**25**	**35**	3	ND	ND	ND	5	ND	ND	ND
Lab pH	Units			8.5	8.6	8.4	8.4	8.3	8.4	8	8.4	8.1	8.4	7.9	8.2
Odor	TON	3	S	2	2	2	1	2	1	1	ND	1	1	2	1
Specific Conductance	umho/cm	1600	S	910	920	560	570	490	490	590	600	630	640	800	780
Turbidity	NTU	5	S	1.1	1	1	0.4	0.2	0.11	0.15	0.12	3.5	2.5	2.9	1
Metals															
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	32	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	1.1	1.5	1.4	3.8	4.7
Barium, Total	ug/l	1000	P	13	14	16	17	31	30	37	39	94	95	95	84
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1	1
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.17	0.13	0.048	0.04	0.023	0.02	ND	ND	ND	ND	0.66	0.56
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.6	8.7
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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 2016-17

Constituents	Units	MCL	MCL Type	Downey #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/4/2017	9/18/2017	5/4/2017	9/18/2017	5/4/2017	9/18/2017	5/4/2017	9/18/2017	5/4/2017	9/18/2017	5/4/2017	9/18/2017
General Minerals															
Alkalinity	mg/l			160	160	160	160	180	180	190	200	220	210	420	420
Anion Sum	meq/l			6.1	3.6	3.7	5.9	8.2	7.9	9.2	8.9	7.6	7.1	19	19
Bicarbonate as HCO3	mg/l			190	190	190	190	220	220	240	240	260	260	510	520
Boron	mg/l	1	N	0.055	0.062	0.05	0.064	0.094	0.11	0.17	0.21	0.085	0.093	0.23	0.27
Bromide	ug/l			97	18	19	93	150	140	180	170	140	120	500	480
Calcium, Total	mg/l			78	40	40	75	99	100	96	94	98	90	210	210
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			ND	ND	2.5	ND	ND	ND	ND	ND	ND	2.1	ND	ND
Cation Sum	meq/l			6.1	3.7	3.7	5.9	8	8.1	9	8.9	7.7	7.2	19	19
Chloride	mg/l	500	S	35	4.6	5.1	33	70	66	81	76	43	37	130	120
Fluoride	mg/l	2	P	0.32	0.34	0.35	0.31	0.37	0.35	0.42	0.4	0.43	0.43	0.34	0.34
Hardness (Total, as CaCO3)	mg/l			240	120	120	240	320	320	320	310	320	290	700	700
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			ND	ND	ND	ND	ND	ND	3.7	3.8	5.7	6.5	4.6	4.8
Iron, Total	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.057	0.02
Langelier Index - 25 degree	None			0.69	0.53	0.71	0.76	0.91	0.91	0.6	0.75	1	1	1.2	1.3
Magnesium, Total	None			12	5.7	5.8	12	18	18	20	19	19	17	43	42
Manganese, Total	ug/l	50	S	ND	ND	ND	ND	ND	ND	2	ND	**110**	**100**	**130**	**130**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	8.8	ND	ND	8.6	15	15	7.5	7	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	2	ND	ND	1.9	3.4	3.4	1.7	1.6	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			3.5	2.9	2.8	3.4	3.6	3.6	4.3	4.2	3.8	3.7	6.5	6.5
Sodium, Total	mg/l			26	26	25	26	34	36	57	58	28	27	100	110
Sulfate	mg/l	500	S	88	16	18	82	110	100	140	130	99	85	350	340
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	200	210	340	500	470	560	530	470	400	**1200**	**1100**
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	2	ND	ND	1.9	3.4	3.4	1.7	1.6	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.34	ND	ND	ND	0.37	ND	0.54	0.45	0.37	ND	1	0.92
General Physical Properties															
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3	ND
Lab pH	Units			8	8.1	8.3	8.1	8	8	7.7	7.8	8	8.1	7.6	7.7
Odor	TON	3	S	ND	1	ND	ND	ND	ND	ND	ND	1	ND	ND	1
Specific Conductance	umho/cm	1600	S	600	350	350	600	800	800	880	900	730	690	**1700**	**1700**
Turbidity	NTU	5	S	0.2	0.1	0.14	0.12	0.12	0.11	ND	ND	1.7	1.9	**8.3**	2.4
Metals															
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	24	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	2.5	2.8	3.1	2	3.1	2.7	2.2	1.9	4.4	3.6	3.3	2.6
Barium, Total	ug/l	1000	P	150	94	91	160	120	130	82	85	230	220	81	83
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	2	3.8	3.9	1.9	1.3	1.2	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	1.9	4	4	1.9	1.2	1.2	0.33	0.32	0.02	ND	0.035	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.9	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		ND		**4.5**		**9.6**		**3.4**		ND		**1.2**
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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	0.65	ND	ND	ND	1.2	ND	0.67	ND	**6.9**	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		ND		ND		ND		ND		ND		ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	0.51	0.53	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	2.6	ND	ND	3	1.8	1.9	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 2016-17

Constituents	Units	MCL	MCL Type	Huntington Park #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				5/23/2017	9/20/2017	5/23/2017	9/20/2017	5/23/2017	9/20/2017	5/23/2017	9/20/2017
General Minerals											
Alkalinity	mg/l			180	180	190	190	240	240	390	390
Anion Sum	meq/l			6.2	6.3	6.6	6.4	11	11	14	14
Bicarbonate as HCO3	mg/l			220	220	220	230	290	290	470	480
Boron	mg/l	1	N	0.12	0.14	0.13	0.14	0.2	0.22	0.16	0.19
Bromide	ug/l			110	110	120	120	430	420	780	770
Calcium, Total	mg/l			61	63	64	68	120	120	150	160
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			2.3	ND	2.8	ND	3	ND	3.8	2
Cation Sum	meq/l			6.1	6.2	6.4	6.6	11	11	14	14
Chloride	mg/l	500	S	23	24	30	28	86	84	82	81
Fluoride	mg/l	2	P	0.5	0.5	0.44	0.43	0.35	0.35	0.36	0.36
Hardness (Total, as CaCO3)	mg/l			210	220	220	240	410	410	540	560
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			42	39	ND	ND	39	38	28	28
Iron, Total	mg/l	0.3	S	0.28	0.29	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.83	0.68	0.98	0.84	1.2	1	1.5	1.3
Magnesium, Total	None			15	15	16	16	28	27	41	40
Manganese, Total	ug/l	50	S	44	46	ND	ND	4.9	5.1	6.7	5.8
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND		3	3.5	1.5	1.4	20	20
Nitrate as Nitrogen	mg/l	10	P	ND		0.67	0.8	0.34	0.31	4.4	4.5
Nitrite, as Nitrogen	mg/l	1	P	ND		ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			3.1	3.2	3.3	3.3	4.2	4.2	5	5.3
Sodium, Total	mg/l			39	40	42	42	58	58	64	63
Sulfate	mg/l	500	S	92	94	92	88	170	170	170	160
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	**1.4**	**1.4**	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	370	370	400	390	710	660	850	830
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	0.67	0.8	0.34	0.31	4.4	4.5
Total Organic Carbon	mg/l			0.46	ND	0.37	ND	6	5.9	0.94	0.84
General Physical Properties											
Apparent Color	ACU	15	S	5	10	ND	ND	3	3	ND	ND
Lab pH	Units			8.2	8	8.3	8.1	8.2	8	8.1	7.8
Odor	TON	3	S	1	ND	2	ND	2	2	**100**	2
Specific Conductance	umho/cm	1600	S	590	600	620	640	1000	1000	1300	1300
Turbidity	NTU	5	S	1.5	1.2	0.14	0.19	0.14	ND	ND	0.12
Metals											
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total	ug/l	1000	P	66	64	86	87	110	110	100	100
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	1.7	ND	1.1	ND	2.8	2
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	ND	0.8	0.74	0.07	0.054	1.2	1.2
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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	1.2	1.4	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	**6.3**	**7**	**50**	**54**
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	1.3	1.4	ND	ND
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	200	220
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	**5.7**	ND	0.99	ND	**14**	ND	0.55
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l	12	N		ND		ND		ND		ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	0.55	0.73	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	ug/l	80	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	**13**	**17**	ND	0.58
Vinyl chloride (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	0.39	ND	ND
Xylenes (Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	1.7	1.2	ND	3	0.64

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 2016-17

Constituents	Units	MCL	MCL Type	Lakewood #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/27/2017	9/13/2017	4/27/2017	9/13/2017	4/27/2017	9/13/2017	4/27/2017	9/13/2017	4/27/2017	9/13/2017	4/27/2017	9/13/2017
General Minerals															
Alkalinity	mg/l			98	98	140	150	160	160	170	170	180	180	180	180
Anion Sum	meq/l			2.9	2.8	3.4	3.5	3.7	3.7	4.1	4.7	4.2	4.2	7.8	8
Bicarbonate as HCO3	mg/l			120	120	180	180	190	190	200	200	220	220	210	210
Boron	mg/l	1	N	ND	0.054	ND	ND	0.062	0.064	0.063	0.072	0.078	0.087	0.076	0.083
Bromide	ug/l			120	110	30	30	47	45	87	210	58	57	810	820
Calcium, Total	mg/l			10	11	38	38	41	40	47	56	49	51	100	100
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.4	ND
Carbonate as CO3	mg/l			3.1	3.9	2.9	ND	2.5	3.1	2.6	3.3	3.6	2.8	ND	2.2
Cation Sum	meq/l			3	2.9	3.7	3.7	3.9	3.8	4.3	4.9	4.4	4.5	8	8
Chloride	mg/l	500	S	20	19	6.6	6.2	8.9	8.4	17	37	12	11	120	130
Fluoride	mg/l	2	P	0.46	0.46	0.28	0.27	0.33	0.33	0.28	0.33	0.51	0.49	0.24	0.23
Hardness (Total, as CaCO3)	mg/l			26	29	110	110	120	120	140	160	160	160	290	290
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			50	50	9.2	8.4	16	15	23	49	17	17	76	86
Iron, Total	mg/l	0.3	S	ND	ND	ND	ND	ND	0.02	0.046	0.05	0.087	0.1	0.081	0.093
Langelier Index - 25 degree	None			0.28	0.33	0.72	0.59	0.78	0.87	0.81	0.99	0.94	0.92	0.92	1.1
Magnesium, Total	None			0.38	0.36	4	3.8	5.2	4.7	5.7	6.2	9.2	8.9	11	11
Manganese, Total	ug/l	50	S	3.7	3.8	18	18	24	23	**76**	**75**	**57**	**54**	**220**	**240**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			ND	ND	2.1	2.1	2.4	2.3	3.4	4.1	2.6	2.7	4.1	4.3
Sodium, Total	mg/l			55	53	33	32	32	31	32	34	25	26	42	41
Sulfate	mg/l	500	S	15	15	17	16	15	15	13	14	14	13	36	35
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	170	150	190	170	220	200	250	260	250	220	550	530
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			0.93	0.75	0.32	ND	0.39	0.32	0.47	0.53	0.34	ND	0.93	0.9
General Physical Properties															
Apparent Color	ACU	15	S	15	ND	ND	ND	3	ND	3	ND	ND	ND	ND	ND
Lab pH	Units			8.6	8.7	8.4	8.2	8.3	8.4	8.3	8.4	8.4	8.3	8	8.2
Odor	TON	3	S	2	2	2	2	1	1	2	2	2	ND	2	2
Specific Conductance	umho/cm	1600	S	290	290	330	340	360	360	400	470	400	400	820	830
Turbidity	NTU	5	S	1.8	1.9	0.39	0.26	1.6	0.34	0.31	0.98	0.26	0.26	0.28	0.34
Metals															
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	**14**	**13**	**16**	**17**	1.5	1.4	**11**	8.3	3.7	3.7	**28**	**28**
Barium, Total	ug/l	1000	P	15	16	24	24	28	28	150	190	110	110	290	300
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.037	0.096	ND	0.026	ND	0.024	ND	0.024	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.2	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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 2016-17

Constituents	Units	MCL	MCL Type	Lakewood #2															
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Zone 7		Zone 8	
				5/2/17	9/13/17	5/2/17	9/13/17	5/2/17	9/13/17	5/2/17	9/13/17	5/2/17	9/13/17	5/2/17	9/13/17	5/2/17	9/13/17	5/2/17	9/13/17
General Minerals																			
Alkalinity	mg/l			100	100	140	140	130	130	180	180	170	170	190	190	180	180	210	210
Anion Sum	meq/l			3.5	3.4	3.2	3.2	3.1	3	4.9	4.8	4	4	4.1	4.1	4.1	4	4.5	4.5
Bicarbonate as HCO3	mg/l			130	130	160	160	160	160	220	220	210	210	230	230	220	220	250	250
Boron	mg/l	1	N	0.053	0.058	ND	0.053	ND	ND	0.062	0.068	0.054	0.06	0.058	0.065	0.057	0.065	0.066	0.078
Bromide	ug/l			48	46	26	25	28	28	32	32	21	21	18	18	28	21	37	38
Calcium, Total	mg/l			11	12	24	26	25	27	60	64	40	41	41	48	51	55	53	59
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	2.2	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			4.2	3.4	2.1	2.6	2.6	3.3	ND	2.8	2.7	2.2	3.8	3.8	3.6	3.6	ND	2.6
Cation Sum	meq/l			3.4	3.4	3.2	3.2	3	3.2	4.8	5	4	4.1	4.1	4.3	4	4.2	4.4	4.7
Chloride	mg/l	500	S	13	12	5.6	5.2	5.6	5.3	12	12	5.8	5.5	5.3	4.9	5.5	5.2	6.7	6.3
Fluoride	mg/l	2	P	0.46	0.45	0.38	0.36	0.32	0.3	0.46	0.45	0.34	0.28	0.37	0.37	0.27	0.25	0.38	0.37
Hardness (Total, as CaCO3)	mg/l			29	32	74	79	72	77	190	200	120	120	130	150	140	150	160	180
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			17	19	8.6	9.7	12	12	ND	ND	5.9	6.7	5.7	5.8	7.9	8.9	26	25
Iron, Total	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	0.021	0.031	0.044	0.055	0.06	0.069	0.055	0.066
Langelier Index - 25 degree	None			0.39	0.36	0.46	0.59	0.54	0.69	0.7	0.98	0.81	0.73	0.89	0.96	0.97	1	0.63	0.9
Magnesium, Total	None			0.43	0.41	3.4	3.4	2.4	2.3	9.4	9.3	4.6	4.4	6.4	6.7	3.8	3.8	7.2	7.2
Manganese, Total	ug/l	50	S	5	5.2	13	13	16	16	ND	ND	**68**	**75**	**130**	**140**	**95**	**99**	**160**	**170**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	1.5	1.5	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	0.34	0.34	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			1	ND	2.2	2.2	1.6	1.6	3.2	3.2	2.4	2.6	2.7	2.9	2.3	2.4	2.7	2.8
Sodium, Total	mg/l			64	62	38	37	36	36	22	22	36	38	34	30	25	25	26	26
Sulfate	mg/l	500	S	48	46	14	13	10	9.5	40	39	18	18	9.5	8.9	15	15	6.4	6.3
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	220	220	190	190	180	190	290	290	240	240	230	240	240	240	270	260
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	0.34	0.34	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.6	0.52	0.44	0.38	0.61	0.55	ND	0.94	0.43	0.31	0.52	0.39	0.33	ND	0.43	0.34
General Physical Properties																			
Apparent Color	ACU	15	S	10	10	5	ND	5	ND	ND	ND	3	ND	5	ND	ND	ND	ND	ND
Lab pH	Units			8.7	8.6	8.3	8.4	8.4	8.5	8	8.3	8.3	8.2	8.4	8.4	8.4	8.4	8	8.2
Odor	TON	3	S	2	1	1	ND	2	1	2	ND	2	1	2	1	1	1	2	1
Specific Conductance	umho/cm	1600	S	350	360	300	310	290	300	460	470	380	390	380	390	380	380	420	420
Turbidity	NTU	5	S	0.49	0.18	0.1	ND	0.22	0.14	0.11	ND	2.4	3.8	0.21	0.26	0.26	0.19	0.74	0.19
Metals																			
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	**14**	**16**	ND	ND	1.9	2	3.1	3.8	**20**	**26**	**11**	8.4	**37**	**42**	**38**	**43**
Barium, Total	ug/l	1000	P	13	15	7.1	7.9	11	11	94	100	110	110	54	67	130	130	94	100
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.023	0.084	ND	ND	ND	0.035	0.66	0.65	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	ug/l	5000	S	ND	ND	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	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	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	ND	ND
1,4-Dioxane	ug/l	1	N		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	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	ND	ND
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			ND	ND	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	ND	ND
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	P	ND	ND	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	ND	ND
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	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	ND	ND
Total Trihalomethanes	ug/l	80	P	ND	ND	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	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	ug/l	1750	P	ND	ND	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	0.51	0.58	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 2016-17

Constituents	Units	MCL	MCL Type	La Mirada #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				5/2/2017	9/26/2017	5/2/2017	9/26/2017	5/2/2017	9/26/2017	5/2/2017	9/26/2017	5/2/2017	9/26/2017
General Minerals													
Alkalinity	mg/l			150	150	140	140	180	180	190	190	200	200
Anion Sum	meq/l			6.3	5.8	4.2	4.2	5.5	5.3	7.4	7.5	20	18
Bicarbonate as HCO3	mg/l			190	180	170	170	220	220	240	240	240	240
Boron	mg/l	1	N	0.13	0.14	0.09	0.098	0.13	0.14	0.12	0.12	0.14	0.16
Bromide	ug/l			130	91	46	43	71	61	210	250	1200	960
Calcium, Total	mg/l			25	18	9.3	9.6	22	22	49	54	170	150
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	3.9	ND	ND	ND
Carbonate as CO3	mg/l			2	2.9	2.8	3.5	2.8	3.6	ND	ND	ND	ND
Cation Sum	meq/l			6.4	5.6	4.2	4	5.5	5.2	7.4	7.4	20	18
Chloride	mg/l	500	S	41	29	14	14	21	17	53	58	410	340
Fluoride	mg/l	2	P	0.8	0.82	0.61	0.6	0.79	0.79	0.56	0.54	0.25	0.32
Hardness (Total, as CaCO3)	mg/l			96	68	29	29	86	84	200	210	660	580
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			24	26	8.5	9.4	20	20	38	36	ND	3.4
Iron, Total	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.47	0.48	0.2	0.23	0.53	0.59	0.59	0.71	0.99	1.1
Magnesium, Total	None			8.2	5.6	1.4	1.3	7.6	7	19	19	58	50
Manganese, Total	ug/l	50	S	4.3	5.6	2.8	3.1	17	17	9.1	14	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	4.8	ND	ND	ND	ND	ND	2	2.3	**120**	**98**
Nitrate as Nitrogen	mg/l	10	P	1.1	ND	ND	ND	ND	ND	0.46	0.52	**27**	**22**
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			2.1	1.8	1.6	1.4	2.4	2.3	2.9	2.9	4.8	4.7
Sodium, Total	mg/l			100	96	83	78	85	79	74	71	140	140
Sulfate	mg/l	500	S	93	93	47	45	59	55	94	91	120	120
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	400	360	260	260	320	320	430	440	**1400**	1000
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	1.1	ND	ND	ND	ND	ND	0.46	0.52	**27**	**22**
Total Organic Carbon	mg/l			0.41	0.31	ND	ND	0.51	0.5	ND	ND	0.61	0.64
General Physical Properties													
Apparent Color	ACU	15	S	ND	3	ND	ND	ND	5	ND	ND	ND	ND
Lab pH	Units			8.2	8.4	8.4	8.5	8.3	8.4	8	8	7.8	8
Odor	TON	3	S	1	ND	1	ND	2	ND	2	1	2	ND
Specific Conductance	umho/cm	1600	S	640	600	420	420	540	520	730	750	**2100**	**1800**
Turbidity	NTU	5	S	0.17	0.12	ND	ND	0.14	0.11	0.18	0.13	0.29	0.21
Metals													
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	5.4	5.5	7.8	7.3	7.9	6.4	3.4	2.3	2.4	ND
Barium, Total	ug/l	1000	P	46	37	23	25	36	37	44	49	160	140
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	2.5	1.8
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	ND	ND	ND	0.07	0.028	ND	ND	2	1.6
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	6.9	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	7	7.6	24	12
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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	**11**	**8.7**

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 2016-17

Constituents	Units	MCL	MCL Type	Long Beach #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				3/30/2017	9/5/2017	3/30/2017	9/5/2017	3/30/2017	9/5/2017	3/30/2017	9/5/2017	3/30/2017	9/5/2017	3/30/2017	9/5/2017
General Minerals															
Alkalinity	mg/l			150	150	150	150	120	120	130	130	130	130	260	260
Anion Sum	meq/l			3.6	3.6	3.5	3.4	3	3	3.7	3.6	12	11	17	17
Bicarbonate as HCO3	mg/l			180	180	180	180	140	140	160	160	160	160	320	320
Boron	mg/l	1	N	0.16	0.17	0.16	0.17	0.088	0.085	0.057	0.059	0.14	0.14	0.11	0.12
Bromide	ug/l			96	99	88	82	44	43	38	32	420	400	570	550
Calcium, Total	mg/l			6	4.6	2.5	2.4	5.8	5.4	25	25	54	52	200	190
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.2	ND
Carbonate as CO3	mg/l			9.3	9.3	12	12	5.7	4.6	3.3	2.6	2.1	2.1	2.1	2.1
Cation Sum	meq/l			3.6	3.4	3.6	3.3	3.4	3	3.9	3.8	12	11	18	18
Chloride	mg/l	500	S	14	14	14	13	11	11	11	11	160	150	200	190
Fluoride	mg/l	2	P	0.64	0.61	0.65	0.6	0.68	0.64	0.42	0.37	0.32	0.22	0.29	0.25
Hardness (Total, as CaCO3)	mg/l			17	13	6.8	6.4	16	14	71	71	170	160	650	610
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			21	27	19	21	7.3	10	6	6.5	14	15	52	50
Iron, Total	mg/l	0.3	S	0.027	0.024	ND	ND	ND	ND	ND	ND	0.032	0.031	0.19	0.18
Langelier Index - 25 degree	None			0.47	0.39	0.21	0.15	0.24	0.16	0.61	0.6	0.83	0.75	1.4	1.3
Magnesium, Total	None			0.6	0.39	0.14	0.11	0.28	0.25	2.2	2.1	7.9	7.2	36	33
Manganese, Total	ug/l	50	S	5.6	4.4	ND	ND	2.7	2.5	20	20	**56**	**58**	**390**	**390**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			ND	ND	ND	ND	ND	ND	1.3	ND	2.9	2.7	4.4	4.4
Sodium, Total	mg/l			74	73	80	74	70	63	56	54	200	180	120	120
Sulfate	mg/l	500	S	3.4	1.6	ND	ND	14	14	34	33	210	210	300	290
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	230	200	220	190	190	220	230	740	740	1000	**1100**
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			3.2	3.4	3	2.9	1.7	1.6	0.58	0.47	1.3	1.2	1.5	1.4
General Physical Properties															
Apparent Color	ACU	15	S	**75**	**75**	**75**	**100**	**35**	**30**	5	3	ND	ND	ND	5
Lab pH	Units			8.9	8.9	9	9	8.8	8.7	8.5	8.4	8.3	8.3	8	8
Odor	TON	3	S	2	2	2	2	2	1	1	1	2	2	2	1
Specific Conductance	umho/cm	1600	S	350	350	340	340	300	300	370	370	1200	1200	1600	1600
Turbidity	NTU	5	S	0.25	0.29	0.23	0.2	0.2	0.24	0.35	0.24	0.39	0.31	0.73	0.71
Metals															
Aluminum, Total	ug/l	1000	P	29	27	26	25	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.3	7.5
Barium, Total	ug/l	1000	P	3.8	2.9	ND	ND	ND	ND	9.2	8.9	43	43	180	180
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.052	0.19	0.034	0.16	0.035	0.16	ND	0.028	ND	0.021	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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 2016-17

Constituents	Units	MCL	MCL Type	Long Beach #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/24/2017	8/31/2017	4/24/2017	8/31/2017	4/24/2017	8/31/2017	4/24/2017	8/31/2017	4/24/2017	8/31/2017	4/24/2017	8/31/2017
General Minerals															
Alkalinity	mg/l			310	310	200	190	160	160	150	150	290	290	290	290
Anion Sum	meq/l			6.8	6.8	4.5	4.4	3.8	3.8	6.2	6	17	16	18	18
Bicarbonate as HCO3	mg/l			370	380	240	240	190	190	180	180	360	360	350	350
Boron	mg/l	1	N	0.46	0.51	0.18	0.19	0.13	0.14	0.086	0.094	0.29	0.3	0.27	0.28
Bromide	ug/l			220	200	140	140	150	140	220	210	120	1200	990	960
Calcium, Total	mg/l			6.7	6.8	14	15	12	13	49	56	180	190	200	220
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			9.6	7.8	4.9	4.9	3.9	4.9	2.3	2.3	ND	ND	ND	ND
Cation Sum	meq/l			6.7	6.6	4.5	4.4	3.8	3.8	5.7	6.2	16	17	18	19
Chloride	mg/l	500	S	20	19	19	18	23	22	57	53	130	120	150	150
Fluoride	mg/l	2	P	0.64	0.63	0.46	0.45	0.52	0.52	0.31	0.3	0.19	0.18	0.28	0.27
Hardness (Total, as CaCO3)	mg/l			23	23	42	44	34	37	140	160	560	590	640	690
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			56	57	33	35	33	36	40	46	28	43	37	42
Iron, Total	mg/l	0.3	S	0.1	0.12	0.025	0.024	ND	ND	ND	0.025	0.23	0.24	0.2	0.23
Langelier Index - 25 degree	None			0.52	0.49	0.55	0.56	0.43	0.53	0.77	0.88	1.1	1.2	1.1	1.3
Magnesium, Total	None			1.5	1.4	1.6	1.6	1.1	1.1	5.6	6	28	29	33	34
Manganese, Total	ug/l	50	S	12	13	16	16	6.3	6.4	29	28	**190**	**190**	**350**	**360**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			2.4	2.4	2.6	1.4	1.5	1	3.1	3	5.2	5.4	5.5	6
Sodium, Total	mg/l			140	140	84	79	70	70	63	66	120	130	100	120
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	ND	73	69	350	340	410	400
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.11	0.1
Total Dissolved Solid (TDS)	mg/l	1000	S	430	420	300	270	260	230	410	390	**1100**	1000	**1200**	**1200**
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			12	8.4	4	3.6	2.9	2.6	1.5	1.4	1.4	1.3	1.6	1.5
General Physical Properties															
Apparent Color	ACU	15	S	**300**	**250**	**40**	**40**	**35**	**35**	ND	5	ND	5	ND	5
Lab pH	Units			8.6	8.5	8.5	8.5	8.5	8.6	8.3	8.3	7.8	7.9	7.7	7.9
Odor	TON	3	S	2	2	2	1	2	1	2	2	2	2	2	**4**
Specific Conductance	umho/cm	1600	S	650	650	430	430	370	370	620	630	1600	1500	**1700**	**1700**
Turbidity	NTU	5	S	0.41	0.47	0.15	0.18	0.13	0.14	0.28	0.26	1.6	1.9	1	1.1
Metals															
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	ND	ND	ND	ND	1.1	1.2	5.3	5.6	7.7	8.2
Barium, Total	ug/l	1000	P	5.9	6.5	9.6	11	5.3	5.6	35	37	62	65	72	78
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	2.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	1.1	ND	1	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.054	0.12	0.039	0.06	0.12	0.12	ND	0.02	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	4.9	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	6.1	6.8	7	8.4
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	5.9	5	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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	0.67
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.59
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l	1	N		ND		ND		ND		ND		**1.1**		**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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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	0.98	1.5	**10**	**12**
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	4.9	9.2	**17**	**20**
Styrene	ug/l	100	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
TBA	ug/l	12	N		ND		ND		ND		10		ND		**410**
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
Total Trihalomethanes	ug/l	80	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	1	1.2
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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 2016-17

Constituents	Units	MCL	MCL Type	Long Beach #6											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				3/16/2017	8/22/2017	3/16/2017	8/22/2017	3/16/2017	8/22/2017	3/16/2017	8/22/2017	3/16/2017	8/22/2017	3/16/2017	8/22/2017
General Minerals															
Alkalinity	mg/l			540	540	430	410	160	170	140	140	120	120	130	130
Anion Sum	meq/l			11	11	9.2	8.8	3.8	3.8	3.5	3.5	3.1	3.1	4.5	4.5
Bicarbonate as HCO3	mg/l			660	660	520	500	200	200	170	170	140	140	160	160
Boron	mg/l	1	N	**1.1**	**1.2**	0.83	0.83	0.23	0.24	0.15	0.14	0.081	0.085	ND	ND
Bromide	ug/l			330	350	280	260	120	120	83	82	80	85	340	320
Calcium, Total	mg/l			8	8	6.2	5.8	5.3	5.2	5.8	6.4	12	12	45	48
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			17	17	13	16	6.5	8.2	5.5	7	2.9	3.6	2.1	2.1
Cation Sum	meq/l			12	11	9.3	8.6	4	3.7	3.6	3.3	3.3	3.1	4.4	4.6
Chloride	mg/l	500	S	18	17	18	17	16	16	15	14	17	18	54	54
Fluoride	mg/l	2	P	0.73	0.73	0.73	0.71	0.64	0.61	0.64	0.63	0.55	0.58	0.26	0.25
Hardness (Total, as CaCO3)	mg/l			26	26	20	19	14	14	16	17	33	33	130	140
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			110	110	81	81	28	33	19	19	25	27	70	78
Iron, Total	mg/l	0.3	S	0.089	0.087	0.096	0.085	0.036	0.037	0.027	0.021	ND	ND	0.052	0.05
Langelier Index - 25 degree	None			0.89	0.93	0.7	0.72	0.29	0.41	0.26	0.35	0.35	0.39	0.71	0.77
Magnesium, Total	None			1.6	1.5	1.2	1	0.24	0.21	0.31	0.32	0.83	0.77	4.6	4.6
Manganese, Total	ug/l	50	S	14	14	16	14	4.3	4.3	14	14	4.6	4.4	**63**	**58**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			1.7	1.7	1.3	1.1	ND	ND	ND	ND	1.1	ND	2.2	2
Sodium, Total	mg/l			260	240	200	190	85	79	76	69	60	56	40	41
Sulfate	mg/l	500	S	ND	1.7	ND	ND	ND	ND	9	10	10	10	16	17
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	660	720	550	510	240	240	200	240	210	220	260	300
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			21	21	17	17	4.5	5.6	3.2	3.5	1.8	0.71	0.74	1.8
General Physical Properties															
Apparent Color	ACU	15	S	**350**	**200**	**300**	**200**	**100**	**100**	**70**	**45**	**40**	**50**	ND	5
Lab pH	Units			8.6	8.6	8.6	8.7	8.7	8.8	8.7	8.8	8.5	8.6	8.3	8.3
Odor	TON	3	S	2	2	2	2	2	1	2	1	2	1	2	1
Specific Conductance	umho/cm	1600	S	1000	1000	860	830	370	370	350	350	320	320	470	470
Turbidity	NTU	5	S	1.2	0.43	0.85	0.4	0.25	0.28	0.38	0.19	0.24	0.18	0.14	0.76
Metals															
Aluminum, Total	ug/l	1000	P	ND	ND	ND	25	21	120	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	2.3	2.6	ND	ND	ND	ND	ND	ND	ND	ND	2.4	2.6
Barium, Total	ug/l	1000	P	6.6	6.2	7.6	7	3.9	4	6.3	5.9	2.9	2.4	21	18
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.032	0.074	0.039	0.1	0.043	0.1	0.033	0.086	0.031	0.092	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	ug/l	5000	S	ND	ND	ND	39	ND	67	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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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 2016-17

Constituents	Units	MCL	MCL Type	Los Angeles #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				5/3/2017	9/27/2017	5/3/2017	9/27/2017	5/3/2017	9/27/2017	5/3/2017	9/27/2017	5/3/2017	9/27/2017
General Minerals													
Alkalinity	mg/l			180	190	180	180	190	190		200		220
Anion Sum	meq/l			5.8	6.4	6	6.1	6.1	6.1		8		11
Bicarbonate as HCO3	mg/l			220	230	220	220	230	230		250		270
Boron	mg/l	1	N	0.14	0.17	0.12	0.14	0.14	0.15	0.15	0.16	0.17	
Bromide	ug/l			130	160	110	100	110	110				
Calcium, Total	mg/l			55	62	60	62	60	62	92	83	110	100
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND		ND		ND
Carbonate as CO3	mg/l			2.3	2.4	ND	ND	ND	ND		ND		ND
Cation Sum	meq/l			5.8	6.4	6	6.2	6.1	6.2		8		10
Chloride	mg/l	500	S	23	28	22	22	22	22	57	42	77	76
Fluoride	mg/l	2	P	0.33	0.32	0.49	0.49	0.44	0.42		0.48		0.44
Hardness (Total, as CaCO3)	mg/l			190	210	210	220	210	220	330	290	390	360
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND		ND		ND
Iodide	mg/l			23	23	17	20	ND	3.8				
Iron, Total	mg/l	0.3	S	ND	ND	0.18	0.18	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.82	0.95	0.74	0.83	0.62	0.84		0.91		
Magnesium, Total	None			12	14	15	15	15	15	24	21	29	28
Manganese, Total	ug/l	50	S	15	8.9	48	**56**	9.7	11	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	3	ND	ND	ND	ND	40	24	**66**	**69**
Nitrate as Nitrogen	mg/l	10	P	ND	0.68	ND	ND	ND	ND	8.9	5.5	**15**	**16**
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			4.1	4.1	3.5	3.3	3.4	3.2	4.2	3.8	4.6	4.6
Sodium, Total	mg/l			45	46	40	41	40	41	52	48	58	57
Sulfate	mg/l	500	S	72	82	82	85	84	86	120	110	140	140
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND				
Total Dissolved Solid (TDS)	mg/l	1000	S	370	380	370	360	380	360				
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	0.68	ND	ND	ND	ND	8.9	5.5	**15**	**16**
Total Organic Carbon	mg/l			0.49	2.4	0.34	2.8	0.32	2				
General Physical Properties													
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND				
Lab pH	Units			8.2	8.2	8	8.1	7.9	8.1		8		8
Odor	TON	3	S	1	1	2	1	1	2				
Specific Conductance	umho/cm	1600	S	570	610	580	580	590	590		790		1000
Turbidity	NTU	5	S	0.11	0.12	0.8	0.72	ND	0.11				
Metals													
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total	ug/l	1000	P	27	34	44	46	68	68	110	100	130	150
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	2
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	**220**	**140**	**410**	**420**
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.055	0.074	ND	0.055	0.26	0.26	**230**	**150**	**440**	**440**
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	5.6	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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	0.73	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
1,4-Dioxane	ug/l	1	N		**3.8**		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	**0.52**	**1.3**
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		ND		ND		ND		ND		ND
Tetrachloroethylene (PCE)	ug/l	5	P	2.2	**7.6**	ND	ND	ND	0.6	1.2	1.4	1.8	3.1
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	0.59	0.86
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	4.6	**16**	ND	ND	ND	0.51	**17**	**17**	**29**	**46**
Vinyl chloride (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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				

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 2016-17

Constituents	Units	MCL	MCL Type	Los Angeles #2							
				Zone 2		Zone 3		Zone 4		Zone 5	
				5/2/2017	9/26/2017	5/2/2017	9/26/2017	5/2/2017	9/26/2017	5/2/2017	9/26/2017
General Minerals											
Alkalinity	mg/l			310	310	320	320	330	330	310	310
Anion Sum	meq/l			19	19	19	19	20	20	23	24
Bicarbonate as HCO3	mg/l			380	380	380	380	400	400	380	370
Boron	mg/l	1	N	0.22	0.24	0.22	0.24	0.27	0.28	0.4	0.42
Bromide	ug/l			580	560	550	530	660	640	680	690
Calcium, Total	mg/l			190	200	190	200	190	200	210	220
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			18	18	18	19	19	20	22	23
Chloride	mg/l	500	S	250	250	270	270	280	270	160	160
Fluoride	mg/l	2	P	0.24	0.23	0.34	0.34	0.37	0.36	0.32	0.34
Hardness (Total, as CaCO3)	mg/l			690	710	680	700	680	700	780	800
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			72	84	55	68	66	70	46	54
Iron, Total	mg/l	0.3	S	0.17	0.18	**1.2**	**1.2**	**1.5**	**1.5**	**0.37**	**1.2**
Langelier Index - 25 degree	None			1.1	1.2	1.1	1.3	1.3	1.1	1.2	1.3
Magnesium, Total	None			52	51	50	50	50	50	63	61
Manganese, Total	ug/l	50	S	**340**	**350**	**170**	**170**	**120**	**120**	**830**	**900**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			9.5	10	6.7	7.4	7.3	8.1	9.9	10
Sodium, Total	mg/l			98	95	99	98	120	130	150	160
Sulfate	mg/l	500	S	290	290	260	260	280	280	**610**	**630**
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	0.14	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	**1200**	**1200**	**1200**	**1200**	**1200**	**1200**	**1500**	**1500**
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.6	0.65	0.68	0.74	0.66	0.73	1.7	3.8
General Physical Properties											
Apparent Color	ACU	15	S	5	5	10	15	**20**	**30**	**20**	**50**
Lab pH	Units			7.7	7.8	7.6	7.8	7.8	7.6	7.7	7.8
Odor	TON	3	S	2	ND	2	ND	1	ND	**8**	**4**
Specific Conductance	umho/cm	1600	S	**1800**	**1800**	**1800**	**1800**	**1900**	**1900**	**2000**	**2000**
Turbidity	NTU	5	S	1.3	1.5	**14**	**54**	**20**	**21**	**29**	**140**
Metals											
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	**31**	**7.8**
Arsenic, Total	ug/l	10	P	1.2	ND	1.4	ND	ND	ND	6.4	8.3
Barium, Total	ug/l	1000	P	73	80	130	140	120	120	48	56
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	7.7	ND	7.8	ND	ND	ND	6.6	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	ug/l	5000	S	ND	ND	ND	ND	ND	ND	480	88
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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	0.61	0.75
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l	12	N		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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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 2016-17

Constituents	Units	MCL	MCL Type	Los Angeles #3											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/1/2017	9/20/2017	5/1/2017	9/20/2017	5/1/2017	9/20/2017	5/1/2017	9/20/2017	5/1/2017	9/20/2017	5/1/2017	9/20/2017
General Minerals															
Alkalinity	mg/l			250	240	180	180	190	190	200	200	210	220	250	250
Anion Sum	meq/l			6.5	6.4	5.9	5.8	6	6	6.7	6.5	8.8	8.9	13	12
Bicarbonate as HCO3	mg/l			300	300	220	220	230	230	240	240	260	260	310	300
Boron	mg/l	1	N	0.31	0.33	0.12	0.13	0.12	0.14	0.13	0.14	0.17	0.19	0.18	0.2
Bromide	ug/l			250	240	160	130	120	110	200	200	250	250	550	530
Calcium, Total	mg/l			15	15	57	58	59	59	66	67	92	94	140	130
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			6.2	4.9	2.8	2.8	2.4	ND	3.1	2.5	2.1	ND	2	2.4
Cation Sum	meq/l			6.4	6.3	5.9	5.8	6	5.9	6.7	6.5	8.9	9	12	12
Chloride	mg/l	500	S	37	34	25	24	22	21	39	36	53	52	120	110
Fluoride	mg/l	2	P	0.36	0.33	0.36	0.35	0.5	0.48	0.46	0.43	0.38	0.36	0.38	0.36
Hardness (Total, as CaCO3)	mg/l			60	59	200	200	200	200	230	230	320	320	480	460
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			66	70	31	28	24	29	37	45	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	ND	ND	0.03	0.033	ND	ND	0.057	0.062	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.7	0.64	0.92	0.92	0.9	0.82	1	0.91	1	1	1.1	1.2
Magnesium, Total	None			5.6	5.3	14	13	14	13	15	15	23	22	33	32
Manganese, Total	ug/l	50	S	22	22	**88**	**98**	**57**	**57**	41	44	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	43	44	27	27
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	9.7	10	6	6.1
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			4	4.1	3.5	3.5	3.7	3.6	4	4	4.2	4.3	4.4	4.4
Sodium, Total	mg/l			120	120	42	41	41	40	46	42	54	54	64	62
Sulfate	mg/l	500	S	24	23	74	72	78	76	77	74	110	110	190	180
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	350	360	360	360	400	390	560	560	770	790
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	9.7	10	6	6.1
Total Organic Carbon	mg/l			1.9	1.8	0.35	0.34	ND	ND	ND	ND	0.4	0.37	0.4	0.38
General Physical Properties															
Apparent Color	ACU	15	S	**20**	**20**	ND	ND	ND	ND	3	ND	ND	ND	ND	ND
Lab pH	Units			8.5	8.4	8.3	8.3	8.2	8.1	8.3	8.2	8.1	8	8	8.1
Odor	TON	3	S	1	1	2	ND	1	1	1	ND	1	ND	ND	ND
Specific Conductance	umho/cm	1600	S	630	630	570	570	580	580	640	650	870	880	1200	1200
Turbidity	NTU	5	S	0.13	0.12	0.14	0.12	0.12	0.1	0.27	0.22	0.2	ND	0.28	0.59
Metals															
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total	ug/l	1000	P	9	8.5	21	21	43	40	68	68	120	110	120	110
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	2.3	1.7	5.2	4.5
Hexavalent Chromium (Cr VI)	ug/l	10	P		0.052	ND	0.022	ND	0.02	ND	0.021	2.1	2.1	5	5.1
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	15	14
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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	0.72	0.67
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		ND		ND		ND		ND		ND		ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5.3**	4.1
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	0.89	0.97	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	1.6	1.3
Vinyl chloride (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	0.93	ND	0.93	ND	0.63	ND	0.81	2	2.8	1.1	1.6

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 2016-17

Constituents	Units	MCL	MCL Type	Los Angeles #4											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				3/22/2017	9/12/2017	3/22/2017	9/12/2017	3/22/2017	9/12/2017	3/22/2017	9/12/2017	3/22/2017	9/12/2017	3/22/2017	9/12/2017
General Minerals															
Alkalinity	mg/l			1600	1600	450	450	170	180	180	180	170	180	210	200
Anion Sum	meq/l			32	33	9.2	9.3	5.6	5.6	5.7	5.7	5.7	5.7	8	7.4
Bicarbonate as HCO3	mg/l			1900	1900	540	550	210	210	210	220	210	210	250	240
Boron	mg/l	1	N	**5.5**	**5.6**	0.5	0.51	0.11	0.12	0.11	0.12	0.12	0.13	0.17	0.17
Bromide	ug/l			620	600	68	66	98	96	100	96	100	96	350	290
Calcium, Total	mg/l			12	12	18	17	55	56	55	56	55	57	68	65
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			25	49	4.4	9	ND	3.4	ND	2.8	ND	2.7	ND	2
Cation Sum	meq/l			36	30	9.9	8.8	5.6	5.7	5.7	5.7	5.7	5.7	8	7.4
Chloride	mg/l	500	S	30	30	7.6	7.2	20	20	20	20	20	20	62	55
Fluoride	mg/l	2	P	0.41	0.38	0.29	0.28	0.34	0.34	0.42	0.42	0.38	0.38	0.16	0.22
Hardness (Total, as CaCO3)	mg/l			57	54	77	72	180	180	190	190	190	190	240	220
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			180	200	18	20	22	21	30	35	23	27	7.6	12
Iron, Total	mg/l	0.3	S	**0.59**	**0.58**	0.11	0.11	ND	ND	ND	ND	0.044	0.05	ND	ND
Langelier Index - 25 degree	None			1.2	1.5	0.63	0.92	0.71	0.98	0.54	0.93	0.73	0.94	0.76	0.84
Magnesium, Total	None			6.5	5.9	7.8	7.1	11	11	12	12	12	12	16	15
Manganese, Total	ug/l	50	S	23	19	48	48	39	36	**55**	**54**	**63**	**61**	**82**	**72**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.9	4.8
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.5	1.1
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			14	15	11	11	3.1	3.1	3.7	3.7	3.8	3.8	4.8	4.6
Sodium, Total	mg/l			790	650	180	160	43	43	42	41	42	41	74	65
Sulfate	mg/l	500	S	0.69	ND	0.6	ND	76	75	75	74	77	76	97	91
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	**2100**	**2100**	540	510	350	340	360	340	350	360	500	450
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.5	1.1
Total Organic Carbon	mg/l			130	120	7.4	7.1	0.36	0.31	ND	ND	ND	ND	0.35	ND
General Physical Properties															
Apparent Color	ACU	15	S	**1000**	**1200**	**60**	**50**	ND	ND	ND	ND	ND	ND	ND	ND
Lab pH	Units			8.3	8.6	8.1	8.4	8.1	8.4	7.9	8.3	8.1	8.3	8	8.1
Odor	TON	3	S	2	2	2	2	2	1	2	1	2	1	2	1
Specific Conductance	umho/cm	1600	S	**2800**	**2900**	850	860	540	550	550	560	510	560	790	750
Turbidity	NTU	5	S	0.64	0.55	2	3	0.1	0.13	0.14	0.12	0.24	0.27	1.2	0.75
Metals															
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	2.8	2.3	5.7	6.2	ND	ND	2.3	2.2	1.4	1.4	3.7	3.5
Barium, Total	ug/l	1000	P	35	34	34	34	19	15	64	52	63	52	58	49
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	3	ND	ND	1.5	ND	1.4	ND	1.5	ND	2.7	1.1
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.18	0.05	0.062	0.048	ND	ND	ND	ND	ND	ND	0.99	0.98
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	9.4	6
Silver, Total	ug/l	100	S	2.1	ND	0.51	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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 2016-17

Constituents	Units	MCL	MCL Type	Lynwood #1																	
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Zone 7		Zone 8		Zone 9	
				5/17/17	9/29/17	5/17/17	9/29/17	5/17/17	9/29/17	5/17/17	9/29/17	5/17/17	9/29/17	5/17/17	9/29/17	5/17/17	9/29/17	5/17/17	9/29/17	5/17/17	9/29/17
General Minerals																					
Alkalinity	mg/l			570	570	140	140	120	120	140	140	160	160	160	160	190	190	180	180	300	300
Anion Sum	meq/l			12	12	4.2	4.2	4.6	4.5	5	4.9	4.8	4.7	5.3	5.3	6.4	6.7	7.3	7.2	18	18
Bicarbonate as HCO3	mg/l			690	690	170	160	140	140	170	170	190	190	200	200	230	230	220	220	370	360
Boron	mg/l	1	N	**1.4**	**1.4**	0.16	0.17	0.1	0.11	0.081	0.092	0.083	0.092	0.11	0.13	0.11	0.13	0.12	0.14	0.16	0.18
Bromide	ug/l			150	150	120	120	110	100	100	100	110	110	100	100	130	150	140	140	600	600
Calcium, Total	mg/l			10	9.8	5.3	5.1	40	42	46	48	46	47	52	56	65	75	76	83	200	220
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			18	14	7	5.2	2.3	ND	2.8	2.2	3.1	2.5	3.3	2	3	2.4	2.3	ND	2.4	ND
Cation Sum	meq/l			12	11	4.3	4	4.5	4.7	4.9	5.2	4.8	5	5.4	5.7	6.3	7.2	7	7.6	17	19
Chloride	mg/l	500	S	10	9.5	21	20	21	20	21	20	21	20	20	20	27	31	44	46	160	160
Fluoride	mg/l	2	P	0.56	0.57	0.45	0.46	0.32	0.33	0.29	0.3	0.3	0.3	0.39	0.39	0.32	0.33	0.42	0.42	0.34	0.34
Hardness (Total, as CaCO3)	mg/l			34	33	14	14	120	130	140	140	130	130	180	190	220	250	260	280	690	750
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			39	38	40	32	40	24	44	26	46	27	46	23	35	44	ND	ND	220	210
Iron, Total	mg/l	0.3	S	0.074	0.21	ND	0.066	ND	ND	ND	0.02	ND	ND	0.022	0.028	0.071	0.091	ND	ND	**0.34**	**0.36**
Langelier Index - 25 degree	None			1	0.93	0.28	0.16	0.73	0.62	0.82	0.74	0.9	0.76	0.93	0.85	1	1	1	0.96	1.4	1.3
Magnesium, Total	None			2.2	2	0.3	0.27	5.5	5.7	5.8	6.1	2.9	2.9	12	12	13	15	17	18	47	48
Manganese, Total	ug/l	50	S	14	14	2.6	2.8	16	15	32	30	27	26	**60**	**59**	3.6	**110**	**100**	3.7	**220**	**220**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.9	6.3	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3	1.4	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			2.7	2.8	ND	ND	1.3	1.4	1.7	1.8	2.1	2.2	3.5	3.5	3.1	3.3	3.3	3.4	4.9	5
Sodium, Total	mg/l			270	230	93	86	45	49	47	52	50	54	39	42	43	48	40	44	73	79
Sulfate	mg/l	500	S	0.78	1.6	42	41	76	74	80	77	49	48	68	67	87	93	100	100	360	340
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	690	680	280	260	300	280	320	300	310	290	330	320	400	400	480	430	**1100**	1000
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3	1.4	ND	ND
Total Organic Carbon	mg/l			15	16	2	1.9	0.5	0.43	0.5	0.38	ND	ND	0.44	0.34	0.42	0.37	ND	ND	1.1	0.96
General Physical Properties																					
Apparent Color	ACU	15	S	**200**	**200**	**25**	**45**	3	ND	5	ND	ND	3	ND	ND	3	3	ND	ND	5	ND
Lab pH	Units			8.6	8.5	8.8	8.7	8.4	8.3	8.4	8.3	8.4	8.3	8.4	8.2	8.3	8.2	8.2	8.1	8	7.9
Odor	TON	3	S	2	2	1	ND	2	ND	1	ND	1	ND	1	1	1	ND	1	ND	1	ND
Specific Conductance	umho/cm	1600	S	1100	1100	430	430	460	460	500	500	470	470	520	520	630	660	710	720	1600	1600
Turbidity	NTU	5	S	3.5	3.1	0.32	0.34	0.1	0.12	0.11	0.12	0.1	0.11	0.13	0.17	0.31	0.26	0.27	0.17	3.3	1.2
Metals																					
Aluminum, Total	ug/l	1000	P	30	ND	30	29	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	**220**	**210**	ND	1.4	ND	ND	ND	ND	4.7	4.5	1.4	ND	1.8	3.9	3.6	1.6	6.5	6.8
Barium, Total	ug/l	1000	P	15	14	2.1	ND	7.6	6.3	150	150	110	110	45	44	120	95	90	120	180	170
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.8	ND	ND	ND	1.7	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.1	0.11	0.088	0.1	0.022	ND	0.028	ND	0.02	ND	0.022	ND	0.024	ND	1	0.89	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	ug/l	5000	S	ND	ND	ND	ND	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	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	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	ND	ND	ND	ND
1,4-Dioxane	ug/l	1	N		ND		ND		ND		ND		ND		ND		ND		**2.4**		ND
Benzene	ug/l	1	P	ND	ND	ND	ND	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	ND	ND	ND	ND
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			ND	ND	ND	ND	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	ND	ND	ND	ND
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	P	ND	ND	ND	ND	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	ND	ND	ND	ND
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	ND	ND	ND	ND	ND	3.6	4.9	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	ug/l	80	P	ND	ND	ND	ND	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	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4	1.2	ND	ND
Vinyl chloride (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	ug/l	1750	P	ND	ND	ND	ND	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	0.63	0.54	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 2016-17

Constituents	Units	MCL	MCL Type	Montebello #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				4/19/2017	9/21/2017	4/19/2017	9/21/2017	4/19/2017	9/21/2017	4/19/2017	9/21/2017	4/19/2017	9/21/2017
General Minerals													
Alkalinity	mg/l			910	900	580	580	180	180	180	180	200	210
Anion Sum	meq/l			37	36	15	15	6.8	6.9	8.2	8	8.3	8
Bicarbonate as HCO3	mg/l			1100	1100	700	700	220	220	220	220	240	250
Boron	mg/l	1	N	**5.8**	**6.1**	**2.1**	**2.3**	0.11	0.13	0.13	0.13	0.19	0.2
Bromide	ug/l			4300	4100	870	820	160	180	240	230	220	180
Calcium, Total	mg/l			13	13	17	18	83	82	90	92	88	81
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			28	23	14	11	ND	2.3	2.3	ND	2	ND
Cation Sum	meq/l			38	35	15	14	7.2	7	8.3	8.2	9	8.2
Chloride	mg/l	500	S	**680**	**650**	120	110	44	48	66	63	70	64
Fluoride	mg/l	2	P	0.5	0.48	0.36	0.34	0.21	0.2	0.25	0.25	0.38	0.38
Hardness (Total, as CaCO3)	mg/l			57	56	72	74	260	260	290	290	290	270
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			1000	900	190	200	270	36	43	46	ND	ND
Iron, Total	mg/l	0.3	S	0.16	0.16	0.21	0.21	0.046	0.052	ND	ND	ND	ND
Langelier Index - 25 degree	None			1.3	1.2	1.1	1	0.96	0.99	1.1	0.9	1	0.76
Magnesium, Total	None			6	5.8	7.2	7.2	14	13	15	14	18	16
Manganese, Total	ug/l	50	S	8.4	8	31	31	**76**	**74**	47	50	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	11	14
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	2.4	3.2
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			8.3	10	5.5	6.2	3.4	3.3	3.8	3.7	3.7	3.3
Sodium, Total	mg/l			850	780	310	290	40	39	58	54	70	63
Sulfate	mg/l	500	S	ND	ND	ND	ND	90	90	130	120	100	87
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	**2100**	**2200**	860	920	410	450	520	520	530	520
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	2.4	3.2
Total Organic Carbon	mg/l			38	13	24	15	0.76	0.69	0.55	0.52	0.52	0.45
General Physical Properties													
Apparent Color	ACU	15	S	**500**	**350**	**250**	**200**	5	5	ND	3	3	ND
Lab pH	Units			8.6	8.5	8.5	8.4	8.1	8.2	8.2	8	8.1	7.9
Odor	TON	3	S	**8**	2	**8**	2	2	2	2	ND	1	ND
Specific Conductance	umho/cm	1600	S	**3600**	**3600**	1400	1400	670	690	810	810	840	820
Turbidity	NTU	5	S	0.52	0.41	0.55	0.27	0.43	0.25	0.1	0.16	0.12	0.11
Metals													
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	3.3	3.6	ND	ND	ND	ND	2.2	2.5	1.5	1.8
Barium, Total	ug/l	1000	P	38	37	25	25	37	35	82	81	65	63
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	1.8	2.3	ND	1.2	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.082	0.45	0.034	0.14	ND	0.02	ND	ND	0.06	0.084
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	ug/l	5000	S	ND	ND	ND	26	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
1,4-Dioxane	ug/l	1	N		ND		ND		**4.1**		**4.8**		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	0.5	ND	ND	ND	0.58	ND	0.65	ND	0.63
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	0.83	ND	ND	ND	ND	0.62	0.75

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 2016-17

Constituents	Units	MCL	MCL Type	Norwalk #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				4/4/2017	9/11/2017	4/4/2017	9/11/2017	4/4/2017	9/11/2017	4/4/2017	9/11/2017	4/4/2017	9/11/2017
General Minerals													
Alkalinity	mg/l			270	280	180	180	140	140	130	130	200	200
Anion Sum	meq/l			8.4	8.4	5.2	5.2	4.8	4.9	3.4	3.4	8.2	8.3
Bicarbonate as HCO3	mg/l			330	330	210	210	170	170	160	160	240	240
Boron	mg/l	1	N	0.36	0.37	0.19	0.2	0.054	0.054	ND	ND	0.078	0.08
Bromide	ug/l			310	290	270	260	360	370	110	97	700	590
Calcium, Total	mg/l			14	13	9.8	9.2	33	33	29	28	77	76
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			2.1	4.3	5.4	5.4	2.2	2.2	2.1	2.1	ND	ND
Cation Sum	meq/l			9.1	8.3	5.6	5.7	5.2	4.9	3.7	3.5	8.6	8.3
Chloride	mg/l	500	S	63	62	58	58	66	68	21	21	140	140
Fluoride	mg/l	2	P	0.54	0.51	0.62	0.6	0.31	0.3	0.34	0.31	0.32	0.3
Hardness (Total, as CaCO3)	mg/l			66	59	30	28	95	94	96	91	270	260
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			75	86	83	91	83	92	40	43	100	110
Iron, Total	mg/l	0.3	S	ND	ND	ND	ND	0.036	0.029	0.028	0.02	0.14	0.12
Langelier Index - 25 degree	None			0.25	0.45	0.49	0.47	0.57	0.64	0.49	0.53	0.82	0.84
Magnesium, Total	None			7.5	6.5	1.3	1.1	3	2.8	5.7	5.2	18	17
Manganese, Total	ug/l	50	S	2.7	2.3	5.5	5.6	22	23	36	33	**140**	**140**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			2.7	2.4	1.4	1.2	2.4	2.3	1.9	1.5	3.8	3.8
Sodium, Total	mg/l			180	160	120	120	74	68	40	37	73	68
Sulfate	mg/l	500	S	55	51	ND	ND	6.4	6.1	8.6	8.9	6.7	7
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	0.21	0.17
Total Dissolved Solid (TDS)	mg/l	1000	S	530	520	310	310	280	290	220	210	490	500
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			2	2	2.9	2.8	0.58	0.62	0.44	0.38	1.9	1.8
General Physical Properties													
Apparent Color	ACU	15	S	**20**	**25**	**30**	**30**	ND	ND	ND	ND	ND	ND
Lab pH	Units			8	8.3	8.6	8.6	8.3	8.3	8.3	8.3	8	8
Odor	TON	3	S	**200**	**200**	**67**	2	2	1	ND	2	**200**	1
Specific Conductance	umho/cm	1600	S	860	860	520	520	490	510	340	340	840	860
Turbidity	NTU	5	S	0.13	0.13	0.66	0.22	0.29	0.2	**6.6**	1	3.2	**10**
Metals													
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	ND	ND	5.5	6	**18**	**19**	**11**	**13**
Barium, Total	ug/l	1000	P	15	13	6	5.8	92	95	110	110	370	350
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.13	0.099	0.043	0.056	ND	ND	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	3.4	3.6
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		ND		ND		ND		ND		2.1
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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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 2016-17

Constituents	Units	MCL	MCL Type	Norwalk #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/19/2017	9/11/2017	4/19/2017	9/11/2017	4/19/2017	9/11/2017	4/19/2017	9/11/2017	4/19/2017	9/11/2017	4/19/2017	9/11/2017
General Minerals															
Alkalinity	mg/l			180	190	180	180	150	150	170	170	160	160	200	200
Anion Sum	meq/l			7.3	7	4.7	4.7	4.1	4.2	5.9	5.9	7.7	8	8.4	8.2
Bicarbonate as HCO3	mg/l			220	230	220	220	180	180	200	200	200	200	240	240
Boron	mg/l	1	N	0.21	0.26	0.22	0.23	ND	ND	0.056	0.053	0.15	0.17	0.17	0.18
Bromide	ug/l			250	300	140	130	48	46	74	72	150	150	160	150
Calcium, Total	mg/l			62	32	12	12	45	46	73	72	86	89	88	85
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			2.3	3	3.6	4.5	ND	2.3	2.6	2	2	ND	ND	ND
Cation Sum	meq/l			7.6	7.6	4.7	4.6	4.4	4.4	6.2	6.1	8	8.2	8.8	8.4
Chloride	mg/l	500	S	68	65	28	28	13	13	30	30	70	75	72	68
Fluoride	mg/l	2	P	0.34	0.39	0.51	0.5	0.23	0.22	0.31	0.3	0.27	0.25	0.4	0.39
Hardness (Total, as CaCO3)	mg/l			210	100	39	39	140	140	240	230	290	290	300	280
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			46	84	40	39	8.6	11	ND	ND	6.4	10	ND	ND
Iron, Total	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.89	0.7	0.39	0.47	0.71	0.82	1	0.91	1	0.94	0.73	0.87
Magnesium, Total	None			13	6.2	2.3	2.2	5.6	5.1	13	12	18	17	19	17
Manganese, Total	ug/l	50	S	17	9.9	17	16	21	20	ND	ND	18	23	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	6.2	6.4	11	12	9.5	9.5
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	1.4	1.4	2.5	2.6	2.2	2.1
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			4.2	4.6	2.6	2.4	2.8	2.7	3.6	3.5	4.4	4.5	4.3	4.3
Sodium, Total	mg/l			78	120	89	87	38	37	32	33	49	52	62	61
Sulfate	mg/l	500	S	87	63	12	12	37	38	78	78	110	110	110	110
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	420	430	300	280	250	240	370	400	480	490	520	520
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	1.4	1.4	2.5	2.6	2.2	2.1
Total Organic Carbon	mg/l			1	1.4	1.2	1.1	0.43	0.35	0.31	ND	0.46	0.46	0.5	0.41
General Physical Properties															
Apparent Color	ACU	15	S	5	5	15	**20**	ND	ND	ND	ND	ND	ND	ND	ND
Lab pH	Units			8.2	8.3	8.4	8.5	8.2	8.3	8.3	8.2	8.2	8.1	7.8	8
Odor	TON	3	S	1	1	2	1	2	ND	1	1	1	ND	1	ND
Specific Conductance	umho/cm	1600	S	740	720	450	460	410	410	580	580	780	800	840	820
Turbidity	NTU	5	S	0.13	0.1	0.14	0.11	0.18	0.16	ND	ND	ND	ND	ND	ND
Metals															
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	3	4.9	ND	ND	ND	ND	1.9	2	1.8	2.3	1.2	1.6
Barium, Total	ug/l	1000	P	92	45	11	10	29	29	160	150	110	99	58	54
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	3.1	2.6	1.2	ND	1.1	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.025	0.022	0.035	0.041	0.022	ND	2.9	2.8	1	0.75	0.81	0.78
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		ND		ND		ND		ND		**3.6**		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		ND		ND		ND		ND		ND		ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	0.76	0.85	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	ug/l	80	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	0.54	ND	ND	ND	ND	ND
Vinyl chloride (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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	2.5	2.3	1	0.77	0.56	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 2016-17

Constituents	Units	MCL	MCL Type	Pico #1						
				Zone 1	Zone 2		Zone 3		Zone 4	
				5/16/2017	5/16/2017	9/20/2017	5/16/2017	9/20/2017	5/16/2017	9/20/2017
General Minerals										
Alkalinity	mg/l			300	170	170	200	200	210	210
Anion Sum	meq/l			6.1	6.1	5.7	9.8	9.3	10	10
Bicarbonate as HCO3	mg/l			360	210	210	250	250	250	250
Boron	mg/l	1	N	0.62	0.065	0.067	0.11	0.11	0.23	0.24
Bromide	ug/l			26	76	67	200	190	190	190
Calcium, Total	mg/l			8.6	76	72	120	120	94	92
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			3.7	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			6	6.1	5.7	9.5	9.4	10	9.9
Chloride	mg/l	500	S	3.1	27	22	86	80	100	100
Fluoride	mg/l	2	P	0.28	0.28	0.27	0.32	0.31	0.32	0.31
Hardness (Total, as CaCO3)	mg/l			35	250	230	390	380	310	300
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			6.6	8.2	4.4	33	20	1.2	ND
Iron, Total	mg/l	0.3	S	0.092	**0.32**	0.29	**0.49**	**0.5**	ND	ND
Langelier Index - 25 degree	None			0.22	0.7	0.77	0.76	0.8	0.42	0.63
Magnesium, Total	None			3.2	14	12	21	20	19	17
Manganese, Total	ug/l	50	S	31	24	25	15	15	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	11	12
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	2.6	2.8
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			3.7	3.1	2.8	4.2	4.1	5.2	5.1
Sodium, Total	mg/l			120	24	24	38	39	88	86
Sulfate	mg/l	500	S	0.62	89	77	160	140	140	130
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	360	360	360	580	570	630	600
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	2.6	2.8
Total Organic Carbon	mg/l			3	0.32	ND	0.64	0.45	0.64	0.49
General Physical Properties										
Apparent Color	ACU	15	S	**40**	10	ND	10	10	ND	ND
Lab pH	Units			8.2	7.9	8	7.7	7.8	7.5	7.7
Odor	TON	3	S	1	2	1	2	ND	1	ND
Specific Conductance	umho/cm	1600	S	570	580	550	930	920	1000	1000
Turbidity	NTU	5	S	4.2	1.8	1.4	4.7	3.5	0.3	ND
Metals										
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	5	ND	ND	ND	ND	3	2.3
Barium, Total	ug/l	1000	P	15	89	93	84	82	58	62
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	ND	ND	ND	ND	0.38	0.6
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N			ND		1		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND
TBA	ug/l	12	N			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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND
Xylenes (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 2016-17

Constituents	Units	MCL	MCL Type	Pico #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/26/2017	9/25/2017	4/26/2017	9/25/2017	4/26/2017	9/25/2017	4/26/2017	9/25/2017	4/26/2017	9/25/2017	4/26/2017	9/25/2017
General Minerals															
Alkalinity	mg/l			200	210	210	220	190	200	150	150	130	130	87	120
Anion Sum	meq/l			8.6	8.7	10	10	8.9	9	8.8	9	7.7	7.8	4.2	7.7
Bicarbonate as HCO3	mg/l			250	250	260	260	240	240	180	180	160	160	110	150
Boron	mg/l	1	N	0.15	0.055	0.057	0.15	0.16	0.16	0.24	0.25	0.24	0.24	0.15	0.14
Bromide	ug/l			160	170	220	210	180	170	150	140	170	150	99	120
Calcium, Total	mg/l			130	110	120	120	100	97	78	78	58	57	23	53
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			2.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			10	8.4	8.9	9.7	9.3	8.6	9.2	9	8	7.6	4.4	7.5
Chloride	mg/l	500	S	53	57	91	93	79	80	110	120	100	100	49	110
Fluoride	mg/l	2	P	0.28	0.26	0.29	0.28	0.34	0.34	0.33	0.33	0.41	0.4	0.49	0.33
Hardness (Total, as CaCO3)	mg/l			430	360	390	400	340	320	260	260	210	210	87	200
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	2.2	3	ND	ND
Iron, Total	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			1.3	1	1.1	1	0.98	0.89	0.79	0.52	0.32	0.2	-0.29	-0.021
Magnesium, Total	None			25	20	21	24	21	20	17	16	16	16	7.1	16
Manganese, Total	ug/l	50	S	2.6	ND	ND	2.1	ND	ND	ND	ND	36	36	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	13	14	10	11	13	13	21	22	15	17	8.7	22
Nitrate as Nitrogen	mg/l	10	P	3	3.1	2.4	2.5	2.9	3	4.7	5	3.3	3.9	2	5
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			4.2	3.6	3.9	4	4.4	4.4	4.4	4.6	5	5.1	5.6	8
Sodium, Total	mg/l			44	26	27	41	50	45	87	83	84	77	59	77
Sulfate	mg/l	500	S	130	130	140	140	120	120	110	110	96	94	46	80
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	540	570	630	650	570	580	560	570	500	520	280	490
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	3	3.1	2.4	2.5	2.9	3	4.7	5	3.3	3.9	2	5
Total Organic Carbon	mg/l			0.39	0.32	0.45	0.39	0.38	0.35	0.61	0.57	0.73	0.76	0.94	1.1
General Physical Properties															
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lab pH	Units			8.2	8	8	8	8	8	8.1	7.8	7.8	7.7	7.8	7.5
Odor	TON	3	S	1	1	2	ND	1	ND	2	ND	1	ND	1	ND
Specific Conductance	umho/cm	1600	S	830	850	980	980	880	890	910	930	810	820	460	820
Turbidity	NTU	5	S	0.61	0.12	0.25	ND	0.4	0.2	0.4	0.16	0.12	ND	0.74	0.45
Metals															
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	2.7	1.7	1.8	2.4	1.9	1.8	2.7	2.5	1.2	1.2	**14**	9.8
Barium, Total	ug/l	1000	P	100	120	110	100	90	95	64	65	82	88	56	140
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.2
Chromium, Total	ug/l	50	P	1.4	1	1.9	ND	1.7	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	1.4	1.2	0.79	0.78	1.1	1.2	0.57	0.52	0.41	0.41	0.34	0.26
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	7.6	ND	6.3	ND	6.1	ND	5.7	ND	ND	ND	ND	5.1
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		**3**		ND		**1.5**		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		ND		ND		ND		ND		ND		ND
Tetrachloroethylene (PCE)	ug/l	5	P	0.74	0.69	1	0.88	2.3	2.1	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	ug/l	80	P	ND	ND	ND	ND	ND	ND	3.4	5.2	0.68	0.61	1	7.2
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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	1.7	1.5	ND	ND	0.95	0.82	ND	ND	ND	ND	0.85	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 2016-17

Constituents	Units	MCL	MCL Type	Rio Hondo #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/4/2017	9/19/2017	5/4/2017	9/19/2017	5/4/2017	9/19/2017	5/4/2017	9/19/2017	5/4/2017	9/19/2017	5/4/2017	9/19/2017
General Minerals															
Alkalinity	mg/l			150	150	170	170	180	180	130	130	130	130	110	100
Anion Sum	meq/l			4.5	4.4	7.1	6.9	7.7	7.5	6.4	6.1	6.8	6.6	4.8	4.3
Bicarbonate as HCO3	mg/l			180	180	210	200	220	220	160	160	160	160	140	120
Boron	mg/l	1	N	0.061	0.069	ND	0.052	0.15	0.16	0.15	0.16	0.14	0.16	0.17	0.17
Bromide	ug/l			96	94	130	130	140	140	110	110	120	120	78	86
Calcium, Total	mg/l			41	40	93	93	88	85	57	54	65	64	40	33
Carbon Dioxide	mg/l			ND	ND	ND	ND	5.7	ND	ND	ND	ND	ND	7.3	ND
Carbonate as CO3	mg/l			2.9	2.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			4.6	4.6	7.2	7.2	7.9	7.7	6.5	6.2	7	6.9	5	4.3
Chloride	mg/l	500	S	18	17	44	42	63	60	67	61	76	75	44	40
Fluoride	mg/l	2	P	0.28	0.27	0.24	0.23	0.33	0.32	0.36	0.35	0.31	0.29	0.35	0.37
Hardness (Total, as CaCO3)	mg/l			140	130	300	300	280	280	190	180	220	220	140	120
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			23	28	5.1	6.1	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	ND	ND	0.071	0.073	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.79	0.69	0.78	0.92	0.69	0.86	0.38	0.28	0.55	0.24	-0.18	-0.24
Magnesium, Total	None			8.3	8.3	16	16	16	16	11	11	14	14	11	8.4
Manganese, Total	ug/l	50	S	31	24	30	29	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
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	8.5	8.6	13	13	14	15	11	9.5
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	1.9	1.9	3	2.9	3.3	3.5	2.6	2.2
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			2.8	3	3.4	3.4	3.9	3.8	3.8	3.6	3.8	3.8	3.7	3.4
Sodium, Total	mg/l			42	41	26	26	48	48	61	59	58	57	47	44
Sulfate	mg/l	500	S	49	46	120	110	100	98	78	72	81	77	54	47
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	270	280	440	440	460	470	390	400	420	420	300	260
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	1.9	1.9	3	2.9	3.3	3.5	2.6	2.2
Total Organic Carbon	mg/l			0.42	ND	0.38	ND	0.43	0.33	0.42	0.33	0.44	0.31	0.44	0.32
General Physical Properties															
Apparent Color	ACU	15	S	ND	ND	ND	3	ND	ND	ND	ND	ND	ND	ND	ND
Lab pH	Units			8.4	8.3	7.9	8.1	7.8	8	7.9	7.8	8	7.7	7.5	7.6
Odor	TON	3	S	1	1	ND	1	ND	ND	ND	ND	2	ND	2	ND
Specific Conductance	umho/cm	1600	S	440	440	690	680	750	750	640	640	700	700	500	450
Turbidity	NTU	5	S	1.2	4.8	0.25	0.25	0.21	0.12	0.61	ND	0.45	1.1	1.4	1.5
Metals															
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	ND	ND	2	2.4	2.6	2.8	1.8	1.8	1.1	1.3
Barium, Total	ug/l	1000	P	18	18	45	48	100	120	48	52	67	73	68	62
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	0.02	ND	ND	0.53	0.54	0.42	0.44	0.52	0.55	0.62	0.63
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		ND		**4.6**		**1.5**		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	**14**	ND	**23**	ND	**11**	ND	**11**	ND	**8.2**	ND	**7.9**
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		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
Total Trihalomethanes	ug/l	80	P	ND	ND	ND	ND	ND	ND	0.68	0.55	2.5	2.2	1.2	0.73
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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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	0.62	0.74	0.52	0.59	0.55	0.66

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 2016-17

Constituents	Units	MCL	MCL Type	Seal Beach #1													
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Zone 7	
				3/9/2017	8/16/2017	3/9/2017	8/16/2017	3/9/2017	8/16/2017	3/9/2017	8/16/2017	3/9/2017	8/16/2017	3/9/2017	8/16/2017	3/9/2017	8/16/2017
General Minerals																	
Alkalinity	mg/l			210	220	160	160	160	160	180	190	91	90	110	100	200	240
Anion Sum	meq/l			4.7	4.8	3.6	3.7	3.5	3.5	4.2	4.2	5.6	5.5	7.1	7.2	39	35
Bicarbonate as HCO3	mg/l			260	260	190	200	180	190	220	220	110	110	130	130	250	300
Boron	mg/l	1	N	0.21	0.26	0.12	0.15	0.17	0.21	0.24	0.26	0.062	0.059	0.13	0.15	0.26	0.24
Bromide	ug/l			170	180	100	100	81	84	130	130	360	370	120	140	3800	3300
Calcium, Total	mg/l			4.6	4.8	3.4	3.7	3.5	3.6	6.1	5.8	24	24	63	63	320	300
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			11	11	12	13	9.3	12	7.2	7.2	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			4.6	4.8	3.7	3.8	3.6	3.6	4.6	4.5	5.4	5.4	7.1	7.2	38	34
Chloride	mg/l	500	S	16	16	14	14	13	13	18	17	110	110	73	77	**1000**	**840**
Fluoride	mg/l	2	P	0.43	0.42	0.52	0.51	0.59	0.58	0.78	0.76	0.39	0.37	0.36	0.34	0.35	0.31
Hardness (Total, as CaCO3)	mg/l			13	14	9.9	11	9.8	10	18	17	68	68	200	210	1100	1000
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			36	45	22	24	18	18	28	31	6.8	6.8	9.6	10	200	180
Iron, Total	mg/l	0.3	S	0.055	0.052	0.029	0.029	0.026	0.025	0.045	0.052	ND	ND	ND	0.021	0.12	0.27
Langelier Index - 25 degree	None			0.38	0.46	0.35	0.37	0.27	0.35	0.38	0.41	0.28	0.33	0.65	0.7	1.4	1.4
Magnesium, Total	None			0.44	0.44	0.35	0.37	0.27	0.27	0.72	0.7	2.1	2	11	12	70	69
Manganese, Total	ug/l	50	S	6.8	6.5	4	4	2.6	2.7	8.9	8.6	17	16	**100**	**94**	**750**	**790**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	1.7	1.7	2.2	2.3	7.4	7
Sodium, Total	mg/l			100	100	80	81	79	77	98	96	92	92	67	70	370	310
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	ND	ND	ND	31	30	140	140	250	300
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	310	300	250	240	240	230	280	270	360	330	500	460	**2500**	**2500**
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			9.5	7.2	4.1	3.8	3.4	3.1	5.7	5.2	0.55	0.4	1.1	1	0.56	0.58
General Physical Properties																	
Apparent Color	ACU	15	S	**200**	**150**	**120**	**100**	**100**	**100**	**160**	**200**	ND	5	ND	ND	ND	5
Lab pH	Units			8.8	8.8	9	9	8.9	9	8.7	8.7	8.3	8.4	8.2	8.2	7.9	8
Odor	TON	3	S	2	1	2	1	2	1	1	1	2	1	1	1	2	2
Specific Conductance	umho/cm	1600	S	450	460	360	360	340	340	410	410	600	610	740	740	**3800**	**3500**
Turbidity	NTU	5	S	0.39	0.38	0.31	0.27	0.31	0.26	0.9	0.93	1.2	0.26	ND	0.25	0.63	1.5
Metals																	
Aluminum, Total	ug/l	1000	P	30	34	30	36	30	29	ND	26	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	1.1	1.3	ND	ND	5.1	5.8
Barium, Total	ug/l	1000	P	7.3	7.4	4.4	4.2	3.7	3.8	5.5	5.1	30	26	110	100	120	100
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.084	0.21	0.058	0.18	0.044	0.13	0.17	0.099	ND	0.03	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	9.7
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
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	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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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 2016-17

Constituents	Units	MCL	MCL Type	South Gate #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				5/25/2017	9/21/2017	5/25/2017	9/21/2017	5/25/2017	9/21/2017	5/25/2017	9/21/2017	5/25/2017	9/21/2017
General Minerals													
Alkalinity	mg/l			170	170	140	140	160	160	160	160	200	210
Anion Sum	meq/l			5.1	5	6.4	6.3	6.8	6.5	7	6.8	8.6	8.5
Bicarbonate as HCO3	mg/l			200	200	170	170	190	190	190	200	250	250
Boron	mg/l	1	N	0.12	0.11	0.15	0.14	0.13	0.12	0.17	0.16	0.15	0.13
Bromide	ug/l			100	100	120	120	120	110	140	140	350	350
Calcium, Total	mg/l			49	50	68	68	74	75	72	71	88	89
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			2.6	2.6	ND	ND	ND	ND	2	ND	ND	ND
Cation Sum	meq/l			5.2	5.2	6.6	6.5	6.8	6.8	7	6.8	8.5	8.6
Chloride	mg/l	500	S	21	20	51	50	49	44	57	51	83	81
Fluoride	mg/l	2	P	0.33	0.32	0.32	0.32	0.4	0.39	0.4	0.41	0.45	0.43
Hardness (Total, as CaCO3)	mg/l			150	160	220	220	250	250	240	230	310	320
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			25	25	12	13	ND	ND	ND	ND	78	79
Iron, Total	mg/l	0.3	S	0.03	0.032	ND	ND	ND	ND	ND	ND	0.091	0.096
Langelier Index - 25 degree	None			0.83	0.84	0.82	0.72	0.75	0.8	0.87	0.64	0.76	0.93
Magnesium, Total	None			7.8	7.7	12	12	15	15	14	14	23	23
Manganese, Total	ug/l	50	S	38	37	2.6	2.7	ND	ND	ND	ND	**110**	**100**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	9.2	9.2	9.6	9.2	7.4	6.9	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	2.1	2.1	2.2	2.1	1.7	1.6	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			2.4	2.3	3.2	3.2	2.8	2.7	3.1	3	2.7	2.7
Sodium, Total	mg/l			46	46	47	46	40	40	50	48	50	50
Sulfate	mg/l	500	S	53	50	94	90	100	94	100	94	100	100
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	320	420	410	420	430	470	440	530	560
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	2.1	2.1	2.2	2.1	1.7	1.6	ND	ND
Total Organic Carbon	mg/l			0.31	ND	0.36	ND	ND	ND	0.34	ND	0.74	2
General Physical Properties													
Apparent Color	ACU	15	S	3	3	ND	3	ND	3	ND	ND	ND	ND
Lab pH	Units			8.3	8.3	8.2	8.1	8	8.1	8.2	7.9	7.9	8
Odor	TON	3	S	1	ND	2	ND	2	ND	1	ND	2	ND
Specific Conductance	umho/cm	1600	S	490	500	650	660	660	670	680	700	830	850
Turbidity	NTU	5	S	0.14	0.12	0.18	0.1	ND	ND	ND	ND	0.29	0.32
Metals													
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	2.5	2.4	2.7	3	2.8	2.9	2.1	2.2	2.3	2.3
Barium, Total	ug/l	1000	P	120	120	86	87	140	140	69	65	200	190
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	1.1	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.027	ND	0.058	0.048	0.87	0.89	0.58	0.58	0.02	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		ND		**2.2**		**4.2**		**1.4**		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	0.51	ND	1.3	ND	3.5	ND	1.1	ND	**7.4**
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		ND		ND		ND		ND		ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	0.56	ND	2.9	3.2	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	ug/l	80	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	0.81	0.91	ND	ND
Vinyl chloride (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	0.8	0.64	1.8	1.7	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 2016-17

Constituents	Units	MCL	MCL Type	South Gate #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/10/2017	9/25/2017	5/10/2017	9/25/2017	5/10/2017	9/25/2017	5/10/2017	9/25/2017	5/10/2017	9/25/2017	5/10/2017	9/25/2017
General Minerals															
Alkalinity	mg/l			170	170	180	180	180	170	180	180	180	170	200	200
Anion Sum	meq/l			5.7	5.6	5.8	5.7	5.7	5.5	6.3	6.1	5.8	5.7	6.3	6.2
Bicarbonate as HCO3	mg/l			210	210	220	220	210	210	220	220	210	210	240	240
Boron	mg/l	1	N	0.12	0.13	0.12	0.12	0.11	0.12	0.13	0.14	0.12	0.13	0.14	0.14
Bromide	ug/l			98	96	97	95	97	95	120	120	99	110	110	110
Calcium, Total	mg/l			58	58	59	57	58	55	64	61	58	57	65	62
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			ND	2.2	2.8	2.3	ND	ND	ND	ND	2.2	2.2	2	ND
Cation Sum	meq/l			5.9	5.7	6	5.6	5.8	5.6	6.5	6.1	5.9	5.7	6.5	6.1
Chloride	mg/l	500	S	20	20	20	20	21	20	28	27	21	20	23	22
Fluoride	mg/l	2	P	0.41	0.44	0.4	0.42	0.4	0.41	0.46	0.47	0.45	0.46	0.52	0.52
Hardness (Total, as CaCO3)	mg/l			200	200	200	190	190	180	220	210	190	190	220	210
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			20	20	19	21	17	25	1.5	3.3	17	20	11	12
Iron, Total	mg/l	0.3	S	0.05	0.049	0.12	0.12	ND	0.021	ND	ND	0.02	ND	ND	ND
Langelier Index - 25 degree	None			0.74	0.87	0.93	0.84	0.73	0.76	0.84	0.73	0.8	0.8	0.82	0.74
Magnesium, Total	None			13	13	13	12	12	11	16	15	12	12	15	14
Manganese, Total	ug/l	50	S	**58**	**59**	39	39	24	48	35	19	40	38	**89**	**85**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	1.6	1.5	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	0.37	0.34	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			3.4	3.3	3.5	3.2	2.8	2.5	3.5	3.2	3.2	3.2	2.8	2.5
Sodium, Total	mg/l			41	39	42	39	43	42	43	40	43	41	44	41
Sulfate	mg/l	500	S	77	75	75	74	74	70	91	85	81	76	79	75
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	350	350	350	360	340	340	380	380	340	330	380	380
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	0.37	0.34	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.73	ND	ND	0.66	ND	ND	ND	ND	0.34	ND	0.37	ND
General Physical Properties															
Apparent Color	ACU	15	S	ND	3	ND	3	ND	ND	ND	ND	ND	ND	ND	ND
Lab pH	Units			8.1	8.2	8.3	8.2	8.1	8.1	8.1	8.1	8.2	8.2	8.1	8
Odor	TON	3	S	1	2	2	2	1	ND	1	ND	1	ND	1	ND
Specific Conductance	umho/cm	1600	S	550	550	560	560	540	540	600	600	560	560	600	600
Turbidity	NTU	5	S	0.12	0.12	0.37	0.32	0.11	0.12	0.12	ND	0.13	0.1	0.24	0.11
Metals															
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	2.1	2.2	1.5	2.6	1.2	1.3	1.1	1.2	ND	ND
Barium, Total	ug/l	1000	P	54	59	64	72	86	91	54	66	96	100	82	94
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	1.9	1.4	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	0.022	ND	ND	0.024	ND	1.6	1.7	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	**7.5**	ND	1.9	ND	2.8	ND	0.6	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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 2016-17

Constituents	Units	MCL	MCL Type	Whittier #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				3/29/2017	9/12/2017	3/29/2017	9/12/2017	3/29/2017	9/12/2017	3/29/2017	9/12/2017	3/29/2017	9/12/2017
General Minerals													
Alkalinity	mg/l			260	270	280	290	290	300	260	260	240	240
Anion Sum	meq/l			42	41	40	39	32	32	11	11	11	11
Bicarbonate as HCO3	mg/l			320	330	350	350	360	360	310	310	290	290
Boron	mg/l	1	N	0.89	0.85	0.99	0.92	0.67	0.64	0.18	0.19	0.14	0.15
Bromide	ug/l			1400	1300	1200	1200	1000	980	330	300	330	310
Calcium, Total	mg/l			190	190	190	180	180	180	81	81	80	81
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			ND	ND	2.3	2.9	ND	3.7	2	2.5	2.4	ND
Cation Sum	meq/l			41	39	39	37	32	30	12	12	11	11
Chloride	mg/l	500	S	280	280	250	240	210	210	78	79	82	83
Fluoride	mg/l	2	P	0.31	0.29	0.33	0.31	0.5	0.47	0.23	0.21	0.35	0.32
Hardness (Total, as CaCO3)	mg/l			1000	1000	1000	940	900	860	360	350	360	360
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			290	240	270	200	210	170	90	120	1.7	3.5
Iron, Total	mg/l	0.3	S	**0.58**	**0.55**	**0.46**	**0.43**	**0.36**	**0.35**	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.93	1.3	1.3	1.4	1.1	1.5	0.93	1	0.98	0.96
Magnesium, Total	None			130	130	130	120	110	99	38	35	40	39
Manganese, Total	ug/l	50	S	50	50	**72**	**72**	**79**	**78**	25	23	3.5	2.5
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	17	18	22	23
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	3.9	4	5	5.2
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			11	13	10	12	7.8	8.7	4.3	4.4	3.6	3.8
Sodium, Total	mg/l			450	420	430	410	310	290	110	120	89	86
Sulfate	mg/l	500	S	**1400**	**1300**	**1300**	**1200**	**970**	**960**	180	180	170	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**	**2700**	**2600**	**2500**	**2100**	**2100**	700	680	690	700
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	3.9	4	5	5.2
Total Organic Carbon	mg/l			1.8	1.8	2.1	2.3	1.6	1.6	ND	ND	ND	ND
General Physical Properties													
Apparent Color	ACU	15	S	15	15	15	**20**	10	15	ND	ND	ND	ND
Lab pH	Units			7.6	7.9	8	8.1	7.7	8.2	8	8.1	8.1	8
Odor	TON	3	S	2	1	2	1	2	1	1	ND	2	ND
Specific Conductance	umho/cm	1600	S	**3500**	**3500**	**3300**	**3300**	**2700**	**2800**	1100	1100	1100	1100
Turbidity	NTU	5	S	2.7	3.9	2	2.1	1.8	2.4	0.11	0.26	0.18	0.13
Metals													
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	7.9	ND	1.4	ND	1.4	1.4	1.8	ND	1.3
Barium, Total	ug/l	1000	P	18	17	17	16	25	24	32	33	26	27
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	3.5	3.1
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	0.024	3.3	3.4
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	10	ND	10	ND	9.4	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	7.9	ND	7.2	ND	5.3	13	16	16	21
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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	1.4	2.9	2.6

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 2016-17

Constituents	Units	MCL	MCL Type	Whittier #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/11/2017	9/19/2017	5/11/2017	9/19/2017	5/11/2017	9/19/2017	5/11/2017	9/19/2017	5/11/2017	9/19/2017	5/11/2017	9/19/2017
General Minerals															
Alkalinity	mg/l			250	250	160	160	210	210	400	400	230	230	350	350
Anion Sum	meq/l			14	14	4.3	4.2	12	12	28	28	12	12	16	16
Bicarbonate as HCO3	mg/l			300	300	200	200	250	250	480	480	280	280	420	430
Boron	mg/l	1	N	0.6	0.67	0.21	0.25	0.22	0.26	0.78	0.88	0.18	0.21	0.33	0.36
Bromide	ug/l			1200	1200	140	140	580	560	960	960	380	370	320	310
Calcium, Total	mg/l			83	79	25	25	89	87	130	130	130	120	160	160
Carbon Dioxide	mg/l			ND	4.9	ND	ND	ND	2.6	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			ND	ND	2	3.3	ND	2.6	2	2	ND	ND	ND	2.2
Cation Sum	meq/l			15	14	4.4	4.3	13	12	28	28	12	12	17	17
Chloride	mg/l	500	S	200	200	23	22	120	120	240	230	120	120	100	100
Fluoride	mg/l	2	P	0.39	0.38	0.32	0.32	0.31	0.31	0.51	0.51	0.27	0.27	0.32	0.3
Hardness (Total, as CaCO3)	mg/l			330	310	80	80	370	360	670	670	430	400	560	550
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			190	250	26	35	17	19	140	170	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.52	0.95	0.44	0.62	0.84	1.1	1.2	1.1	0.96	1.1	1.1	1.2
Magnesium, Total	None			29	27	4.3	4.3	36	36	84	83	25	24	38	37
Manganese, Total	ug/l	50	S	14	13	42	42	31	28	**130**	**120**	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	3.2	3.4	10	11	22	22	28	29
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	0.73	0.77	2.4	2.5	5	4.9	6.3	6.5
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			4	3.7	2.4	2.4	4.1	4	4.2	4	4.9	4.6	4.8	5.1
Sodium, Total	mg/l			190	180	62	62	120	110	330	330	86	82	130	140
Sulfate	mg/l	500	S	180	160	15	15	230	220	**650**	**620**	170	170	280	280
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	890	840	260	270	770	780	**1800**	**1700**	730	700	1000	1000
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	0.73	0.77	2.4	2.5	5	4.9	6.3	6.5
Total Organic Carbon	mg/l			0.92	0.82	0.54	0.43	0.55	0.39	0.67	0.5	0.54	0.38	0.62	0.49
General Physical Properties															
Apparent Color	ACU	15	S	ND	ND	3	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lab pH	Units			7.6	8	8.2	8.4	7.9	8.2	7.8	7.8	7.8	8	7.8	7.9
Odor	TON	3	S	2	2	2	1	1	ND	1	ND	2	ND	2	ND
Specific Conductance	umho/cm	1600	S	1400	1400	420	420	1200	1200	**2500**	**2500**	1200	1200	1500	1500
Turbidity	NTU	5	S	0.48	0.6	ND	0.11	0.1	ND	0.11	ND	0.21	0.11	0.74	0.11
Metals															
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	1	1.6	ND	ND	1	1.6	ND	2	1	1.5	1.2	1.7
Barium, Total	ug/l	1000	P	18	16	26	26	50	46	13	11	77	71	28	26
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	2.7	2.8	ND	ND	2	2	3.6	3.7
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.023	0.023	ND	0.023	3.1	3	0.068	0.085	2.4	2.3	4.2	4.2
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.2
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	7.2	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		ND		ND		ND		ND		**3.7**		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	**12**	ND	0.63	ND	ND	ND	0.58	ND	0.68	ND	0.63
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		ND		ND		ND		ND		ND		ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.61	0.74
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	ug/l	80	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	0.81	0.87	ND	ND
Vinyl chloride (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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	2.1	2.3	2.1	2.2	2.8	2.7	2.6	2.7

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 2016-17

Constituents	Units	MCL	MCL Type	Whittier Narrows #1								
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Zone 9
				9/13/2017	9/13/2017	9/13/2017	9/13/2017	9/13/2017	9/13/2017	9/13/2017	9/13/2017	9/13/2017
General Minerals												
Alkalinity	mg/l			86	110	140	160	150	170	170	180	170
Anion Sum	meq/l			22	3.2	7.3	8.6	8	9.6	9.8	9.7	7.9
Bicarbonate as HCO3	mg/l			100	140	170	190	180	200	200	210	210
Boron	mg/l	1	N	**1.5**	0.14	0.082	0.19	0.14	0.25	0.25	0.3	0.21
Bromide	ug/l			6900	180	170	180	160	190	180	190	180
Calcium, Total	mg/l			66	11	97	100	100	95	88	84	53
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	2.6	2	ND	ND
Cation Sum	meq/l			20	3.2	7.2	8.9	8.3	10	9.8	11	8.2
Chloride	mg/l	500	S	**710**	24	81	100	94	120	120	120	93
Fluoride	mg/l	2	P	0.78	0.38	0.24	0.24	0.27	0.28	0.26	0.26	0.44
Hardness (Total, as CaCO3)	mg/l			220	29	280	300	310	290	280	270	180
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			1400	45	ND	10	8.2	13	12	11	14
Iron, Total	mg/l	0.3	S	**11**	0.046	**1.2**	0.021	0.026	0.026	0.03	0.06	0.04
Langelier Index - 25 degree	None			-0.24	0.04	0.9	0.95	1	1.1	1	0.95	0.74
Magnesium, Total	None			13	0.38	9.3	12	14	14	14	14	13
Manganese, Total	ug/l	50	S	**750**	14	ND	4.7	ND	38	30	21	**52**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	6	9.2	10	13	20	19	10
Nitrate as Nitrogen	mg/l	10	P	ND	ND	1.4	2.1	2.3	2.8	4.4	4.4	2.3
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	0.34	ND	ND	ND
Potassium, Total	mg/l			ND	1.5	2.8	4.8	4.8	5.9	6.1	6.1	7
Sodium, Total	mg/l			360	59	34	57	44	92	93	120	97
Sulfate	mg/l	500	S	ND	11	100	110	100	130	120	110	82
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	**1400**	200	460	530	490	570	590	580	450
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	1.4	2.1	2.3	3.1	4.4	4.4	2.3
Total Organic Carbon	mg/l			10	0.5	0.55	0.76	0.72	1.3	1.3	1.5	1.7
General Physical Properties												
Apparent Color	ACU	15	S	**25**	ND	ND	ND	ND	ND	ND	ND	5
Lab pH	Units			7.4	8.3	8.1	8.1	8.2	8.3	8.2	8.1	8.1
Odor	TON	3	S	2	1	1	1	1	2	2	2	2
Specific Conductance	umho/cm	1600	S	**2400**	330	760	880	820	990	1000	1000	820
Turbidity	NTU	5	S	**130**	0.91	0.65	0.7	0.74	0.62	0.36	0.4	0.5
Metals												
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	7.5	1.2	1.3	1.4	1.1	1.4	1.5	1.3	ND
Barium, Total	ug/l	1000	P	550	25	190	150	220	100	100	81	56
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	4.8	3.9
Chromium, Total	ug/l	50	P	ND	ND	9.8	ND	1.1	1	ND	2	1.3
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	0.024	1.2	0.086	0.52	ND	ND	ND	0.031
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	7.3	ND	ND	ND	ND	10	ND
Selenium, Total	ug/l	50	P	5.8	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	ug/l	5000	S	29	ND	24	25	24	33	30	94	57
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
1,4-Dioxane	ug/l	1	N									
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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N									
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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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 2016-17

Constituents	Units	MCL	MCL Type	Willowbrook #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				4/13/2017	9/18/2017	4/13/2017	9/18/2017	4/13/2017	9/18/2017	4/13/2017	9/18/2017
General Minerals											
Alkalinity	mg/l			200	230	180	180	180	180	190	190
Anion Sum	meq/l			5.5	5.4	5.2	5	5.8	5.7	5.9	5.9
Bicarbonate as HCO3	mg/l			250	280	220	220	220	220	230	230
Boron	mg/l	1	N	0.13	0.16	0.11	0.12	0.11	0.13	0.12	0.13
Bromide	ug/l			98	100	94	96	100	99	120	120
Calcium, Total	mg/l			46	42	52	50	58	59	61	59
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			2	2.9	2.3	2.8	ND	ND	ND	ND
Cation Sum	meq/l			5.5	5.5	5.3	5.1	5.8	5.9	6.1	5.9
Chloride	mg/l	500	S	19	17	20	19	21	20	30	29
Fluoride	mg/l	2	P	0.37	0.34	0.34	0.32	0.44	0.42	0.4	0.38
Hardness (Total, as CaCO3)	mg/l			150	140	170	160	200	200	200	190
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			24	27	20	25	22	26	39	45
Iron, Total	mg/l	0.3	S	0.078	0.073	ND	ND	0.082	0.081	ND	ND
Langelier Index - 25 degree	None			0.76	0.81	0.79	0.86	0.59	0.74	0.68	0.83
Magnesium, Total	None			9.7	8.6	9.8	9.3	13	13	11	10
Manganese, Total	ug/l	50	S	**65**	**55**	45	44	29	28	**90**	**93**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			3.8	3.9	2.7	2.5	3.5	3.5	3.1	3
Sodium, Total	mg/l			54	60	42	41	41	42	47	46
Sulfate	mg/l	500	S	42	15	48	40	76	73	62	57
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	350	300	320	290	350	330	370	330
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.97	1.4	0.41	0.39	0.31	ND	ND	ND
General Physical Properties											
Apparent Color	ACU	15	S	5	10	ND	ND	ND	ND	5	ND
Lab pH	Units			8.1	8.2	8.2	8.3	7.9	8.1	8	8.1
Odor	TON	3	S	**67**	2	2	1	2	1	2	ND
Specific Conductance	umho/cm	1600	S	530	520	500	500	560	560	570	580
Turbidity	NTU	5	S	2.8	0.2	0.12	0.1	0.26	0.24	**8**	2.3
Metals											
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	6.4	5.2	ND	ND	2.9	2.8	4.9	4.8
Barium, Total	ug/l	1000	P	49	45	49	49	76	73	140	140
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.04	0.025	ND	ND	ND	ND	0.023	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	9	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l	12	N		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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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 COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2016-17

Constituents	Units	MCL	MCL Type	Carson #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				3/23/2017	9/5/2017	3/23/2017	9/5/2017	3/23/2017	9/5/2017	3/23/2017	9/5/2017
General Minerals											
Alkalinity	mg/l			150	150	170	170	160	170	190	190
Anion Sum	meq/l			3.5	3.5	4	4	5.2	5.2	6.6	6.3
Bicarbonate as HCO3	mg/l			180	180	210	210	200	200	230	230
Boron	mg/l	1	N	0.081	0.095	0.097	0.11	0.099	0.11	0.11	0.12
Bromide	ug/l			110	100	100	100	110	110	250	240
Calcium, Total	mg/l			20	21	32	33	44	45	55	56
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			2.3	2.3	2.7	2.2	2	3.3	ND	3
Cation Sum	meq/l			3.6	3.5	4.1	4.1	5.4	5.4	6.7	6.6
Chloride	mg/l	500	S	19	19	20	19	22	21	48	42
Fluoride	mg/l	2	P	0.28	0.24	0.24	0.2	0.33	0.29	0.42	0.38
Hardness (Total, as CaCO3)	mg/l			66	68	110	110	160	160	200	200
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			26	31	27	29	29	35	58	66
Iron, Total	mg/l	0.3	S	ND	0.02	0.022	0.024	ND	ND	0.09	0.087
Langelier Index - 25 degree	None			0.42	0.44	0.63	0.62	0.68	0.89	0.67	0.92
Magnesium, Total	None			4	3.8	6.9	6.7	13	13	16	15
Manganese, Total	ug/l	50	S	19	19	13	13	28	28	**100**	**100**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			2.7	2.5	2.3	2.1	2.9	2.8	3.6	3.5
Sodium, Total	mg/l			49	48	43	43	46	46	59	58
Sulfate	mg/l	500	S	ND	ND	ND	ND	60	58	71	65
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	210	210	230	230	310	330	390	390
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.86	0.88	0.49	0.55	0.37	0.42	0.48	0.51
General Physical Properties											
Apparent Color	ACU	15	S	5	5	3	3	3	ND	ND	ND
Lab pH	Units			8.3	8.3	8.3	8.2	8.2	8.4	8	8.3
Odor	TON	3	S	2	ND	2	2	1	1	2	1
Specific Conductance	umho/cm	1600	S	350	350	390	390	510	510	640	640
Turbidity	NTU	5	S	0.16	0.14	0.39	ND	ND	ND	0.94	0.87
Metals											
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total	ug/l	1000	P	15	15	37	36	66	63	170	160
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	0.068	ND	0.049	ND	0.062	ND	0.05
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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 COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2016-17

Constituents	Units	MCL	MCL Type	Carson #2									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				3/28/2017	9/14/2017	3/28/2017	9/14/2017	3/28/2017	9/14/2017	3/28/2017	9/14/2017	3/28/2017	9/14/2017
General Minerals													
Alkalinity	mg/l			160	170	190	200	180	180	190	190	180	180
Anion Sum	meq/l			3.8	3.9	4.5	4.5	4.9	4.8	4.4	4.4	4.6	4.6
Bicarbonate as HCO3	mg/l			200	200	230	240	220	220	230	230	210	220
Boron	mg/l	1	N	0.11	0.14	0.13	0.14	0.13	0.13	0.11	0.11	0.1	0.11
Bromide	ug/l			120	120	100	100	110	110	110	110	100	110
Calcium, Total	mg/l			2.1	2.4	11	11	34	33	37	36	43	44
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			8.2	8.2	6	6.2	3.6	4.5	3	3	2.2	3.6
Cation Sum	meq/l			3.6	3.8	5	4.4	5.3	4.9	4.8	4.6	4.9	4.8
Chloride	mg/l	500	S	18	18	20	20	23	21	23	21	22	20
Fluoride	mg/l	2	P	0.36	0.34	0.28	0.26	0.31	0.28	0.25	0.22	0.33	0.31
Hardness (Total, as CaCO3)	mg/l			6.7	7.5	44	43	130	120	140	140	150	150
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			31	33	25	26	26	28	31	30	25	26
Iron, Total	mg/l	0.3	S	ND	ND	ND	ND	0.02	ND	ND	ND	0.058	0.056
Langelier Index - 25 degree	None			-0.0016	0.074	0.56	0.52	0.84	0.92	0.79	0.74	0.74	0.98
Magnesium, Total	None			0.35	0.36	4	3.7	11	10	12	11	9.8	9.3
Manganese, Total	ug/l	50	S	2.5	2.1	6	5.8	13	13	8.1	7.6	44	39
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			1.6	1.6	4.2	4.3	4.9	4.7	4.1	4	3.4	3.2
Sodium, Total	mg/l			78	84	92	80	60	53	43	40	42	40
Sulfate	mg/l	500	S	ND	ND	ND	0.63	31	30	ND	ND	24	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	230	230	250	260	280	260	250	250	270	280
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			1.6	1.7	0.94	0.9	0.59	0.56	0.5	0.46	0.3	ND
General Physical Properties													
Apparent Color	ACU	15	S	**30**	**45**	10	15	3	ND	ND	ND	ND	ND
Lab pH	Units			8.8	8.8	8.6	8.6	8.4	8.5	8.3	8.3	8.2	8.4
Odor	TON	3	S	2	2	2	1	2	1	2	2	2	1
Specific Conductance	umho/cm	1600	S	380	380	440	440	480	480	420	430	450	450
Turbidity	NTU	5	S	0.17	0.41	0.13	0.12	0.11	ND	0.1	0.14	0.16	0.14
Metals													
Aluminum, Total	ug/l	1000	P	25	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total	ug/l	1000	P	ND	ND	5.9	6.2	15	15	17	17	25	24
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.099	0.098	0.1	0.093	0.03	0.036	0.04	0.044	ND	0.027
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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 COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2016-17

Constituents	Units	MCL	MCL Type	Carson #3											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				3/27/2017	9/5/2017	3/27/2017	9/5/2017	3/27/2017	9/5/2017	3/27/2017	9/5/2017	3/27/2017	9/5/2017	3/27/2017	9/5/2017
General Minerals															
Alkalinity	mg/l			360	360	150	150	160	160	160	160	180	180	180	180
Anion Sum	meq/l			7.5	7.4	3.9	3.9	3.9	3.9	3.9	3.9	4.1	4.1	5.2	5.2
Bicarbonate as HCO3	mg/l			430	430	180	190	200	200	200	200	210	220	210	220
Boron	mg/l	1	N	0.63	0.65	0.11	0.1	0.11	0.1	0.093	0.095	0.11	0.11	0.12	0.13
Bromide	ug/l			360	350	110	110	100	110	96	99	100	98	99	96
Calcium, Total	mg/l			8.4	8	21	20	18	17	27	26	34	32	52	50
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			8.8	5.6	2.9	3.1	3.3	2.6	2.6	2.6	2.2	2.3	2.7	ND
Cation Sum	meq/l			7.5	7.5	4.1	3.9	4.2	3.8	4.2	4.1	4.6	4.2	5.6	5.4
Chloride	mg/l	500	S	12	11	20	19	21	20	20	20	21	20	21	20
Fluoride	mg/l	2	P	0.59	0.54	0.26	0.24	0.33	0.28	0.28	0.25	0.28	0.19	0.39	0.35
Hardness (Total, as CaCO3)	mg/l			30	29	69	65	59	55	97	92	120	110	180	170
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			130	120	30	28	31	32	30	28	29	28	26	29
Iron, Total	mg/l	0.3	S	0.052	0.045	ND	ND	ND	ND	ND	ND	ND	ND	0.029	0.026
Langelier Index - 25 degree	None			0.6	0.37	0.56	0.57	0.55	0.36	0.58	0.56	0.64	0.65	0.86	0.7
Magnesium, Total	None			2.3	2.1	4.1	3.7	3.4	3	7.2	6.6	9.1	8.1	13	12
Manganese, Total	ug/l	50	S	17	16	14	16	34	35	49	49	21	23	50	50
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			2.5	2.5	3.2	3	3.5	3.2	4	3.8	3.1	2.8	3.6	3.4
Sodium, Total	mg/l			160	160	60	58	66	60	49	49	47	44	42	41
Sulfate	mg/l	500	S	ND	ND	12	12	ND	ND	ND	ND	0.56	0.53	53	51
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	450	480	220	230	210	220	230	240	200	230	320	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	0.89	0.81	1.1	1	0.66	0.61	0.51	0.4	0.33	ND
General Physical Properties															
Apparent Color	ACU	15	S	**150**	**200**	3	5	10	10	ND	3	ND	ND	ND	ND
Lab pH	Units			8.5	8.3	8.4	8.4	8.4	8.3	8.3	8.3	8.2	8.2	8.3	8.1
Odor	TON	3	S	2	2	2	1	2	1	2	1	1	1	1	1
Specific Conductance	umho/cm	1600	S	700	700	380	380	380	380	380	380	400	400	510	500
Turbidity	NTU	5	S	0.44	0.29	0.14	0.17	0.18	0.15	0.16	0.14	0.11	ND	1.2	0.61
Metals															
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.6	1.7
Barium, Total	ug/l	1000	P	7.9	7.9	16	16	18	19	23	23	27	29	59	63
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.067	0.13	ND	0.055	ND	0.066	ND	0.047	ND	0.038	ND	0.036
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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 COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2016-17

Constituents	Units	MCL	MCL Type	Chandler #3			
				Zone 1		Zone 2	
				5/4/2017	8/31/2017	5/4/2017	8/31/2017
General Minerals							
Alkalinity	mg/l			370	370	380	410
Anion Sum	meq/l			13	12	16	17
Bicarbonate as HCO3	mg/l			450	450	460	500
Boron	mg/l	1	N	0.18	0.2	0.28	0.34
Bromide	ug/l			680	810	590	660
Calcium, Total	mg/l			98	100	150	160
Carbon Dioxide	mg/l			15	ND	ND	ND
Carbonate as CO3	mg/l			ND	2.3	2.4	ND
Cation Sum	meq/l			12	13	16	17
Chloride	mg/l	500	S	170	160	200	210
Fluoride	mg/l	2	P	0.25	0.23	0.23	0.19
Hardness (Total, as CaCO3)	mg/l			360	370	560	600
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND
Iodide	mg/l			85	78	ND	2.1
Iron, Total	mg/l	0.3	S	0.21	0.22	ND	ND
Langelier Index - 25 degree	None			0.92	1.2	1.3	1.1
Magnesium, Total	None			29	29	45	48
Manganese, Total	ug/l	50	S	**84**	**83**	8.4	25
Mercury	ug/l	2	P	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	0.58	**50**	**58**
Nitrate as Nitrogen	mg/l	10	P	ND	0.13	**11**	**13**
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND
Potassium, Total	mg/l			3.9	4.1	3.7	3.9
Sodium, Total	mg/l			120	120	120	120
Sulfate	mg/l	500	S	37	33	110	97
Surfactants	mg/l	0.5	S	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	720	720	980	1000
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	0.13	**11**	**13**
Total Organic Carbon	mg/l			1.2	1.1	0.76	0.77
General Physical Properties							
Apparent Color	ACU	15	S	10	5	10	5
Lab pH	Units			7.7	7.9	7.9	7.7
Odor	TON	3	S	2	2	2	1
Specific Conductance	umho/cm	1600	S	1200	1200	1600	**1700**
Turbidity	NTU	5	S	1.3	1	**28**	**11**
Metals							
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	3.6	4	3.3	3.1
Barium, Total	ug/l	1000	P	28	30	100	110
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	2.8	1.4
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	ND	2.7	2.2
Lead, Total	ug/l	15	P	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	77	**190**
Selenium, Total	ug/l	50	P	ND	ND	19	20
Silver, Total	ug/l	100	S	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		ND		ND
Benzene	ug/l	1	P	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND
Chloromethane	ug/l			ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND
Styrene	ug/l	100	P	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND
TBA	ug/l	12	N		ND		ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND
Xylenes (Total)	ug/l	1750	P	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	3	4.5

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 COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2016-17

Constituents	Units	MCL	MCL Type	Gardena #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				3/15/2017	8/21/2017	3/15/2017	8/21/2017	3/15/2017	8/21/2017	3/15/2017	8/21/2017
General Minerals											
Alkalinity	mg/l			270	270	170	180	170	170	210	220
Anion Sum	meq/l			6	6	6	5.5	5.4	5.4	44	38
Bicarbonate as HCO3	mg/l			330	330	210	220	200	210	260	260
Boron	mg/l	1	N	0.31	0.35	0.11	0.13	0.1	0.12	0.12	0.14
Bromide	ug/l			130	130	110	100	100	100	3100	3000
Calcium, Total	mg/l			13	13	51	48	49	52	460	430
Carbon Dioxide	mg/l			ND	ND	5.4	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			5.4	4.3	ND	2.3	2	ND	ND	ND
Cation Sum	meq/l			5.4	5.6	5.6	5.4	5.1	5.4	40	39
Chloride	mg/l	500	S	18	18	41	34	22	22	**1300**	**1100**
Fluoride	mg/l	2	P	0.23	0.21	0.5	0.48	0.44	0.4	0.17	0.15
Hardness (Total, as CaCO3)	mg/l			60	61	180	160	170	180	1700	1600
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			35	39	23	25	26	27	ND	1.1
Iron, Total	mg/l	0.3	S	0.16	0.17	0.029	0.037	0.037	0.044	ND	ND
Langelier Index - 25 degree	None			0.64	0.53	0.44	0.76	0.71	0.71	1.1	1
Magnesium, Total	None			6.7	7	12	11	11	11	130	130
Manganese, Total	ug/l	50	S	41	44	50	49	45	43	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	**99**	**90**
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	**22**	**20**
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			9.9	10	3.4	3.6	2.9	3.1	7.2	7.5
Sodium, Total	mg/l			90	93	45	46	39	42	140	140
Sulfate	mg/l	500	S	ND	ND	67	40	66	67	61	55
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	330	340	350	310	310	320	**2900**	**3200**
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	**22**	**20**
Total Organic Carbon	mg/l			2.4	2.2	0.75	0.6	0.31	ND	0.3	0.34
General Physical Properties											
Apparent Color	ACU	15	S	**30**	**30**	3	ND	5	3	**30**	ND
Lab pH	Units			8.4	8.3	7.8	8.2	8.2	8.1	7.5	7.4
Odor	TON	3	S	2	2	2	2	ND	ND	1	1
Specific Conductance	umho/cm	1600	S	580	580	600	540	530	530	**4100**	**4100**
Turbidity	NTU	5	S	1.6	**7.2**	**5.5**	4.5	**10**	**5.5**	**66**	**6.8**
Metals											
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	**24**	**23**	ND	ND	ND	ND	3.5	4.4
Barium, Total	ug/l	1000	P	14	16	54	50	32	30	520	480
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	7.6	7.9
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	ND	ND	0.04	ND	ND	7.3	7.2
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	8.8	17
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	12	16
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l	12	N		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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	**11**	**12**

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 COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2016-17

Constituents	Units	MCL	MCL Type	Gardena #2									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				3/20/2017	9/8/2017	3/20/2017	9/8/2017	3/20/2017	9/8/2017	3/20/2017	9/8/2017	3/20/2017	9/8/2017
General Minerals													
Alkalinity	mg/l			280	290	180	180	180	180	170	170	190	200
Anion Sum	meq/l			6.1	6.2	5.4	5.4	5.3	5.3	4	4	5.3	5.3
Bicarbonate as HCO3	mg/l			350	350	220	220	210	220	210	210	240	240
Boron	mg/l	1	N	0.31	0.31	0.16	0.16	0.13	0.13	0.095	0.095	0.12	0.12
Bromide	ug/l			120	120	100	100	100	100	100	100	150	160
Calcium, Total	mg/l			17	16	41	39	52	50	32	31	53	51
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			5.7	5.7	2.3	2.3	ND	2.3	2.2	2.2	2.5	3.1
Cation Sum	meq/l			6.6	6.6	5.9	5.5	5.8	5.4	4.4	4.1	5.8	5.4
Chloride	mg/l	500	S	13	13	22	21	22	22	21	20	45	44
Fluoride	mg/l	2	P	0.23	0.26	0.3	0.28	0.41	0.39	0.31	0.29	0.33	0.31
Hardness (Total, as CaCO3)	mg/l			70	65	160	150	180	170	120	110	180	170
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			33	34	24	22	25	22	27	28	28	28
Iron, Total	mg/l	0.3	S	0.032	0.03	0.041	0.036	0.053	0.047	0.08	0.07	0.026	0.031
Langelier Index - 25 degree	None			0.71	0.76	0.66	0.72	0.66	0.79	0.58	0.6	0.85	0.95
Magnesium, Total	None			6.6	6	13	12	13	12	9.5	8.6	12	10
Manganese, Total	ug/l	50	S	24	24	28	26	43	41	48	47	48	49
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			5.8	5.9	6.4	6.4	4.2	4	3.4	3.3	3.4	3.1
Sodium, Total	mg/l			120	120	59	55	47	44	45	42	48	45
Sulfate	mg/l	500	S	ND	ND	58	55	53	51	ND	ND	4.5	2.2
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	330	350	330	340	310	310	220	230	290	310
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			3.7	3.2	0.66	0.58	0.54	0.41	0.66	0.6	0.37	0.32
General Physical Properties													
Apparent Color	ACU	15	S	**25**	**20**	5	ND	ND	ND	3	ND	ND	ND
Lab pH	Units			8.4	8.4	8.2	8.2	8.1	8.2	8.2	8.2	8.2	8.3
Odor	TON	3	S	2	2	2	ND	1	ND	2	ND	2	**67**
Specific Conductance	umho/cm	1600	S	580	580	530	530	510	520	400	400	520	520
Turbidity	NTU	5	S	1.1	0.3	0.13	ND	0.14	0.13	0.34	0.13	2.9	**11**
Metals													
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total	ug/l	1000	P	17	20	16	19	20	23	34	37	81	96
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	0.045	ND	0.024	ND	0.026	ND	0.021	ND	0.026
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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 COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2016-17

Constituents	Units	MCL	MCL Type	Hawthorne #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/3/2017	9/22/2017	4/3/2017	9/22/2017	4/3/2017	9/22/2017	4/3/2017	9/22/2017	4/3/2017	9/22/2017	4/3/2017	9/22/2017
General Minerals															
Alkalinity	mg/l			700	710	660	670	430	430	310	320	200	190	290	270
Anion Sum	meq/l			15	15	14	15	10	10	7.4	7.6	13	12	21	19
Bicarbonate as HCO3	mg/l			850	860	800	810	530	520	380	380	240	230	350	330
Boron	mg/l	1	N	**1.2**	**1.4**	1	**1.2**	0.5	0.52	0.36	0.36	0.11	0.12	0.19	0.2
Bromide	ug/l			280	280	330	320	310	310	220	230	840	790	1000	900
Calcium, Total	mg/l			14	15	17	18	34	34	34	34	120	110	180	160
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			8.8	11	10	13	5.4	6.7	4.9	4.9	ND	ND	ND	ND
Cation Sum	meq/l			14	14	15	15	10	10	8	7.4	13	12	21	19
Chloride	mg/l	500	S	44	43	44	41	52	53	42	44	300	290	360	320
Fluoride	mg/l	2	P	0.14	0.13	0.27	0.25	0.25	0.23	0.42	0.4	0.33	0.31	0.3	0.29
Hardness (Total, as CaCO3)	mg/l			84	87	88	86	180	180	150	150	460	430	670	590
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			15	70	110	95	62	67	20	48	44	41	110	91
Iron, Total	mg/l	0.3	S	0.14	0.14	0.15	0.15	0.16	0.15	0.089	0.04	0.024	ND	0.14	0.12
Langelier Index - 25 degree	None			0.88	0.92	1	1.1	1	1.1	0.93	0.94	0.96	1	0.85	1
Magnesium, Total	None			12	12	11	10	24	22	17	15	40	37	54	47
Manganese, Total	ug/l	50	S	13	13	**52**	**51**	**55**	**51**	34	29	**120**	**100**	**470**	**400**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			19	22	14	16	14	14	9.7	9.3	7.6	7.7	5.5	5.5
Sodium, Total	mg/l			280	270	290	290	150	140	110	97	83	77	170	160
Sulfate	mg/l	500	S	ND	ND	2.6	2.3	ND	ND	ND	ND	33	21	230	210
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.1	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	890	900	850	840	550	570	410	440	920	850	**1200**	**1200**
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			15	14	17	18	3.9	4	2.4	2.6	0.92	0.76	1.5	1.4
General Physical Properties															
Apparent Color	ACU	15	S	**180**	**200**	**300**	**200**	**35**	**30**	**20**	**30**	ND	ND	ND	5
Lab pH	Units			8.2	8.3	8.3	8.4	8.2	8.3	8.3	8.3	8	8.1	7.5	7.8
Odor	TON	3	S	2	1	2	1	2	ND	2	ND	2	ND	2	2
Specific Conductance	umho/cm	1600	S	1400	1400	1300	1400	950	950	710	730	1300	1300	**2000**	**1900**
Turbidity	NTU	5	S	0.23	0.19	ND	0.54	0.14	0.14	0.17	0.13	0.13	0.1	4.7	0.66
Metals															
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.2	1.5	2.8
Barium, Total	ug/l	1000	P	31	30	30	30	33	31	28	29	120	110	49	44
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	1.6	1.5	ND	ND	ND	ND	ND	ND	1	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.031	0.11	0.078	0.2	ND	0.029	ND	0.041	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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	0.58
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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	5.1	**10**
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		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
Total Trihalomethanes	ug/l	80	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	0.52
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**22**	**34**
Vinyl chloride (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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 COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2016-17

Constituents	Units	MCL	MCL Type	Inglewood #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				4/25/2017	8/30/2017	4/25/2017	8/30/2017	4/25/2017	8/30/2017	4/25/2017	8/30/2017	4/25/2017	8/30/2017
General Minerals													
Alkalinity	mg/l			1200	1300	650	670	340	340	240	230	350	340
Anion Sum	meq/l			65	65	28	27	23	23	15	15	24	23
Bicarbonate as HCO3	mg/l			1500	1600	790	810	420	410	290	280	430	410
Boron	mg/l	1	N	**7.2**	**7.9**	**1.4**	**1.4**	0.44	0.48	0.18	0.19	0.24	0.25
Bromide	ug/l			15000	15000	3600	2900	4400	4400	1300	1200	2000	1900
Calcium, Total	mg/l			82	78	80	80	150	160	110	110	200	210
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			19	10	8.1	3.3	2.2	ND	3	ND	ND	ND
Cation Sum	meq/l			58	57	25	25	21	23	14	14	22	24
Chloride	mg/l	500	S	**1400**	**1400**	480	440	460	460	280	280	430	430
Fluoride	mg/l	2	P	0.37	0.34	0.31	0.29	0.47	0.44	0.42	0.39	0.24	0.22
Hardness (Total, as CaCO3)	mg/l			380	360	350	340	620	660	470	480	800	820
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			4700	4900	730	160	810	900	74	100	1.3	2.1
Iron, Total	mg/l	0.3	S	**1.6**	**0.92**	0.087	**1.2**	**0.5**	**0.55**	**0.36**	**0.4**	ND	ND
Langelier Index - 25 degree	None			1.9	1.7	1.5	1.1	1.3	1	1.2	0.9	1	0.9
Magnesium, Total	None			44	41	36	33	60	64	48	49	72	73
Manganese, Total	ug/l	50	S	**110**	**82**	**77**	**75**	**420**	**400**	**230**	**230**	5.2	6.8
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	44	42
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	10	9.5
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			28	39	16	19	8.2	9.4	9.6	10	8.9	9.8
Sodium, Total	mg/l			1100	1100	410	400	190	210	96	98	150	160
Sulfate	mg/l	500	S	33	3.1	45	43	160	160	100	100	190	190
Surfactants	mg/l	0.5	S	ND	0.12	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	**3600**	**3800**	**1600**	**1500**	**1400**	**1300**	900	870	**1500**	**1400**
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	10	9.5
Total Organic Carbon	mg/l			63	68	11	11	1.3	1.4	0.66	0.64	0.94	0.86
General Physical Properties													
Apparent Color	ACU	15	S	**300**	**250**	ND	**50**	15	10	10	10	ND	3
Lab pH	Units			8.3	8	8.2	7.8	7.9	7.7	8.2	7.8	7.5	7.4
Odor	TON	3	S	2	2	2	2	2	ND	2	1	2	ND
Specific Conductance	umho/cm	1600	S	**6000**	**6400**	**2700**	**2600**	**2300**	**2300**	1500	1500	**2300**	**2300**
Turbidity	NTU	5	S	2.1	0.82	1.7	4.2	3.1	3.1	2.2	1.6	ND	2.9
Metals													
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	1.4	**22**	**17**	1.8	ND	1.3	ND	2.4	ND
Barium, Total	ug/l	1000	P	140	150	94	120	53	57	110	130	160	160
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	2.2	ND	1.3	ND	ND	ND	1.7	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.06	0.054	0.033	ND	ND	ND	ND	ND	0.4	0.25
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	8.5	ND	5.9	ND	11	ND
Selenium, Total	ug/l	50	P	ND	11	20	ND	25	5	7	ND	18	7.8
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		ND		ND		ND		ND		ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	0.52	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	0.59	0.96
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	0.68	0.58
Vinyl chloride (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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	3.2	2.6

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 COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2016-17

Constituents	Units	MCL	MCL Type	Inglewood #3													
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Zone 7	
				4/5/2017	8/29/2017	4/5/2017	8/29/2017	4/5/2017	8/29/2017	4/5/2017	8/29/2017	4/5/2017	8/29/2017	4/5/2017	8/29/2017	4/5/2017	8/29/2017
General Minerals																	
Alkalinity	mg/l			690	700	1100	1100	560	560	800	800	460	450	210	210	240	240
Anion Sum	meq/l			46	46	24	24	12	12	17	17	12	12	8.6	9.4	18	18
Bicarbonate as HCO3	mg/l			840	850	1400	1400	680	680	980	980	550	550	250	260	290	290
Boron	mg/l	1	N	**3.8**	**4.2**	**5.2**	**5.3**	**1.1**	**1.1**	**2.1**	**2.2**	0.62	0.6	0.11	0.11	0.11	0.11
Bromide	ug/l			8700	8600	1900	1700	150	160	170	160	620	620	540	600	1400	1400
Calcium, Total	mg/l			21	20	11	11	5.9	5.5	15	15	57	54	83	85	190	180
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			6.9	8.8	14	23	11	14	8	13	9	5.7	3.2	2.7	3	ND
Cation Sum	meq/l			46	42	24	22	12	10	16	15	13	12	9.5	9.4	19	18
Chloride	mg/l	500	S	**1200**	**1100**	48	49	14	14	24	24	95	91	150	180	420	430
Fluoride	mg/l	2	P	0.52	0.47	0.55	0.51	0.27	0.24	0.25	0.22	0.28	0.25	0.34	0.3	0.39	0.37
Hardness (Total, as CaCO3)	mg/l			100	91	55	53	28	26	79	78	220	210	320	320	720	680
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			2600	1000	450	470	44	13	54	46	140	130	34	47	81	74
Iron, Total	mg/l	0.3	S	0.2	0.22	**0.56**	**0.56**	0.16	0.15	**0.38**	**0.41**	0.072	0.06	0.025	0.029	0.16	0.15
Langelier Index - 25 degree	None			0.88	0.98	0.97	1.1	0.54	0.62	0.87	1	1.4	1.2	1.1	1.1	1.5	1.3
Magnesium, Total	None			12	10	6.6	6.2	3.2	2.9	10	9.9	20	18	27	26	60	55
Manganese, Total	ug/l	50	S	**60**	**57**	22	23	21	22	34	39	47	43	**110**	**100**	**340**	**330**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	1.6	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	0.35	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			18	22	14	16	7.6	7.7	18	20	13	12	8.1	7.9	7.9	7.7
Sodium, Total	mg/l			1000	900	510	480	260	230	330	310	180	160	66	63	100	92
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8	7.3	46	47
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.11	0.21	**0.87**	**0.81**
Total Dissolved Solid (TDS)	mg/l	1000	S	**2600**	**2600**	**1500**	**1500**	680	680	980	1000	660	670	530	580	**1200**	**1100**
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	0.35	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			25	14	110	99	14	13	23	22	3.5	3.5	1.8	2.6	4.6	4.3
General Physical Properties																	
Apparent Color	ACU	15	S	**250**	**350**	**1500**	**1000**	**350**	**800**	**1000**	**500**	**30**	**35**	ND	ND	5	ND
Lab pH	Units			8.1	8.2	8.2	8.4	8.4	8.5	8.1	8.3	8.4	8.2	8.3	8.2	8.2	8
Odor	TON	3	S	2	2	**17**	**8**	2	2	2	2	2	1	2	1	**200**	**8**
Specific Conductance	umho/cm	1600	S	**4600**	**4700**	**2100**	**2100**	1100	1100	1500	1500	1100	1100	890	970	**1800**	**1900**
Turbidity	NTU	5	S	0.5	0.3	0.64	0.49	0.98	0.4	0.38	0.4	0.21	0.12	0.18	0.14	0.65	0.5
Metals																	
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	28	ND	32	35	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	2.3	2.2	ND	1.1	1.9	2	2.2	2.7	ND	ND	ND	ND	1.6	1.9
Barium, Total	ug/l	1000	P	61	60	25	26	13	13	42	43	53	48	72	74	230	240
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	4	3.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	5.8	5.1	1.5	1.5	2.5	2.6	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.073	0.09	0.28	0.32	0.22	0.27	0.27	0.3	0.041	0.045	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.2
Selenium, Total	ug/l	50	P	5.4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.4	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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	1.9	2
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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	**49**	**58**
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		ND		ND		ND		ND		ND		5.3		**27**
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
Total Trihalomethanes	ug/l	80	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	**14**	**18**
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.99**	**0.94**
Xylenes (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 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2016-17
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Constituents	Units	MCL	MCL Type	Lawndale #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				3/23/2017	8/23/2017	3/23/2017	8/23/2017	3/23/2017	8/23/2017	3/23/2017	8/23/2017	3/23/2017	8/23/2017	3/23/2017	8/23/2017
General Minerals															
Alkalinity	mg/l			460	460	620	620	260	240	190	200	190	190	250	220
Anion Sum	meq/l			9.5	9.6	13	13	6.1	5.7	6.4	6.5	6.8	6.6	24	22
Bicarbonate as HCO3	mg/l			550	560	750	750	320	300	230	240	230	230	310	270
Boron	mg/l	1	N	0.76	0.86	**1.1**	**1.2**	0.16	0.18	0.1	0.11	0.092	0.094	0.29	0.29
Bromide	ug/l			410	390	220	210	140	130	200	200	220	200	1500	1400
Calcium, Total	mg/l			11	11	4.5	4.5	14	18	53	54	54	54	200	190
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			7.1	9.1	12	12	3.3	4.9	ND	2.5	3	3	ND	ND
Cation Sum	meq/l			9.5	9.4	13	13	6.3	5.6	6.5	6.5	6.9	6.8	24	22
Chloride	mg/l	500	S	13	13	29	30	26	25	55	54	60	55	**560**	**510**
Fluoride	mg/l	2	P	0.48	0.46	0.36	0.34	0.37	0.34	0.42	0.41	0.48	ND	0.26	0.25
Hardness (Total, as CaCO3)	mg/l			42	41	26	26	72	86	210	210	210	200	720	680
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			130	140	79	77	40	38	34	35	30	31	15	26
Iron, Total	mg/l	0.3	S	0.061	0.059	0.11	0.11	0.03	0.027	0.063	0.06	0.034	0.036	ND	ND
Langelier Index - 25 degree	None			0.67	0.78	0.53	0.54	0.45	0.63	0.69	0.85	0.97	0.93	1	1.1
Magnesium, Total	None			3.5	3.4	3.7	3.7	8.9	9.9	19	18	18	17	55	49
Manganese, Total	ug/l	50	S	13	12	35	34	47	39	**80**	**75**	**71**	**69**	**140**	**120**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	13	12
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3	2.8
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			5.5	5.4	8.8	8.9	9.4	9.6	4.7	4.5	5.2	5.1	8.2	8.7
Sodium, Total	mg/l			200	190	290	280	100	85	51	50	60	58	200	190
Sulfate	mg/l	500	S	ND	ND	ND	ND	6	2	48	49	60	58	150	130
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	550	570	780	800	360	350	380	400	400	420	**1600**	**1600**
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3	2.8
Total Organic Carbon	mg/l			13	11	10	9	2.3	1.6	0.49	0.49	0.53	0.46	0.56	0.46
General Physical Properties															
Apparent Color	ACU	15	S	10	**100**	**200**	**250**	10	10	ND	ND	ND	ND	ND	ND
Lab pH	Units			8.3	8.4	8.4	8.4	8.2	8.4	8	8.2	8.3	8.3	7.7	7.8
Odor	TON	3	S	2	2	2	2	2	1	2	2	1	1	2	1
Specific Conductance	umho/cm	1600	S	890	890	1200	1200	600	540	640	650	670	680	**2400**	**2300**
Turbidity	NTU	5	S	0.27	0.26	0.41	0.34	0.17	0.14	0.16	0.14	0.12	0.11	0.1	0.14
Metals															
Aluminum, Total	ug/l	1000	P	ND	70	24	22	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	1.4	1.2	ND	ND	2	1.2	ND	ND	2.9	2.6
Barium, Total	ug/l	1000	P	13	11	13	12	15	14	28	28	98	87	94	80
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	0.07	0.071	0.1	ND	0.023	ND	ND	ND	ND	0.18	0.17
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.1
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.7	8.3
Silver, Total	ug/l	100	S	ND	ND	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	ug/l	5000	S	ND	ND	40	77	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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.6	1.2
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		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
Total Trihalomethanes	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.55	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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	2.8	4.2

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

TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2016-17

Constituents	Units	MCL	MCL Type	Lomita #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				4/17/2017	9/7/2017	4/17/2017	9/7/2017	4/17/2017	9/7/2017	4/17/2017	9/7/2017	4/17/2017	9/7/2017
General Minerals													
Alkalinity	mg/l			270	280	290	280	330	320	310	290	280	290
Anion Sum	meq/l			24	26	25	27	13	18	13	19	30	30
Bicarbonate as HCO3	mg/l			330	340	350	350	400	390	370	350	350	350
Boron	mg/l	1	N	0.49	0.53	0.51	0.64	0.43	0.54	0.5	0.65	0.62	0.71
Bromide	ug/l			7000	7400	7000	7300	2100	3800	2200	4600	8700	8400
Calcium, Total	mg/l			190	220	190	220	78	130	76	160	250	260
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			ND	ND	2.3	ND	2.6	2.5	3	2.3	ND	ND
Cation Sum	meq/l			25	27	25	27	14	18	13	21	31	31
Chloride	mg/l	500	S	**660**	**720**	**650**	**730**	220	400	230	460	**820**	**830**
Fluoride	mg/l	2	P	0.16	0.14	0.14	0.11	0.19	0.14	0.25	0.17	0.091	0.087
Hardness (Total, as CaCO3)	mg/l			700	790	700	800	290	470	280	580	920	940
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			1600	1900	1200	1700	380	790	430	490	1600	1600
Iron, Total	mg/l	0.3	S	0.07	0.12	0.19	0.3	0.086	0.034	0.042	**0.34**	0.16	0.16
Langelier Index - 25 degree	None			1.3	1.3	1.3	1.3	1.1	1.3	1.1	1.3	1.2	1.4
Magnesium, Total	None			55	59	54	60	23	36	22	44	71	70
Manganese, Total	ug/l	50	S	**370**	**400**	**370**	**390**	**120**	**190**	**110**	**260**	**460**	**460**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	1.1	ND	ND	3.2	2.2
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	0.25	ND	ND	0.73	0.49
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			15	18	15	18	9.8	13	9.1	14	17	19
Sodium, Total	mg/l			230	240	240	240	180	200	170	210	270	260
Sulfate	mg/l	500	S	5.8	17	26	30	9.1	30	4.8	13	37	32
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	**1900**	**1700**	**1800**	**1800**	770	1000	770	**1200**	**2300**	**2000**
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	0.25	ND	ND	0.73	0.49
Total Organic Carbon	mg/l			1.2	1.2	1.2	1.1	3.2	2.3	3.6	2.2	0.84	0.98
General Physical Properties													
Apparent Color	ACU	15	S	10	5	15	10	**30**	**20**	**40**	**25**	5	5
Lab pH	Units			7.9	7.9	8	7.9	8	8	8.1	8	7.8	7.8
Odor	TON	3	S	**67**	**100**	2	2	2	1	**17**	1	2	ND
Specific Conductance	umho/cm	1600	S	**2600**	**2800**	**2600**	**2900**	1400	**1900**	1300	**2000**	**3100**	**3200**
Turbidity	NTU	5	S	**32**	**26**	2.2	1.5	2.1	1.1	**6.8**	2	0.89	ND
Metals													
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	1.6	1.2	ND	ND	ND	ND	ND	ND	1.1	ND
Barium, Total	ug/l	1000	P	120	130	120	140	49	80	46	99	160	160
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	1.5	ND	ND	ND	1.6	ND	ND	ND	1.6	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.058	ND	0.03	ND	0.025	0.03	0.043	0.026	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	**64**	25	7.8	8.1	5.1	ND	ND	5.6	6	8.8
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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 COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2016-17

Constituents	Units	MCL	MCL Type	Long Beach #3									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				3/8/2017	8/18/2017	3/8/2017	8/18/2017	3/8/2017	8/18/2017	3/8/2017	8/18/2017	3/8/2017	8/18/2017
General Minerals													
Alkalinity	mg/l			370	380	140	140	150	150	120	120	140	140
Anion Sum	meq/l			8	8	3.8	3.8	3.9	3.9	33	30	34	32
Bicarbonate as HCO3	mg/l			450	460	160	170	190	190	140	150	170	180
Boron	mg/l	1	N	0.33	0.37	0.12	0.12	0.12	0.13	0.11	0.11	0.1	0.11
Bromide	ug/l			230	230	110	110	200	190	7900	7800	8100	8200
Calcium, Total	mg/l			11	11	17	16	19	18	350	320	380	360
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			9.2	9.4	2.6	3.5	2.5	2.5	ND	ND	ND	ND
Cation Sum	meq/l			7.9	7.8	3.9	3.7	3.9	3.8	31	29	31	31
Chloride	mg/l	500	S	16	16	19	19	28	27	**1000**	**910**	**1000**	**970**
Fluoride	mg/l	2	P	0.52	0.52	0.38	0.37	0.34	0.33	0.16	0.16	0.17	0.16
Hardness (Total, as CaCO3)	mg/l			41	41	54	51	61	58	1300	1100	1300	1200
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			61	62	33	30	49	53	2000	2100	2200	2300
Iron, Total	mg/l	0.3	S	0.046	0.041	ND	ND	0.035	0.036	0.27	0.24	0.29	0.29
Langelier Index - 25 degree	None			0.75	0.77	0.42	0.46	0.43	0.42	1	0.96	1.2	1.1
Magnesium, Total	None			3.4	3.2	2.8	2.7	3.2	3.1	94	84	81	82
Manganese, Total	ug/l	50	S	11	11	7.1	6.9	9.7	9.3	**260**	**250**	**390**	**340**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			3.4	3.4	2	1.9	2.3	2.2	14	13	10	10
Sodium, Total	mg/l			160	160	63	61	61	60	140	130	130	140
Sulfate	mg/l	500	S	ND	ND	22	22	ND	ND	71	69	79	77
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	480	430	250	210	240	240	**2600**	**2500**	**2700**	**2100**
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			7.8	7.5	1.3	1.3	2.2	2.2	0.68	0.73	0.68	0.82
General Physical Properties													
Apparent Color	ACU	15	S	**90**	**100**	10	10	15	15	3	ND	5	3
Lab pH	Units			8.5	8.5	8.4	8.5	8.3	8.3	7.8	7.7	7.8	7.8
Odor	TON	3	S	2	1	2	1	1	1	2	2	2	2
Specific Conductance	umho/cm	1600	S	740	750	380	380	380	380	**3300**	**3200**	**3400**	**3400**
Turbidity	NTU	5	S	0.53	0.31	0.11	0.14	0.13	0.11	1.8	1.2	4.1	1.4
Metals													
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	ND	ND	ND	ND	1.3	2.7	1.7	3.4
Barium, Total	ug/l	1000	P	9.1	9.2	15	13	8.1	7.1	110	96	200	170
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	0.089	ND	0.05	ND	0.042	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	8.7	ND	9.5
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	5.6	31	6.1	31
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N	ND	ND	ND	ND	ND	ND	9.3	8.7	10	9.8
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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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 COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2016-17

Constituents	Units	MCL	MCL Type	Long Beach #8					
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
				4/6/2017	4/6/2017	4/6/2017	4/6/2017	4/6/2017	4/6/2017
General Minerals									
Alkalinity	mg/l			530	450	620	400	300	200
Anion Sum	meq/l			11	10	15	25	19	18
Bicarbonate as HCO3	mg/l			640	550	750	480	370	250
Boron	mg/l	1	N	1	0.66	**1.3**	0.95	0.54	0.18
Bromide	ug/l			360	450	740	4500	3500	1700
Calcium, Total	mg/l			7.2	8.8	10	48	60	100
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			16	11	15	3.9	3.8	ND
Cation Sum	meq/l			11	9.4	14	23	18	17
Chloride	mg/l	500	S	21	33	83	**600**	460	480
Fluoride	mg/l	2	P	0.84	0.85	0.61	0.26	0.22	0.5
Hardness (Total, as CaCO3)	mg/l			26	35	46	260	260	400
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Iodide	mg/l			95	110	120	980	790	79
Iron, Total	mg/l	0.3	S	0.21	0.16	0.22	0.2	0.28	**0.74**
Langelier Index - 25 degree	None			0.78	0.72	0.93	1.1	1.1	0.77
Magnesium, Total	None			2	3.1	5.2	35	27	36
Manganese, Total	ug/l	50	S	17	24	22	17	**59**	**330**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			1.9	3.6	7.2	12	9.2	6.2
Sodium, Total	mg/l			240	200	310	410	280	200
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	21
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	650	590	890	**1400**	1000	**1100**
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			21	21	32	20	14	0.97
General Physical Properties									
Apparent Color	ACU	15	S	**30**	**350**	**400**	**80**	**50**	15
Lab pH	Units			8.6	8.5	8.5	8.1	8.2	7.8
Odor	TON	3	S	**8**	**4**	2	2	**8**	**4**
Specific Conductance	umho/cm	1600	S	1000	940	1400	**2500**	**2000**	**1900**
Turbidity	NTU	5	S	0.61	1.1	1.2	0.32	4.4	**8.1**
Metals									
Aluminum, Total	ug/l	1000	P	34	27	ND	24	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	1.2	ND	ND	ND	1.4	ND
Barium, Total	ug/l	1000	P	9.7	9.1	13	23	25	100
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	2.6	ND	2.2	ND	ND	ND
Chromium, Total	ug/l	50	P	1.1	ND	1.4	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.17	0.13	0.23	0.042	0.033	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N						
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	P	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND	ND	ND
TBA	ug/l	12	N						
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
Xylenes (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 COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2016-17

Constituents	Units	MCL	MCL Type	Manhattan Beach #1								
				Zone 1		Zone 2		Zone 3	Zone 4	Zone 5	Zone 6	Zone 7
				11/22/2016	8/3/2017	7/20/2017	8/3/2017	8/2/2017	8/3/2017	8/3/2017	8/3/2017	8/3/2017
General Minerals												
Alkalinity	mg/l				580	450	440	890	490	130	160	130
Anion Sum	meq/l				120	50	49	21	11	400	130	9.7
Bicarbonate as HCO3	mg/l				700	550	530	1100	590	160	200	160
Boron	mg/l	1	N		**16**	**7**	**7.1**	**3.7**	0.41	ND	ND	0.19
Bromide	ug/l				26000	10000	11000	2200	320	47000	14000	340
Calcium, Total	mg/l				51	32	32	15	27	1900	950	48
Carbon Dioxide	mg/l				ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l				9.1	3.6	8.6	14	12	ND	ND	ND
Cation Sum	meq/l				130	45	45	20	11	390	140	9.9
Chloride	mg/l	500	S		**4000**	**1400**	**1400**	120	34	**13000**	**4200**	120
Fluoride	mg/l	2	P		0.79	0.58	0.6	0.36	0.22	0.094	0.16	0.31
Hardness (Total, as CaCO3)	mg/l				280	130	130	87	110	8600	3400	180
Hydroxide as OH, Calculated	mg/l				ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l				6600	12	2700	820	71	240	39	47
Iron, Total	mg/l	0.3	S		**0.72**	**0.4**	0.19	0.21	0.088	**4.7**	**1.8**	ND
Langelier Index - 25 degree	None				1.4	0.8	1.2	1	1.3	1.7	1.8	0.69
Magnesium, Total	None				38	13	13	12	10	950	260	14
Manganese, Total	ug/l	50	S		**58**	**120**	**56**	50	**70**	**740**	**990**	**61**
Mercury	ug/l	2	P		ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	7.2	ND	ND	ND	ND	ND	ND	ND	9.7
Nitrate as Nitrogen	mg/l	10	P	1.6	ND	ND	ND	ND	ND	ND	ND	2.2
Nitrite, as Nitrogen	mg/l	1	P		ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l				ND	15	16	25	9.8	110	41	5.3
Sodium, Total	mg/l				2800	950	970	400	200	4900	1600	140
Sulfate	mg/l	500	S		ND	ND	ND	0.69	ND	**1600**	**560**	170
Surfactants	mg/l	0.5	S		0.15		ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	**7300**	**6400**	**2800**	**2600**	**1300**	630	**24000**	**8000**	630
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P		ND	ND	ND	ND	ND	ND	ND	2.2
Total Organic Carbon	mg/l				17	33	33	44	5.5	1.6	0.56	1.1
General Physical Properties												
Apparent Color	ACU	15	S		**150**		**250**	**250**	**35**	**35**	**25**	3
Lab pH	Units				8.3	8	8.4	8.3	8.5	7.7	7.9	8.2
Odor	TON	3	S		2		2	2	1	1	1	ND
Specific Conductance	umho/cm	1600	S	**13000**	**13000**	**5100**	**5000**	**2000**	990	**34000**	**13000**	1000
Turbidity	NTU	5	S		0.38		0.54	0.4	0.24	**28**	**17**	0.75
Metals												
Aluminum, Total	ug/l	1000	P		ND	65	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P		ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P		ND	**11**	2	ND	ND	**16**	5	3.4
Barium, Total	ug/l	1000	P		710	200	200	96	49	150	190	21
Beryllium, Total	ug/l	4	P		ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P		ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P		ND	5.1	ND	ND	ND	15	ND	ND
Chromium, Total	ug/l	50	P		ND	ND	ND	1.9	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P		ND	0.036	0.059	0.24	0.043	ND	ND	ND
Lead, Total	ug/l	15	P		ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P		ND	ND	ND	ND	ND	41	ND	ND
Selenium, Total	ug/l	50	P		ND	ND	ND	ND	ND	**150**	**52**	ND
Silver, Total	ug/l	100	S		ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P		ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	ug/l	5000	S		ND	74	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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P		ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l				ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P		ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	ug/l				ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P		ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l				ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P		ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P		ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P		ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P		ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	P		ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l				ND	ND	ND	ND	ND	ND	ND	ND
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	ND
Toluene	ug/l	150	P		ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P		ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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	1.1

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

TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2016-17

Constituents	Units	MCL	MCL Type	PM-2 Police Station			
				Zone 1	Zone 2	Zone 3	Zone 4
				6/28/2017	6/28/2017	6/28/2017	6/28/2017
General Minerals							
Alkalinity	mg/l			120	160	140	180
Anion Sum	meq/l			190	45	13	14
Bicarbonate as HCO3	mg/l			140	190	170	220
Boron	mg/l	1	N	ND	0.21	0.37	0.49
Bromide	ug/l			20000	4700	740	2000
Calcium, Total	mg/l			1100	360	92	89
Carbon Dioxide	mg/l			11	22	6.2	4.8
Carbonate as CO3	mg/l			ND	ND	ND	ND
Cation Sum	meq/l			180	41	14	14
Chloride	mg/l	500	S	**6200**	**1400**	190	260
Fluoride	mg/l	2	P	0.16	0.83	0.43	0.34
Hardness (Total, as CaCO3)	mg/l			5000	1400	350	340
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND
Iodide	mg/l			110	150	140	360
Iron, Total	mg/l	0.3	S	0.23	**1.5**	ND	ND
Langelier Index - 25 degree	None			1.1	0.55	0.41	0.73
Magnesium, Total	None			540	120	30	30
Manganese, Total	ug/l	50	S	**410**	**2500**	**200**	**90**
Mercury	ug/l	2	P	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND
Potassium, Total	mg/l			74	13	7.7	8.2
Sodium, Total	mg/l			1700	270	140	170
Sulfate	mg/l	500	S	**600**	64	250	160
Surfactants	mg/l	0.5	S	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	**12000**	**2900**	860	920
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.79	1.4	1.6	1.5
General Physical Properties							
Apparent Color	ACU	15	S	3	**30**	ND	ND
Lab pH	Units			7.8	7.4	8.1	8.2
Odor	TON	3	S	1	**8**	1	2
Specific Conductance	umho/cm	1600	S	**17000**	**4300**	1400	1500
Turbidity	NTU	5	S	1	**10**	0.22	0.13
Metals							
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	1.3	5.9	2.2	1.6
Barium, Total	ug/l	1000	P	280	260	33	53
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	14	7.8	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N				
Benzene	ug/l	1	P	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND
Chloromethane	ug/l			ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND
Styrene	ug/l	100	P	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND
TBA	ug/l	12	N				
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND
Xylenes (Total)	ug/l	1750	P	ND	ND	ND	ND
Perchlorate	ug/l	6	P	0.87	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 COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2016-17

Constituents	Units	MCL	MCL Type	PM-3 Madrid							
				Zone 1		Zone 2		Zone 3		Zone 4	
				3/28/2017	8/24/2017	3/28/2017	8/24/2017	3/28/2017	8/24/2017	3/28/2017	8/24/2017
General Minerals											
Alkalinity	mg/l			310	310	190	190	200	190	200	200
Anion Sum	meq/l			6.9	6.8	8.3	8.2	11	11	16	15
Bicarbonate as HCO3	mg/l			380	370	230	230	240	240	250	240
Boron	mg/l	1	N	0.35	0.37	0.15	0.15	0.2	0.2	0.42	0.4
Bromide	ug/l			130	130	930	940	1700	1600	1900	1900
Calcium, Total	mg/l			12	12	76	69	100	94	120	120
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			7.8	3.8	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			7.6	7.6	8.9	8.1	12	11	16	15
Chloride	mg/l	500	S	24	22	160	150	260	250	330	330
Fluoride	mg/l	2	P	0.35	0.33	0.31	0.32	0.37	0.35	0.36	0.35
Hardness (Total, as CaCO3)	mg/l			70	69	270	250	370	340	450	440
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			36	21	130	120	220	200	250	240
Iron, Total	mg/l	0.3	S	0.048	0.048	ND	0.15	0.12	0.11	**0.54**	**0.52**
Langelier Index - 25 degree	None			0.72	0.46	0.64	0.64	0.9	0.85	0.67	0.74
Magnesium, Total	None			9.8	9.5	20	20	29	26	37	34
Manganese, Total	ug/l	50	S	22	24	**66**	**66**	**55**	**60**	**320**	**340**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			13	14	5.6	4.6	5.8	5.7	7	7.1
Sodium, Total	mg/l			130	130	76	67	100	91	160	150
Sulfate	mg/l	500	S	ND	ND	2	ND	5.2	4.3	95	92
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	380	390	480	490	660	750	900	950
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			3	2.9	1.2	0.72	0.83	0.77	1.1	1
General Physical Properties											
Apparent Color	ACU	15	S	**30**	**35**	3	5	ND	ND	10	10
Lab pH	Units			8.5	8.2	7.8	7.9	8	8	7.6	7.7
Odor	TON	3	S	2	1	2	ND	2	1	2	2
Specific Conductance	umho/cm	1600	S	660	660	860	870	1200	1200	1600	1600
Turbidity	NTU	5	S	1.3	0.34	0.26	0.5	2.2	1.4	4.7	3.7
Metals											
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	1.9	1.8	ND	ND	6.5	8.9
Barium, Total	ug/l	1000	P	19	20	37	31	65	64	81	77
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	0.048	ND	ND	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	8.1	ND	9.3
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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	0.73	0.78
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	1.8	1.5	**13**	**15**
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ug/l	1	N		ND		ND		ND		**3.4**
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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	0.78	0.61	4	2.7
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
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
Total Trihalomethanes	ug/l	80	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	1.2	1.3
Vinyl chloride (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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 COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2016-17

Constituents	Units	MCL	MCL Type	PM-4 Mariner							
				Zone 1		Zone 2		Zone 3		Zone 4	
				3/26/2017	8/20/2017	3/26/2017	8/20/2017	3/26/2017	8/20/2017	3/26/2017	8/20/2017
General Minerals											
Alkalinity	mg/l			260	260	150	150	150	140	200	200
Anion Sum	meq/l			5.9	5.9	210	220	8.8	8.6	10	10
Bicarbonate as HCO3	mg/l			310	310	190	190	180	170	240	240
Boron	mg/l	1	N	0.17	0.17	ND	ND	0.28	0.28	0.25	0.24
Bromide	ug/l			160	160	23000	24000	200	190	430	430
Calcium, Total	mg/l			30	28	1500	1500	58	49	80	72
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			3.2	4	ND	ND	2.3	ND	2.5	2.5
Cation Sum	meq/l			6.6	6	200	220	10	9	12	11
Chloride	mg/l	500	S	27	25	**6600**	**7000**	85	85	120	130
Fluoride	mg/l	2	P	0.39	0.36	0.13	0.11	0.46	0.45	0.3	0.27
Hardness (Total, as CaCO3)	mg/l			130	120	5600	5800	210	180	290	260
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			61	65	76	83	22	22	55	66
Iron, Total	mg/l	0.3	S	0.064	0.059	0.22	0.24	0.026	0.023	0.16	**3.5**
Langelier Index - 25 degree	None			0.73	0.77	1.6	1.6	0.84	0.71	1	0.96
Magnesium, Total	None			13	12	460	490	16	13	22	19
Manganese, Total	ug/l	50	S	28	31	**890**	**980**	38	36	**71**	**74**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			7.5	7.4	50	62	6	5.8	6.7	6.6
Sodium, Total	mg/l			87	79	2200	2200	130	120	130	120
Sulfate	mg/l	500	S	ND	ND	**850**	**840**	160	160	140	140
Surfactants	mg/l	0.5	S	ND	ND	ND	0.11	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	340	330	**16000**	**12000**	590	520	630	620
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	0.72	1.6	1.6	1.7	1.1	0.97
General Physical Properties											
Apparent Color	ACU	15	S	10	10	ND	5	10	10	3	5
Lab pH	Units			8.2	8.3	7.6	7.6	8.3	8.2	8.2	8.2
Odor	TON	3	S	2	ND	2	ND	2	ND	2	1
Specific Conductance	umho/cm	1600	S	570	570	**19000**	**20000**	930	890	1100	1000
Turbidity	NTU	5	S	0.1	0.1	1.8	1.8	1.1	1.2	0.35	0.28
Metals											
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	**43**	**37**	ND	ND	ND	ND
Barium, Total	ug/l	1000	P	19	19	190	180	76	70	47	44
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	1.7	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	4.5	4.1	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	1.2	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	0.026	ND	ND	ND	0.049	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	29	41	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	**81**	**100**	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
TBA	ug/l	12	N		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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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 COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2016-17

Constituents	Units	MCL	MCL Type	PM-5 Columbia Park											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				3/15/2017	8/23/2017	3/15/2017	8/23/2017	3/15/2017	8/23/2017	3/15/2017	8/23/2017	3/15/2017	8/23/2017	3/15/2017	8/23/2017
General Minerals															
Alkalinity	mg/l			700	700	910	920	420	400	300	300	180	180	210	220
Anion Sum	meq/l			17	17	19	19	9.2	8.8	6.8	6.8	38	36	13	12
Bicarbonate as HCO3	mg/l			840	850	1100	1100	510	490	360	360	220	220	260	260
Boron	mg/l	1	N	**2.5**	**2.7**	**1.8**	**2**	0.36	0.36	0.16	0.17	0.17	0.19	0.16	0.2
Bromide	ug/l			1600	1600	220	200	270	680	180	170	2900	2700	750	720
Calcium, Total	mg/l			14	13	7.3	7.2	14	14	25	27	280	290	86	92
Carbon Dioxide	mg/l			ND	ND	ND	ND	3.3	ND	ND	ND	ND	ND	3.4	ND
Carbonate as CO3	mg/l			14	11	18	18	8.3	8	5.9	4.7	ND	ND	2.1	2.7
Cation Sum	meq/l			17	16	19	18	9.7	9.1	6.4	7.3	35	36	12	12
Chloride	mg/l	500	S	100	99	14	13	28	27	30	29	**930**	**850**	170	150
Fluoride	mg/l	2	P	0.67	0.66	0.35	0.33	0.31	0.3	0.34	0.33	0.19	0.18	0.36	0.33
Hardness (Total, as CaCO3)	mg/l			61	58	40	40	67	65	110	120	1000	1000	300	320
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			640	630	78	83	120	120	60	62	29	30	74	96
Iron, Total	mg/l	0.3	S	0.19	0.19	**0.31**	0.29	0.049	0.044	0.026	0.025	0.1	0.11	ND	ND
Langelier Index - 25 degree	None			1	0.86	0.86	0.84	0.79	0.82	0.92	0.83	1.3	1.2	0.96	1.1
Magnesium, Total	None			6.3	6.2	5.3	5.3	7.8	7.2	12	13	73	74	20	22
Manganese, Total	ug/l	50	S	50	46	32	29	39	36	26	24	**240**	**260**	**120**	**120**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			13	13	9.9	9.9	15	16	10	11	11	11	5.5	6
Sodium, Total	mg/l			360	340	410	400	180	170	90	110	330	340	120	140
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	ND	ND	ND	420	400	180	170
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	1000	1000	**1100**	**1100**	520	540	380	390	**2400**	**2300**	750	740
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			42	42	40	32	6.8	6.7	2.8	2.8	1	1.1	1.2	1.2
General Physical Properties															
Apparent Color	ACU	15	S	**300**	**300**	**500**	**500**	**50**	**50**	15	**20**	3	3	ND	ND
Lab pH	Units			8.4	8.3	8.4	8.4	8.4	8.4	8.4	8.3	8	7.8	8.1	8.2
Odor	TON	3	S	2	2	2	2	2	ND	2	ND	2	ND	2	ND
Specific Conductance	umho/cm	1600	S	1600	1600	1600	**1700**	860	870	650	650	**3600**	**3600**	1200	1200
Turbidity	NTU	5	S	1.5	0.41	2.8	0.42	0.52	0.25	0.2	0.17	0.46	0.48	0.47	ND
Metals															
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	3.7	3.1	ND	ND	ND	ND	2	3.3	ND	ND
Barium, Total	ug/l	1000	P	110	95	24	23	27	23	22	20	98	96	150	150
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	2.7	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	2.8	2.8	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	0.081	0.07	0.18	ND	0.061	ND	0.038	ND	ND	ND	0.025
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	5.4	11	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	8.5	14	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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 COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2016-17

Constituents	Units	MCL	MCL Type	PM-6 Madrona Marsh											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				3/14/2017	8/21/2017	3/14/2017	8/21/2017	3/14/2017	8/21/2017	3/14/2017	8/21/2017	3/14/2017	8/21/2017	3/14/2017	8/21/2017
General Minerals															
Alkalinity	mg/l			390	370	130	130	140	140	240	240	160	160	170	160
Anion Sum	meq/l			70	92	84	81	200	200	6.3	6.6	53	51	11	10
Bicarbonate as HCO3	mg/l			480	450	150	160	170	170	290	290	200	200	200	190
Boron	mg/l	1	N	0.62	0.66	0.5	0.59	ND	ND	0.24	0.25	0.36	0.37	0.16	0.18
Bromide	ug/l			7500	10000	9800	9900	24000	24000	270	270	4600	4900	360	310
Calcium, Total	mg/l			330	490	220	220	1100	1100	20	18	280	250	79	68
Carbon Dioxide	mg/l			ND	ND	ND	ND	3.5	ND	ND	ND	ND	ND	3.3	ND
Carbonate as CO3	mg/l			3.1	2.9	ND	ND	ND	ND	4.7	3.8	ND	ND	ND	ND
Cation Sum	meq/l			67	95	82	82	190	200	6.8	6.4	51	47	11	10
Chloride	mg/l	500	S	**2200**	**3000**	**2900**	**2800**	**7000**	**7000**	56	62	**1500**	**1400**	190	180
Fluoride	mg/l	2	P	0.36	0.32	0.09	0.088	0.11	0.11	0.53	0.53	0.16	0.16	0.26	0.27
Hardness (Total, as CaCO3)	mg/l			1800	2700	1000	960	6000	6000	99	94	1000	950	290	250
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			150	180	500	520	230	240	57	66	68	82	46	41
Iron, Total	mg/l	0.3	S	0.053	ND	0.13	ND	ND	ND	0.098	0.041	**0.98**	**0.85**	0.3	0.14
Langelier Index - 25 degree	None			1.7	1.8	1	1.1	1.7	1.8	0.66	0.61	1.1	1	0.74	0.66
Magnesium, Total	None			240	360	110	100	790	780	12	12	87	80	23	20
Manganese, Total	ug/l	50	S	16	23	**190**	**190**	**120**	**120**	**71**	**58**	**540**	**460**	**100**	**85**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			36	54	48	49	91	100	5.8	5.5	20	19	5.9	5.4
Sodium, Total	mg/l			690	920	1400	1400	1600	1700	110	100	670	640	120	110
Sulfate	mg/l	500	S	3.2	44	ND	ND	31	36	ND	ND	400	390	100	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	**4400**	**5100**	**5400**	**5200**	**12000**	**11000**	380	370	**3100**	**2800**	680	600
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			2.7	3.2	1.1	1.1	1	0.78	2.3	2.1	1.3	1.3	1.4	1.4
General Physical Properties															
Apparent Color	ACU	15	S	**250**	**300**	5	5	**30**	**40**	15	**20**	**20**	**30**	5	5
Lab pH	Units			8	8	8	8	7.9	8	8.4	8.3	7.8	7.8	8	8
Odor	TON	3	S	**200**	**200**	2	1	**200**	**200**	2	1	2	2	2	1
Specific Conductance	umho/cm	1600	S	**7100**	**9300**	**8400**	**8600**	**19000**	**19000**	630	640	**5000**	**5100**	1100	1100
Turbidity	NTU	5	S	**6.4**	**15**	1	0.33	**22**	**21**	0.21	0.13	**7.5**	**5.9**	0.7	0.39
Metals															
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	1.5	2.7	3	ND	ND	ND	1.6	4	1.7	2.2
Barium, Total	ug/l	1000	P	1000	**1400**	560	530	**3000**	**2900**	27	21	140	120	21	17
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	2.6	ND	ND	ND	2.2	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	1.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	0.037	ND	ND	ND	0.02
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	7.9	ND	ND	ND	ND	ND	7.2	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	9	**52**	9.7	ND	ND	ND	ND	17	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		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	0.76	0.78	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	0.34	ND	ND	ND	ND	ND	ND
Xylenes (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 COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2016-17

Constituents	Units	MCL	MCL Type	Westchester #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				3/29/2017	8/24/2017	3/29/2017	8/24/2017	3/29/2017	8/24/2017	3/29/2017	8/24/2017	3/29/2017	8/24/2017
General Minerals													
Alkalinity	mg/l			540	510	540	540	440	430	350	350	290	290
Anion Sum	meq/l			14	14	13	13	11	11	10	10	9.2	9.2
Bicarbonate as HCO3	mg/l			660	620	660	660	540	530	420	420	350	350
Boron	mg/l	1	N	0.83	0.8	0.73	0.84	0.41	0.41	0.22	0.23	0.22	0.22
Bromide	ug/l			580	520	480	460	400	380	350	340	340	330
Calcium, Total	mg/l			66	63	30	32	54	54	71	71	66	65
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	4.3	ND	ND	ND
Carbonate as CO3	mg/l			8.6	6.4	11	8.6	7	5.4	4.3	2.7	3.6	2.9
Cation Sum	meq/l			14	13	12	13	11	11	11	10	9.7	9.4
Chloride	mg/l	500	S	79	81	67	68	59	60	61	62	63	64
Fluoride	mg/l	2	P	0.31	0.29	0.3	0.28	0.28	0.27	0.31	0.28	0.37	0.36
Hardness (Total, as CaCO3)	mg/l			280	260	150	150	240	230	300	300	280	260
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			78	70	88	46	84	81	64	72	60	68
Iron, Total	mg/l	0.3	S	0.18	0.16	0.12	0.13	0.24	0.24	0.13	0.13	**0.32**	**0.31**
Langelier Index - 25 degree	None			1.5	1.3	1.2	1.2	1.3	1.2	1.2	1.1	1.1	0.97
Magnesium, Total	None			28	26	18	18	25	23	30	29	27	25
Manganese, Total	ug/l	50	S	**120**	**100**	47	49	**140**	**140**	**110**	**120**	**140**	**140**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			12	11	15	17	12	12	9.4	9.5	7.5	7.4
Sodium, Total	mg/l			190	180	210	210	140	140	99	94	92	88
Sulfate	mg/l	500	S	44	50	ND	ND	13	13	73	74	77	78
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	830	800	730	720	610	610	600	600	540	550
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			13	14	8.1	8.1	3.4	3.2	1.7	1.6	1.4	1.3
General Physical Properties													
Apparent Color	ACU	15	S	**200**	**100**	**70**	**50**	**20**	**25**	5	10	10	10
Lab pH	Units			8.3	8.2	8.4	8.3	8.3	8.2	8.2	8	8.2	8.1
Odor	TON	3	S	2	1	2	1	2	1	2	ND	2	1
Specific Conductance	umho/cm	1600	S	1300	1300	1200	1200	1000	1000	980	980	900	900
Turbidity	NTU	5	S	1.2	1	0.29	0.31	0.33	0.31	0.27	0.26	0.99	0.74
Metals													
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1
Barium, Total	ug/l	1000	P	100	87	130	110	69	66	74	70	65	60
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	1.1	ND	ND	1.1	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.13	0.06	0.066	0.04	0.025	0.02	0.024	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	ug/l	5000	S	ND	46	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
1,4-Dioxane	ug/l	1	N		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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
TBA	ug/l	12	N		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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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 COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2016-17

Constituents	Units	MCL	MCL Type	Wilmington #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				2/23/2017	8/7/2017	2/23/2017	8/7/2017	2/23/2017	8/7/2017	2/23/2017	8/7/2017	2/23/2017	8/7/2017
General Minerals													
Alkalinity	mg/l			140	140	160	160	180	190	150	140	160	150
Anion Sum	meq/l			11	11	24	22	36	34	18	18	13	13
Bicarbonate as HCO3	mg/l			180	170	190	200	220	230	180	170	190	180
Boron	mg/l	1	N	0.26	0.27	0.19	0.2	0.24	0.31	0.21	0.23	0.19	0.2
Bromide	ug/l			2300	2200	2900	2600	4700	4300	1400	1300	1000	880
Calcium, Total	mg/l			64	60	160	140	220	220	91	86	92	90
Carbon Dioxide	mg/l			4	ND	9.4	ND	13	ND	5.9	ND	8.4	ND
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			11	11	23	21	33	34	18	17	14	13
Chloride	mg/l	500	S	290	290	**640**	**600**	**1100**	**1000**	400	400	250	240
Fluoride	mg/l	2	P	0.16	0.15	0.087	0.077	0.087	0.077	0.15	0.14	0.16	0.16
Hardness (Total, as CaCO3)	mg/l			250	230	570	500	790	790	360	350	360	350
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			800	780	370	400	610	500	45	47	87	79
Iron, Total	mg/l	0.3	S	ND	ND	0.042	0.04	ND	ND	ND	ND	0.13	0.044
Langelier Index - 25 degree	None			0.47	0.82	0.55	0.96	0.67	1.2	0.47	0.72	0.38	0.73
Magnesium, Total	None			21	20	41	37	59	58	33	32	31	30
Manganese, Total	ug/l	50	S	22	23	18	17	9.3	7.9	13	13	**62**	42
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			8.4	8.2	8.1	7.7	9.5	10	6.8	6.6	6.7	6.4
Sodium, Total	mg/l			140	130	260	250	400	420	230	230	140	130
Sulfate	mg/l	500	S	ND	ND	110	110	37	36	170	180	140	150
Surfactants	mg/l	0.5	S	0.38	0.43	0.4	**0.54**	0.27	0.44	0.13	0.2	0.36	0.4
Total Dissolved Solid (TDS)	mg/l	1000	S	690	770	**1600**	**1500**	**2100**	**2300**	**1100**	**1100**	790	840
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			3.3	3.4	3	3.4	1.8	1.9	2.1	2.3	3.8	3.6
General Physical Properties													
Apparent Color	ACU	15	S	ND	3	ND	ND	5	5	3	ND	3	3
Lab pH	Units			8	8.2	8	8	7.8	8	7.9	8	8	8
Odor	TON	3	S	**200**	**100**	**67**	**4**	**200**	**200**	**200**	**4**	**200**	**100**
Specific Conductance	umho/cm	1600	S	1200	1200	**2400**	**2400**	**3700**	**3600**	**1900**	**1900**	1400	1300
Turbidity	NTU	5	S	ND	ND	**6**	0.14	0.12	0.15	0.23	0.12	0.12	0.17
Metals													
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	1.8	ND	ND	ND	1.3	ND	ND	ND
Barium, Total	ug/l	1000	P	12	10	12	11	32	29	37	32	95	71
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.038
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	5.4	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	9.2	7.9	11	ND	ND	ND	6	ND	5.5	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N										
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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			9.4	7.5	21	18	8.8	7.8	ND	ND	4.6	3.6
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	3	1.2	**24**	**19**
Styrene	ug/l	100	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
TBA	ug/l	12	N	**100**	**73**	**99**	**66**	**87**	**54**	**17**	**32**	**42**	**44**
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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	**1.2**	ND	ND	ND	ND	ND
Xylenes (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 COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2016-17

Constituents	Units	MCL	MCL Type	Wilmington #2									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				2/28/2017	8/8/2017	2/28/2017	8/8/2017	2/28/2017	8/8/2017	2/28/2017	8/8/2017	2/28/2017	8/8/2017
General Minerals													
Alkalinity	mg/l			300	290	500	500	160	160	270	280	160	160
Anion Sum	meq/l			12	12	26	25	12	12	11	11	69	66
Bicarbonate as HCO3	mg/l			360	360	600	610	190	200	330	340	200	200
Boron	mg/l	1	N	0.51	0.59	**1.6**	**1.8**	0.17	0.2	0.58	0.63	0.47	0.51
Bromide	ug/l			890	930	4300	4100	2400	2400	1300	1200	6700	6400
Calcium, Total	mg/l			4.5	5.1	27	27	58	59	21	20	200	200
Carbon Dioxide	mg/l			2.5		12		4.3		6.4		9.9	
Carbonate as CO3	mg/l			5.6	9.3	3.2	7.9	ND	2	ND	5.6	ND	ND
Cation Sum	meq/l			11		25		12		11		66	
Chloride	mg/l	500	S	200	220	**590**	**540**	320	330	190	180	**2100**	**2000**
Fluoride	mg/l	2	P	0.76	0.72	0.5	0.48	0.19	0.17	0.8	0.79	0.23	0.22
Hardness (Total, as CaCO3)	mg/l			25	29	150	150	240	240	91	87	890	880
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			140	100	1300	1100	870	830	450	300	50	42
Iron, Total	mg/l	0.3	S	0.031	0.031	0.061	0.057	0.033	0.034	ND	ND	ND	ND
Langelier Index - 25 degree	None			0.14	0.43	0.69	1.1	0.46	0.83	0.32	0.75	0.68	1.1
Magnesium, Total	None			3.4	4.0	20	20	22	22	9.4	9.1	96	92
Manganese, Total	ug/l	50	S	4.2	3.9	9.8	9.3	14	12	7.3	7	**52**	42
Mercury	ug/l	2	P	ND		ND		ND		ND		ND	
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.5
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			5.9		11	11	7.6	7.3	5.2	5.0	17	
Sodium, Total	mg/l			250	260	510	490	150	150	200	190	1100	1000
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	ND	ND	ND	340	330
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	670	740	**1500**	**1500**	680	790	630	650	**3900**	**4000**
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			6.2	6.5	20	20	2.4	2.4	9.2	9.6	1.3	1.5
General Physical Properties													
Apparent Color	ACU	15	S	**250**	**150**	**150**	**200**	5	10	**100**	**200**	15	15
Lab pH	Units			8.6	8.6	8.2	8.3	8.2	8.2	8.4	8.4	7.6	7.9
Odor	TON	3	S	**40**	1	**17**	1	2	1	**17**	2	**8**	1
Specific Conductance	umho/cm	1600	S	1200	1200	**2700**	**2700**	1300	1400	1100	1100	**6700**	**6800**
Turbidity	NTU	5	S	0.2	0.19	0.27	0.25	0.12	0.15	0.27	0.4	0.37	0.15
Metals													
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND		ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	ND	0.39	ND	ND	ND	ND	4.1	
Barium, Total	ug/l	1000	P	5.1	4.9	49	45	20	18	18	16	56	51
Beryllium, Total	ug/l	4	P	ND		ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	1.2	ND	ND	ND	1	ND	1.2	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.072	0.14	0.036	0.19	ND	0.025	0.072	0.25	ND	0.032
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND		ND	ND	ND	ND	7	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	9.6	8.6	ND	ND	30	25
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	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
1,4-Dioxane	ug/l	1	N										
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
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l			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
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/l	100	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
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
Total Trihalomethanes	ug/l	80	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 (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (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**

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TABLE 3.3
QUALITY OF REPLENISHMENT WATER

			IMPORTED WATER			RECYCLED WATER							LOCAL WATER
Constituent	Units	Regulatory Limit	Treated Blend of Colorado River & State Water Project [A]	Untreated Colorado River [B]	Untreated State Water Project [C]	WBMWD ELWRF [D]	LADWP TIWRP [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]
			2016	2016	2016	2016	2016	2017	2016-2017	2016-2017	2016-2017	2016-2017	2015-2016
Arsenic	µg/L	MCL = 10	ND/ 3.1	2.4	5.0	ND	ND	ND	0.830	1.33	0.833	0.367	2.35
Chloride	mg/L	SMCL = 500	66.5 [I] / 90.5 [I]	96 [I]	53 [I]	53 [J]	89 [K]	44 [L]	141	142	118	116	73
Hexavalent Chromium	µg/L	MCL = 10	ND / ND	ND	1.0	0.34	ND	0.089	0.02	0.10	0.10	0.05	0.43 J
Iron	µg/L	SMCL = 300	ND / ND	ND	ND	ND	ND	ND	32.0	39	40	35.0	732
Manganese	µg/L	SMCL = 50	ND / ND	ND	ND	ND	ND	ND	5.89	8.00	9.71	3.10	ND
Nitrate (as N)	mg/L	MCL = 10	ND / 0.8	ND	0.8	0.4 [J]	0.92	1.03 [L]	6.69	6.14	6.42	6.67	2.47
Perchlorate	µg/L	MCL = 6	ND / ND	ND	ND	ND	ND	ND	0.3	0.3	0.4	0.4	ND
Tetrachloroethylene (PCE)	µg/L	MCL = 5	ND / ND	ND	ND	ND	ND	ND	ND	ND	0.72	0.20	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	399 [I] / 358 [I]	630 [I]	180 [I]	331 [J]	242 [K]	201 [L]	565	628	558	602	384
Alkalinity	mg/L	None	77 [I] / 87 [I]	124 [I]	52 [I]	74	NA	NA	143	146	157	158	95
Boron	µg/L	NL = 1,000	150/270	150	250	355 [J]	489 [K]	190 [L]	250	290	320	270	NA
Chromium, Total	µg/L	MCL = 50	ND / ND	ND	ND	ND	0.55	ND	1.0	0.82	1.29	1.1	1.58
Copper, Total	µg/L	SMCL = 1,000	ND / ND	ND	ND	2.3	1.41	ND	4.03	3.83	6.09	3.68	16.0
1,4-Dioxane	ug/L	NL = 1	NA	NA	NA	ND	ND	NA	0.98	1.1	0.88	0.87	NA
Hardness	mg/L	None	166 [I] / 121 [I]	286 [I]	67 [I]	48	43	36	200	209	202	202	114
Lead, Total	µg/L	AL = 15	ND / ND	ND	ND	ND	ND	NA	0.30	0.046	0.26	0.12	5.7
Methyl tertiary butyl ether (MTBE)	µg/L	SMCL = 5	ND / ND	ND	ND	ND	ND	ND	ND	ND	ND	5.65	ND
Nitrite (as N)	mg/L	MCL = 1	ND / ND	ND	ND	0.1 [J]	ND	0.02 [L]	0.19	0.0055	0.019	0.074	0.11
n-Nitrosodimethylamine (NDMA)	ng/L	NL = 10	ND / 2.7	NA	NA	1.7	44.8	ND	194	72	603	42	ND
pH	pH Units	None	8.1 / 8.3	8.2	8.4	7.6	8.0 [K]	8.3	7.5	7.0	7.1	7.2	NA
Selenium	µg/L	MCL = 50	ND / ND	ND	ND	ND	ND	ND	ND	0.110	ND	ND	1.36
Specific Conductance	µS/cm	SMCL = 1,600	660 [I] / 633 [I]	1001 [I]	332 [I]	115.3	421	250	NA	NA	NA	NA	NA
Sulfate	mg/L	SMCL = 500	144 [I] / 76 [I]	245 [I]	22 [I]	95 [J]	15.5 [K]	36 [L]	72.7	113	79.5	110	86.5
Total Organic Carbon (TOC)	mg/L	None [M]	2.5 / 2.2	2.95 [I]	3.85 [I]	0.39	0.2	0.33	7.72	6.32	5.50	5.59	8.3
Turbidity	NTU	SMCL = 5	0.05 [I] / 0.04 [I]	2.4 [I]	2.8 [I]	0.08	0.1	0.13	0.64	0.69	0.68	0.39	4.8

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 (Data Source #1).

B = Used at the Montebello Forebay spreading grounds (Lake Mathews) (Data Source #1).

C = Used at the Montebello Forebay spreading grounds (Silverwood Lake) (Data Source #1).

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 (Data Source #4).

E = Effluent of Terminal Island Water Reclamation Plant/Advanced Water Treatment Facilities (TIWRP) before blending with treated water from Colorado River/State Water Project; used at the Dominguez Gap Seawater Intrusion Barrier. Estimated values used where reported as "detected, but not quantified" [DNQ] (Data Source #6).

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 (Data Source #7).

G = Effluent of water reclamation plants (WRPs); used at the Montebello Forebay spreading grounds (Data Source #3).

H = Average concentration of water samples collected from LACDPW San Gabriel River Monitoring Station S14 from December 2016 through March 2017 (four storm events total) (Data Source #5).

I = Average concentration for Water Year October 2015 through September 2017 (Data Source #2).

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 (Data Source #4).

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 (Data Source #6).

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 (Data Source #7).

M = California's 2014 Groundwater Replenishment Using Recycled Water Regulations specify the following TOC limits for groundwater replenishment projects:

- For surface spreading (surface application), TOC limit = 0.5 mg/L divided by the 120-month running monthly average recycled water contribution (e.g., the TOC limit for a 100% recycled water project would be 0.5 mg/L.) For compliance determination, TOC may be monitored in one of the following: 1) undiluted recycled municipal wastewater prior to application or within the zone of percolation; 2) diluted percolated recycled municipal wastewater, with the value amended to negate the effect of the diluent water; or 3) undiluted recycled municipal wastewater prior to application, with the value amended using a soil-aquifer treatment factor approved by the Division of Drinking Water.
- For injection (subsurface application), TOC limit = 0.5 mg/L. For compliance determination, TOC is monitored in the applied recycled municipal wastewater.

NA = Not Available/Analyzed
ND = Not Detected
NS = Not sampled due to plant shutdown
mg/L = milligrams per liter
µg/L = micrograms per liter
µS/cm = microSiemen per centimeter

NTU = Nephelometric Turbidity Units
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:

(1) 2016 Water Quality Report to MWD Member Agencies (Metropolitan Water District of Southern California, March 2017)

(2) Table D, Monthly Analyses of the District Water Supplies (Metropolitan Water District of Southern California, October 2016 - September 2017)

(3) October 2016 - September 2017 Annual Monitoring Report, Montebello Forebay Groundwater Recharge (County Sanitation Districts of Los Angeles County [SDLAC], December 15, 2017)

(4) Annual West Coast Basin Barrier Project Monitoring Report for 2016, Edward C. Little Water Recycling Facility (West Basin Municipal Water District [WBMWD], March 30, 2017)

(5) Annual stormwater monitoring data provided by Los Angeles County (Los Angeles County Department of Public Works [LACDPW], Eva Hsiung email dated February 7, 2017)

(6) Annual Monitoring Report - January-December 2016, Harbor Water Recycling/Dominguez Gap Barrier Project (City of Los Angeles, Bureau of Sanitation)

(7) 2016 Annual Summary Report, Alamitos Barrier Recycled Water Project, Leo J. Vander Lans Water Treatment Facility (Water Replenishment District of Southern California [WRD], April 13, 2017)

TABLE 3.4
MAJOR MINERAL WATER QUALITY GROUPS

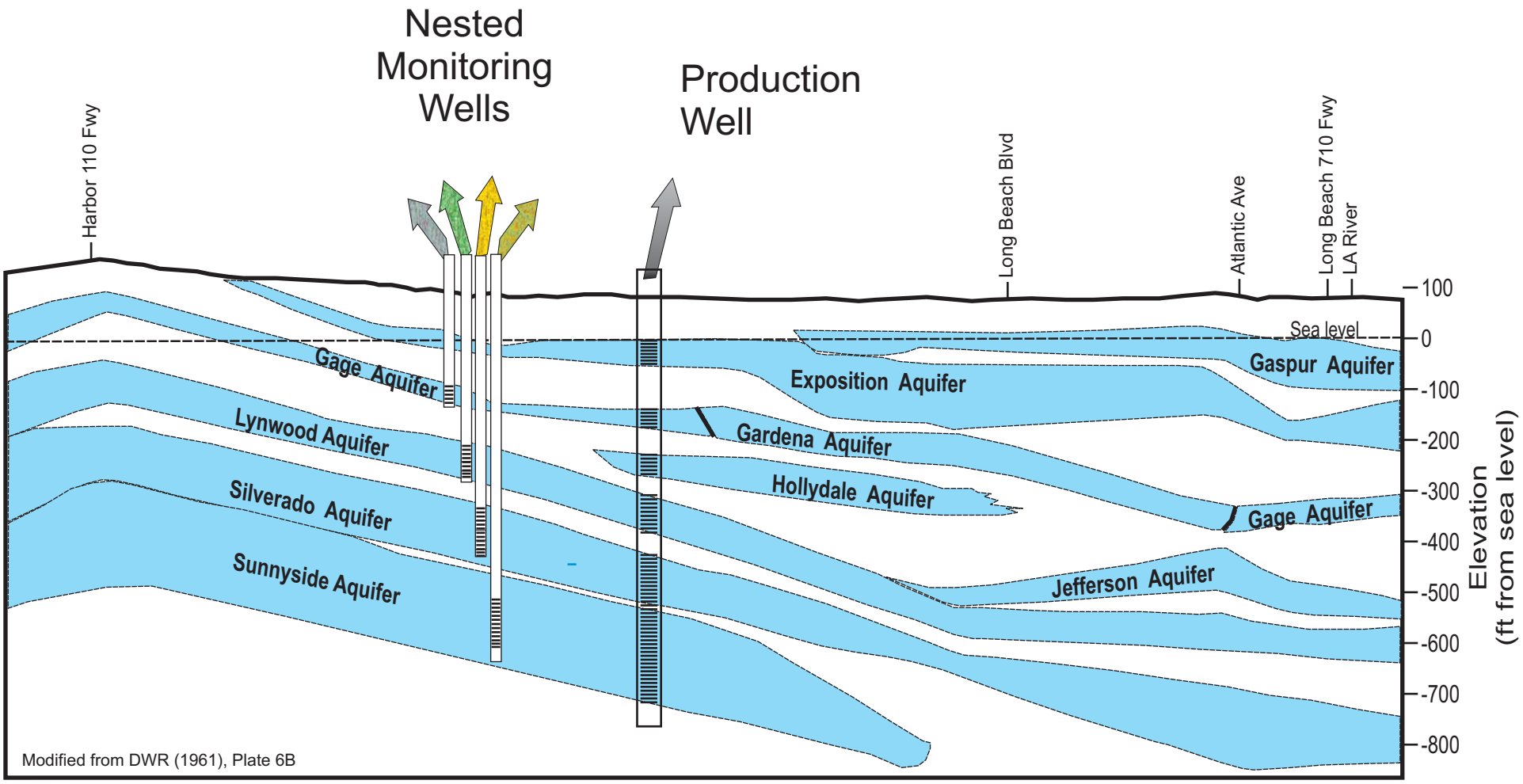
NESTED MONITORING WELL LOCATIONS	GROUP A ZONES Generally Calcium Bicarbonate or Calcium Bicarbonate/Sulfate Dominant	GROUP B ZONES Generally Calcium-Sodium-Bicarbonate or Sodium-Bicarbonate Dominant	GROUP C ZONES Generally Sodium-Chloride Dominant	OTHER ZONES Generally Different Than Groups A, B, and 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		6
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		
Lakewood #2		1, 2, 3, 4, 5, 6, 7, 8		
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		
Lynwood #1	3, 4, 5, 6, 7, 8, 9	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	
Lawndale #1	4, 5	1, 2, 3		6
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-2 Police Station			1,2,4	3
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	

Note - Values shown above represent the various zones at each nested well location classified by major mineral water quality group.

FIGURES


Figure 1.1
Water Replenishment District of Southern California
4040 Paramount Boulevard
Lakewood, Ca 90712
(562) 921-5521
(562) 921-6101 (fax)
www.wrd.org
WRD
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA
West Coast Basin
Central Basin
LOS ANGELES FOREBAY
MONTEBELLO FOREBAY
NON-PRESSURE AREA
PRESSURE AREA
WHITTIER AREA
Dominguez Gap Barrier Project
West Coast Barrier Project
Alamitos Gap Barrier Project
N
0 1 2 3 4 5 10 Miles

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.

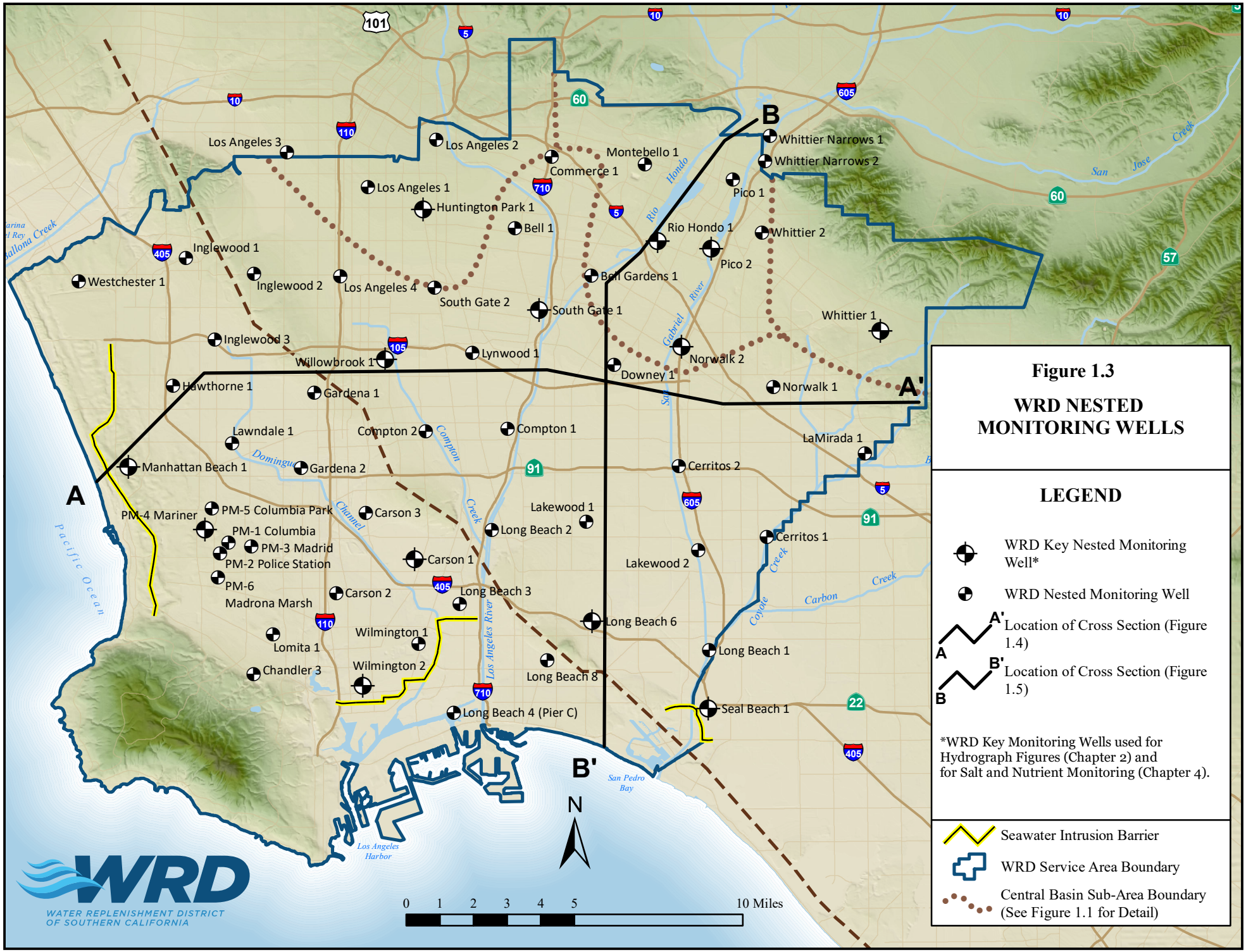
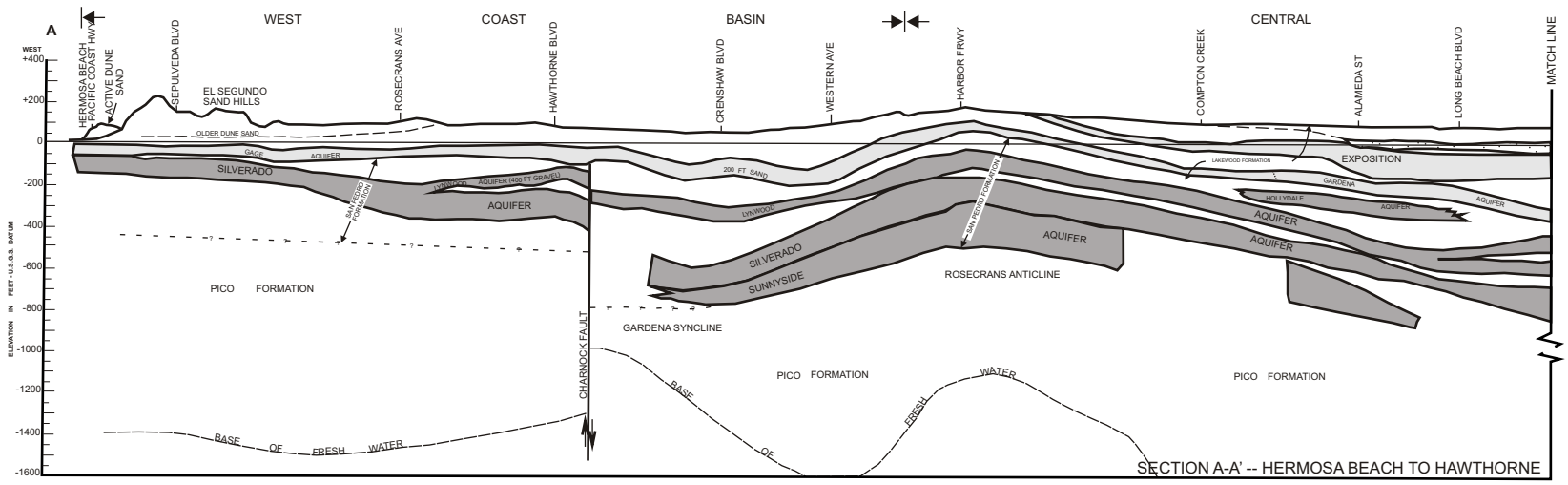
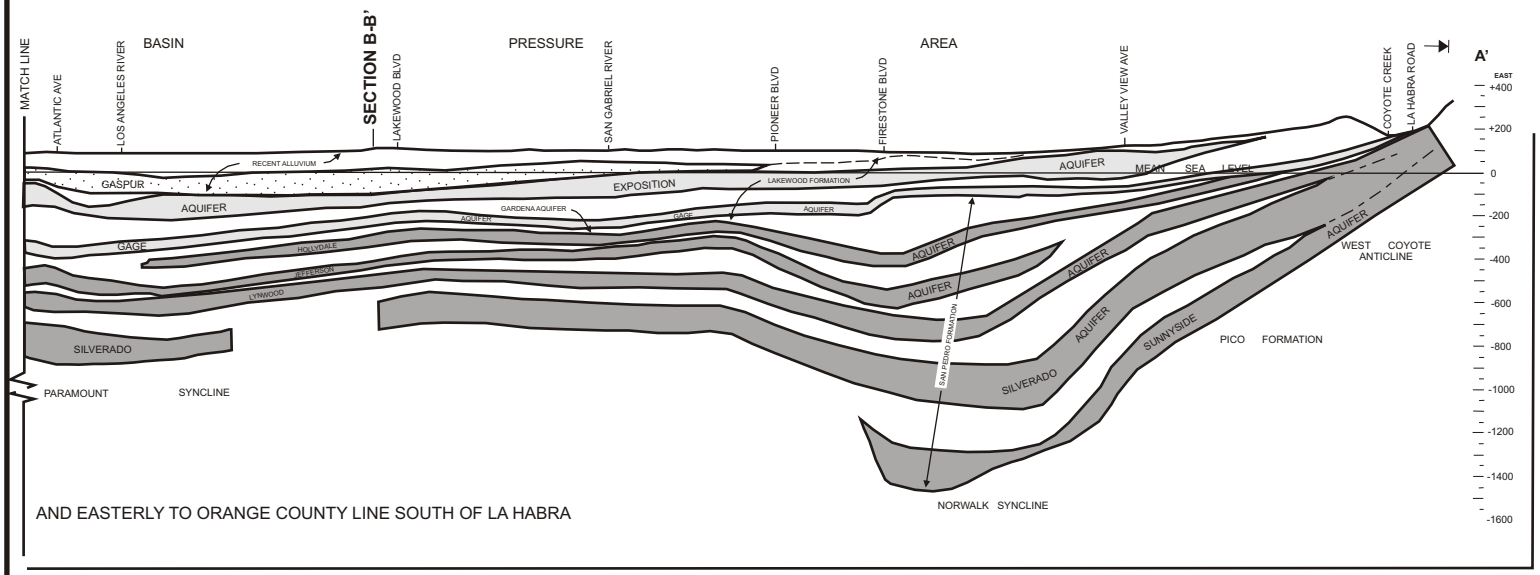


Figure 1.3
WRD NESTED MONITORING WELLS
LEGEND
WRD Key Nested Monitoring Well*
WRD Nested Monitoring Well
Location of Cross Section (Figure 1.4)
Location of Cross Section (Figure 1.5)
*WRD Key Monitoring Wells used for Hydrograph Figures (Chapter 2) and for Salt and Nutrient Monitoring (Chapter 4).
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary (See Figure 1.1 for Detail)
Los Angeles 3
Los Angeles 2
Montebello 1
Commerce 1
Whittier Narrows 1
Whittier Narrows 2
Los Angeles 1
Huntington Park 1
Bell 1
Pico 1
Rio Hondo 1
Whittier 2
Pico 2
Inglewood 1
Westchester 1
Inglewood 2
Los Angeles 4
South Gate 2
South Gate 1
Bell Gardens 1
Whittier 1
Inglewood 3
Willowbrook 1
Lynwood 1
Norwalk 2
Downey 1
Norwalk 1
Hawthorne 1
Gardena 1
Lawndale 1
Compton 2
Compton 1
LaMirada 1
Manhattan Beach 1
Gardena 2
Cerritos 2
PM-4 Mariner
PM-5 Columbia Park
Carson 3
Lakewood 1
PM-1 Columbia
Long Beach 2
Cerritos 1
PM-3 Madrid
PM-2 Police Station
Carson 1
Lakewood 2
PM-6
Madrona Marsh
Carson 2
Long Beach 3
Wilmington 1
Long Beach 6
Lomita 1
Long Beach 1
Chandler 3
Wilmington 2
Long Beach 8
Seal Beach 1
Long Beach 4 (Pier C)
A
A'
B
B'
Pacific Ocean
San Pedro Bay
Los Angeles Harbor
N
0 1 2 3 4 5 10 Miles
WRD
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA



SECTION A-A' -- HERMOSA BEACH TO HAWTHORNE



AND EASTERLY TO ORANGE COUNTY LINE SOUTH OF LA HABRA

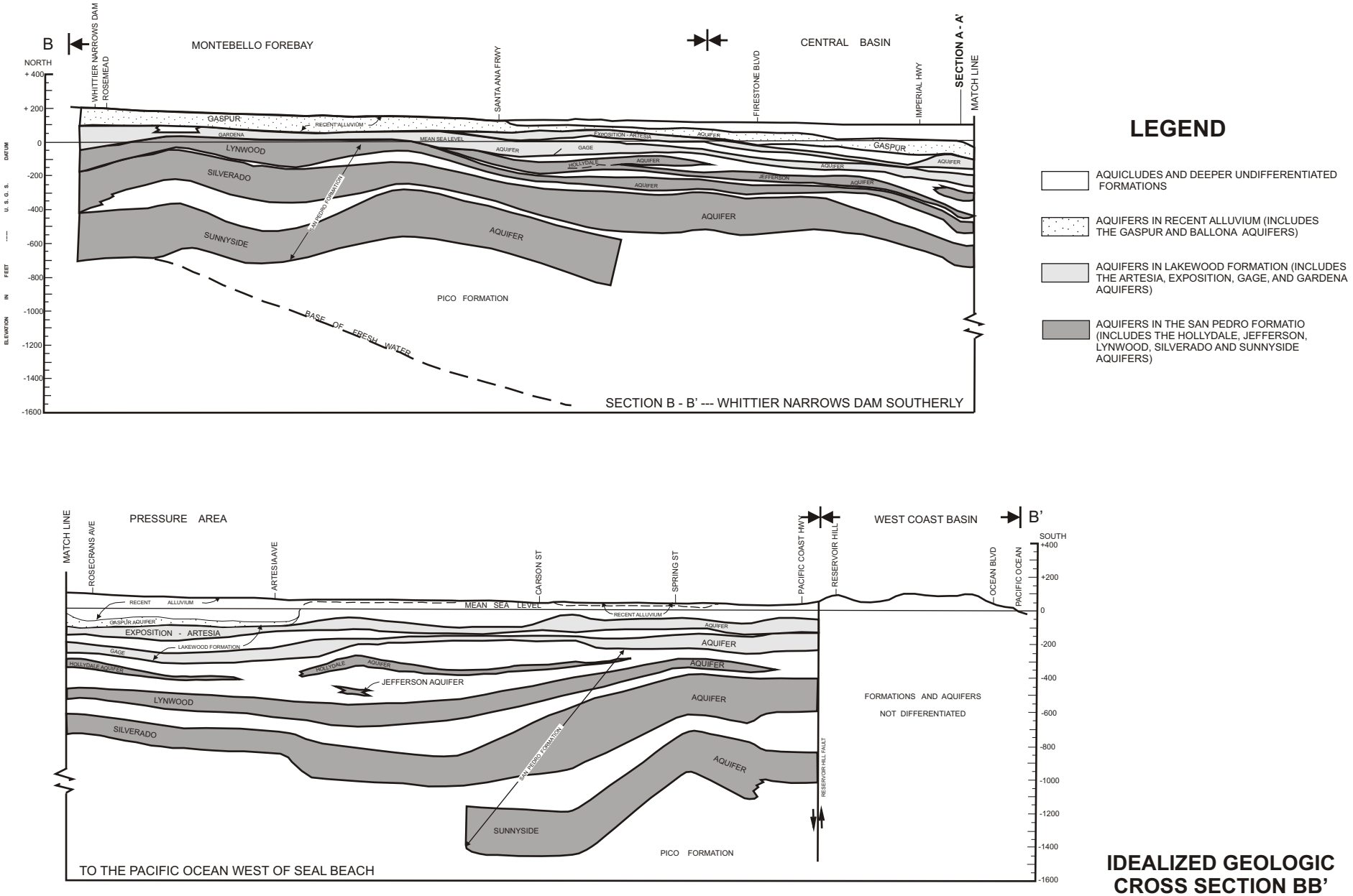
LEGEND

- 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

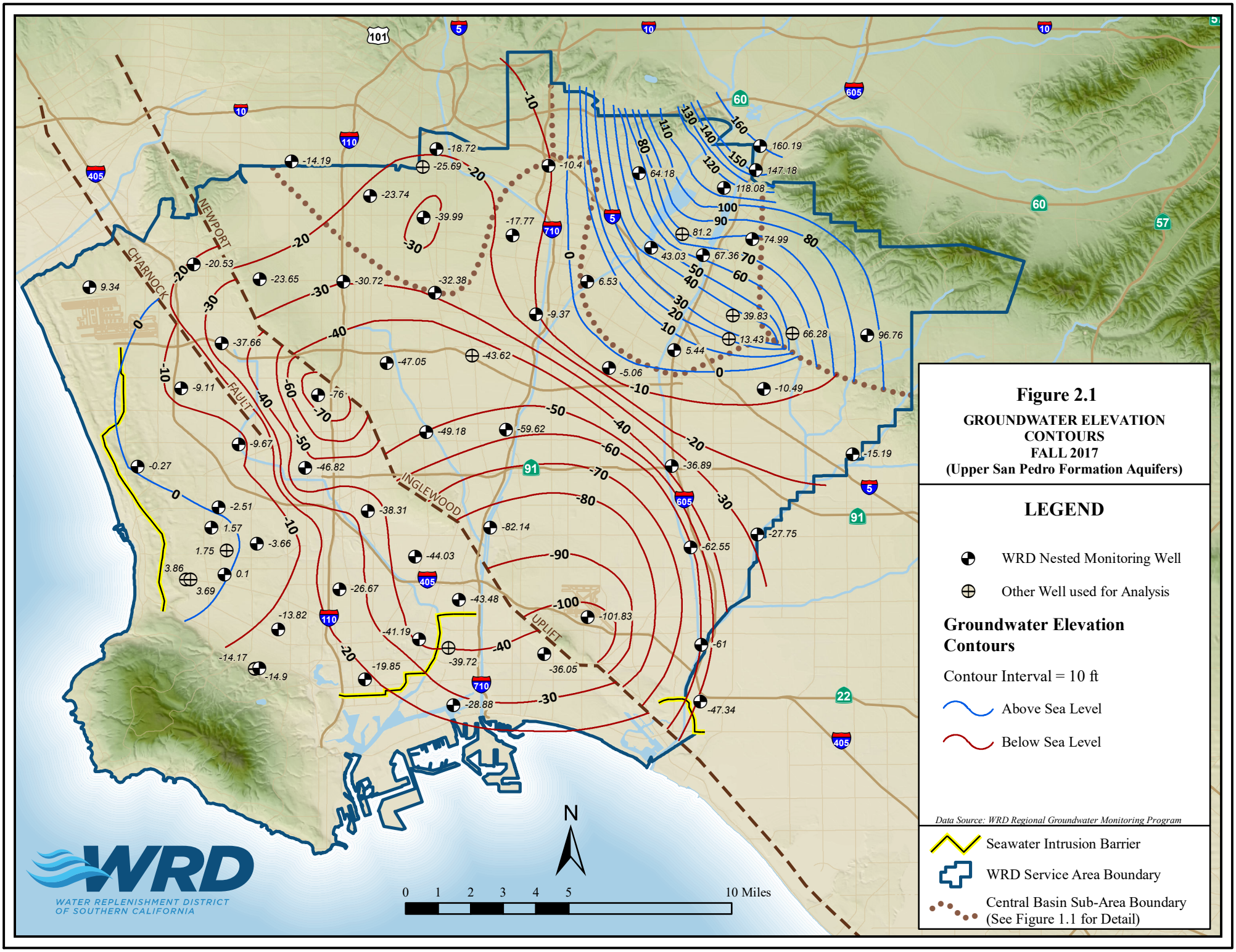


Figure 2.1
GROUNDWATER ELEVATION CONTOURS
FALL 2017
(Upper San Pedro Formation Aquifers)
LEGEND
WRD Nested Monitoring Well
Other Well used for Analysis
Groundwater Elevation Contours
Contour Interval = 10 ft
Above Sea Level
Below Sea Level
Data Source: WRD Regional Groundwater Monitoring Program
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 1.1 for Detail)
NEWPORT
CHARNOCK
FAULT
INGLEWOOD
UPLIFT
N
0 1 2 3 4 5 10 Miles
WRD
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

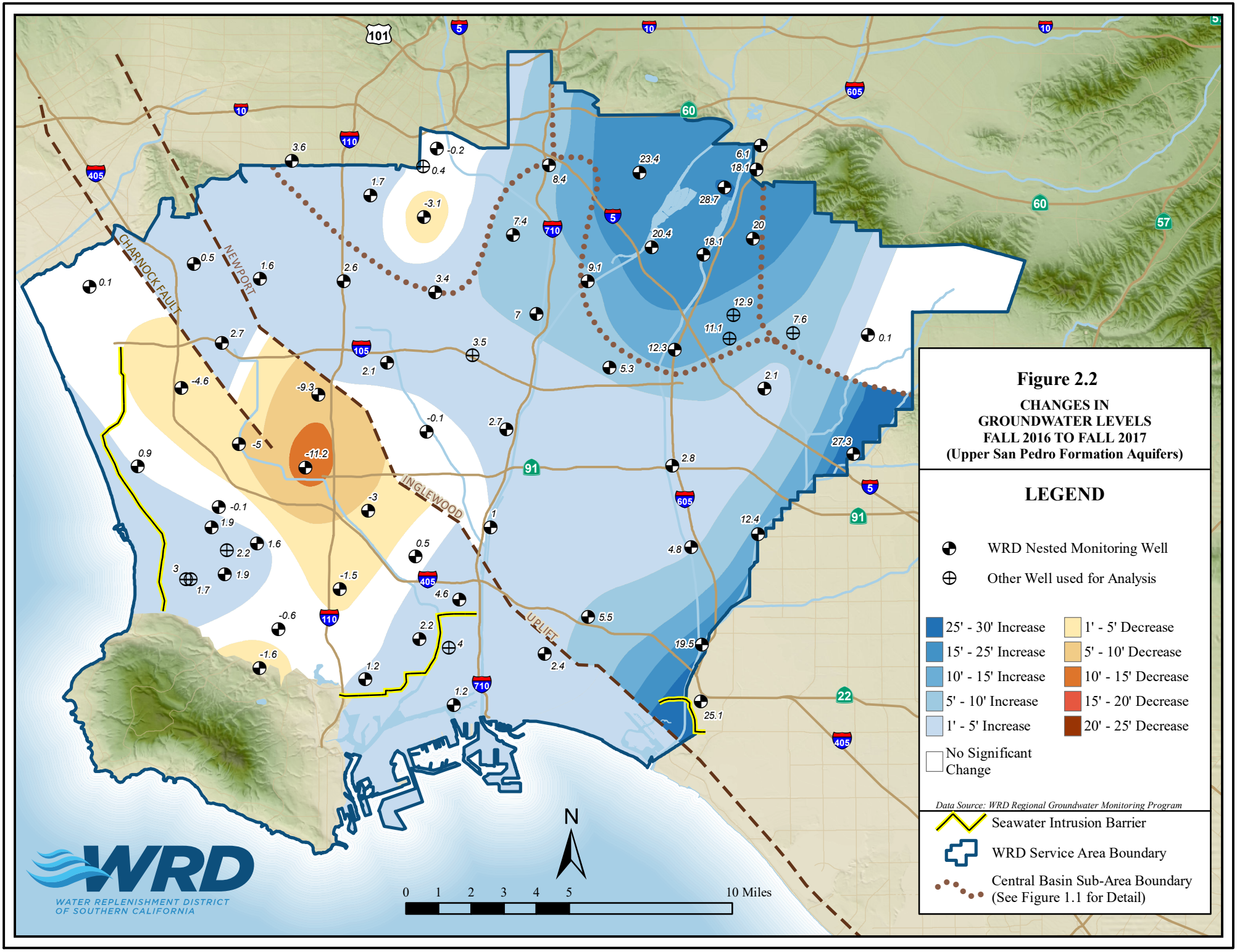


Figure 2.2
CHANGES IN
GROUNDWATER LEVELS
FALL 2016 TO FALL 2017
(Upper San Pedro Formation Aquifers)
LEGEND
WRD Nested Monitoring Well
Other Well used for Analysis
25' - 30' Increase
15' - 25' Increase
10' - 15' Increase
5' - 10' Increase
1' - 5' Increase
No Significant Change
1' - 5' Decrease
5' - 10' Decrease
10' - 15' Decrease
15' - 20' Decrease
20' - 25' Decrease
Data Source: WRD Regional Groundwater Monitoring Program
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 1.1 for Detail)
CHARNOCK FAULT
NEWPORT
INGLEWOOD
UPLIFT
N
0 1 2 3 4 5 10 Miles
WRD
WATER REPLENISHMENT DISTRICT
OF SOUTHERN CALIFORNIA

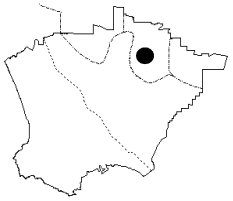
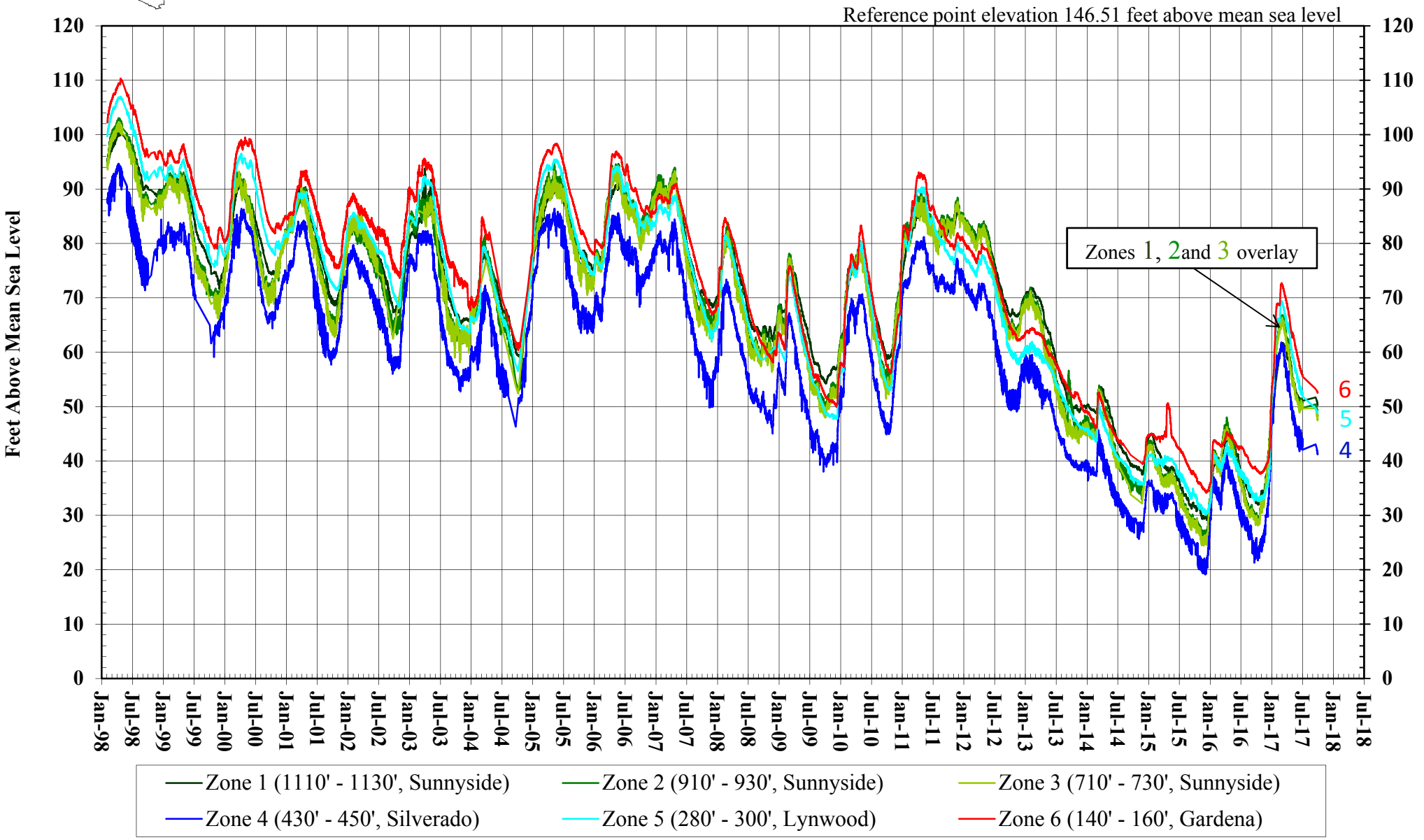


FIGURE 2.3
WATER LEVELS IN WRD KEY NESTED MONITORING WELL RIO HONDO #1



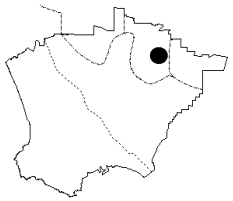
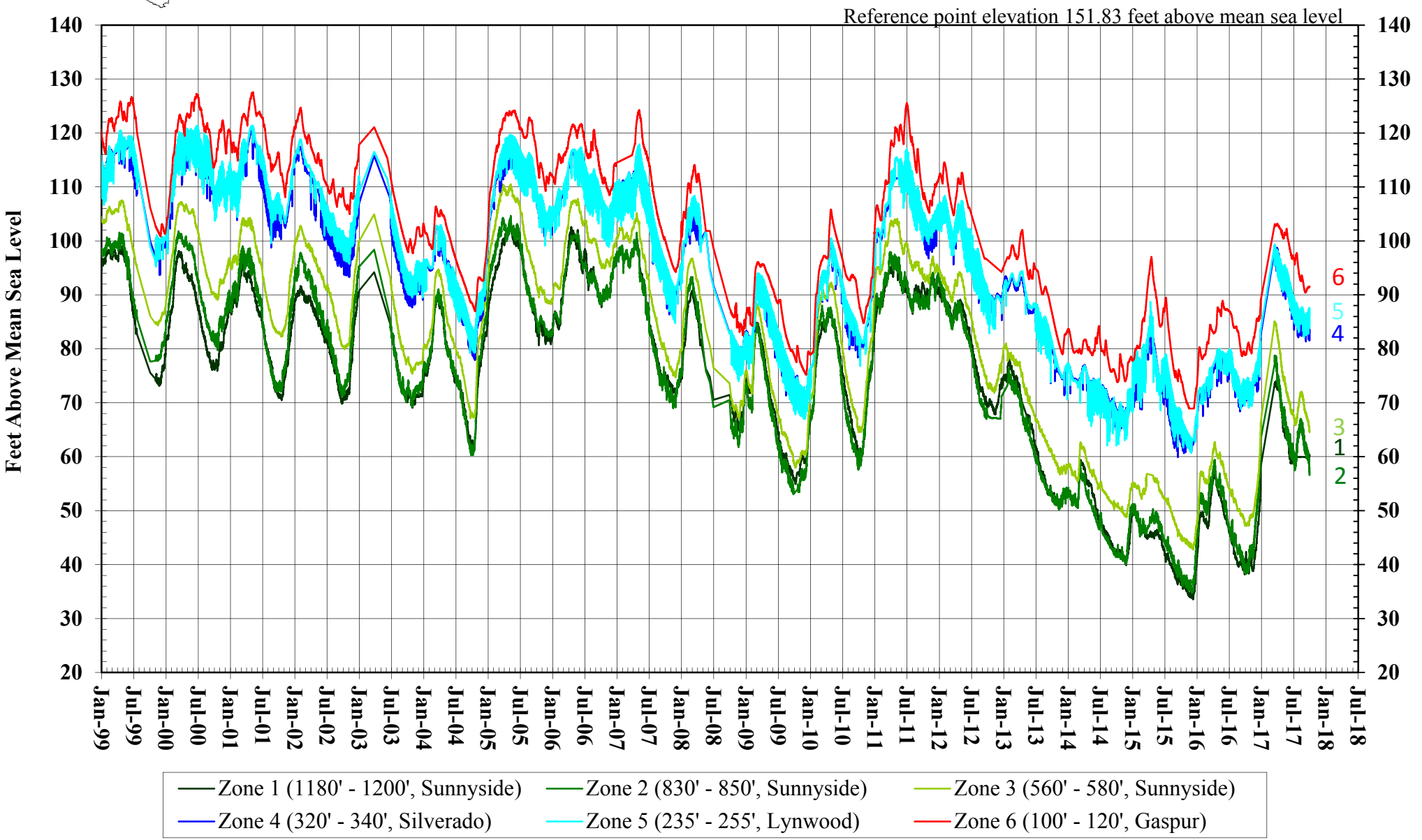


FIGURE 2.4
WATER LEVELS IN WRD KEY NESTED MONITORING WELL PICO #2



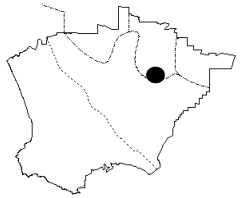


FIGURE 2.5
WATER LEVELS IN WRD KEY NESTED MONITORING WELL NORWALK #2

Reference point elevation 116.73 feet above mean sea level

Feet Above Mean Sea Level

80 70 60 50 40 30 20 10 0 -10 -20 -30

Jan-06 Jul-06 Jan-07 Jul-07 Jan-08 Jul-08 Jan-09 Jul-09 Jan-10 Jul-10 Jan-11 Jul-11 Jan-12 Jul-12 Jan-13 Jul-13 Jan-14 Jul-14 Jan-15 Jul-15 Jan-16 Jul-16 Jan-17 Jul-17 Jan-18 Jul-18

6
5
4
3

Zones 1 and 2 overlay

Zone 1 (1460 - 1480', Sunnyside)
Zone 2 (1260 - 1280', Sunnyside)
Zone 3 (960 - 980', Silverado)
Zone 4 (800 - 820', Lynwood)
Zone 5 (480 - 500', Gardena)
Zone 6 (236 - 256', Exposition)

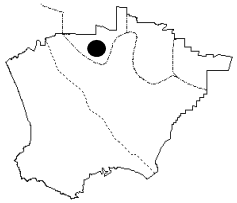
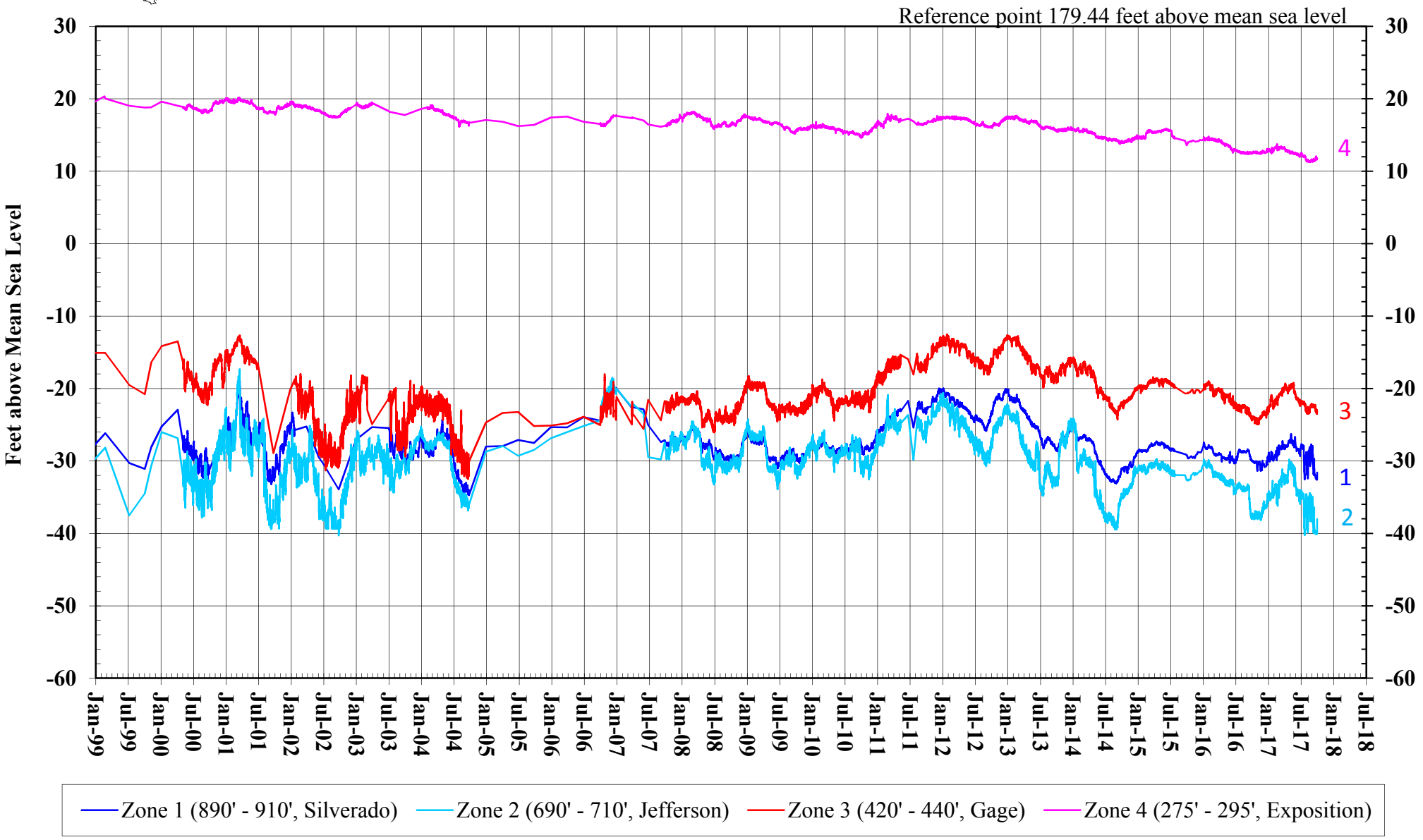


FIGURE 2.6
WATER LEVELS IN WRD KEY NESTED MONITORING WELL HUNTINGTON PARK #1



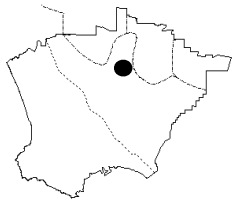


FIGURE 2.7
WATER LEVELS IN WRD KEY NESTED MONITORING WELL SOUTH GATE #1

Reference point elevation 102.50 feet above mean sea level

Feet Above Mean Sea Level

60 50 40 30 20 10 0 -10 -20 -30 -40

Jan-99 Jul-99 Jan-00 Jul-00 Jan-01 Jul-01 Jan-02 Jul-02 Jan-03 Jul-03 Jan-04 Jul-04 Jan-05 Jul-05 Jan-06 Jul-06 Jan-07 Jul-07 Jan-08 Jul-08 Jan-09 Jul-09 Jan-10 Jul-10 Jan-11 Jul-11 Jan-12 Jul-12 Jan-13 Jul-13 Jan-14 Jul-14 Jan-15 Jul-15 Jan-16 Jul-16 Jan-17 Jul-17 Jan-18 Jul-18

5

3
2
4
1

Zone 1 (1440' - 1460', Pico Formation)
Zone 2 (1320' - 1340', Sunnyside)
Zone 3 (910' - 930', Silverado)
Zone 4 (565' - 585', Lynwood)
Zone 5 (220' - 240', Exposition)

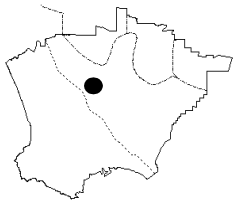
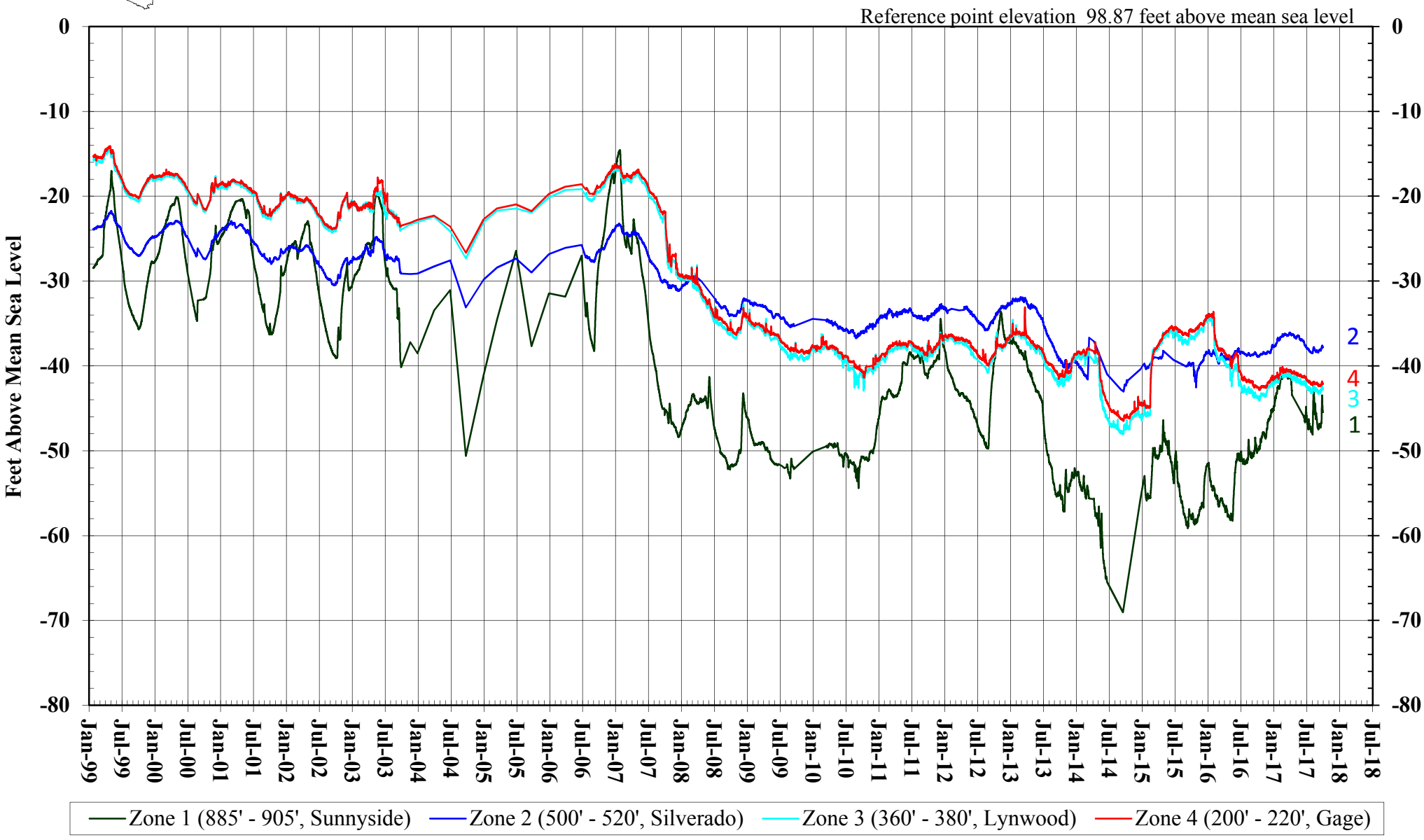


FIGURE 2.8
WATER LEVELS IN WRD KEY NESTED MONITORING WELL WILLOWBROOK #1



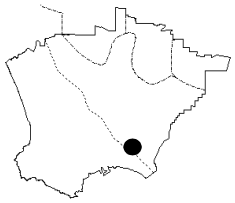
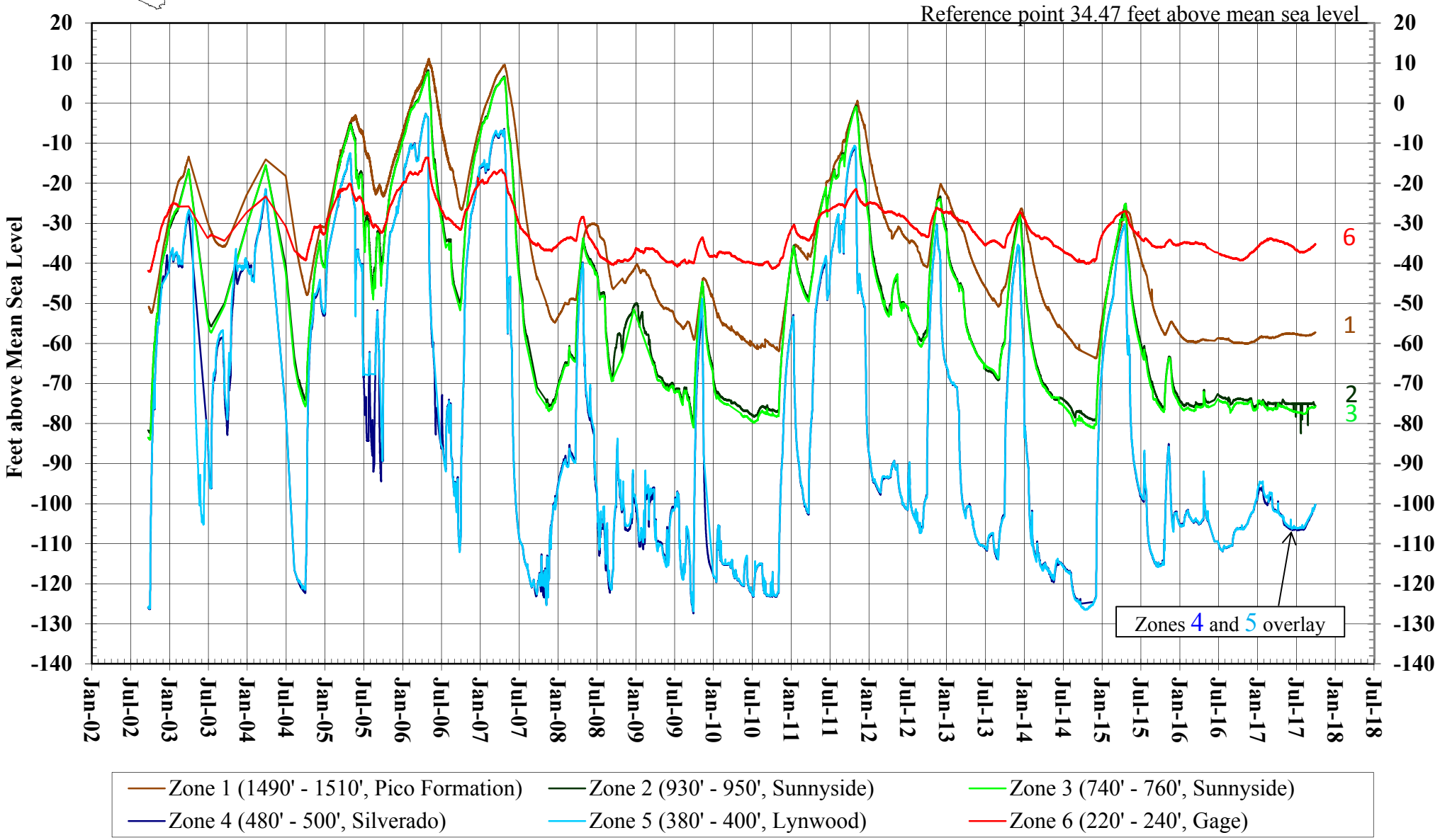


FIGURE 2.9
WATER LEVELS IN WRD KEY NESTED MONITORING WELL LONG BEACH #6



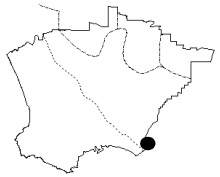
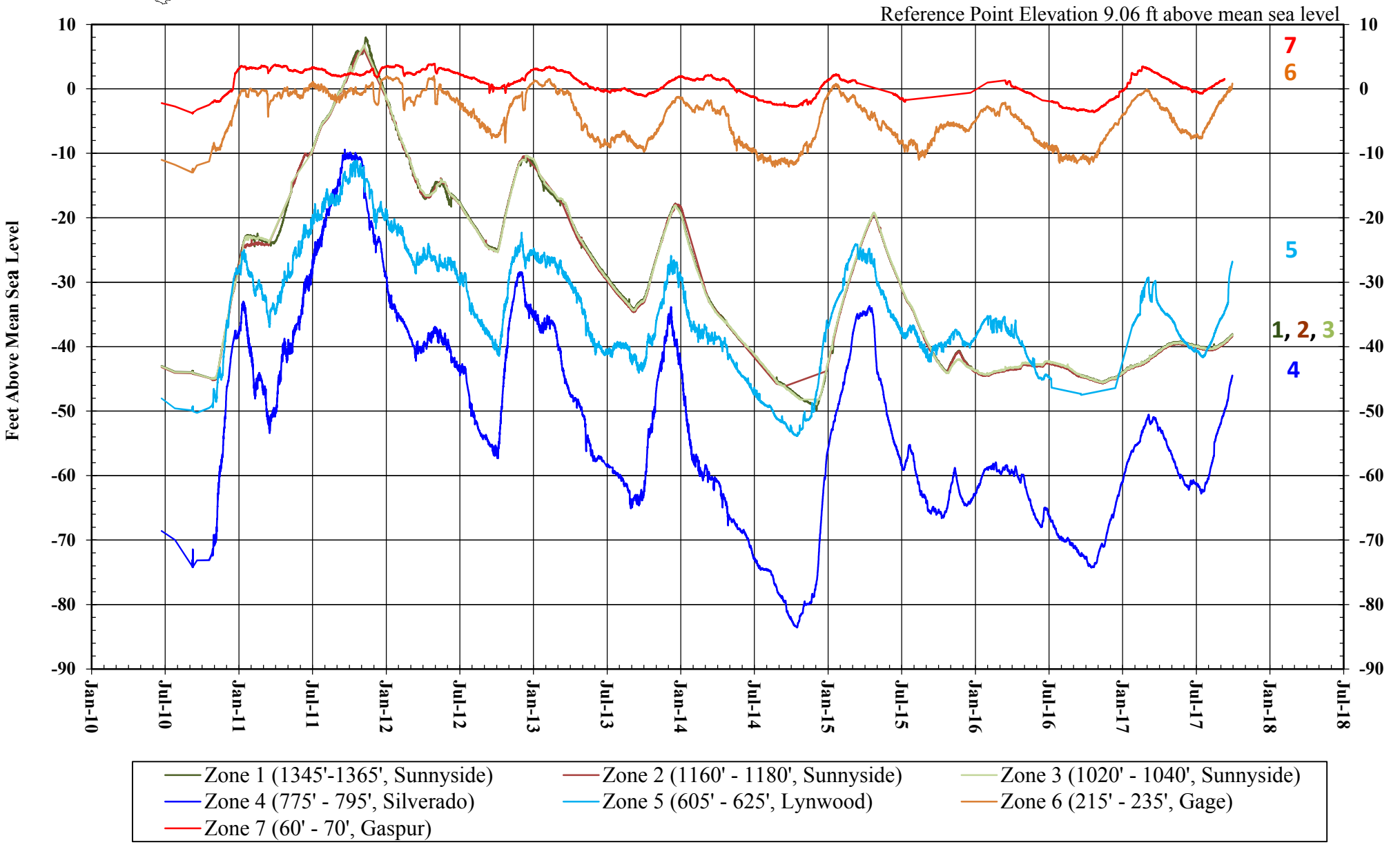


FIGURE 2.10
WATER LEVELS IN WRD KEY NESTED MONITORING WELL SEAL BEACH #1



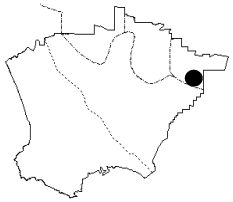
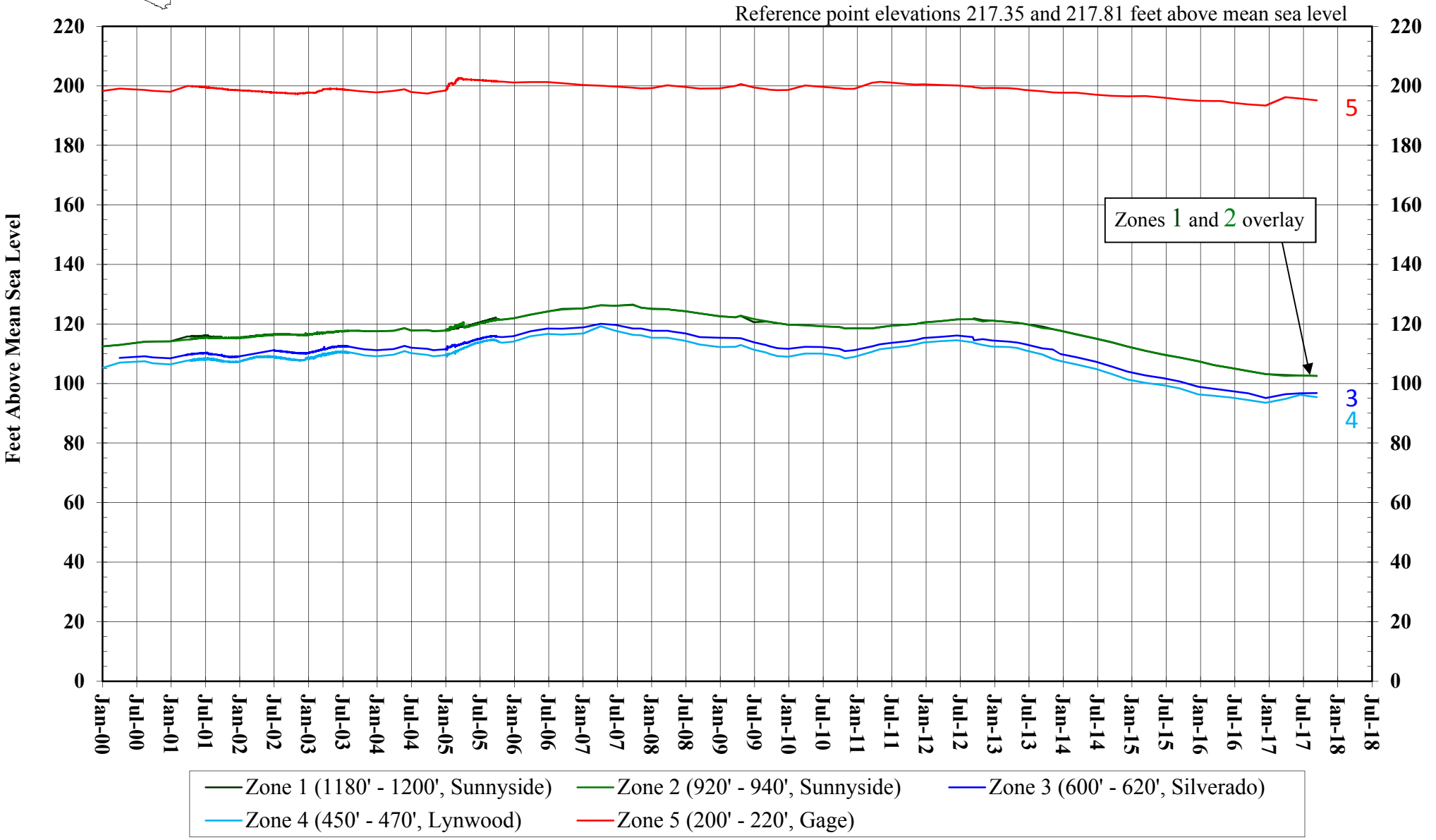


FIGURE 2.11
WATER LEVELS IN WRD KEY NESTED MONITORING WELL WHITTIER #1



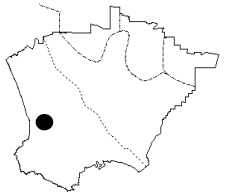
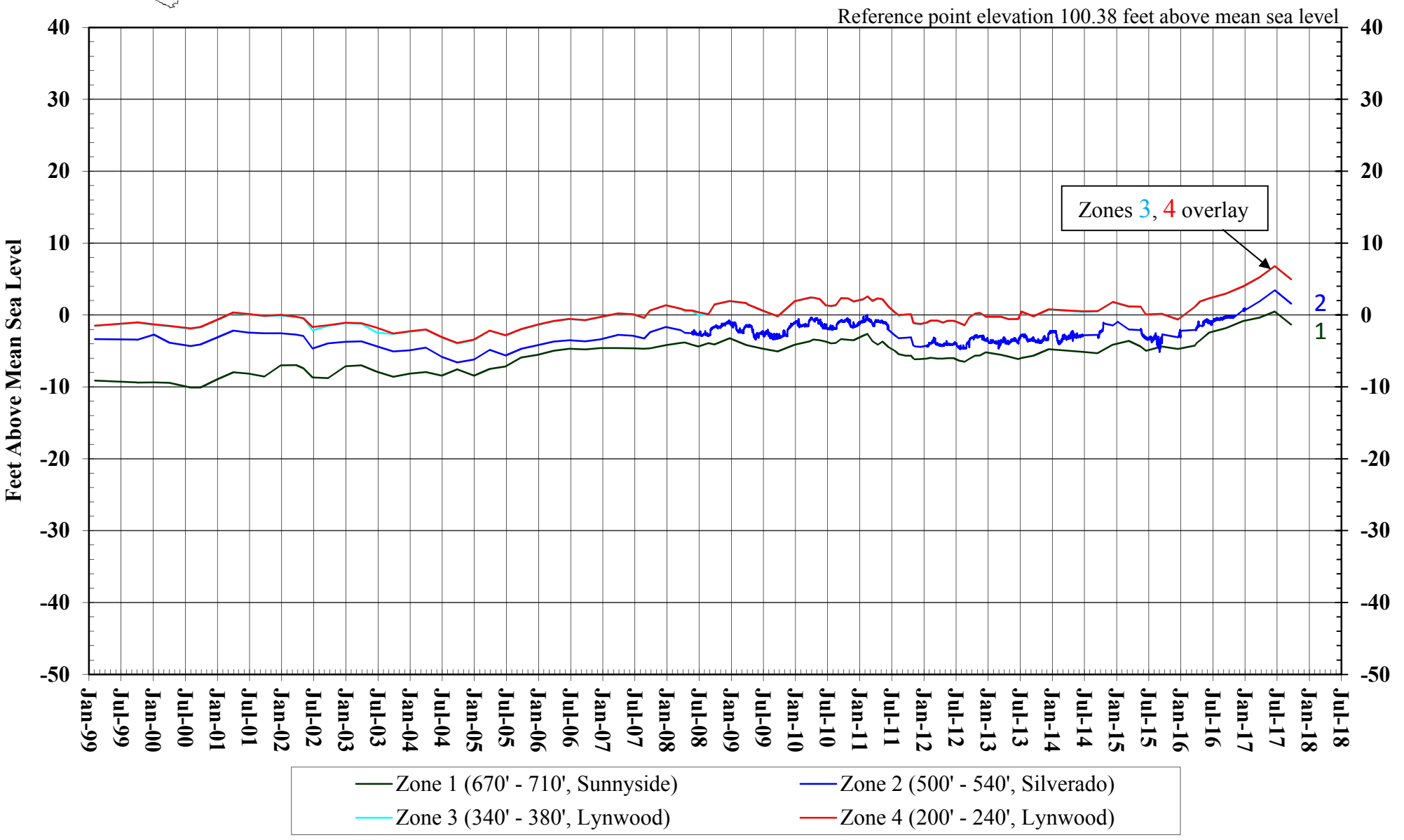


FIGURE 2.12
WATER LEVELS IN WRD NESTED MONITORING WELL PM-4 MARINER



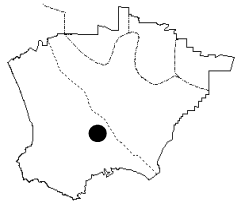
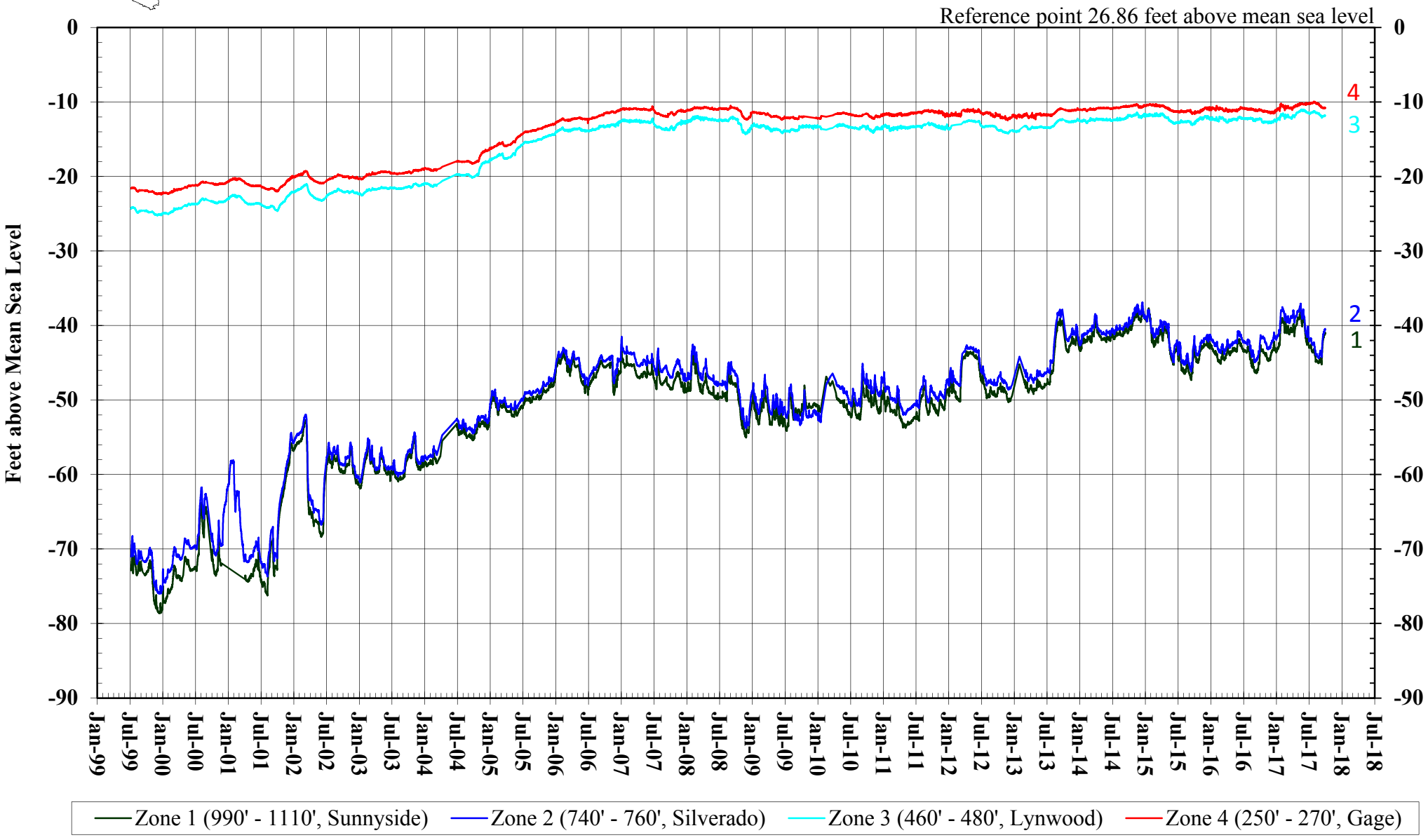


FIGURE 2.13
WATER LEVELS IN WRD KEY NESTED MONITORING WELL CARSON #1



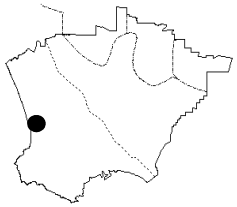
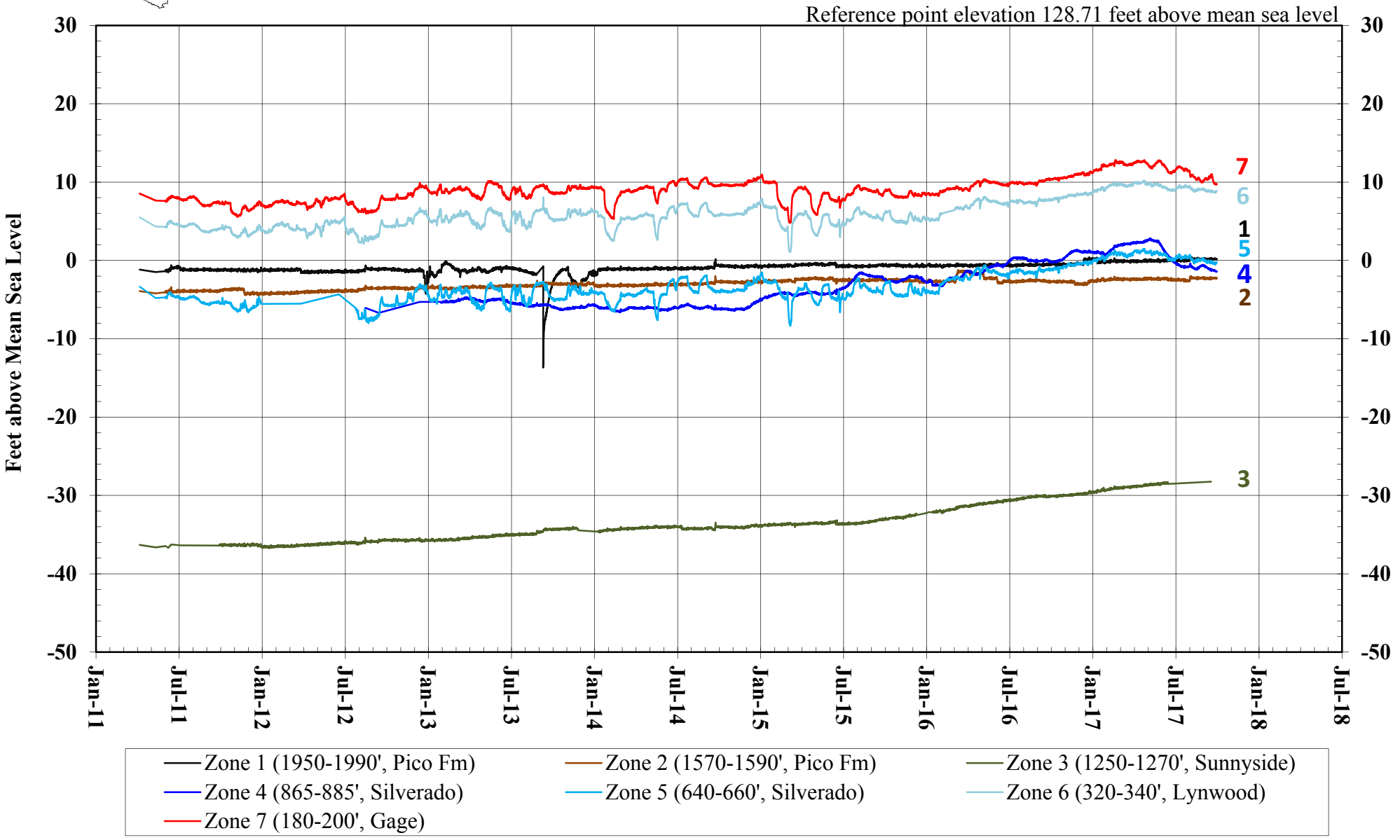


FIGURE 2.14
WATER LEVELS IN WRD KEY NESTED MONITORING WELL MANHATTAN BEACH #1



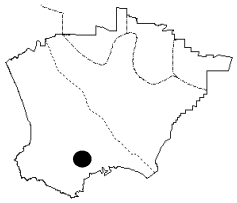
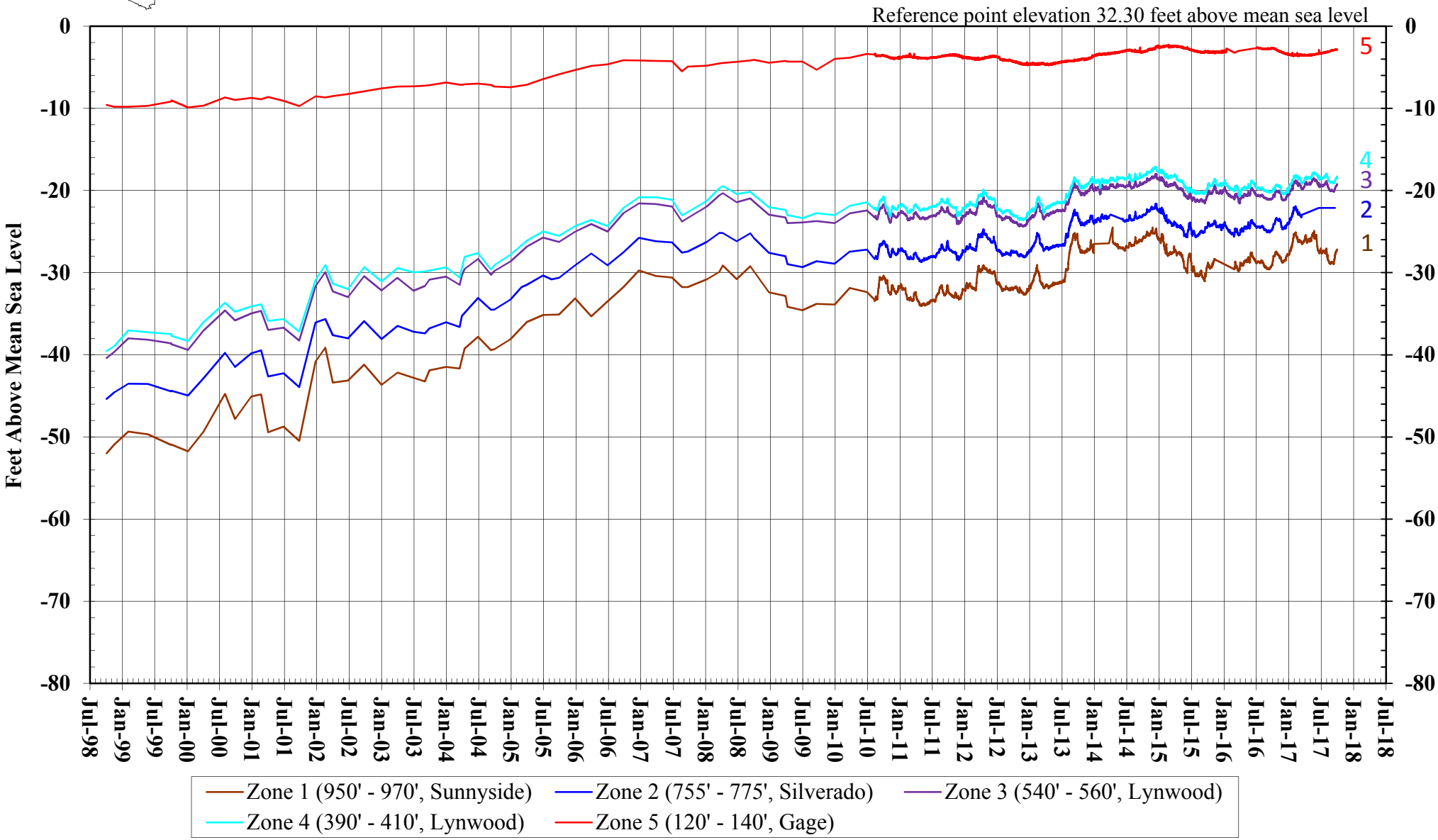


FIGURE 2.15
WATER LEVELS IN WRD KEY NESTED MONITORING WELL WILMINGTON #2



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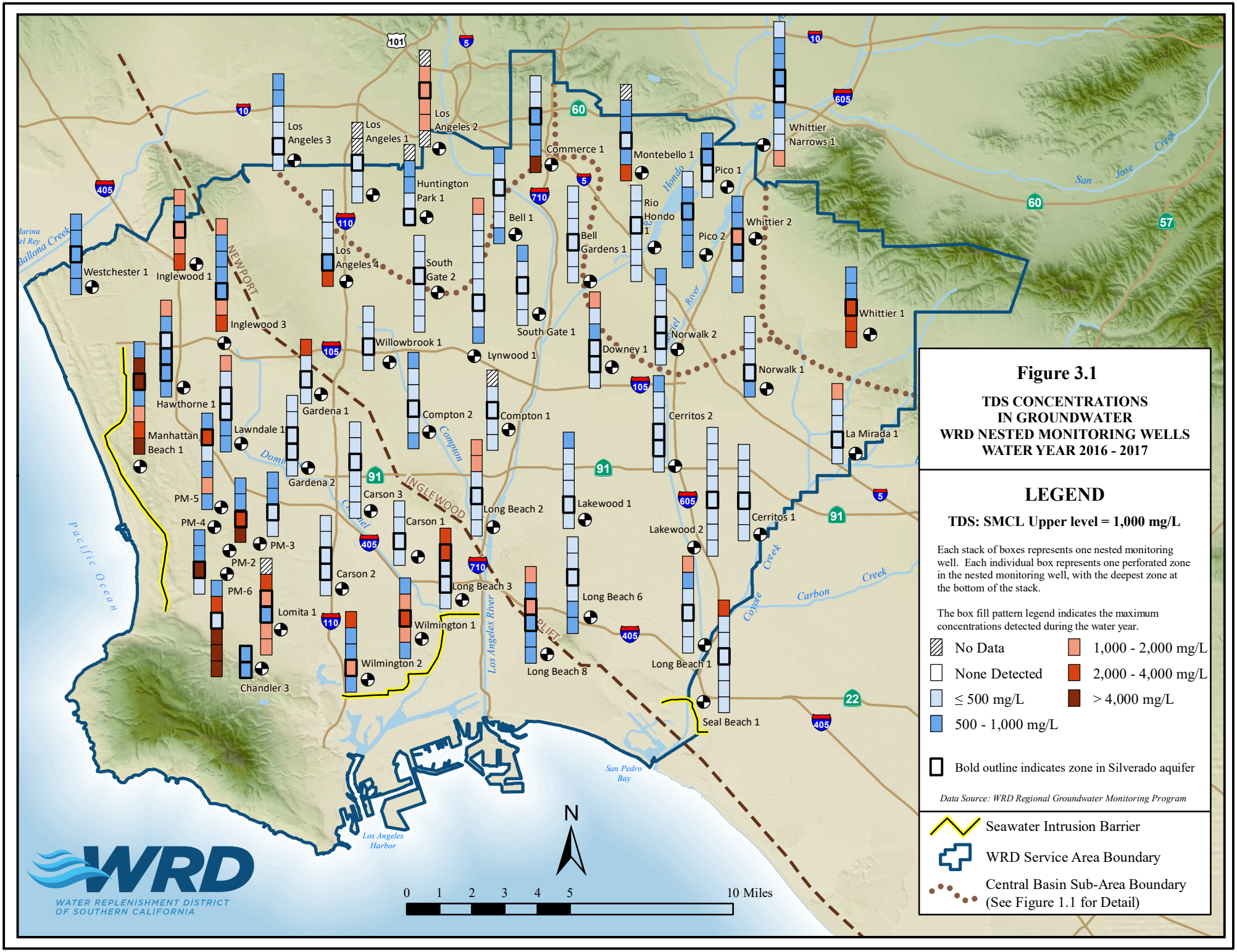


Figure 3.1
TDS CONCENTRATIONS
IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2016 - 2017
LEGEND
TDS: SMCL Upper level = 1,000 mg/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone 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 - 4,000 mg/L
> 4,000 mg/L
Bold outline indicates zone in Silverado aquifer
Data Source: WRD Regional Groundwater Monitoring Program
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 1.1 for Detail)
Los Angeles 3
Los Angeles 1
Los Angeles 2
Commerce 1
Montebello 1
Whittier Narrows 1
Huntington Park 1
Bell 1
Bell Gardens 1
Rio Hondo 1
Pico 1
Pico 2
Whittier 2
Whittier 1
Westchester 1
Inglewood 1
Inglewood 3
Los Angeles 4
South Gate 2
South Gate 1
Willowbrook 1
Lynwood 1
Downey 1
Norwalk 2
Norwalk 1
Hawthorne 1
Gardena 1
Gardena 2
Compton 2
Compton 1
Cerritos 2
La Mirada 1
Manhattan Beach 1
Lawndale 1
Carson 3
Carson 1
Carson 2
Long Beach 2
Lakewood 1
Lakewood 2
Cerritos 1
PM-5
PM-4
PM-3
PM-2
PM-6
Lomita 1
Chandler 3
Wilmington 1
Wilmington 2
Long Beach 3
Long Beach 8
Long Beach 6
Long Beach 1
Seal Beach 1
NEWPORT
INGLEWOOD
ALIFT
Pacific Ocean
San Pedro Bay
Los Angeles Harbor
Los Angeles River
Coyote Creek
Carbon Creek
San Jose Creek
Rio Hondo
Compton
Dominguez
Marina del Rey
Ballona Creek
N
0 1 2 3 4 5 10 Miles
WRD
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

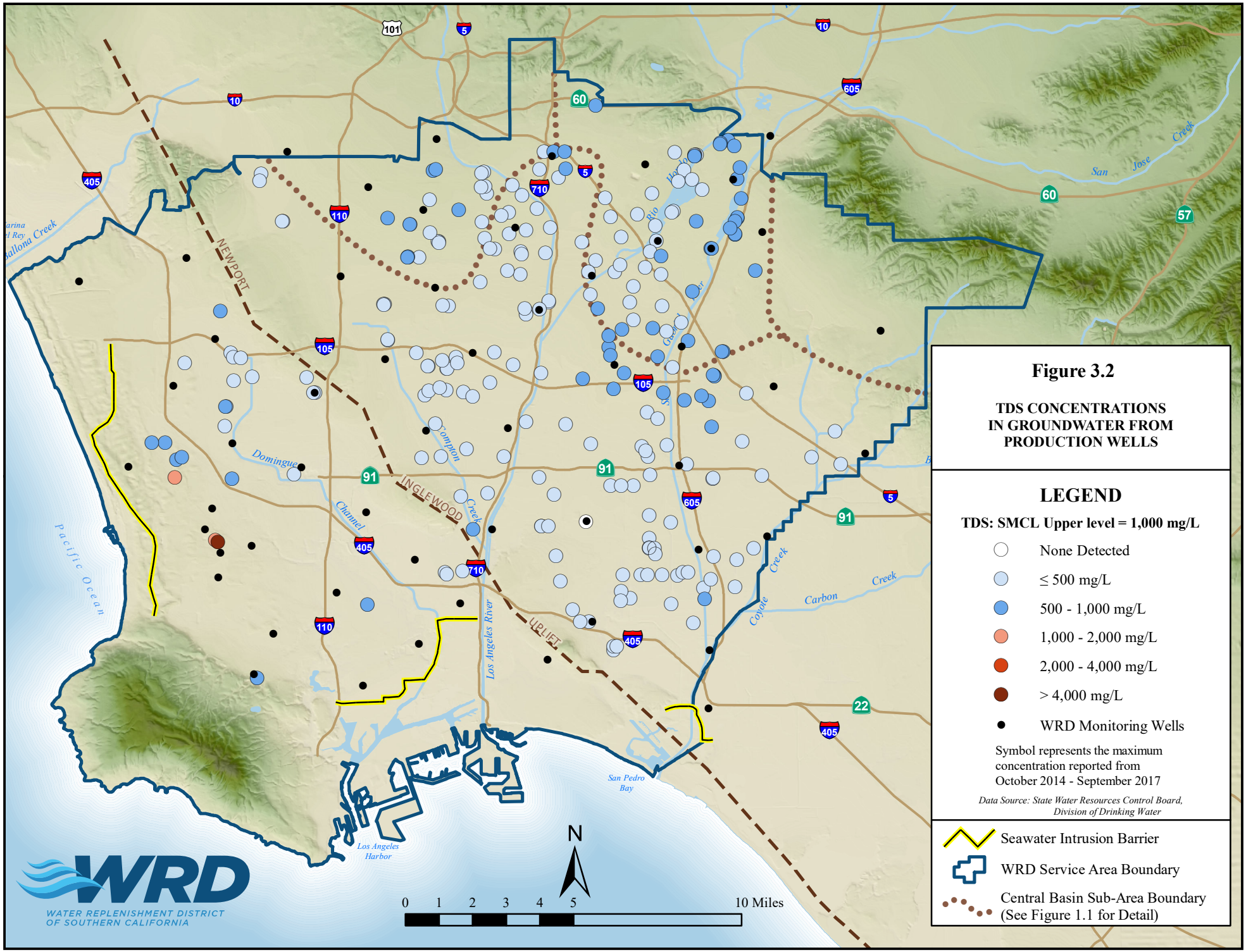


Figure 3.2
TDS CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
TDS: SMCL Upper level = 1,000 mg/L
None Detected
≤ 500 mg/L
500 - 1,000 mg/L
1,000 - 2,000 mg/L
2,000 - 4,000 mg/L
> 4,000 mg/L
WRD Monitoring Wells
Symbol represents the maximum concentration reported from October 2014 - September 2017
Data Source: State Water Resources Control Board, Division of Drinking Water
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary (See Figure 1.1 for Detail)
NEWPORT
INGLEWOOD
UPLIFT
Los Angeles River
Compton Creek
Dominguez Channel
Coyote Creek
Carbon Creek
San Jose Creek
Pacific Ocean
San Pedro Bay
Los Angeles Harbor
N
0 1 2 3 4 5 10 Miles
WRD
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

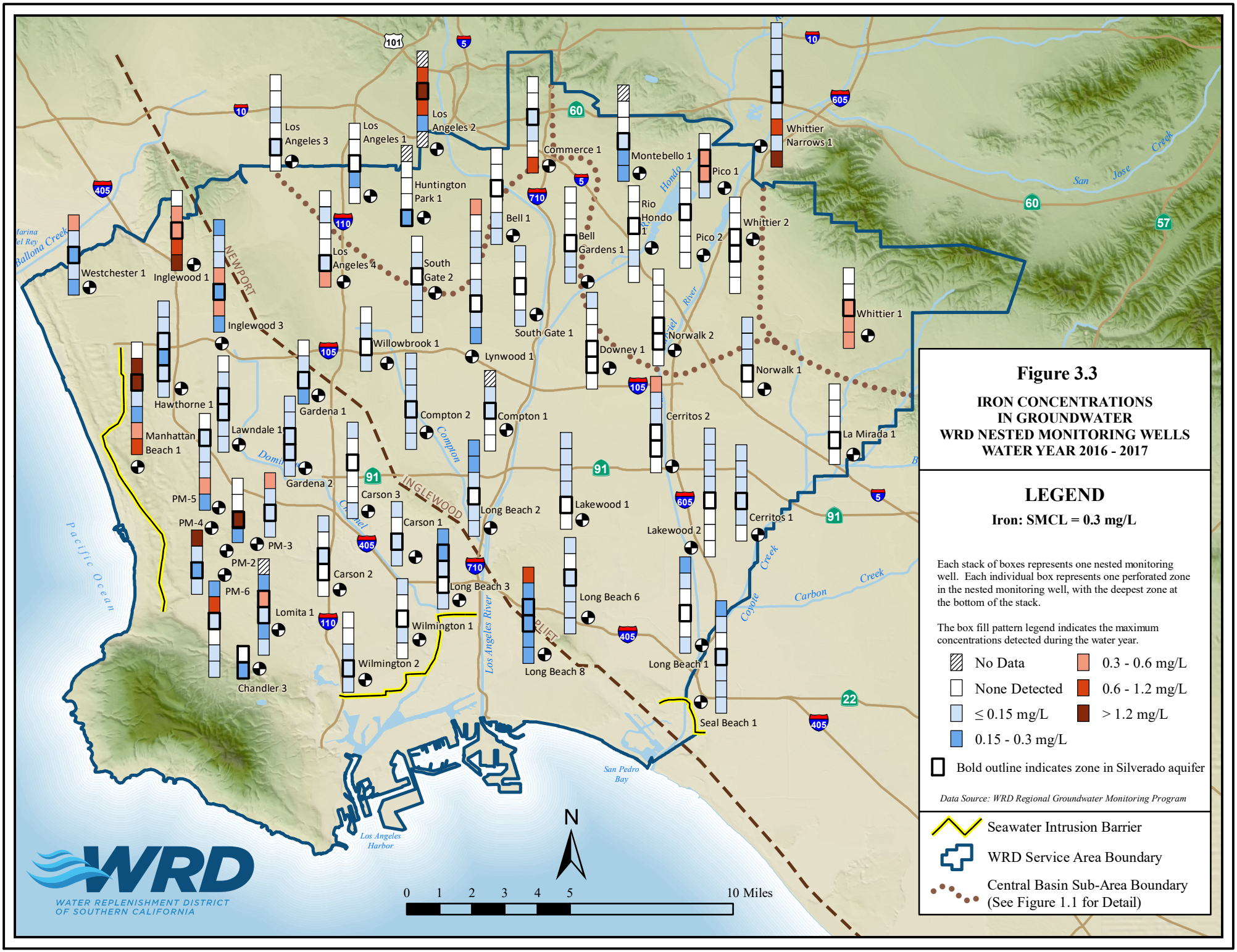


Figure 3.3
IRON CONCENTRATIONS
IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2016 - 2017
LEGEND
Iron: SMCL = 0.3 mg/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.
The box fill pattern legend indicates the maximum concentrations detected during the water year.
No Data
None Detected
≤ 0.15 mg/L
0.15 - 0.3 mg/L
0.3 - 0.6 mg/L
0.6 - 1.2 mg/L
> 1.2 mg/L
Bold outline indicates zone in Silverado aquifer
Data Source: WRD Regional Groundwater Monitoring Program
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 1.1 for Detail)
Los Angeles 3
Los Angeles 1
Los Angeles 2
Commerce 1
Montebello 1
Whittier Narrows 1
Huntington Park 1
Pico 1
Rio Hondo 1
Pico 2
Whittier 2
Bell 1
Bell Gardens 1
Los Angeles 4
South Gate 2
Westchester 1
Inglewood 1
Inglewood 3
Whittier 1
Willowbrook 1
South Gate 1
Lynwood 1
Downey 1
Norwalk 2
Norwalk 1
Hawthorne 1
Gardena 1
Compton 2
Compton 1
Cerritos 2
La Mirada 1
Manhattan Beach 1
Lawndale 1
Gardena 2
PM-5
PM-4
PM-3
PM-2
PM-6
Carson 3
Carson 1
Long Beach 2
Lakewood 1
Lakewood 2
Cerritos 1
Carson 2
Long Beach 3
Long Beach 6
Lomita 1
Wilmington 1
Long Beach 8
Long Beach 1
Wilmington 2
Chandler 3
Seal Beach 1
NEWPORT
INGLEWOOD
COMPTON
ARTESIA
Los Angeles River
Pacific Ocean
San Pedro Bay
Los Angeles Harbor
Coyote Creek
Carbon Creek
San Jose Creek
Rio Hondo
Ballona Creek
Marina del Rey
0 1 2 3 4 5 10 Miles
N
WRD
WATER REPLENISHMENT DISTRICT
OF SOUTHERN CALIFORNIA

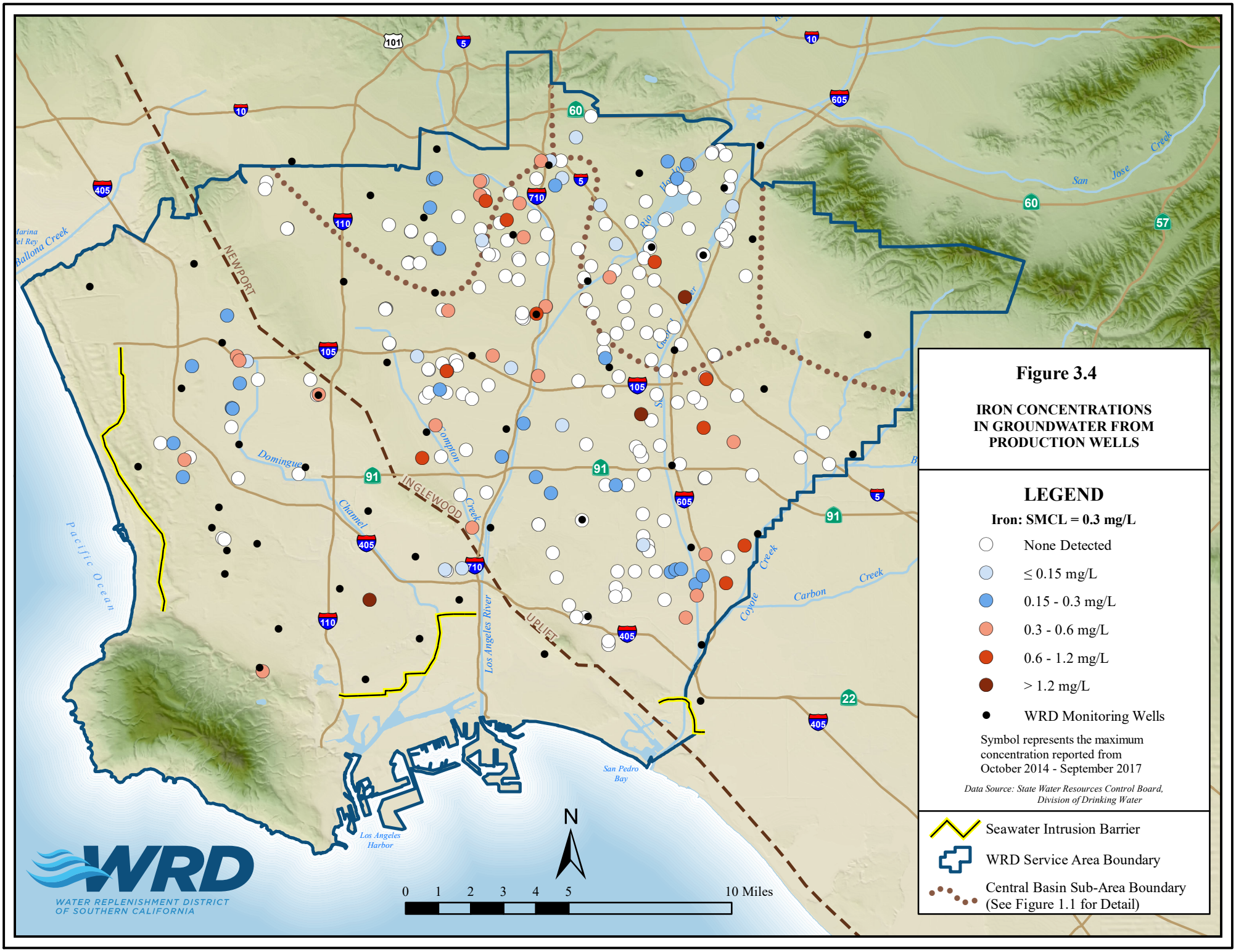


Figure 3.4
IRON CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
Iron: SMCL = 0.3 mg/L
None Detected
≤ 0.15 mg/L
0.15 - 0.3 mg/L
0.3 - 0.6 mg/L
0.6 - 1.2 mg/L
> 1.2 mg/L
WRD Monitoring Wells
Symbol represents the maximum concentration reported from October 2014 - September 2017
Data Source: State Water Resources Control Board, Division of Drinking Water
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary (See Figure 1.1 for Detail)
WRD
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA
N
0 1 2 3 4 5 10 Miles
Pacific Ocean
Los Angeles Harbor
San Pedro Bay
Los Angeles River
Dominguez Channel
Compton Creek
Coyote Creek
Carbon Creek
San Jose Creek
Ballona Creek
NEWPORT
INGLEWOOD
UPLIFT

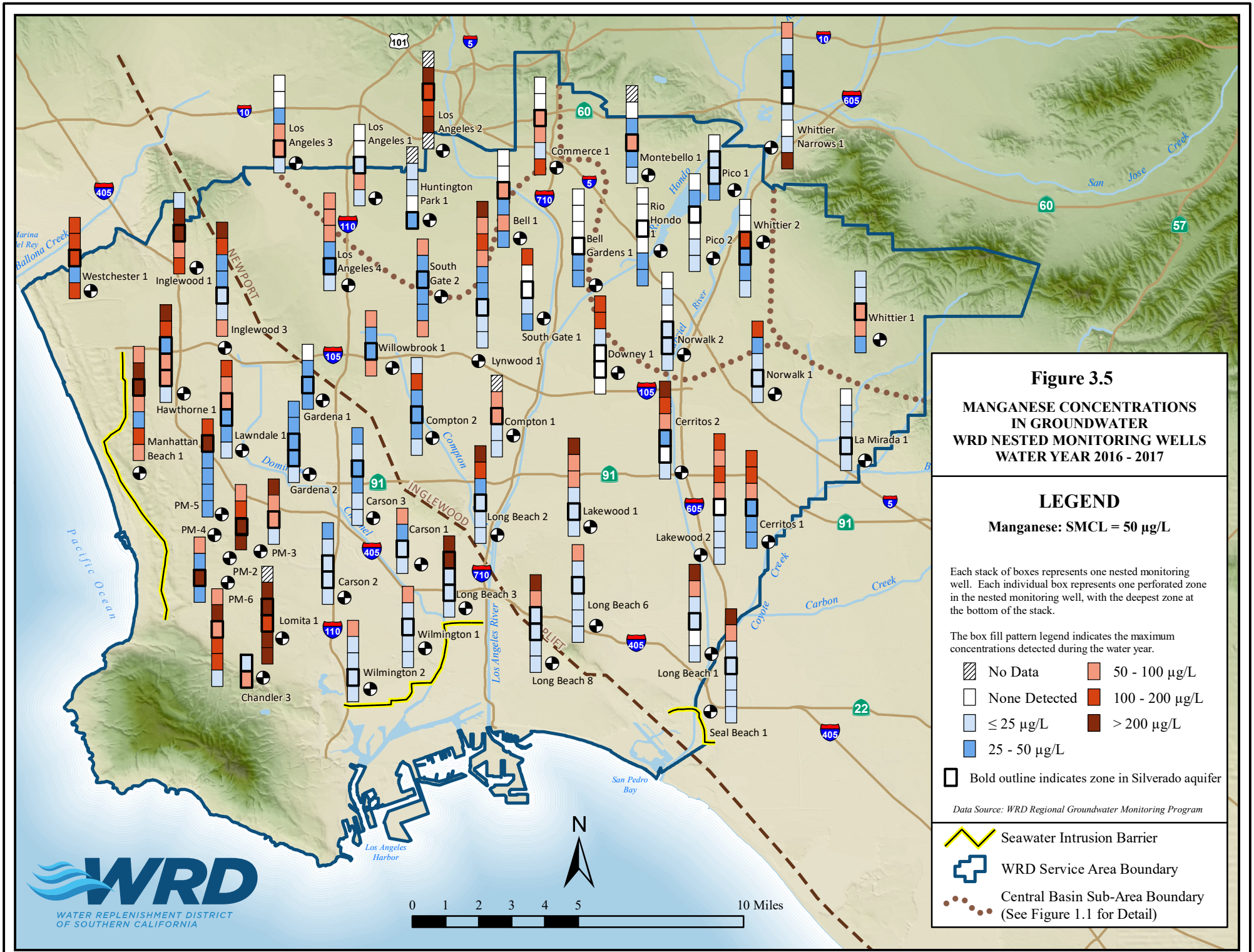


Figure 3.5
MANGANESE CONCENTRATIONS IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2016 - 2017
LEGEND
Manganese: SMCL = 50 µg/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.
The box fill pattern legend indicates the maximum concentrations detected during the water year.
No Data
None Detected
≤ 25 µg/L
25 - 50 µg/L
50 - 100 µg/L
100 - 200 µg/L
> 200 µg/L
Bold outline indicates zone in Silverado aquifer
Data Source: WRD Regional Groundwater Monitoring Program
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 1.1 for Detail)
Los Angeles 3
Los Angeles 1
Los Angeles 2
Commerce 1
Montebello 1
Whittier Narrows 1
Huntington Park 1
Bell 1
Bell Gardens 1
Rio Hondo 1
Pico 1
Pico 2
Whittier 2
Whittier 1
Westchester 1
Inglewood 1
Inglewood 3
Los Angeles 4
South Gate 2
South Gate 1
Willowbrook 1
Lynwood 1
Downey 1
Norwalk 2
Norwalk 1
Hawthorne 1
Gardena 1
Gardena 2
Compton 2
Compton 1
Cerritos 2
La Mirada 1
Manhattan Beach 1
Lawndale 1
PM-5
PM-4
PM-3
PM-2
PM-6
Carson 3
Carson 1
Carson 2
Long Beach 2
Lakewood 1
Lakewood 2
Cerritos 1
Lomita 1
Wilmington 1
Wilmington 2
Long Beach 3
Long Beach 6
Long Beach 8
Long Beach 1
Chandler 3
Seal Beach 1
NEWPORT
INGLEWOOD
ALAMITOS
Los Angeles River
Coyote Creek
Carbon Creek
San Jose Creek
Rio Hondo
San Gabriel River
Compton
Dominguez
Ballona Creek
Marina del Rey
Pacific Ocean
San Pedro Bay
Los Angeles Harbor
N
0 1 2 3 4 5 10 Miles
WRD
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

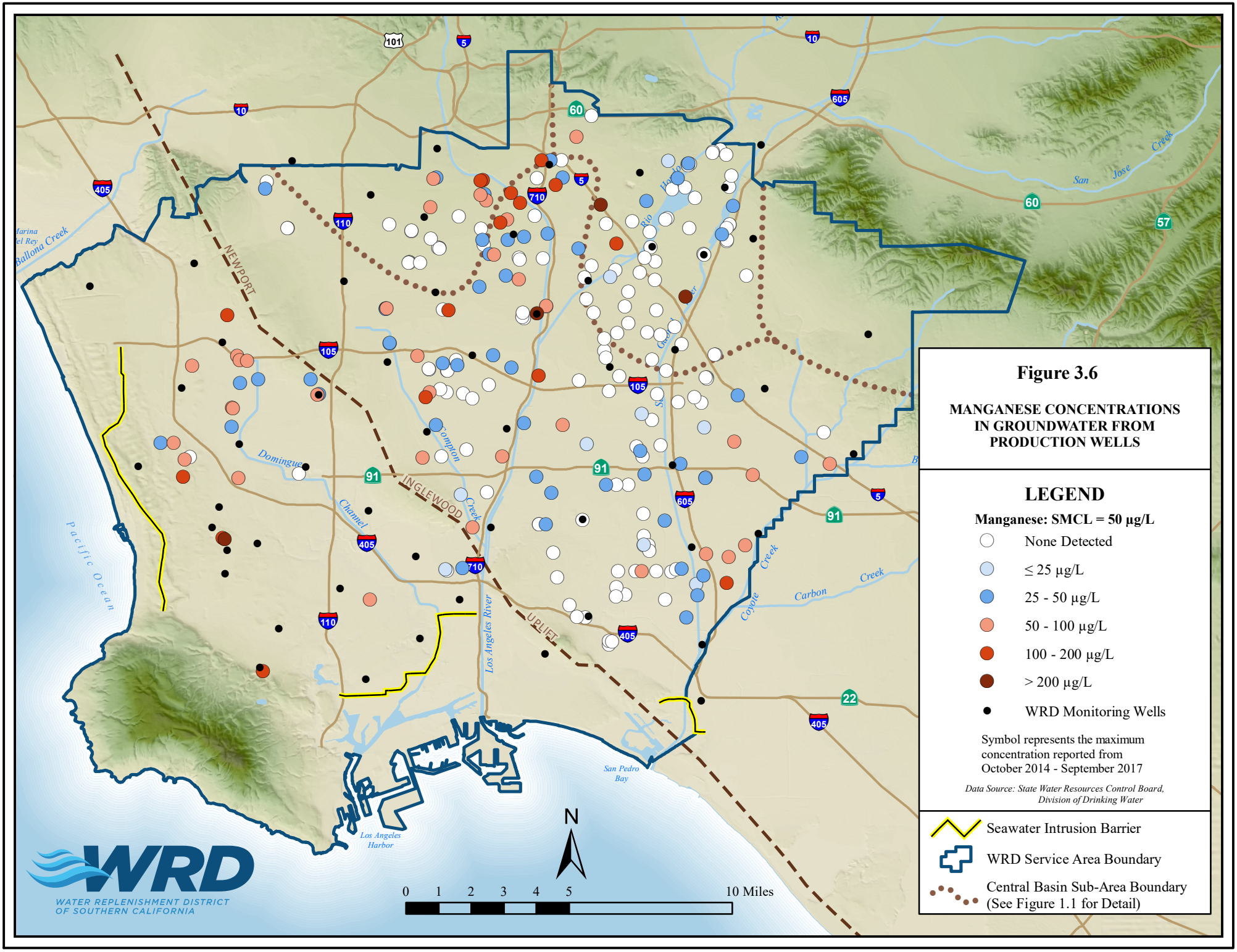


Figure 3.6
MANGANESE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
Manganese: SMCL = 50 µg/L
None Detected
≤ 25 µg/L
25 - 50 µg/L
50 - 100 µg/L
100 - 200 µg/L
> 200 µg/L
WRD Monitoring Wells
Symbol represents the maximum concentration reported from October 2014 - September 2017
Data Source: State Water Resources Control Board, Division of Drinking Water
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary (See Figure 1.1 for Detail)
WRD
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA
N
0 1 2 3 4 5 10 Miles
NEWPORT
INGLEWOOD
UPLIFT
Los Angeles River
Dominguez Channel
Compton Creek
Coyote Creek
Carbon Creek
San Jose Creek
Rio Hondo
San Gabriel River
Ballona Creek
Pacific Ocean
San Pedro Bay
Los Angeles Harbor

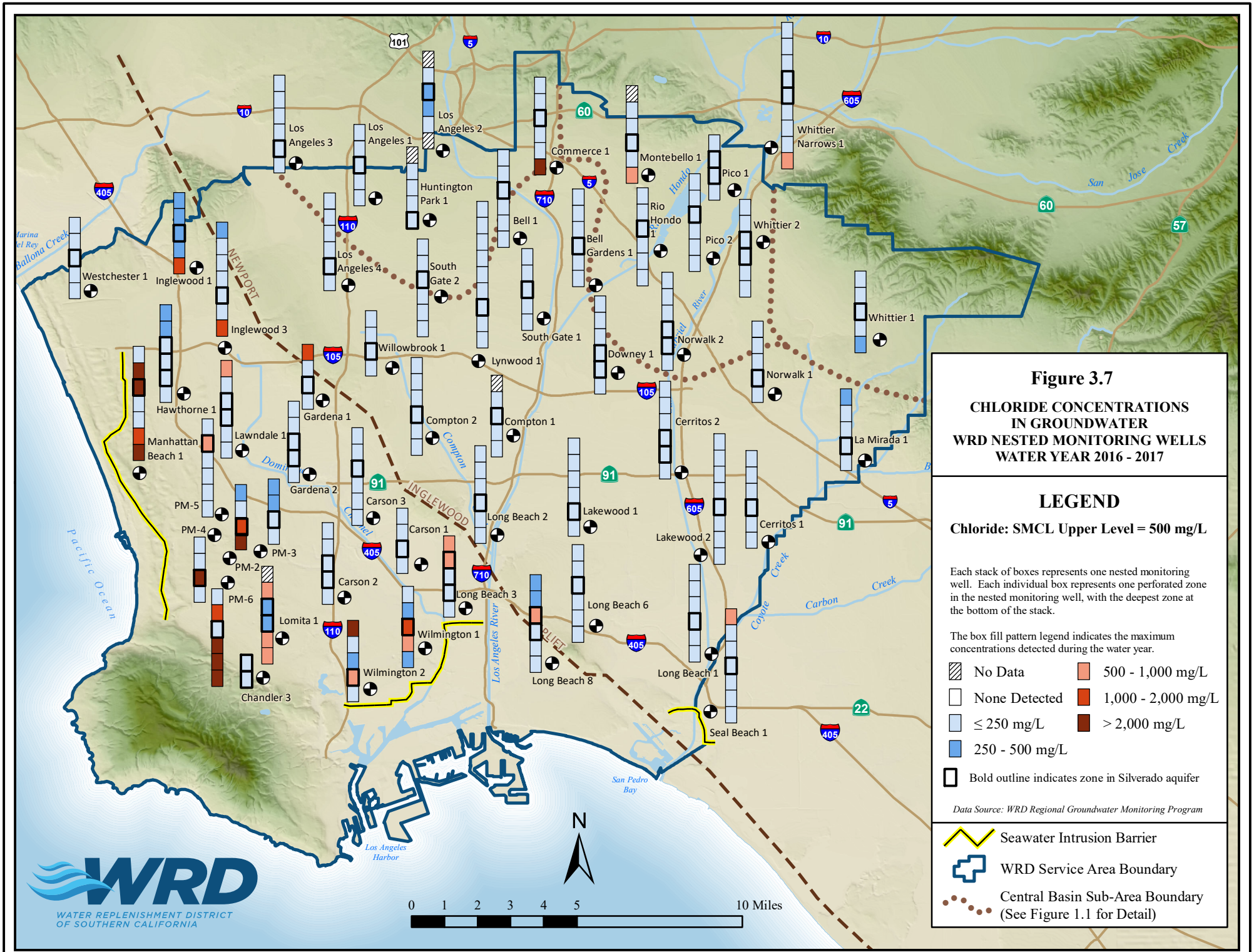


Figure 3.7
CHLORIDE CONCENTRATIONS
IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2016 - 2017
LEGEND
Chloride: SMCL Upper Level = 500 mg/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.
The box fill pattern legend indicates the maximum concentrations detected during the water year.
No Data
None Detected
≤ 250 mg/L
250 - 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
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 1.1 for Detail)
Los Angeles 3
Los Angeles 1
Los Angeles 2
Commerce 1
Montebello 1
Whittier Narrows 1
Huntington Park 1
Pico 1
Whittier 2
Pico 2
Bell 1
Bell Gardens 1
Rio Hondo 1
Westchester 1
Inglewood 1
Los Angeles 4
South Gate 2
Inglewood 3
Willowbrook 1
Lynwood 1
South Gate 1
Downey 1
Norwalk 2
Whittier 1
Norwalk 1
Hawthorne 1
Gardena 1
Compton 2
Compton 1
Cerritos 2
La Mirada 1
Manhattan Beach 1
Lawndale 1
Gardena 2
Carson 3
Long Beach 2
Lakewood 1
PM-5
PM-4
PM-3
PM-2
PM-6
Carson 1
Lakewood 2
Cerritos 1
Carson 2
Long Beach 3
Long Beach 6
Lomita 1
Wilmington 1
Long Beach 8
Long Beach 1
Wilmington 2
Chandler 3
Seal Beach 1
NEWPORT
INGLEWOOD
ORANGE
Pacific Ocean
Los Angeles River
Coyote Creek
Carbon Creek
San Pedro Bay
Los Angeles Harbor
N
0 1 2 3 4 5 10 Miles
WRD
WATER REPLENISHMENT DISTRICT
OF SOUTHERN CALIFORNIA

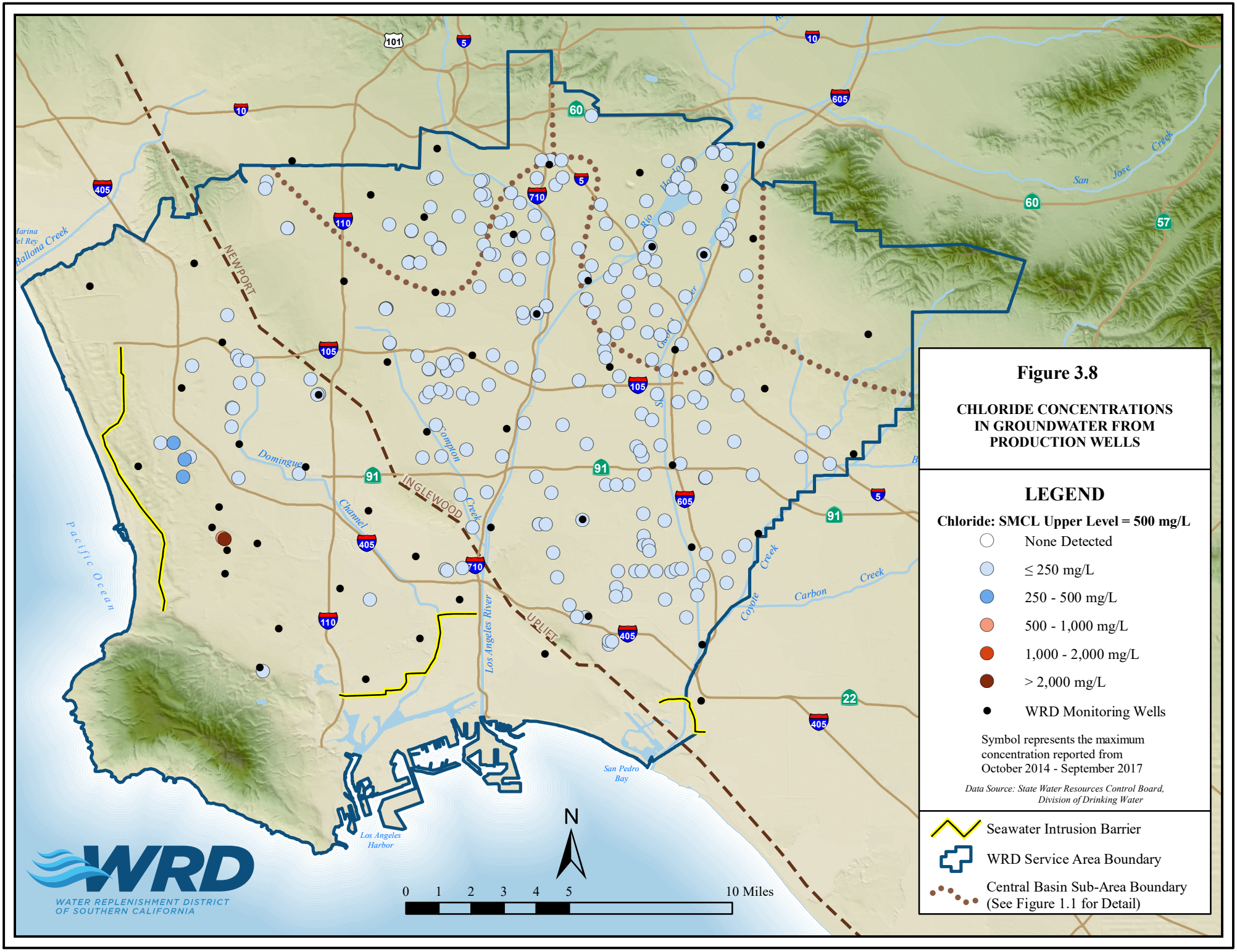


Figure 3.8
CHLORIDE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
Chloride: SMCL Upper Level = 500 mg/L
None Detected
≤ 250 mg/L
250 - 500 mg/L
500 - 1,000 mg/L
1,000 - 2,000 mg/L
> 2,000 mg/L
WRD Monitoring Wells
Symbol represents the maximum concentration reported from October 2014 - September 2017
Data Source: State Water Resources Control Board, Division of Drinking Water
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary (See Figure 1.1 for Detail)
WRD
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA
N
0 1 2 3 4 5 10 Miles
NEWPORT
INGLEWOOD
UPLIFT
Los Angeles River
Compton Creek
Dominguez Channel
Coyote Creek
Carbon Creek
San Jose Creek
Pacific Ocean
San Pedro Bay
Los Angeles Harbor
Ballona Creek

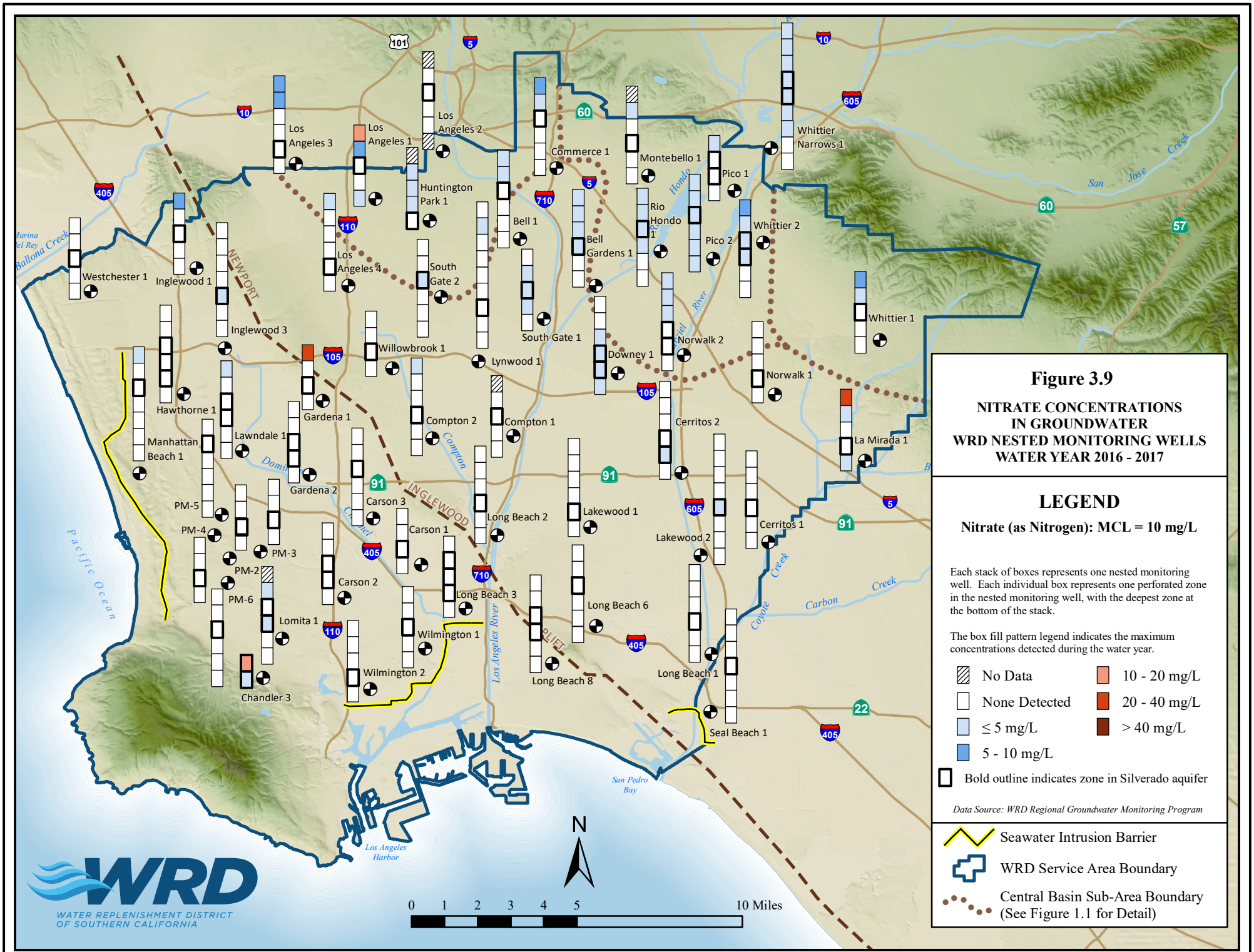


Figure 3.9
NITRATE CONCENTRATIONS
IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2016 - 2017
LEGEND
Nitrate (as Nitrogen): MCL = 10 mg/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest 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
≤ 5 mg/L
5 - 10 mg/L
10 - 20 mg/L
20 - 40 mg/L
> 40 mg/L
Bold outline indicates zone in Silverado aquifer
Data Source: WRD Regional Groundwater Monitoring Program
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 1.1 for Detail)
Los Angeles 3
Los Angeles 1
Los Angeles 2
Commerce 1
Montebello 1
Whittier Narrows 1
Huntington Park 1
Pico 1
Rio Hondo 1
Pico 2
Whittier 2
Bell 1
Bell Gardens 1
Los Angeles 4
South Gate 2
South Gate 1
Whittier 1
Norwalk 2
Norwalk 1
Westchester 1
Inglewood 1
Inglewood 3
Willowbrook 1
Lynwood 1
Downey 1
Hawthorne 1
Gardena 1
Compton 2
Compton 1
Cerritos 2
La Mirada 1
Manhattan Beach 1
Lawndale 1
Gardena 2
Carson 3
Lakewood 1
PM-5
PM-4
PM-3
PM-2
PM-6
Carson 1
Long Beach 2
Lakewood 2
Cerritos 1
Carson 2
Long Beach 3
Long Beach 6
Lomita 1
Wilmington 1
Long Beach 8
Long Beach 1
Wilmington 2
Seal Beach 1
Chandler 3
Pacific Ocean
Los Angeles River
San Pedro Bay
Los Angeles Harbor
Ballona Creek
San Jose Creek
Carbon Creek
Coyote Creek
Compton Creek
Dominguez Channel
NEWPORT
INGLEWOOD
ALAMEDA
N
0 1 2 3 4 5 10 Miles
WRD
WATER REPLENISHMENT DISTRICT
OF SOUTHERN CALIFORNIA

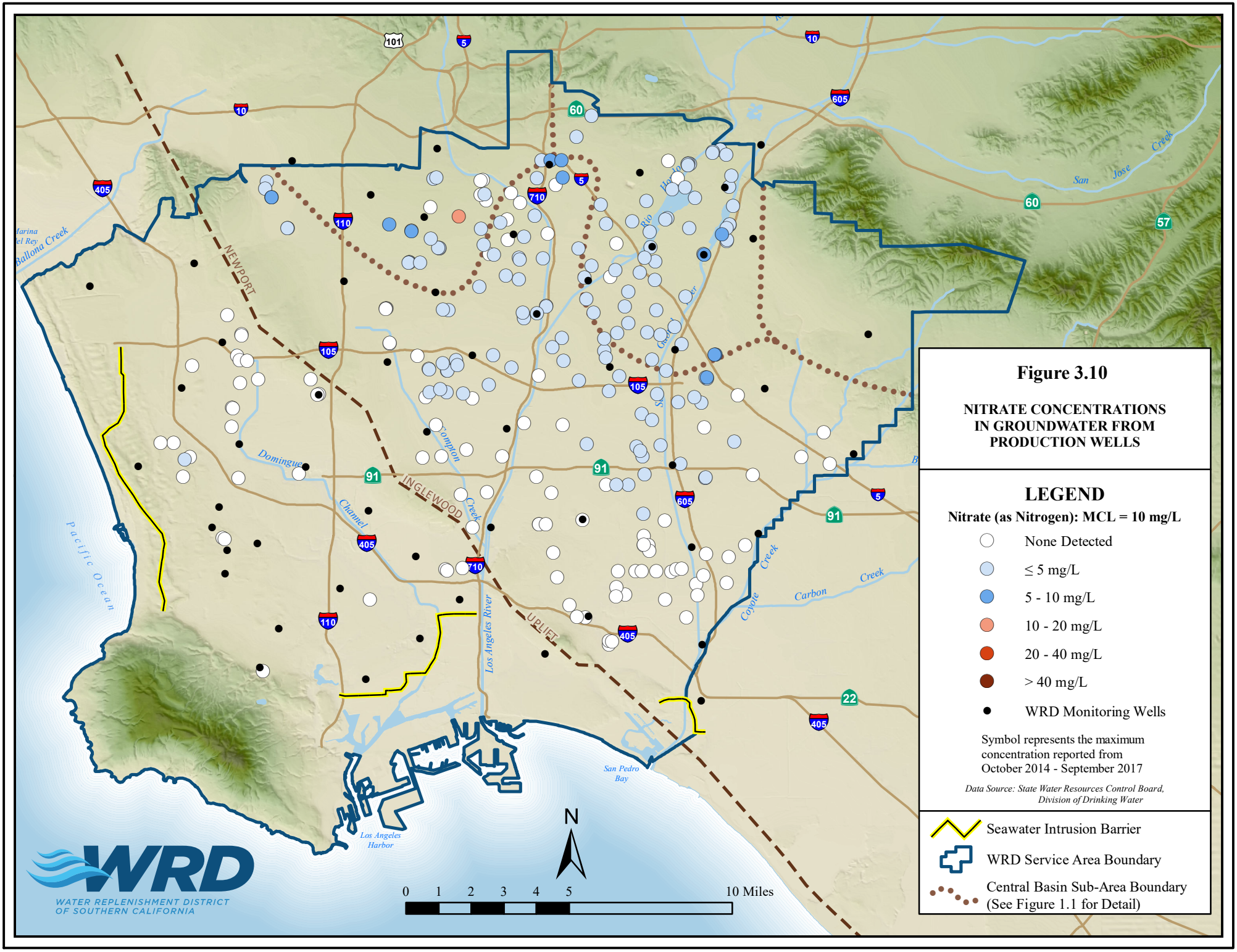


Figure 3.10
NITRATE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
Nitrate (as Nitrogen): MCL = 10 mg/L
None Detected
≤ 5 mg/L
5 - 10 mg/L
10 - 20 mg/L
20 - 40 mg/L
> 40 mg/L
WRD Monitoring Wells
Symbol represents the maximum concentration reported from October 2014 - September 2017
Data Source: State Water Resources Control Board, Division of Drinking Water
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary (See Figure 1.1 for Detail)
WRD
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA
N
0 1 2 3 4 5 10 Miles
NEWPORT
INGLEWOOD
UPLIFT
Pacific Ocean
Los Angeles River
Dominguez Channel
Compton Creek
Coyote Creek
Carbon Creek
San Jose Creek
Ballona Creek
San Pedro Bay
Los Angeles Harbor

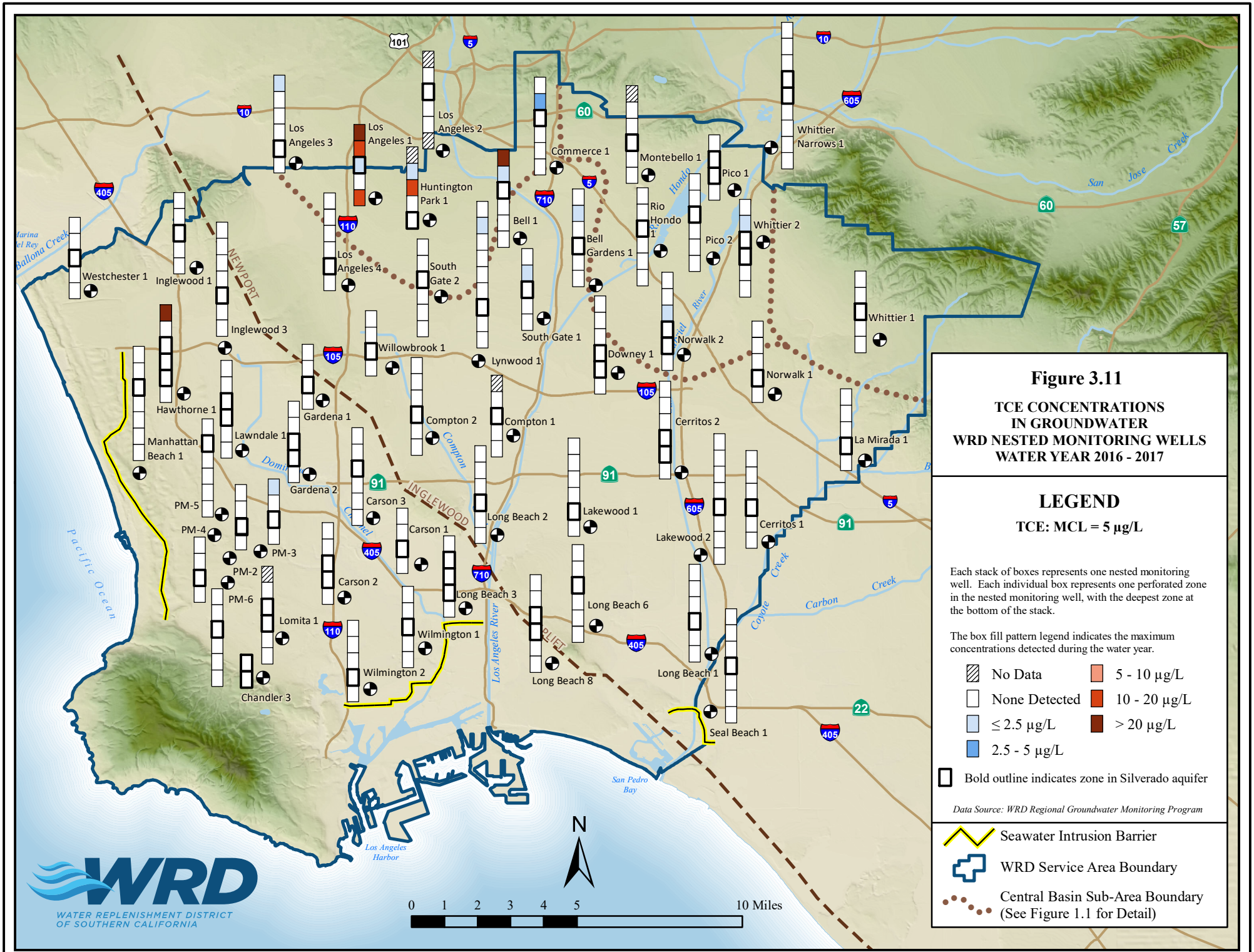


Figure 3.11
TCE CONCENTRATIONS
IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2016 - 2017
LEGEND
TCE: MCL = 5 µg/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.
The box fill pattern legend indicates the maximum concentrations detected during the water year.
No Data
None Detected
≤ 2.5 µg/L
2.5 - 5 µg/L
5 - 10 µg/L
10 - 20 µg/L
> 20 µg/L
Bold outline indicates zone in Silverado aquifer
Data Source: WRD Regional Groundwater Monitoring Program
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 1.1 for Detail)
Westchester 1
Inglewood 1
Inglewood 3
Los Angeles 3
Los Angeles 1
Los Angeles 2
Los Angeles 4
Huntington Park 1
South Gate 2
Bell 1
South Gate 1
Commerce 1
Bell Gardens 1
Montebello 1
Rio Hondo 1
Pico 1
Pico 2
Whittier Narrows 1
Whittier 2
Whittier 1
Norwalk 2
Norwalk 1
Downey 1
Lynwood 1
Willowbrook 1
Hawthorne 1
Gardena 1
Gardena 2
Compton 2
Compton 1
Cerritos 2
La Mirada 1
Manhattan Beach 1
Lawndale 1
PM-5
PM-4
PM-3
PM-2
PM-6
Carson 3
Carson 1
Carson 2
Long Beach 2
Long Beach 3
Lakewood 1
Lakewood 2
Cerritos 1
Long Beach 6
Long Beach 1
Long Beach 8
Lomita 1
Wilmington 1
Wilmington 2
Chandler 3
Seal Beach 1
Pacific Ocean
Los Angeles River
San Pedro Bay
Los Angeles Harbor
Coyote Creek
Carbon Creek
San Jose Creek
Ballona Creek
Dominguez Channel
Compton Creek
Rio Hondo
San Gabriel River
NEWPORT
INGLEWOOD
ALAMEDA
N
0 1 2 3 4 5 10 Miles
WRD
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

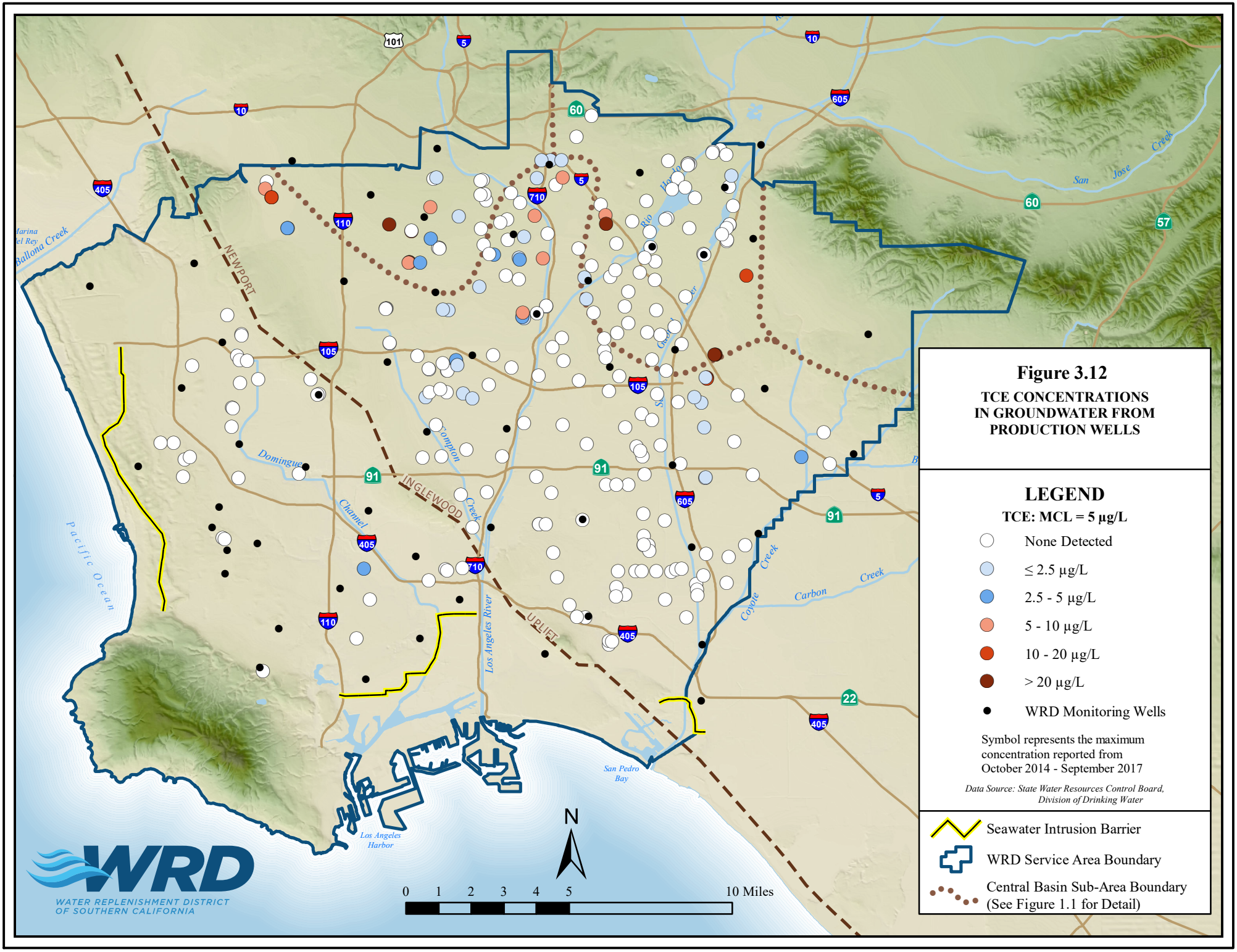


Figure 3.12
TCE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
TCE: MCL = 5 µg/L
None Detected
≤ 2.5 µg/L
2.5 - 5 µg/L
5 - 10 µg/L
10 - 20 µg/L
> 20 µg/L
WRD Monitoring Wells
Symbol represents the maximum concentration reported from October 2014 - September 2017
Data Source: State Water Resources Control Board, Division of Drinking Water
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary (See Figure 1.1 for Detail)
WRD
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA
N
0 1 2 3 4 5 10 Miles
Pacific Ocean
Los Angeles Harbor
San Pedro Bay
Los Angeles River
Dominguez Channel
Compton Creek
Coyote Creek
Carbon Creek
San Jose Creek
Ballona Creek
NEWPORT
INGLEWOOD
UPLIFT

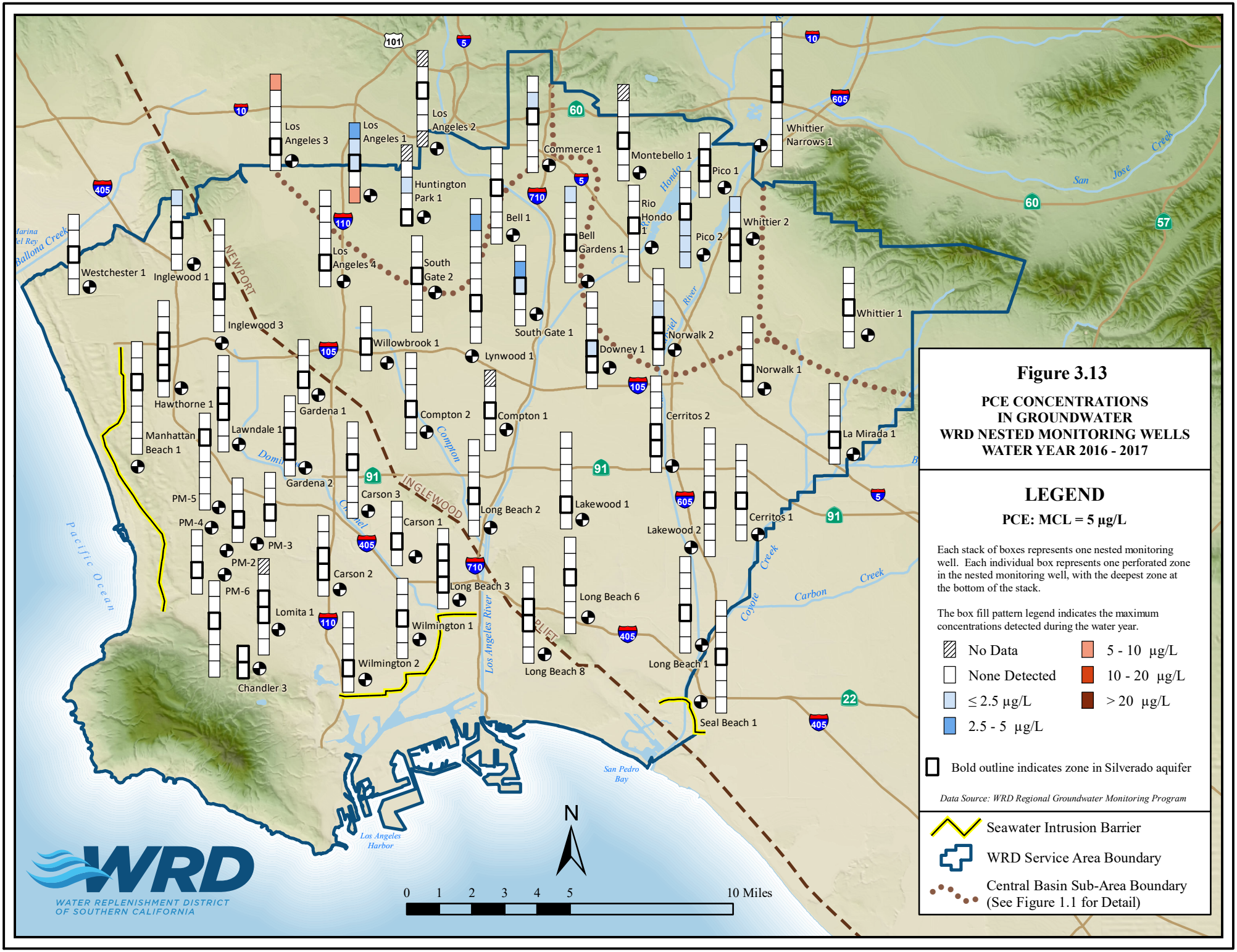


Figure 3.13
PCE CONCENTRATIONS
IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2016 - 2017
LEGEND
PCE: MCL = 5 µg/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.
The box fill pattern legend indicates the maximum concentrations detected during the water year.
No Data
None Detected
≤ 2.5 µg/L
2.5 - 5 µg/L
5 - 10 µg/L
10 - 20 µg/L
> 20 µg/L
Bold outline indicates zone in Silverado aquifer
Data Source: WRD Regional Groundwater Monitoring Program
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 1.1 for Detail)
Los Angeles 3
Los Angeles 1
Los Angeles 2
Commerce 1
Montebello 1
Whittier Narrows 1
Huntington Park 1
Bell 1
Bell Gardens 1
Rio Hondo 1
Pico 1
Pico 2
Whittier 2
Whittier 1
Westchester 1
Inglewood 1
Inglewood 3
Los Angeles 4
South Gate 2
South Gate 1
Willowbrook 1
Lynwood 1
Downey 1
Norwalk 2
Norwalk 1
Hawthorne 1
Gardena 1
Gardena 2
Compton 2
Compton 1
Cerritos 2
La Mirada 1
Manhattan Beach 1
Lawndale 1
PM-5
PM-4
PM-3
PM-2
PM-6
Carson 3
Carson 1
Carson 2
Long Beach 2
Lakewood 1
Lakewood 2
Cerritos 1
Lomita 1
Wilmington 1
Wilmington 2
Long Beach 3
Long Beach 6
Long Beach 8
Long Beach 1
Chandler 3
Seal Beach 1
NEWPORT
INGLEWOOD
ALAMITOS
Pacific Ocean
San Pedro Bay
Los Angeles Harbor
Los Angeles River
Coyote Creek
Carbon Creek
San Gabriel River
Rio Hondo
San Jose Creek
Ballona Creek
N
0 1 2 3 4 5 10 Miles
WRD
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

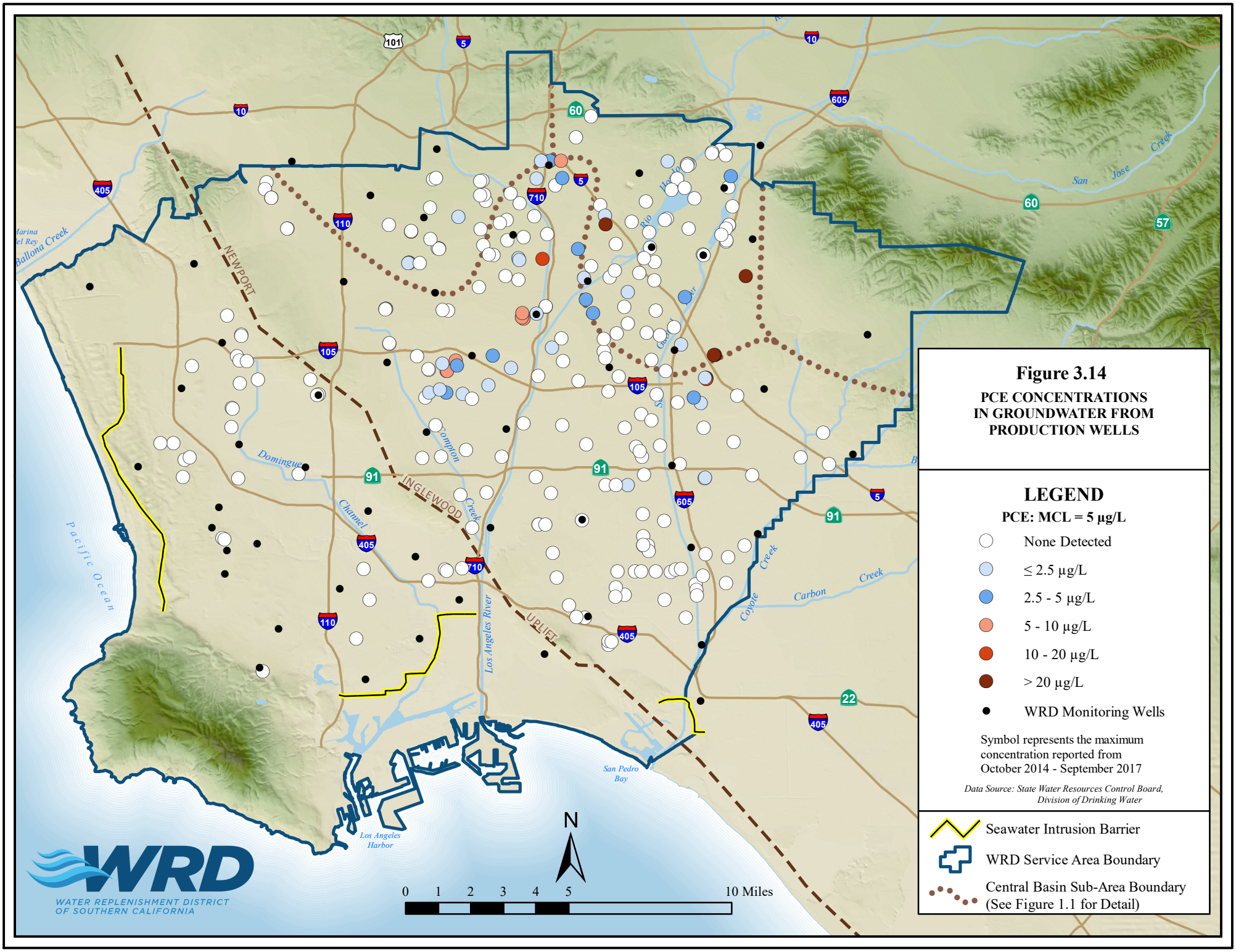


Figure 3.14
PCE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
PCE: MCL = 5 µg/L
None Detected
≤ 2.5 µg/L
2.5 - 5 µg/L
5 - 10 µg/L
10 - 20 µg/L
> 20 µg/L
WRD Monitoring Wells
Symbol represents the maximum concentration reported from October 2014 - September 2017
Data Source: State Water Resources Control Board, Division of Drinking Water
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary (See Figure 1.1 for Detail)
WRD
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA
N
0 1 2 3 4 5 10 Miles
Pacific Ocean
Los Angeles Harbor
San Pedro Bay
Los Angeles River
Dominguez Channel
Compton Creek
Rio Hondo
San Gabriel River
Coyote Creek
Carbon Creek
San Jose Creek
Ballona Creek
NEWPORT
INGLEWOOD
UPLIFT

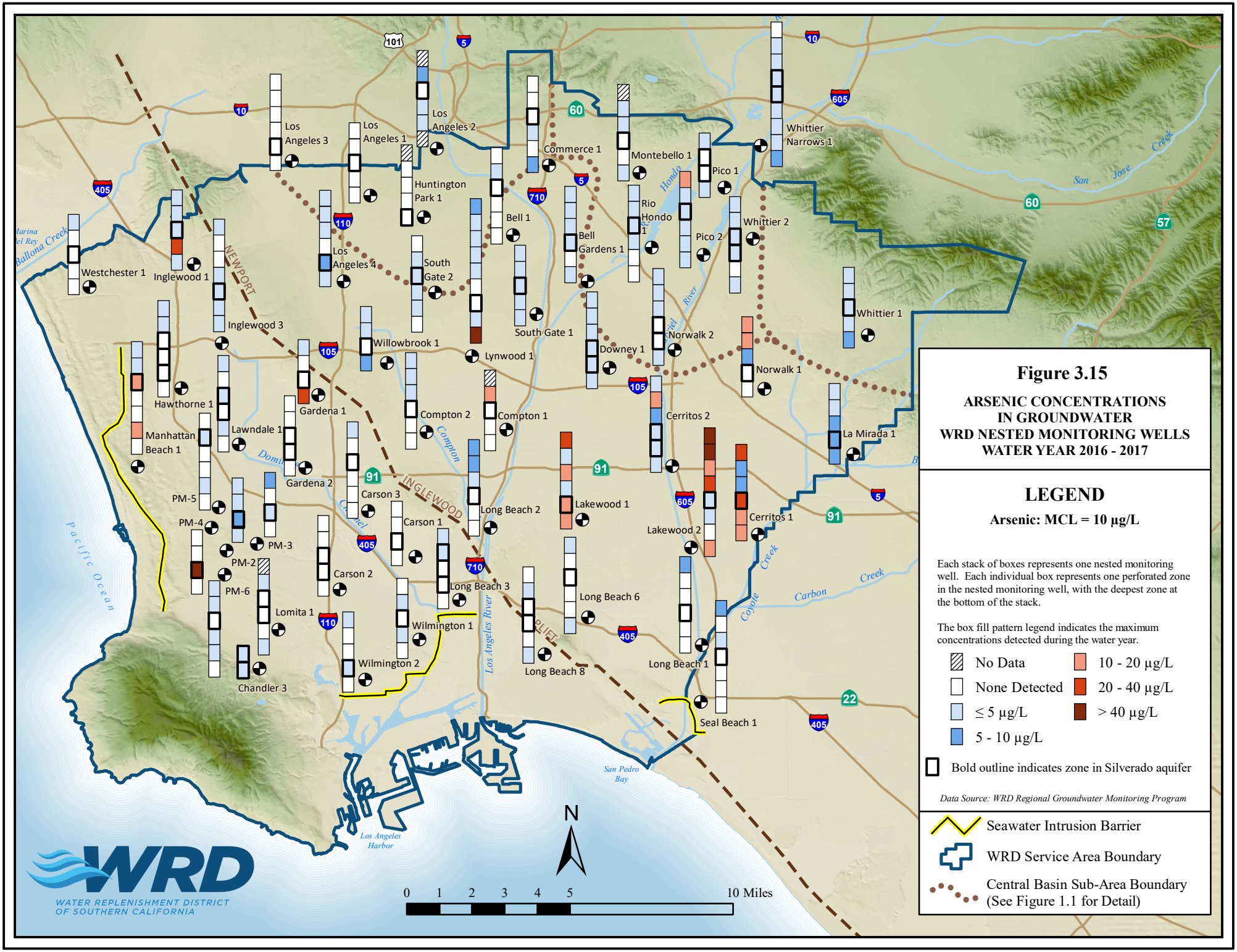


Figure 3.15
ARSENIC CONCENTRATIONS
IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2016 - 2017
LEGEND
Arsenic: MCL = 10 µg/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.
The box fill pattern legend indicates the maximum concentrations detected during the water year.
No Data
None Detected
≤ 5 µg/L
5 - 10 µg/L
10 - 20 µg/L
20 - 40 µg/L
> 40 µg/L
Bold outline indicates zone in Silverado aquifer
Data Source: WRD Regional Groundwater Monitoring Program
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 1.1 for Detail)
Los Angeles 3
Los Angeles 1
Los Angeles 2
Commerce 1
Montebello 1
Whittier Narrows 1
Huntington Park 1
Pico 1
Whittier 2
Pico 2
Bell 1
Bell Gardens 1
Rio Hondo 1
Los Angeles 4
South Gate 2
South Gate 1
Westchester 1
Inglewood 1
Inglewood 3
Willowbrook 1
Lynwood 1
Downey 1
Norwalk 2
Norwalk 1
Whittier 1
Hawthorne 1
Gardena 1
Compton 2
Compton 1
Cerritos 2
La Mirada 1
Manhattan Beach 1
Lawndale 1
Gardena 2
Carson 3
Lakewood 1
PM-5
PM-4
PM-3
PM-2
PM-6
Carson 1
Long Beach 2
Lakewood 2
Cerritos 1
Carson 2
Long Beach 3
Long Beach 6
Lomita 1
Wilmington 1
Long Beach 8
Long Beach 1
Wilmington 2
Chandler 3
Seal Beach 1
Pacific Ocean
San Pedro Bay
Los Angeles Harbor
Los Angeles River
Coyote Creek
Carbon Creek
San Jose Creek
Ballona Creek
Rio Hondo
Compton
Dominguez
NEWPORT
INGLEWOOD
ALAMEDA
N
0 1 2 3 4 5 10 Miles
WRD
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

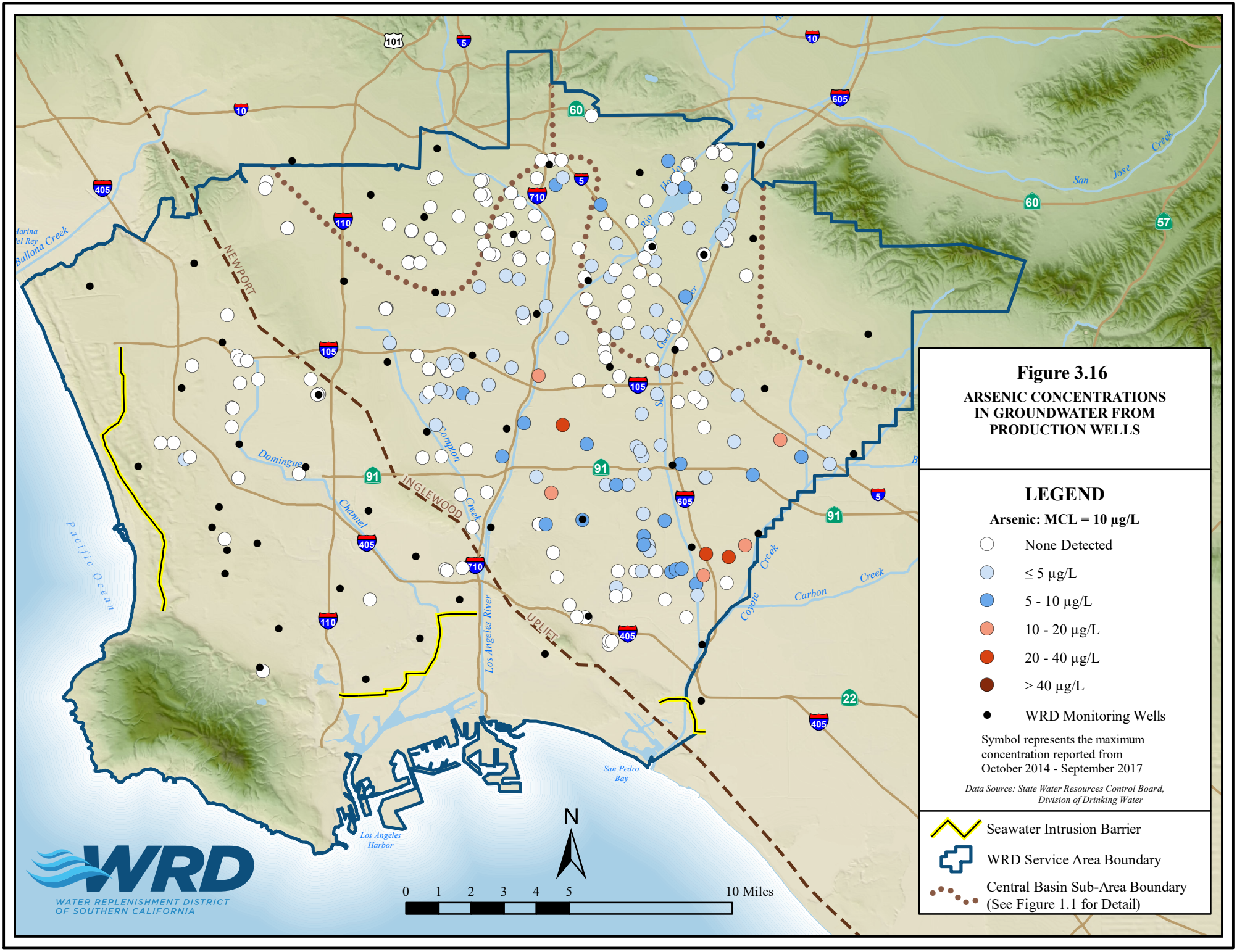


Figure 3.16
ARSENIC CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
Arsenic: MCL = 10 µg/L
None Detected
≤ 5 µg/L
5 - 10 µg/L
10 - 20 µg/L
20 - 40 µg/L
> 40 µg/L
WRD Monitoring Wells
Symbol represents the maximum concentration reported from October 2014 - September 2017
Data Source: State Water Resources Control Board, Division of Drinking Water
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary (See Figure 1.1 for Detail)
WRD
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA
N
0 1 2 3 4 5 10 Miles
NEWPORT
INGLEWOOD
UPLIFT
Los Angeles River
Pacific Ocean
San Pedro Bay
Los Angeles Harbor
Dominguez Channel
Compton Creek
Coyote Creek
Carbon Creek
San Jose Creek
Ballona Creek

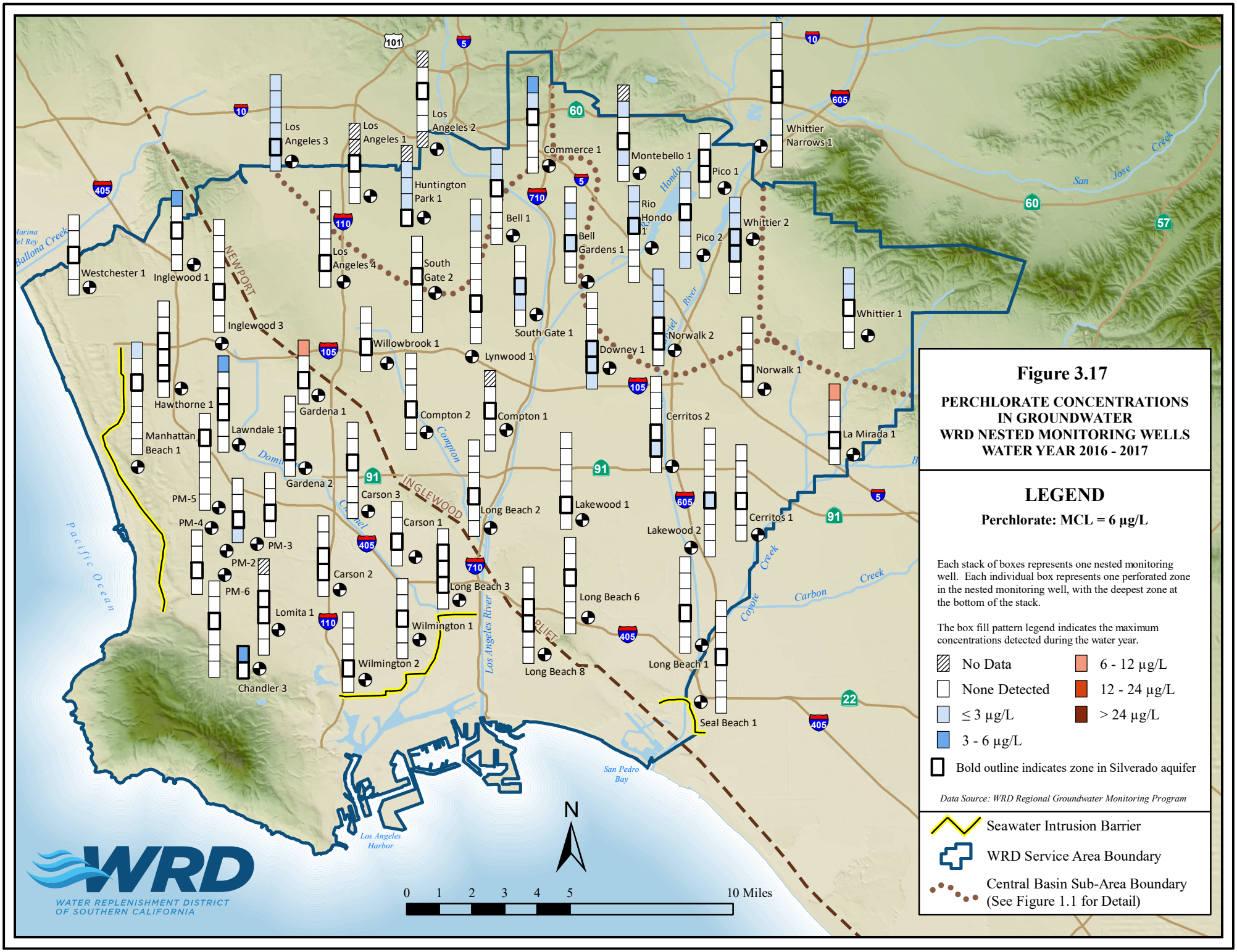


Figure 3.17
PERCHLORATE CONCENTRATIONS IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2016 - 2017
LEGEND
Perchlorate: MCL = 6 µg/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.
The box fill pattern legend indicates the maximum concentrations detected during the water year.
No Data
None Detected
≤ 3 µg/L
3 - 6 µg/L
6 - 12 µg/L
12 - 24 µg/L
> 24 µg/L
Bold outline indicates zone in Silverado aquifer
Data Source: WRD Regional Groundwater Monitoring Program
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 1.1 for Detail)
Los Angeles 3
Los Angeles 1
Los Angeles 2
Commerce 1
Montebello 1
Whittier Narrows 1
Huntington Park 1
Pico 1
Rio Hondo 1
Pico 2
Whittier 2
Bell 1
Bell Gardens 1
Westchester 1
Inglewood 1
Los Angeles 4
South Gate 2
Inglewood 3
Willowbrook 1
South Gate 1
Lynwood 1
Downey 1
Norwalk 2
Norwalk 1
Whittier 1
Hawthorne 1
Gardena 1
Compton 2
Compton 1
Cerritos 2
La Mirada 1
Manhattan Beach 1
Lawndale 1
Gardena 2
Carson 3
Long Beach 2
Lakewood 1
PM-5
PM-4
PM-3
PM-2
PM-6
Carson 1
Lakewood 2
Cerritos 1
Carson 2
Long Beach 3
Long Beach 6
Lomita 1
Wilmington 1
Long Beach 8
Long Beach 1
Wilmington 2
Chandler 3
Seal Beach 1
Pacific Ocean
San Pedro Bay
Los Angeles Harbor
Los Angeles River
Compton Creek
Coyote Creek
Carbon Creek
San Jose Creek
Rio Hondo
NEWPORT
INGLEWOOD
ALAMEDA
N
0 1 2 3 4 5 10 Miles
WRD
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

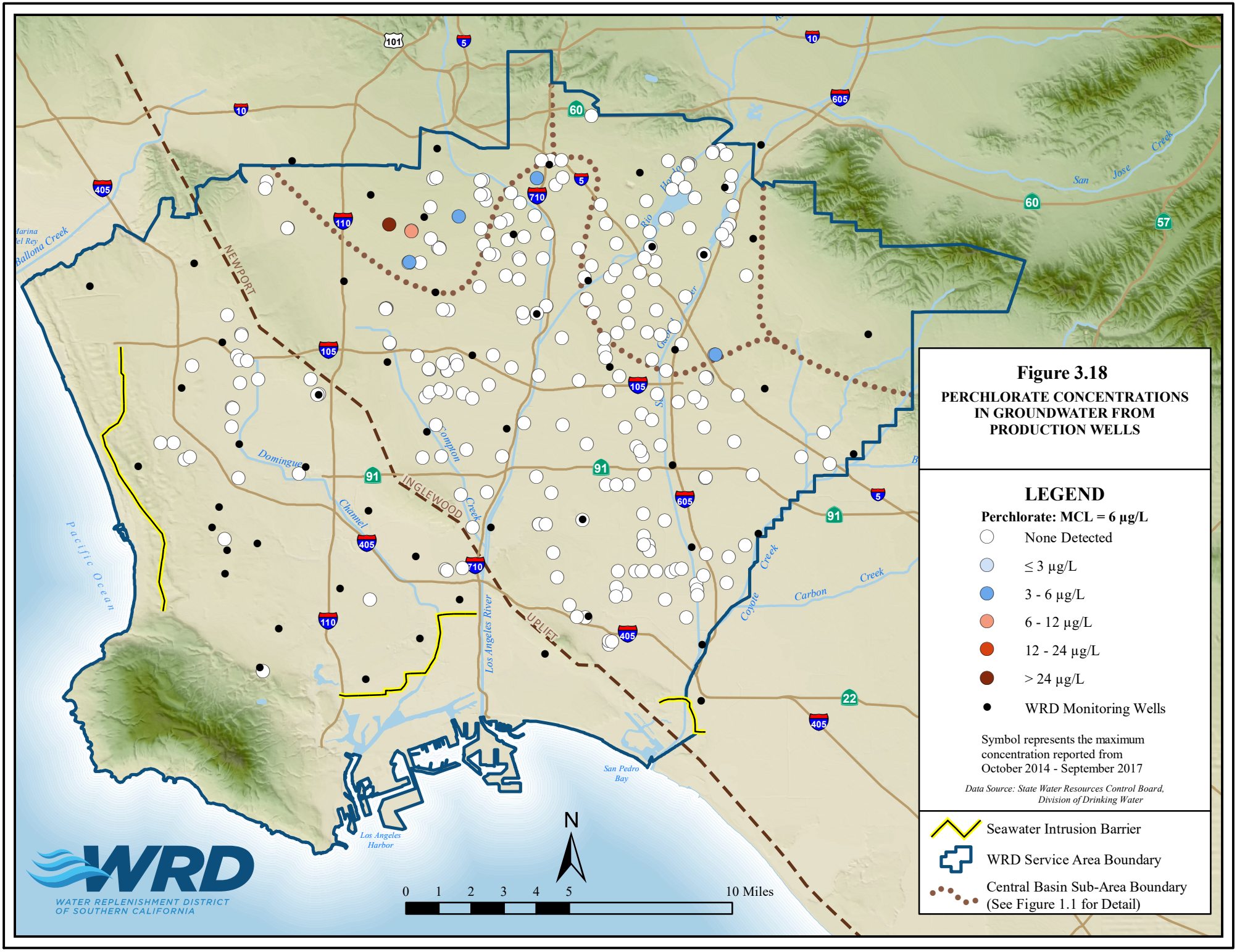


Figure 3.18
PERCHLORATE CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
Perchlorate: MCL = 6 µg/L
None Detected
≤ 3 µg/L
3 - 6 µg/L
6 - 12 µg/L
12 - 24 µg/L
> 24 µg/L
WRD Monitoring Wells
Symbol represents the maximum concentration reported from October 2014 - September 2017
Data Source: State Water Resources Control Board, Division of Drinking Water
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary (See Figure 1.1 for Detail)
WRD
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA
N
0 1 2 3 4 5 10 Miles
NEWPORT
INGLEWOOD
UPLIFT
Pacific Ocean
Los Angeles River
Dominguez Channel
Compton Creek
Coyote Creek
Carbon Creek
San Jose Creek
Rio Hondo
Ballona Creek
San Pedro Bay
Los Angeles Harbor

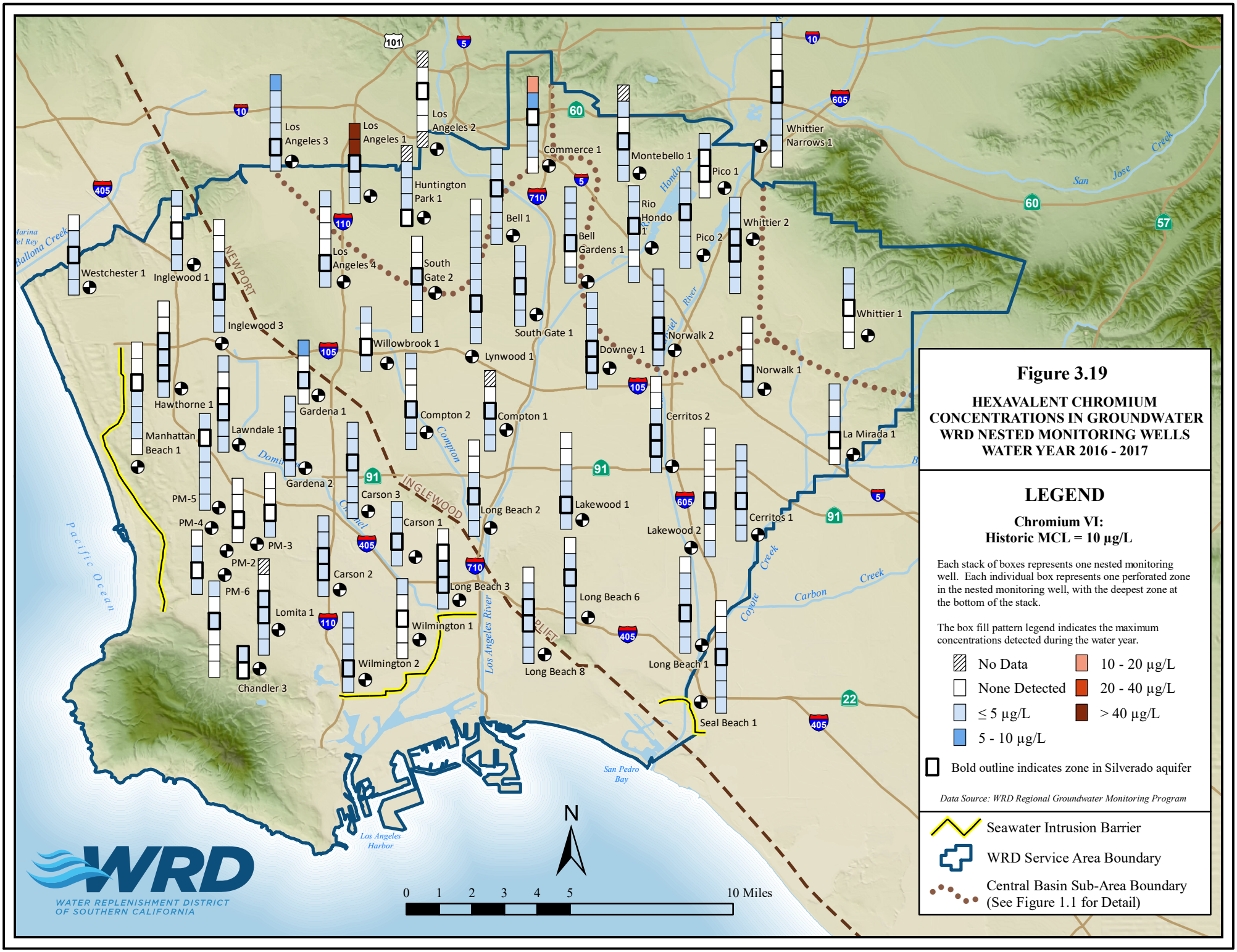


Figure 3.19
HEXAVALENT CHROMIUM CONCENTRATIONS IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2016 - 2017
LEGEND
Chromium VI:
Historic MCL = 10 µg/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with 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
≤ 5 µg/L
5 - 10 µg/L
10 - 20 µg/L
20 - 40 µg/L
> 40 µg/L
Bold outline indicates zone in Silverado aquifer
Data Source: WRD Regional Groundwater Monitoring Program
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 1.1 for Detail)
Los Angeles 3
Los Angeles 1
Los Angeles 2
Commerce 1
Montebello 1
Whittier Narrows 1
Huntington Park 1
Bell 1
Bell Gardens 1
Rio Hondo 1
Pico 1
Pico 2
Whittier 2
Whittier 1
Westchester 1
Inglewood 1
Inglewood 3
Los Angeles 4
South Gate 2
South Gate 1
Willowbrook 1
Lynwood 1
Downey 1
Norwalk 2
Norwalk 1
Hawthorne 1
Gardena 1
Gardena 2
Compton 2
Compton 1
Cerritos 2
La Mirada 1
Manhattan Beach 1
Lawndale 1
PM-5
PM-4
PM-3
PM-2
PM-6
Carson 3
Carson 1
Carson 2
Long Beach 2
Lakewood 1
Lakewood 2
Cerritos 1
Lomita 1
Wilmington 1
Wilmington 2
Long Beach 3
Long Beach 6
Long Beach 8
Long Beach 1
Chandler 3
Seal Beach 1
NEWPORT
INGLEWOOD
ALAMITOS
Los Angeles River
Compton Creek
Coyote Creek
Carbon Creek
San Jose Creek
Rio Hondo
San Gabriel River
Ballona Creek
Marina del Rey
Pacific Ocean
San Pedro Bay
Los Angeles Harbor
N
0 1 2 3 4 5 10 Miles
WRD
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

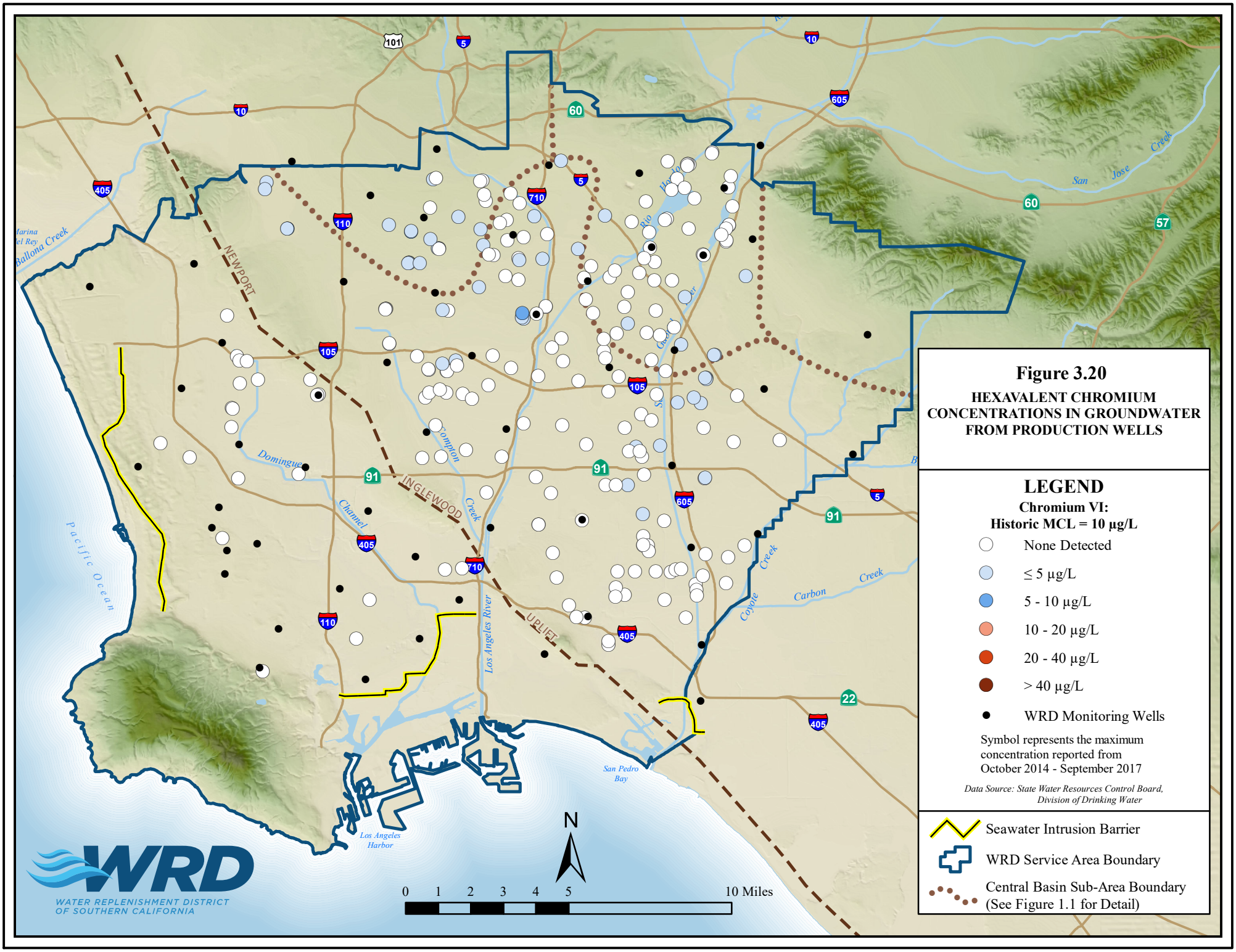


Figure 3.20
HEXAVALENT CHROMIUM CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
Chromium VI:
Historic MCL = 10 µg/L
None Detected
≤ 5 µg/L
5 - 10 µg/L
10 - 20 µg/L
20 - 40 µg/L
> 40 µg/L
WRD Monitoring Wells
Symbol represents the maximum concentration reported from October 2014 - September 2017
Data Source: State Water Resources Control Board, Division of Drinking Water
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary (See Figure 1.1 for Detail)
WRD
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA
N
0 1 2 3 4 5 10 Miles
Pacific Ocean
Los Angeles River
Los Angeles Harbor
San Pedro Bay
Coyote Creek
Carbon Creek
San Jose Creek
Rio Hondo
Compton Creek
Dominguez Channel
NEWPORT
INGLEWOOD
UPLIFT
Ballona Creek
Marina del Rey

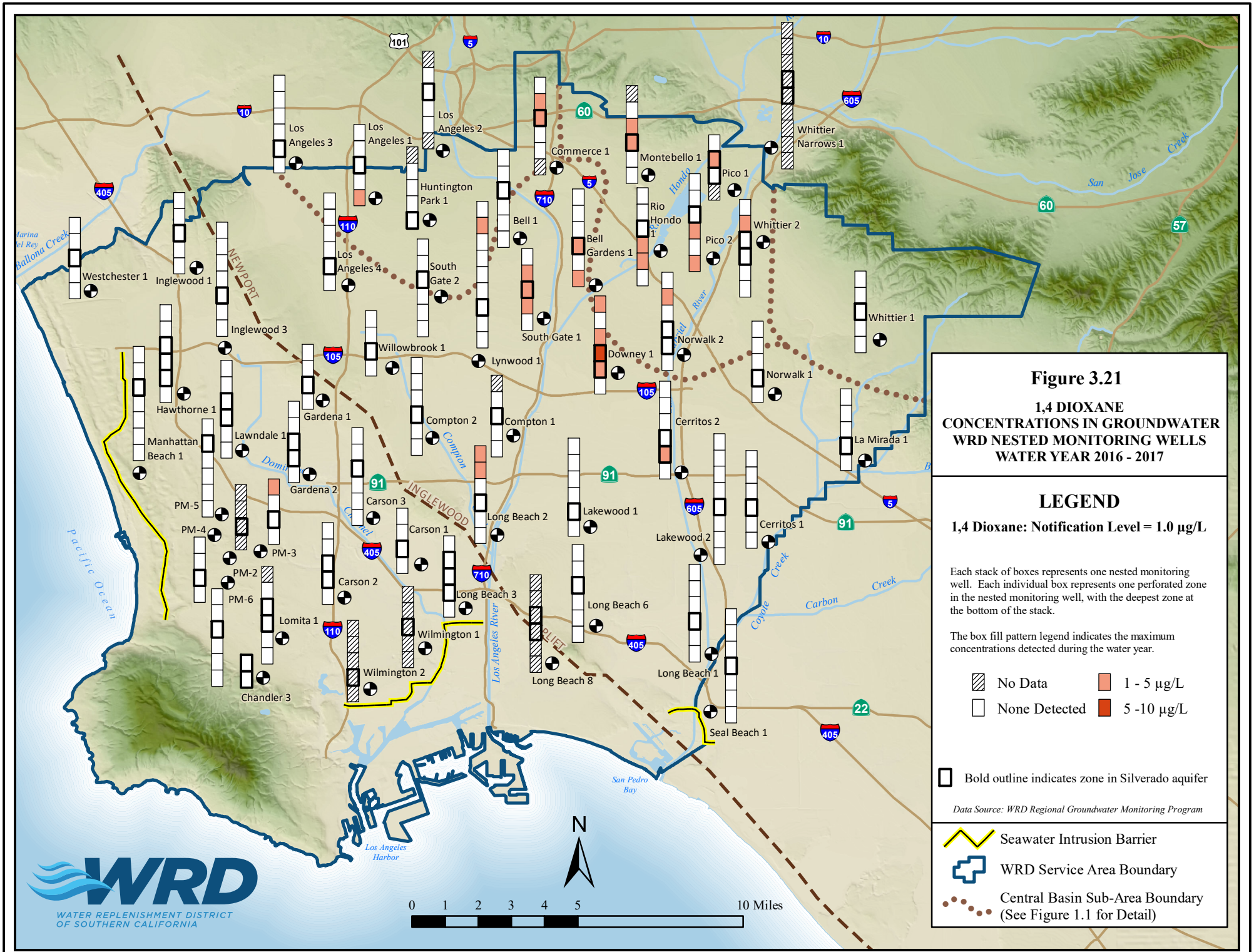


Figure 3.21
1,4 DIOXANE
CONCENTRATIONS IN GROUNDWATER
WRD NESTED MONITORING WELLS
WATER YEAR 2016 - 2017
LEGEND
1,4 Dioxane: Notification Level = 1.0 µg/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with 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
1 - 5 µg/L
5 -10 µg/L
Bold outline indicates zone in Silverado aquifer
Data Source: WRD Regional Groundwater Monitoring Program
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 1.1 for Detail)
Westchester 1
Inglewood 1
Inglewood 3
Los Angeles 3
Los Angeles 1
Los Angeles 2
Los Angeles 4
Huntington Park 1
South Gate 2
Bell 1
South Gate 1
Commerce 1
Bell Gardens 1
Montebello 1
Rio Hondo 1
Pico 1
Pico 2
Whittier Narrows 1
Whittier 2
Whittier 1
Norwalk 2
Norwalk 1
Downey 1
Lynwood 1
Willowbrook 1
Hawthorne 1
Manhattan Beach 1
Lawndale 1
Gardena 1
Gardena 2
Compton 2
Compton 1
Cerritos 2
La Mirada 1
Carson 3
Carson 1
Carson 2
Long Beach 2
Long Beach 3
Long Beach 8
Lakewood 1
Lakewood 2
Long Beach 6
Long Beach 1
Cerritos 1
Seal Beach 1
Wilmington 1
Wilmington 2
Lomita 1
Chandler 3
PM-5
PM-4
PM-3
PM-2
PM-6
NEWPORT
INGLEWOOD
ALAMITOS
Pacific Ocean
Los Angeles Harbor
San Pedro Bay
Los Angeles River
Coyote Creek
Carbon Creek
San Jose Creek
Rio Hondo
Compton
Dominguez
Ballona Creek
Marina del Rey
N
0 1 2 3 4 5 10 Miles
WRD
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

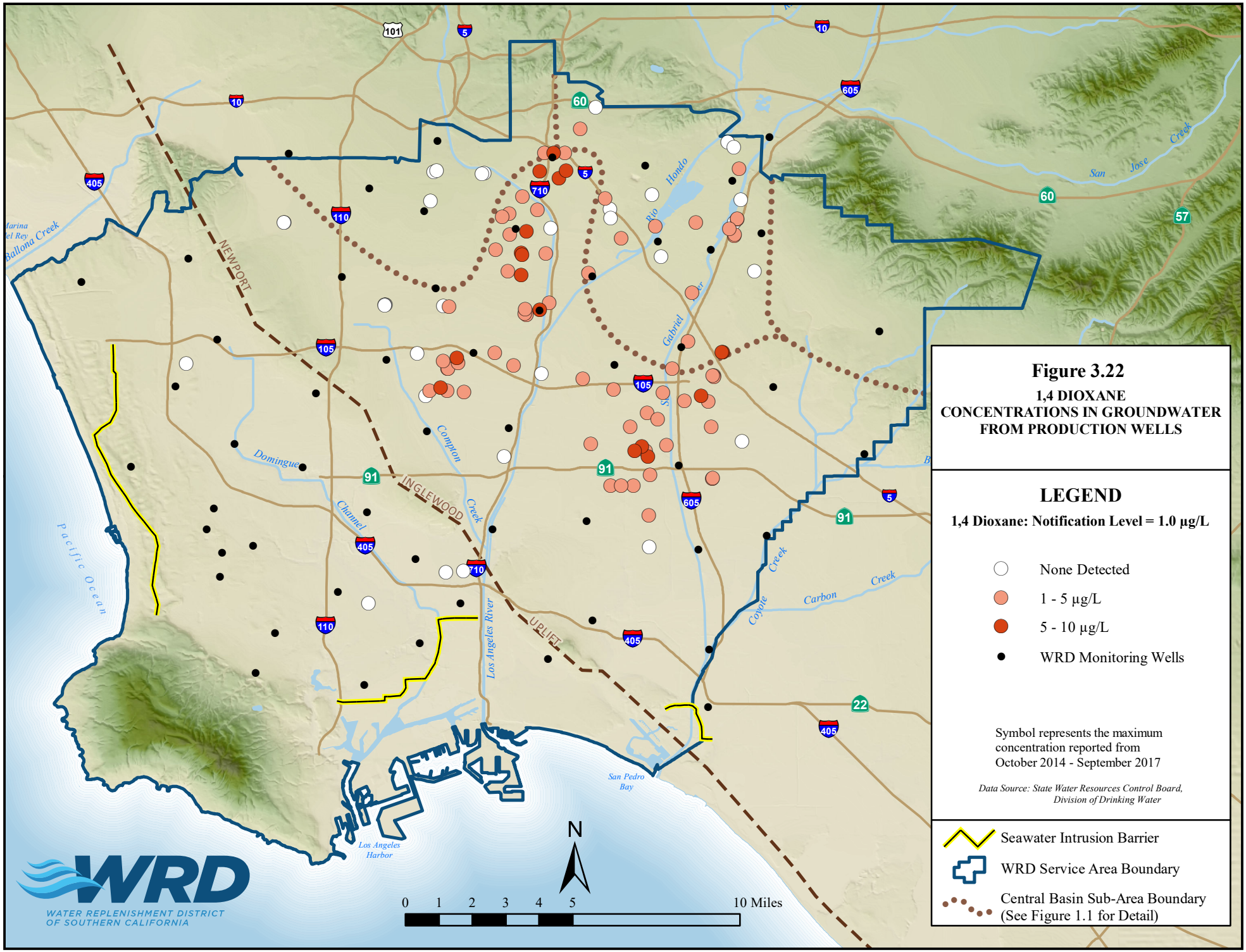


Figure 3.22
1,4 DIOXANE
CONCENTRATIONS IN GROUNDWATER
FROM PRODUCTION WELLS
LEGEND
1,4 Dioxane: Notification Level = 1.0 µg/L
None Detected
1 - 5 µg/L
5 - 10 µg/L
WRD Monitoring Wells
Symbol represents the maximum concentration reported from October 2014 - September 2017
Data Source: State Water Resources Control Board, Division of Drinking Water
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary (See Figure 1.1 for Detail)
WRD
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA
N
0 1 2 3 4 5 10 Miles
Pacific Ocean
Los Angeles Harbor
San Pedro Bay
Los Angeles River
Rio Hondo
San Gabriel River
Compton Creek
Coyote Creek
Carbon Creek
San Jose Creek
Ballona Creek
Channel
NEWPORT
INGLEWOOD
UPLIFT
Domingue
101
5
10
60
605
405
710
110
105
91
57
22

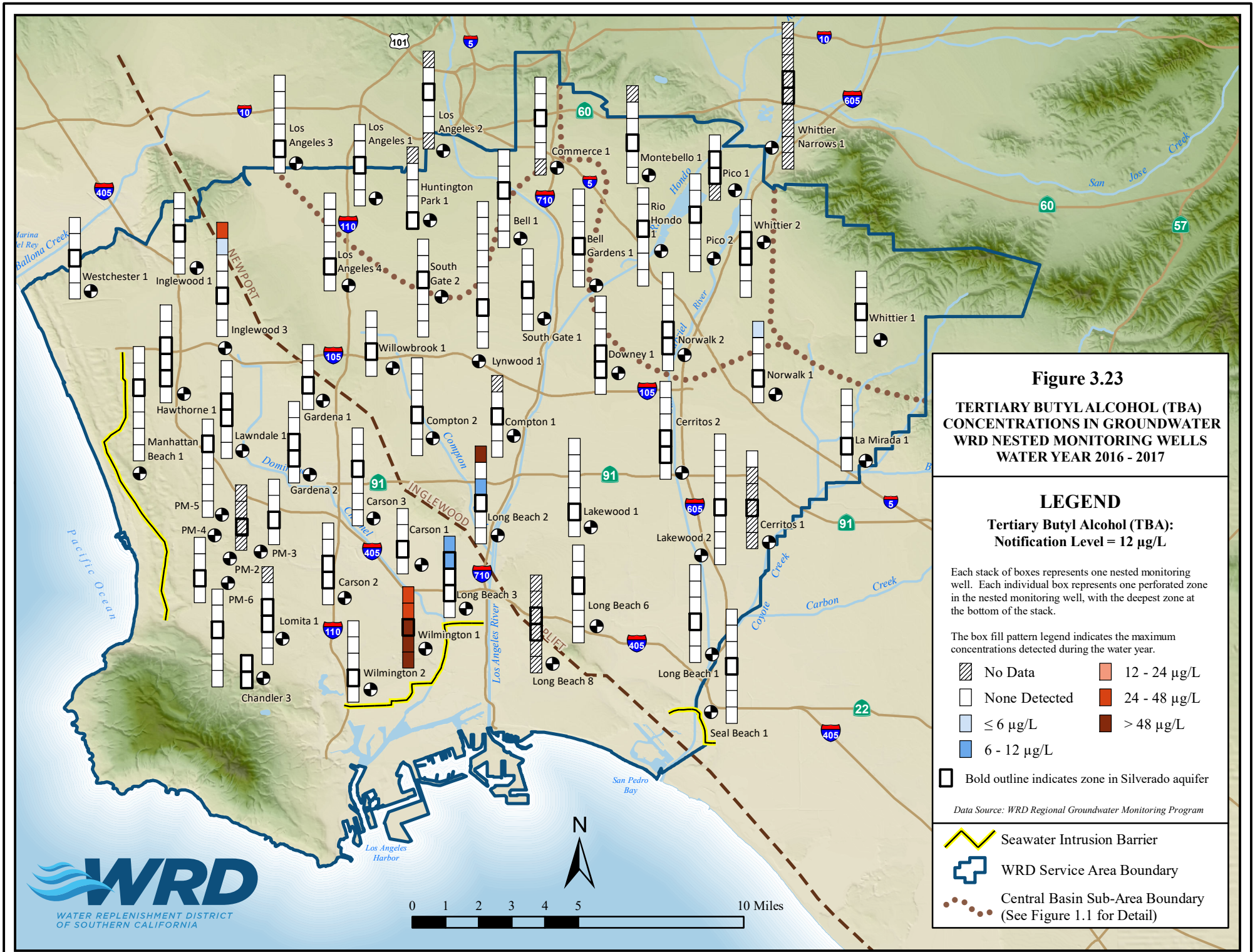


Figure 3.23
TERTIARY BUTYL ALCOHOL (TBA) CONCENTRATIONS IN GROUNDWATER WRD NESTED MONITORING WELLS WATER YEAR 2016 - 2017
LEGEND
Tertiary Butyl Alcohol (TBA): Notification Level = 12 µg/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in 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
≤ 6 µg/L
6 - 12 µg/L
12 - 24 µg/L
24 - 48 µg/L
> 48 µg/L
Bold outline indicates zone in Silverado aquifer
Data Source: WRD Regional Groundwater Monitoring Program
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary (See Figure 1.1 for Detail)
Los Angeles 3
Los Angeles 1
Los Angeles 2
Commerce 1
Montebello 1
Whittier Narrows 1
Huntington Park 1
Pico 1
Rio Hondo 1
Pico 2
Whittier 2
Bell 1
Bell Gardens 1
Los Angeles 4
South Gate 2
South Gate 1
Whittier 1
Inglewood 1
Westchester 1
Inglewood 3
Willowbrook 1
Lynwood 1
Downey 1
Norwalk 2
Norwalk 1
Hawthorne 1
Gardena 1
Compton 2
Compton 1
Cerritos 2
La Mirada 1
Manhattan Beach 1
Lawndale 1
Gardena 2
Carson 3
Lakewood 1
PM-5
PM-4
PM-3
PM-2
PM-6
Carson 1
Long Beach 2
Lakewood 2
Cerritos 1
Carson 2
Long Beach 3
Long Beach 6
Lomita 1
Wilmington 1
Long Beach 8
Long Beach 1
Wilmington 2
Chandler 3
Seal Beach 1
Pacific Ocean
San Pedro Bay
Los Angeles Harbor
Los Angeles River
Coyote Creek
Carbon Creek
San Jose Creek
Ballona Creek
Dominguez Channel
Compton Creek
Rio Hondo
San Gabriel River
NEWPORT
INGLEWOOD
ALAMEDA
N
0 1 2 3 4 5 10 Miles
WRD
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

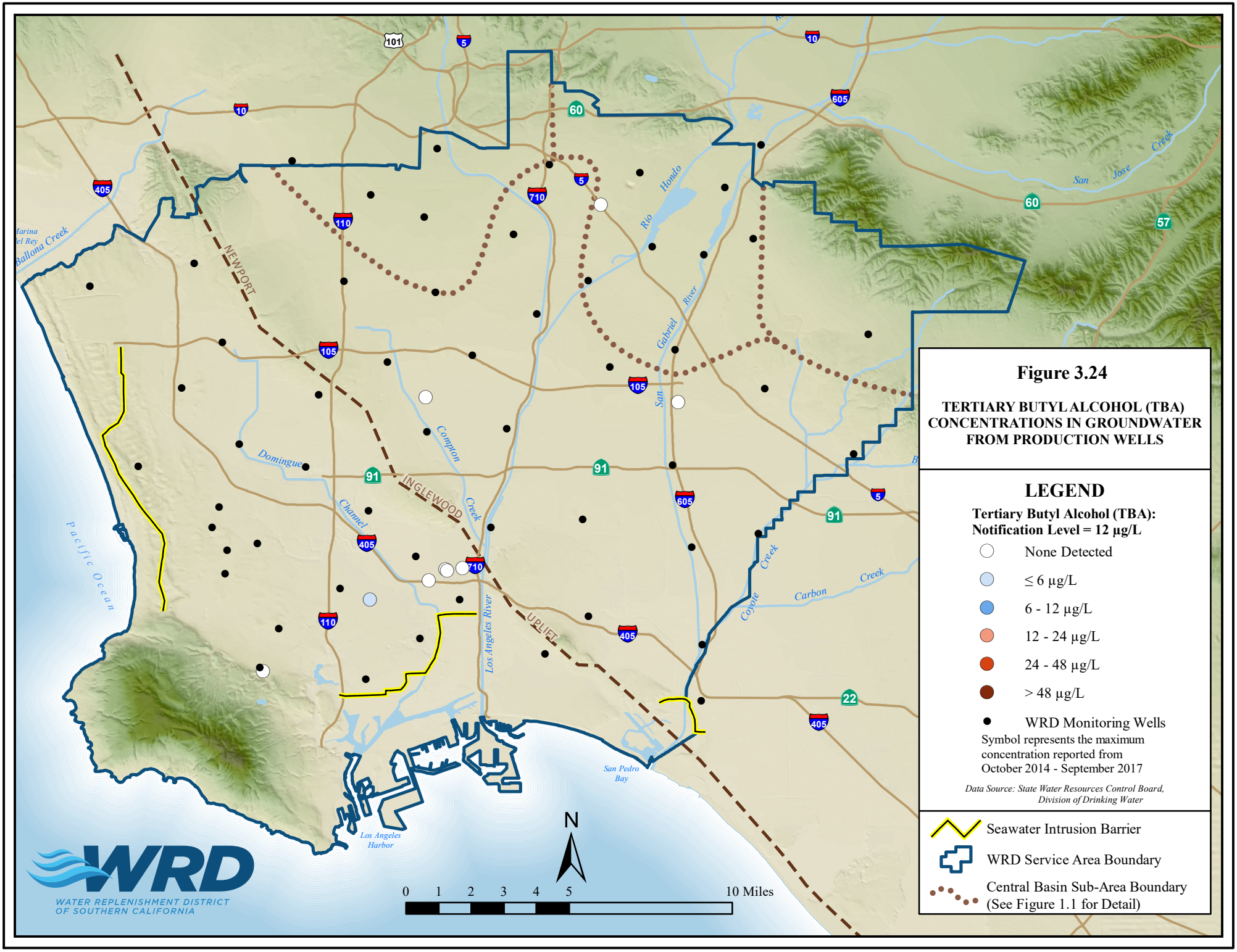
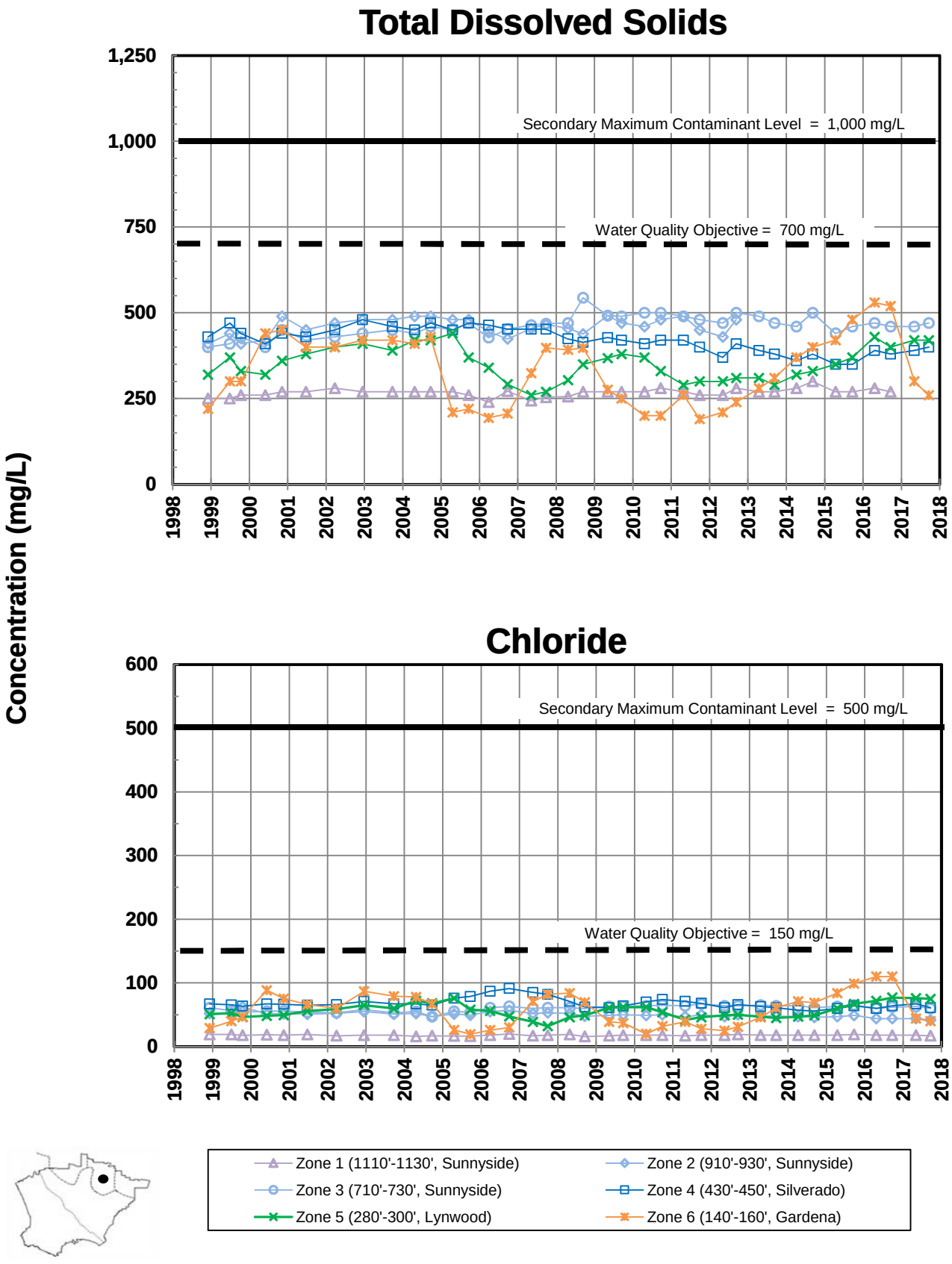
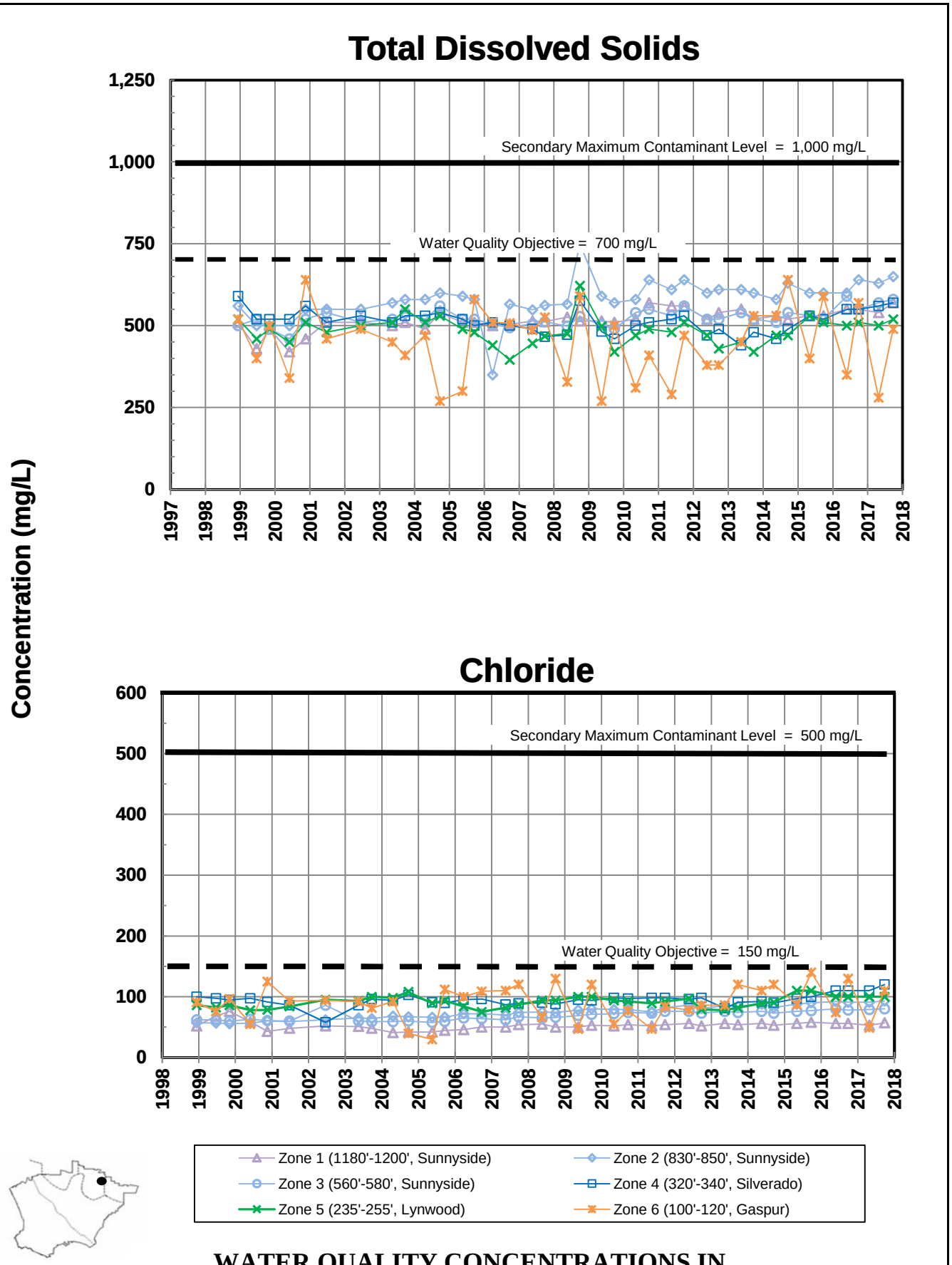


Figure 3.24
TERTIARY BUTYL ALCOHOL (TBA) CONCENTRATIONS IN GROUNDWATER FROM PRODUCTION WELLS
LEGEND
Tertiary Butyl Alcohol (TBA): Notification Level = 12 µg/L
None Detected
≤ 6 µg/L
6 - 12 µg/L
12 - 24 µg/L
24 - 48 µg/L
> 48 µg/L
WRD Monitoring Wells
Symbol represents the maximum concentration reported from October 2014 - September 2017
Data Source: State Water Resources Control Board, Division of Drinking Water
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary (See Figure 1.1 for Detail)
WRD
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA
N
0 1 2 3 4 5 10 Miles
Pacific Ocean
Los Angeles Harbor
San Pedro Bay
Los Angeles River
Rio Hondo
San Gabriel River
Coyote Creek
Carbon Creek
Compton Creek
Dominguez Channel
NEWPORT
INGLEWOOD
UPLIFT
Ballona Creek
San Jose Creek



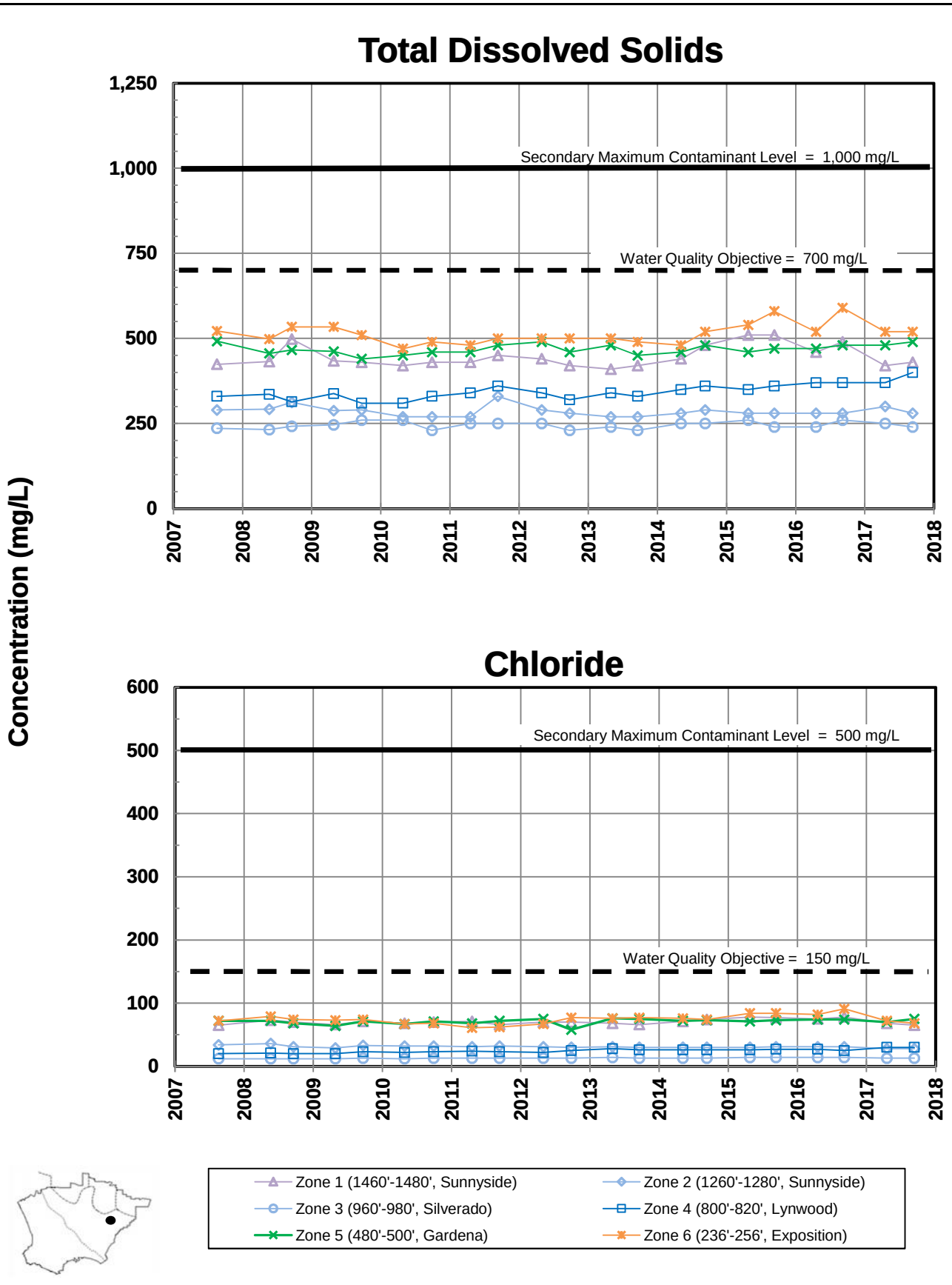
WATER QUALITY CONCENTRATIONS IN WRD KEY MONITORING WELL RIO HONDO #1

FIGURE 4.1



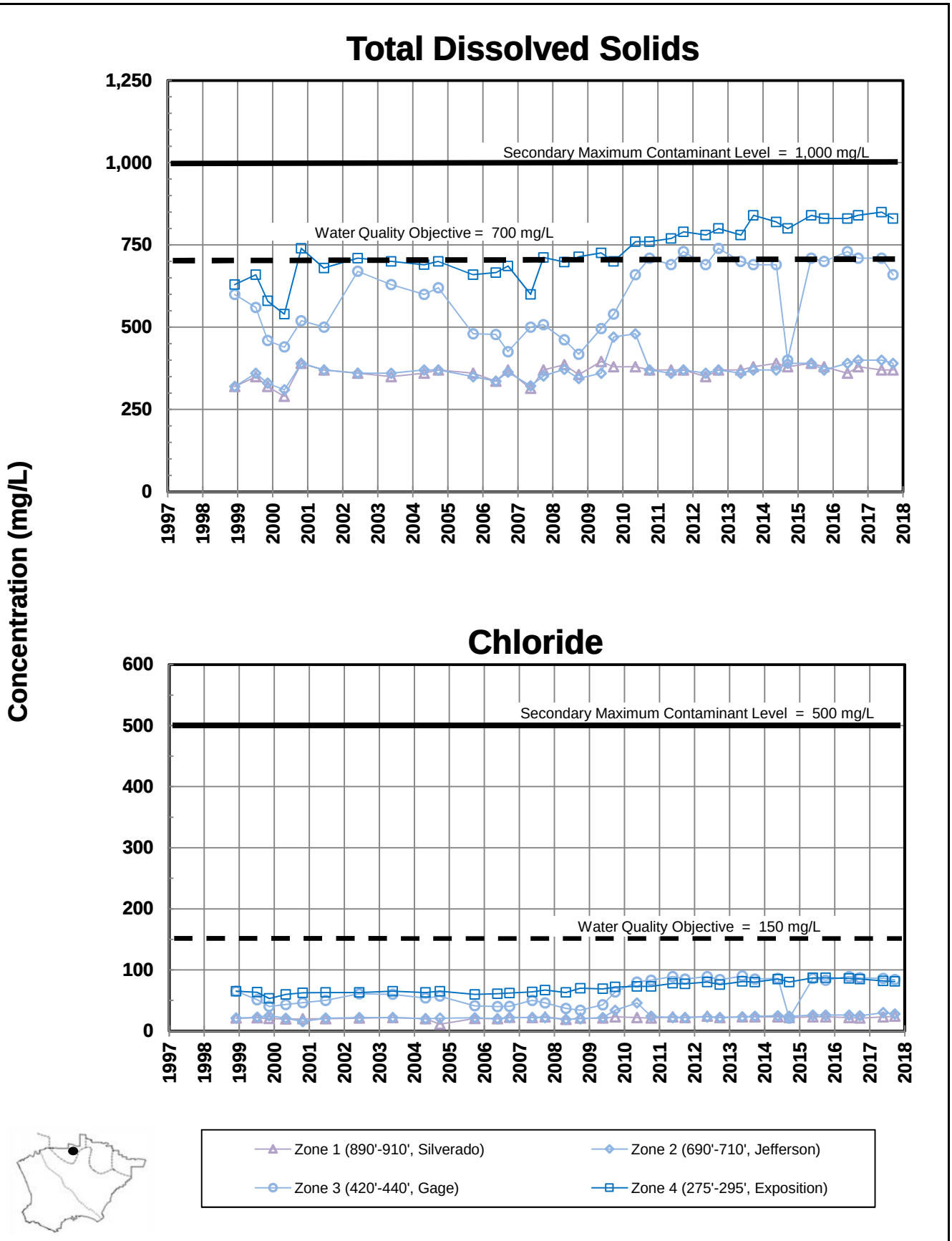
WATER QUALITY CONCENTRATIONS IN WRD KEY MONITORING WELL PICO #2

FIGURE 4.2



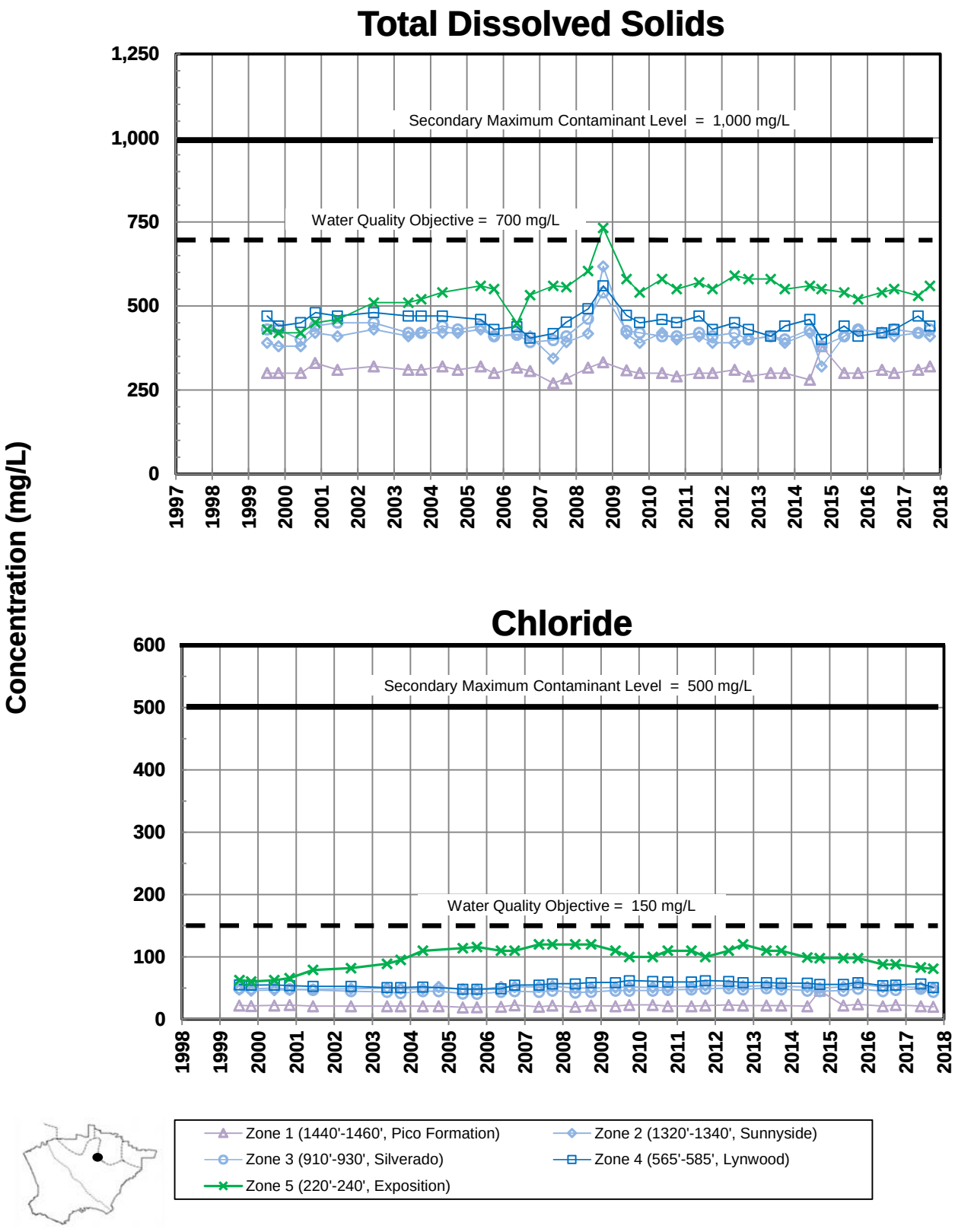
WATER QUALITY CONCENTRATIONS IN WRD KEY MONITORING WELL NORWALK #2

FIGURE 4.3



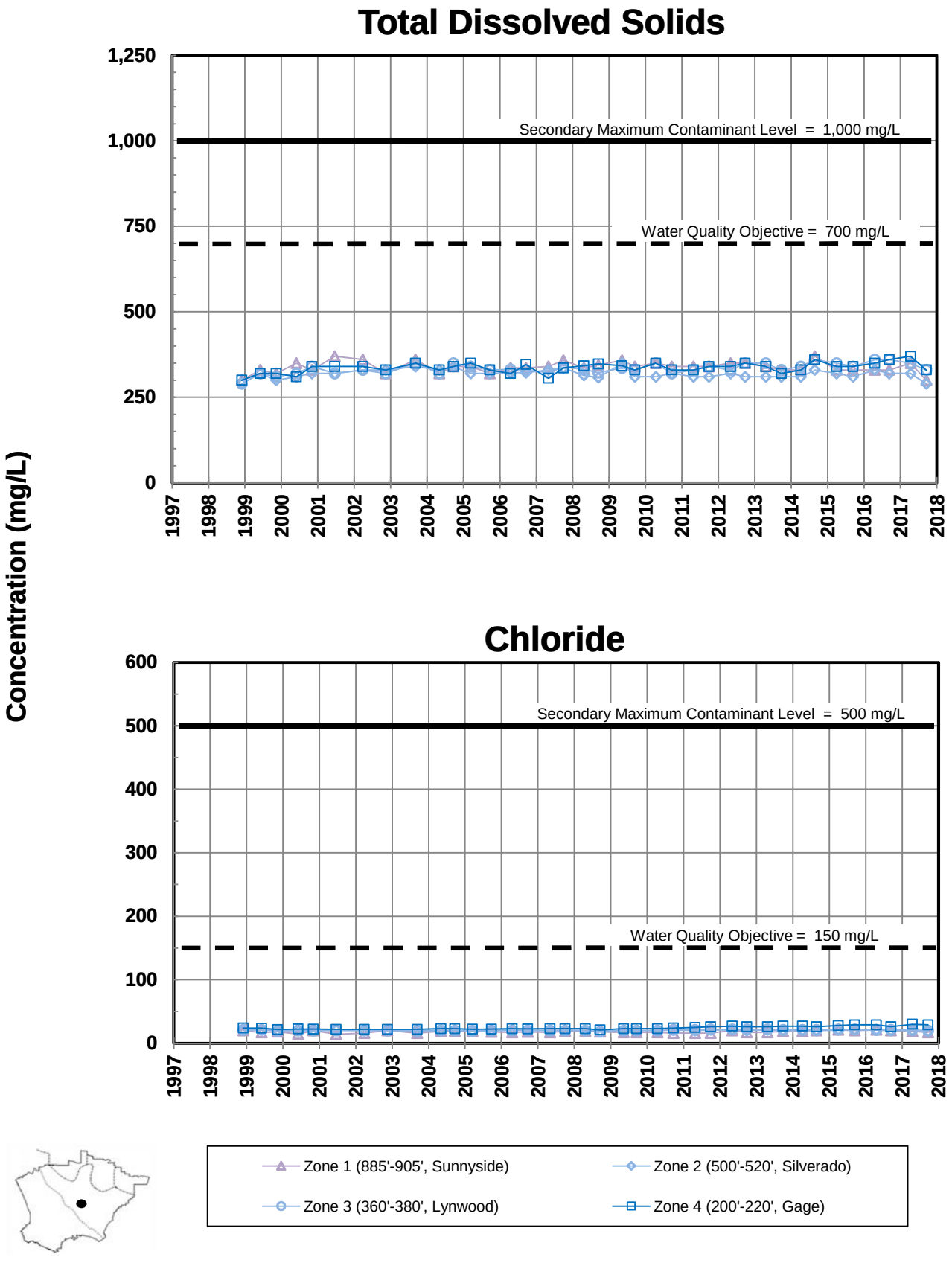
WATER QUALITY CONCENTRATIONS IN
WRD KEY MONITORING WELL HUNTINGTON PARK #1

FIGURE 4.4



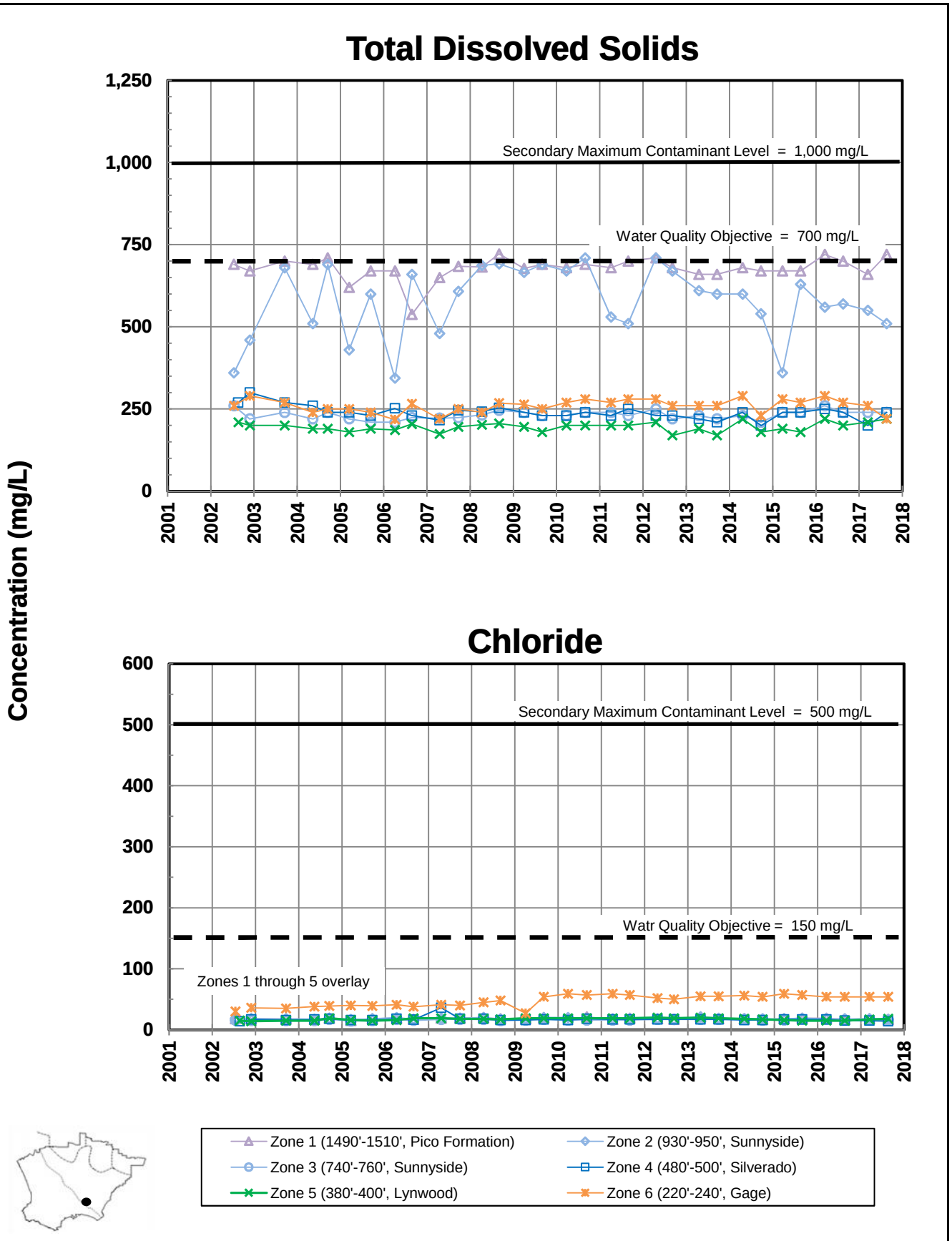
WATER QUALITY CONCENTRATIONS IN WRD KEY MONITORING WELL SOUTH GATE #1

FIGURE 4.5



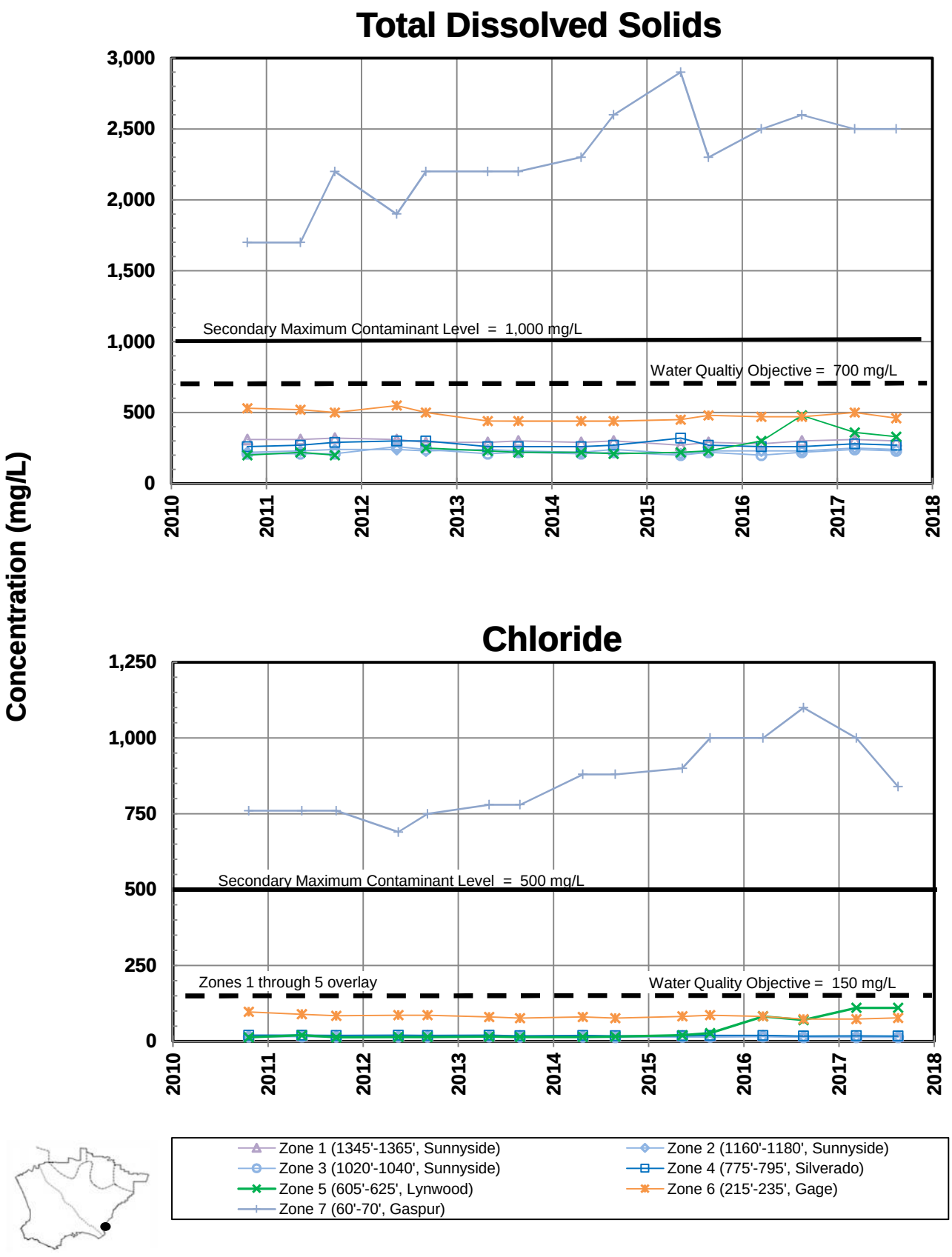
WATER QUALITY CONCENTRATIONS IN
WRD KEY MONITORING WELL WILLOWBROOK #1

FIGURE 4.6



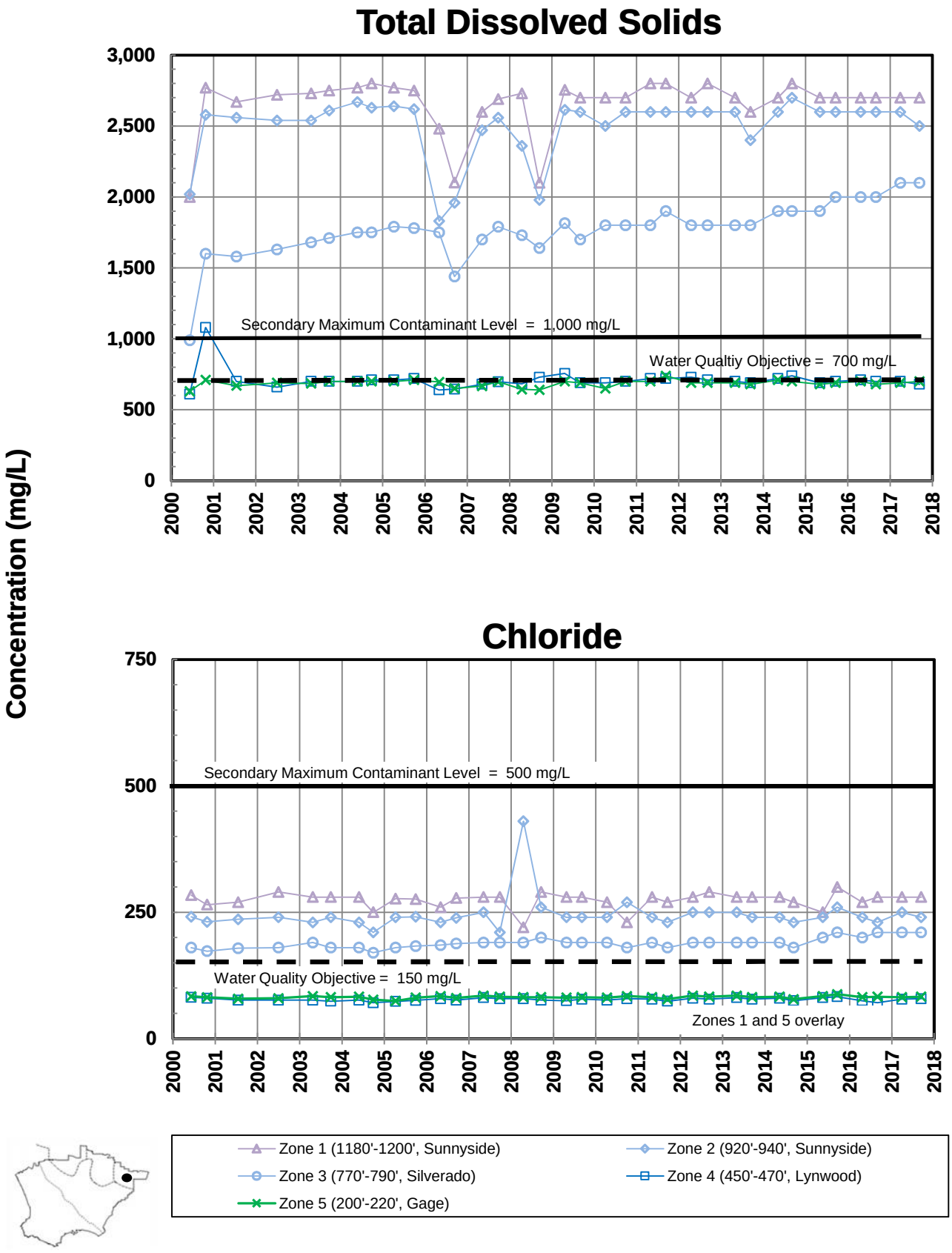
WATER QUALITY CONCENTRATIONS IN
WRD KEY MONITORING WELL LONG BEACH #6

FIGURE 4.7



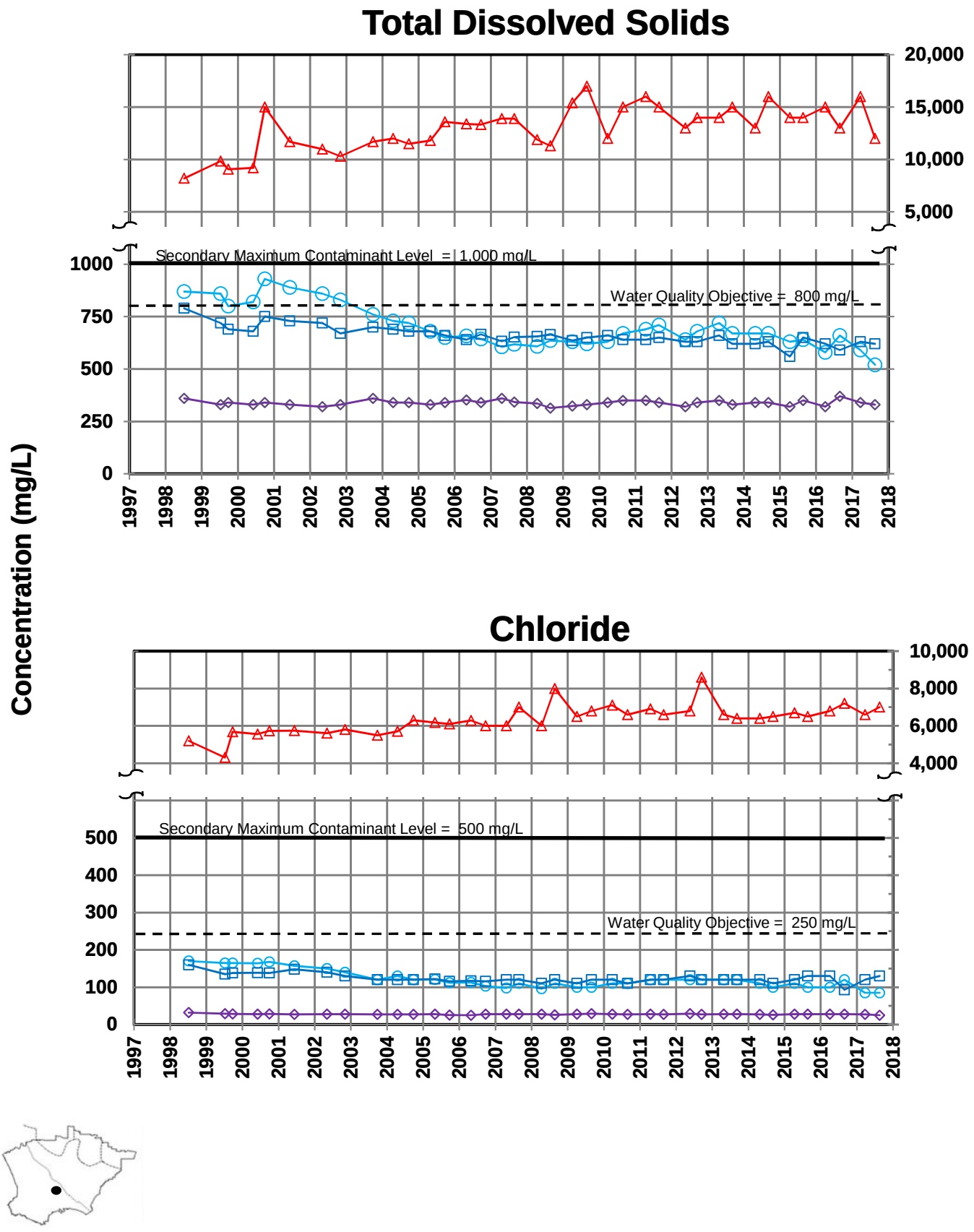
WATER QUALITY CONCENTRATIONS IN
WRD KEY MONITORING WELL SEAL BEACH #1

FIGURE 4.8



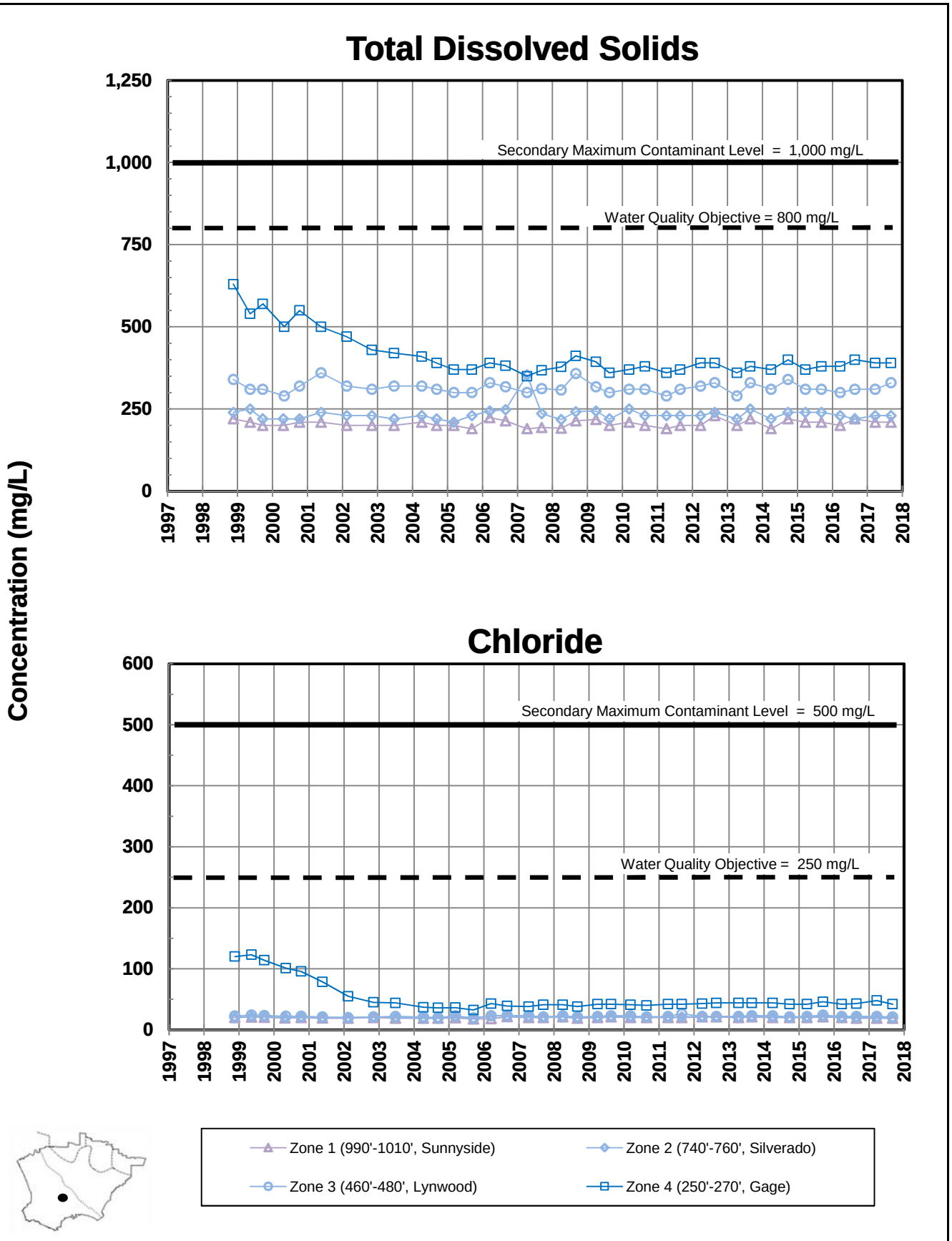
WATER QUALITY CONCENTRATIONS IN WRD KEY MONITORING WELL WHITTIER #1

FIGURE 4.9



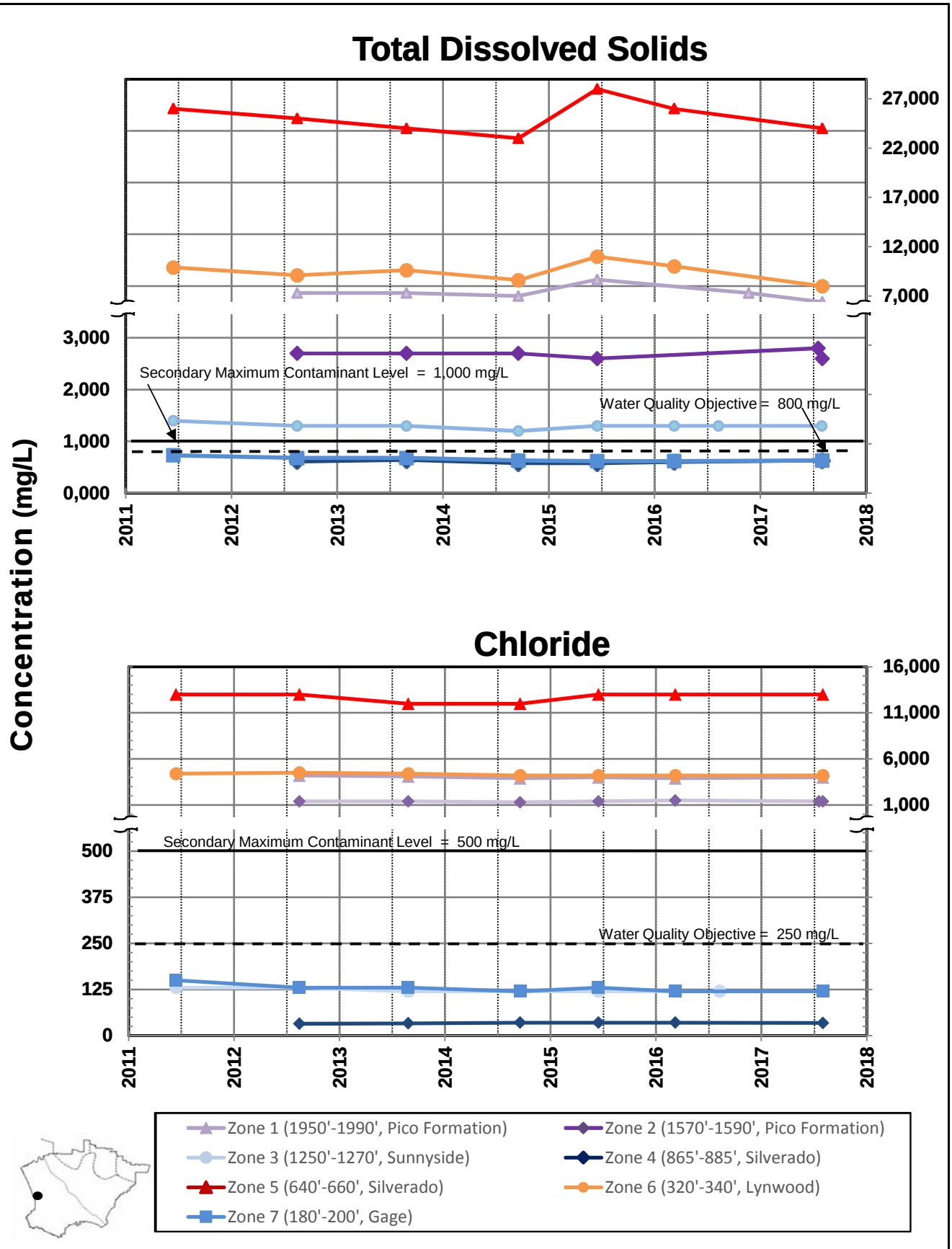
WATER QUALITY CONCENTRATIONS IN
WRD KEY MONITORING WELL PM-4 MARINER

FIGURE 4.10



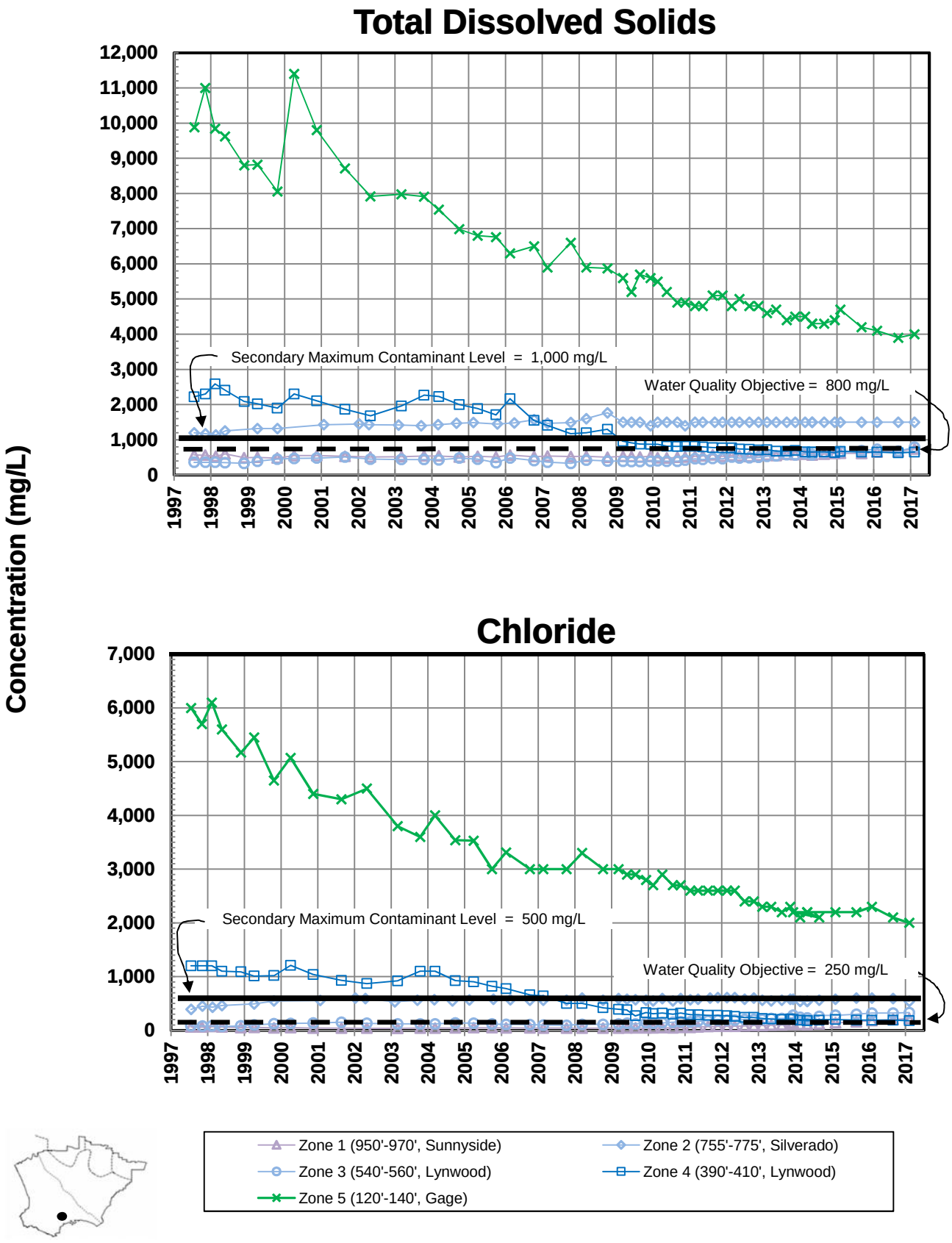
WATER QUALITY CONCENTRATIONS IN WRD KEY MONITORING WELL CARSON #1

FIGURE 4.11



WATER QUALITY CONCENTRATIONS IN WRD KEY MONITORING WELL MANHATTAN BEACH #1

FIGURE 4.12



WATER QUALITY CONCENTRATIONS IN
WRD KEY MONITORING WELL WILMINGTON #2

FIGURE 4.13

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."

Water Replenishment District
of Southern California
4040 Paramount Boulevard
Lakewood, CA 90712
Tel. (562) 921-5521
Fax (562) 921-6101
www.wrd.org