Water Replenishment District

REGIONAL GROUNDWATER MONITORING REPORT WATER YEAR 2018-2019

Central and West Coast Basins
Los Angeles County, California

WRD
WATER REPLENISHMENT DISTRICT

March 2020

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REGIONAL GROUNDWATER MONITORING REPORT
CENTRAL BASIN AND WEST COAST BASIN
LOS ANGELES COUNTY, CALIFORNIA
WATER YEAR 2018-2019

MARCH 2020

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Cover photo – The American Flag flies high above the drill rig installing WRD's most recent addition to its nested monitoring well network, Los Angeles #6, with the City skyline framing the view to the north.

Executive Summary

The Water Replenishment District (WRD or the District) was formed in 1959 to manage the groundwater replenishment and groundwater quality activities for four 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 most of the Central Basin and nearly 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.

This year marks the 60th year that WRD has been monitoring the CBWCB, 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. To that end, WRD has a dedicated Board and staff that engage in year-round activities to closely monitor groundwater conditions. The Regional Groundwater Monitoring Program (RGWMP) currently consists of a network of 335 monitoring wells at 60 locations throughout the District. WRD 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 covers WY 2018-19. 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 WY. On average this year water levels rose three feet across the District. In the Central Basin, water levels increased nearly everywhere which is mostly attributed to above average precipitation in WY 2018-19. Water levels in the West Coast Basin have generally increased; however, there are local areas where water levels are lower than they were in WY 2017-18. Overall groundwater storage gain across the District was 62,200 Acre-Feet (AF); 50,800 AF of that gain in storage occurred in the unconfined Montebello Forebay. Groundwater storage gain in the Los Angeles Forebay was 8,400 AF; the Whittier Area experienced a gain of 2,300 AF; and 700 AF of storage was gained in the Central Basin Pressure Area (CBPA). Storage in the West Coast Basin was unchanged compared to WY 2017-18.

Groundwater Quality

In WY 2018-19, WRD collected over 600 groundwater samples from its monitoring well network and analyzed them for more than 100 water quality constituents to produce over 60,000 individual data points to help track the water quality in the CBWCB. Included in the data for the first time this year are the analytical results for Los Angeles #6, WRD's most recently installed nested monitoring well. Analytical results from Los Angeles #6 are included in the Tables, Figures, and discussion in the body of this report.

Analysis for this report uses water quality maps and trend graphs to focus on 13 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, and 1,4-Dioxane. Also included this year is an analysis for the presence of 32 distinct Perfluoroalkyl and Polyfluoroalkyl Substance (PFAS) constituents in groundwater in the vicinity of the spreading grounds, including Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA). Overall, groundwater quality in the District remains very good, with only some areas facing poor water quality from natural or anthropogenic sources that WRD staff continue to monitor closely to determine increasing or decreasing trends.

This report also complies with the state's Recycled Water Policy to present information for the adopted Salt and Nutrient Management Plan (SNMP) for the CBWCB. Through the RGWMP, 13 key WRD nested monitoring wells track salt and nutrient water quality trends throughout the District and in the most critical areas of the basins, including areas near 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 generally stable, and although a few individual well zones do show increasing trends, a comparable number show decreasing trends.

Future Activities

WRD remains committed to its statutory charge to protect and preserve groundwater resources in its service area. To that end, WRD plans to add to its groundwater monitoring well network in the CBWCB to fill data gaps and enhance the tracking of replenishment water by installing three new wells within and downgradient of the spreading grounds.

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, developed by the United States Geological Survey (USGS), and expected to be published in 2020, to improve the framework for understanding the groundwater system and for use as a planning tool.

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

AF	Acre-Feet
ARC	Albert Robles Center for Water Recycling and Environmental Learning
AWTF	Advanced Water Treatment Facility
BGS	Below Ground Surface
CASGEM	California Statewide Groundwater Elevation Monitoring
CEC	Chemical of Emerging Concern
CSDLAC	County Sanitation Districts of Los Angeles County
CBWCB	Central Basin and West Coast Basin
CBPA	Central Basin Pressure Area
DDW	State Water Resources Control Board, Division of Drinking Water
DME	Designated Monitoring Entity
DWR	California Department of Water Resources
ELWRF	Edward C. Little Water Recycling Facility
ESR	Engineering Survey and Report
GIS	Geographic Information System
GPS	Global Positioning System
GRIP	Groundwater Reliability Improvement Program
LACDPW	Los Angeles County Department of Public Works
LAX	Los Angeles International Airport
MCL	Maximum Contaminant Level
mg/L	Milligram per Liter
µg/L	Microgram per Liter
MSL	Mean Sea Level
MWD	Metropolitan Water District of Southern California
NAVD88	North American Vertical Datum of 1988
NDMA	N-Nitrosodimethylamine
ng/L	Nanograms per Liter
NL	Notification Level
OEHHA	Office of Environmental Health Hazard Assessment

GLOSSARY OF ACRONYMS (continued)

PCE	Tetrachloroethylene
PDF	Portable Document Format
PFAS	Perfluoroalkyl and Polyfluoroalkyl Substances
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctane Sulfonate
PHG	Public Health Goal
RGWMP	Regional Groundwater Monitoring Program
RGWMR	Regional Groundwater Monitoring Report
RL	Response Level
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
WQO	Water Quality Objective
WRD	Water Replenishment District
WRP	Water Reclamation Plant
WY	Water Year

SECTION 1
INTRODUCTION

The Water Replenishment District (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 most of the Central Basin and nearly 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 in 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. Following its inception, WRD implemented the Regional Groundwater Monitoring Program (RGWMP) as a program designed to track groundwater levels and groundwater quality in the WRD service area in the effort to ensure the sustainability of groundwater as a reliable 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 provided for a Water Year (WY), which occurs from October 1 to 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). The study provides 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 that are used in the RGWMP. Currently, there are 335 wells at 60 locations; a few of these wells are used exclusively to monitor groundwater elevations, but most are used to monitor both groundwater elevations and water quality within the WRD service area. A listing and well construction details for the WRD nested wells used in the RGWMP are presented in **Table 1.1.** Listings and well construction details for other wells used to prepare the groundwater elevation contour and groundwater elevation change maps that are included in this report are presented in **Table 1.2**.

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. WRD's RGWMR is published annually 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 (DME) 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 DWR document entitled *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. During WY 2017-18, WRD updated its interpretation of the aquifer classifications assigned to each well so that they more closely match those of Bulletin 104. This has resulted in changes to designations at some wells from those that have been previously used and published by WRD. **Table 1.1** lists the specific aquifer assigned to each well used in the RGWMP and indicates whether that designation follows Bulletin 104 or is the result of WRD's most current interpretation.

The locations of idealized geologic cross-sections A-A' and B-B' 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; however, 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 described above in Section 1.1. 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 (MSL) 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 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. In 2018, a major upgrade to this site was completed to enhance its capabilities, and in November 2019 further enhancements to the site were launched. 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 2018-19 and discusses the status of the RGWMP. Section 1 provides an overview of the WRD and its RGWMP. Section 2 discusses district-wide groundwater levels for WY 2018-19. 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 current WY 2018-19 RGWMR, along with previously published reports for past WYs, can be viewed online and downloaded in Portable Document Format (PDF) form 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. Groundwater levels can 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 dependent on both regional precipitation and on the amount of water extracted by pumping.

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 MSL 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 2018-19. 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 pumpers, DWR, and LACDPW, who collect water levels from their own wells. These data are entered into WRD's GIS water level database for archiving and analysis.

From the water level database, a groundwater elevation contour map, change in groundwater level map, and groundwater elevation hydrographs for selected wells were prepared 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 2019 is presented in **Figure 2.1**. Specific well zones used to develop the groundwater contour map are identified on **Table 2.1**. The fall 2019 Contour Map shows that in the Central Basin water levels range from highs in excess of 160 feet above MSL to lows deeper than 105 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 more than 60 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 elevations 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

Figure 2.2 is a groundwater level change map that illustrates the difference between groundwater levels measured in fall 2018 and those measured in fall 2019. Specific well zones used to develop the groundwater level change map are identified on **Table 2.1**. During WY 2018-19, groundwater levels across the WRD service area have generally increased, although decreases are observed in some areas, and in others groundwater levels are essentially unchanged from WY 2017-18.

In the Central Basin, groundwater levels have increased nearly everywhere in WY 2018-19. Across the unconfined Montebello Forebay the greatest increases in water levels are observed in close vicinity to the spreading grounds where water levels are as much as 22 feet higher than they were the previous year (fall 2018). The increase in water levels becomes less pronounced moving away from the spreading grounds; along the eastern reach of the Montebello Forebay they are as much as 12 feet higher than they were in fall 2018, and along the western reach they are about six feet higher than they were in fall 2018. Across the unconfined Los Angeles Forebay, water levels have increased by nearly 13 feet compared to those measured in fall 2018. Water levels in the western portion of the Los Angeles Forebay range from relatively unchanged to about three feet higher than they were in fall 2018, while those in the eastern portion have increased by as much as seven feet. Water levels in the Whittier Area have also increased or remained relatively unchanged in WY 2018-19; in the west they are as much as 12 feet higher than they were in fall 2018. In the eastern reach of the Whittier Area water levels are essentially unchanged from fall 2018.

Water levels have generally increased or have remained relatively unchanged across the rest of the Central Basin in WY 2018-19. In the north-central portion of the Central Basin Pressure Area (CBPA), water levels have increased this year by as much as eight feet; along the eastern edge of the CBPA water levels range from relatively unchanged to as much as six feet higher than they were in fall 2018. Across the southern and western portions of the CBPA, near the Newport-Inglewood Uplift, water levels remain generally unchanged from those measured in fall 2018. One exception is in the Willowbrook area where a small area of localized groundwater depression has resulted in a decrease of nearly four feet.

In the West Coast Basin, water levels have generally increased; however local areas with water levels lower than those measured in fall 2018 are observed. Across much of the coastal area water levels are about one to two feet higher this year than in fall 2018. In the Wilmington area, a localized area of groundwater depression has resulted in a decrease of nearly six feet. In the Long Beach/Carson/Torrance areas, water levels range from about one to six feet higher than they were in WY 2017-18. In the Gardena area between the Newport-Inglewood and Charnock Faults, water levels have generally decreased and range from relatively unchanged to as much as six feet lower than they were in fall 2018.

District wide, groundwater levels increased by three feet in WY 2018-19, although across the Montebello Forebay region water levels increased by an average of more than 10 feet. Overall groundwater storage gain across the District in WY 2018-19 was 62,200 Acre-Feet (AF); 50,800 AF of that increase in storage occurred in the Montebello Forebay. Groundwater storage gain in the Los Angeles Forebay was about 8,400 AF; 700 AF of storage was gained in the CBPA, and the Whittier Area saw an increase of 2,300 AF. Storage in the West Coast Basin was unchanged compared to WY 2017-18.

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, CBPA, and West Coast Basin are presented in the annual WRD Engineering Survey and Report (ESR). In general, the hydrographs show that in the Central Basin, water levels were in steep decline through the 1930s and into the late 1950s as a result of excessive pumping (overdraft). Initiation of groundwater management policies in the late 1950s and early 1960s including formation of the WRD, adjudication of the basins, and installation of seawater barrier wells are evident on the hydrographs in the form of a distinct reversal in water level decline followed by a steady increase through the 1960s. Despite repeated fluctuation between periods of decreasing and increasing trends, water levels in the Central Basin have generally been relatively stable since the 1960s, although over the past several years they have been in decline. In the West Coast Basin, the hydrographs show a similar steep decline in water levels in the 1930s through the1950s as a result of overdraft, followed by stabilization and steady increase through the 1960s that continues to the present day. ESR hydrographs are not presented in this RGWMR; however, they can be viewed in the ESR reports online and downloaded from the WRD website at *http://www.wrd.org* .

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 CBPA, one in the Whittier Area, and four in the West Coast Basin. The 13 key nested monitoring well locations 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** is 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, from shallowest to deepest, in the Gardena, Hollydale, Silverado, and Sunnyside (two zones) Aquifers, and the Pico Formation, 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 each 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 by more than 10 feet over the previous WY, bringing them to about the levels last observed in WY 2016-17.

Figure 2.4 is a hydrograph for WRD's Pico #2 key nested monitoring well located in the Montebello Forebay adjacent to the San Gabriel River and just south of the San Gabriel River Spreading Grounds. There are six individual wells (zones) that are screened, from shallowest to deepest, in the Gaspur/Gage, Lynwood, Silverado, and Sunnyside (three deepest zones) Aquifers, with depths ranging from 100 to 1,200 feet BGS. Groundwater elevations are lowest in Zones 1, 2, and 3, all of which are screened in the Sunnyside Aquifer, suggesting that the Sunnyside Aquifer is the most heavily pumped in this area. Water levels in Zone 3 increased more than 11 feet over the previous WY, returning them to levels last observed at this location in WY 2016-17.

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): Gardena, Silverado, Sunnyside (two zones) Aquifers, and the Pico Formation (two 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 CBPA. Unlike Rio Hondo #1 and Pico #2, water level responses to seasonal discharge and recharge influences are less pronounced at Norwalk #2, with seasonal swings of around 20 feet compared to the greater than 30-foot seasonal swings at Rio Hondo #1 and Pico #2. Groundwater elevations are deepest in Zones 3 and 4, which are both screened in the Sunnyside Aquifer, suggesting that this aquifer is the most heavily pumped in the area. The water level in Zone 3 increased by more than 7 feet over the previous WY, bringing it to about the level last observed here in WY 2016-17.

2.5 GROUNDWATER LEVELS IN THE LOS ANGELES FOREBAY

Figure 2.6 is a hydrograph for WRD's Huntington Park #1 key 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, Gage, Hollydale, Lynwood, 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 the Gaspur Aquifer) is dry. 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 Gage Aquifer from the deeper aquifers. Water levels in the deepest two zones, the Lynwood and Silverado Aquifers, are generally similar. Water levels in the Lynwood Aquifer increased nearly 13 feet and in the Silverado Aquifer they increased by about eight feet over WY 2018-19. Unlike recent decreases over the past seven years in the Montebello Forebay, water levels in the Los Angeles Forebay have remained relatively stable over the past 20 years.

2.6 GROUNDWATER LEVELS IN THE CENTRAL BASIN PRESSURE AREA

Figure 2.7 is a hydrograph for WRD's South Gate #1 key nested monitoring well, which is located in the north-central portion of the CBPA, 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 (two deepest zones) Aquifers, 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 5 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 between two and seven feet in the deeper aquifers over WY 2018-19.

Figure 2.8 is a hydrograph for WRD's Willowbrook #1 key nested monitoring well, which is located in the CBPA, about seven 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 decreased by four feet in Zone 1 and by about 0.5 foot in Zone 2 over WY 2018-19. Water levels in Zones 3 and 4 have decreased by less than 0.5-foot over WY 2018-19. Water levels in Willowbrook #1 have generally declined over the past 20 years.

Figure 2.9 is a hydrograph for key nested monitoring well Long Beach #6 located in the southern portion of the CBPA. There are six individual wells (zones) that are screened, from shallowest to deepest, in the 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 CBPA 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 Silverado and Lynwood Aquifers, can rise and fall by more than 100 feet through typical seasonal cycles, and have been recorded historically at elevations ranging from highs near sea level to lows deeper 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 WY 2018-19; water levels in Zones 4 and 5 have increased slightly during WY 2018-19.

Seal Beach #1 is included as a key nested monitoring well for the CBPA 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, from shallowest to deepest, in the Artesia, Gage, Lynwood, Silverado, and Sunnyside (three deepest zones) Aquifers, 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 decreased about two feet in WY 2018-19. 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 slightly more than four feet this WY compared to WY 2017-18.

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 key nested monitoring well located in the eastern part of the Whittier Area. There are five individual wells (zones) that are screened, from shallowest to deepest, in the Jefferson, Silverado, and Sunnyside Aquifers, and the Pico Formation (two deepest 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 more than 80 feet higher suggesting substantial isolation by an aquitard(s). The Whittier #1 hydrograph indicates that groundwater levels in the Whittier Area have remained relatively unchanged over WY 2018-19 and have decreased about 10 feet over the past 19 years.

2.8 GROUNDWATER LEVELS IN THE WEST COAST BASIN

Figure 2.12 is a hydrograph for WRD's PM-4 Mariner key 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, from shallowest to deepest, in the Gardena, Lynwood, Silverado, and Sunnyside Aquifers, 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 and are separated from Zone 2 (Silverado) water levels, which are a couple of feet higher. Water levels in Zones 3 and 4 (Lynwood and Gardena) are both between two and four feet higher than those in Zone 2. Water levels have increased by about one foot in Zones 1, 2, 3 and 4 at PM-4 Mariner in WY 2018-19.

Figure 2.13 is a hydrograph for WRD's Carson #1 key nested monitoring well, which is located in the inland region of the West Coast Basin. There are four individual wells (zones) that are screened, from shallowest to deepest, in the Gage, Lynwood, and Silverado (two deepest zones) Aquifers, with depths ranging from 250 to 1,010 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 25 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 have decreased slightly more than one foot over WY 2018-19 but have generally increased about 35 feet over the past 20 years.

Manhattan Beach #1 is 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, from shallowest to deepest, in the Gage, Silverado, and Sunnyside (two zones) Aquifers, and the Pico Formation (three deepest zones), with depths ranging from 180 to 1,990 feet BGS. Zone 3 is screened in the Pico Formation and has the deepest groundwater levels, as much as 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 previous WY. Water levels in Zone 3 have increased slightly more than two feet over the previous WY and about 12 feet since this well was installed in WY 2010-11.

Figure 2.15 is a hydrograph for WRD's Wilmington #2 key 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, Silverado (two zones), 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 5 has shallower water levels and shows less seasonal change suggesting hydraulic separation from the lower four zones. Wilmington #2 water levels have increased slightly in the deeper aquifers over WY 2018-19 and have increased by as much as 30 feet over the past 20 years.

SECTION 3
GROUNDWATER AND REPLENISHMENT WATER QUALITY

This section discusses the vertical and horizontal distribution of water quality constituents in WRD's service area 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.

Comparisons of water quality results to various regulatory standards are made throughout this section. A brief discussion of 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. 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 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 in 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 that these data provide the most valuable insight into CBWCB groundwater quality. Groundwater samples collected from WRD's nested wells are submitted immediately after collection to a State-certified laboratory for analysis for general water quality constituents, known or suspected natural and man-made contaminants, and other select constituents of interest.

Historically, WRD has performed groundwater sampling of its nested monitoring wells on a semi-annual schedule, and over the past few decades has compiled an enormous database of analytical results. In WY 2017-18, WRD conducted an intensive review of this database specifically to determine if the frequency of sampling could be reduced at some wells without compromising its current high-quality assessment of groundwater conditions in the CBWCB. Using criteria such as the length of time a well has been in service, and the nature of concentration trends within each zone at a nested monitoring well site, WRD was able to identify 11 nested wells where the sampling frequency could be reduced from semi-annual to annual. Commencing in WY 2017-18 and continuing this WY (WY 2018-19), semi-annual sampling was not conducted during fall sampling events at Bell Gardens #1, Carson #2, Cerritos #1, Commerce #1, Compton #2, Hawthorne #1, Lakewood #1, Long Beach #2, Long Beach #8, Norwalk #1 and Whittier #2; however, annual sampling was conducted from those wells each year during the spring sampling events. This reduction in sampling will produce a net cost savings without sacrificing the quality of data provided by WRD. As the quantity of data from each nested well site continues to increase, WRD will periodically review that data and where conditions allow, will reduce the sampling frequency at additional nested well sites. WRD will closely monitor the data collected from the reduced frequency wells to assure that conditions that allowed their reductions still exist; if they do not, sampling will be resumed on a semi-annual schedule.

Table 3.1 presents water quality analytical results from 35 WRD nested monitoring wells (201 individual well zones) in the Central Basin during WY 2018-19. **Table 3.2** presents water quality analytical results from 22 WRD nested monitoring wells (112 individual well zones) in the West Coast Basin during WY 2018-19. WRD also collected samples from 20 nested monitoring wells (124 individual well zones) in the vicinity of the spreading grounds to assess for the presence of 32 distinct Per- and polyfluoroalkyl substance (PFAS) constituents, including Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA). **Table 3.3** presents the analytical results of WRD's PFAS assessment during WY 2018-19. 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 13 water quality constituents (**Figures 3.1 – 3.26**). The 13 constituents include total dissolved solids (TDS), iron, manganese, chloride, nitrate, trichloroethylene (TCE), tetrachloroethylene (PCE), arsenic, perchlorate, hexavalent chromium, 1,4-Dioxane, PFOS, and PFOA. 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 2018-19 indicate relatively low TDS concentrations for groundwater in the producing aquifers of the Central Basin. As shown on **Figure 3.1**, in the Central Basin, TDS was detected in WRD nested monitoring wells at concentrations above the SMCL in 19 out of 201 individual well zones (9%). In the West Coast Basin, TDS was detected in WRD nested monitoring wells at concentrations above the SMCL in 34 out of 112 individual well zones (30%). 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 the maximum TDS detection in production wells across the WRD service area for a three-year period spanning WYs 2016-19. In the Central Basin, TDS was not detected above the Upper Level SMCL of 1,000 mg/L in any of the 194 production wells sampled for TDS during this period. In the West Coast Basin, TDS was detected at concentrations above the SMCL in five out of 30 production wells (17%). The elevated TDS levels detected in the West Coast Basin may be caused by seawater intrusion, connate brines, or perhaps 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. As shown on **Figure 3.3,** in the Central Basin, iron was detected in WRD nested monitoring wells at concentrations above the SMCL in 13 out of 201 individual well zones (6%). In the West Coast Basin, iron was detected in WRD nested monitoring wells at concentrations above the SMCL in 19 out of 112 individual well zones (17%).

Figure 3.4 presents DDW water quality data for the maximum iron detection in production wells across the WRD service area for a three-year period spanning WYs 2016-19. In the Central Basin, iron was detected at concentrations above the SMCL of 0.3 mg/L in 20 out of 231 production wells (9%). In the West Coast Basin, iron was detected at concentrations above the SMCL in nine out of 31 production wells (29%).

3.1.3 Manganese

Manganese is naturally-occurring and in high concentrations may be 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 also has an NL of 500 µg/L.

Manganese concentrations in the WRD nested monitoring wells 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. As shown in **Figure 3.5**, in the Central Basin nested well sites, manganese concentrations exceed the SMCL in 65 out of 201 individual well zones (32%), and in three of those 65 zones (5%) manganese was detected at concentrations above the NL. In West Coast Basin nested well sites, manganese was detected at concentrations above the SMCL in 53 out of 112 individual well zones (47%), and in five of those 53 zones (9%) it was detected at concentrations above the NL.

Figure 3.6 presents DDW water quality data for the maximum manganese detection in production wells across the WRD service area for a three-year period spanning WYs 2016-19. Manganese was detected in Central Basin production wells at concentrations above the SMCL in 43 out of 223 production wells (19%), and in one of those 43 wells (2%)

manganese was detected at concentrations above the NL of 500 µg/L. Manganese was detected in West Coast Basin production wells at concentrations above the SMCL in 20 out of 31 production wells (65%) but was not detected at concentrations above the NL in any of those 20 wells.

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 2018-19. In the Central Basin, with only a few exceptions all 35 nested well sites generally have low chloride concentrations. As shown on Figure 3.7, chloride was detected in WRD nested monitoring wells in the Central Basin at concentrations above both the upper SMCL and the short term SMCL in five out of 201 individual well zones (2%). In the West Coast Basin, chloride was detected in WRD nested monitoring wells at concentrations above the upper SMCL in 26 out of 112 individual well zones (23%); in 23 of those 26 individual well zones (88%) chloride was at a concentration above the short term SMCL of 600 mg/L.

Figure 3.8 presents DDW water quality data for the maximum chloride detection in production wells in the WRD service area for a three-year period spanning WYs 2016-19. Chloride was not detected above the upper SMCL of 500 mg/L in any of the 214 Central Basin production wells sampled for chloride during this period. In the West Coast Basin, four of the 30 (13%) production wells tested, all of which are located on the west side of the basin near the coast, had chloride concentrations above the short term SMCL of 600 mg/L.

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 to 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 2018-19. In the Central Basin, nitrate was detected in WRD nested monitoring well locations at concentrations above the MCL in three out of 201 individual well zones (1%). All three of those nitrate detections were from the shallower zones; two of those wells are located in the Los Angeles Forebay, and one is located in the CBPA near the District Boundary. In general, nested monitoring wells in the immediate vicinity of the Montebello and Los Angeles Forebays typically contain nitrate at concentrations below the MCL in the shallower 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. In the West Coast Basin, nitrate was detected in WRD nested monitoring well locations at concentrations above the MCL in three out of 112 individual well zones (3%).

Figure 3.10 presents DDW water quality data for the maximum nitrate detection in production wells across the WRD service area for a three-year period spanning WYs 2016-19. One of the 225 (<1%) Central Basin production wells tested for nitrate, located in the Los Angeles Forebay, contained nitrate above the MCL of 10 mg/L. None of the 30 production wells tested in the West Coast Basin for nitrate exceeded the MCL during WYs 2016-19.

3.1.6 Trichloroethylene (TCE)

TCE is a solvent used in metal degreasing, textile processing, and dry cleaning. In addition to its multiple, acute effects on health, TCE is also classified as a probable human carcinogen. The MCL for TCE in drinking water is 5 µg/L. If present in water, TCE can be removed easily by common treatment processes, including air stripping or vapor extraction utilizing granular activated carbon filtration media.

As shown on **Figure 3.11**, in the Central Basin TCE was detected in WRD nested monitoring well locations at concentrations above the MCL in four out of 201 individual well zones (2%). In the West Coast Basin, TCE was detected in WRD nested monitoring well locations at concentrations above the MCL in one out of 112 individual well zones (<1%). Nested wells impacted by TCE are generally located in the northern portion of the Central Basin, within or near the Los Angeles Forebay.

Figure 3.12 presents DDW water quality data for the maximum TCE detection in production wells across the WRD service area for a three-year period spanning WYs 2016-19. As shown on Figure 3.12, in the Central Basin TCE was detected at concentrations above the MCL of 5 µg/L in 20 out of 228 production wells (9%). 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 not detected at concentrations above the MCL in any of the 31 West Coast Basin production wells tested for TCE during WYs 2016-19.

3.1.7 Tetrachloroethylene (PCE)

PCE (also known as tetrachloroethylene, tetrachloroethene, perc, perclene, and perchlor) is a solvent used commonly in the dry-cleaning industry, as well as in metal degreasing and textile processing. The MCL for PCE in drinking water is 5 µg/L. In addition to its multiple acute health effects, PCE is also classified as a probable human carcinogen. If present in water, PCE can be removed easily by common treatment processes, including air stripping or vapor extraction utilizing granular activated carbon filtration media.

As shown on **Figure 3.13**, in the Central Basin PCE was detected in WRD nested monitoring well locations at concentrations above the MCL in one of 201 individual wells zones (<1%). In West Coast Basin nested wells, PCE was not detected in any of the individual well zones.

Figure 3.14 presents DDW water quality data for the maximum PCE detection in production wells across the WRD service area for a three-year period spanning WYs 2016-19. In the Central Basin, PCE was detected at concentrations above the MCL in 12 out of 228 production wells (5%). 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 CBPA. PCE was not detected in any of the 31 West Coast Basin production wells tested for PCE.

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 2018-19. In the Central Basin, arsenic was detected in WRD nested monitoring well locations at concentrations above the MCL in 19 out of 201 individual well zones (9%). In the West Coast Basin, arsenic was detected in WRD nested well locations at concentrations above the MCL at three out of 112 individual well zones (3%).

Figure 3.16 presents DDW water quality data for the maximum arsenic detection in production wells across the WRD service area for a three-year period spanning WYs 2016-19. In the Central Basin, arsenic was detected at concentrations above the MCL in nine out of 220 (4%) production wells. In the West Coast Basin, arsenic was not detected at a concentration above the MCL in any of the 29 production wells tested for arsenic.

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 2018-19. In the Central Basin, perchlorate was detected in WRD nested monitoring well locations at concentrations above the MCL in one out of 201 individual well zones (<1%). In the West Coast Basin, perchlorate was detected in WRD nested monitoring well locations at concentrations above the MCL in one out of 112 individual well zones (<1%).

Figure 3.18 presents DDW water quality data for the maximum perchlorate detection in production wells across the WRD service area for a three-year period spanning WYs 2016-19. In the Central Basin, perchlorate was detected at concentrations above the MCL of 6 µg/L in two out of 220 production wells (<1%). Perchlorate was not detected in any of the 30 West Coast Basin production wells that were tested for perchlorate.

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 State Water Resources Control Board (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 herein 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 has recently been shown to increase the risk of cancer 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 at concentrations above the historic MCL value in three out of 201 individual well zones (2%). In the West Coast Basin, hexavalent chromium was not detected at concentrations above the MCL in any of the individual well zones.

Figure 3.20 presents DDW water quality data for the maximum hexavalent chromium detection in production wells across the WRD service area for a three-year period spanning WYs 2016-19. Hexavalent chromium was not detected at a concentration above the historic MCL of 10 µg/L in any of the production wells that were tested for hexavalent chromium in either the Central Basin or 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 SWRCB established a drinking water NL of 1 µg/L, and a RL of 35 µg/L, for 1,4-Dioxane.

Figure 3.21 shows 1,4-Dioxane concentrations in WRD nested monitoring wells in the WRD service area. In the Central Basin, 1,4-Dioxane was detected at concentrations above the NL in 24 out of 201 individual well zones (12%). In the West Coast Basin, 1-4 Dioxane was not detected above the NL in any of the 112 individual well zones (0%). 1,4-Dioxane was not detected at concentrations above the RL in any of the individual well zones in the CBWCB.

Figure 3.22 presents DDW water quality data for the maximum 1,4-Dioxane detection in production wells across the WRD service area for a three-year period spanning WYs 2016-19. In the Central Basin 1,4-Dioxane was detected at concentrations above the NL of 1 µg/L in 70 of the 96 (73%) production wells that were tested. In the West Coast Basin, 1,4-Dioxane was not detected in any of the production wells. 1,4-Dioxane was not detected at concentrations above the RL of 35 µg/L in any CBWCB production wells.

3.1.12 Per- and Poly-Fluoroalkyl Substances (PFAS)

PFAS are a large group of man-made compounds including the most commonly used PFOA and PFOS. They have been used for several decades all over the world in industrial manufacturing, firefighting foams (aqueous film forming foam [AFFF]), and several consumer products including fast food wrappers, pizza boxes, stain resistant carpets, non-stick cookware (Teflon™), clothing (Gore-Tex ®), and fabric protectant (Scotchgard™). However, PFOA and PFOS have been phased out of products made in the United States since the 2000's.

In May 2016, the USEPA issued a lifetime health advisory of 70 nanograms per liter (ng/L) for the combined concentration of PFOS and PFOA. In August 2019, California (through DDW) established drinking water NLs of 5.1 ng/L for PFOA and 6.5 ng/L for PFOS, and in February 2020 the DDW established a RL of 10 ng/L for PFOA and 40 ng/L for PFOS.

WRD collected samples from 20 nested monitoring wells (124 individual well zones) in and around the spreading grounds to evaluate the presence of 32 distinct PFAS constituents. Although results of the entire suite of PFAS constituents analyzed in WY 2018-19 are summarized in **Table 3.3**, discussion of those results are limited herein to PFOS and PFOA.

Figure 3.23 shows PFOS concentrations in the WRD nested wells that were tested in WY 2018-19. PFOS was detected in 45 out of 124 individual well zones (36%); 39 of those 45 detections (87%) were at concentrations above the NL of 6.5 ng/L and eight (18%) were at concentrations above the RL of 40 ng/L.

Figure 3.24 presents all DDW water quality data received by WRD (as of January 8, 2020) for the maximum PFOS detection in production wells across the WRD service area. In the Central Basin, PFOS was detected at concentrations above the NL of 6.5 ng/L in 42 out of 62 production wells (68%) that were tested; 19 of those 62 wells (31%) had concentrations above the RL of 40 ng/L. Sampling for PFOS was not conducted in any West Coast Basin production wells.

Figure 3.25 shows PFOA concentrations in the WRD nested wells that were tested in WY 2018-19. PFOA was detected in 44 out of 124 individual well zones (35%); 36 of those 44 detections (82%) were at concentrations above the NL of 5.1 ng/L and 22 (50%) were at concentrations above the RL of 10 ng/L.

Figure 3.26 presents all DDW water quality data received by WRD (as of January 8, 2020) for the maximum PFOA detection in production wells across the WRD service area. In the Central Basin, PFOA was detected at concentrations above the NL of 5.1 ng/L in 36 out of 62 production wells (58%) that were tested; 30 of those 62 wells (48%) had concentrations above the RL of 10 ng/L. Sampling for PFOA was not conducted in any West Coast Basin production wells.

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 potential presence of quagga mussels; however, 5,340 AF of State Water Project water was received for replenishment in WY 2018-19. 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 is thus 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 3.4.**

In 2018, the average TDS concentration of untreated Colorado River water was 591 mg/L and the average TDS concentration of untreated water from the State Water Project was 217 mg/L. Only untreated State Water Project water was received for recharge in the Montebello Forebay spreading grounds in 2018.

In 2018, 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 0.4 mg/L. Recently and historically, both Colorado River and State Water Project nitrate concentrations have remained below the MCL.

In 2018, the average iron and manganese concentrations in untreated Colorado River water were below detection limits. Untreated State Water Project water contained averaged iron and manganese at concentrations below detection limits. 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, hexavalent chromium, and perchlorate have not been detected in water from the Colorado River or State Water Project during calendar year 2018. Both Colorado River and State Water Project TCE, PCE, hexavalent chromium, and perchlorate concentrations have historically been below their respective MCLs.

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 3.4**.

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, and San Jose Creek East WRP are all slightly at or above the NL of 1.0 µg/L, but they are well below the RL of 35 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 include 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 ultimately advanced treated recycled water will replace nearly all the imported water used for injection at the West Coast Basin Barrier. **Table 3.4** 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 WRP 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 ultimately to replace nearly all the imported water used for injection at the Alamitos Gap Seawater Intrusion Barrier. A lack of source water has kept the Vander Lans AWTF offline for much of WY 2018-19. **Table 3.4** 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. Currently, treated imported water is blended with advanced treated recycled water from the

TIWRP for injection at the Dominguez Gap Seawater Intrusion Barrier. Expansion of the TIWRP was completed in December 2016 and included the installation of an advanced oxidation process into the treatment train. Although the TIWRP has been offline for about the first half of WY 2018-19, it is anticipated that ultimately the advanced treated recycled water produced there will replace nearly all the imported water used for injection into the Dominguez Gap Seawater Intrusion Barrier. **Table 3.4** 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 typically performed by LACDPW and other entities; however, several of the constituents that are usually reported by LACDPW were not analyzed during WY 2017-18, and therefore those results are not available for inclusion in this report. Average stormwater quality data for those constituents that were provided by LACDPW for WY 2017-18 are presented on **Table 3.4**.

3.3 MINERAL CHARACTERISTICS OF GROUNDWATER IN THE CENTRAL BASIN AND WEST COAST BASIN

Major minerals data obtained from the WRD nested monitoring wells were used to characterize groundwater of discrete vertical zones (**Table 3.5**). 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 3.5** 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 3.5**, 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. 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 in December 2011. The 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 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 CBWCB is 700 mg/L and in the West Coast Basin it is 800 mg/L. The WQO for chloride in the Central Basin is 150 mg/L and 250 mg/L in the West Coast Basin. The MCL/WQO for nitrate (as Nitrogen) is 10 mg/L in both the Central Basin and the West Coast Basin.

In accordance with the statewide Recycled Water Policy, the 13 selected nested well locations are in the most critical areas of the basins, based on 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 CBPA, 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 (as nitrogen) for all WRD nested wells sampled during WY 2018-19 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 (as nitrogen) concentrations in production wells, sampled during WYs 2016-2019 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 continues to be monitored as part of the RGWMP and is 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 (six zones), Pico #2 (six zones), and Norwalk #2 (six zones) 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, with a one-time exception in the shallow zone at Pico #2, where chloride concentrations were detected during the fall 2018 sampling round at the WQO of 150 mg/L. Zones 4 and 5 at Pico #2 show very slightly increasing trends in chloride concentrations. 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 (four 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 SMCL and WQO. The upper two zones indicate a relatively stable trend in chloride concentrations that are below both the WQO and SMCL but show a slight increase over the past 10 years in TDS concentrations. TDS concentrations in the shallowest zone (Zone 4) are consistently above the WQO of 700 mg/L, but below the SMCL. TDS concentrations in Zone 3 fluctuate just above and below the WQO but remain below the SMCL of 1,000 mg/L.

In the CBPA, key wells include South Gate #1 (five zones), Willowbrook #1 (four zones), Long Beach #6 (six zones), and Seal Beach #1 (seven 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 Zone 5 of South Gate #1 have increased somewhat since initial sampling but have remained relatively stable over the past 15 years and are below both the WQOs and SMCLs. At all four 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 Zone 1, the deepest zone of Long Beach #6, TDS is typically detected very close to the WQO of 700 mg/L. TDS concentrations in Zone 2 fluctuate by as much as 50% with historic highs near the WQO; over the past four years TDS concentrations have stabilized somewhat and show a distinctly decreasing trend. Chloride concentrations in Zones 1 and 2 remain stable and are substantially below the SMCL and WQO. At Seal Beach #1, the deeper six zones have historically contained TDS and chloride at concentrations below the WQOs and SMCLs; however, chloride concentrations in Zone 5 have steadily increased over the past three years and were measured at concentrations above the WQO, but below the SMCL, in WY 2018-19. Zone 7, the shallowest zone, contains TDS and chloride at concentrations that steadily increased during the first six years after the wells were installed; they appear to have stabilized since then however, and concentrations are steady and slightly decreasing. TDS and chloride concentrations in Zone 7 are well above the WQOs and SMCLs, likely due to seawater intrusion.

In the Whittier Area, represented by key well Whittier #1 (five 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 SMCL, and meets the WQO. TDS in Zones 1, 2, and 3 has historically exceeded the SMCL and WQO; in Zones 1 and 2 its trend has been stable, in Zone 3 TDS concentrations have generally increased over the past 10 years but have been relatively stable for the past three years. Chloride in Zones 4 and 5 has been historically below the SMCL 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 (four zones), Carson #1 (four zones), Manhattan Beach #1 (seven zones), and Wilmington #2 (five 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, in Zone 2 at PM-4 Mariner, TDS and chloride concentrations are well above the SMCLs and WQOs and have increased since monitoring began around 1998. 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 shows evidence of impact by seawater intrusion. TDS concentrations in five of the seven zones exceed the WQO and SMCL, and in four zones the WQO and SMCL for chloride are exceeded. TDS and chloride concentrations in all seven of the zones at Manhattan Beach #1 appear to be rather stable. At Wilmington #2, TDS in Zones 1 and 3 has historically been below the WQO and SMCL but has steadily increased over the past six years. TDS in Zone 2 has been both stable and consistently above the WQO and SMCL. TDS and chloride in Zone 4 were initially above the WQOs and SMCLs but have steadily decreased. TDS and chloride concentrations in Zone 4 have been below the WQOs and SMCLs for at least the past six years, likely 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, have generally fluctuated within the same concentration range since 1998. At the key well location in the Los Angeles Forebay, Huntington Park #1, the shallow zones have variable TDS concentrations at and above the WQO, but deeper zones do not show increasing TDS levels. In the CBPA, TDS concentrations in the shallowest zone at key well location South Gate #1 fluctuate slightly but remain relatively stable, and chloride concentrations have remained relatively stable over the past 15 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 the Albert Robles Center for Water Recycling and Environmental Learning (ARC) formerly known as the Groundwater Reliability Improvement Program (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 Dominguez Gap Seawater Intrusion Barrier 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 RGWMR was prepared by WRD to provide a comprehensive review of groundwater conditions in the WRD service area during WY 2018-19. 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 member agencies to 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 (heads) 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 of up to 90 feet occur between zones above and within the producing aquifers. The greatest head differences between aquifers tend to occur in the southern area of the Central Basin (Long Beach) and the inland, eastern areas of the West Coast Basin (Gardena and Carson), while the smallest differences occur in the recharge area of the Montebello Forebay, and the southern area of the West Coast Basin (Torrance), which has merged and unconfined aquifers.
- Hydrographs and groundwater elevations measured in basin-wide nested monitoring wells and key production wells indicate increases across most of the CBWCB during WY 2018-19. In the unconfined Montebello Forebay, water levels have increased due to above average precipitation that was available for natural replenishment in WY 2018-19; in the vicinity of the spreading grounds water levels are as much as 22 feet higher than they were in WY 2017-18. Across the

unconfined Los Angeles Forebay, water levels have increased by as much as 13 feet from those measured in fall 2018. Water levels in the Whittier Area have also either increased or have remained relatively unchanged in WY 2018-19, in the west they are as much as 13 feet higher, and in the eastern reach they are relatively unchanged from those measured in fall 2018. In the CBPA, water levels increased by as much as eight feet in some areas and remain relatively unchanged in other areas over WY 2018-19.

- In the West Coast Basin water levels have generally increased; however local areas with water levels lower than those measured in fall 2018 are observed. Across much of the coastal area water levels are about two feet higher this year than in fall 2018. In the Wilmington area, a localized area of groundwater depression has resulted in a decrease of nearly six feet. In the Long Beach/Carson/Torrance areas, water levels range from about one to six feet higher than they were in WY 2017-18. In the Gardena area between the Newport-Inglewood and Charnock Faults, water levels have generally decreased and range from relatively unchanged to as much as six feet lower than they were in fall 2018. District wide, groundwater levels increased by an average of about three feet in WY 2018-19. As a result of that increase, a district-wide gain in groundwater storage of 62,200 AF was calculated for WY 2018-19. In the Montebello Forebay, which is unconfined and responds the most to spreading grounds recharge or discharge events, the increase in storage was 50,800 AF. Groundwater storage gain in the Los Angeles Forebay was about 8,400 AF, storage in the Whittier Area increased by 2,300 AF, and the CBPA saw an increase in storage of 700 AF. Storage in the West Coast Basin was unchanged this year compared to WY 2017-18.
- For an assessment of groundwater quality, WRD collected over 600 samples from its nested monitoring wells throughout the WY and obtained water quality data from potable wells in the District from the DDW database. WRD uses 11 chemical compounds to summarize overall water quality across the district although results for over 100 compounds are present in our databases. A discussion of the 11 constituents used follows:

- TDS concentrations for 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 (above the SMCL) may be caused by seawater intrusion, connate brines, or perhaps oil field brines.
- Iron is generally common at low concentrations across the WRD service area. In Central Basin nested wells, iron concentrations above the SMCL are observed in and around the Los Angeles and Montebello Forebays, while in production wells iron concentrations above the SMCL extend southward from the forebays into the CBPA. Across the West Coast Basin in both nested and production well sites, iron is present at concentrations above the SMCL at numerous locations.
- Manganese is very common in groundwater across the CBWCB and was detected at all of the nested monitoring wells and more than one third of the production well sites. It is present in the Central Basin at concentrations above the SMCL in samples collected from about 30% of the nested monitoring wells and about 20% of production wells but was only present above its NL in about 2% of those wells. Manganese is even more widespread in the West Coast Basin, where it was detected above the SMCL in about 45% of nested monitoring well sites and 65% of the production well sites. It was only detected above the NL in 10% of the nested monitoring well zones and is not detected above the NL in any of the production well sites in the West Coast Basin.
- Chloride concentrations are low in the Central Basin 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 concentrations in groundwater.
- 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 shallowest zones at a given location and are likely due either to localized surface recharge, or isolated areas of shallow impacts from industrial operations.

- TCE and PCE detections above the MCL in Central Basin nested monitoring wells are only observed within and in close proximity to the Los Angeles Forebay, but in Central Basin production wells elevated TCE and PCE concentrations are observed within the general vicinity of Los Angeles Forebay, west of the Rio Hondo spreading grounds, and downgradient of the San Gabriel River Spreading grounds. TCE is observed at a concentration above the MCL in the West Coast Basin in just one individual well zone in the Hawthorne area, and PCE is not detected in any of the West Coast Basin nested monitoring wells. Neither TCE nor PCE was detected in any of the West Coast Basin production wells.
- Arsenic is present at low concentrations in groundwater from most of the WRD nested monitoring well sites. With few exceptions, arsenic in nested monitoring wells at concentrations above the MCL is generally restricted to areas within the southeastern portion of the Central Basin and along the western area of the West Coast Basin. Arsenic at concentrations above the MCL in West Coast Basin production wells was not detected, however concentrations above the MCL were present in a few production wells located in the southeastern portion of the Central Basin.
- Perchlorate is relatively common at low concentrations within and downgradient of the nested monitoring wells located in the Los Angeles and Montebello Forebays in the Central Basin but is rarely detected in West Coast Basin nested wells. Perchlorate in Central Basin production wells is restricted to within and just east of the Los Angeles Forebay; it is absent elsewhere in CBWCB production wells.
- Hexavalent chromium is present in the CBWCB at low concentrations in nearly every nested monitoring well site, but it is only found at concentrations above the historic MCL in two nested monitoring well sites in the Los Angeles Forebay. In production wells, hexavalent chromium is only present at low concentrations in a few wells located within and downgradient of the Los Angeles and Montebello Forebays and in the southeastern portion of the Central Basin. Hexavalent chromium was not detected in any of the West Coast Basin production wells.
- 1,4-Dioxane is present at concentrations above the NL in Central Basin nested monitoring and production wells east of the Los Angeles Forebay and extending

southward into the CBPA, as well as within the Montebello Forebay and extending southward in to the CBPA adjacent to the San Gabriel River. In the West Coast Basin, 1,4-Dioxane was detected in only one of the nested monitoring wells and was not detected in any of production wells tested.

- In addition to the constituents addressed above, this year WRD performed a focused assessment within and in the general vicinity of the Montebello Forebay for the presence of 32 distinct PFAS constituents at 20 nested monitoring well sites. Two of those constituents, PFOS and PFOA, were used to summarize WRD's findings, they are discussed below.
    - PFOS was detected at 14 of the 20 nested monitoring well sites tested and in 45 out of 124 individual well zones; 39 of those 45 detections were at concentrations above the NL of 6.5 ng/L and eight of those 39 were at concentrations above the RL of 40 ng/L. PFOS sampling was also conducted from 62 production wells in the Central Basin, all located within and downgradient of the Montebello Forebay. PFOS was detected at concentrations above the NL in 42 of those 62 wells and in 19 of those wells concentrations were detected above the RL. Sampling for PFOS was not conducted in any West Coast Basin production wells.
    - PFOA was detected at 14 of the 20 nested monitoring well sites tested and in 44 out of 124 individual well zones; 36 of those 44 detections were at concentrations above the NL of 5.1 ng/L and 22 of those 36 were above the RL of 10 ng/L. PFOA sampling was also conducted from 62 production wells in the Central Basin, all located within and downgradient of the Montebello Forebay. PFOA was detected at concentrations above the NL in 36 of those 62 wells and in 30 of those wells concentrations were above the RL. Sampling for PFOA was not conducted in any 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, and arsenic concentrations in imported water used for

recharge do not exceed their respective MCLs. Meanwhile, TCE, PCE, hexavalent chromium, 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.
- A total of 13 WRD nested groundwater monitoring wells across the CBWCB are designated for salt and nutrient (specifically, TDS, chloride, and nitrate) sampling and reporting as part of the SNMP monitoring program. 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, local exceedances of the WQO for TDS are observed in the three deep zones at Whittier #1, the two shallowest zones at Huntington Park #1, and the shallowest zone at Seal Beach #1. While TDS concentrations at Whittier #1 and Seal Beach #1 are relatively stable and remain at concentrations seen historically, TDS in the shallowest zone at Huntington Park #1 is at concentrations higher than were initially detected in this well. TDS first began to be consistently detected at Huntington Park #1 at concentrations above the WQO in about 2010; TDS concentrations increased slightly over the next few sampling events but have remained relatively stable for the past five years. Chloride concentrations in the three deep zones at Whittier #1 have historically exceeded the WQO, but have remained below the SMCL, and generally show a stable trend. Chloride concentrations in Zones 5 and 7 at Seal Beach #1 also exceed the WQOs. Chloride in Zone 5 has steadily increased over the past three years and exceeded the WQO for the first time in WY 2018-19. Chloride in Zone 7 remains relatively stable and is at values consistent with those measured historically. Elsewhere 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 in general either relatively stable or are decreasing slightly 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 for the RGWMP in the current WY 2019-20 are listed below.

- 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.
- 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. Three such wells are planned for installation in WY 2019-20 within and downgradient of the spreading grounds. The additional wells will provide additional water quality data and will enhance tracking of replenishment water.
- 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 Chemicals of Emerging Concern (CEC)s that have not been comprehensively monitored in the past, WRD's nested monitoring well network is in good position to screen for emerging CECs in groundwater which may include, pesticides, pharmaceuticals and personal care products, oil and gas field indicators, and other CECs. This year WRD anticipates enhancing its assessment of the presence of PFAS constituents, including PFOS and PFOA, beyond the general

vicinity of the Montebello Forebay to incorporate all of WRD's remaining nested well sites across the district into the assessment. Sampling of those nested wells where the full suite of PFAS constituents was analyzed in WY 2018-19 will be reduced from the full PFAS suite to PFOS and PFOA only in WY 2019-20 to aid in identifying concentration trends of these constituents. 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, developed and expected to be published by the USGS in 2020, to improve the framework for understanding the groundwater system and for use as a planning tool.

- 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 in place and is 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 State's 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 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 the data to the CASGEM program.
- WRD will continue to monitor the quality of replenishment water sources to ensure the CBWCB are being recharged with high-quality water.

- 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 [1]
Bell #1	1	102041	1750	1730	1750	Pico Formation [2]
	2	102042	1215	1195	1215	Sunnyside
	3	102043	985	965	985	Sunnyside
	4	102044	635	615	635	Silverado
	5	102045	440	420	440	Jefferson
	6	102046	270	250	270	Gage
Bell Gardens #1	1	101954	1795	1775	1795	Sunnyside [2]
	2	101955	1410	1390	1410	Sunnyside [2]
	3	101956	1110	1090	1110	Sunnyside
	4	101957	875	855	875	Sunnyside
	5	101958	575	555	575	Silverado
	6	101959	390	370	390	Lynwood
Carson #1	1	100030	1010	990	1010	Silverado
	2	100031	760	740	760	Silverado
	3	100032	480	460	480	Lynwood
	4	100033	270	250	270	Gage [2]
Carson #2	1	101787	1250	1230	1250	Sunnyside [2]
	2	101788	870	850	870	Sunnyside [2]
	3	101789	620	600	620	Silverado
	4	101790	470	450	470	Silverado
	5	101791	250	230	250	Lynwood
Carson #3	1	102075	1800	1600	1620	Pico Formation [2]
	2	102076	1240	1220	1240	Sunnyside [2]
	3	102077	1100	1080	1100	Silverado [2]
	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]
	2	100871	1020	1000	1020	Silverado [2]
	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]
	2	101782	935	915	935	Silverado
	3	101783	760	740	760	Lynwood [2]
	4	101784	510	490	510	Hollydale
	5	101785	370	350	370	Gage
	6	101786	170	150	170	Artesia
Chandler #3B	1	100082	363	341	363	Silverado [2]
Chandler #3A	2	100083	192	165	192	Lynwood [2]
Commerce #1	1	100881	1390	1330	1390	Pico Formation [2]
	2	100882	960	940	960	Sunnyside
	3	100883	780	760	780	Sunnyside [2]
	4	100884	590	570	590	Silverado
	5	100885	345	325	345	Jefferson
	6	100886	225	205	225	Hollydale

1 - Unless otherwise noted, aquifer designations are based on DWR's Bulletin 104.
2 - Aquifer designation is based on WRD's in-house interpretation.

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 [1]
Compton #1	1	101809	1410	1370	1390	Sunnyside [2]
	2	101810	1170	1150	1170	Sunnyside [2]
	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	Pico Formation [2]
	2	101949	850	830	850	Sunnyside [2]
	3	101950	605	585	605	Silverado
	4	101951	400	380	400	Lynwood [2]
	5	101952	315	295	315	Hollydale [2]
	6	101953	170	150	170	Exposition
Downey #1	1	100010	1190	1170	1190	Sunnyside [2]
	2	100011	960	940	960	Sunnyside [2]
	3	100012	600	580	600	Silverado
	4	100013	390	370	390	Jefferson
	5	100014	270	250	270	Gage
	6	100015	110	90	110	Gaspur
Gardena #1	1	100020	990	970	990	Pico Formation [2]
	2	100021	465	445	465	Silverado
	3	100022	365	345	365	Lynwood [2]
	4	100023	140	120	140	Gage
Gardena #2	1	101804	1335	1275	1335	Pico Formation [2]
	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	Pico Formation [2]
	2	100888	730	710	730	Sunnyside [2]
	3	100889	540	520	540	Sunnyside [2]
	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	Lynwood
	3	100007	440	420	440	Hollydale
	4	100008	295	275	295	Gage
	5	100009	134	114	134	Gaspur
Inglewood #1	1	100091	1400	1380	1400	Pico Formation [2]
	2	100092	885	865	885	Pico Formation [2]
	3	100093	450	430	450	Silverado
	4	100094	300	280	300	Lynwood [2]
	5	100095	170	150	170	Gage
Inglewood #2	1	100824	860	800	840	Pico Formation [2]
	2	100825	470	450	470	Silverado [2]
	3	100826	350	330	350	Lynwood [2]
	4	100827	245	225	245	Gage [2]

1 - Unless otherwise noted, aquifer designations are based on DWR's Bulletin 104.
2 - Aquifer designation is based on WRD's in-house interpretation.

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 [1]
Inglewood #3	1	102138	1940	1900	1940	Pico Formation [2]
	2	102139	1460	1440	1460	Pico Formation [2]
	3	102140	1275	1255	1275	Pico Formation [2]
	4	102141	910	890	910	Pico Formation [2]
	5	102142	560	540	560	Silverado
	6	102143	390	370	390	Lynwood
	7	102144	265	245	265	Gage
Lakewood #1	1	100024	1009	989	1009	Sunnyside
	2	100025	660	640	660	Lynwood
	3	100026	470	450	470	Hollydale
	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]
	2	102152	1760	1740	1760	Sunnyside [2]
	3	102153	1320	1300	1320	Sunnyside [2]
	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 [2]
	3	100878	710	690	710	Lynwood [2]
	4	100879	490	470	490	Jefferson [2]
	5	100880	245	225	245	Gage
Lawndale #1	1	102171	1400	1360	1400	Pico Formation [2]
	2	102172	905	885	905	Sunnyside [2]
	3	102173	635	615	635	Silverado
	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	Pico Formation [2]
	2	100819	720	700	720	Silverado
	3	100820	570	550	570	Silverado
	4	100821	420	400	420	Lynwood
	5	100822	240	220	240	Gage [2]
	6	100823	120	100	120	Gage [2]
Long Beach #1	1	100920	1470	1430	1450	Sunnyside [2]
	2	100921	1250	1230	1250	Sunnyside
	3	100922	990	970	990	Silverado [2]
	4	100923	619	599	619	Lynwood [2]
	5	100924	420	400	420	Jefferson [2]
	6	100925	175	155	175	Artesia
Long Beach #2	1	101740	1090	970	990	Sunnyside
	2	101741	740	720	740	Silverado [2]
	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 [1]
Long Beach #3	1	101751	1390	1350	1390	Pico Formation [2]
	2	101752	1017	997	1017	Silverado
	3	101753	690	670	690	Silverado [2]
	4	101754	550	530	550	Silverado [2]
	5	101755	430	410	430	Lynwood
Long Beach #4	1	101759	1380	1200	1220	Pico Formation [2]
	2	101760	820	800	820	Sunnyside [2]
Long Beach #6	1	101792	1530	1490	1510	Pico Formation [2]
	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]
	2	101820	1040	1020	1040	Sunnyside [2]
	3	101821	800	780	800	Silverado [2]
	4	101822	655	635	655	Silverado [2]
	5	101823	435	415	435	Silverado [2]
	6	101824	185	165	185	Lynwood [2]
Los Angeles #1	1	100926	1370	1350	1370	Sunnyside [2]
	2	100927	1100	1080	1100	Sunnyside
	3	100928	940	920	940	Sunnyside
	4	100929	660	640	660	Silverado
	5	100930	370	350	370	Lynwood [2]
Los Angeles #2	1	102003	1370	1330	1370	Pico Formation [2]
	2	102004	730	710	730	Sunnyside
	3	102005	525	505	525	Silverado
	4	102006	430	410	430	Lynwood
	5	102007	265	245	265	Hollydale [2]
	6	102008	155	135	155	Gardena
Los Angeles #3	1	102069	1570	1210	1230	Pico Formation [2]
	2	102070	895	875	895	Sunnyside [2]
	3	102071	725	705	725	Sunnyside [2]
	4	102072	570	550	570	Sunnyside
	5	102073	350	330	350	Silverado [2]
	6	102074	210	190	210	Gage [2]
Los Angeles #4	1	102131	1780	1740	1780	Pico Formation [2]
	2	102132	1230	1190	1230	Sunnyside [2]
	3	102133	740	720	740	Sunnyside
	4	102134	510	490	510	Silverado
	5	102135	375	355	375	Lynwood
	6	102136	255	235	255	Gage
Los Angeles #5	1	103029	2000	1960	2000	Pico Formation [2]
	2	103030	1255	1235	1255	Sunnyside [2]
	3	103031	770	750	770	Sunnyside
	4	103032	575	555	575	Sunnyside
	5	103033	450	430	450	Silverado
	6	103034	235	215	235	Lynwood [2]
	7	103035	105	95	105	Exposition

1 - Unless otherwise noted, aquifer designations are based on DWR's Bulletin 104.
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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 [1]
Los Angeles #6	1	103047	600	580	600	Pico Formation [2]
	2	103048	440	420	440	Sunnyside
	3	103049	365	345	365	Silverado
	4	103050	275	255	275	Lynwood
Lynwood #1	1	102211	2900	2880	2900	Pico Formation [2]
	2	102212	2450	2430	2450	Pico Formation [2]
	3	102213	1670	1650	1670	Sunnyside [2]
	4	102214	1465	1445	1465	Sunnyside [2]
	5	102215	1220	1200	1220	Silverado [2]
	6	102216	900	880	900	Silverado [2]
	7	102217	660	640	660	Lynwood
	8	102218	335	315	335	Gardena
	9	102219	180	160	180	Gaspur
Manhattan Beach #1	1	102081	1990	1950	1990	Pico Formation [2]
	2	102082	1590	1570	1590	Pico Formation [2]
	3	102083	1270	1250	1270	Pico Formation [2]
	4	102084	885	865	885	Sunnyside [2]
	5	102085	660	640	660	Sunnyside [2]
	6	102086	340	320	340	Silverado
	7	102087	200	180	200	Gage
Montebello #1	1	101770	980	900	960	Pico Formation [2]
	2	101771	710	690	710	Sunnyside
	3	101772	520	500	520	Sunnyside
	4	101773	390	370	390	Silverado
	5	101774	230	210	230	Lynwood
	6	101775	110	90	110	Gage
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	Hollydale
	5	101818	240	220	240	Gage
Norwalk #2	1	101942	1480	1460	1480	Pico Formation [2]
	2	101943	1280	1260	1280	Pico Formation [2]
	3	101944	980	960	980	Sunnyside [2]
	4	101945	820	800	820	Sunnyside [2]
	5	101946	500	480	500	Silverado
	6	101947	256	236	256	Gardena
Pico #1	1	100001	900	860	900	Pico Formation [2]
	2	100002	480	460	480	Silverado
	3	100003	400	380	400	Silverado
	4	100004	190	170	190	Gardena [2]
Pico #2	1	100085	1200	1180	1200	Sunnyside [2]
	2	100086	850	830	850	Sunnyside [2]
	3	100087	580	560	580	Sunnyside
	4	100088	340	320	340	Silverado
	5	100089	255	235	255	Lynwood
	6	100090	120	100	120	Gaspur/Gage [2]

1 - Unless otherwise noted, aquifer designations are based on DWR's Bulletin 104.
2 - Aquifer designation is based on WRD's in-house interpretation.

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 [1]
PM-2 Police Station	1	102237	665	645	665	Sunnyside [2]
	2	102238	540	520	540	Silverado
	3	102239	390	370	390	Lynwood/Silverado [2]
	4	102240	260	240	260	Lynwood
PM-3 Madrid	1	100034	685	640	680	Sunnyside [2]
	2	100035	525	480	520	Silverado
	3	100036	285	240	280	Lynwood
	4	100037	190	145	185	Gardena
PM-4 Mariner	1	100038	720	670	710	Sunnyside [2]
	2	100039	550	500	540	Silverado
	3	100040	390	340	380	Lynwood
	4	100041	250	200	240	Gardena
PM-5 Columbia Park	1	102047	1480	1360	1380	Pico Formation [2]
	2	102048	960	940	960	Pico Formation [2]
	3	102049	790	770	790	Sunnyside [2]
	4	102050	600	580	600	Silverado
	5	102051	340	320	340	Lynwood [2]
	6	102052	160	140	160	Gardena
PM-6 Madrona Marsh	1	102053	1235	1195	1235	Pico Formation [2]
	2	102054	925	905	925	Sunnyside [2]
	3	102055	790	770	790	Sunnyside [2]
	4	102056	550	530	550	Silverado
	5	102057	410	390	410	Lynwood
	6	102058	260	240	260	Lynwood
Rio Hondo #1	1	100064	1150	1110	1130	Pico Formation [2]
	2	100065	930	910	930	Sunnyside [2]
	3	100066	730	710	730	Sunnyside
	4	100067	450	430	450	Silverado
	5	100068	300	280	300	Hollydale
	6	100069	160	140	160	Gardena
Seal Beach #1	1	102062	1485	1345	1365	Sunnyside [2]
	2	102063	1180	1160	1180	Sunnyside [2]
	3	102064	1040	1020	1040	Sunnyside [2]
	4	102065	795	775	795	Silverado
	5	102066	625	605	625	Lynwood [2]
	6	102067	235	215	235	Gage
	7	102068	70	60	70	Artesia
South Gate #1	1	100893	1460	1440	1460	Sunnyside [2]
	2	100894	1340	1320	1340	Sunnyside [2]
	3	100895	930	910	930	Silverado [2]
	4	100896	585	565	585	Lynwood
	5	100897	250	220	240	Exposition [2]
South Gate #2	1	102180	1760	1740	1760	Sunnyside [2]
	2	102181	1430	1410	1430	Sunnyside [2]
	3	102182	1082	1062	1082	Sunnyside
	4	102183	690	670	690	Silverado [2]
	5	102184	430	410	430	Hollydale
	6	102185	225	205	225	Gaspur [2]

1 - Unless otherwise noted, aquifer designations are based on DWR's Bulletin 104.
2 - Aquifer designation is based on WRD's in-house interpretation.

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 [1]
Westchester #1	1	101776	860	740	760	Pico Formation [2]
	2	101777	580	560	580	Sunnyside [2]
	3	101778	475	455	475	Sunnyside [2]
	4	101779	330	310	330	Silverado
	5	101780	235	215	235	Silverado
Whittier #1	1	101735	1298	1180	1200	Pico Formation [2]
	2	101736	940	920	940	Pico Formation [2]
	3	101737	620	600	620	Sunnyside
	4	101738	470	450	470	Silverado
	5	101739	220	200	220	Jefferson
Whittier #2	1	101936	1390	1370	1390	Pico Formation [2]
	2	101937	1110	1090	1110	Pico Formation [2]
	3	101938	675	655	675	Sunnyside
	4	101939	445	425	445	Silverado
	5	101940	335	315	335	Silverado
	6	101941	170	150	170	Gage [2]
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	Lynwood
	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]
	2	100056	720	579	598.2	Pico Formation [2]
	3	100057	720	469	488.2	Pico Formation [2]
	4	100058	720	419	428.2	Pico Formation [2]
	5	100059	720	329	338.3	Pico Formation [2]
	6	100060	720	263	273.3	Lynwood
	7	100061	720	214	223.3	Lynwood
	8	100062	720	136	145.3	Gardena [2]
	9	100063	720	91	100.3	Gardena
Willowbrook #1	1	100016	905	885	905	Sunnyside [2]
	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]
	2	100071	800	780	800	Silverado
	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]
	2	100076	775	755	775	Silverado
	3	100077	560	540	560	Silverado
	4	100078	410	390	410	Lynwood
	5	100079	140	120	140	Gage

1 - Unless otherwise noted, aquifer designations are based on DWR's Bulletin 104.
2 - Aquifer designation is based on WRD's in-house interpretation.

TABLE 1.2
CONSTRUCTION INFORMATION FOR WELLS USED TO PREPARE FIGURES 2.1 AND 2.2

Well Name	Zone	WRD ID Number	Reference Point Elevation (feet msl)	Depth of Well (feet)	Top of Perforation (feet)	Bottom of Perforation (feet)	Date of Measurement	Groundwater Elevation (feet msl)	Aquifer Designation [1]
Hawkins #1	3	102233	147.75	296	286	296	9/9/2019	36.28	Lynwood
Koontz #1	1	102226	135.17	491	481	491	9/9/2019	23.59	Lynwood
LADWP-MH-MW1A	2	102251	133.91	580	510	560	--- [2]	--- [2]	Silverado
LHCWD-MW1	1	102164	151.00	570	540	560	9/10/2019	74.35	Sunnyside
LongBeach #7	2	101899	16.35	670	650	670	9/12/2019	-34.60	Silverado
Sepulveda #1	1	201058	90.00	550	370	530	9/10/2019	3.40	Silverado
Vernon #1	1	102241	210.45	530	520	530	9/12/2019	-26.09	Silverado

1 - Aquifer designations are based on DWR's Bulletin 104.
2 - Groundwater elevation was not measured in Fall 2018-19.

TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2018 - 2019

	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 Screen Interval	1730-1750	1195-1215	965-985	615-635	420-440	250-270			
Aquifer Name [1]	Pico Form. [2]	Sunnyside	Sunnyside	Silverado	Jefferson	Gage			
12/11/2018	-38.95	-36.65	-25.16	-25.27	-17.53	9.33			
3/15/2019	-30.37	-29.87	-16.85	-19.35	-12.37	10.54			
4/25/2019	-26.99	-27.82	-15.23	-17.54	-11.27	9.90			
6/20/2019	-27.58	-28.01	-14.98	-18.37	-11.79	9.20			
9/18/2019	-32.06	-28.42	-17.86	-19.78	-13.86	8.02			
Bell Gardens #1									Reference Point Elevation: 121.03
Depth of Screen Interval	1775-1795	1390-1410	1090-1110	855-875	555-575	370-390			
Aquifer Name [1]	Sunnyside [2]	Sunnyside [2]	Sunnyside	Sunnyside	Silverado	Lynwood			
12/11/2018	-9.68	-10.24	-8.03	-2.66	2.59	3.10			
3/15/2019	1.88	2.90	6.01	8.17	11.50	10.10			
4/26/2019	2.68	2.57	5.02	8.75	11.24	8.31			
5/22/2019	1.72	1.64	3.86	8.24	11.75	9.32			
6/11/2019	0.84	0.40	2.50	7.16	10.69	7.69			
9/12/2019	-1.10	-0.76	1.30	5.32	7.72	3.22			
Carson #1									Reference Point Elevation: 26.86
Depth of Screen Interval	990-1010	740-760	460-480	250-270					
Aquifer Name [1]	Silverado	Silverado	Lynwood	Gage [2]					
10/2/2018	-35.40	-34.15	-10.58	-9.46					
11/6/2018	-35.39	-34.05	-10.53	-9.45					
12/10/2018	-36.45	-35.62	-10.44	-9.42					
1/2/2019	-35.76	-34.96	-10.18	-9.16					
2/6/2019	-35.82	-34.99	-9.91	-8.86					
3/13/2019	-37.22	-36.33	-9.95	-8.86					
4/17/2019	-35.24	-34.59	-9.64	-8.64					
6/4/2019	-37.58	-36.37	-9.79	-8.64					
6/18/2019	-36.36	-35.10	-9.66	-8.50					
7/2/2019	-35.63	-34.35	-9.49	-8.42					
8/6/2019	-35.59	-34.13	-9.22	-8.17					
9/11/2019	-36.54	-35.29	-9.33	-8.22					
Carson #2									Reference Point Elevation: 43.04
Depth of Screen Interval	1230-1250	850-870	600-620	450-470	230-250				
Aquifer Name [1]	Sunnyside [2]	Sunnyside [2]	Silverado	Silverado	Lynwood				
12/21/2018	-26.16	-21.99	-21.77	-19.28	-17.55				
3/14/2019	-26.37	-22.26	-22.02	-19.39	-17.57				
4/17/2019	-25.09	-21.63	-21.41	-18.87	-17.10				
4/19/2019	-25.60	-21.71	-21.46	-18.93	-17.15				
6/18/2019	-25.87	-20.72	-20.53	-18.26	-16.66				
9/17/2019	-24.63	-20.13	-19.94	-17.71	-16.24				
Carson #3									Reference Point Elevation: 20.18
Depth of Screen Interval	1600-1620	1220-1240	1080-1100	870-890	620-640	360-380			
Aquifer Name [1]	Pico Form. [2]	Sunnyside [2]	Silverado [2]	Silverado	Silverado	Lynwood			
12/10/2018	-27.77	-31.87	-31.55	-31.61	-31.20	-12.84			
3/13/2019	-27.02	-31.50	-31.37	-31.96	-31.62	-12.48			
4/17/2019	-27.00	-31.25	-30.98	-31.03	-30.76	-12.29			
4/17/2019	-27.00	-31.25	-30.98	-31.03	-30.76	-12.29			
6/19/2019	-26.71	-31.20	-29.51	-28.59	-27.63	-11.81			
9/17/2019	-26.26	-29.46	-27.96	-27.49	-26.54	-11.28			
Cerritos #1									Reference Point Elevation: 43.35
Depth of Screen Interval	1155-1175	1000-1020	610-630	270-290	180-200	125-135			
Aquifer Name [1]	Sunnyside [2]	Silverado [2]	Lynwood	Gage	Artesia	Artesia			
12/10/2018	-36.80	-45.30	-23.72	17.60	19.64	19.87			
3/12/2019	-22.26	-32.86	-11.44	21.34	22.63	23.01			
3/19/2019	-22.62	-33.83	-11.89	21.28	22.69	23.03			
6/14/2019	-31.25	-41.66	-22.53	19.89	21.42	21.51			
6/27/2019	-33.97	-43.60	-22.57	20.04	21.76	21.87			
9/10/2019	-47.37	-54.76	-33.45	17.82	20.09	20.18			

1 - Unless otherwise noted, aquifer designations are based on DWR's Bulletin 104.

2 - Aquifer designation is based on WRD's in-house interpretation.

- Shaded cell indentifies the zone and measurement used in Figures 2.1 and 2.2.

TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2018 - 2019

	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 Screen Interval	1350-1370	915-935	740-760	490-510	350-370	150-170			
Aquifer Name [1]	Sunnyside [2]	Silverado	Lynwood [2]	Hollydale	Gage	Artesia			
12/18/2018	-27.15	-39.39	-32.64	-8.58	14.52	22.12			
3/13/2019	-19.16	-31.18	-25.24	-3.08	16.45	23.38			
4/19/2019	-19.32	-34.95	-29.26	-5.83	16.07	23.35			
4/23/2019	-19.79	-34.27	-29.41	-5.98	15.99	23.31			
5/16/2019	-22.23	-34.89	-31.23	-7.15	15.64	23.21			
6/17/2019	-25.39	-37.45	-32.61	-8.54	15.43	23.09			
6/28/2019	-26.07	-39.48	-33.29	-8.66	15.28	23.04			
9/12/2019	-28.12	-44.45	-39.31	-12.79	13.90	22.20			
Chandler #3									Reference Point Elevation: 156.01
Depth of Screen Interval	341-363	165-192							
Aquifer Name [1]	Silverado [2]	Lynwood [2]							
12/20/2018	-11.87	-11.86							
03/21/2019	-11.63	-11.57							
4/11/2019	-11.42	-11.42							
6/11/2019	-11.09	-10.94							
9/19/2019	-10.73	-10.77							
Commerce #1									Reference Point Elevation: 159.31
Depth of Screen Interval	1330-1390	940-960	760-780	570-590	325-345	205-225			
Aquifer Name [1]	Pico Form. [2]	Sunnyside	Sunnyside [2]	Silverado	Jefferson	Hollydale			
10/9/2018	27.32	18.51	14.59	-17.33	-13.58	27.16			
12/11/2018	26.80	17.33	13.29	-18.71	-15.21	26.72			
3/11/2019	26.75	23.10	20.18	-11.55	-11.80	26.87			
4/8/2019	26.82	24.79	21.82	-10.12	-29.53	20.97			
6/12/2019	23.90	23.71	20.32	-1.44	-3.44	21.83			
7/3/2019	24.21	24.17	20.86	-2.50	-3.23	26.91			
9/11/2019	24.34	23.41	20.05	-12.13	-12.38	26.25			
Compton #1									Reference Point Elevation: 68.84
Depth of Screen Interval	1370-1390	1150-1170	800-820	460-480	305-325				
Aquifer Name [1]	Sunnyside [2]	Sunnyside [2]	Silverado	Hollydale	Gage				
10/19/2018	-64.19	-63.94	-32.05	-34.77	-20.94				
11/2/2018	-63.54	-63.29	-31.92	-34.71	-20.52				
12/12/2018	-63.31	-63.02	-30.42	-31.27	-16.53				
1/4/2019	-62.22	-61.92	-29.25	-30.87	-15.83				
3/20/2019	-57.69	-57.38	-24.73	-24.97	-11.71				
4/2/2019	-56.96	-56.69	-24.29	-26.79	-12.38				
6/18/2019	-58.32	-58.08	-26.63	-26.80	-15.71				
9/17/2019	-61.30	-60.99	-28.75	-31.30	-20.05				
Compton #2									Reference Point Elevation: 76.97
Depth of Screen Interval	1479-1495	830-850	585-605	380-400	295-315	150-170			
Aquifer Name [1]	Pico Form. [2]	Sunnyside [2]	Silverado	Lynwood [2]	Hollydale [2]	Exposition			
12/18/2018	-29.95	-51.29	-45.98	-46.08	-39.58	-33.74			
3/12/2019	-28.94	-48.03	-43.38	-43.90	-37.41	-32.17			
4/12/2019	-27.85	-47.86	-41.17	-39.54	-36.92	-31.32			
6/19/2019	-25.99	-48.87	-43.07	-43.59	-38.27	-33.06			
9/12/2019	-26.21	-50.12	-44.64	-45.38	-39.51	-34.25			
Downey #1									Reference Point Elevation: 99.39
Depth of Screen Interval	1170-1190	940-960	580-600	370-390	250-270	90-110			
Aquifer Name [1]	Sunnyside [2]	Sunnyside [2]	Silverado	Jefferson	Gage	Gaspur			
12/19/2018	-15.63	-12.59	-8.27	-3.77	22.96	27.05			
3/15/2019	-4.34	-2.61	-0.59	2.50	23.85	27.03			
4/4/2019	-3.26	-1.87	-0.92	1.95	23.69	27.02			
6/10/2019	-6.19	-4.65	-3.29	-2.10	23.13	26.89			
9/20/2019	-8.60	-7.59	-8.57	-7.00	22.25	26.67			
Gardena #1									Reference Point Elevation: 84.23
Depth of Screen Interval	970-990	445-465	345-365	120-140					
Aquifer Name [1]	Pico Form. [2]	Silverado	Lynwood [2]	Gage					
12/15/2018	-36.27	-69.02	-47.63	-5.99					
3/15/2019	-34.82	-71.25	-46.46	-5.81					
4/10/2019	-34.73	-63.18	-45.68	-5.43					
6/15/2019	-34.30	-37.66	-34.78	-5.24					
9/15/2019	-31.22	-64.22	-40.36	-4.75					

1 - Unless otherwise noted, aquifer designations are based on DWR's Bulletin 104.
2 - Aquifer designation is based on WRD's in-house interpretation.
- Shaded cell indentifies the zone and measurement used in Figures 2.1 and 2.2.

TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2018 - 2019

	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 Screen Interval	1275-1335	770-790	610-630	340-360	235-255				
Aquifer Name [1]	Pico Form. [2]	Silverado	Silverado	Lynwood	Gardena				
12/10/2018	-30.54	-35.45	-36.08	-12.52	-4.38				
3/13/2019	-28.73	-36.62	-37.44	-12.20	-3.75				
4/3/2019	-28.74	-35.87	-37.05	-12.09	-3.64				
4/17/2019	-28.60	-36.68	-37.60	-12.22	-3.80				
6/19/2019	-28.42	-25.66	-25.56	-9.77	-3.50				
9/17/2019	-26.09	-24.80	-24.66	-9.28	-3.05				
Hawthorne #1									Reference Point Elevation: 88.98
Depth of Screen Interval	910-950	710-730	520-540	400-420	240-260	110-130			
Aquifer Name [1]	Pico Form. [2]	Sunnyside [2]	Sunnyside [2]	Silverado	Lynwood	Gage			
12/13/2018	-31.00	-2.82	-2.45	-2.37	0.32	6.12			
3/12/2019	-27.48	-1.93	-1.48	-1.39	1.29	6.65			
4/10/2019	-27.20	-2.46	-1.83	-1.80	1.13	6.57			
6/17/2019	-26.69	0.18	0.64	0.71	2.60	7.03			
6/18/2019	-26.78	0.17	0.60	0.71	2.57	6.92			
9/19/2019	-32.59	-2.90	-2.41	-2.23	0.99	7.27			
Huntington Park #1									Reference Point Elevation: 179.44
Depth of Screen Interval	890-910	690-710	420-440	275-295	114-134				
Aquifer Name [1]	Silverado	Lynwood	Hollydale	Gage	Gaspur				
12/14/2018	-27.31	-31.54	-20.68	10.54	Dry				
3/21/2019	-25.45	-28.46	-18.09	9.69	Dry				
4/2/2019	-25.00	-28.28	-17.67	9.85	Dry				
6/11/2019	-23.25	-27.49	-17.57	9.30	Dry				
9/12/2019	-25.29	-28.71	-18.32	8.71	Dry				
Inglewood #1									Reference Point Elevation: 112.82
Depth of Screen Interval	1380-1400	865-885	430-450	280-300	150-170				
Aquifer Name [1]	Pico Form. [2]	Pico Form. [2]	Silverado	Lynwood [2]	Gage				
12/12/2018	-27.55	-30.65	-16.01	2.29	6.13				
3/11/2019	-27.04	-28.68	-17.60	2.04	6.45				
3/12/2019	-26.99	-28.64	-17.83	2.84	6.51				
5/9/2019	-26.76	-27.9	-13.34	-10.16	6.50				
6/10/2019	-28.64	-28.16	-13.23	2.47	6.37				
9/9/2019	-27.94	-27.64	-19.41	-0.69	5.93				
Inglewood #2									Reference Point Elevation: 219.82
Depth of Screen Interval	800-840	450-470	330-350	225-245					
Aquifer Name [1]	Pico Form. [2]	Silverado [2]	Lynwood [2]	Gage [2]					
12/12/2018	-23.24	-15.84	-1.87	1.96					
3/12/2019	-22.76	-15.35	-1.50	1.90					
6/17/2019	-20.90	-14.77	-1.64	1.86					
9/9/2019	-21.67	-14.82	-1.69	1.84					
Inglewood #3									Reference Point Elevation: 72.20
Depth of Screen Interval	1900-1940	1440-1460	1255-1275	890-910	540-560	370-390	245-265		
Aquifer Name [1]	Pico Form. [2]	Pico Form. [2]	Pico Form. [2]	Pico Form. [2]	Silverado	Lynwood	Gage		
12/13/2018	-32.36	-30.42	-35.83	-32.37	-32.73	-4.04	4.82		
3/15/2019	-32.53	-29.79	-34.23	-27.96	-28.50	-1.24	5.42		
4/9/2019	-32.71	-29.65	-33.74	-27.49	-28.05	-1.10	5.67		
6/10/2019	-33.05	-29.26	-32.85	-27.78	-27.73	-2.32	5.66		
9/9/2019	-33.53	-28.69	-31.41	-33.88	-34.08	-4.77	5.52		
Lakewood #1									Reference Point Elevation: 53.87 (Zones 5 and 6) and 53.14 (Zones 1, 2, 3 and 4)
Depth of Screen Interval	989-1009	640-660	450-470	280-300	140-160	70-90			
Aquifer Name [1]	Sunnyside	Lynwood	Hollydale	Gage	Artesia	Bellflower			
12/15/2018	-4.28	-36.95	-34.83	-20.25	-3.84	19.33			
3/15/2019	12.21	-33.59	-29.72	-15.10	0.55	21.62			
4/29/2019	-54.44	-34.95	-31.39	-16.72	-1.34	21.94			
6/15/2019	-5.24	-36.81	-32.38	-18.46	-2.93	21.58			
9/16/2019	-58.88	-38.64	-36.91	-22.90	-6.83	20.45			

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- Shaded cell indentifies the zone and measurement used in Figures 2.1 and 2.2.

TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2018 - 2019

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
Lakewood #2									Reference Point Elevation: 40.51
Depth of Screen Interval	1960-2000	1740-1760	1300-1320	995-1015	690-710	555-575	255-275	110-120	
Aquifer Name [1]	Sunnyside [2]	Sunnyside [2]	Sunnyside [2]	Silverado	Lynwood	Jefferson	Gage	Artesia	
12/10/2018	-31.65	-41.30	-43.76	-59.82	-26.42	-13.51	15.92	18.35	
3/14/2019	-23.43	-34.95	-35.26	-49.18	-16.32	-4.99	18.36	20.71	
4/22/2019	-21.94	-37.53	-37.93	-52.66	-21.84	-8.26	18.31	20.7	
4/22/2019	-21.94	-37.53	-37.93	-52.66	-21.84	-8.26	18.31	20.7	
5/21/2019	-23.16	-39.76	-40.08	-53.85	-23.84	-10.20	18.02	20.48	
6/14/2019	-23.67	-40.56	-40.97	-55.96	-26.86	-11.67	17.81	20.27	
9/11/2019	-29.28	-45.75	-49.37	-68.43	-40.68	-20.67	16.44	19.03	
La Mirada #1									Reference Point Elevation: 78.30
Depth of Screen Interval	1130-1150	965-985	690-710	470-490	225-245				
Aquifer Name [1]	Sunnyside	Silverado [2]	Lynwood [2]	Jefferson [2]	Gage				
12/17/2018	-18.81	-13.59	-15.01	-27.74	-4.65				
1/23/2019	-13.15	-8.72	-9.89	-21.57	0.13				
3/12/2019	-10.03	-4.82	-12.24	-19.15	4.55				
3/26/2019	-9.18	-3.86	-3.78	-18.38	4.68				
6/11/2019	-11.55	-5.89	-11.20	-30.60	-2.66				
6/21/2019	-12.97	-7.19	-16.11	-37.01	-4.88				
7/3/2019	-14.82	-8.95	-15.91	-36.45	-5.53				
9/10/2019	-19.02	-13.75	-24.00	-53.02	-14.17				
Lawndale #1									Reference Point Elevation: 48.93
Depth of Screen Interval	1360-1400	895-905	615-635	395-415	290-310	170-190			
Aquifer Name [1]	Pico Form. [2]	Sunnyside [2]	Silverado	Silverado	Lynwood	Gardena			
43447	-28	-35.75	-3.93	-3.53	-2.21	-0.39			
43502	-27.42	-36.31	-3.82	-3.21	-1.96	-0.07			
43529	-27.18	-35.73	-3.28	-2.82	-1.52	0.34			
43539	-27.12	-36.05	-3.72	-3.13	-1.87	0.18			
43586	-26.96	-36.08	-3.46	-2.89	-1.63	0.35			
6/4/2019	-26.69	-32.96	-3.12	-2.57	-4.77	-2.85			
6/19/2019	-26.67	-27.44	-2.27	-1.80	-0.85	-2.76			
7/2/2019	-26.70	-25.69	-1.41	-0.80	-0.03	-2.11			
8/6/2019	-26.41	-24.21	-2.19	-1.55	-0.74	-2.39			
9/12/2019	-25.96	-25.79	-2.47	-2.08	-0.94	-2.56			
Lomita #1									Reference Point Elevation: 79.48
Depth of Screen Interval	1240-1260	700-720	550-570	400-420	220-240	100-120			
Aquifer Name [1]	Pico Form. [2]	Silverado	Silverado	Lynwood	Gage [2]	Gage [2]			
12/13/2018	-19.46	-14.91	-11.54	-13.25	-11.01	-10.91			
3/19/2019	-18.33	-14.29	-10.41	-12.72	-10.22	-10.17			
4/30/2019	-17.88	-15.44	-10.54	-12.68	-10.53	-10.16			
6/13/2019	-20.60	-14.10	-10.91	-12.42	-10.15	-10.38			
9/10/2019	-20.07	-13.54	-10.73	-11.93	-9.86	-10.17			
Long Beach #1									Reference Point Elevation: 30.86
Depth of Screen Interval	1430-1450	1230-1250	970-990	599-619	400-420	155-175			
Aquifer Name [1]	Sunnyside [2]	Sunnyside	Silverado [2]	Lynwood [2]	Jefferson [2]	Artesia			
12/12/2018	-39.96	-42.92	-70.21	-33.70	-28.71	-5.59			
3/13/2019	-35.62	-38.53	-62.82	-26.81	-21.92	-1.05			
3/18/2019	-35.39	-38.34	-63.68	-27.32	-22.53	-0.44			
5/20/2019	-33.44	-36.42	-66.14	-30.58	-26.19	-4.37			
6/10/2019	-33.48	-36.57	-67.29	-31.36	-26.58	-4.89			
7/3/2019	-33.56	-36.60	-69.86	-35.05	-31.16	-7.08			
9/11/2019	-37.51	-40.73	-69.87	-38.32	-35.24	-10.18			
Long Beach #2									Reference Point Elevation: 44.20
Depth of Screen Interval	970-990	720-740	450-470	280-300	160-180	95-115			
Aquifer Name [1]	Sunnyside	Silverado [2]	Silverado	Lynwood	Gage	Gaspur			
12/13/2018	-84.28	-50.23	-40.33	-16.19	-4.62	-2.31			
1/2/2019	-82.24	-49.64	-39.91	-15.93	-4.51	-2.23			
3/19/2019	-78.56	-47.21	-44.12	-14.60	-3.57	-1.55			
6/4/2019	-80.29	-49.15	-42.32	-15.02	-3.53	-1.33			
6/17/2019	-79.51	-49.62	-43.24	-15.08	-3.52	-1.34			
9/13/2019	-83.24	-49.98	-44.83	-15.63	-3.78	-1.38			

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TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2018 - 2019

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
Long Beach #3									Reference Point Elevation: 26.67
Depth of Screen Interval	1350-1390	997-1017	670-690	530-550	410-430				
Aquifer Name [1]	Pico Form. [2]	Silverado	Silverado [2]	Silverado [2]	Lynwood				
12/12/2018	-29.77	-38.39	-38.37	-38.78	-1.33				
1/2/2019	-29.74	-37.30	-37.39	-37.86	-1.16				
3/14/2019	-29.38	-38.94	-38.98	-39.50	-0.79				
4/3/2019	-29.38	-36.56	-36.56	-37.01	-0.48				
6/17/2019	-29.36	-38.14	-38.12	-38.71	-1.52				
9/13/2019	-29.09	-38.19	-38.24	-38.60	-1.55				
Long Beach #4									Reference Point Elevation: 12.34
Depth of Screen Interval	1200-1220	800-820							
Aquifer Name [1]	Pico Form. [2]	Sunnyside [2]							
12/19/2018	-25.11	-9.51							
03/20/2019	-24.06	-8.01							
6/19/2019	-25.39	-9.72							
9/11/2019	-23.88	-7.59							
Long Beach #6									Reference Point Elevation: 34.47
Depth of Screen Interval	1490-1510	930-950	740-760	480-500	380-400	220-240			
Aquifer Name [1]	Pico Form. [2]	Sunnyside	Sunnyside	Silverado	Lynwood	Gage			
12/12/2018	-55.35	-76.02	-78.91	-107.67	-108.01	-37.02			
1/2/2019	-53.82	-74.17	-77.07	-105.51	-105.87	-36.57			
3/11/2019	-51.84	-69.20	-72.31	-103.19	-103.58	-34.23			
4/5/2019	-51.82	-68.43	-71.64	-103.12	-103.51	-34.64			
4/26/2019	-51.36	-68.17	-71.54	-103.80	-104.18	-35.00			
6/17/2019	-50.94	-69.51	-72.95	-104.68	-105.11	-35.57			
9/11/2019	-53.66	-79.32	-83.24	-106.53	-106.99	-38.15			
Long Beach #8									Reference Point Elevation: 21.20
Depth of Screen Interval	1435-1455	1020-1040	780-800	635-655	415-435	165-185			
Aquifer Name [1]	Pico Form. [2]	Sunnyside [2]	Silverado [2]	Silverado [2]	Silverado [2]	Lynwood [2]			
12/19/2018	-11.39	-24.57	-31.35	-29.65	-29.30	3.97			
3/20/2019	-11.00	-23.88	-32.46	-30.75	-30.35	4.48			
9/11/2019	-10.84	-23.82	-32.52	-30.84	-30.46	4.76			
Los Angeles #1									Reference Point Elevation:176.21
Depth of Screen Interval	1350-1370	1080-1100	920-940	640-660	350-370				
Aquifer Name [1]	Sunnyside [2]	Sunnyside	Sunnyside	Silverado	Lynwood [2]				
12/11/2018	-25.67	-21.59	-21.66	-21.61	-13.87				
3/18/2019	-25.14	-20.20	-20.46	-20.05	-12.29				
4/24/2019	-24.24	-19.68	-20.08	-19.77	-12.13				
9/18/2019	-24.56	-19.54	-20.00	-19.52	-11.80				
Los Angeles #2									Reference Point Elevation: 220.33
Depth of Screen Interval	1330-1370	710-730	505-525	410-430	245-265	135-155			
Aquifer Name [1]	Pico Form. [2]	Sunnyside	Silverado	Lynwood	Hollydale [2]	Gardena			
12/11/2018	45.06	-9.17	-9.76	-19.42	-25.23	Dry			
3/21/2019	45.24	-8.33	-8.77	-19.52	-25.44	Dry			
3/27/2019	not measured	-8.15	-8.62	-19.21	-25.13	Dry			
6/12/2019	45.21	-7.14	-7.52	-18.00	-24.15	Dry			
9/16/2019	44.89	-7.56	-8.02	-18.28	-23.48	Dry			
Los Angeles #3									Reference Point Elevation: 145.35
Depth of Screen Interval	1210-1230	875-895	705-725	550-570	330-350	190-210			
Aquifer Name [1]	Pico Form. [2]	Sunnyside [2]	Sunnyside [2]	Sunnyside	Silverado [2]	Gage [2]			
12/12/2018	-16.64	-5.63	-9.87	-12.46	-10.18	4.74			
3/11/2019	-16.70	-5.06	-9.07	-11.10	-9.16	5.01			
3/27/2019	-16.44	-4.97	-8.96	-11.13	-9.02	5.00			
6/12/2019	-14.99	-4.53	-8.39	-10.89	-8.68	5.02			
9/16/2019	-15.26	-4.48	-8.42	-10.41	-8.06	5.17			

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GROUNDWATER ELEVATIONS, WATER YEAR 2018 - 2019

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
Los Angeles #4									Reference Point Elevation: 136.04
Depth of Screen Interval	1740-1780	1190-1230	720-740	490-510	355-375	235-255			
Aquifer Name [1]	Pico Form. [2]	Sunnyside [2]	Sunnyside	Silverado	Lynwood	Gage			
12/12/2018	-25.52	-34.24	-31.50	-26.31	-26.42	-17.08			
3/18/2019	-26.74	-32.34	-29.24	-24.62	-24.86	-16.22			
5/8/2019	-24.87	-31.43	-28.87	-24.40	-24.64	-16.12			
6/10/2019	-24.10	-31.14	-28.50	-24.15	-24.39	-15.99			
9/16/2019	-23.69	-32.23	-30.08	-25.12	-25.33	-15.93			
Los Angeles #5									Reference Point Elevation: 104.11
Depth of Screen Interval	1960-2000	1235-1255	750-770	555-575	430-450	215-235	95-105		
Aquifer Name [1]	Pico Form. [2]	Sunnyside [2]	Sunnyside	Sunnyside	Silverado	Lynwood [2]	Exposition		
12/12/2018	7.01	7.79	11.02	8.03	4.03	32.87	62.53		
3/11/2019	7.32	8.43	12.57	7.85	4.62	33.07	62.42		
5/7/2019	7.99	9.50	12.26	9.04	5.86	34.15	62.49		
6/12/2019	7.16	9.02	9.82	8.34	5.41	33.34	62.56		
9/10/2019	7.16	9.04	10.58	8.83	6.25	33.56	62.48		
Los Angeles #6									Reference Point Elevation: 213.59
Depth of Screen Interval	580-600	420-440	345-365	255-275					
Aquifer Name [1]	Pico Form. [2]	Sunnyside	Silverado	Lynwood					
6/11/2019	3.60	-2.35	-2.65	-3.36					
6/26/2019	3.50	-2.36	-2.67	-3.42					
8/9/2019	3.49	-2.29	-2.57	-3.23					
9/16/2019	3.53	-2.30	-2.60	-3.29					
Lynwood #1									Reference Point Elevation: 88.86 (Zones 3, 4, 5, 6, 7 and 9) and 89.29 (Zones 1, 2 and 8)
Depth of Screen Interval	2880-2900	2430-2450	1650-1670	1445-1465	1200-1220	880-900	640-660	315-335	160-180
Aquifer Name [1]	Pico Form. [2]	Pico Form. [2]	Sunnyside [2]	Sunnyside [2]	Silverado [2]	Silverado [2]	Lynwood	Gardena	Gaspur
10/9/2018	-23.02	-40.74	-52.97	-47.83	-35.88	-32.97	-33.67	-30.9	35.23
12/13/2018	-24.97	-42.61	-53.02	-47.72	-35.64	-30.72	-31.29	-23.43	35.11
3/18/2019	-24.16	-39.21	-47.96	-41.96	-28.28	-25.48	-26.67	-21.56	35.31
5/14/2019	-22.69	-37.28	-47.76	-41.79	-29.29	-26.52	-27.91	-23.57	35.12
6/10/2019	-22.11	-37.23	-48.05	-42.13	-29.36	-26.11	-27.38	-24.67	34.94
9/12/2019	-21.93	-39.73	-50.66	-44.67	-32.58	-30.32	-31.69	-29.96	34.29
Manhattan Beach #1									Reference Point Elevation: 128.71
Depth of Screen Interval	1950-1990	1570-1590	1250-1270	865-885	640-660	320-340	180-200		
Aquifer Name [1]	Pico Form. [2]	Pico Form. [2]	Pico Form. [2]	Sunnyside [2]	Sunnyside [2]	Silverado	Gage		
12/10/2018	0.41	-1.96	-27.25	1.92	0.67	8.48	10.01		
3/4/2019	0.35	-1.84	-26.71	2.36	0.67	9.12	11.43		
3/11/2019	0.51	-1.89	-26.54	2.47	0.96	9.57	11.76		
6/12/2019	0.42	-1.97	-26.21	2.74	1.01	9.54	11.53		
9/11/2019	0.38	-2.01	-25.61	2.91	1.47	10.01	11.94		
Montebello #1									Reference Point Elevation: 193.11
Depth of Screen Interval	900-960	690-710	500-520	370-390	210-230	90-110			
Aquifer Name [1]	Pico Form. [2]	Sunnyside	Sunnyside	Silverado	Lynwood	Gage			
10/16/2018	49.79	40.94	40.33	38.97	44.68	Dry			
12/11/2018	47.80	40.32	39.81	38.49	41.83	Dry			
1/4/2019	48.73	42.43	41.92	40.37	41.83	Dry			
3/19/2019	63.71	66.86	66.47	62.81	50.29	Dry			
4/26/2019	64.82	63.66	63.09	59.98	54.53	Dry			
5/1/2019	64.57	63.26	62.76	59.95	54.63	Dry			
6/11/2019	63.00	59.36	58.68	55.87	54.76	Dry			
9/10/2019	64.18	58.06	57.21	54.46	56.97	Dry			
Norwalk #1									Reference Point Elevation: 96.18
Depth of Screen Interval	1400-1420	990-1010	720-740	430-450	220-240				
Aquifer Name [1]	Sunnyside	Silverado	Lynwood	Hollydale	Gage				
12/17/2018	22.04	-27.42	-1.56	-12.76	-9.67				
3/15/2019	26.38	-20.56	4.98	-9.05	-6.41				
5/2/2019	29.13	-19.68	5.84	-9.95	-7.18				
6/13/2019	29.32	-34.14	4.43	-12.02	-7.72				
9/18/2019	27.92	-24.68	2.44	-14.10	-10.31				

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	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
Norwalk #2									Reference Point Elevation: 116.73
Depth of Screen Interval	1460-1480	1260-1280	960-980	800-820	480-500	236-256			
Aquifer Name [1]	Pico Form. [2]	Pico Form. [2]	Sunnyside [2]	Sunnyside [2]	Silverado	Gardena			
12/18/2018	0.79	0.88	-9.03	-6.13	4.06	11.16			
3/18/2019	7.62	7.69	3.93	7.41	12.32	16.96			
4/16/2019	9.47	9.61	3.81	7.02	10.98	16.32			
6/10/2019	9.34	9.32	-0.95	3.49	9.10	15.81			
9/17/2019	7.44	7.43	-1.91	1.42	5.76	13.34			
Pico #1									Reference Point Elevation: 182.89
Depth of Screen Interval	860-900	460-480	380-400	170-190					
Aquifer Name [1]	Pico Form. [2]	Silverado	Silverado	Gardena [2]					
12/15/2018	94.75	80.01	79.39	77.13					
3/15/2019	111.31	111.04	110.72	110.45					
3/28/2019	116.60	115.34	114.98	113.29					
6/15/2019	125.85	112.18	111.37	108.27					
9/15/2019	125.54	104.98	106.76	101.68					
Pico #2									Reference Point Elevation: 151.83
Depth of Screen Interval	1180-1200	830-850	560-580	320-340	235-255	100-120			
Aquifer Name [1]	Sunnyside [2]	Sunnyside [2]	Sunnyside	Silverado	Lynwood	Gaspur/Gage [2]			
12/15/2018	41.14	43.53	47.52	69.88	68.66	79.70			
3/15/2019	79.51	73.87	79.77	89.82	90.19	95.72			
4/26/2019	61.83	61.95	70.15	62.87	82.65	90.31			
5/7/2019	59.93	60.22	68.08	85.31	86.21	90.25			
6/15/2019	61.82	57.66	64.26	83.25	79.29	92.45			
9/15/2019	54.91	49.80	58.56	81.53	80.43	87.75			
PM-1 Columbia									Reference Point Elevation: 81.39
Depth of Screen Interval	555-595	460-500	240-280	160-200					
Aquifer Name [1]	Silverado	Silverado	Lynwood	Gardena					
12/20/2018	-2.16	-2.01	not measured	-0.42					
3/18/2019	-1.54	-0.98	not measured	-0.12					
5/8/2019	-1.33	-0.76	not measured	not measured					
6/20/2019	-1.10	-0.59	not measured	0.31					
9/18/2019	-0.63	-0.10	not measured	0.69					
PM-2 Police Station									Reference Point Elevation: 87.43
Depth of Screen Interval	635-655	520-540	370-390	240-260					
Aquifer Name [1]	Sunnyside [2]	Silverado	Silver/Lyn [2]	Lynwood					
12/19/2018	-6.16	0.34	0.15	0.28					
3/18/2019	-5.56	1.47	1.17	1.29					
3/29/2019	-5.55	1.17	0.87	0.99					
6/11/2019	-5.22	0.62	1.08	1.20					
7/2/2019	-5.00	0.47	0.96	1.08					
9/10/2019	-4.74	1.08	1.62	1.77					
PM-3 Madrid									Reference Point Elevation: 73.12
Depth of Screen Interval	640-680	480-520	240-280	145-185					
Aquifer Name [1]	Sunnyside [2]	Silverado	Lynwood	Gardena					
12/21/2018	-5.83	-3.50	-3.47	-3.46					
3/15/2019	-5.58	-3.16	-3.20	-3.16					
4/8/2019	-5.27	-2.96	-3.00	-2.95					
6/18/2019	-4.93	-2.91	-2.86	-2.85					
9/11/2019	-4.53	-2.53	-2.43	-2.44					
PM-4 Mariner									Reference Point Elevation: 100.38
Depth of Screen Interval	670-710	500-540	340-380	200-240					
Aquifer Name [1]	Sunnyside [2]	Silverado	Lynwood	Gardena					
12/19/2018	-1.32	-0.11	3.20	3.24					
3/15/2019	-0.72	0.52	3.82	3.86					
5/12/2019	-0.14	0.82	4.23	4.29					
6/18/2019	-0.15	0.84	4.25	4.28					
9/13/2019	0.21	0.83	4.34	4.41					

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- Shaded cell indentifies the zone and measurement used in Figures 2.1 and 2.2.

TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2018 - 2019

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
PM-5 Columbia Park									Reference Point Elevation: 78.57
Depth of Screen Interval	1360-1380	940-960	770-790	580-600	320-340	140-160			
Aquifer Name [1]	Pico Form. [2]	Pico Form. [2]	Sunnyside [2]	Silverado	Lynwood [2]	Gardena			
12/19/2018	-26.15	-29.53	-3.51	-2.28	2.65	2.77			
3/15/2019	-26.50	-29.05	-3.10	-1.79	3.45	3.55			
5/13/2019	-26.32	-28.44	-2.41	-0.63	4.12	4.27			
6/12/2019	-25.27	-27.40	-2.45	-1.23	3.61	3.77			
9/13/2019	-25.53	-21.78	-2.12	-0.94	4.09	4.29			
PM-6 Madrona Marsh									Reference Point Elevation: 80.88
Depth of Screen Interval	1195-1235	905-925	770-790	530-550	390-410	240-260			
Aquifer Name [1]	Pico Form. [2]	Sunnyside [2]	Sunnyside [2]	Silverado	Lynwood	Lynwood			
10/10/2018	-28.19	-8.40	-7.93	-0.38	0.72	1.16			
12/18/2018	-26.78	-8.37	-7.97	-0.52	0.76	1.20			
1/2/2019	-26.65	-8.45	-8.04	-0.58	0.50	0.94			
3/18/2019	-26.56	-7.82	-7.23	0.30	1.66	2.06			
3/26/2019	-26.58	-7.63	71.95	0.45	2.03	2.17			
6/11/2019	-25.85	-7.43	-7.07	0.56	1.70	2.17			
9/10/2019	-22.99	-6.89	-6.71	0.89	1.95	2.39			
Rio Hondo #1									Reference Point Elevation: 146.51
Depth of Screen Interval	1110-1130	910-930	710-730	430-450	280-300	140-160			
Aquifer Name [1]	Pico Form. [2]	Sunnyside [2]	Sunnyside	Silverado	Hollydale	Gardena			
10/16/2018	32.64	28.69	27.97	23.40	32.51	36.94			
12/17/2018	34.12	33.19	32.55	24.27	32.89	37.06			
3/15/2019	55.91	48.10	59.32	55.51	63.56	66.63			
4/19/2019	55.00	55.08	54.28	48.89	58.08	61.68			
5/2/2019	53.13	51.80	51.05	46.35	55.51	59.39			
6/11/2019	48.11	48.34	47.66	42.53	50.55	54.59			
9/11/2019	44.82	42.64	41.96	35.54	45.90	50.44			
Seal Beach #1									Reference Point Elevation: 9.06
Depth of Screen Interval	1345-1365	1160-1180	1020-1040	775-795	605-625	215-235	60-70		
Aquifer Name [1]	Sunnyside [2]	Sunnyside [2]	Sunnyside [2]	Silverado	Lynwood [2]	Gage	Artesia		
12/17/2018	-38.09	-38.30	-38.15	-56.37	-33.48	0.61	2.59		
3/18/2019	-33.78	-34.17	-33.88	-50.27	-30.74	3.48	4.98		
4/15/2019	-32.45	-32.65	-32.51	-52.79	-32.98	0.65	4.08		
6/10/2019	-31.93	-32.15	-31.99	-55.52	-35.03	-1.10	3.02		
9/11/2019	-35.41	-35.61	-35.49	-59.33	-40.01	-4.33	1.31		
South Gate #1									Reference Point Elevation: 102.50
Depth of Screen Interval	1440-1460	1320-1340	910-930	565-585	220-240				
Aquifer Name [1]	Sunnyside [2]	Sunnyside [2]	Silverado [2]	Lynwood	Exposition [2]				
12/11/2018	-17.07	-14.46	-9.67	-7.81	28.48				
3/21/2019	-8.43	-6.75	-2.80	-2.28	28.92				
3/28/2019	-7.82	-5.69	-2.43	-2.68	29.07				
6/11/2019	-9.22	-7.68	-3.94	-6.83	28.59				
9/11/2019	-11.78	-9.73	-6.16	-13.55	27.98				
South Gate #2									Reference Point Elevation: 120.29
Depth of Screen Interval	1740-1760	1410-1430	1062-1082	670-690	410-430	205-225			
Aquifer Name [1]	Sunnyside [2]	Sunnyside [2]	Sunnyside	Silverado [2]	Hollydale	Gaspur [2]			
10/19/2018	-34.49	-33.87	-27.91	-24.16	36.48	42.56			
12/14/2018	-31.16	-30.96	-24.76	-21.19	36.26	42.47			
3/15/2019	-26.49	-26.90	-25.24	-24.80	36.06	42.11			
5/24/2019	-25.77	-26.35	-25.18	-26.09	35.87	42.02			
6/19/2019	-27.11	-27.83	-25.94	-27.26	35.69	41.94			
9/12/2019	-29.26	-29.92	-27.30	-28.25	35.16	41.51			
Westchester #1									Reference Point Elevation: 126.95
Depth of Screen Interval	740-760	560-580	455-475	310-330	215-235				
Aquifer Name [1]	Pico Form. [2]	Sunnyside [2]	Sunnyside [2]	Silverado	Jefferson				
12/12/2018	0.58	8.97	9.34	9.52	9.71				
3/15/2019	0.94	9.11	9.50	9.74	9.93				
6/17/2019	1.27	9.30	9.78	9.96	10.09				
9/9/2019	-0.12	8.94	9.38	9.58	9.76				

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- Shaded cell indentifies the zone and measurement used in Figures 2.1 and 2.2.

TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2018 - 2019

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
Whittier #1									Reference Point Elevation: 217.35 (Zones 1, 2, 4 and 5) and 217.81 (Zone 3)
Depth of Screen Interval	1180-1200	920-940	600-620	450-470	200-220				
Aquifer Name [1]	Pico Form. [2]	Pico Form. [2]	Sunnyside	Silverado	Jefferson				
12/20/2018	100.98	100.97	94.41	92.75	193.80				
3/12/2019	100.95	100.84	95.26	93.15	196.37				
4/30/2019	100.94	100.84	95.19	93.99	196.25				
6/11/2019	100.99	101.01	96.18	94.31	196.20				
9/10/2019	101.15	101.18	95.73	94.43	195.76				
Whittier #2									Reference Point Elevation: 167.55
Depth of Screen Interval	1370-1390	1090-1110	655-675	425-445	315-335	150-170			
Aquifer Name [1]	Pico Form. [2]	Pico Form. [2]	Sunnyside	Silverado	Silverado	Gage [2]			
12/17/2018	61.41	62.63	53.84	56.79	87.71	98.04			
3/12/2019	73.75	74.79	82.28	85.35	101.39	105.65			
4/23/2019	76.73	77.47	75.41	73.71	98.42	105.12			
6/11/2019	74.95	75.44	69.21	66.99	93.89	102.04			
6/21/2019	75.53	76.21	69.94	69.49	94.01	101.85			
9/19/2019	73.28	73.93	64.49	62.13	91.53	99.95			
Whittier Narrows #1									Reference Point Elevation: 214.66
Depth of Screen Interval	749-769	610-629	463-483	393-402	334-344	273-283	234-243	163-173	95-105
Aquifer Name [1]	Sunnyside	Sunnyside	Sunnyside	Silverado	Silverado	Lynwood	Lynwood	Gardena	Gaspur
43537	174.71	174.55	175.98	178.54	not measured	not measured	not measured	not measured	not measured
43538	not measured	not measured	not measured	not measured	180	181.21	181.46	181.21	184.15
10/30/2019	174.71	159.91	162.10	166.78	167.74	169.04	168.78	168.88	not measured
10/31/2019	not measured	not measured	not measured	not measured	not measured	not measured	not measured	not measured	169.9
Whittier Narrows #2									Reference Point Elevation: 209.15
Depth of Screen Interval	659-678	579-598	469-488	419-428	328-338	263-273	214-223	136-145	91-100
Aquifer Name [1]	Pico Form. [2]	Pico Form. [2]	Pico Form. [2]	Pico Form. [2]	Pico Form. [2]	Lynwood	Lynwood	Gardena [2]	Gardena
3/18/2019	-18.95	-18.74	-17.66	-10.29	97.72	137.94	153.22	151.23	150.47
10/31/2019	-19.67	-19.48	-19.02	-11.03	90.05	136.79	137.59	138.99	155.39
Willowbrook #1									Reference Point Elevation: 98.87
Depth of Screen Interval	885-905	500-520	360-380	200-220					
Aquifer Name [1]	Sunnyside [2]	Silverado	Lynwood	Gage					
12/12/2018	-52.08	-39.77	-41.11	not measured					
12/27/2018	-52.14	-39.77	-40.74	-39.95					
3/15/2019	-48.33	-38.17	-39.13	-38.55					
4/25/2019	-49.53	-38.16	-39.28	-38.61					
6/19/2019	-50.73	-38.54	-41.89	-40.63					
6/27/2019	-51.42	-38.46	-42.46	-41.27					
9/12/2019	-53.92	-39.46	-43.77	-42.65					
Wilmington #1									Reference Point Elevation: 40.74
Depth of Screen Interval	915-935	780-800	550-570	225-245	120-140				
Aquifer Name [1]	Sunnyside [2]	Silverado	Silverado	Lynwood	Gage				
12/20/2018	-32.89	-33.29	-33.51	-10.51	-7.78				
2/27/2019	-34.06	-34.33	-34.67	-10.42	-7.64				
3/18/2019	-33.54	-33.93	-34.14	-10.29	-7.54				
6/18/2019	-33.25	-33.63	-33.86	-9.97	-7.27				
9/11/2019	-34.84	-34.71	-35.06	-9.78	-6.99				
Wilmington #2									Reference Point Elevation: 32.30
Depth of Screen Interval	950-970	755-775	540-560	390-410	120-140				
Aquifer Name [1]	Sunnyside [2]	Silverado	Silverado	Lynwood	Gage				
12/18/2018	-23.03	-20.23	-16.77	-16.02	-2.57				
2/26/2019	-23.60	-20.13	-16.68	-15.84	-2.25				
3/19/2019	-23.19	-19.84	-16.45	-15.60	-2.14				
6/18/2019	-22.94	-19.63	-16.17	-15.35	-1.64				
9/13/2019	-23.08	-19.61	-15.90	-15.04	-1.51				

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TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

Constituents	Units	MCL	MCL Type	Bell #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/25/2019	9/17/2019	4/25/2019	9/17/2019	4/25/2019	9/17/2019	4/25/2019	9/17/2019	4/25/2019	9/17/2019	4/25/2019	9/17/2019
General Minerals															
Alkalinity	mg/l			590	590	160	160	160	160	170	170	180	170	270	260
Anion Sum	meq/l			17	16	5.4	5.6	5.1	5.1	5.6	5.7	7.5	7.3	12	11
Bicarbonate as HCO3	mg/l			710	710	200	200	190	190	210	210	220	210	320	320
Boron	mg/l	1	N	**1.5**	**1.5**	0.13	0.14	0.12	0.13	0.14	0.15	0.13	0.14	0.16	0.17
Bromide	ug/l			1300	1200	110	100	150	150	120	120	180	180	420	400
Calcium, Total	mg/l			16	16	52	52	45	46	58	58	76	76	120	130
Carbon Dioxide	mg/l			4.6	4.6	2.1	2.1	2.5	2	2.2	ND	3.6	2.7	10	5.2
Carbonate as CO3	mg/l			12	12	2	2	ND	2	2.2	2.7	ND	ND	ND	2.1
Cation Sum	meq/l			15	14	5.6	5.6	5.2	5.3	5.9	5.9	7.6	7.6	12	12
Chloride	mg/l	500	S	170	170	21	23	29	29	26	28	52	49	100	97
Fluoride	mg/l	2	P	0.4	0.38	0.23	0.21	0.39	0.38	0.41	0.41	0.39	0.34	0.37	0.35
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			300	360	33	29	44	42	40	34	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	8.8	8.2	7.1	6.9
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	2	1.9	1.6	1.5
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			6	6	2.5	2.6	3.4	3.4	3.2	3.3	2.9	2.9	2.9	2.9
Sodium, Total	mg/l			320	300	49	48	46	48	42	42	50	51	61	61
Sulfate	mg/l	500	S	1.2	0.73	73	81	55	56	70	73	110	110	160	160
Total Dissolved Solid (TDS)	mg/l	1000	S	950	970	330	330	310	290	340	320	450	450	680	690
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	2	1.9	1.6	1.5
General Physical Properties															
Apparent Color	ACU	15	S	**180**	**200**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			64	63	170	170	150	160	200	200	260	270	430	460
Lab pH	Units			8.4	8.4	8.2	8.2	8.1	8.2	8.2	8.3	8	8.1	7.7	8
Langelier Index - 25 degree	None			1	1	0.8	0.8	0.59	0.66	0.82	0.89	0.79	0.85	0.9	1.2
Odor	TON	3	S	**4**	**8**	ND	1	ND	1	ND	2	ND	2	ND	2
Specific Conductance	umho/cm	1600	S	1600	1600	540	540	510	520	560	570	740	730	1100	1100
Turbidity	NTU	5	S	0.32	0.42	ND	0.13	ND	0.16	0.16	0.2	ND	0.36	0.84	1.6
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	3.3	3.2	1.5	ND
Barium, Total	ug/l	1000	P	21	21	37	39	36	35	77	76	240	230	140	130
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
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	2	ND	3.9	2.8
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.5	0.36	0.1	0.1	0.091	0.092	0.087	0.086	2.3	2.1	4.1	4.2
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.078	0.079	0.023	0.024	ND	ND	ND	0.02	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			5.8	5.7	10	10	10	10	13	13	18	19	32	33
Manganese, Total	ug/l	50	S	34	36	**78**	**84**	**51**	**51**	**70**	**69**	ND	ND	ND	ND
Mercury	ug/l	2	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	5.3	ND	6	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
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 (Methyl Chloride)	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	0.85	0.9
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												
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	2	1.8	**46**	**46**
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
Others															
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	2.3	2.2	2.2	2
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			24	18	ND	ND	ND	0.4	ND	ND	ND	ND	ND	0.44

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 2018-19

Constituents	Units	MCL	MCL Type	Bell Gardens #1					
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
				5/22/2019	5/22/2019	5/22/2019	5/22/2019	5/22/2019	5/22/2019
General Minerals									
Alkalinity	mg/l			160	160	140	110	120	130
Anion Sum	meq/l			7.1	5.1	6.9	5	5	5.9
Bicarbonate as HCO3	mg/l			200	190	170	130	150	160
Boron	mg/l	1	N	0.053	0.12	0.17	0.13	0.14	0.14
Bromide	ug/l			120	120	130	81	140	110
Calcium, Total	mg/l			96	43	71	47	49	59
Carbon Dioxide	mg/l			2.6	2	2.8	2.7	3.9	4.2
Carbonate as CO3	mg/l			ND	2	ND	ND	ND	ND
Cation Sum	meq/l			7.2	5.2	6.8	5	5	5.8
Chloride	mg/l	500	S	47	34	67	45	37	55
Fluoride	mg/l	2	P	0.2	0.28	0.33	0.39	0.23	0.34
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Iodide	ug/l			6	12	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	10	7.8	8.2	11
Nitrate as Nitrogen	mg/l	10	P	ND	ND	2.4	1.8	1.8	2.4
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			2.1	2.3	3.2	2.9	2.6	3.1
Sodium, Total	mg/l			29	52	51	44	40	43
Sulfate	mg/l	500	S	120	47	100	67	64	74
Total Dissolved Solid (TDS)	mg/l	1000	S	440	320	420	310	310	370
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	2.4	1.8	1.8	2.4
General Physical Properties									
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			290	140	230	150	160	190
Lab pH	Units			8.1	8.2	8	7.9	7.8	7.8
Langelier Index - 25 degree	None			0.95	0.72	0.63	0.3	0.28	0.37
Odor	TON	3	S	2	1	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	700	510	690	510	510	600
Turbidity	NTU	5	S	0.1	ND	ND	ND	ND	ND
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	3.5	ND	2.7	2.4	1.2	1.9
Barium, Total	ug/l	1000	P	100	77	120	54	56	58
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.11	0.14	0.53	0.64	0.79	0.63
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.039	ND	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			13	8.1	12	8.4	9.4	11
Manganese, Total	ug/l	50	S	27	41	ND	ND	ND	ND
Mercury	ug/l	2	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
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 (Methyl Chloride)	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	0.64	0.91
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	ug/l	80	P	ND	ND	ND	ND	ND	0.98
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
Others									
1,4-Dioxane	ug/l	1	N	**2**	ND	**1.3**	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	0.7	ND	0.52	0.58
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			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 2018-19

Constituents	Units	MCL	MCL Type	Cerritos #1					
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
				3/19/2019	3/19/2019	3/19/2019	3/19/2019	3/19/2019	3/19/2019
General Minerals									
Alkalinity	mg/l			160	160	160	170	180	180
Anion Sum	meq/l			4.6	4.1	5.1	4.8	4.5	4.5
Bicarbonate as HCO3	mg/l			190	190	200	210	220	220
Boron	mg/l	1	N	0.082	0.054	0.085	0.084	0.082	0.074
Bromide	ug/l			44	39	64	48	38	50
Calcium, Total	mg/l			36	36	42	48	40	47
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			3.1	2	2	2.2	2.3	ND
Cation Sum	meq/l			4.6	4.1	5.1	4.9	4.5	4.6
Chloride	mg/l	500	S	14	11	19	15	10	9.5
Fluoride	mg/l	2	P	0.27	0.32	0.38	0.48	0.42	0.32
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Iodide	ug/l			11	18	32	22	16	72
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			1.8	1.7	1.6	1.6	1.6	1.8
Sodium, Total	mg/l			54	43	56	37	40	34
Sulfate	mg/l	500	S	50	30	61	45	29	25
Total Dissolved Solid (TDS)	mg/l	1000	S	280	250	320	290	260	270
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND
General Physical Properties									
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			110	110	130	160	140	150
Lab pH	Units			8.4	8.2	8.2	8.2	8.2	8
Langelier Index - 25 degree	None			0.76	0.63	0.73	0.71	0.68	0.62
Odor	TON	3	S	1	1	ND	2	1	1
Specific Conductance	umho/cm	1600	S	460	400	510	480	440	440
Turbidity	NTU	5	S	ND	ND	ND	0.29	0.16	0.2
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	**15**	**11**	**20**	5.6	**11**	**38**
Barium, Total	ug/l	1000	P	52	100	130	63	85	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
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.062	0.12	0.064	0.062	0.078	0.049
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	ND	ND	0.027	0.089	0.063	0.068
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			4.6	5.4	6	11	9.3	8.8
Manganese, Total	ug/l	50	S	25	33	46	**81**	**120**	**140**
Mercury	ug/l	2	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
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 (Methyl Chloride)	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
Others									
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			1.2	0.3	ND	ND	1.4	1.4

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 2018-19

Constituents	Units	MCL	MCL Type	Cerritos #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/23/2019	9/12/2019	4/23/2019	9/12/2019	4/23/2019	9/12/2019	4/23/2019	9/12/2019	4/23/2019	9/12/2019	4/23/2019	9/12/2019
General Minerals															
Alkalinity	mg/l			150	140	160	160	160	160	180	180	180	170	320	320
Anion Sum	meq/l			3.6	3.5	8.1	7.7	3.7	3.6	4.1	4	4	4	12	12
Bicarbonate as HCO3	mg/l			180	180	200	200	190	190	220	210	220	210	400	390
Boron	mg/l	1	N	0.051	0.053	0.16	0.17	0.058	0.06	0.074	0.075	0.072	0.073	0.11	0.11
Bromide	ug/l			23	22	150	150	17	17	24	22	22	20	220	220
Calcium, Total	mg/l			43	43	88	88	47	47	54	53	54	53	150	150
Carbon Dioxide	mg/l			ND	2.3	5	5.2	ND	2	2.6	2.7	2.3	2.7	17	6.4
Carbonate as CO3	mg/l			ND	ND	ND	ND	2.4	2	2	ND	2.2	ND	ND	2.5
Cation Sum	meq/l			3.8	3.8	8	8.1	3.9	3.9	4.4	4.3	4.4	4.3	12	12
Chloride	mg/l	500	S	5.9	5.7	76	72	5.2	4.9	6.1	5.9	5.5	5.4	71	69
Fluoride	mg/l	2	P	0.24	0.28	0.37	0.35	0.31	0.29	0.43	0.4	0.37	0.36	0.36	0.35
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			2.2	1.7	2.3	1.9	7	5	8.5	6.2	8.6	6.6	30	22
Nitrate (as NO3)	mg/l	45	P	ND	ND	13	12	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	3	2.7	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			2.6	2.7	4.2	4.4	2.3	2.4	2.6	2.7	2.7	2.7	4.3	4.4
Sodium, Total	mg/l			25	25	51	52	24	24	22	21	22	22	52	50
Sulfate	mg/l	500	S	21	20	120	110	17	16	18	18	16	16	170	160
Total Dissolved Solid (TDS)	mg/l	1000	S	210	220	470	500	200	230	230	250	230	230	710	730
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	3	2.7	ND	ND	ND	ND	ND	ND	ND	ND
General Physical Properties															
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			130	130	280	280	140	140	170	170	160	160	500	500
Lab pH	Units			8.2	8.1	7.9	7.8	8.2	8.2	8.2	8.1	8.2	8.1	7.7	8
Langelier Index - 25 degree	None			0.64	0.54	0.62	0.61	0.79	0.68	0.77	0.7	0.81	0.74	0.92	1.4
Odor	TON	3	S	ND	2	ND	2	**8**	2	2	2	2	2	**4**	2
Specific Conductance	umho/cm	1600	S	350	350	800	790	360	360	400	400	390	390	1100	1100
Turbidity	NTU	5	S	ND	0.2	ND	0.16	0.21	0.69	0.12	0.32	0.16	0.38	2.2	2.2
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	2.5	2.1	2.1	2.1	3.3	3.1	8.3	7.9	**18**	**18**	4.5	4.1
Barium, Total	ug/l	1000	P	100	98	130	120	110	110	160	160	170	170	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
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	0.3	0.39	0.76	0.84	0.17	0.2	0.12	0.2	0.13	0.17	0.074	0.042
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	ND	ND	ND	ND	0.022	ND	0.037	0.034	0.074	0.07	**0.39**	**0.37**
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			5.3	5.3	16	16	6	6	8.5	8.4	7.4	7.2	30	30
Manganese, Total	ug/l	50	S	6.2	6.2	ND	ND	38	39	**91**	**99**	**110**	**120**	**320**	**300**
Mercury	ug/l	2	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
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 (Methyl Chloride)	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												
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
Others															
1,4-Dioxane	ug/l	1	N	ND	ND	**3.1**	**2.7**	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	0.84	0.72	ND	ND	ND	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			ND	ND	0.46	0.56	ND	ND	ND	ND	ND	ND	0.9	0.86

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 2018-19

Constituents	Units	MCL	MCL Type	Commerce #1					
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
				4/8/2019	4/8/2019	4/8/2019	4/8/2019	4/8/2019	4/8/2019
General Minerals									
Alkalinity	mg/l			470	300	240	190	170	190
Anion Sum	meq/l			250	10	9.4	7.9	7	8
Bicarbonate as HCO3	mg/l			580	360	290	230	210	230
Boron	mg/l	1	N	**7.9**	0.72	0.27	0.24	0.14	0.12
Bromide	ug/l			49000	1000	830	340	260	340
Calcium, Total	mg/l			210	46	56	43	73	78
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			2.4	2.3	ND	ND	ND	ND
Cation Sum	meq/l			240	12	9.8	7.9	7.4	8.2
Chloride	mg/l	500	S	**8400**	160	150	79	66	83
Fluoride	mg/l	2	P	0.18	0.4	0.32	0.48	0.35	0.42
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Iodide	ug/l			10000	290	230	66	ND	ND
Nitrate (as NO3)	mg/l	45	P	7	ND	ND	ND	21	39
Nitrate as Nitrogen	mg/l	10	P	1.6	ND	ND	ND	4.7	8.7
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			70	6.2	3.7	3.5	2.2	2
Sodium, Total	mg/l			4900	170	120	98	49	53
Sulfate	mg/l	500	S	3.1	3.2	15	90	66	62
Total Dissolved Solid (TDS)	mg/l	1000	S	**14000**	610	530	470	430	470
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	1.6	ND	ND	ND	4.7	8.7
General Physical Properties									
Apparent Color	ACU	15	S	**50**	**25**	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			1200	200	220	180	260	290
Lab pH	Units			7.8	8	8	8	7.9	7.7
Langelier Index - 25 degree	None			1.4	0.79	0.74	0.56	0.63	0.54
Odor	TON	3	S	**8**	**200**	1	ND	1	1
Specific Conductance	umho/cm	1600	S	**24000**	1100	970	810	720	820
Turbidity	NTU	5	S	**5.2**	0.14	ND	0.2	0.13	0.33
Metals									
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	1.1	ND	ND	ND	ND	1.4
Arsenic, Total	ug/l	10	P	**12**	ND	ND	ND	ND	ND
Barium, Total	ug/l	1000	P	760	76	91	240	81	68
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	7.8	10
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	0.38	0.18	0.11	7.8	**11**
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	**1.3**	ND	ND	0.094	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			170	21	19	17	20	24
Manganese, Total	ug/l	50	S	**140**	9.6	**55**	**62**	ND	ND
Mercury	ug/l	2	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	41	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
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 (Methyl Chloride)	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	0.93	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	ug/l	80	P	ND	ND	ND	ND	ND	0.9
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	4	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
Others									
1,4-Dioxane	ug/l	1	N	ND	ND	ND	**4.7**	**2.1**	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	3.2	4.8
Surfactants	mg/l	0.5	S	0.13	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			12	5.1	1.5	0.78	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 2018-19

Constituents	Units	MCL	MCL Type	Compton #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				4/2/2019	9/17/2019	4/2/2019	9/17/2019	4/2/2019	9/17/2019	4/2/2019	9/17/2019
General Minerals											
Alkalinity	mg/l			120	120	140	140	160	150	170	160
Anion Sum	meq/l			4	4.1	4.5	4.5	5	5	5.5	5.4
Bicarbonate as HCO3	mg/l			150	140	170	170	190	190	200	200
Boron	mg/l	1	N	0.15	0.16	0.098	0.1	0.11	0.11	0.091	0.092
Bromide	ug/l			100	100	110	110	130	130	100	100
Calcium, Total	mg/l			22	22	39	38	52	50	65	62
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	2.1
Carbonate as CO3	mg/l			ND	2.3	ND	2.2	ND	2.5	ND	2
Cation Sum	meq/l			4.2	4.2	4.6	4.6	5.2	5.2	5.8	5.7
Chloride	mg/l	500	S	19	19	22	22	24	24	22	22
Fluoride	mg/l	2	P	0.29	0.28	0.35	0.32	0.3	0.3	0.27	0.26
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			39	34	38	33	44	46	38	32
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			1.5	1.4	1.6	1.6	2.6	2.7	2.4	2.3
Sodium, Total	mg/l			65	66	55	56	43	44	45	45
Sulfate	mg/l	500	S	52	54	53	54	58	58	72	73
Total Dissolved Solid (TDS)	mg/l	1000	S	260	250	290	270	320	310	360	340
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
General Physical Properties											
Apparent Color	ACU	15	S	**20**	**20**	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			62	62	110	110	160	160	190	180
Lab pH	Units			8.3	8.4	8.2	8.3	8.1	8.3	8.1	8.2
Langelier Index - 25 degree	None			0.4	0.41	0.6	0.68	0.66	0.8	0.78	0.85
Odor	TON	3	S	1	2	1	2	1	2	2	2
Specific Conductance	umho/cm	1600	S	420	420	460	460	500	500	540	540
Turbidity	NTU	5	S	ND	0.2	ND	0.12	0.11	0.27	0.33	0.54
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**	**16**
Barium, Total	ug/l	1000	P	9.1	9	11	10	68	62	170	150
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
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.28	0.26	0.19	0.23	0.1	0.24	0.053	0.2
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	ND	ND	ND	ND	ND	0.02	0.068	0.069
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			1.8	1.8	3.1	3.1	8.7	8.8	6.4	6.3
Manganese, Total	ug/l	50	S	9.2	9.2	16	15	**54**	50	**87**	**79**
Mercury	ug/l	2	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	59	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
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 (Methyl Chloride)	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								
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
Others											
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			1.6	1.4	0.6	0.69	0.58	0.5	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 2018-19

Constituents	Units	MCL	MCL Type	Compton #2					
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
				4/12/2019	4/12/2019	4/12/2019	4/12/2019	4/12/2019	4/12/2019
General Minerals									
Alkalinity	mg/l			460	280	160	180	180	180
Anion Sum	meq/l			9.7	5.9	4.9	6.1	6.4	7.8
Bicarbonate as HCO3	mg/l			560	330	190	220	220	220
Boron	mg/l	1	N	0.68	0.18	0.1	0.12	0.12	0.16
Bromide	ug/l			190	91	94	120	130	270
Calcium, Total	mg/l			12	27	48	68	68	84
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			12	4.3	2	ND	2.3	ND
Cation Sum	meq/l			10	6	5.1	6.3	6.6	8.1
Chloride	mg/l	500	S	13	13	19	30	34	64
Fluoride	mg/l	2	P	0.41	0.27	0.21	0.23	0.32	0.37
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Iodide	ug/l			59	28	27	33	34	1.9
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	4
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	0.89
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			ND	4.3	2.4	2.5	3.8	4.1
Sodium, Total	mg/l			220	94	48	44	44	53
Sulfate	mg/l	500	S	0.59	ND	56	79	82	110
Total Dissolved Solid (TDS)	mg/l	1000	S	570	330	290	370	370	470
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	0.89
General Physical Properties									
Apparent Color	ACU	15	S	**40**	**30**	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			39	88	150	220	230	280
Lab pH	Units			8.5	8.3	8.2	8.1	8.2	7.8
Langelier Index - 25 degree	None			0.85	0.79	0.74	0.84	0.92	0.67
Odor	TON	3	S	**8**	2	**8**	ND	ND	ND
Specific Conductance	umho/cm	1600	S	910	560	480	600	620	780
Turbidity	NTU	5	S	1.2	0.35	ND	0.11	2.5	0.2
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	1.3	ND	ND	ND	1.2	4.3
Barium, Total	ug/l	1000	P	15	17	33	39	100	84
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.57	0.19	0.15	0.088	0.085	0.52
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	ND	0.041	ND	0.034	0.03	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			2.1	4.9	6.8	11	14	18
Manganese, Total	ug/l	50	S	12	30	30	45	**110**	29
Mercury	ug/l	2	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	6.5
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
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 (Methyl Chloride)	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
Others									
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	0.52
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			19	3.2	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 2018-19

Constituents	Units	MCL	MCL Type	Downey #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/4/2019	9/23/2019	4/4/2019	9/23/2019	4/4/2019	9/23/2019	4/4/2019	9/23/2019	4/4/2019	9/23/2019	4/4/2019	9/23/2019
General Minerals															
Alkalinity	mg/l			150	150	150	150	170	170	190	190	210	210	380	400
Anion Sum	meq/l			3.5	3.5	5.9	6.1	7.9	8.1	8.9	9	7.7	7.7	17	18
Bicarbonate as HCO3	mg/l			180	180	180	180	210	210	230	230	260	260	470	480
Boron	mg/l	1	N	0.055	0.058	0.062	0.064	0.1	0.11	0.19	0.19	0.091	0.093	0.25	0.26
Bromide	ug/l			19	17	89	95	140	140	170	160	140	140	410	400
Calcium, Total	mg/l			42	41	80	78	92	99	96	94	93	99	200	200
Carbon Dioxide	mg/l			2.3	2.3	3	3	4.3	3.4	7.5	6	6.8	5.4	ND	20
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			3.7	3.7	6.2	6.1	7.7	8.1	9.1	8.9	7.6	7.9	18	19
Chloride	mg/l	500	S	4.9	5	34	38	69	72	79	81	45	46	110	110
Fluoride	mg/l	2	P	0.28	0.34	0.31	0.29	0.35	0.34	0.4	0.38	0.41	0.42	0.34	0.34
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			ND	ND	ND	ND	ND	ND	3	3.4	6.9	7.8	3.8	5.2
Nitrate (as NO3)	mg/l	45	P	ND	ND	8.9	9.1	16	16	7.7	7.9	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	2	2	3.6	3.6	1.7	1.8	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			2.8	2.9	3.5	3.6	3.7	3.7	4.6	4.7	4	4	7	7.1
Sodium, Total	mg/l			26	26	27	27	36	37	58	58	29	30	110	120
Sulfate	mg/l	500	S	17	18	84	88	110	110	130	140	100	100	300	310
Total Dissolved Solid (TDS)	mg/l	1000	S	220	220	380	380	490	490	560	550	480	470	1000	**1100**
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	2	2	3.6	3.6	1.7	1.8	ND	ND	ND	ND
General Physical Properties															
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			130	120	250	240	300	320	320	310	310	320	660	660
Lab pH	Units			8.1	8.1	8	8	7.9	8	7.7	7.8	7.8	7.9	7.5	7.6
Langelier Index - 25 degree	None			0.57	0.48	0.73	0.76	0.74	0.87	0.64	0.71	0.77	0.84	1	1.1
Odor	TON	3	S	1	1	ND	2	ND	2	ND	2	ND	2	1	2
Specific Conductance	umho/cm	1600	S	350	350	600	600	800	800	880	880	750	740	1600	1600
Turbidity	NTU	5	S	ND	0.3	ND	ND	ND	ND	ND	0.15	0.16	0.4	0.43	1.9
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	ND	2.2	2.2	2.9	3	1.9	ND	4	3.9	2.4	2.8
Barium, Total	ug/l	1000	P	110	4.8	170	160	140	130	89	84	260	240	82	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
Chromium, Total	ug/l	50	P	3.7	ND	1.8	ND	1.1	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	4	4.1	2	2	1.3	1.3	0.39	0.42	0.093	0.093	0.099	0.078
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.021
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			5.7	5.6	12	12	18	18	19	19	19	19	38	39
Manganese, Total	ug/l	50	S	ND	ND	ND	ND	ND	ND	ND	ND	**110**	**120**	**120**	**130**
Mercury	ug/l	2	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
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 (Methyl Chloride)	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												
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
Others															
1,4-Dioxane	ug/l	1	N	ND	ND	**4.2**	**4.3**	**8.4**	**8.1**	**2.9**	**2.9**	**1.3**	**1.2**	**1.3**	**1.2**
Perchlorate	ug/l	6	P	ND	ND	2.9	2.8	2	1.5	ND	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			ND	ND	ND	ND	ND	ND	ND	0.39	ND	0.3	0.84	0.8

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

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

Constituents	Units	MCL	MCL Type	Huntington Park #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				4/2/2019	9/4/2019	4/2/2019	9/4/2019	4/2/2019	9/4/2019	4/2/2019	9/4/2019
General Minerals											
Alkalinity	mg/l			170	170	180	180	240	240	370	370
Anion Sum	meq/l			6.1	6	6.4	6.6	11	11	14	13
Bicarbonate as HCO3	mg/l			210	210	220	220	290	290	460	450
Boron	mg/l	1	N	0.14	0.14	0.14	0.14	ND	0.21	0.19	0.19
Bromide	ug/l			110	100	120	130	440	490	1000	1100
Calcium, Total	mg/l			63	63	66	67	120	120	160	150
Carbon Dioxide	mg/l			ND	5.4	ND	4.5	ND	7.5	ND	15
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			6.2	6.3	6.5	6.7	11	11	14	14
Chloride	mg/l	500	S	23	22	29	31	90	91	89	81
Fluoride	mg/l	2	P	0.56	0.5	0.49	0.45	0.32	0.34	0.4	0.38
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			45	39	ND	ND	46	42	20	9.8
Nitrate (as NO3)	mg/l	45	P	ND	ND	2.9	4	1.9	1.8	23	23
Nitrate as Nitrogen	mg/l	10	P	ND	ND	0.66	0.9	0.43	0.4	5.3	5.2
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			3.2	3.4	3.4	3.6	ND	4.7	5.4	5.6
Sodium, Total	mg/l			40	41	42	43	62	61	64	66
Sulfate	mg/l	500	S	91	92	91	96	170	180	170	160
Total Dissolved Solid (TDS)	mg/l	1000	S	370	370	400	400	710	730	840	830
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	0.66	0.9	0.43	0.4	5.3	5.2
General Physical Properties											
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			220	220	230	230	410	410	560	540
Lab pH	Units			8	7.8	8	7.9	8	7.8	7.7	7.7
Langelier Index - 25 degree	None			0.68	0.51	0.7	0.62	1.1	0.9	1.1	1
Odor	TON	3	S	1	1	1	1	**4**	**8**	2	**8**
Specific Conductance	umho/cm	1600	S	590	590	630	640	1000	1000	1300	1300
Turbidity	NTU	5	S	1.1	1.7	0.17	0.26	1.7	0.36	ND	0.32
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	1	ND	ND	ND	ND	ND	ND
Barium, Total	ug/l	1000	P	68	65	83	83	110	100	94	98
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
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	1.3	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.056	0.067	0.96	0.9	0.15	0.18	1.3	1.5
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	2.8
Iron, Total	mg/l	0.3	S	0.28	0.28	ND	ND	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			15	15	16	16	28	28	40	40
Manganese, Total	ug/l	50	S	49	48	ND	ND	5.2	6.3	5.5	5.9
Mercury	ug/l	2	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	5.3
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	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	1.2	1.3	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	**6.5**	**6.7**	**46**	**38**
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 (Methyl Chloride)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	1.2	1.3	ND	ND
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	180	150
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								
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	0.96	0.79	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	**17**	**18**	1.8	2.1
Vinyl chloride (VC)	ug/l	0.5	P	ND	ND	ND	ND	0.33	0.31	ND	ND
Xylenes (Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND
Others											
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	1.3	1.2	3.7	4
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	**1**	**2.6**	ND	ND
Total Organic Carbon	mg/l			ND	0.3	ND	0.36	6.1	6.3	0.74	0.74

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 2018-19

Constituents	Units	MCL	MCL Type	Lakewood #1					
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
				4/29/2019	4/29/2019	4/29/2019	4/29/2019	4/29/2019	4/29/2019
General Minerals									
Alkalinity	mg/l			94	140	150	170	180	180
Anion Sum	meq/l			2.8	3.3	3.6	4.3	4.2	8.6
Bicarbonate as HCO3	mg/l			110	170	180	200	210	210
Boron	mg/l	1	N	ND	ND	0.06	0.065	0.08	0.079
Bromide	ug/l			120	35	54	140	67	960
Calcium, Total	mg/l			10	36	39	48	51	110
Carbon Dioxide	mg/l			ND	ND	ND	2.1	3.4	4.3
Carbonate as CO3	mg/l			3.6	2.2	2.3	2	ND	ND
Cation Sum	meq/l			2.8	3.5	3.7	4.5	4.4	8.4
Chloride	mg/l	500	S	20	6.2	8.5	23	13	150
Fluoride	mg/l	2	P	0.44	0.26	0.31	0.32	0.48	0.2
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Iodide	ug/l			46	10	19	40	25	100
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			ND	1.8	2.1	4	2.5	4.3
Sodium, Total	mg/l			52	31	32	35	25	43
Sulfate	mg/l	500	S	16	16	15	13	14	39
Total Dissolved Solid (TDS)	mg/l	1000	S	180	210	210	260	240	570
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND
General Physical Properties									
Apparent Color	ACU	15	S	10	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			26	100	120	140	160	320
Lab pH	Units			8.7	8.3	8.3	8.2	8	7.9
Langelier Index - 25 degree	None			0.31	0.64	0.66	0.76	0.64	0.8
Odor	TON	3	S	2	2	2	2	2	1
Specific Conductance	umho/cm	1600	S	290	330	350	430	420	900
Turbidity	NTU	5	S	0.59	0.34	0.29	0.48	0.24	0.71
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	**13**	**16**	1.4	8.3	3.7	**29**
Barium, Total	ug/l	1000	P	15	25	29	170	120	350
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.39	0.11	0.12	0.1	0.071	0.052
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	ND	ND	ND	0.044	0.11	0.11
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			0.34	3.6	4.5	5.6	8.2	12
Manganese, Total	ug/l	50	S	4.1	19	24	**75**	**74**	**280**
Mercury	ug/l	2	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
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 (Methyl Chloride)	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
Others									
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	0.11
Total Organic Carbon	mg/l			ND	ND	0.3	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 2018-19

Constituents	Units	MCL	MCL Type	Lakewood #2															
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Zone 7		Zone 8	
				5/21/2019	9/16/2019	5/21/2019	9/16/2019	5/21/2019	9/16/2019	5/21/2019	9/16/2019	5/21/2019	9/16/2019	5/21/2019	9/16/2019	5/21/2019	9/16/2019	5/21/2019	9/16/2019
General Minerals																			
Alkalinity	mg/l			100	99	130	130	130	130	180	170	170	160	180	180	170	170	200	200
Anion Sum	meq/l			3.4	3.3	3.1	3	3	2.9	4.7	4.6	3.9	3.8	4	3.9	3.9	3.9	4.4	4.3
Bicarbonate as HCO3	mg/l			120	120	160	160	160	160	210	210	200	200	220	220	210	210	240	240
Boron	mg/l	1	N	0.056	0.058	0.051	0.051	ND	ND	0.068	0.07	0.057	0.059	0.061	0.064	0.061	0.066	0.074	0.077
Bromide	ug/l			45	44	25	27	28	28	33	33	22	21	19	16	20	21	40	41
Calcium, Total	mg/l			12	12	27	26	26	27	62	62	43	42	46	47	53	54	56	57
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	2.7	2.7	2.1	2.1	2.3	2.3	2.2	2.7	3.9	5
Carbonate as CO3	mg/l			3.1	3.1	2.1	2.1	2.6	2.6	ND	ND	2	2	2.3	2.3	2.2	ND	ND	ND
Cation Sum	meq/l			3.3	3.4	3.2	3.2	3	3.1	4.9	4.9	4	4.1	4.1	4.2	4	4.2	4.5	4.6
Chloride	mg/l	500	S	12	12	5.1	5.4	5.2	5.3	11	11	5.5	5.4	5	4.9	5.3	5.2	6.4	6.4
Fluoride	mg/l	2	P	0.41	0.43	0.32	0.33	0.27	0.28	0.41	0.42	0.28	0.27	0.32	0.33	0.22	0.23	0.34	0.35
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			21	26	9.5	12	13	14	ND	ND	6.8	7.2	5.8	6.8	8.8	10	26	31
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	1.2	1	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	0.28	0.23	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			ND	ND	2	2	1.4	1.5	2.9	3	2.3	2.4	2.6	2.7	2.1	2.2	2.6	2.6
Sodium, Total	mg/l			62	63	35	35	34	35	21	22	33	35	27	27	24	25	25	25
Sulfate	mg/l	500	S	47	47	15	14	8.6	8.6	38	37	17	18	9.2	9.1	15	15	6.6	6.6
Total Dissolved Solid (TDS)	mg/l	1000	S	220	220	190	190	180	170	270	270	240	220	220	230	220	230	250	250
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	0.28	0.23	ND	ND	ND	ND	ND	ND	ND	ND
General Physical Properties																			
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			32	32	82	79	74	77	190	190	130	120	140	140	150	150	170	170
Lab pH	Units			8.6	8.6	8.3	8.3	8.4	8.4	8.1	8.1	8.2	8.2	8.2	8.2	8.2	8.1	8	7.9
Langelier Index - 25 degree	None			0.36	0.35	0.44	0.45	0.54	0.53	0.75	0.78	0.64	0.64	0.76	0.81	0.76	0.71	0.67	0.64
Odor	TON	3	S	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2
Specific Conductance	umho/cm	1600	S	350	350	310	300	290	290	460	460	380	380	390	390	380	380	420	420
Turbidity	NTU	5	S	ND	0.26	ND	0.16	ND	0.33	ND	0.15	**8.4**	3.3	0.12	0.14	0.2	0.24	0.21	0.24
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	**15**	**15**	ND	ND	1.9	2.4	3.7	3.2	**24**	**23**	10	9.2	**43**	**43**	**44**	**40**
Barium, Total	ug/l	1000	P	16	14	7.3	7.4	10	9.7	100	98	120	110	66	62	140	140	110	110
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
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	0.36	0.2	0.13	0.1	0.16	0.1	0.63	0.58	0.12	0.09	0.13	0.086	0.092	0.083	0.093	0.081
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	0.039	0.021	0.055	0.055	0.074	0.076	0.07	0.071
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			0.39	0.39	3.5	3.5	2.3	2.3	9.1	9.3	4.8	4.8	6.6	6.8	3.6	3.7	6.9	7
Manganese, Total	ug/l	50	S	5	4.9	14	13	16	16	ND	ND	**88**	**92**	**160**	**160**	**100**	**110**	**190**	**200**
Mercury	ug/l	2	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
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 (Methyl Chloride)	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																
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
Others																			
1,4-Dioxane	ug/l	1	N	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	0.56	ND	ND	ND	ND	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.54	0.48	0.35	0.33	0.58	0.54	ND	ND	0.38	ND	0.46	0.39	ND	ND	0.39	0.36

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 2018-19

Constituents	Units	MCL	MCL Type	La Mirada #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				3/26/2019	8/20/2019	3/26/2019	8/20/2019	3/26/2019	8/20/2019	3/26/2019	8/20/2019	3/26/2019	8/20/2019
General Minerals													
Alkalinity	mg/l			150	150	130	140	190	180	190	190	200	200
Anion Sum	meq/l			6.5	5.7	4	4.1	5.3	5.6	8.6	7.7	21	19
Bicarbonate as HCO3	mg/l			180	180	160	160	220	220	230	240	240	240
Boron	mg/l	1	N	0.14	0.14	0.094	0.097	0.14	0.14	0.13	0.13	0.17	0.17
Bromide	ug/l			120	92	42	41	56	82	300	250	1100	1100
Calcium, Total	mg/l			27	16	9.6	9.5	25	27	59	53	180	160
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	4.7	3.1	9.9	7.8
Carbonate as CO3	mg/l			2.3	2.9	2.6	3.3	3.6	2.8	ND	2	ND	ND
Cation Sum	meq/l			6.2	5.5	4.1	4	5.4	5.6	8.5	7.6	21	19
Chloride	mg/l	500	S	42	27	14	14	15	24	82	57	440	390
Fluoride	mg/l	2	P	0.71	0.74	0.54	0.54	0.71	0.66	0.55	0.5	0.26	0.25
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			35	27	14	11	32	21	48	36	ND	ND
Nitrate (as NO3)	mg/l	45	P	4.3	ND	ND	ND	ND	ND	5.4	1.8	**130**	**110**
Nitrate as Nitrogen	mg/l	10	P	0.97	ND	ND	ND	ND	ND	1.2	0.41	**29**	**26**
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			2	2.1	1.3	1.5	2.5	2.6	2.8	3	5.2	5.2
Sodium, Total	mg/l			94	99	81	78	81	79	81	79	160	140
Sulfate	mg/l	500	S	100	97	45	48	52	59	110	100	140	120
Total Dissolved Solid (TDS)	mg/l	1000	S	390	350	250	230	310	330	510	460	**1200**	**1400**
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	0.97	ND	ND	ND	ND	ND	1.2	0.41	**29**	**26**
General Physical Properties													
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			100	59	29	29	92	100	240	210	680	620
Lab pH	Units			8.3	8.4	8.4	8.5	8.4	8.3	7.9	8.1	7.6	7.7
Langelier Index - 25 degree	None			0.52	0.36	0.17	0.26	0.72	0.62	0.59	0.72	0.77	0.86
Odor	TON	3	S	1	1	2	1	ND	1	ND	ND	1	1
Specific Conductance	umho/cm	1600	S	640	590	420	420	530	560	830	770	**2000**	**2000**
Turbidity	NTU	5	S	0.26	0.22	ND	0.46	0.12	0.2	0.1	0.38	ND	0.27
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	5.9	6.2	7.9	7.9	7.4	4.9	3.5	3.5	1.4	1.6
Barium, Total	ug/l	1000	P	50	32	25	24	42	49	55	58	170	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
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.067	0.23	0.062	0.22	0.084	0.21	0.1	0.2	1.7	1.9
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			8.5	4.7	1.3	1.3	7.2	8.7	23	18	57	54
Manganese, Total	ug/l	50	S	19	11	3.6	3.5	19	22	5.2	29	ND	6.7
Mercury	ug/l	2	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	10	6.8	18	15
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
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 (Methyl Chloride)	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										
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
Others													
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	0.54	ND	ND	ND	ND	ND	0.56	ND	**10**	**11**
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.1
Total Organic Carbon	mg/l			1.2	ND	ND	ND	1.4	0.4	0.6	ND	0.59	0.5

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 2018-19

Constituents	Units	MCL	MCL Type	Long Beach #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				3/13/2019	8/7/2019	3/13/2019	8/7/2019	3/13/2019	8/7/2019	3/13/2019	8/7/2019	3/13/2019	8/7/2019	3/13/2019	8/7/2019
General Minerals															
Alkalinity	mg/l			160	140	150	140	110	110	130	120	130	120	250	230
Anion Sum	meq/l			3.6	3.2	3.4	3.2	2.9	2.8	3.6	3.4	12	11	17	16
Bicarbonate as HCO3	mg/l			190	160	180	160	140	130	150	150	160	140	310	280
Boron	mg/l	1	N	0.18	0.17	0.17	0.17	0.085	0.083	0.057	0.056	0.15	0.14	0.12	0.11
Bromide	ug/l			110	120	84	86	44	45	38	37	430	380	520	520
Calcium, Total	mg/l			4.6	3.4	2.6	2.5	5.3	5.2	23	22	55	51	200	190
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.6
Carbonate as CO3	mg/l			7.8	8.2	7.4	10	4.6	5.3	2.4	2.4	2.1	ND	2.5	ND
Cation Sum	meq/l			3.8	3.5	3.5	3.5	3	2.9	3.7	3.5	12	11	18	16
Chloride	mg/l	500	S	15	15	14	13	11	11	11	10	160	160	190	180
Fluoride	mg/l	2	P	0.61	0.58	0.59	0.57	0.65	0.62	0.4	0.37	0.3	0.28	0.27	0.26
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			25	34	19	27	8.5	11	5.3	6.4	11	9.4	6.8	71
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	ND	1	3	3	4.4	4.2
Sodium, Total	mg/l			81	76	77	77	62	60	53	51	200	180	120	98
Sulfate	mg/l	500	S	2.1	ND	ND	ND	14	14	34	32	210	210	300	280
Total Dissolved Solid (TDS)	mg/l	1000	S	230	220	210	210	190	180	230	220	740	710	1000	1000
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
General Physical Properties															
Apparent Color	ACU	15	S	**100**	**100**	**50**	**75**	**30**	**30**	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			13	9.7	7	6.8	14	14	66	63	170	160	640	600
Lab pH	Units			8.8	8.9	8.8	9	8.7	8.8	8.4	8.4	8.3	8.2	8.1	8
Langelier Index - 25 degree	None			0.29	0.18	0.056	0.13	0.099	0.14	0.46	0.5	0.76	0.58	1.4	1.3
Odor	TON	3	S	2	1	2	2	**17**	1	2	ND	2	1	2	1
Specific Conductance	umho/cm	1600	S	360	360	340	340	300	300	360	360	1200	1200	1600	1600
Turbidity	NTU	5	S	0.21	0.28	0.15	0.39	0.12	0.38	0.46	0.48	1.3	1.4	0.89	0.85
Metals															
Aluminum, Total	ug/l	1000	P	28	31	25	26	ND	25	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	1.1	ND	7.7	6.1
Barium, Total	ug/l	1000	P	3.4	3	2.3	2	ND	ND	8.7	8.2	49	44	200	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
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	0.4	0.48	0.36	0.38	0.4	0.44	0.1	0.19	0.083	0.17	0.042	0.1
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.028	0.028	ND	ND	ND	ND	ND	ND	0.033	0.028	0.19	0.17
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			0.4	0.29	0.12	0.13	0.24	0.23	2	1.9	7.8	7.1	33	31
Manganese, Total	ug/l	50	S	4.3	5.7	ND	ND	2	ND	16	17	**60**	**54**	**410**	**390**
Mercury	ug/l	2	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
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 (Methyl Chloride)	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												
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
Others															
1,4-Dioxane	ug/l	1	N	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
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			3.3	3.5	2.6	2.8	1.5	1.4	0.51	0.4	1.3	1.2	1.5	1.2

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

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

Constituents	Units	MCL	MCL Type	Long Beach #2					
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
				3/19/2019	3/19/2019	3/19/2019	3/19/2019	3/19/2019	3/19/2019
General Minerals									
Alkalinity	mg/l			300	190	150	150	280	280
Anion Sum	meq/l			6.7	4.3	3.7	6.2	16	18
Bicarbonate as HCO3	mg/l			370	230	180	180	340	350
Boron	mg/l	1	N	0.52	0.19	0.14	0.09	0.29	0.26
Bromide	ug/l			200	140	140	210	1000	870
Calcium, Total	mg/l			7.1	15	13	56	170	220
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			7.6	3.8	3.7	ND	ND	ND
Cation Sum	meq/l			6.9	4.2	3.6	6.1	16	19
Chloride	mg/l	500	S	20	20	23	59	120	150
Fluoride	mg/l	2	P	0.59	0.4	0.46	0.26	0.16	0.25
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Iodide	ug/l			59	34	38	45	38	47
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			2	1.3	ND	2.8	5	5.6
Sodium, Total	mg/l			150	75	65	63	120	120
Sulfate	mg/l	500	S	ND	ND	ND	78	340	410
Total Dissolved Solid (TDS)	mg/l	1000	S	400	250	230	390	990	**1200**
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND
General Physical Properties									
Apparent Color	ACU	15	S	**200**	**40**	**30**	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			23	44	37	160	530	680
Lab pH	Units			8.5	8.4	8.5	8.2	7.9	7.9
Langelier Index - 25 degree	None			0.49	0.5	0.41	0.81	1.2	1.3
Odor	TON	3	S	2	2	1	1	2	2
Specific Conductance	umho/cm	1600	S	640	430	370	640	1500	**1700**
Turbidity	NTU	5	S	0.35	0.15	0.11	0.15	1.4	1.5
Metals									
Aluminum, Total	ug/l	1000	P	30	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	4.6	6.4
Barium, Total	ug/l	1000	P	6.8	9.7	5.5	39	62	73
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.27	0.2	0.31	0.085	0.03	0.021
Copper, Total	ug/l	1300	P	2	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.11	0.023	ND	0.025	0.23	0.23
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			1.4	1.5	1.1	5.9	26	32
Manganese, Total	ug/l	50	S	16	14	7.2	28	**180**	**360**
Mercury	ug/l	2	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	1.3
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
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 (Methyl Chloride)	ug/l			ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	2.6	**9.7**
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	**14**	**14**
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	**20**	**480**
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	0.96
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
Others									
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	**1.8**	**5.9**
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			20	7.4	2.5	1.4	3.4	1.5

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 2018-19

Constituents	Units	MCL	MCL Type	Long Beach #6											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				3/11/2019	8/14/2019	3/11/2019	8/14/2019	3/11/2019	8/14/2019	3/11/2019	8/14/2019	3/11/2019	8/14/2019	3/11/2019	8/14/2019
General Minerals															
Alkalinity	mg/l			540	500	360	330	160	150	130	120	120	100	130	120
Anion Sum	meq/l			11	10	7.8	7.2	3.8	3.5	3.3	3.2	3.1	2.8	4.7	4.4
Bicarbonate as HCO3	mg/l			650	600	440	400	200	180	160	150	140	120	160	140
Boron	mg/l	1	N	**1.2**	**1.1**	0.7	0.62	0.26	0.24	0.12	0.096	0.087	0.075	ND	ND
Bromide	ug/l			340	320	240	220	130	120	66	59	90	85	350	350
Calcium, Total	mg/l			8.2	7.8	5.5	5.1	5.6	5.1	9	9	12	11	52	48
Carbon Dioxide	mg/l			ND	2.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			17	16	14	13	8.2	7.4	4.1	4.9	3.6	3.1	2.1	ND
Cation Sum	meq/l			12	12	7.8	7.1	3.9	3.6	3.3	3.3	3.1	3.1	4.8	4.7
Chloride	mg/l	500	S	18	17	19	18	17	16	14	13	18	18	59	57
Fluoride	mg/l	2	P	0.7	0.66	0.68	0.64	0.62	0.58	0.6	0.59	0.56	0.55	0.55	0.24
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			110	100	69	60	31	34	16	13	28	24	89	78
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	ND	ND	ND	ND	2.1	2
Sodium, Total	mg/l			270	270	170	160	84	78	66	65	57	57	42	42
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	ND	13	15	9.8	9.3	18	18
Total Dissolved Solid (TDS)	mg/l	1000	S	660	650	460	430	250	220	200	190	170	170	260	280
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
General Physical Properties															
Apparent Color	ACU	15	S	**200**	**200**	**180**	**300**	**100**	**100**	**45**	**45**	**45**	**45**	ND	ND
Hardness (Total, as CaCO3)	mg/l			27	26	18	16	15	14	24	24	33	30	150	140
Lab pH	Units			8.6	8.6	8.7	8.7	8.8	8.8	8.6	8.7	8.6	8.6	8.3	8.2
Langelier Index - 25 degree	None			0.91	0.88	0.61	0.55	0.35	0.29	0.36	0.36	0.33	0.29	0.74	0.64
Odor	TON	3	S	3	2	**8**	2	2	2	1	1	1	1	1	1
Specific Conductance	umho/cm	1600	S	1000	1000	740	700	370	380	330	330	310	310	480	480
Turbidity	NTU	5	S	0.44	0.7	0.42	0.55	0.23	0.38	0.15	0.29	0.18	0.39	0.14	0.13
Metals															
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	20	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	2.5	2.4	ND	ND	ND	ND	ND	ND	ND	ND	2.2	2.2
Barium, Total	ug/l	1000	P	7.4	6.4	6.9	6.1	4.5	4.1	7.6	7.1	2.6	ND	22	20
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
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	0.35	0.41	0.29	0.39	0.31	0.38	0.31	0.34	0.35	0.42	0.076	0.19
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.084	0.085	0.072	0.072	0.037	0.04	ND	ND	ND	ND	0.057	0.051
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			1.6	1.5	0.96	0.85	0.22	0.19	0.49	0.51	0.73	0.72	4.8	4.7
Manganese, Total	ug/l	50	S	13	13	12	12	3.5	3.6	15	16	4.1	4.1	**58**	**58**
Mercury	ug/l	2	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
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 (Methyl Chloride)	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												
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
Others															
1,4-Dioxane	ug/l	1	N	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
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			30	23	29	13	6.2	4.3	4	2	2.1	1.4	1.2	0.58

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 2018-19

Constituents	Units	MCL	MCL Type	Los Angeles #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				4/24/2019	9/18/2019	4/24/2019	9/18/2019	4/24/2019	9/18/2019	4/24/2019	9/18/2019	4/24/2019	9/18/2019
General Minerals													
Alkalinity	mg/l			180	180	180	180	180	180	200	190	220	220
Anion Sum	meq/l			5.7	5.7	5.9	5.9	6	6	8	7.6	10	10
Bicarbonate as HCO3	mg/l			220	210	220	220	220	220	240	240	270	260
Boron	mg/l	1	N	0.14	0.15	0.14	0.14	0.14	0.15	0.15	0.16	0.18	0.2
Bromide	ug/l			120	120	110	100	110	100	200	160	320	310
Calcium, Total	mg/l			56	57	64	63	61	63	84	80	100	110
Carbon Dioxide	mg/l			ND	2.7	3.6	4.5	2.9	4.5	3.9	6.2	4.4	8.5
Carbonate as CO3	mg/l			2.8	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			5.8	5.9	6.3	6.2	6.1	6.2	8.1	7.8	10	11
Chloride	mg/l	500	S	22	23	21	22	22	23	44	40	76	74
Fluoride	mg/l	2	P	0.32	0.29	0.51	0.46	0.44	0.4	0.47	0.43	0.44	0.4
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			46	31	46	24	ND	ND	9.5	11	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	25	16	**67**	**63**
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	5.6	3.6	**15**	**14**
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			3.8	4.1	3.4	3.4	3.1	3.3	3.8	4	4.5	4.8
Sodium, Total	mg/l			44	45	41	41	40	41	48	47	57	59
Sulfate	mg/l	500	S	72	73	81	83	82	85	110	110	140	130
Total Dissolved Solid (TDS)	mg/l	1000	S	350	350	360	360	360	370	500	470	620	660
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	5.6	3.6	**15**	**14**
General Physical Properties													
Apparent Color	ACU	15	S	ND	ND	ND	5	ND	ND	ND	ND	10	10
Hardness (Total, as CaCO3)	mg/l			190	190	220	220	210	220	300	280	360	390
Lab pH	Units			8.3	8.1	8	7.9	8.1	7.9	8	7.8	8	7.7
Langelier Index - 25 degree	None			0.93	0.75	0.72	0.61	0.82	0.58	0.91	0.68	1	0.75
Odor	TON	3	S	1	1	ND	2	ND	2	ND	2	ND	2
Specific Conductance	umho/cm	1600	S	570	560	580	580	590	590	790	740	1000	1000
Turbidity	NTU	5	S	ND	0.27	0.58	1.1	ND	0.18	ND	0.34	ND	0.1
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	29	27	49	50	73	71	110	100	150	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
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	**150**	**86**	**450**	**390**
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.11	0.14	0.059	0.074	0.34	0.37	**150**	**92**	**440**	**430**
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	ND	ND	0.19	0.2	ND	ND	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			12	12	15	15	15	15	21	20	28	29
Manganese, Total	ug/l	50	S	19	19	**52**	48	7.6	7.2	ND	ND	ND	ND
Mercury	ug/l	2	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	5.1	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
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	**1**	**0.96**
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane (Methyl Chloride)	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										
Tetrachloroethylene (PCE)	ug/l	5	P	1.4	0.96	ND	ND	ND	ND	1.2	0.89	2.8	2.6
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	0.8	0.61
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	4.3	3.2	ND	ND	ND	ND	**16**	**9.3**	**43**	**39**
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
Others													
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	1.7	0.94	4.5	3.5
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			ND	0.52	ND	ND	ND	0.3	ND	ND	ND	0.53

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 2018-19

Constituents	Units	MCL	MCL Type	Los Angeles #2							
				Zone 2		Zone 3		Zone 4		Zone 5	
				3/27/2019	8/22/2019	3/27/2019	8/22/2019	3/27/2019	8/22/2019	3/27/2019	8/22/2019
General Minerals											
Alkalinity	mg/l			310	310	310	310	330	330	300	300
Anion Sum	meq/l			20	19	19	19	20	20	24	23
Bicarbonate as HCO3	mg/l			380	380	370	370	400	400	360	370
Boron	mg/l	1	N	0.26	0.24	0.25	0.24	0.28	0.27	0.44	0.41
Bromide	ug/l			580	550	530	530	670	670	720	710
Calcium, Total	mg/l			210	200	210	210	200	200	230	230
Carbon Dioxide	mg/l			ND	12	ND	15	ND	13	ND	15
Carbonate as CO3	mg/l			2.5	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			20	19	20	20	20	20	24	23
Chloride	mg/l	500	S	270	250	270	270	250	240	160	150
Fluoride	mg/l	2	P	0.22	0.2	0.33	0.3	0.34	0.33	0.32	0.29
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			130	64	100	57	120	60	87	37
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			11	10	7.6	7.4	8.1	7.9	11	10
Sodium, Total	mg/l			120	98	120	110	130	130	160	150
Sulfate	mg/l	500	S	290	280	260	250	290	290	**650**	**600**
Total Dissolved Solid (TDS)	mg/l	1000	S	**1100**	**1200**	**1100**	**1100**	**1200**	**1200**	**1500**	**1500**
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
General Physical Properties											
Apparent Color	ACU	15	S	ND	ND	**20**	**20**	**20**	**20**	10	15
Hardness (Total, as CaCO3)	mg/l			750	710	740	730	700	700	840	820
Lab pH	Units			8	7.7	7.8	7.6	7.8	7.7	7.7	7.6
Langelier Index - 25 degree	None			1.4	1.2	1.2	1.1	1.2	1.1	1.2	1.1
Odor	TON	3	S	ND	1	1	2	ND	1	**4**	**8**
Specific Conductance	umho/cm	1600	S	**1800**	**1800**	**1800**	**1800**	**1800**	**1800**	**2000**	**2100**
Turbidity	NTU	5	S	1.4	2.8	**10**	**12**	**14**	**14**	**13**	**31**
Metals											
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	24
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	**11**	**21**
Arsenic, Total	ug/l	10	P	ND	ND	ND	ND	ND	ND	3.1	4
Barium, Total	ug/l	1000	P	82	82	140	140	97	95	50	49
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
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.035	0.072	ND	ND	ND	ND	0.045	0.11
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.19	0.17	**1.2**	**1.2**	**1.4**	**1.3**	0.026	0.14
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			55	51	52	49	50	48	65	60
Manganese, Total	ug/l	50	S	**360**	**370**	**180**	**180**	**110**	**110**	**450**	**600**
Mercury	ug/l	2	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	120	230
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
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 (Methyl Chloride)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	0.56	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								
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
Others											
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	1	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.59	0.59	0.63	0.58	2.5	0.66	1.6	2

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

Constituents	Units	MCL	MCL Type	Los Angeles #3											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				3/27/2019	8/6/2019	3/27/2019	8/6/2019	3/27/2019	8/6/2019	3/27/2019	8/6/2019	3/27/2019	8/6/2019	3/27/2019	8/6/2019
General Minerals															
Alkalinity	mg/l			240	200	180	170	180	180	190	170	210	200	230	220
Anion Sum	meq/l			6.4	5.6	5.8	5.7	5.9	5.8	6.7	6.1	9.1	8.8	12	12
Bicarbonate as HCO3	mg/l			290	250	210	210	220	220	230	210	250	250	280	270
Boron	mg/l	1	N	0.36	0.33	0.14	0.13	0.14	0.14	0.15	0.14	0.2	0.2	0.2	0.18
Bromide	ug/l			240	240	130	130	110	100	210	200	250	250	520	500
Calcium, Total	mg/l			16	15	60	57	63	59	70	65	99	94	140	130
Carbon Dioxide	mg/l			ND	2	ND	2.7	ND	4.5	ND	3.4	ND	6.5	ND	7
Carbonate as CO3	mg/l			4.7	3.2	2.2	ND	2.3	ND	2.4	ND	2	ND	2.3	ND
Cation Sum	meq/l			6.9	6.6	6.1	5.8	6.2	5.9	7	6.5	9.5	9	12	12
Chloride	mg/l	500	S	39	34	25	24	22	21	43	38	57	54	120	110
Fluoride	mg/l	2	P	0.34	0.31	0.34	0.32	0.49	0.45	0.44	0.4	0.33	0.32	0.34	0.33
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			74	77	41	39	42	34	53	48	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	**48**	45	31	29
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	**11**	10	7	6.6
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	4.3	3.6	3.5	3.7	3.7	4.1	4.1	4.4	4.4	4.6	4.4
Sodium, Total	mg/l			130	120	43	40	43	40	47	44	57	54	67	60
Sulfate	mg/l	500	S	24	24	75	73	78	77	78	74	120	120	180	170
Total Dissolved Solid (TDS)	mg/l	1000	S	400	370	340	330	360	350	390	370	560	530	710	690
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	**11**	10	7	6.6
General Physical Properties															
Apparent Color	ACU	15	S	**20**	**20**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			64	60	210	200	210	200	240	220	350	330	480	450
Lab pH	Units			8.4	8.3	8.2	8.1	8.2	7.9	8.2	8	8.1	7.8	8.1	7.8
Langelier Index - 25 degree	None			0.64	0.43	0.89	0.69	0.88	0.58	0.94	0.68	1	0.73	1.3	0.84
Odor	TON	3	S	2	1	ND	ND	1	1	1	1	ND	2	1	1
Specific Conductance	umho/cm	1600	S	630	630	570	560	580	570	650	640	880	870	1100	1100
Turbidity	NTU	5	S	ND	0.18	ND	0.14	ND	0.16	0.18	0.35	ND	0.21	ND	0.14
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	9.5	26	22	46	47	72	70	130	120	120	120
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
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	1.3	1.1	4.5	4.4
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.16	0.26	0.085	0.12	0.08	0.14	0.064	0.14	2.2	2.3	5.6	6
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	ND	ND	0.032	0.03	ND	ND	0.067	0.061	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			5.8	5.4	14	13	14	13	16	15	24	23	32	30
Manganese, Total	ug/l	50	S	25	24	**96**	**96**	**57**	**57**	45	43	ND	ND	ND	ND
Mercury	ug/l	2	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	12	12
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
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 (Methyl Chloride)	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												
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5.2**	4.6
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	0.9	0.9	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	0.8	1.4	0.62	0.59
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
Others															
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	2.1	1.9	1.2	1.1
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			2.4	1.8	0.65	ND	ND	ND	ND	ND	0.36	0.41	0.85	0.37

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 2018-19

Constituents	Units	MCL	MCL Type	Los Angeles #4											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/8/2019	8/13/2019	5/8/2019	8/13/2019	5/8/2019	8/13/2019	5/8/2019	8/13/2019	5/8/2019	8/13/2019	5/8/2019	8/13/2019
General Minerals															
Alkalinity	mg/l			1500	1500	440	410	170	150	170	160	170	160	160	160
Anion Sum	meq/l			32	32	9	8.5	5.5	5.1	5.7	5.5	5.6	5.3	6.5	6.5
Bicarbonate as HCO3	mg/l			1900	1900	540	500	200	180	210	200	210	190	200	190
Boron	mg/l	1	N	**6**	**5.9**	0.51	0.52	0.12	0.12	0.12	0.12	0.13	0.13	0.14	0.14
Bromide	ug/l			600	600	69	69	98	93	100	96	100	95	190	190
Calcium, Total	mg/l			12	13	17	18	57	55	57	56	58	57	64	64
Carbon Dioxide	mg/l			12	16	4.4	6.5	2.1	2.3	2.7	3.3	3.4	3.1	5.2	3.9
Carbonate as CO3	mg/l			31	25	7	4.1	2	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			34	35	9.1	9.1	5.8	5.5	5.8	5.7	5.8	5.7	6.6	6.4
Chloride	mg/l	500	S	30	30	7.3	7.2	20	19	20	20	20	19	48	49
Fluoride	mg/l	2	P	0.4	0.39	0.27	0.25	0.33	0.31	0.42	0.41	0.37	0.34	0.22	0.22
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			210	150	14	16	27	18	36	24	29	18	3.2	2.2
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	9.7	11
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.2	2.4
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	12	3	2.9	3.7	3.5	3.8	3.6	3.5	3.4
Sodium, Total	mg/l			750	760	170	170	43	41	42	41	42	40	51	49
Sulfate	mg/l	500	S	ND	ND	ND	ND	76	75	76	76	77	76	82	86
Total Dissolved Solid (TDS)	mg/l	1000	S	**2000**	**2000**	510	510	340	330	320	320	340	330	390	390
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.2	2.4
General Physical Properties															
Apparent Color	ACU	15	S	**400**	**800**	**100**	**50**	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			57	59	72	77	190	180	200	190	190	190	210	210
Lab pH	Units			8.4	8.3	8.3	8.1	8.2	8.1	8.1	8	8	8	7.8	7.9
Langelier Index - 25 degree	None			1.3	1.2	0.82	0.64	0.77	0.64	0.72	0.58	0.68	0.65	0.48	0.56
Odor	TON	3	S	**8**	2	**8**	2	ND	1	ND	1	1	1	ND	1
Specific Conductance	umho/cm	1600	S	**2800**	**2800**	850	850	540	540	560	560	550	550	650	650
Turbidity	NTU	5	S	0.72	0.77	0.57	1.1	ND	0.22	0.11	0.16	0.26	0.44	0.28	0.73
Metals															
Aluminum, Total	ug/l	1000	P	ND	21	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	2.2	2	6.4	6.1	ND	ND	2.1	2.2	1.4	1.2	2	2
Barium, Total	ug/l	1000	P	36	35	36	35	18	16	64	67	62	58	58	56
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
Chromium, Total	ug/l	50	P	ND	1.6	ND	ND	ND	ND	ND	ND	ND	ND	1.1	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.41	0.29	0.28	0.15	0.17	0.1	0.17	0.073	0.18	0.095	1.3	1.3
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	**0.64**	**0.62**	0.11	0.13	ND	ND	ND	0.02	0.051	0.058	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			6.5	6.5	7.3	7.7	11	11	13	12	12	12	13	12
Manganese, Total	ug/l	50	S	17	16	49	47	40	39	**55**	50	**70**	**66**	**57**	**54**
Mercury	ug/l	2	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
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 (Methyl Chloride)	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												
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
Others															
1,4-Dioxane	ug/l	1	N	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
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			140	110	5.9	6.8	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 2018-19

Constituents	Units	MCL	MCL Type	Los Angeles #5											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/8/2019	9/11/2019	5/7/2019	9/10/2019	5/7/2019	9/10/2019	5/7/2019	9/10/2019	5/7/2019	9/10/2019	5/7/2019	9/10/2019
General Minerals															
Alkalinity	mg/l			850	840	890	880	160	160	220	220	220	220	180	180
Anion Sum	meq/l			120	120	31	31	5.3	5.3	9.9	9.3	8.6	8	6.9	6.7
Bicarbonate as HCO3	mg/l			1000	1000	1100	1100	200	200	270	270	260	260	220	220
Boron	mg/l	1	N	**7.8**	**7.6**	**2.6**	**2.7**	0.12	0.12	0.25	0.26	0.15	0.15	0.14	0.14
Bromide	ug/l			33000	35000	4100	4400	100	99	1100	1200	760	750	150	150
Calcium, Total	mg/l			45	44	21	22	50	49	88	91	82	84	72	72
Carbon Dioxide	mg/l			13	13	9	11	2.1	2.6	4.4	4.4	3.4	4.3	3.6	4.5
Carbonate as CO3	mg/l			8.2	8.2	14	11	2	ND	ND	ND	2.1	ND	ND	ND
Cation Sum	meq/l			110	100	30	29	5.5	5.4	9.3	9.4	8.3	8.3	7	7
Chloride	mg/l	500	S	**3800**	**3600**	480	480	20	20	170	160	120	110	31	28
Fluoride	mg/l	2	P	0.13	0.12	0.22	0.22	0.23	0.24	0.27	0.27	0.3	0.3	0.36	0.38
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			12000	14000	1300	790	31	29	350	270	190	200	34	44
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			46	43	20	19	3.4	3.4	5.5	5.6	4.6	4.6	3.3	3.3
Sodium, Total	mg/l			2400	2200	620	610	47	48	67	65	56	54	47	46
Sulfate	mg/l	500	S	ND	ND	0.78	0.54	70	67	24	19	34	29	110	110
Total Dissolved Solid (TDS)	mg/l	1000	S	**6900**	**6500**	**1800**	**1800**	320	320	530	560	470	460	410	410
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
General Physical Properties															
Apparent Color	ACU	15	S	**150**	**180**	**200**	**200**	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			310	310	100	110	160	160	310	320	280	290	240	240
Lab pH	Units			8.1	8.1	8.3	8.2	8.2	8.1	8	8	8.1	8	8	7.9
Langelier Index - 25 degree	None			1.3	1.3	1.2	1.1	0.74	0.67	0.93	1	0.98	0.95	0.74	0.69
Odor	TON	3	S	2	**67**	**8**	**8**	2	2	2	2	2	2	1	2
Specific Conductance	umho/cm	1600	S	**12000**	**12000**	**3000**	**3200**	530	540	950	980	830	840	670	670
Turbidity	NTU	5	S	0.48	0.48	0.45	0.53	0.18	0.3	0.53	0.77	2	0.89	0.31	0.71
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	5.6	**12**	ND	1.8	ND	ND	1.1	1.4	ND	ND	ND	ND
Barium, Total	ug/l	1000	P	67	63	28	28	23	28	60	66	84	84	61	60
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
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	0.099	0.23	0.3	0.11	0.14	0.12	0.091	0.096	0.11	0.14	0.12
Copper, Total	ug/l	1300	P	ND	ND	9.7	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	**0.38**	**0.36**	0.23	0.23	0.038	0.047	0.12	0.14	0.16	0.16	0.026	0.029
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			49	48	13	13	9.7	9.5	22	22	19	20	16	16
Manganese, Total	ug/l	50	S	35	36	48	**51**	45	**64**	**140**	**140**	**140**	**140**	31	32
Mercury	ug/l	2	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	31	**56**	ND	7.1	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
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 (Methyl Chloride)	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												
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
Others															
1,4-Dioxane	ug/l	1	N	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
Surfactants	mg/l	0.5	S	0.12	0.13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			14	25	26	26	ND	0.46	ND	0.51	ND	0.33	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 2018-19

Constituents	Units	MCL	MCL Type	Los Angeles #6							
				Zone 1		Zone 2		Zone 3		Zone 4	
				6/11/2019	9/5/2019	6/11/2019	9/5/2019	6/11/2019	9/5/2019	6/11/2019	9/5/2019
General Minerals											
Alkalinity	mg/l			310	300	220	220	270	270	270	260
Anion Sum	meq/l			15	14	8.8	8.8	14	14	10	9.9
Bicarbonate as HCO3	mg/l			370	370	270	270	330	320	330	310
Boron	mg/l	1	N	0.46	0.42	0.28	0.3	0.39	0.39	0.26	0.23
Bromide	ug/l			2400	2400	860	840	2400	2400	740	630
Calcium, Total	mg/l			11	10	42	37	63	64	64	83
Carbon Dioxide	mg/l			2.4	2.4	2.2	2.8	5.4	5.2	4.3	6.4
Carbonate as CO3	mg/l			6	6	3.5	2.8	2.1	2.1	2.7	ND
Cation Sum	meq/l			14	12	8.9	9.1	14	14	10	10
Chloride	mg/l	500	S	310	300	130	130	300	320	130	120
Fluoride	mg/l	2	P	0.25	0.29	0.3	0.34	0.23	0.24	0.52	0.52
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			960	930	340	280	920	340	220	130
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			17	15	8.2	8.9	11	11	7.2	6.7
Sodium, Total	mg/l			280	260	130	140	210	200	130	90
Sulfate	mg/l	500	S	1.6	2.3	31	34	5.1	3	71	60
Total Dissolved Solid (TDS)	mg/l	1000	S	840	840	520	510	800	810	610	560
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
General Physical Properties											
Apparent Color	ACU	15	S	**40**	**45**	**25**	15	10	10	10	ND
Hardness (Total, as CaCO3)	mg/l			55	49	150	130	220	220	220	290
Lab pH	Units			8.4	8.4	8.3	8.2	8	8	8.1	7.9
Langelier Index - 25 degree	None			0.54	0.51	0.87	0.79	0.93	0.9	0.98	0.83
Odor	TON	3	S	2	**8**	2	**8**	1	2	1	**8**
Specific Conductance	umho/cm	1600	S	1600	1600	900	920	1500	1500	1000	990
Turbidity	NTU	5	S	0.87	0.9	1	0.39	0.18	0.27	0.19	0.29
Metals											
Aluminum, Total	ug/l	1000	P	ND	23	24	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	1.3	1.4	1.1	1.1	2.5	1.2	5.7	3.2
Barium, Total	ug/l	1000	P	22	23	34	29	73	74	24	43
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
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.11	0.18	0.1	0.15	0.094	0.13	0.079	0.13
Copper, Total	ug/l	1300	P	ND	2.7	ND	ND	ND	ND	ND	3
Iron, Total	mg/l	0.3	S	0.061	0.052	0.04	0.021	0.052	0.053	ND	0.023
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			6.6	5.9	11	10	16	16	16	21
Manganese, Total	ug/l	50	S	21	23	49	40	**74**	**72**	**67**	**85**
Mercury	ug/l	2	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
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 (Methyl Chloride)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	**12**	**14**
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	3.8	2
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
Others											
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			2.2	3	2.6	2.3	1.9	1.9	1.9	0.69

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 2018-19

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	
				5/15/2019	9/27/2019	5/14/2019	9/26/2019	5/15/2019	9/27/2019	5/15/2019	9/27/2019	5/15/2019	9/27/2019	5/15/2019	9/27/2019	5/15/2019	9/27/2019	5/14/2019	9/26/2019	5/15/2019	9/27/2019
General Minerals																					
Alkalinity	mg/l			560	540	130	130	110	110	130	130	150	150	160	160	180	180	180	180	290	290
Anion Sum	meq/l			11	11	4.2	4	4.4	4.3	5	4.8	4.8	4.7	5.3	5.2	6.1	6	7.6	7.3	18	18
Bicarbonate as HCO3	mg/l			680	660	160	160	140	140	160	160	190	180	200	200	220	220	220	220	360	360
Boron	mg/l	1	N	**1.3**	**1.4**	0.17	0.17	0.099	0.098	0.083	0.084	0.087	0.085	0.12	0.12	0.12	0.12	0.13	0.13	0.18	0.17
Bromide	ug/l			190	140	120	120	98	100	110	99	110	100	100	100	120	120	140	140	610	590
Calcium, Total	mg/l			9.9	10	5.4	5.4	41	39	48	46	48	45	55	54	67	64	85	81	230	220
Carbon Dioxide	mg/l			4.4	3.4	ND	ND	ND	ND	ND	ND	2	ND	2.6	2.1	2.9	2.3	3.6	4.5	15	12
Carbonate as CO3	mg/l			11	14	6.6	6.6	ND	ND	ND	ND	2	2.3	ND	2	ND	2.3	ND	ND	ND	ND
Cation Sum	meq/l			12	11	4	4	4.5	4.3	5.1	4.9	5	4.7	5.4	5.4	6.3	6.1	7.7	7.5	19	18
Chloride	mg/l	500	S	10	9.5	21	20	21	20	21	20	22	21	20	20	27	27	53	49	160	150
Fluoride	mg/l	2	P	0.51	0.5	0.42	0.43	0.28	0.28	0.24	0.25	0.26	0.27	0.33	0.34	0.3	0.3	0.39	0.4	0.3	0.3
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	ug/l			35	39	20	35	27	26	28	28	30	31	27	30	37	35	ND	ND	220	240
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.1	6.9	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.6	1.6	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			ND	2.6	ND	ND	1.1	1	1.6	1.6	2	1.9	3.3	3.3	2.9	2.8	3.4	3.3	5.5	5.2
Sodium, Total	mg/l			250	240	86	86	46	44	50	49	52	50	38	39	42	41	43	42	77	74
Sulfate	mg/l	500	S	1.2	1.3	42	40	76	72	80	77	53	49	69	68	83	81	110	110	370	350
Total Dissolved Solid (TDS)	mg/l	1000	S	670	680	270	250	270	270	290	300	280	290	310	320	360	370	440	450	**1100**	**1100**
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.6	1.6	ND	ND
General Physical Properties																					
Apparent Color	ACU	15	S	**180**	**100**	**45**	**40**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			33	34	14	15	120	120	140	140	140	120	180	180	220	210	290	280	770	740
Lab pH	Units			8.4	8.5	8.8	8.8	8.3	8.3	8.2	8.2	8.2	8.3	8.1	8.2	8.1	8.2	8	7.9	7.6	7.7
Langelier Index - 25 degree	None			0.79	0.86	0.26	0.25	0.59	0.54	0.64	0.66	0.71	0.78	0.7	0.78	0.83	0.89	0.78	0.73	1	1.2
Odor	TON	3	S	**40**	**8**	3	1	ND	2	2	2	ND	2	ND	2	2	**8**	ND	1	ND	1
Specific Conductance	umho/cm	1600	S	1100	1100	430	420	450	450	490	490	480	470	520	520	600	600	740	730	1600	1600
Turbidity	NTU	5	S	2	1	0.21	0.23	ND	ND	ND	ND	0.1	0.15	ND	0.11	0.17	0.31	ND	0.28	2.8	2.4
Metals																					
Aluminum, Total	ug/l	1000	P	ND	ND	22	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	ND	ND
Arsenic, Total	ug/l	10	P	**230**	**240**	ND	ND	ND	ND	ND	ND	5.7	5.3	1.2	ND	2.9	3	1.9	ND	8.3	7.3
Barium, Total	ug/l	1000	P	16	16	2.1	ND	5.5	4.8	160	150	100	100	46	44	110	110	130	120	170	150
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
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.52	0.34	0.43	0.32	0.16	0.12	0.18	0.12	0.14	0.1	0.12	0.12	0.1	0.091	0.75	0.72	0.054	0.023
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	ND	0.075	ND	ND	ND	ND	ND	ND	0.024	0.02	0.024	0.023	0.074	0.075	ND	ND	**0.39**	**0.37**
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			2	2.1	0.26	0.28	5.4	5.2	5.8	5.7	3.8	3.2	11	11	13	13	18	18	48	47
Manganese, Total	ug/l	50	S	12	15	2.8	ND	16	14	32	32	39	33	**66**	**62**	**110**	**99**	2	ND	**240**	**230**
Mercury	ug/l	2	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
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 (Methyl Chloride)	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																		
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.4	3.7	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	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	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
Others																					
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2.3**	**2.4**	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.6	0.53	ND	ND
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 Organic Carbon	mg/l			15	17	1.7	1.6	0.3	0.31	0.31	0.33	ND	ND	0.3	0.33	0.34	0.42	ND	0.33	0.94	1

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

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

Constituents	Units	MCL	MCL Type	Montebello #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				5/1/2019	9/26/2019	5/1/2019	9/26/2019	5/1/2019	9/26/2019	5/1/2019	9/26/2019	5/1/2019	9/26/2019
General Minerals													
Alkalinity	mg/l			890	870	560	560	180	180	180	180	210	190
Anion Sum	meq/l			37	36	15	14	7	7.2	8.3	8.2	8.3	7.6
Bicarbonate as HCO3	mg/l			1100	1000	690	680	210	210	220	220	250	230
Boron	mg/l	1	N	**6.2**	**6.2**	**2.2**	**2.2**	0.14	0.13	0.14	0.16	0.2	0.2
Bromide	ug/l			4100	4000	860	800	200	180	240	220	190	170
Calcium, Total	mg/l			13	13	17	17	86	83	91	87	84	77
Carbon Dioxide	mg/l			8.2	6.5	5.9	4.4	2.4	3.4	3.9	3.6	10	6
Carbonate as CO3	mg/l			16	16	8.5	11	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			36	36	14	14	7.4	7.2	8.4	8.2	8.4	7.9
Chloride	mg/l	500	S	**680**	**680**	120	120	53	54	69	69	69	63
Fluoride	mg/l	2	P	0.48	0.47	0.34	0.33	0.2	0.19	0.25	0.24	0.36	0.36
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			940	1000	200	240	68	39	99	40	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	14	14
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	3.2	3.1
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			8.2	7.4	ND	6	3.5	3.3	3.8	3.7	3.6	3.3
Sodium, Total	mg/l			800	800	300	280	44	42	58	60	65	63
Sulfate	mg/l	500	S	ND	ND	ND	ND	96	100	130	120	96	83
Total Dissolved Solid (TDS)	mg/l	1000	S	**2100**	**2200**	870	870	430	450	490	490	490	480
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	3.2	3.1
General Physical Properties													
Apparent Color	ACU	15	S	**300**	**250**	**250**	**180**	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			56	56	70	72	270	260	290	270	280	250
Lab pH	Units			8.4	8.4	8.4	8.4	8.1	8	8.1	8	7.8	7.8
Langelier Index - 25 degree	None			1	1.1	0.9	1	0.97	0.86	0.83	0.88	0.49	0.65
Odor	TON	3	S	**4**	2	**4**	2	2	2	ND	2	ND	1
Specific Conductance	umho/cm	1600	S	**3600**	**3600**	1400	1400	700	720	810	810	820	790
Turbidity	NTU	5	S	0.5	0.83	0.3	0.36	0.22	0.2	ND	0.15	ND	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	3.8	4.6	ND	ND	ND	ND	2.8	2.5	1.7	ND
Barium, Total	ug/l	1000	P	43	39	27	26	39	40	80	82	66	59
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
Chromium, Total	ug/l	50	P	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.6	0.66	0.36	0.37	0.19	0.2	0.15	0.22	0.2	0.28
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.22	0.16	0.2	0.2	0.046	0.038	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			5.8	5.8	6.8	7.1	14	14	15	14	16	15
Manganese, Total	ug/l	50	S	8.1	9.4	29	32	**78**	**79**	49	23	ND	ND
Mercury	ug/l	2	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
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 (Methyl Chloride)	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										
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
Others													
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	**3.6**	**3.7**	**3.4**	**2.9**	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	0.76	0.69
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			40	40	24	24	0.9	0.64	0.68	0.65	0.6	0.5

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 2018-19

Constituents	Units	MCL	MCL Type	Norwalk #1				
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
				5/2/2019	5/2/2019	5/2/2019	5/2/2019	5/2/2019
General Minerals								
Alkalinity	mg/l			260	170	150	130	190
Anion Sum	meq/l			8.1	5.1	5.5	3.4	8
Bicarbonate as HCO3	mg/l			320	210	180	150	240
Boron	mg/l	1	N	0.37	0.19	0.06	ND	0.074
Bromide	ug/l			290	260	450	110	640
Calcium, Total	mg/l			13	9.1	37	28	71
Carbon Dioxide	mg/l			5.2	ND	ND	ND	5
Carbonate as CO3	mg/l			2.1	5.4	ND	ND	ND
Cation Sum	meq/l			8.3	4.8	5.3	3.4	7.7
Chloride	mg/l	500	S	63	59	87	24	140
Fluoride	mg/l	2	P	0.47	0.56	0.23	0.3	0.29
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND
Iodide	ug/l			85	97	110	36	110
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND
Potassium, Total	mg/l			2.6	1.2	2.5	1.6	3.6
Sodium, Total	mg/l			160	98	72	35	63
Sulfate	mg/l	500	S	47	ND	2.9	7	7
Total Dissolved Solid (TDS)	mg/l	1000	S	510	310	320	200	470
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND
General Physical Properties								
Apparent Color	ACU	15	S	**25**	**40**	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			58	28	100	91	240
Lab pH	Units			8	8.6	8.2	8.2	7.9
Langelier Index - 25 degree	None			0.17	0.42	0.57	0.36	0.65
Odor	TON	3	S	**200**	1	ND	1	**8**
Specific Conductance	umho/cm	1600	S	830	520	570	340	820
Turbidity	NTU	5	S	ND	0.14	0.14	0.3	1.3
Metals								
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	5.6	**17**	**11**
Barium, Total	ug/l	1000	P	14	8	140	130	380
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.44	0.35	0.14	0.18	0.11
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	ND	ND	0.032	0.025	0.12
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND
Magnesium, Total	None			6.1	1.2	3.3	5.2	16
Manganese, Total	ug/l	50	S	2.5	6.7	28	38	**150**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND
Zinc, Total	ug/l	5000	S	ND	ND	ND	ND	ND
Volatile Organic Compounds								
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	3.3
Chloromethane (Methyl Chloride)	ug/l			ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND
Styrene	ug/l	100	P	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			ND	ND	ND	ND	ND
TBA	ug/l	12	N					
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND
Total Trihalomethanes	ug/l	80	P	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND
Vinyl chloride (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND
Xylenes (Total)	ug/l	1750	P	ND	ND	ND	ND	ND
Others								
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.65	3.9	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 2018-19

Constituents	Units	MCL	MCL Type	Norwalk #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/16/2019	9/24/2019	4/16/2019	9/24/2019	4/16/2019	9/24/2019	4/16/2019	9/24/2019	4/16/2019	9/24/2019	4/16/2019	9/24/2019
General Minerals															
Alkalinity	mg/l			180	190	180	180	140	140	160	160	150	150	180	180
Anion Sum	meq/l			6.9	6.7	4.6	4.7	4.1	4.2	5.6	5.8	7.8	7.5	7.5	7.4
Bicarbonate as HCO3	mg/l			220	230	210	210	180	180	200	190	190	190	210	210
Boron	mg/l	1	N	0.24	0.26	0.22	0.23	ND	ND	0.052	0.056	0.15	0.15	0.17	0.17
Bromide	ug/l			280	310	140	150	47	49	71	70	140	150	130	120
Calcium, Total	mg/l			37	21	12	12	44	45	68	69	80	80	74	75
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	3.3	2.5	ND	3.1	ND	4.3
Carbonate as CO3	mg/l			ND	3	3.4	3.4	ND	2.3	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			6.8	7	4.5	4.6	4.2	4.3	5.8	5.8	7.5	7.5	7.5	7.5
Chloride	mg/l	500	S	67	64	29	31	14	14	27	30	76	72	60	58
Fluoride	mg/l	2	P	0.35	0.38	0.46	0.48	0.2	0.18	0.28	0.29	0.25	0.27	0.38	0.36
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			79	96	38	46	9.9	9.3	ND	ND	6.5	6.7	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	6.2	6.2	12	11	9.5	9.1
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	1.4	1.4	2.7	2.5	2.1	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			3.5	3.8	2.3	2.3	2.4	2.5	3.3	3.2	4	4	3.8	3.9
Sodium, Total	mg/l			98	130	84	87	35	36	30	31	50	50	56	56
Sulfate	mg/l	500	S	66	52	13	14	40	41	73	77	110	100	100	100
Total Dissolved Solid (TDS)	mg/l	1000	S	410	420	270	290	250	260	360	350	460	450	460	460
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	1.4	1.4	2.7	2.5	2.1	2.1
General Physical Properties															
Apparent Color	ACU	15	S	10	15	**20**	**20**	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			120	69	39	39	130	130	220	220	260	260	250	250
Lab pH	Units			8.1	8.3	8.4	8.4	8.2	8.3	8	8.1	8	8	7.9	7.9
Langelier Index - 25 degree	None			0.54	0.53	0.36	0.42	0.65	0.71	0.67	0.82	0.72	0.75	0.64	0.63
Odor	TON	3	S	ND	2	ND	2	ND	2	ND	2	ND	2	ND	2
Specific Conductance	umho/cm	1600	S	720	700	460	470	410	420	570	570	760	760	760	750
Turbidity	NTU	5	S	ND	0.18	0.1	0.15	ND	0.14	ND	0.15	ND	ND	0.1	0.19
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	3.1	4.7	ND	ND	ND	ND	2	ND	2	ND	1.4	ND
Barium, Total	ug/l	1000	P	45	33	12	11	33	31	160	160	76	69	54	51
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
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	2.7	2.1	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.24	0.19	0.3	0.2	0.15	0.11	3.2	3.2	0.91	0.85	0.99	1
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	ND	ND	ND	ND	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
Magnesium, Total	None			7.1	4	2.2	2.2	5	5.1	11	11	16	16	15	15
Manganese, Total	ug/l	50	S	10	7.5	16	17	22	21	ND	ND	13	10	ND	ND
Mercury	ug/l	2	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
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 (Methyl Chloride)	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												
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	0.67	0.59	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
Others															
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	ND	ND	**3.7**	**3.5**	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	2.2	2.2	1.2	1.1	0.63	0.69
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			1.4	1.4	ND	1	ND	0.3	ND	ND	ND	0.38	ND	0.33

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 2018-19

Constituents	Units	MCL	MCL Type	Pico #1						
				Zone 1	Zone 2		Zone 3		Zone 4	
				3/28/2019	3/28/2019	9/24/2019	3/28/2019	9/24/2019	3/28/2019	9/24/2019
General Minerals										
Alkalinity	mg/l			280	160	160	190	190	200	210
Anion Sum	meq/l			5.7	5	5	9.4	9.3	10	9.8
Bicarbonate as HCO3	mg/l			340	190	190	240	240	250	250
Boron	mg/l	1	N	0.64	0.063	0.068	0.11	0.12	0.24	0.25
Bromide	ug/l			24	56	51	190	190	200	200
Calcium, Total	mg/l			8.8	64	65	110	120	88	92
Carbon Dioxide	mg/l			ND	ND	3.1	ND	6.2	ND	6.5
Carbonate as CO3	mg/l			4.4	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			6.2	5.1	5.2	9	9.5	9.5	9.9
Chloride	mg/l	500	S	2.9	16	17	82	81	110	100
Fluoride	mg/l	2	P	0.25	0.26	0.24	0.29	0.3	0.3	0.28
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			6.8	5.2	3.5	24	16	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	16	14
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	3.7	3.1
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			3.6	2.5	2.8	4	4.5	4.9	5.6
Sodium, Total	mg/l			120	22	23	39	40	84	86
Sulfate	mg/l	500	S	ND	64	66	150	150	130	120
Total Dissolved Solid (TDS)	mg/l	1000	S	330	300	310	560	580	580	620
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	3.7	3.1
General Physical Properties										
Apparent Color	ACU	15	S	**35**	ND	ND	10	10	ND	ND
Hardness (Total, as CaCO3)	mg/l			35	200	210	350	380	280	300
Lab pH	Units			8.3	7.9	8	7.6	7.8	7.6	7.8
Langelier Index - 25 degree	None			0.3	0.5	0.66	0.62	0.83	0.47	0.71
Odor	TON	3	S	2	ND	1	ND	1	ND	1
Specific Conductance	umho/cm	1600	S	540	490	500	900	910	970	1000
Turbidity	NTU	5	S	2.3	2.2	2.1	**5.5**	**5.9**	0.14	0.11
Metals										
Aluminum, Total	ug/l	1000	P	36	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	4.4	ND	ND	ND	ND	2.7	2.3
Barium, Total	ug/l	1000	P	18	78	79	81	85	59	63
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
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.15	0.055	0.091	0.03	ND	0.84	0.93
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.14	0.27	0.28	**0.49**	**0.5**	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			3.1	11	11	19	20	16	17
Manganese, Total	ug/l	50	S	30	21	22	15	17	ND	ND
Mercury	ug/l	2	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	7	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
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 (Methyl Chloride)	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							
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	0.55	0.68
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
Others										
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	0.75	0.55
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			4.1	ND	0.98	0.43	0.43	0.5	0.52

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

Constituents	Units	MCL	MCL Type	Pico #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/7/2019	9/23/2019	5/7/2019	9/23/2019	5/7/2019	9/23/2019	5/7/2019	9/23/2019	5/7/2019	9/23/2019	5/7/2019	9/23/2019
General Minerals															
Alkalinity	mg/l			200	200	200	200	190	190	150	140	130	130	88	140
Anion Sum	meq/l			9.1	8.6	10	9.9	9.4	8.8	9.5	8.9	8.5	7.7	4.3	8.3
Bicarbonate as HCO3	mg/l			240	240	250	250	230	230	180	180	160	160	110	170
Boron	mg/l	1	N	0.057	0.059	0.15	0.16	0.16	0.16	0.26	0.26	0.24	0.22	0.093	0.28
Bromide	ug/l			170	170	210	210	180	170	150	150	130	130	70	130
Calcium, Total	mg/l			110	120	120	120	100	100	77	75	57	57	27	66
Carbon Dioxide	mg/l			6.5	5	26	6.5	7.4	4.7	9.6	5.9	12	6.6	7.7	11
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			8.7	8.8	10	10	8.9	9.1	9	8.9	7.9	7.7	4.3	8.9
Chloride	mg/l	500	S	64	58	100	96	90	79	130	120	120	110	49	120
Fluoride	mg/l	2	P	0.23	0.22	0.25	0.25	0.28	0.31	0.27	0.3	0.32	0.35	0.32	0.29
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	3.5	2.9	ND	3
Nitrate (as NO3)	mg/l	45	P	16	14	13	12	15	14	27	24	26	22	5.3	9.3
Nitrate as Nitrogen	mg/l	10	P	3.6	3.2	2.9	2.8	3.4	3.2	6.1	5.6	6	5	1.2	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			4.1	3.9	4.2	4.2	4.5	4.5	4.8	5	5.2	5	5.6	10
Sodium, Total	mg/l			27	27	42	44	48	48	85	84	83	79	50	86
Sulfate	mg/l	500	S	150	130	150	140	140	120	120	110	95	84	52	88
Total Dissolved Solid (TDS)	mg/l	1000	S	510	540	600	620	520	540	530	560	480	480	250	520
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	3.6	3.2	2.9	2.8	3.4	3.2	6.1	5.6	6	5	1.2	2.1
General Physical Properties															
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			360	390	400	400	330	340	260	250	210	210	100	240
Lab pH	Units			7.7	7.9	7.7	7.8	7.8	7.9	7.6	7.7	7.5	7.6	7.5	7.4
Langelier Index - 25 degree	None			0.78	0.9	0.23	0.84	0.63	0.8	0.18	0.37	-0.15	0.1	-0.61	0.063
Odor	TON	3	S	ND	1	1	2	ND	1	ND	2	ND	2	1	2
Specific Conductance	umho/cm	1600	S	830	840	980	980	880	880	930	930	830	810	460	890
Turbidity	NTU	5	S	0.11	0.31	ND	0.25	0.13	0.27	0.12	0.29	ND	0.33	0.29	0.46
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	1.7	ND	2.3	2.2	1.8	ND	2.3	2.6	ND	ND	9	7.8
Barium, Total	ug/l	1000	P	110	100	98	93	91	88	71	69	92	85	72	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
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	1.4	1.4	0.92	1	1.3	1.4	0.62	0.73	0.42	0.51	0.29	0.31
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.3
Iron, Total	mg/l	0.3	S	ND	ND	ND	ND	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
Magnesium, Total	None			21	21	24	24	20	21	16	16	16	16	8.1	19
Manganese, Total	ug/l	50	S	ND	ND	4.3	ND	ND	ND	ND	ND	38	36	ND	ND
Mercury	ug/l	2	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
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 (Methyl Chloride)	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												
Tetrachloroethylene (PCE)	ug/l	5	P	0.57	0.57	0.73	0.62	1.6	1.7	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	5.6	4.6	ND	ND	1	2.9
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
Others															
1,4-Dioxane	ug/l	1	N	**2.5**	**2.6**	ND	ND	**1.4**	**1.3**	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	1.7	1.5	0.58	0.55	1	0.92	ND	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			ND	0.32	ND	ND	ND	0.42	0.57	0.69	0.78	0.78	1.1	1.4

TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

Constituents	Units	MCL	MCL Type	Rio Hondo #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/2/2019	9/24/2019	5/2/2019	9/24/2019	5/2/2019	9/24/2019	5/2/2019	9/24/2019	5/2/2019	9/24/2019	5/2/2019	9/24/2019
General Minerals															
Alkalinity	mg/l			140	140	160	160	180	180	110	110	120	120	100	100
Anion Sum	meq/l			4.3	4.3	6.9	6.6	7.8	7.7	5.7	5.4	6	6	4.8	3.1
Bicarbonate as HCO3	mg/l			170	170	200	200	220	220	140	130	140	140	120	120
Boron	mg/l	1	N	0.059	0.062	ND	0.051	0.15	0.15	0.14	0.14	0.16	0.15	0.13	0.14
Bromide	ug/l			96	93	130	120	140	140	150	140	120	120	80	54
Calcium, Total	mg/l			40	40	89	87	87	88	49	46	54	55	38	31
Carbon Dioxide	mg/l			ND	ND	3.9	3.3	5.7	3.6	5	3.4	7.1	3.6	8.6	3.9
Carbonate as CO3	mg/l			2.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			4.4	4.3	6.9	6.8	7.8	7.8	5.6	5.3	5.9	6	4.7	4.1
Chloride	mg/l	500	S	18	17	44	40	65	65	66	60	68	69	49	33
Fluoride	mg/l	2	P	0.24	0.23	0.21	0.2	0.28	0.27	0.32	0.31	0.26	0.25	0.31	0.33
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			33	29	6.2	6.7	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	9.8	9.3	10	8.8	14	14	13	9.7
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	2.2	2.1	2.3	2	3.2	3.1	3	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			2.9	2.6	3.4	3.2	4	3.9	3.4	3.2	3.6	3.5	3.6	3.2
Sodium, Total	mg/l			39	38	25	24	46	46	52	51	51	51	44	42
Sulfate	mg/l	500	S	48	46	110	110	100	100	69	68	72	70	55	ND
Total Dissolved Solid (TDS)	mg/l	1000	S	270	280	420	440	470	490	350	350	370	390	300	260
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	2.2	2.1	2.3	2	3.2	3.1	3	2.2
General Physical Properties															
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			130	130	280	280	280	280	160	150	180	180	140	110
Lab pH	Units			8.2	8.2	7.9	8	7.8	8	7.7	7.8	7.6	7.8	7.5	7.7
Langelier Index - 25 degree	None			0.72	0.62	0.72	0.84	0.64	0.86	0.04	0.15	-0.051	0.21	-0.4	-0.19
Odor	TON	3	S	ND	2	ND	2	ND	2	ND	2	ND	1	ND	2
Specific Conductance	umho/cm	1600	S	440	430	670	660	770	780	590	570	610	640	500	430
Turbidity	NTU	5	S	0.15	0.32	0.3	0.41	ND	0.31	ND	0.16	0.44	0.39	0.4	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	2.1	2	2.5	2.1	1.5	ND	1.2	ND
Barium, Total	ug/l	1000	P	21	19	57	51	140	120	57	50	74	65	88	66
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
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	0.26	0.12	0.22	0.7	0.79	0.63	0.8	0.75	0.87	0.77	0.93
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	ND	ND	0.069	0.066	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
Magnesium, Total	None			7.8	7.8	15	15	15	16	9.3	8.9	11	11	9.8	7.9
Manganese, Total	ug/l	50	S	26	24	31	30	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, 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
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 (Methyl Chloride)	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												
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	0.7	0.65	1.9	2.6	2.9	1.6
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
Others															
1,4-Dioxane	ug/l	1	N	ND	ND	**4.4**	**3.9**	**1.3**	**1.3**	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	0.55	0.57	0.59	0.67	0.6	0.6
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			ND	ND	ND	ND	ND	0.32	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 2018-19

Constituents	Units	MCL	MCL Type	Seal Beach #1													
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Zone 7	
				4/15/2019	8/26/2019	4/15/2019	8/26/2019	4/15/2019	8/26/2019	4/15/2019	8/26/2019	4/15/2019	8/26/2019	4/15/2019	8/26/2019	4/15/2019	8/26/2019
General Minerals																	
Alkalinity	mg/l			220	220	160	160	150	150	180	180	81	77	100	95	220	240
Anion Sum	meq/l			4.8	4.9	3.6	3.6	3.4	3.4	4.2	4.1	6.9	6.8	6.7	6.3	35	35
Bicarbonate as HCO3	mg/l			260	260	190	190	180	180	220	220	98	94	120	120	270	300
Boron	mg/l	1	N	0.24	0.24	0.14	0.14	0.19	0.19	0.23	0.22	0.061	0.06	0.14	0.14	0.22	0.21
Bromide	ug/l			180	180	100	100	86	81	140	130	520	530	140	100	3100	2800
Calcium, Total	mg/l			5.1	5.1	3.7	3.6	3.5	3.6	5.7	5.5	34	35	59	51	320	320
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.8
Carbonate as CO3	mg/l			11	8.5	9.8	12	9.3	12	7.2	7.2	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			5.4	5.3	3.7	3.5	3.4	3.4	4.2	4	6.9	7	6.7	6	35	34
Chloride	mg/l	500	S	16	17	15	14	14	13	18	17	160	160	74	66	**820**	**770**
Fluoride	mg/l	2	P	0.4	0.4	0.5	0.5	0.57	0.57	0.75	0.74	0.3	0.31	0.35	0.36	0.28	0.3
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			52	36	26	18	21	14	34	24	7.8	5.1	9.8	6.2	220	240
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	1.9	1.9	2.2	2	8.3	8.5
Sodium, Total	mg/l			120	110	80	75	73	73	89	85	120	120	65	62	300	280
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	ND	ND	ND	34	32	130	120	350	420
Total Dissolved Solid (TDS)	mg/l	1000	S	300	320	220	220	200	210	260	260	380	400	420	390	**2100**	**2200**
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
General Physical Properties																	
Apparent Color	ACU	15	S	**180**	**150**	**100**	**100**	**50**	**100**	**100**	**150**	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			14	14	10	10	9.6	9.8	17	16	94	96	190	160	1100	1100
Lab pH	Units			8.8	8.7	8.9	9	8.9	9	8.7	8.7	8.3	8.2	8.1	8.1	7.6	7.8
Langelier Index - 25 degree	None			0.43	0.42	0.3	0.33	0.24	0.31	0.33	0.31	0.36	0.32	0.47	0.44	1.1	1.3
Odor	TON	3	S	**4**	2	**4**	2	**4**	2	2	2	2	2	2	1	2	2
Specific Conductance	umho/cm	1600	S	470	480	360	360	340	340	410	400	730	760	700	650	**3400**	**3500**
Turbidity	NTU	5	S	0.35	0.48	0.24	0.53	0.22	0.34	0.43	1.2	0.1	1	ND	0.27	0.88	1.7
Metals																	
Aluminum, Total	ug/l	1000	P	31	32	32	34	25	29	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
Arsenic, Total	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.4	3.6
Barium, Total	ug/l	1000	P	8.4	7.5	4.4	3.9	3.8	3.7	5.5	22	36	38	95	86	100	110
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
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.59	0.48	0.53	0.36	0.49	0.37	0.54	0.54	0.19	0.17	0.1	0.15	0.049	0.042
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.054	0.053	0.027	0.026	0.023	0.023	0.041	0.021	ND	ND	0.022	ND	0.19	0.3
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			0.42	0.4	0.33	0.32	0.22	0.21	0.59	0.56	2.2	2.2	10	8.9	67	68
Manganese, Total	ug/l	50	S	6.4	6.3	3.8	3.8	2.2	2.5	7.8	7.9	18	18	**88**	**83**	**830**	**850**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.49
Nickel, Total	ug/l	100	P	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	5.1
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
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 (Methyl Chloride)	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														
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
Others																	
1,4-Dioxane	ug/l	1	N	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
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			16	10	3.5	4	2.8	3.5	5.2	5.5	0.5	0.35	1	0.89	0.61	0.62

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 2018-19

Constituents	Units	MCL	MCL Type	South Gate #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				3/28/2019	9/19/2019	3/28/2019	9/19/2019	3/28/2019	9/19/2019	3/28/2019	9/19/2019	3/28/2019	9/19/2019
General Minerals													
Alkalinity	mg/l			160	160	140	140	150	150	160	160	200	200
Anion Sum	meq/l			5	4.9	6.4	6.2	6.4	6.4	7.2	7	9.2	9.1
Bicarbonate as HCO3	mg/l			200	200	170	160	180	180	200	200	250	250
Boron	mg/l	1	N	0.11	0.11	0.14	0.14	0.12	0.12	0.16	0.17	0.13	0.13
Bromide	ug/l			100	100	140	120	110	110	140	140	390	400
Calcium, Total	mg/l			50	50	69	66	72	73	74	78	94	95
Carbon Dioxide	mg/l			ND	2.1	ND	2.1	ND	3	ND	3.3	ND	4.1
Carbonate as CO3	mg/l			ND	2	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			5.1	5.2	6.6	6.4	6.6	6.6	7.1	7.5	9	9.1
Chloride	mg/l	500	S	22	20	53	49	44	44	55	52	97	95
Fluoride	mg/l	2	P	0.3	0.28	0.31	0.28	0.36	0.34	0.37	0.36	0.4	0.38
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			28	20	14	7.8	ND	ND	ND	ND	110	94
Nitrate (as NO3)	mg/l	45	P	ND	ND	10	9.5	9.4	9.1	6.8	6.4	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	2.3	2.1	2.1	2.1	1.5	1.4	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			2.2	2.4	3	3.3	2.6	2.9	3	3.4	2.7	3
Sodium, Total	mg/l			44	46	48	46	40	40	50	52	52	52
Sulfate	mg/l	500	S	55	52	96	91	97	95	110	100	120	110
Total Dissolved Solid (TDS)	mg/l	1000	S	310	310	390	380	410	420	450	450	550	580
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	2.3	2.1	2.1	2.1	1.5	1.4	ND	ND
General Physical Properties													
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			160	160	220	210	240	240	240	260	330	340
Lab pH	Units			8.1	8.2	7.9	8.1	8	8	7.8	8	7.9	8
Langelier Index - 25 degree	None			0.69	0.76	0.55	0.67	0.63	0.69	0.57	0.7	0.8	0.88
Odor	TON	3	S	2	1	ND	2	ND	1	ND	2	1	2
Specific Conductance	umho/cm	1600	S	500	500	650	650	660	650	710	720	880	900
Turbidity	NTU	5	S	ND	0.21	ND	ND	ND	0.24	ND	0.28	0.42	0.44
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	2.4	2.4	2.7	2.7	2.7	2.8	1.9	ND	2.1	2.3
Barium, Total	ug/l	1000	P	120	130	86	89	140	140	68	73	210	220
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
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.09	0.13	0.094	0.14	0.89	0.92	0.61	0.67	0.063	0.094
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.028	0.03	ND	ND	ND	ND	ND	ND	0.1	0.1
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			7.6	7.7	12	12	15	15	14	15	24	24
Manganese, Total	ug/l	50	S	38	40	3.7	ND	ND	ND	ND	ND	**110**	**120**
Mercury	ug/l	2	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
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 (Methyl Chloride)	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										
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	3.7	3	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	1.2	1.2	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
Others													
1,4-Dioxane	ug/l	1	N	ND	ND	**1.8**	**2**	**3.3**	**3**	**1.3**	**1.2**	ND	ND
Perchlorate	ug/l	6	P	ND	ND	0.86	0.71	1.9	1.6	0.53	ND	ND	ND
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.6	0.46	0.32	0.36	0.32	ND	0.5	0.4	1.5	0.92

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 2018-19

Constituents	Units	MCL	MCL Type	South Gate #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/24/2019	9/20/2019	5/24/2019	9/20/2019	5/24/2019	9/20/2019	5/24/2019	9/20/2019	5/24/2019	9/20/2019	5/24/2019	9/20/2019
General Minerals															
Alkalinity	mg/l			170	170	180	170	170	160	170	160	170	170	190	190
Anion Sum	meq/l			5.6	5.6	5.7	5.6	5.5	5.4	6.1	6	5.6	5.6	6.2	6.1
Bicarbonate as HCO3	mg/l			210	200	210	210	210	200	210	200	200	200	240	230
Boron	mg/l	1	N	0.12	0.13	0.12	0.13	0.1	0.11	0.13	0.14	0.13	0.14	0.14	0.14
Bromide	ug/l			97	93	95	94	98	95	120	130	97	95	110	110
Calcium, Total	mg/l			58	59	59	60	57	58	62	62	58	58	63	64
Carbon Dioxide	mg/l			2.7	2.1	2.7	2.7	2.2	2.1	4.3	3.3	2.6	2.1	5	3.8
Carbonate as CO3	mg/l			ND	2	ND	ND	2.2	2	ND	ND	ND	2	ND	ND
Cation Sum	meq/l			5.7	5.8	5.8	5.9	5.6	5.7	6.2	6.2	5.7	5.8	6.3	6.3
Chloride	mg/l	500	S	20	20	20	20	20	20	29	29	21	20	23	22
Fluoride	mg/l	2	P	0.38	0.37	0.36	0.37	0.28	0.26	0.4	0.4	0.4	0.39	0.44	0.46
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			35	24	30	23	40	30	1.4	1	30	26	18	16
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	1.8	1.8	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	0.41	0.42	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			3.2	3.4	3.3	3.4	2.3	2.4	3.2	3.3	3.1	3.2	2.6	2.7
Sodium, Total	mg/l			39	40	41	41	44	44	40	41	42	42	42	42
Sulfate	mg/l	500	S	78	77	76	75	74	74	87	87	78	78	78	77
Total Dissolved Solid (TDS)	mg/l	1000	S	310	330	320	320	310	310	350	360	310	330	340	360
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	0.41	0.42	ND	ND	ND	ND
General Physical Properties															
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			200	200	200	200	180	180	220	220	190	190	220	220
Lab pH	Units			8.1	8.2	8.1	8.1	8.2	8.2	7.9	8	8.1	8.2	7.9	8
Langelier Index - 25 degree	None			0.77	0.81	0.76	0.74	0.82	0.8	0.58	0.7	0.71	0.79	0.66	0.74
Odor	TON	3	S	1	ND	3	ND	3	ND	1	1	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	550	550	560	560	540	540	590	600	550	550	600	600
Turbidity	NTU	5	S	0.11	0.12	0.34	0.28	0.11	0.16	ND	ND	ND	ND	ND	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	3	2.7	1.2	ND	ND	ND	ND	ND
Barium, Total	ug/l	1000	P	60	60	71	72	71	81	74	74	100	100	96	99
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
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	1.4	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.16	0.093	0.16	0.081	0.17	0.085	2.1	2.1	0.18	0.11	0.17	0.12
Copper, Total	ug/l	1300	P	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.048	0.051	0.12	0.13	0.034	0.039	ND	ND	ND	ND	ND	0.024
Lead, Total	ug/l	15	P	**0.52**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			13	13	12	13	9.8	9.7	15	15	12	12	15	15
Manganese, Total	ug/l	50	S	**63**	**61**	43	43	**89**	**97**	14	12	30	28	**71**	**69**
Mercury	ug/l	2	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
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 (Methyl Chloride)	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												
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
Others															
1,4-Dioxane	ug/l	1	N	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
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.37	ND	ND	ND	0.37	0.39	0.31	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 2018-19

Constituents	Units	MCL	MCL Type	Whittier #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				4/30/2019	8/6/2019	4/30/2019	8/6/2019	4/30/2019	8/6/2019	4/30/2019	8/6/2019	4/30/2019	8/6/2019
General Minerals													
Alkalinity	mg/l			260	260	280	280	290	260	250	240	230	210
Anion Sum	meq/l			42	41	40	12	34	31	11	38	11	10
Bicarbonate as HCO3	mg/l			320	310	340	340	350	320	300	290	280	260
Boron	mg/l	1	N	0.88	0.85	0.98	0.91	0.7	0.68	0.19	0.18	0.15	0.15
Bromide	ug/l			1300	1300	1200	1200	990	960	290	290	320	310
Calcium, Total	mg/l			200	190	190	180	190	190	81	77	82	80
Carbon Dioxide	mg/l			10	13	14	14	14	10	12	12	9.2	11
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			40	39	38	36	31	31	12	11	11	11
Chloride	mg/l	500	S	290	280	260	78	220	200	78	240	86	82
Fluoride	mg/l	2	P	0.29	0.26	0.29	0.28	0.44	0.43	0.2	0.19	0.3	0.3
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			180	140	160	110	140	120	90	84	2.4	1.5
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	17	ND	ND	18	ND	24	23
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	3.9	ND	ND	4	ND	5.5	5.2
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			14	13	13	12	9.4	9.1	4.4	4.2	3.7	3.6
Sodium, Total	mg/l			430	420	420	390	300	300	110	98	88	86
Sulfate	mg/l	500	S	**1400**	**1300**	**1300**	180	**1000**	**940**	180	**1300**	180	180
Total Dissolved Solid (TDS)	mg/l	1000	S	**2600**	**2700**	**2500**	**2400**	**2100**	**2100**	660	670	660	690
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	3.9	ND	ND	4	ND	5.5	5.2
General Physical Properties													
Apparent Color	ACU	15	S	**20**	**20**	**20**	ND	10	10	ND	15	ND	ND
Hardness (Total, as CaCO3)	mg/l			1000	1000	1000	940	890	890	350	330	370	360
Lab pH	Units			7.7	7.6	7.6	7.6	7.6	7.7	7.6	7.6	7.7	7.6
Langelier Index - 25 degree	None			1	0.9	0.97	0.92	1	1	0.56	0.55	0.6	0.49
Odor	TON	3	S	1	1	2	1	1	1	ND	1	ND	2
Specific Conductance	umho/cm	1600	S	**3500**	**3500**	**3300**	**3300**	**2800**	**2800**	1100	1100	1100	1100
Turbidity	NTU	5	S	3.8	4.6	2.7	0.17	2.7	2.4	ND	3.4	ND	0.2
Metals													
Aluminum, Total	ug/l	1000	P	30	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	1.7	1.6	1.4	1.1
Barium, Total	ug/l	1000	P	17	18	17	17	24	24	32	33	28	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
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	3.3	3.2
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	ND	0.042	ND	0.049	0.028	0.14	0.091	3.5	3.7
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	**0.59**	**0.56**	**0.47**	**0.44**	**0.37**	**0.37**	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			130	130	130	120	100	100	36	34	40	39
Manganese, Total	ug/l	50	S	**53**	**51**	**72**	**70**	**81**	**80**	23	24	2.7	2.6
Mercury	ug/l	2	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	15	12	23	18
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
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 (Methyl Chloride)	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										
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
Others													
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	1.4	1.3	2.6	2.8
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			1.8	1.6	2.3	2	ND	1.6	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 2018-19

Constituents	Units	MCL	MCL Type	Whittier #2					
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
				4/23/2019	4/23/2019	4/23/2019	4/23/2019	4/23/2019	4/23/2019
General Minerals									
Alkalinity	mg/l			210	150	200	390	220	350
Anion Sum	meq/l			13	4.1	13	28	12	18
Bicarbonate as HCO3	mg/l			260	190	250	470	260	430
Boron	mg/l	1	N	0.74	0.22	0.25	0.85	0.2	0.38
Bromide	ug/l			1500	150	590	950	350	310
Calcium, Total	mg/l			41	25	91	120	120	170
Carbon Dioxide	mg/l			4.3	2	4.1	15	5.4	11
Carbonate as CO3	mg/l			ND	2	ND	ND	ND	ND
Cation Sum	meq/l			12	4.3	13	27	12	18
Chloride	mg/l	500	S	230	24	130	240	120	100
Fluoride	mg/l	2	P	0.43	0.32	0.3	0.49	0.27	0.3
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Iodide	ug/l			260	47	18	180	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	3.4	11	21	32
Nitrate as Nitrogen	mg/l	10	P	ND	ND	0.76	2.5	4.7	7.2
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			3.9	2.3	4.4	5	4.9	5.5
Sodium, Total	mg/l			200	62	120	320	83	150
Sulfate	mg/l	500	S	86	18	240	**650**	170	350
Total Dissolved Solid (TDS)	mg/l	1000	S	700	230	760	**1700**	670	1000
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	0.76	2.5	4.7	7.2
General Physical Properties									
Apparent Color	ACU	15	S	15	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			180	80	380	650	400	600
Lab pH	Units			8	8.2	8	7.7	7.9	7.8
Langelier Index - 25 degree	None			0.57	0.46	0.88	1	0.99	1.2
Odor	TON	3	S	2	1	ND	1	ND	1
Specific Conductance	umho/cm	1600	S	1300	420	1200	**2500**	1100	1600
Turbidity	NTU	5	S	3	ND	ND	ND	ND	ND
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	2.9	ND	1.2	ND	1.2	1.4
Barium, Total	ug/l	1000	P	15	25	50	12	71	31
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	2.4	ND	1.2	3.2
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.02	0.12	3.1	0.11	2.2	4.5
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	**0.7**	ND	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			20	4.2	37	85	24	42
Manganese, Total	ug/l	50	S	**150**	39	25	**120**	ND	ND
Mercury	ug/l	2	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	6.2	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
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 (Methyl Chloride)	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	1.2
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	0.7	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
Others									
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	**3.1**	ND
Perchlorate	ug/l	6	P	ND	ND	1.9	2.1	2.6	3
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			1.3	0.4	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 2018-19

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
				3/13/2019	3/13/2019	3/13/2019	3/13/2019	3/14/2019	3/14/2019	3/14/2019	3/14/2019	3/14/2019
General Minerals												
Alkalinity	mg/l			83	110	140	160	150	160	170	150	130
Anion Sum	meq/l			22	3	7.3	8.6	8.3	9.2	8.8	8.1	6.8
Bicarbonate as HCO3	mg/l			100	130	160	190	180	200	210	180	160
Boron	mg/l	1	N	**1.6**	0.15	0.094	0.2	0.17	0.26	0.27	0.22	0.18
Bromide	ug/l			6600	150	170	180	170	220	190	160	170
Calcium, Total	mg/l			63	9.6	100	100	98	84	75	60	48
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	2	ND	ND	ND
Cation Sum	meq/l			19	3	7.6	9	8.4	9.2	8.9	8	6.9
Chloride	mg/l	500	S	**700**	21	84	100	100	120	110	95	84
Fluoride	mg/l	2	P	0.87	0.38	0.25	0.22	0.24	0.26	0.26	0.28	0.35
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			1500	34	ND	8	5.8	7.6	13	7.4	5
Nitrate (as NO3)	mg/l	45	P	ND	ND	6.5	7.4	11	14	13	19	15
Nitrate as Nitrogen	mg/l	10	P	ND	ND	1.5	1.7	2.5	3	2.9	4.3	3.4
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			4.3	1.2	2.7	4.3	4.5	5.2	5.2	4.9	5.9
Sodium, Total	mg/l			340	57	36	59	50	89	91	93	76
Sulfate	mg/l	500	S	ND	11	100	110	110	110	96	100	75
Total Dissolved Solid (TDS)	mg/l	1000	S	**1300**	190	490	530	520	560	530	500	420
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	1.5	1.7	2.5	3	2.9	4.3	3.4
General Physical Properties												
Apparent Color	ACU	15	S	**200**	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			210	25	290	300	300	260	240	190	170
Lab pH	Units			7.1	8.2	7.9	8.1	8.1	8.2	8	8.1	7.9
Langelier Index - 25 degree	None			-0.53	-0.13	0.73	0.95	0.9	0.96	0.79	0.7	0.35
Odor	TON	3	S	**17**	2	2	1	1	2	2	2	2
Specific Conductance	umho/cm	1600	S	**2300**	310	760	880	850	930	900	830	720
Turbidity	NTU	5	S	**140**	0.37	0.3	0.23	0.26	0.23	0.43	0.45	0.37
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	7.3	2.8	ND	1.4	1.2	1.6	1.6	1.4	ND
Barium, Total	ug/l	1000	P	500	21	170	150	240	96	94	68	54
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
Chromium, Total	ug/l	50	P	ND	ND	2.2	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	ND	1.1	0.04	0.32	ND	ND	ND	0.047
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	2.1	3	3.3
Iron, Total	mg/l	0.3	S	**11**	0.04	0.024	ND	ND	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			13	0.35	10	12	14	12	13	10	12
Manganese, Total	ug/l	50	S	**650**	13	ND	6.6	ND	38	20	18	**58**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	5.5	ND	ND	5.3
Selenium, Total	ug/l	50	P	5.3	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	23	ND	24	ND	ND	32	ND	22	ND
Volatile Organic Compounds												
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
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 (Methyl Chloride)	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	0.63
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
Others												
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	0.7
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			8.9	0.67	0.59	0.76	2	2	2.4	1.4	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 2018-19

Constituents	Units	MCL	MCL Type	Willowbrook #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				4/25/2019	8/28/2019	4/25/2019	8/28/2019	4/25/2019	8/28/2019	4/25/2019	8/28/2019
General Minerals											
Alkalinity	mg/l			220	220	180	180	180	170	180	180
Anion Sum	meq/l			5.3	5.3	5	5	5.7	5.7	5.7	5.8
Bicarbonate as HCO3	mg/l			270	270	220	220	210	210	220	220
Boron	mg/l	1	N	0.15	0.15	0.11	0.11	0.12	0.12	0.12	0.12
Bromide	ug/l			110	98	100	110	100	98	120	120
Calcium, Total	mg/l			41	38	52	51	61	59	61	61
Carbon Dioxide	mg/l			2.6	3.5	ND	2.3	3.4	3.4	2.6	3.6
Carbonate as CO3	mg/l			3	2.2	3	2.3	ND	ND	2	ND
Cation Sum	meq/l			5.5	5.3	5.2	5.1	5.9	5.8	6	6
Chloride	mg/l	500	S	18	18	20	20	21	21	27	31
Fluoride	mg/l	2	P	0.32	0.31	0.31	0.31	0.41	0.41	0.39	0.38
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			28	19	27	20	33	28	49	48
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			4	4.2	2.5	2.5	3.4	3.5	2.9	3.1
Sodium, Total	mg/l			61	62	41	40	41	40	45	46
Sulfate	mg/l	500	S	18	13	38	38	76	77	61	60
Total Dissolved Solid (TDS)	mg/l	1000	S	310	290	290	280	350	320	340	330
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
General Physical Properties											
Apparent Color	ACU	15	S	10	10	ND	ND	ND	ND	ND	5
Hardness (Total, as CaCO3)	mg/l			140	130	170	160	200	200	190	190
Lab pH	Units			8.2	8.1	8.2	8.2	8	8	8	8
Langelier Index - 25 degree	None			0.83	0.7	0.94	0.81	0.68	0.66	0.84	0.71
Odor	TON	3	S	2	**40**	ND	1	ND	1	ND	**4**
Specific Conductance	umho/cm	1600	S	520	520	490	500	560	560	570	580
Turbidity	NTU	5	S	ND	0.17	ND	0.22	0.26	0.51	2.4	4.6
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	5	4.4	ND	ND	3.2	3.2	5.5	4.8
Barium, Total	ug/l	1000	P	45	45	51	51	76	75	140	150
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
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.23	0.2	0.16	0.21	0.12	0.17	0.15	0.21
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.069	0.064	ND	ND	0.086	0.088	0.021	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			8	7.6	9.2	9.2	12	12	10	10
Manganese, Total	ug/l	50	S	**57**	**53**	48	47	29	29	**94**	**96**
Mercury	ug/l	2	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
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 (Methyl Chloride)	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								
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
Others											
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			ND	1.4	ND	0.33	ND	ND	ND	0.31

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 2018-19
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Constituents	Units	MCL	MCL Type	Carson #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				4/17/2019	8/19/2019	4/17/2019	8/19/2019	4/17/2019	8/19/2019	4/17/2019	8/19/2019
General Minerals											
Alkalinity	mg/l			140	140	170	170	160	160	180	180
Anion Sum	meq/l			3.4	3.4	3.9	4	5.2	5.2	6.5	6.5
Bicarbonate as HCO3	mg/l			170	170	200	200	200	200	220	220
Boron	mg/l	1	N	0.093	0.093	0.1	0.1	0.1	0.1	0.12	0.12
Bromide	ug/l			100	100	100	100	110	110	250	240
Calcium, Total	mg/l			21	21	33	33	46	45	56	56
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND	3.4	2.9
Carbonate as CO3	mg/l			4.1	2.8	4	3.3	3.3	2.6	ND	ND
Cation Sum	meq/l			3.5	3.5	4.1	4	5.4	5.3	6.7	6.6
Chloride	mg/l	500	S	19	20	20	21	22	22	47	46
Fluoride	mg/l	2	P	0.26	0.24	0.21	0.2	0.3	0.28	0.4	0.37
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			31	27	32	32	37	32	71	83
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	2.8	2.3	2.3	2.9	2.9	3.6	3.7
Sodium, Total	mg/l			48	48	42	42	46	45	58	57
Sulfate	mg/l	500	S	ND	ND	ND	ND	59	60	72	73
Total Dissolved Solid (TDS)	mg/l	1000	S	200	220	220	240	310	320	370	390
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
General Physical Properties											
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			68	68	110	110	160	160	200	200
Lab pH	Units			8.4	8.4	8.4	8.4	8.3	8.3	8	8.1
Langelier Index - 25 degree	None			0.69	0.49	0.88	0.74	0.92	0.77	0.68	0.72
Odor	TON	3	S	2	2	1	1	1	1	1	2
Specific Conductance	umho/cm	1600	S	340	340	390	390	510	510	650	650
Turbidity	NTU	5	S	0.12	0.27	ND	0.24	ND	0.17	0.29	0.52
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	14	37	37	65	68	140	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
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.18	0.2	0.15	0.19	0.14	0.19	0.12	0.15
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	ND	ND	0.024	0.023	ND	ND	0.082	0.084
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			3.8	3.8	6.7	6.5	12	12	16	15
Manganese, Total	ug/l	50	S	19	19	14	14	30	30	**93**	**100**
Mercury	ug/l	2	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
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 (Methyl Chloride)	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
Others											
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.3	0.68	0.75	0.38	ND	ND	ND	0.4

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

TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

Constituents	Units	MCL	MCL Type	Carson #2				
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
				4/19/2019	4/19/2019	4/19/2019	4/19/2019	4/19/2019
General Minerals								
Alkalinity	mg/l			160	190	180	180	170
Anion Sum	meq/l			3.8	4.4	4.8	4.3	4.6
Bicarbonate as HCO3	mg/l			190	230	220	220	210
Boron	mg/l	1	N	0.13	0.13	0.12	0.11	0.11
Bromide	ug/l			120	100	110	110	110
Calcium, Total	mg/l			3.6	12	31	35	43
Carbon Dioxide	mg/l			ND	ND	950	1400	1600
Carbonate as CO3	mg/l			16	9	ND	ND	ND
Cation Sum	meq/l			3.8	4.4	4.9	4.4	4.7
Chloride	mg/l	500	S	18	20	22	21	21
Fluoride	mg/l	2	P	0.34	0.24	0.3	0.21	0.29
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND
Iodide	mg/l			31	24	32	40	32
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND
Potassium, Total	mg/l			1.7	4.1	4.3	3.6	3
Sodium, Total	mg/l			81	77	55	38	40
Sulfate	mg/l	500	S	ND	0.78	31	ND	24
Total Dissolved Solid (TDS)	mg/l	1000	S	230	250	280	230	260
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND
General Physical Properties								
Apparent Color	ACU	15	S	**35**	10	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			11	47	120	130	140
Lab pH	Units			8.8	8.5	8.3	8.2	8.2
Langelier Index - 25 degree	None			0.5	0.78	-2	-2.1	-2.1
Odor	TON	3	S	1	1	ND	**100**	3
Specific Conductance	umho/cm	1600	S	380	440	480	420	450
Turbidity	NTU	5	S	0.12	ND	ND	0.11	0.18
Metals								
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	ND	ND	ND
Barium, Total	ug/l	1000	P	ND	6.6	15	17	24
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.38	0.34	0.19	0.21	0.13
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.02	ND	ND	ND	0.06
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND
Magnesium, Total	None			0.56	4.2	10	11	9.3
Manganese, Total	ug/l	50	S	3.4	7	13	8.7	45
Mercury	ug/l	2	P	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND
Zinc, Total	ug/l	5000	S	ND	ND	ND	ND	ND
Volatile Organic Compounds								
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND
Chloromethane (Methyl Chloride)	ug/l			ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	ND	ND	ND	ND
MTBE	ug/l	13	P	ND	ND	ND	ND	ND
Styrene	ug/l	100	P	ND	ND	ND	ND	ND
Tert Amyl Methyl Ether	ug/l			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
Toluene	ug/l	150	P	ND	ND	ND	ND	ND
Total Trihalomethanes	ug/l	80	P	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND
Vinyl chloride (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND
Xylenes (Total)	ug/l	1750	P	ND	ND	ND	ND	ND
Others								
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			4.4	ND	ND	0.46	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 2018-19

Constituents	Units	MCL	MCL Type	Carson #3											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/17/2019	8/15/2019	4/17/2019	8/15/2019	4/17/2019	8/15/2019	4/17/2019	8/15/2019	4/17/2019	8/15/2019	4/17/2019	8/15/2019
General Minerals															
Alkalinity	mg/l			350	340	150	130	160	140	160	160	170	170	170	170
Anion Sum	meq/l			7.4	7.2	3.8	3.4	3.8	3.4	3.8	3.8	4	3.9	5	5
Bicarbonate as HCO3	mg/l			420	410	180	160	200	170	200	200	210	200	210	200
Boron	mg/l	1	N	0.63	0.64	0.1	0.1	0.1	0.1	0.089	0.089	0.1	0.11	0.12	0.12
Bromide	ug/l			340	340	110	100	110	110	100	98	99	98	98	95
Calcium, Total	mg/l			7.9	7.8	20	20	17	17	26	25	31	32	48	48
Carbon Dioxide	mg/l			ND	2.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.1
Carbonate as CO3	mg/l			11	8.4	2.9	2.6	3.3	2.8	2.6	3.3	2.7	2.6	2.7	2
Cation Sum	meq/l			7.4	7.3	3.8	3.8	3.8	3.8	4	3.9	4.2	4.2	5.2	5.3
Chloride	mg/l	500	S	11	11	19	19	19	20	19	20	20	20	19	20
Fluoride	mg/l	2	P	0.57	0.55	0.24	0.24	0.3	0.29	0.26	0.26	0.26	0.25	0.37	0.35
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			100	110	30	21	32	22	29	22	30	24	27	20
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	2.6	3	3	3.1	3.1	3.7	3.7	2.8	2.9	3.4	3.4
Sodium, Total	mg/l			160	150	56	57	61	61	47	47	43	43	41	42
Sulfate	mg/l	500	S	ND	ND	11	11	ND	ND	ND	ND	ND	ND	49	50
Total Dissolved Solid (TDS)	mg/l	1000	S	460	470	220	220	220	240	220	220	220	240	290	310
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
General Physical Properties															
Apparent Color	ACU	15	S	**100**	**120**	ND	ND	10	15	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			28	28	65	65	54	55	92	89	110	110	170	170
Lab pH	Units			8.6	8.5	8.4	8.4	8.4	8.4	8.3	8.4	8.3	8.3	8.3	8.2
Langelier Index - 25 degree	None			0.68	0.6	0.55	0.5	0.46	0.38	0.56	0.6	0.68	0.62	0.82	0.78
Odor	TON	3	S	2	2	ND	ND	2	1	2	1	1	ND	1	1
Specific Conductance	umho/cm	1600	S	700	700	380	380	380	380	380	380	400	400	500	510
Turbidity	NTU	5	S	0.28	0.41	ND	0.27	0.11	0.3	0.11	0.21	ND	0.19	0.41	0.44
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	1.6
Barium, Total	ug/l	1000	P	7.5	7.2	16	16	19	20	23	23	29	29	65	66
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
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	0.32	0.33	0.3	0.21	0.23	0.2	0.17	0.17	0.15	0.13	0.13	0.12
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.049	0.045	ND	ND	ND	ND	ND	ND	ND	ND	0.029	0.029
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			2.1	2.1	3.7	3.7	2.9	3	6.5	6.4	7.9	8.1	12	12
Manganese, Total	ug/l	50	S	14	15	15	15	37	36	45	48	23	23	**52**	49
Mercury	ug/l	2	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
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 (Methyl Chloride)	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
Others															
1,4-Dioxane	ug/l	1	N	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
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			20	9.9	ND	0.72	1	0.93	3.4	0.54	2.5	0.35	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 2018-19

Constituents	Units	MCL	MCL Type	Chandler #3			
				Zone 1		Zone 2	
				4/11/2019	9/19/2019	4/11/2019	9/19/2019
General Minerals							
Alkalinity	mg/l			350	350	370	420
Anion Sum	meq/l			12	12	16	16
Bicarbonate as HCO3	mg/l			430	430	450	500
Boron	mg/l	1	N	0.19	0.2	0.27	0.3
Bromide	ug/l			630	620	730	410
Calcium, Total	mg/l			95	93	150	150
Carbon Dioxide	mg/l			ND	8.9	ND	20
Carbonate as CO3	mg/l			ND	2.2	ND	ND
Cation Sum	meq/l			13	12	16	17
Chloride	mg/l	500	S	140	150	220	150
Fluoride	mg/l	2	P	0.21	0.21	0.16	0.15
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND
Iodide	mg/l			100	88	1.6	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	**48**	31
Nitrate as Nitrogen	mg/l	10	P	ND	ND	**11**	7
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND
Potassium, Total	mg/l			4.3	4.5	4.5	4.6
Sodium, Total	mg/l			130	130	130	120
Sulfate	mg/l	500	S	37	36	56	130
Total Dissolved Solid (TDS)	mg/l	1000	S	670	690	870	950
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	**11**	7
General Physical Properties							
Apparent Color	ACU	15	S	ND	10	ND	ND
Hardness (Total, as CaCO3)	mg/l			350	340	550	560
Lab pH	Units			7.7	7.9	7.8	7.6
Langelier Index - 25 degree	None			0.91	1	1.2	1.1
Odor	TON	3	S	1	2	2	2
Specific Conductance	umho/cm	1600	S	1200	1200	1600	1500
Turbidity	NTU	5	S	1.4	1.2	0.81	0.85
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	3.4	2.3	2.5	2.7
Barium, Total	ug/l	1000	P	31	28	140	140
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	3.8
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.088	0.12	0.61	4
Copper, Total	ug/l	1300	P	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.23	0.22	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND
Magnesium, Total	None			27	26	42	45
Manganese, Total	ug/l	50	S	**80**	**76**	12	8.9
Mercury	ug/l	2	P	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	99	**110**
Selenium, Total	ug/l	50	P	ND	ND	40	16
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
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 (Methyl Chloride)	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
Others							
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	3.3	1.7
Surfactants	mg/l	0.5	S	ND	ND	ND	ND
Total Organic Carbon	mg/l			ND	1.3	ND	0.77

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 2018-19

Constituents	Units	MCL	MCL Type	Gardena #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				4/10/2019	8/5/2019	4/10/2019	8/5/2019	4/10/2019	8/5/2019	4/10/2019	8/5/2019
General Minerals											
Alkalinity	mg/l			270	250	190	180	160	160	210	200
Anion Sum	meq/l			5.8	5.5	4.7	4.5	5.4	5.3	37	37
Bicarbonate as HCO3	mg/l			320	300	230	220	200	200	260	250
Boron	mg/l	1	N	0.34	0.32	0.13	0.12	0.12	0.11	0.14	0.14
Bromide	ug/l			130	130	120	120	100	100	2600	2700
Calcium, Total	mg/l			14	13	44	41	54	51	410	380
Carbon Dioxide	mg/l			ND	2.5	ND	2.3	ND	2.6	ND	13
Carbonate as CO3	mg/l			5.2	3.9	ND	2.3	2	ND	ND	ND
Cation Sum	meq/l			5.5	5.4	5	4.6	5.5	5.3	38	35
Chloride	mg/l	500	S	17	18	28	27	22	22	**1000**	**1000**
Fluoride	mg/l	2	P	0.2	0.19	0.42	0.41	0.37	0.37	0.14	0.14
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			41	33	38	30	31	27	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	**95**	**94**
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	**21**	**21**
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			11	11	3.5	3.3	3.1	3	8.2	7.9
Sodium, Total	mg/l			91	90	43	41	42	40	150	140
Sulfate	mg/l	500	S	ND	ND	5.8	1.3	67	67	61	61
Total Dissolved Solid (TDS)	mg/l	1000	S	340	340	280	270	330	330	**2600**	**2500**
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	**21**	**21**
General Physical Properties											
Apparent Color	ACU	15	S	**30**	**25**	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			63	60	150	140	180	170	1500	1400
Lab pH	Units			8.4	8.3	8.1	8.2	8.2	8.1	7.4	7.5
Langelier Index - 25 degree	None			0.6	0.43	0.66	0.74	0.75	0.65	0.96	1
Odor	TON	3	S	2	1	**4**	2	ND	1	ND	1
Specific Conductance	umho/cm	1600	S	570	570	480	460	530	530	**3800**	**3700**
Turbidity	NTU	5	S	1.2	1.4	1	1.2	0.39	0.62	0.86	1
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	**19**	**18**	ND	ND	ND	ND	ND	ND
Barium, Total	ug/l	1000	P	16	14	43	40	33	34	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
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	7.4	7
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.13	0.084	0.11	0.1	0.1	0.069	7.4	7.7
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.16	0.14	0.023	0.02	0.048	0.046	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			6.8	6.8	9.8	8.8	11	11	120	110
Manganese, Total	ug/l	50	S	41	41	35	36	47	**52**	ND	ND
Mercury	ug/l	2	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
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 (Methyl Chloride)	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								
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
Others											
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	**11**	**10**
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	0.12	ND
Total Organic Carbon	mg/l			2.3	2.3	0.48	0.36	0.36	ND	0.37	0.41

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 2018-19

Constituents	Units	MCL	MCL Type	Gardena #2									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				4/3/2019	8/21/2019	4/3/2019	8/21/2019	4/3/2019	8/21/2019	4/3/2019	8/21/2019	4/3/2019	8/21/2019
General Minerals													
Alkalinity	mg/l			280	280	170	180	170	170	170	170	190	190
Anion Sum	meq/l			6	6	5.4	5.3	5.2	5.2	3.9	4	5.2	5.2
Bicarbonate as HCO3	mg/l			340	340	210	210	210	210	200	200	230	230
Boron	mg/l	1	N	0.3	0.3	0.15	0.14	0.12	0.12	0.093	0.093	0.12	0.12
Bromide	ug/l			120	120	120	100	100	100	100	100	160	160
Calcium, Total	mg/l			16	16	40	39	49	47	30	30	50	49
Carbon Dioxide	mg/l			ND	2.2	ND	2.2	ND	2.7	ND	2.1	ND	ND
Carbonate as CO3	mg/l			5.6	5.6	2.2	2.2	2.2	ND	2	2	2.4	3
Cation Sum	meq/l			6.4	5.7	5.5	5.3	5.4	5.2	4.1	4	5.4	5.3
Chloride	mg/l	500	S	13	13	22	22	22	21	20	20	47	47
Fluoride	mg/l	2	P	0.25	0.25	0.26	0.26	0.38	0.37	0.28	0.28	0.3	0.3
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			29	21	38	18	34	26	33	28	33	28
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			5.7	5.6	6.2	5.8	4	3.8	3.2	3.1	3.1	2.9
Sodium, Total	mg/l			110	98	52	50	43	43	41	41	44	44
Sulfate	mg/l	500	S	ND	ND	60	58	52	50	ND	ND	2.1	1.5
Total Dissolved Solid (TDS)	mg/l	1000	S	350	340	340	310	330	310	250	240	310	300
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
General Physical Properties													
Apparent Color	ACU	15	S	**25**	**30**	ND	ND	ND	ND	ND	5	ND	ND
Hardness (Total, as CaCO3)	mg/l			64	64	150	150	170	160	110	110	170	160
Lab pH	Units			8.4	8.4	8.2	8.2	8.2	8.1	8.2	8.2	8.2	8.3
Langelier Index - 25 degree	None			0.67	0.63	0.66	0.65	0.78	0.69	0.49	0.52	0.87	0.92
Odor	TON	3	S	2	2	2	2	1	ND	1	1	2	2
Specific Conductance	umho/cm	1600	S	580	580	530	540	520	520	400	400	530	530
Turbidity	NTU	5	S	0.15	0.47	ND	0.15	ND	0.23	ND	0.22	4.4	1.8
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	22	19	20	18	23	20	40	37	99	ND
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
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.22	0.24	0.11	0.2	0.1	0.24	0.1	0.2	0.094	0.12
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.027	0.027	0.034	0.032	0.041	0.042	0.071	0.076	0.024	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			5.9	5.8	13	12	11	11	8.5	8.4	10	10
Manganese, Total	ug/l	50	S	24	26	26	28	36	39	48	50	46	ND
Mercury	ug/l	2	P	ND	0.28	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
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 (Methyl Chloride)	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
Others													
1,4-Dioxane	ug/l	1	N	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
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			3.3	3	0.5	0.42	0.85	0.4	0.53	0.51	ND	0.33

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 2018-19

Constituents	Units	MCL	MCL Type	Hawthorne #1					
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
				4/10/2019	4/10/2019	4/10/2019	4/10/2019	4/10/2019	4/10/2019
General Minerals									
Alkalinity	mg/l			680	660	410	310	190	250
Anion Sum	meq/l			15	14	9.7	7.5	12	18
Bicarbonate as HCO3	mg/l			830	800	490	380	230	310
Boron	mg/l	1	N	**1.3**	**1.1**	0.52	0.38	0.12	0.19
Bromide	ug/l			260	300	310	220	780	840
Calcium, Total	mg/l			15	16	36	32	110	160
Carbon Dioxide	mg/l			ND	ND	ND	ND	ND	ND
Carbonate as CO3	mg/l			17	16	8	6.2	2.4	ND
Cation Sum	meq/l			15	15	10	7.2	12	18
Chloride	mg/l	500	S	46	39	56	43	280	300
Fluoride	mg/l	2	P	0.12	0.24	0.21	0.38	0.29	0.27
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Iodide	mg/l			78	110	64	55	48	110
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			20	15	14	9.6	7.8	5.4
Sodium, Total	mg/l			280	300	140	97	75	150
Sulfate	mg/l	500	S	ND	0.65	ND	ND	29	210
Total Dissolved Solid (TDS)	mg/l	1000	S	880	850	550	440	770	1000
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND
General Physical Properties									
Apparent Color	ACU	15	S	**150**	**200**	**30**	**20**	ND	ND
Hardness (Total, as CaCO3)	mg/l			87	81	180	140	430	580
Lab pH	Units			8.5	8.5	8.4	8.4	8.2	7.8
Langelier Index - 25 degree	None			1.1	1.2	1.2	1	1.1	1
Odor	TON	3	S	**4**	**40**	1	**4**	**4**	2
Specific Conductance	umho/cm	1600	S	1400	1400	940	740	1300	**1800**
Turbidity	NTU	5	S	0.22	0.24	0.13	ND	ND	1
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	ND	1.7
Barium, Total	ug/l	1000	P	36	32	36	30	130	48
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	1.2	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.19	0.22	0.097	0.093	0.093	0.051
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.15	0.15	0.16	0.077	ND	0.12
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			12	10	23	14	37	44
Manganese, Total	ug/l	50	S	14	**55**	**57**	33	**100**	**450**
Mercury	ug/l	2	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	0.6
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND
Chloromethane (Methyl Chloride)	ug/l			ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	**13**
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	0.63
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	**30**
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
Others									
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			14	20	4	2.8	ND	1.2

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 2018-19

Constituents	Units	MCL	MCL Type	Inglewood #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				5/9/2019	9/9/2019	5/9/2019	9/9/2019	5/9/2019	9/9/2019	5/9/2019	9/9/2019	5/9/2019	9/9/2019
General Minerals													
Alkalinity	mg/l			1400	1400	660	690	330	330	230	230	280	270
Anion Sum	meq/l			73	75	25	25	23	22	15	15	23	22
Bicarbonate as HCO3	mg/l			1600	1700	800	840	400	400	280	280	340	320
Boron	mg/l	1	N	**9.8**	**9.6**	**1.5**	**1.5**	0.48	0.48	0.19	0.2	0.23	0.23
Bromide	ug/l			17000	16000	2900	2500	4300	4100	1200	1200	2300	2300
Calcium, Total	mg/l			74	57	69	62	160	160	120	110	210	200
Carbon Dioxide	mg/l			26	28	16	17	13	13	7.3	7.3	28	21
Carbonate as CO3	mg/l			10	11	4.1	4.3	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			74	65	24	24	23	22	14	14	24	23
Chloride	mg/l	500	S	**1600**	**1700**	420	400	460	450	290	280	470	460
Fluoride	mg/l	2	P	0.3	0.33	0.26	0.29	0.43	0.46	0.37	0.4	0.22	0.24
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			4100	6400	530	320	990	500	90	96	2.1	2.6
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	30	27
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	6.9	6.2
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			46	36	19	20	9.7	9.6	11	11	10	10
Sodium, Total	mg/l			1500	1300	400	410	210	200	98	97	160	150
Sulfate	mg/l	500	S	ND	ND	16	14	160	160	110	100	180	170
Total Dissolved Solid (TDS)	mg/l	1000	S	**4000**	**4100**	**1400**	**1400**	**1200**	**1200**	810	800	**1300**	**1400**
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	6.9	6.2
General Physical Properties													
Apparent Color	ACU	15	S	**200**	**200**	**75**	**120**	10	10	10	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			370	290	290	270	660	660	500	480	820	800
Lab pH	Units			8	8	7.9	7.9	7.7	7.7	7.8	7.8	7.3	7.4
Langelier Index - 25 degree	None			1.7	1.6	1.2	1.2	1	1	0.89	0.87	0.73	0.82
Odor	TON	3	S	**8**	**8**	**4**	2	ND	2	1	2	ND	2
Specific Conductance	umho/cm	1600	S	**7000**	**7100**	**2500**	**2500**	**2300**	**2300**	1500	1500	**2300**	**2300**
Turbidity	NTU	5	S	1	1	0.82	0.89	4.6	4.1	2.3	2.1	0.12	0.2
Metals													
Aluminum, Total	ug/l	1000	P	ND	100	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	2.8	**12**	10	9.3	ND	1.7	ND	ND	ND	1.6
Barium, Total	ug/l	1000	P	200	340	110	99	63	57	140	130	160	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
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.14	0.16	0.13	0.12	0.043	0.023	0.038	0.042	0.21	0.29
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	**1.5**	**1.5**	**0.6**	**0.63**	**0.57**	**0.56**	**0.43**	**0.4**	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			46	37	29	27	63	63	50	50	72	72
Manganese, Total	ug/l	50	S	**76**	**120**	**70**	**74**	**420**	**420**	**250**	**240**	9.4	9.2
Mercury	ug/l	2	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	16	**55**	ND	ND	ND	7.7	ND	ND	9.3	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
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 (Methyl Chloride)	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										
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	0.56	0.5
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
Others													
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	1	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	2.2	1.8
Surfactants	mg/l	0.5	S	0.1	ND	ND	ND	ND	ND	ND	ND	ND	0.13
Total Organic Carbon	mg/l			84	78	10	12	1.1	1.5	0.72	0.56	0.55	0.58

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 2018-19

Constituents	Units	MCL	MCL Type	Inglewood #3													
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Zone 7	
				4/9/2019	8/27/2019	4/9/2019	8/27/2019	4/9/2019	8/27/2019	4/9/2019	8/27/2019	4/9/2019	8/27/2019	4/9/2019	8/27/2019	4/9/2019	8/27/2019
General Minerals																	
Alkalinity	mg/l			690	670	1100	1100	550	540	780	770	430	430	210	210	230	230
Anion Sum	meq/l			46	44	23	23	11	11	16	16	11	11	8.9	8.3	18	18
Bicarbonate as HCO3	mg/l			840	820	1300	1300	660	650	950	940	530	520	260	250	280	280
Boron	mg/l	1	N	**4**	**4.2**	**5.3**	**5.2**	**1.2**	**1.1**	**2.2**	**2.2**	0.56	0.54	0.11	0.11	0.11	0.11
Bromide	ug/l			8600	8700	1700	1700	140	150	160	160	620	600	540	510	1400	1500
Calcium, Total	mg/l			20	19	11	11	5.8	5.6	16	16	53	54	80	75	190	180
Carbon Dioxide	mg/l			ND	11	ND	8.5	ND	4.2	ND	9.7	ND	8.5	ND	4.1	ND	5.8
Carbonate as CO3	mg/l			11	6.7	27	21	14	11	16	9.7	5.4	3.4	ND	ND	ND	ND
Cation Sum	meq/l			43	41	25	22	12	10	17	16	11	11	8.8	8.4	18	18
Chloride	mg/l	500	S	**1100**	**1100**	48	47	14	15	24	24	97	92	160	140	430	430
Fluoride	mg/l	2	P	0.48	0.47	0.52	0.51	0.23	0.23	0.22	0.22	0.27	0.25	0.33	0.32	0.37	0.36
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			3000	2400	540	380	53	39	54	52	170	130	5.4	35	79	98
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			18	23	12	16	6.9	7.9	17	20	13	12	7.7	7.2	8	8
Sodium, Total	mg/l			940	880	540	480	250	220	340	310	160	150	60	59	92	93
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.7	5.1	49	55
Total Dissolved Solid (TDS)	mg/l	1000	S	**2500**	**2600**	**1500**	**1500**	690	680	960	970	640	630	530	510	**1200**	**1100**
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
General Physical Properties																	
Apparent Color	ACU	15	S	**200**	**220**	**500**	**700**	**250**	**300**	**450**	**300**	**35**	**30**	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			91	89	54	54	27	26	81	81	200	200	300	280	700	680
Lab pH	Units			8.3	8.1	8.5	8.4	8.5	8.4	8.4	8.2	8.2	8	8	8	8	7.9
Langelier Index - 25 degree	None			1	0.9	1.2	1.2	0.68	0.54	1.1	0.92	1.2	1	0.86	0.85	1.3	1.1
Odor	TON	3	S	**4**	**8**	**67**	**67**	**8**	1	1	2	2	2	2	**17**	**67**	**67**
Specific Conductance	umho/cm	1600	S	**4700**	**4700**	**2100**	**2100**	1100	1100	1500	1500	1100	1100	920	890	**1900**	**1900**
Turbidity	NTU	5	S	0.4	0.56	0.58	1.1	0.39	0.54	0.42	0.94	0.13	0.44	ND	0.15	0.57	0.56
Metals																	
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	36	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
Arsenic, Total	ug/l	10	P	2.5	4.1	1.3	ND	1.6	ND	2.5	2.4	ND	ND	ND	ND	2.2	2.7
Barium, Total	ug/l	1000	P	66	60	28	24	15	13	48	41	52	53	77	78	260	270
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
Chromium, Total	ug/l	50	P	ND	ND	3.7	5.1	1.3	ND	2.2	2.7	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.16	0.23	0.35	0.47	0.25	0.51	0.2	0.6	0.1	0.13	0.093	0.12	0.076	0.083
Copper, Total	ug/l	1300	P	ND	ND	2.6	ND	2.2	ND	2.2	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.2	0.2	**0.56**	**0.56**	0.16	0.15	**0.36**	**0.4**	0.063	0.09	0.024	0.024	0.13	0.12
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			10	10	6.4	6.4	3	2.9	10	10	17	17	24	23	55	55
Manganese, Total	ug/l	50	S	**62**	**58**	24	22	21	22	41	38	47	**56**	**120**	**120**	**390**	**380**
Mercury	ug/l	2	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	ND
Selenium, Total	ug/l	50	P	7.5	15	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
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	1.7	2.1
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	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 (Methyl Chloride)	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	**48**	**61**
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														
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	**12**	**12**
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	**0.75**	**0.79**
Xylenes (Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Others																	
1,4-Dioxane	ug/l	1	N	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
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.15	0.17	**1**	**0.74**
Total Organic Carbon	mg/l			28	24	100	86	18	15	17	26	3.5	3.5	1.6	2.5	4.2	4.4

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

TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

Constituents	Units	MCL	MCL Type	Lawndale #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/1/2019	8/20/2019	5/1/2019	8/20/2019	5/1/2019	8/20/2019	5/1/2019	8/20/2019	5/1/2019	8/20/2019	5/1/2019	8/20/2019
General Minerals															
Alkalinity	mg/l			450	450	610	600	240	240	190	190	180	190	240	230
Anion Sum	meq/l			9.4	9.3	13	13	5.6	5.6	6.2	6.4	6.6	6.9	25	24
Bicarbonate as HCO3	mg/l			540	540	740	730	290	290	230	230	220	230	300	280
Boron	mg/l	1	N	0.83	0.81	**1.1**	**1.1**	0.18	0.18	0.11	0.11	0.098	0.098	0.3	0.28
Bromide	ug/l			500	370	260	200	130	120	220	190	230	220	1500	1400
Calcium, Total	mg/l			11	11	4.3	4.4	16	16	56	54	57	55	220	210
Carbon Dioxide	mg/l			2.8	2.8	3.8	3.8	3	ND	2.4	2.4	2.3	2.4	12	9.2
Carbonate as CO3	mg/l			11	11	15	15	3	4.7	2.4	2.4	2.3	2.4	ND	ND
Cation Sum	meq/l			9.3	9	12	12	5.7	5.4	6.6	6.4	7	6.8	24	23
Chloride	mg/l	500	S	14	13	29	30	24	25	52	54	62	66	**580**	**560**
Fluoride	mg/l	2	P	0.45	0.41	0.33	0.3	0.33	0.32	0.39	0.37	0.44	0.4	0.24	0.22
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			130	140	86	76	44	28	37	27	48	30	14	11
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	16	15
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.7	3.3
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			6	5.7	9.5	9.5	9.8	9.4	4.5	4.4	5.4	5.4	9.6	9
Sodium, Total	mg/l			190	180	260	260	89	84	50	49	59	58	190	180
Sulfate	mg/l	500	S	ND	ND	ND	ND	1.8	1.7	44	47	56	61	160	150
Total Dissolved Solid (TDS)	mg/l	1000	S	550	560	750	770	310	320	360	370	400	390	**1600**	**1600**
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.7	3.3
General Physical Properties															
Apparent Color	ACU	15	S	**50**	**100**	**150**	**300**	15	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			41	41	24	25	79	78	210	210	220	210	780	740
Lab pH	Units			8.5	8.5	8.5	8.5	8.2	8.4	8.2	8.2	8.2	8.2	7.6	7.7
Langelier Index - 25 degree	None			0.81	0.85	0.57	0.58	0.44	0.64	0.85	0.88	0.86	0.82	1	1
Odor	TON	3	S	**8**	3	**4**	2	2	1	1	ND	ND	1	ND	2
Specific Conductance	umho/cm	1600	S	880	880	1200	1200	550	540	630	630	680	680	**2400**	**2400**
Turbidity	NTU	5	S	0.24	0.43	0.32	0.6	ND	0.14	0.14	0.26	0.13	0.25	ND	0.17
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	1.4	1.2	ND	ND	1.5	1.5	ND	ND	1.8	1.8
Barium, Total	ug/l	1000	P	14	12	14	13	16	15	30	31	99	96	100	98
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
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	0.32	0.16	0.34	0.17	0.17	0.11	0.14	0.088	0.13	0.1	0.36	0.32
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.064	0.062	0.11	0.11	0.038	0.037	0.07	0.068	0.031	0.03	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			3.3	3.2	3.3	3.4	9.4	9.3	18	18	18	17	56	53
Manganese, Total	ug/l	50	S	12	11	32	32	50	49	**75**	**76**	**76**	**76**	**100**	**80**
Mercury	ug/l	2	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
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 (Methyl Chloride)	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	1.8	1.8
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												
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
Others															
1,4-Dioxane	ug/l	1	N	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	3.8	4.6
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			12	10	8.9	10	1.7	1.5	0.48	0.42	0.47	0.4	0.55	0.42

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 2018-19

Constituents	Units	MCL	MCL Type	Lomita #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				4/30/2019	8/27/2019	4/30/2019	8/27/2019	4/30/2019	8/27/2019	4/30/2019	8/27/2019	4/30/2019	8/27/2019
General Minerals													
Alkalinity	mg/l			260	270	270	260	280	280	240	240	270	270
Anion Sum	meq/l			27	27	27	25	13	16	12	14	31	32
Bicarbonate as HCO3	mg/l			320	330	330	320	340	340	290	290	330	330
Boron	mg/l	1	N	0.57	0.54	0.53	0.6	0.37	0.49	0.43	0.47	0.67	0.69
Bromide	ug/l			7900	8100	7900	7000	2200	3600	2600	3100	8900	9200
Calcium, Total	mg/l			220	220	200	190	73	110	83	96	260	260
Carbon Dioxide	mg/l			12	8.6	12	8.3	7.4	8.8	5.8	6	16	14
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			27	26	25	24	13	17	13	14	31	31
Chloride	mg/l	500	S	**770**	**770**	**760**	**690**	240	370	260	310	**890**	**910**
Fluoride	mg/l	2	P	0.13	0.14	0.14	0.15	0.21	0.18	0.29	0.26	0.097	0.098
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			1700	1400	1400	1300	460	730	540	600	1700	1600
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			18	18	16	17	9.3	12	9	11	18	19
Sodium, Total	mg/l			240	230	240	220	160	180	140	160	260	260
Sulfate	mg/l	500	S	4.4	8	21	22	12	19	4.4	7	28	26
Total Dissolved Solid (TDS)	mg/l	1000	S	**2000**	**1700**	**1800**	**1500**	730	970	700	840	**2300**	**2400**
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
General Physical Properties													
Apparent Color	ACU	15	S	ND	ND	**20**	15	**20**	**20**	**35**	**20**	ND	ND
Hardness (Total, as CaCO3)	mg/l			800	800	730	700	270	410	300	360	940	950
Lab pH	Units			7.8	7.8	7.9	7.8	8.1	7.8	8.1	7.9	7.8	7.6
Langelier Index - 25 degree	None			1	1.2	1	1.2	0.83	0.89	0.84	0.93	1	1.1
Odor	TON	3	S	**8**	**100**	2	2	**4**	2	**8**	2	2	2
Specific Conductance	umho/cm	1600	S	**2900**	**2900**	**2800**	**2700**	1300	**1800**	1300	1500	**3200**	**3400**
Turbidity	NTU	5	S	**7**	**23**	1.5	1.6	1.1	1.4	0.2	0.41	0.78	0.86
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	2.1	3.2	1.7	2.6	1.1	ND	ND	ND	2	3.6
Barium, Total	ug/l	1000	P	130	130	130	120	44	71	51	61	150	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
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.077	0.097	0.11	0.11	0.19	0.21	0.17	0.17	0.11	0.11
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.068	0.1	0.26	0.26	0.054	0.054	0.12	0.16	0.15	0.17
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			61	62	56	56	22	34	23	29	70	73
Manganese, Total	ug/l	50	S	**440**	**440**	**430**	**350**	**110**	**170**	**150**	**170**	**480**	**500**
Mercury	ug/l	2	P	ND	0.57	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	32	19	12	13	ND	ND	5.2	ND	11	19
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
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 (Methyl Chloride)	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										
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
Others													
1,4-Dioxane	ug/l	1	N	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
Surfactants	mg/l	0.5	S	0.13	ND	ND	0.1	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			1.1	1.2	ND	1.3	2.5	2.2	2.5	2.3	ND	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 2018-19

Constituents	Units	MCL	MCL Type	Long Beach #3									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				4/3/2019	8/12/2019	4/3/2019	8/12/2019	4/3/2019	8/12/2019	4/3/2019	8/12/2019	4/3/2019	8/12/2019
General Minerals													
Alkalinity	mg/l			360	360	130	120	150	120	120	120	140	130
Anion Sum	meq/l			7.8	7.7	3.7	3.5	3.7	3.1	29	29	30	28
Bicarbonate as HCO3	mg/l			440	440	160	150	180	150	140	140	180	150
Boron	mg/l	1	N	0.4	0.38	0.12	0.12	0.12	0.12	0.11	0.12	0.11	0.12
Bromide	ug/l			220	220	100	110	160	160	7500	7200	7800	6900
Calcium, Total	mg/l			12	12	17	16	18	18	320	320	330	320
Carbon Dioxide	mg/l			ND	2.3	ND	ND	ND	ND	ND	3.6	ND	3.9
Carbonate as CO3	mg/l			11	9	2.6	2.4	2.3	ND	ND	ND	ND	ND
Cation Sum	meq/l			8.6	8	3.8	3.8	3.7	3.7	29	30	30	29
Chloride	mg/l	500	S	17	16	19	19	25	24	**890**	**890**	**900**	**860**
Fluoride	mg/l	2	P	0.48	0.52	0.36	0.38	0.32	0.35	0.16	0.16	0.16	0.16
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			55	53	34	25	47	39	1900	1700	2200	1800
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			3.9	3.8	2	1.8	2.2	2.1	15	16	12	12
Sodium, Total	mg/l			170	160	61	61	57	58	140	140	150	150
Sulfate	mg/l	500	S	ND	ND	21	22	ND	ND	71	72	80	82
Total Dissolved Solid (TDS)	mg/l	1000	S	470	450	240	220	230	230	**1800**	**2100**	**2000**	**1700**
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
General Physical Properties													
Apparent Color	ACU	15	S	**50**	**50**	10	**20**	**20**	**25**	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			45	44	54	51	57	57	1100	1100	1100	1100
Lab pH	Units			8.6	8.5	8.4	8.4	8.3	8.3	7.8	7.8	7.8	7.8
Langelier Index - 25 degree	None			0.86	0.76	0.41	0.4	0.38	0.31	1	0.99	1.2	1.1
Odor	TON	3	S	2	2	1	2	2	2	**4**	2	2	2
Specific Conductance	umho/cm	1600	S	750	750	380	380	370	360	**3100**	**3100**	**3100**	**3100**
Turbidity	NTU	5	S	0.2	0.24	ND	0.24	ND	0.14	1	1.2	1.3	1.3
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	1.9	1.3	2.1
Barium, Total	ug/l	1000	P	10	8.8	15	13	7.6	6.7	110	100	180	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
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.28	0.27	0.25	0.21	0.22	0.17	0.037	0.033	0.038	0.086
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.042	0.039	ND	ND	0.027	0.026	0.23	0.23	0.26	0.25
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			3.6	3.4	2.7	2.6	2.9	2.9	81	83	74	73
Manganese, Total	ug/l	50	S	12	11	6.8	7	7.7	8.3	**240**	**250**	**320**	**320**
Mercury	ug/l	2	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	5.9	7.6	5.4	7.1
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
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 (Methyl Chloride)	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	9.5	11	10	11
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
Others													
1,4-Dioxane	ug/l	1	N	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
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			7.6	7	0.85	1.1	2.5	1.8	0.5	0.76	0.85	0.85

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 2018-19

Constituents	Units	MCL	MCL Type	Long Beach #8					
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
				8/21/2019	8/21/2019	8/21/2019	8/21/2019	8/21/2019	8/21/2019
General Minerals									
Alkalinity	mg/l			520	440	600	390	300	200
Anion Sum	meq/l			11	9.8	14	24	18	17
Bicarbonate as HCO3	mg/l			630	540	730	470	360	240
Boron	mg/l	1	N	**1.1**	0.76	**1.3**	**1.1**	0.58	0.19
Bromide	ug/l			330	430	680	4200	3300	1600
Calcium, Total	mg/l			7.2	9.4	10	47	62	99
Carbon Dioxide	mg/l			2.6	2.8	3	4.9	3.7	5
Carbonate as CO3	mg/l			16	11	19	4.8	3.7	ND
Cation Sum	meq/l			10	9.7	14	22	17	17
Chloride	mg/l	500	S	21	32	81	**580**	420	450
Fluoride	mg/l	2	P	0.76	0.8	0.57	0.23	0.18	0.46
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Iodide	mg/l			89	44	46	1300	980	62
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			1.7	3.8	7.7	14	11	7.1
Sodium, Total	mg/l			220	200	290	390	260	200
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	22
Total Dissolved Solid (TDS)	mg/l	1000	S	690	590	870	**1400**	1000	**1200**
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND
General Physical Properties									
Apparent Color	ACU	15	S	**400**	**400**	**200**	**100**	**40**	15
Hardness (Total, as CaCO3)	mg/l			26	36	45	250	270	400
Lab pH	Units			8.6	8.5	8.6	8.2	8.2	7.9
Langelier Index - 25 degree	None			0.82	0.79	0.98	1.1	1.1	0.81
Odor	TON	3	S	2	2	**8**	2	**8**	**40**
Specific Conductance	umho/cm	1600	S	1000	950	1400	**2500**	**2000**	**2000**
Turbidity	NTU	5	S	0.65	0.59	0.65	0.39	1.3	**5.4**
Metals									
Aluminum, Total	ug/l	1000	P	22	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	1.4	ND	1.3	1.9	2	ND
Barium, Total	ug/l	1000	P	9.3	9.7	14	22	20	120
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	1	1.3	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.38	0.3	0.35	0.28	0.21	0.031
Copper, Total	ug/l	1300	P	ND	2.6	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.18	0.16	0.21	0.18	0.23	**0.74**
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			1.9	3.1	4.8	33	27	36
Manganese, Total	ug/l	50	S	16	24	22	15	**51**	**330**
Mercury	ug/l	2	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	8.9	7.1	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
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 (Methyl Chloride)	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
Others									
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			20	19	32	18	14	0.82

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 2018-19

Constituents	Units	MCL	MCL Type	Manhattan Beach #1													
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Zone 7	
				3/5/2019	7/31/2019	3/5/2019	7/31/2019	3/4/2019	7/30/2019	3/4/2019	7/30/2019	3/4/2019	7/30/2019	3/4/2019	7/30/2019	3/4/2019	7/30/2019
General Minerals																	
Alkalinity	mg/l			570	520	440	430	890	880	470	470	120	120	150	140	130	140
Anion Sum	meq/l			130	130	48	48	21	21	10	10	410	390	140	140	9.7	10
Bicarbonate as HCO3	mg/l			690	640	530	520	1100	1100	570	570	150	150	190	170	160	170
Boron	mg/l	1	N	**15**	**15**	**6.4**	**6.6**	**3.6**	**3.7**	0.39	0.4	0.58	0.58	0.13	0.13	0.17	0.17
Bromide	ug/l			26000	26000	9700	9400	2300	2300	330	330	43000	42000	14000	14000	340	360
Calcium, Total	mg/l			50	47	32	32	16	16	27	27	2000	1800	960	910	51	53
Carbon Dioxide	mg/l			ND	10	ND	6.8	ND	11	ND	5.9	ND	16	ND	8.8	ND	2.8
Carbonate as CO3	mg/l			5.6	4.2	5.4	4.2	18	11	5.9	5.9	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			120	110	42	44	20	20	11	10	400	340	140	130	10	10
Chloride	mg/l	500	S	**4100**	**4200**	**1400**	**1400**	120	120	34	34	**13000**	**12000**	**4400**	**4300**	120	130
Fluoride	mg/l	2	P	0.75	0.77	0.58	0.6	0.35	0.36	0.2	0.21	0.095	0.081	0.14	0.14	0.23	0.26
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			5800	7700	2500	2800	810	ND	120	130	220	200	34	29	33	30
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	**63**	ND	ND	ND	8.5	9
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	**14**	ND	ND	ND	1.9	2
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			25	32	17	22	25	29	10	11	170	170	59	57	5.9	6
Sodium, Total	mg/l			2500	2500	900	930	410	410	190	180	4800	4000	1600	1300	140	140
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	ND	ND	ND	**1700**	**1700**	**580**	**570**	170	180
Total Dissolved Solid (TDS)	mg/l	1000	S	**7400**	**7300**	**2700**	**2600**	**1300**	**1200**	610	580	**27000**	**26000**	**9000**	**10000**	620	630
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	**14**	ND	ND	ND	1.9	2
General Physical Properties																	
Apparent Color	ACU	15	S	**120**	**100**	**120**	**200**	**200**	**30**	**40**	**30**	**50**	**30**	ND	**25**	ND	ND
Hardness (Total, as CaCO3)	mg/l			270	260	130	130	89	89	110	110	9100	8300	3500	3300	190	200
Lab pH	Units			8.1	8	8.2	8.1	8.4	8.2	8.2	8.2	7.6	7.2	7.6	7.5	7.9	8
Langelier Index - 25 degree	None			1.2	0.98	1	0.9	1.2	1	0.92	0.99	1.7	1.2	1.4	1.3	0.32	0.56
Odor	TON	3	S	**4**	**8**	**4**	**4**	3	**8**	1	2	2	1	2	1	2	1
Specific Conductance	umho/cm	1600	S	**13000**	**13000**	**5000**	**5000**	**2000**	**2000**	990	990	**34000**	**34000**	**13000**	**13000**	1000	1000
Turbidity	NTU	5	S	0.71	0.53	0.6	0.74	0.63	0.55	0.12	0.16	**9.3**	**42**	**5.8**	**19**	0.48	0.52
Metals																	
Aluminum, Total	ug/l	1000	P	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
Arsenic, Total	ug/l	10	P	9.1	5.4	3.1	2.3	ND	1.1	ND	ND	8.2	**12**	3.2	3.3	4.5	5.2
Barium, Total	ug/l	1000	P	740	770	220	200	110	97	41	43	190	190	220	220	20	22
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
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	1.1	1.9	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	ND	0.19	0.22	0.31	0.29	0.12	0.16	ND	ND	ND	ND	0.057	0.12
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	**0.57**	**0.46**	0.16	0.16	0.21	0.22	0.087	0.08	**4.4**	**4.1**	**1.7**	**1.7**	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			36	35	12	13	12	12	10	10	1000	920	260	260	15	16
Manganese, Total	ug/l	50	S	**52**	47	50	42	42	45	**67**	**64**	**920**	**870**	**1100**	**1100**	**66**	**68**
Mercury	ug/l	2	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	ND
Selenium, Total	ug/l	50	P	23	23	12	8.4	ND	ND	ND	ND	41	49	15	15	ND	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	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	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 (Methyl Chloride)	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														
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
Others																	
1,4-Dioxane	ug/l	1	N	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	0.84	1.1
Surfactants	mg/l	0.5	S	0.25	0.13	ND	ND	ND	ND	ND	ND	ND	0.39	0.14	ND	ND	ND
Total Organic Carbon	mg/l			20	19	36	30	47	48	5.3	5.3	1.5	1.7	0.54	0.48	1	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 2018-19

Constituents	Units	MCL	MCL Type	PM-2 Police Station							
				Zone 1		Zone 2		Zone 3		Zone 4	
				3/29/2019	8/16/2019	3/29/2019	8/16/2019	3/29/2019	8/16/2019	3/29/2019	8/16/2019
General Minerals											
Alkalinity	mg/l			120	120	140	150	140	140	140	140
Anion Sum	meq/l			180	190	40	45	14	14	12	12
Bicarbonate as HCO3	mg/l			140	140	170	180	170	170	170	180
Boron	mg/l	1	N	ND	ND	ND	0.23	0.33	0.32	0.42	0.4
Bromide	ug/l			20000	21000	4400	5000	1000	1000	990	830
Calcium, Total	mg/l			1200	1100	360	400	95	90	67	63
Carbon Dioxide	mg/l			ND	5.8	ND	4.7	ND	2.8	ND	2.3
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			180	180	40	45	14	14	12	11
Chloride	mg/l	500	S	**5800**	**6100**	**1300**	**1400**	250	260	180	160
Fluoride	mg/l	2	P	0.14	0.13	0.6	0.65	0.38	0.37	0.35	0.37
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			88	120	110	120	120	130	160	160
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			92	91	15	21	8.8	9.4	7.5	7.7
Sodium, Total	mg/l			1700	1700	280	310	160	160	150	150
Sulfate	mg/l	500	S	**680**	**690**	59	65	200	200	190	200
Total Dissolved Solid (TDS)	mg/l	1000	S	**12000**	**13000**	**2700**	**3300**	870	900	740	700
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
General Physical Properties											
Apparent Color	ACU	15	S	5	ND	**30**	**20**	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			5300	4900	1400	1500	360	340	250	240
Lab pH	Units			7.6	7.6	7.8	7.8	8.2	8	8.1	8.1
Langelier Index - 25 degree	None			1.4	1.3	1.1	1.2	0.93	0.73	0.73	0.74
Odor	TON	3	S	ND	ND	**40**	**8**	2	ND	2	ND
Specific Conductance	umho/cm	1600	S	**18000**	**18000**	**4300**	**4800**	1500	1500	1200	1200
Turbidity	NTU	5	S	0.71	0.86	**5.1**	**5.2**	ND	0.17	ND	ND
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	4.3	8.9	4.6	6.4	1.9	2.4	1.4	1.8
Barium, Total	ug/l	1000	P	250	260	280	330	36	38	38	38
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
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	0.088	0.13	0.11	0.14
Copper, Total	ug/l	1300	P	2.2	2.2	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.26	0.26	**1.2**	**1.5**	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			560	530	120	130	30	29	21	20
Manganese, Total	ug/l	50	S	**400**	**390**	**1000**	**1000**	**150**	**150**	**67**	**67**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	0.25	ND	0.32
Nickel, Total	ug/l	100	P	ND	7.9	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	22	33	5.5	9.8	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
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 (Methyl Chloride)	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								
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
Others											
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	ND	0.14	0.14	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			2.2	ND	2	0.9	1.3	1.4	1.4	1.5

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 2018-19

Constituents	Units	MCL	MCL Type	PM-3 Madrid							
				Zone 1		Zone 2		Zone 3		Zone 4	
				4/8/2019	8/20/2019	4/8/2019	8/20/2019	4/8/2019	8/20/2019	4/8/2019	8/20/2019
General Minerals											
Alkalinity	mg/l			310	310	180	190	190	190	190	190
Anion Sum	meq/l			6.8	6.8	9	9.6	11	12	15	15
Bicarbonate as HCO3	mg/l			370	370	220	230	230	230	230	230
Boron	mg/l	1	N	0.34	0.38	0.17	0.17	0.2	0.2	0.38	0.39
Bromide	ug/l			120	130	1000	1100	1600	1500	2000	1900
Calcium, Total	mg/l			12	13	78	80	96	95	110	100
Carbon Dioxide	mg/l			ND	2.4	ND	3.8	ND	4.7	ND	6
Carbonate as CO3	mg/l			6	6	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			7.1	7.5	9	9.4	11	11	14	14
Chloride	mg/l	500	S	22	24	190	210	260	270	320	320
Fluoride	mg/l	2	P	0.3	0.3	0.27	0.27	0.33	0.32	0.32	0.32
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			37	38	130	150	210	240	270	290
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	5.4	5.2	5.8	5.9	7.1	7
Sodium, Total	mg/l			120	130	75	77	94	93	140	140
Sulfate	mg/l	500	S	ND	ND	2	ND	5.7	9.5	85	87
Total Dissolved Solid (TDS)	mg/l	1000	S	360	380	570	600	720	740	910	910
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
General Physical Properties											
Apparent Color	ACU	15	S	**30**	**40**	ND	ND	ND	ND	10	10
Hardness (Total, as CaCO3)	mg/l			66	73	280	290	350	350	410	380
Lab pH	Units			8.4	8.4	8	8	8.1	7.9	7.8	7.8
Langelier Index - 25 degree	None			0.62	0.64	0.82	0.78	0.96	0.78	0.73	0.74
Odor	TON	3	S	2	1	1	1	2	2	ND	2
Specific Conductance	umho/cm	1600	S	660	660	970	1000	1200	1200	1600	1600
Turbidity	NTU	5	S	0.26	1.3	0.19	0.68	1	1.6	4.4	**5.3**
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	ND	ND	1.4	ND	ND	ND	9.1	9
Barium, Total	ug/l	1000	P	20	18	38	36	67	68	79	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
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.12	0.16	0.08	0.074	0.069	0.071	ND	0.021
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.039	0.048	ND	0.18	0.11	0.1	**0.52**	**0.54**
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			8.7	9.8	21	23	27	27	33	32
Manganese, Total	ug/l	50	S	22	21	**59**	**65**	**59**	**59**	**340**	**350**
Mercury	ug/l	2	P	ND	ND	ND	0.37	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	1.3	1.2	1.9	1
1,2-Dichloroethane	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/l	70	P	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane (Methyl Chloride)	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	0.56	0.56	2.5	2.2
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	0.93	0.89
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
Others											
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			3.2	2.7	1.3	0.9	0.81	0.87	1	0.83

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 2018-19

Constituents	Units	MCL	MCL Type	PM-4 Mariner							
				Zone 1		Zone 2		Zone 3		Zone 4	
				5/12/2019	9/8/2019	5/12/2019	9/8/2019	5/12/2019	9/8/2019	5/12/2019	9/8/2019
General Minerals											
Alkalinity	mg/l			250	250	150	150	140	140	200	200
Anion Sum	meq/l			5.8	5.7	220	210	8.8	8.9	11	11
Bicarbonate as HCO3	mg/l			310	300	180	180	170	170	240	240
Boron	mg/l	1	N	0.17	0.17	0.26	0.26	0.25	0.23	0.25	0.24
Bromide	ug/l			160	160	25000	24000	230	230	410	390
Calcium, Total	mg/l			29	28	1600	1500	50	49	78	76
Carbon Dioxide	mg/l			3.2	3.1	12	9.3	ND	ND	3.1	2.5
Carbonate as CO3	mg/l			3.2	3.1	ND	ND	ND	ND	2	2.5
Cation Sum	meq/l			6.1	5.9	220	210	9.6	9.2	12	11
Chloride	mg/l	500	S	25	25	**7200**	**6800**	94	96	130	130
Fluoride	mg/l	2	P	0.34	0.37	0.1	0.12	0.38	0.43	0.25	0.28
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			68	78	46	89	18	32	49	59
Nitrate (as NO3)	mg/l	45	P	ND	ND	8.9	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	2	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			7.7	7.5	83	67	6.1	5.8	7	7
Sodium, Total	mg/l			81	78	2200	2200	130	130	130	130
Sulfate	mg/l	500	S	ND	ND	**830**	**900**	160	160	140	140
Total Dissolved Solid (TDS)	mg/l	1000	S	320	330	**15000**	**17000**	550	540	620	620
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	2	ND	ND	ND	ND	ND
General Physical Properties											
Apparent Color	ACU	15	S	10	10	ND	5	15	15	ND	5
Hardness (Total, as CaCO3)	mg/l			120	120	6000	5800	180	180	280	270
Lab pH	Units			8.2	8.2	7.4	7.5	8.2	8.2	8.1	8.2
Langelier Index - 25 degree	None			0.68	0.68	1.4	1.5	0.69	0.71	0.95	0.98
Odor	TON	3	S	ND	2	ND	2	1	2	1	2
Specific Conductance	umho/cm	1600	S	570	570	**21000**	**21000**	920	920	1100	1100
Turbidity	NTU	5	S	ND	0.18	1.2	1.7	0.39	1.3	0.3	0.49
Metals											
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	23	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	5.3	10	ND	ND	ND	ND
Barium, Total	ug/l	1000	P	18	20	220	220	73	76	55	55
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
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.21	0.2	ND	ND	0.25	0.3	0.15	0.16
Copper, Total	ug/l	1300	P	ND	ND	ND	3.6	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.061	0.059	0.21	0.21	0.02	0.05	0.15	0.14
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			12	12	480	490	13	13	20	20
Manganese, Total	ug/l	50	S	30	30	**1000**	**940**	35	37	**76**	**75**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	9	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	26	50	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
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 (Methyl Chloride)	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								
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
Others											
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	ND	ND	0.1	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			1.5	1.5	ND	ND	1.3	1.3	0.96	0.93

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 2018-19

Constituents	Units	MCL	MCL Type	PM-5 Columbia Park											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/13/2019	9/11/2019	5/13/2019	9/11/2019	5/13/2019	9/11/2019	5/13/2019	9/11/2019	5/13/2019	9/11/2019	5/13/2019	9/11/2019
General Minerals															
Alkalinity	mg/l			670	670	890	880	410	400	290	290	190	190	220	220
Anion Sum	meq/l			16	16	18	18	9	8.9	6.7	6.6	33	31	12	12
Bicarbonate as HCO3	mg/l			810	810	1100	1100	500	490	350	350	230	230	260	260
Boron	mg/l	1	N	**2.6**	**2.7**	**1.9**	**2**	0.36	0.38	0.18	0.17	0.2	0.18	0.2	0.19
Bromide	ug/l			1600	2000	190	210	280	280	210	180	2300	2100	400	790
Calcium, Total	mg/l			14	13	7.2	7.3	14	14	28	25	250	230	96	89
Carbon Dioxide	mg/l			6.6	5.3	7.2	5.7	3.3	2.5	3.6	2.9	6	4.7	4.3	2.7
Carbonate as CO3	mg/l			10	13	18	23	8.2	10	3.6	4.5	ND	ND	ND	2.7
Cation Sum	meq/l			17	15	18	17	9.2	9.2	6.9	6.4	32	30	13	12
Chloride	mg/l	500	S	98	98	13	13	28	28	32	29	**730**	**660**	160	160
Fluoride	mg/l	2	P	0.62	0.6	0.32	0.3	0.28	0.26	0.31	0.3	0.18	0.17	0.33	0.31
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			530	95	46	34	120	120	66	82	12	12	95	120
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	15	9.6	12	16	16	12	11	13	12	6.7	6.3
Sodium, Total	mg/l			360	320	400	370	170	170	96	89	320	300	150	140
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	ND	ND	ND	410	400	170	170
Total Dissolved Solid (TDS)	mg/l	1000	S	1000	1000	**1100**	**1100**	500	510	360	380	**1900**	**2000**	740	750
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
General Physical Properties															
Apparent Color	ACU	15	S	**300**	**250**	**400**	**600**	**45**	**20**	**25**	**25**	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			60	57	39	40	64	65	120	110	880	810	330	300
Lab pH	Units			8.3	8.4	8.4	8.5	8.4	8.5	8.2	8.3	7.8	7.9	8	8.2
Langelier Index - 25 degree	None			0.93	0.96	0.85	0.92	0.77	0.9	0.77	0.81	1.1	1.1	0.99	1.2
Odor	TON	3	S	**8**	**8**	3	2	2	2	1	2	1	2	1	2
Specific Conductance	umho/cm	1600	S	1600	1600	**1700**	**1700**	860	870	650	650	**3200**	**3200**	1200	1300
Turbidity	NTU	5	S	0.58	0.63	0.63	0.64	0.2	0.25	0.12	0.18	0.42	0.39	ND	0.19
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	3.4	3.3	ND	ND	ND	ND	1.3	1.8	ND	ND
Barium, Total	ug/l	1000	P	100	89	25	21	29	23	22	21	89	87	160	160
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
Chromium, Total	ug/l	50	P	ND	ND	2.1	2.5	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.37	0.25	0.65	0.34	0.33	0.2	0.24	0.17	ND	0.075	0.19	0.15
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.2	0.2	**0.31**	0.3	0.049	0.053	0.031	0.029	0.09	0.082	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			6.2	6	5.2	5.2	7.1	7.3	13	12	61	57	22	20
Manganese, Total	ug/l	50	S	43	46	27	29	35	34	25	25	**220**	**240**	**120**	**120**
Mercury	ug/l	2	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
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 (Methyl Chloride)	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
Others															
1,4-Dioxane	ug/l	1	N	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
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			35	45	32	36	6.8	7.4	3	3.1	1.2	1.4	1.3	1.3

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

TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

Constituents	Units	MCL	MCL Type	PM-6 Madrona Marsh											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				3/26/2019	8/5/2019	3/26/2019	8/5/2019	3/26/2019	8/5/2019	3/26/2019	8/5/2019	3/26/2019	8/5/2019	3/26/2019	8/5/2019
General Minerals															
Alkalinity	mg/l			380	400	120	120	130	120	230	220	160	160	160	140
Anion Sum	meq/l			76	54	88	88	210	210	6.7	6.5	50	50	10	9.6
Bicarbonate as HCO3	mg/l			470	490	150	140	160	150	280	270	200	190	190	170
Boron	mg/l	1	N	0.72	0.76	0.56	0.54	0.25	0.24	0.24	0.23	0.37	0.37	0.18	0.17
Bromide	ug/l			7500	5300	10000	10000	24000	24000	290	300	4300	4200	360	360
Calcium, Total	mg/l			350	220	210	200	1200	1200	20	19	250	240	69	65
Carbon Dioxide	mg/l			7.7	6.4	3.1	2.9	3.3	9.8	2.9	2.8	ND	4.9	3.1	3.5
Carbonate as CO3	mg/l			3	4	ND	ND	ND	ND	2.9	2.8	ND	ND	ND	ND
Cation Sum	meq/l			71	48	76	75	200	200	6.4	6.3	46	44	11	9.9
Chloride	mg/l	500	S	**2400**	**1600**	**3000**	**3000**	**7200**	**7400**	72	68	**1300**	**1400**	160	150
Fluoride	mg/l	2	P	0.36	0.37	0.086	0.079	0.1	0.095	0.52	0.48	0.16	0.15	0.27	0.25
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			170	150	510	390	260	330	67	61	82	110	70	59
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	7	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	1.6	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			40	34	64	61	130	120	5.6	5.8	24	23	5.7	5.6
Sodium, Total	mg/l			750	530	1300	1300	1600	1600	99	96	610	580	120	110
Sulfate	mg/l	500	S	4	2.4	ND	ND	52	54	ND	ND	400	370	120	120
Total Dissolved Solid (TDS)	mg/l	1000	S	**4100**	**3200**	**5000**	**5300**	**15000**	**14000**	380	390	**2900**	**2700**	590	580
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	1.6	ND	ND	ND	ND	ND	ND	ND
General Physical Properties															
Apparent Color	ACU	15	S	**200**	**150**	ND	10	10	10	10	**20**	10	**20**	ND	ND
Hardness (Total, as CaCO3)	mg/l			1900	1200	940	890	6200	6200	99	97	940	900	250	240
Lab pH	Units			8	8.1	7.9	7.9	7.9	7.4	8.2	8.2	8	7.8	8	7.9
Langelier Index - 25 degree	None			1.8	1.7	0.97	0.91	1.7	1.2	0.49	0.53	1.2	1	0.69	0.54
Odor	TON	3	S	**4**	**8**	ND	2	**100**	**100**	1	2	1	2	2	2
Specific Conductance	umho/cm	1600	S	**7100**	**5300**	**8700**	**8800**	**19000**	**19000**	660	660	**4800**	**4800**	1000	1000
Turbidity	NTU	5	S	3	2.3	0.34	0.44	0.11	0.35	ND	0.14	1.8	4.4	0.44	0.5
Metals															
Aluminum, Total	ug/l	1000	P	ND	ND	44	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	1.2	ND	1.9	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	1.2	1.1	2.6	1.6	3.9	4	ND	ND	2.8	2.4	1.9	1.8
Barium, Total	ug/l	1000	P	1000	640	570	610	**3100**	**2800**	26	25	140	130	19	19
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
Chromium, Total	ug/l	50	P	ND	1.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	0.14	0.03	ND	ND	ND	0.079	0.13	ND	ND	0.061	0.071
Copper, Total	ug/l	1300	P	2	2	2	ND	3.2	3.7	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	ND	0.05	0.13	0.12	0.11	0.1	0.07	0.069	**0.7**	**0.69**	0.2	0.18
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	0.67	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			240	160	100	94	780	790	12	12	76	74	19	18
Manganese, Total	ug/l	50	S	9.8	8.4	**170**	**190**	**79**	**84**	**60**	**69**	**470**	**530**	**82**	**95**
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	6.7	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	7.5	ND	6.8	7.6	24	26	ND	ND	5	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
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 (Methyl Chloride)	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												
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	0.65	0.56	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
Others															
1,4-Dioxane	ug/l	1	N	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
Surfactants	mg/l	0.5	S	ND	ND	ND	0.13	0.25	0.12	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			7.1	6.6	2.1	0.67	2.1	1.2	2.2	2.2	1.6	1.4	2.1	1.4

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

TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

Constituents	Units	MCL	MCL Type	Westchester #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				3/15/2019	8/8/2019	3/15/2019	8/8/2019	3/15/2019	8/8/2019	3/15/2019	8/8/2019	3/15/2019	8/8/2019
General Minerals													
Alkalinity	mg/l			580	590	530	470	430	400	340	290	270	250
Anion Sum	meq/l			15	15	12	11	10	10	10	9.2	9	8.6
Bicarbonate as HCO3	mg/l			710	710	640	570	520	480	410	350	330	300
Boron	mg/l	1	N	**1.1**	**1.1**	0.8	0.8	0.42	0.38	0.23	0.23	0.22	0.22
Bromide	ug/l			610	630	450	450	380	390	340	340	320	320
Calcium, Total	mg/l			65	60	31	31	51	55	71	71	63	64
Carbon Dioxide	mg/l			ND	9.2	ND	3.7	ND	3.9	ND	5.7	ND	3.9
Carbonate as CO3	mg/l			7.3	5.8	6.6	9.3	5.4	6.2	2.7	2.3	2.1	2.4
Cation Sum	meq/l			16	16	12	13	11	11	10	10	9	9.2
Chloride	mg/l	500	S	94	88	70	70	62	62	64	64	66	65
Fluoride	mg/l	2	P	0.28	0.26	0.28	0.25	0.26	0.25	0.27	0.26	0.33	0.31
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			150	120	ND	120	100	88	76	83	73	74
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			11	14	16	15	12	12	9.4	9.7	7.1	7.4
Sodium, Total	mg/l			230	230	200	230	140	130	93	94	85	87
Sulfate	mg/l	500	S	39	36	ND	ND	9.2	15	77	76	81	81
Total Dissolved Solid (TDS)	mg/l	1000	S	900	880	720	710	600	580	580	560	530	510
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
General Physical Properties													
Apparent Color	ACU	15	S	**100**	**200**	**45**	**40**	**20**	**20**	ND	10	ND	10
Hardness (Total, as CaCO3)	mg/l			270	250	150	150	220	230	290	300	260	260
Lab pH	Units			8.2	8.1	8.2	8.4	8.2	8.3	8	8	8	8.1
Langelier Index - 25 degree	None			1.4	1.3	1	1.2	1.2	1.2	1.1	0.9	0.91	0.98
Odor	TON	3	S	ND	1	**8**	1	ND	1	ND	ND	2	1
Specific Conductance	umho/cm	1600	S	1400	1400	1200	1200	1000	1000	980	980	890	900
Turbidity	NTU	5	S	0.43	0.53	0.24	0.22	0.2	0.39	0.63	0.49	0.65	0.65
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	100	94	130	110	71	66	80	75	69	68
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
Chromium, Total	ug/l	50	P	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.19	0.44	0.11	0.25	0.062	0.12	0.059	0.11	0.036	0.078
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.2	0.18	0.12	0.12	0.2	0.25	0.12	0.14	0.27	0.28
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			26	24	17	17	22	23	28	29	24	25
Manganese, Total	ug/l	50	S	**100**	**83**	45	45	**120**	**130**	**110**	**120**	**130**	**140**
Mercury	ug/l	2	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
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 (Methyl Chloride)	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										
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
Others													
1,4-Dioxane	ug/l	1	N	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
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			31	21	13	7.6	7.6	3	3.8	1.5	3	1.2

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 2018-19

Constituents	Units	MCL	MCL Type	Wilmington #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				2/27/2019	8/12/2019	2/27/2019	8/12/2019	2/27/2019	8/12/2019	2/27/2019	8/12/2019	2/27/2019	8/12/2019
General Minerals													
Alkalinity	mg/l			130	120	150	140	190	190	130	130	140	130
Anion Sum	meq/l			11	11	23	23	34	35	14	13	13	13
Bicarbonate as HCO3	mg/l			160	140	190	180	230	230	160	150	180	150
Boron	mg/l	1	N	0.26	0.25	0.19	0.2	0.31	0.31	0.21	0.21	0.19	0.2
Bromide	ug/l			2300	2300	2800	2800	4400	4400	900	840	940	860
Calcium, Total	mg/l			61	61	160	170	200	210	66	60	96	92
Carbon Dioxide	mg/l			ND	ND	ND	4.7	ND	4.7	ND	2.5	ND	2.5
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			11	11	21	22	33	35	13	13	13	13
Chloride	mg/l	500	S	290	290	**620**	**640**	**1000**	**1100**	280	260	250	240
Fluoride	mg/l	2	P	0.14	0.14	0.071	0.07	0.073	0.076	0.14	0.16	0.14	0.16
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			690	800	280	340	410	490	24	22	54	64
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			8.9	8.7	8.8	9	12	9.8	6.2	5.9	6.5	6.8
Sodium, Total	mg/l			140	140	230	230	430	460	190	180	130	140
Sulfate	mg/l	500	S	ND	ND	110	110	20	27	150	140	160	170
Total Dissolved Solid (TDS)	mg/l	1000	S	670	690	**1400**	**1500**	**2100**	**2300**	830	790	820	790
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
General Physical Properties													
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			230	230	560	600	700	730	260	240	360	350
Lab pH	Units			8.1	8.1	7.9	7.8	7.9	7.9	8.1	8	8	8
Langelier Index - 25 degree	None			0.67	0.6	0.95	0.85	1.1	1.1	0.65	0.56	0.83	0.69
Odor	TON	3	S	**67**	**100**	2	**100**	**200**	**200**	**67**	**67**	**40**	**67**
Specific Conductance	umho/cm	1600	S	1200	1200	**2400**	**2500**	**3600**	**3800**	1400	1400	1400	1400
Turbidity	NTU	5	S	ND	0.15	0.19	0.2	ND	0.12	ND	0.11	ND	0.14
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	4	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	ND	ND	ND	2.7	ND	ND	ND	ND
Barium, Total	ug/l	1000	P	12	12	12	12	28	31	27	24	76	72
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
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	0.16	ND	0.14	ND	0.068	ND	0.15	0.045	0.24
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	ND	ND	**40**	**42**	ND	ND	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			20	20	40	42	49	51	23	21	30	30
Manganese, Total	ug/l	50	S	24	24	20	21	6	6.7	11	10	36	33
Mercury	ug/l	2	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	25	ND	7.6	ND	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
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 (Methyl Chloride)	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			5.9	5.7	16	17	6.8	5.5	ND	ND	3.7	3.1
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	0.84	0.93	**23**	**20**
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	**72**	**100**	**89**	**110**	**53**	**72**	**19**	**14**	**98**	**64**
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
Others													
1,4-Dioxane	ug/l	1	N	ND		ND		ND		ND		ND	
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	0.42	**0.61**	**0.54**	**0.58**	0.27	0.35	0.12	ND	0.43	0.35
Total Organic Carbon	mg/l			3.3	3.1	2.4	3	1.5	2	2.2	1.8	2.3	3

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

TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

Constituents	Units	MCL	MCL Type	Wilmington #2									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				2/26/2019	8/13/2019	2/26/2019	8/13/2019	2/26/2019	8/13/2019	2/26/2019	8/13/2019	2/26/2019	8/13/2019
General Minerals													
Alkalinity	mg/l			260	260	480	460	140	140	270	260	160	140
Anion Sum	meq/l			14	14	26	25	13	14	10	10	67	69
Bicarbonate as HCO3	mg/l			320	320	580	560	170	170	320	320	190	170
Boron	mg/l	1	N	0.53	0.54	**1.8**	**1.9**	0.19	0.18	0.64	0.64	0.52	0.51
Bromide	ug/l			1200	1300	4200	4200	2700	2700	1200	1200	6800	6800
Calcium, Total	mg/l			6.2	6.7	27	28	71	70	20	20	200	200
Carbon Dioxide	mg/l			ND	ND	ND	5.8	ND	2.8	ND	2.6	ND	4.4
Carbonate as CO3	mg/l			6.6	6.6	7.5	5.8	ND	ND	4.1	4.1	ND	ND
Cation Sum	meq/l			12	13	24	24	14	13	10	10	63	60
Chloride	mg/l	500	S	300	300	**570**	**560**	370	390	180	180	**2000**	**2100**
Fluoride	mg/l	2	P	0.71	0.61	0.54	0.49	0.18	0.18	0.84	0.76	0.22	0.2
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			95	100	1000	1200	810	1100	280	310	37	44
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			7.9	8.4	14	14	9.1	9	5.8	5.8	23	23
Sodium, Total	mg/l			270	280	480	480	170	170	200	200	1000	980
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	16	ND	ND	330	340
Total Dissolved Solid (TDS)	mg/l	1000	S	800	810	**1400**	**1400**	820	870	600	590	**3900**	**4000**
Total Nitrogen, Nitrate+Nitrite	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
General Physical Properties													
Apparent Color	ACU	15	S	**50**	**40**	**100**	**100**	ND	ND	**50**	**150**	10	**20**
Hardness (Total, as CaCO3)	mg/l			35	38	150	150	280	280	86	87	870	880
Lab pH	Units			8.5	8.5	8.3	8.2	8.1	8	8.3	8.3	7.8	7.8
Langelier Index - 25 degree	None			0.34	0.37	1	0.91	0.71	0.65	0.67	0.65	0.96	0.89
Odor	TON	3	S	2	2	**4**	2	2	2	2	2	2	2
Specific Conductance	umho/cm	1600	S	1500	1500	**2600**	**2600**	1500	1500	1100	1100	**6700**	**7000**
Turbidity	NTU	5	S	0.18	0.64	0.34	0.47	ND	0.37	0.29	0.83	0.1	0.24
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	1.2	ND	ND	ND	ND	ND	ND	1.4
Arsenic, Total	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	1.6	1.7
Barium, Total	ug/l	1000	P	6.1	6.2	42	43	24	22	16	16	70	70
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
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.022	0.34	0.031	0.42	ND	0.17	0.075	0.52	0.021	0.3
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	**21**	**23**	**56**	**58**	**33**	**33**	ND	**20**	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	None			4.8	5.2	20	20	26	26	8.8	9	91	92
Manganese, Total	ug/l	50	S	3.6	3.9	7.7	8.2	13	14	5.8	6.1	48	47
Mercury	ug/l	2	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	10	9
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
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 (Methyl Chloride)	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	3.3	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
Others													
1,4-Dioxane	ug/l	1	N	ND		ND		ND		ND		ND	
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			6	5.7	20	20	2	1.8	9.4	9.6	1.4	1.4

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

TABLE 3.3
WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS
REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19

Constituent	Units	NL	RL	Bell #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/25/2019	9/17/2019	4/25/2019	9/17/2019	4/25/2019	9/17/2019	4/25/2019	9/17/2019	4/25/2019	9/17/2019	4/25/2019	9/17/2019
Perfluorobutanesulfonate (PFBS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorobutanoic Acid (PFBA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanesulfonate (PFDS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanoic Acid (PFDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanesulfonate (PFDoS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanoic Acid (PFDoA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanesulfonate (PFHpS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanoic Acid (PFHpA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexadecanoic Acid (PFHxDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanesulfonate (PFHxS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanoic Acid (PFHxA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorononanesulfonate (PFNS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorononanoic Acid (PFNA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctadecanoic Acid (PFOcDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanesulfonamide (PFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoro-octanesulfonate (PFOS)	ng/L	6.5	40	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanoic Acid (PFOA)	ng/L	5.1	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoropentanesulfonate (PFPeS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoropentanoic Acid (PFPeA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotetradecanoic Acid (PFTA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotridecanoic Acid (PFTrDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroundecanoic Acid (PFUnA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10:2-Fluorotelomersulfonate (10:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4:2-Fluorotelomersulfonate (4:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6:2-Fluorotelomersulfonate (6:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8:2-Fluorotelomersulfonate (8:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethylperfluorooctane-1-sulfonamide (NEtPFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl-N-perfluorooctylsulfonylaminoethanol (NEtPFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl-perfluorooctane-1-sulfonamide (NMePFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methylperfluorooctanesulfonamidoethanol (NMePFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NL - Drinking Water Notification Level
RL - Response Level

TABLE 3.3
WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS
REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19

Constituent	Units	NL	RL	Bell Gardens #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/22/2019	9/12/2019	5/22/2019	9/12/2019	5/22/2019	9/12/2019	5/22/2019	9/12/2019	5/22/2019	9/12/2019	5/22/2019	9/12/2019
Perfluorobutanesulfonate (PFBS)	ng/L	---	---	ND	ND	ND	ND	4.1	3.1	6.4	4.6	4.3	3.8	5.7	5
Perfluorobutanoic Acid (PFBA)	ng/L	---	---	ND	ND	ND	ND	6.7	4.8	5.5	ND	ND	ND	5.7	ND
Perfluorodecanesulfonate (PFDS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanoic Acid (PFDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	2.2	ND	ND	ND	ND	ND
Perfluorododecanesulfonate (PFDoS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanoic Acid (PFDoA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanesulfonate (PFHpS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanoic Acid (PFHpA)	ng/L	---	---	ND	ND	ND	ND	4.7	3.3	5.5	3.6	3.1	2.5	4.6	3.3
Perfluorohexadecanoic Acid (PFHxDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanesulfonate (PFHxS)	ng/L	---	---	ND	ND	ND	ND	8.9	7.4	5.1	3.2	4.5	3.7	5.4	3.6
Perfluorohexanoic Acid (PFHxA)	ng/L	---	---	ND	ND	ND	ND	5.8	4.4	9.7	6.7	5.2	4.3	7.9	5.7
Perfluorononanesulfonate (PFNS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorononanoic Acid (PFNA)	ng/L	---	---	ND	ND	ND	ND	2.8	2.1	4.3	2.6	ND	ND	2.4	1.9
Perfluorooctadecanoic Acid (PFOcDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanesulfonamide (PFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoro-octanesulfonate (PFOS)	ng/L	6.5	40	6.3	4.4	ND	ND	**56**	**41**	**39**	**23**	**24**	**18**	**30**	**22**
Perfluorooctanoic Acid (PFOA)	ng/L	5.1	10	2.9	2.4	ND	ND	**20**	**14**	**18**	**11**	**11**	**8.9**	**15**	**11**
Perfluoropentanesulfonate (PFPeS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoropentanoic Acid (PFPeA)	ng/L	---	---	ND	ND	ND	ND	ND	4.3	8	6.4	ND	4.4	6.8	5.9
Perfluorotetradecanoic Acid (PFTA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotridecanoic Acid (PFTrDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroundecanoic Acid (PFUnA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10:2-Fluorotelomersulfonate (10:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4:2-Fluorotelomersulfonate (4:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6:2-Fluorotelomersulfonate (6:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8:2-Fluorotelomersulfonate (8:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethylperfluorooctane-1-sulfonamide (NEtPFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl-N-perfluorooctylsulfonylaminoethanol (NEtPFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl-perfluorooctane-1-sulfonamide (NMePFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methylperfluorooctanesulfonamidoethanol (NMePFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NL - Drinking Water Notification Level
RL - Response Level

TABLE 3.3
WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS
REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19

Constituent	Units	NL	RL	Cerritos #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				3/19/2019	9/25/2019	3/19/2019	9/25/2019	3/19/2019	9/25/2019	3/19/2019	9/25/2019	3/19/2019	9/25/2019	3/19/2019	9/25/2019
Perfluorobutanesulfonate (PFBS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorobutanoic Acid (PFBA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanesulfonate (PFDS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanoic Acid (PFDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanesulfonate (PFDoS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanoic Acid (PFDoA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanesulfonate (PFHpS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanoic Acid (PFHpA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexadecanoic Acid (PFHxDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanesulfonate (PFHxS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanoic Acid (PFHxA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorononanesulfonate (PFNS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorononanoic Acid (PFNA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctadecanoic Acid (PFOcDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanesulfonamide (PFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoro-octanesulfonate (PFOS)	ng/L	6.5	40	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanoic Acid (PFOA)	ng/L	5.1	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoropentanesulfonate (PFPeS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoropentanoic Acid (PFPeA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotetradecanoic Acid (PFTA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotridecanoic Acid (PFTrDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroundecanoic Acid (PFUnA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10:2-Fluorotelomersulfonate (10:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4:2-Fluorotelomersulfonate (4:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6:2-Fluorotelomersulfonate (6:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8:2-Fluorotelomersulfonate (8:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethylperfluorooctane-1-sulfonamide (NEtPFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl-N-perfluorooctylsulfonylaminoethanol (NEtPFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl-perfluorooctane-1-sulfonamide (NMePFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methylperfluorooctanesulfonamidoethanol (NMePFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NL - Drinking Water Notification Level
RL - Response Level

TABLE 3.3
WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS
REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19

Constituent	Units	NL	RL	Cerritos #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/23/2019	9/12/2019	4/23/2019	9/12/2019	4/23/2019	9/12/2019	4/23/2019	9/12/2019	4/23/2019	9/12/2019	4/23/2019	9/12/2019
Perfluorobutanesulfonate (PFBS)	ng/L	---	---	ND	ND	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorobutanoic Acid (PFBA)	ng/L	---	---	ND	ND	7.3	6	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanesulfonate (PFDS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanoic Acid (PFDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanesulfonate (PFDoS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanoic Acid (PFDoA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanesulfonate (PFHpS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanoic Acid (PFHpA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexadecanoic Acid (PFHxDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanesulfonate (PFHxS)	ng/L	---	---	ND	ND	11	8.9	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanoic Acid (PFHxA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorononanesulfonate (PFNS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorononanoic Acid (PFNA)	ng/L	---	---	ND	ND	3.2	2.5	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctadecanoic Acid (PFOcDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanesulfonamide (PFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoro-octanesulfonate (PFOS)	ng/L	6.5	40	ND	ND	**64**	**48**	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanoic Acid (PFOA)	ng/L	5.1	10	ND	ND	**9.7**	**8**	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoropentanesulfonate (PFPeS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoropentanoic Acid (PFPeA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotetradecanoic Acid (PFTA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotridecanoic Acid (PFTrDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroundecanoic Acid (PFUnA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10:2-Fluorotelomersulfonate (10:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4:2-Fluorotelomersulfonate (4:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6:2-Fluorotelomersulfonate (6:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8:2-Fluorotelomersulfonate (8:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethylperfluorooctane-1-sulfonamide (NEtPFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl-N-perfluorooctylsulfonylaminoethanol (NEtPFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl-perfluorooctane-1-sulfonamide (NMePFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methylperfluorooctanesulfonamidoethanol (NMePFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NL - Drinking Water Notification Level
RL - Response Level

TABLE 3.3
WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS
REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19

Constituent	Units	NL	RL	Commerce #1										
				Zone 1	Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/8/2019	4/8/2019	9/26/2019	4/8/2019	9/26/2019	4/8/2019	9/26/2019	4/8/2019	9/26/2019	4/8/2019	9/26/2019
Perfluorobutanesulfonate (PFBS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorobutanoic Acid (PFBA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanesulfonate (PFDS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanoic Acid (PFDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanesulfonate (PFDoS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanoic Acid (PFDoA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanesulfonate (PFHpS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanoic Acid (PFHpA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexadecanoic Acid (PFHxDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanesulfonate (PFHxS)	ng/L	---	---	ND	ND	ND	ND	ND	2.3	2	ND	ND	ND	ND
Perfluorohexanoic Acid (PFHxA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorononanesulfonate (PFNS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorononanoic Acid (PFNA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctadecanoic Acid (PFOcDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanesulfonamide (PFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoro-octanesulfonate (PFOS)	ng/L	6.5	40	ND	ND	ND	ND	ND	**8.4**	**8.2**	2.3	2.3	ND	ND
Perfluorooctanoic Acid (PFOA)	ng/L	5.1	10	ND	ND	ND	ND	ND	2.7	2.6	ND	ND	ND	ND
Perfluoropentanesulfonate (PFPeS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoropentanoic Acid (PFPeA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotetradecanoic Acid (PFTA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotridecanoic Acid (PFTrDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroundecanoic Acid (PFUnA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10:2-Fluorotelomersulfonate (10:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4:2-Fluorotelomersulfonate (4:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6:2-Fluorotelomersulfonate (6:2 FTS)	ng/L	---	---	3.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8:2-Fluorotelomersulfonate (8:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethylperfluorooctane-1-sulfonamide (NEtPFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl-N-perfluorooctylsulfonylaminoethanol (NEtPFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl-perfluorooctane-1-sulfonamide (NMePFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methylperfluorooctanesulfonamidoethanol (NMePFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NL - Drinking Water Notification Level
RL - Response Level

TABLE 3.3
WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS
REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19

Constituent	Units	NL	RL	Compton #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				4/2/2019	9/17/2019	4/2/2019	9/17/2019	4/2/2019	9/17/2019	4/2/2019	9/17/2019
Perfluorobutanesulfonate (PFBS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorobutanoic Acid (PFBA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanesulfonate (PFDS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanoic Acid (PFDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanesulfonate (PFDoS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanoic Acid (PFDoA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanesulfonate (PFHpS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanoic Acid (PFHpA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexadecanoic Acid (PFHxDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanesulfonate (PFHxS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanoic Acid (PFHxA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorononanesulfonate (PFNS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorononanoic Acid (PFNA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctadecanoic Acid (PFOcDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanesulfonamide (PFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoro-octanesulfonate (PFOS)	ng/L	6.5	40	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanoic Acid (PFOA)	ng/L	5.1	10	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoropentanesulfonate (PFPeS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoropentanoic Acid (PFPeA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotetradecanoic Acid (PFTA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotridecanoic Acid (PFTrDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroundecanoic Acid (PFUnA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
10:2-Fluorotelomersulfonate (10:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
4:2-Fluorotelomersulfonate (4:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
6:2-Fluorotelomersulfonate (6:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
8:2-Fluorotelomersulfonate (8:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
N-ethylperfluorooctane-1-sulfonamide (NEtPFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl-N-perfluorooctylsulfonylaminoethanol (NEtPFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl-perfluorooctane-1-sulfonamide (NMePFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND
N-methylperfluorooctanesulfonamidoethanol (NMePFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND

NL - Drinking Water Notification Level
RL - Response Level

TABLE 3.3
WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS
REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19

Constituent	Units	NL	RL	Downey #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/4/2019	9/23/2019	4/4/2019	9/23/2019	4/4/2019	9/23/2019	4/4/2019	9/23/2019	4/4/2019	9/23/2019	4/4/2019	9/23/2019
Perfluorobutanesulfonate (PFBS)	ng/L	---	---	ND	ND	ND	ND	1.1	ND	2.4	1.9	ND	ND	ND	ND
Perfluorobutanoic Acid (PFBA)	ng/L	---	---	ND	ND	ND	ND	7.8	7.1	6.5	5.8	ND	ND	ND	ND
Perfluorodecanesulfonate (PFDS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanoic Acid (PFDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanesulfonate (PFDoS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanoic Acid (PFDoA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanesulfonate (PFHpS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanoic Acid (PFHpA)	ng/L	---	---	ND	ND	ND	ND	1.6	ND	ND	ND	ND	ND	ND	ND
Perfluorohexadecanoic Acid (PFHxDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanesulfonate (PFHxS)	ng/L	---	---	ND	ND	2	2	6.2	6.2	8	7.3	ND	ND	ND	ND
Perfluorohexanoic Acid (PFHxA)	ng/L	---	---	ND	ND	ND	ND	2.7	2.7	ND	ND	ND	ND	ND	ND
Perfluorononanesulfonate (PFNS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorononanoic Acid (PFNA)	ng/L	---	---	ND	ND	ND	ND	2.8	2.8	2	2.2	ND	ND	ND	ND
Perfluorooctadecanoic Acid (PFOcDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanesulfonamide (PFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoro-octanesulfonate (PFOS)	ng/L	6.5	40	ND	ND	**8.6**	**9**	**27**	**26**	**39**	**35**	ND	ND	ND	ND
Perfluorooctanoic Acid (PFOA)	ng/L	5.1	10	ND	ND	3.4	3.5	**9.1**	**8.7**	**5.6**	**5.4**	ND	ND	ND	ND
Perfluoropentanesulfonate (PFPeS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoropentanoic Acid (PFPeA)	ng/L	---	---	ND	ND	ND	ND	ND	2.8	ND	ND	ND	ND	ND	ND
Perfluorotetradecanoic Acid (PFTA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotridecanoic Acid (PFTrDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroundecanoic Acid (PFUnA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10:2-Fluorotelomersulfonate (10:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4:2-Fluorotelomersulfonate (4:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6:2-Fluorotelomersulfonate (6:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8:2-Fluorotelomersulfonate (8:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethylperfluorooctane-1-sulfonamide (NEtPFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl-N-perfluorooctylsulfonylaminoethanol (NEtPFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl-perfluorooctane-1-sulfonamide (NMePFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methylperfluorooctanesulfonamidoethanol (NMePFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NL - Drinking Water Notification Level
RL - Response Level

TABLE 3.3
WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS
REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19

Constituent	Units	NL	RL	Lakewood #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/29/2019	9/16/2019	4/29/2019	9/16/2019	4/29/2019	9/16/2019	4/29/2019	9/16/2019	4/29/2019	9/16/2019	4/29/2019	9/16/2019
Perfluorobutanesulfonate (PFBS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorobutanoic Acid (PFBA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanesulfonate (PFDS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanoic Acid (PFDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanesulfonate (PFDoS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanoic Acid (PFDoA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanesulfonate (PFHpS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanoic Acid (PFHpA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexadecanoic Acid (PFHxDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanesulfonate (PFHxS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanoic Acid (PFHxA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorononanesulfonate (PFNS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorononanoic Acid (PFNA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctadecanoic Acid (PFOcDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanesulfonamide (PFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoro-octanesulfonate (PFOS)	ng/L	6.5	40	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanoic Acid (PFOA)	ng/L	5.1	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoropentanesulfonate (PFPeS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoropentanoic Acid (PFPeA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotetradecanoic Acid (PFTA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotridecanoic Acid (PFTrDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroundecanoic Acid (PFUnA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10:2-Fluorotelomersulfonate (10:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4:2-Fluorotelomersulfonate (4:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6:2-Fluorotelomersulfonate (6:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8:2-Fluorotelomersulfonate (8:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethylperfluorooctane-1-sulfonamide (NEtPFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl-N-perfluorooctylsulfonylaminoethanol (NEtPFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl-perfluorooctane-1-sulfonamide (NMePFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methylperfluorooctanesulfonamidoethanol (NMePFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NL - Drinking Water Notification Level
RL - Response Level

TABLE 3.3
WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS
REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19

Constituent	Units	NL	RL	Lakewood #2															
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Zone 7		Zone 8	
				5/21/2019	9/16/2019	5/21/2019	9/16/2019	5/21/2019	9/16/2019	5/21/2019	9/16/2019	5/21/2019	9/16/2019	5/21/2019	9/16/2019	5/21/2019	9/16/2019	5/21/2019	9/16/2019
Perfluorobutanesulfonate (PFBS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorobutanoic Acid (PFBA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanesulfonate (PFDS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanoic Acid (PFDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanesulfonate (PFDoS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanoic Acid (PFDoA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanesulfonate (PFHpS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanoic Acid (PFHpA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexadecanoic Acid (PFHxDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanesulfonate (PFHxS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanoic Acid (PFHxA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorononanesulfonate (PFNS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorononanoic Acid (PFNA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctadecanoic Acid (PFOcDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanesulfonamide (PFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoro-octanesulfonate (PFOS)	ng/L	6.5	40	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanoic Acid (PFOA)	ng/L	5.1	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoropentanesulfonate (PFPeS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoropentanoic Acid (PFPeA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotetradecanoic Acid (PFTA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotridecanoic Acid (PFTrDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroundecanoic Acid (PFUnA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10:2-Fluorotelomersulfonate (10:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4:2-Fluorotelomersulfonate (4:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6:2-Fluorotelomersulfonate (6:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8:2-Fluorotelomersulfonate (8:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethylperfluorooctane-1-sulfonamide (NEtPFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl-N-perfluorooctylsulfonylaminoethanol (NEtPFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl-perfluorooctane-1-sulfonamide (NMePFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methylperfluorooctanesulfonamidoethanol (NMePFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NL - Drinking Water Notification Level
RL - Response Level

TABLE 3.3
WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS
REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19

Constituent	Units	NL	RL	Lynwood #1																	
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Zone 7		Zone 8		Zone 9	
				5/15/2019	9/27/2019	5/14/2019	9/26/2019	5/15/2019	9/27/2019	5/15/2019	9/27/2019	5/15/2019	9/27/2019	5/15/2019	9/27/2019	5/15/2019	9/27/2019	5/14/2019	9/26/2019	5/15/2019	9/26/2019
Perfluorobutanesulfonate (PFBS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3	ND	ND	ND
Perfluorobutanoic Acid (PFBA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanesulfonate (PFDS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanoic Acid (PFDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanesulfonate (PFDoS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanoic Acid (PFDoA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanesulfonate (PFHpS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanoic Acid (PFHpA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2	ND	ND	ND
Perfluorohexadecanoic Acid (PFHxDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanesulfonate (PFHxS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.3	5.2	ND	ND
Perfluorohexanoic Acid (PFHxA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.6	2.7	ND	ND
Perfluorononanesulfonate (PFNS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorononanoic Acid (PFNA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctadecanoic Acid (PFOcDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanesulfonamide (PFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoro-octanesulfonate (PFOS)	ng/L	6.5	40	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**11**	**17**	ND	ND
Perfluorooctanoic Acid (PFOA)	ng/L	5.1	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**7.9**	**5.9**	ND	ND
Perfluoropentanesulfonate (PFPeS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoropentanoic Acid (PFPeA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.2	ND	ND
Perfluorotetradecanoic Acid (PFTA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotridecanoic Acid (PFTrDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroundecanoic Acid (PFUnA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10:2-Fluorotelomersulfonate (10:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4:2-Fluorotelomersulfonate (4:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6:2-Fluorotelomersulfonate (6:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8:2-Fluorotelomersulfonate (8:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethylperfluorooctane-1-sulfonamide (NEtPFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl-N-perfluorooctylsulfonylaminoethanol (NEtPFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl-perfluorooctane-1-sulfonamide (NMePFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methylperfluorooctanesulfonamidoethanol (NMePFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NL - Drinking Water Notification Level
RL - Response Level

TABLE 3.3
WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS
REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19

Constituent	Units	NL	RL	Montebello #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				5/1/2019	9/26/2019	5/1/2019	9/26/2019	5/1/2019	9/26/2019	5/1/2019	9/26/2019	5/1/2019	9/26/2019
Perfluorobutanesulfonate (PFBS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	2.3	7.6	8.4
Perfluorobutanoic Acid (PFBA)	ng/L	---	---	ND	ND	ND	ND	ND	4.4	ND	ND	11	11
Perfluorodecanesulfonate (PFDS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanoic Acid (PFDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanesulfonate (PFDoS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanoic Acid (PFDoA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanesulfonate (PFHpS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanoic Acid (PFHpA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	4.3	4.7
Perfluorohexadecanoic Acid (PFHxDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanesulfonate (PFHxS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	2.9	10	7.5
Perfluorohexanoic Acid (PFHxA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	2	6	7.3
Perfluorononanesulfonate (PFNS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorononanoic Acid (PFNA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	3.1	2.6
Perfluorooctadecanoic Acid (PFOcDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanesulfonamide (PFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoro-octanesulfonate (PFOS)	ng/L	6.5	40	ND	ND	ND	ND	3.8	3.2	5.5	**14**	**57**	**41**
Perfluorooctanoic Acid (PFOA)	ng/L	5.1	10	ND	ND	ND	ND	1.2	ND	0.92	5	**19**	**18**
Perfluoropentanesulfonate (PFPeS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoropentanoic Acid (PFPeA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	1.8	6.1	7.6
Perfluorotetradecanoic Acid (PFTA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotridecanoic Acid (PFTrDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroundecanoic Acid (PFUnA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10:2-Fluorotelomersulfonate (10:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4:2-Fluorotelomersulfonate (4:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6:2-Fluorotelomersulfonate (6:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8:2-Fluorotelomersulfonate (8:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethylperfluorooctane-1-sulfonamide (NEtPFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl-N-perfluorooctylsulfonylaminoethanol (NEtPFOSAE)	ng/L	---	---	ND	ND	ND	7.9	ND	ND	ND	ND	ND	ND
N-methyl perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl-perfluorooctane-1-sulfonamide (NMePFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methylperfluorooctanesulfonamidoethanol (NMePFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NL - Drinking Water Notification Level
RL - Response Level

TABLE 3.3
WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS
REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19

Constituent	Units	NL	RL	Norwalk #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				5/2/2019	9/25/2019	5/2/2019	9/25/2019	5/2/2019	9/25/2019	5/2/2019	9/25/2019	5/2/2019	9/25/2019
Perfluorobutanesulfonate (PFBS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorobutanoic Acid (PFBA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanesulfonate (PFDS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanoic Acid (PFDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanesulfonate (PFDoS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanoic Acid (PFDoA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanesulfonate (PFHpS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanoic Acid (PFHpA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexadecanoic Acid (PFHxDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanesulfonate (PFHxS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanoic Acid (PFHxA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorononanesulfonate (PFNS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorononanoic Acid (PFNA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctadecanoic Acid (PFOcDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanesulfonamide (PFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoro-octanesulfonate (PFOS)	ng/L	6.5	40	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanoic Acid (PFOA)	ng/L	5.1	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoropentanesulfonate (PFPeS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoropentanoic Acid (PFPeA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.6
Perfluorotetradecanoic Acid (PFTA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotridecanoic Acid (PFTrDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroundecanoic Acid (PFUnA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10:2-Fluorotelomersulfonate (10:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4:2-Fluorotelomersulfonate (4:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6:2-Fluorotelomersulfonate (6:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8:2-Fluorotelomersulfonate (8:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethylperfluorooctane-1-sulfonamide (NEtPFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl-N-perfluorooctylsulfonylaminoethanol (NEtPFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl-perfluorooctane-1-sulfonamide (NMePFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methylperfluorooctanesulfonamidoethanol (NMePFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NL - Drinking Water Notification Level
RL - Response Level

TABLE 3.3
WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS
REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19

Constituent	Units	NL	RL	Norwalk #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/16/2019	9/24/2019	4/16/2019	9/24/2019	4/16/2019	9/24/2019	4/16/2019	9/24/2019	4/16/2019	9/24/2019	4/16/2019	9/24/2019
Perfluorobutanesulfonate (PFBS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	1.8	1.7	7.3	6.3
Perfluorobutanoic Acid (PFBA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	7.9	6.5	8	7.1
Perfluorodecanesulfonate (PFDS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanoic Acid (PFDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanesulfonate (PFDoS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanoic Acid (PFDoA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanesulfonate (PFHpS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanoic Acid (PFHpA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.8	5.1
Perfluorohexadecanoic Acid (PFHxDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanesulfonate (PFHxS)	ng/L	---	---	2.5	ND	ND	ND	ND	ND	ND	ND	10	8.4	9.6	8.5
Perfluorohexanoic Acid (PFHxA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.8	8.4
Perfluorononanesulfonate (PFNS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorononanoic Acid (PFNA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	3.2	2.7	2.8	2.7
Perfluorooctadecanoic Acid (PFOcDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanesulfonamide (PFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoro-octanesulfonate (PFOS)	ng/L	6.5	40	**17**	ND	ND	ND	ND	ND	1.8	2.1	**54**	**49**	**47**	**44**
Perfluorooctanoic Acid (PFOA)	ng/L	5.1	10	2.9	ND	ND	ND	ND	ND	ND	ND	**9.2**	**8.5**	**20**	**19**
Perfluoropentanesulfonate (PFPeS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoropentanoic Acid (PFPeA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.9	8.4
Perfluorotetradecanoic Acid (PFTA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotridecanoic Acid (PFTrDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroundecanoic Acid (PFUnA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10:2-Fluorotelomersulfonate (10:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4:2-Fluorotelomersulfonate (4:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6:2-Fluorotelomersulfonate (6:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8:2-Fluorotelomersulfonate (8:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethylperfluorooctane-1-sulfonamide (NEtPFOSA)	ng/L	---	---	ND	ND	ND	5	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl-N-perfluorooctylsulfonylaminoethanol (NEtPFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl-perfluorooctane-1-sulfonamide (NMePFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methylperfluorooctanesulfonamidoethanol (NMePFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NL - Drinking Water Notification Level
RL - Response Level

TABLE 3.3
WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS
REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19

Constituent	Units	NL	RL	Pico #1						
				Zone 1	Zone 2		Zone 3		Zone 4	
				3/28/2019	3/28/2019	9/24/2019	3/28/2019	9/24/2019	3/28/2019	9/24/2019
Perfluorobutanesulfonate (PFBS)	ng/L	---	---	ND	ND	ND	2.7	2.8	9.3	9.4
Perfluorobutanoic Acid (PFBA)	ng/L	---	---	ND	ND	ND	ND	6.1	11	12
Perfluorodecanesulfonate (PFDS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanoic Acid (PFDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanesulfonate (PFDoS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanoic Acid (PFDoA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanesulfonate (PFHpS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanoic Acid (PFHpA)	ng/L	---	---	ND	ND	ND	ND	ND	3.1	3.2
Perfluorohexadecanoic Acid (PFHxDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanesulfonate (PFHxS)	ng/L	---	---	ND	ND	ND	5.2	5.3	4.6	5.3
Perfluorohexanoic Acid (PFHxA)	ng/L	---	---	ND	ND	ND	ND	ND	5.5	5.5
Perfluorononanesulfonate (PFNS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND
Perfluorononanoic Acid (PFNA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND
Perfluorooctadecanoic Acid (PFOcDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanesulfonamide (PFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND
Perfluoro-octanesulfonate (PFOS)	ng/L	6.5	40	ND	ND	ND	**21**	**22**	**7.4**	**7.9**
Perfluorooctanoic Acid (PFOA)	ng/L	5.1	10	ND	ND	ND	**7.1**	**8.9**	**13**	**13**
Perfluoropentanesulfonate (PFPeS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND
Perfluoropentanoic Acid (PFPeA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	6.3
Perfluorotetradecanoic Acid (PFTA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND
Perfluorotridecanoic Acid (PFTrDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND
Perfluoroundecanoic Acid (PFUnA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND
10:2-Fluorotelomersulfonate (10:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND
4:2-Fluorotelomersulfonate (4:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND
6:2-Fluorotelomersulfonate (6:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND
8:2-Fluorotelomersulfonate (8:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND
N-ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND
N-ethylperfluorooctane-1-sulfonamide (NEtPFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND
N-ethyl-N-perfluorooctylsulfonylaminoethanol (NEtPFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND
N-methyl perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND
N-methyl-perfluorooctane-1-sulfonamide (NMePFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND
N-methylperfluorooctanesulfonamidoethanol (NMePFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND

NL - Drinking Water Notification Level
RL - Response Level

TABLE 3.3
WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS
REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19

Constituent	Units	NL	RL	Pico #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/7/2019	9/23/2019	5/7/2019	9/23/2019	5/7/2019	9/23/2019	5/7/2019	9/23/2019	5/7/2019	9/23/2019	5/7/2019	9/23/2019
Perfluorobutanesulfonate (PFBS)	ng/L	---	---	ND	ND	5.1	4.8	4.5	3.1	12	8.5	13	9.4	6.8	7.3
Perfluorobutanoic Acid (PFBA)	ng/L	---	---	ND	ND	8	7.8	7.1	5.1	9.4	6.9	18	14	6.8	6.8
Perfluorodecanesulfonate (PFDS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanoic Acid (PFDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3	4.8
Perfluorododecanesulfonate (PFDoS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanoic Acid (PFDoA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanesulfonate (PFHpS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanoic Acid (PFHpA)	ng/L	---	---	ND	ND	2.8	2.9	2.7	2.3	3.1	2.8	2.9	2.6	2.8	3
Perfluorohexadecanoic Acid (PFHxDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanesulfonate (PFHxS)	ng/L	---	---	2.1	1.9	10	9.7	8.9	6.7	4.7	3.6	3.4	2.9	4	3
Perfluorohexanoic Acid (PFHxA)	ng/L	---	---	ND	ND	4.1	4	5	3.7	20	13	15	11	13	22
Perfluorononanesulfonate (PFNS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorononanoic Acid (PFNA)	ng/L	---	---	ND	ND	2	1.7	ND	ND	3.2	2.3	3.5	2.4	ND	3.9
Perfluorooctadecanoic Acid (PFOcDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanesulfonamide (PFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoro-octanesulfonate (PFOS)	ng/L	6.5	40	4.5	4.4	**42**	**44**	**40**	**30**	**20**	**15**	**20**	**15**	**15**	**21**
Perfluorooctanoic Acid (PFOA)	ng/L	5.1	10	ND	ND	**16**	**16**	**15**	**11**	**15**	**11**	**16**	**11**	**9.2**	**9.4**
Perfluoropentanesulfonate (PFPeS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoropentanoic Acid (PFPeA)	ng/L	---	---	ND	ND	ND	4.3	ND	3.7	22	16	23	16	11	24
Perfluorotetradecanoic Acid (PFTA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotridecanoic Acid (PFTrDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroundecanoic Acid (PFUnA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10:2-Fluorotelomersulfonate (10:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4:2-Fluorotelomersulfonate (4:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6:2-Fluorotelomersulfonate (6:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8:2-Fluorotelomersulfonate (8:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethylperfluorooctane-1-sulfonamide (NEtPFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl-N-perfluorooctylsulfonylaminoethanol (NEtPFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl-perfluorooctane-1-sulfonamide (NMePFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methylperfluorooctanesulfonamidoethanol (NMePFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NL - Drinking Water Notification Level
RL - Response Level

TABLE 3.3
WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS
REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19

Constituent	Units	NL	RL	Rio Hondo #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/2/2019	9/24/2019	5/2/2019	9/24/2019	5/2/2019	9/24/2019	5/2/2019	9/24/2019	5/2/2019	9/24/2019	5/2/2019	9/24/2019
Perfluorobutanesulfonate (PFBS)	ng/L	---	---	ND	ND	ND	ND	4.3	4.1	7.5	6.6	8.1	8.6	7.7	6.8
Perfluorobutanoic Acid (PFBA)	ng/L	---	---	ND	ND	ND	ND	8	7.7	6	4.9	6.6	6.3	8.6	6.8
Perfluorodecanesulfonate (PFDS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanoic Acid (PFDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	1.8	ND	ND	ND	1.9	1.8
Perfluorododecanesulfonate (PFDoS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanoic Acid (PFDoA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanesulfonate (PFHpS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanoic Acid (PFHpA)	ng/L	---	---	ND	ND	ND	ND	1.9	2.1	4.2	4.2	6	5.9	7.7	6.5
Perfluorohexadecanoic Acid (PFHxDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanesulfonate (PFHxS)	ng/L	---	---	ND	ND	ND	1.9	9.9	9.7	3.6	3.1	4.1	4	3.1	3
Perfluorohexanoic Acid (PFHxA)	ng/L	---	---	ND	ND	ND	ND	3	3	12	9.9	15	15	28	18
Perfluorononanesulfonate (PFNS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorononanoic Acid (PFNA)	ng/L	---	---	ND	ND	ND	ND	2.6	2.5	4	3.8	3.4	3.2	3.8	3.7
Perfluorooctadecanoic Acid (PFOcDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanesulfonamide (PFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoro-octanesulfonate (PFOS)	ng/L	6.5	40	ND	ND	ND	ND	**52**	**48**	**23**	**22**	**22**	**20**	**16**	**17**
Perfluorooctanoic Acid (PFOA)	ng/L	5.1	10	ND	ND	2.3	2.6	**14**	**15**	**15**	**13**	**18**	**17**	**22**	**17**
Perfluoropentanesulfonate (PFPeS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoropentanoic Acid (PFPeA)	ng/L	---	---	ND	ND	ND	ND	ND	2.4	11	10	13	16	25	19
Perfluorotetradecanoic Acid (PFTA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotridecanoic Acid (PFTrDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroundecanoic Acid (PFUnA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10:2-Fluorotelomersulfonate (10:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4:2-Fluorotelomersulfonate (4:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6:2-Fluorotelomersulfonate (6:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8:2-Fluorotelomersulfonate (8:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethylperfluorooctane-1-sulfonamide (NEtPFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl-N-perfluorooctylsulfonylaminoethanol (NEtPFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl-perfluorooctane-1-sulfonamide (NMePFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methylperfluorooctanesulfonamidoethanol (NMePFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NL - Drinking Water Notification Level
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TABLE 3.3
WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS
REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19

Constituent	Units	NL	RL	South Gate #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				3/28/2019	9/19/2019	3/28/2019	9/19/2019	3/28/2019	9/19/2019	3/28/2019	9/19/2019	3/28/2019	9/19/2019
Perfluorobutanesulfonate (PFBS)	ng/L	---	---	ND	ND	1.5	ND	ND	ND	3	2.5	0.99	ND
Perfluorobutanoic Acid (PFBA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanesulfonate (PFDS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanoic Acid (PFDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanesulfonate (PFDoS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanoic Acid (PFDoA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanesulfonate (PFHpS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanoic Acid (PFHpA)	ng/L	---	---	ND	ND	2.5	2.4	1.6	ND	3.2	2.8	ND	ND
Perfluorohexadecanoic Acid (PFHxDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanesulfonate (PFHxS)	ng/L	---	---	ND	ND	8.2	7.6	4.6	4.6	5.5	5.4	ND	ND
Perfluorohexanoic Acid (PFHxA)	ng/L	---	---	ND	ND	3.3	3.3	2.6	2.2	5.1	4.6	ND	ND
Perfluorononanesulfonate (PFNS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorononanoic Acid (PFNA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	1.8	ND	ND	ND
Perfluorooctadecanoic Acid (PFOcDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanesulfonamide (PFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoro-octanesulfonate (PFOS)	ng/L	6.5	40	ND	ND	**42**	**40**	**20**	ND	**26**	**22**	ND	ND
Perfluorooctanoic Acid (PFOA)	ng/L	5.1	10	ND	ND	**11**	**11**	**7.2**	**5.8**	**11**	**10**	ND	ND
Perfluoropentanesulfonate (PFPeS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoropentanoic Acid (PFPeA)	ng/L	---	---	ND	ND	ND	2.9	ND	2.1	ND	4.4	ND	ND
Perfluorotetradecanoic Acid (PFTA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotridecanoic Acid (PFTrDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroundecanoic Acid (PFUnA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10:2-Fluorotelomersulfonate (10:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4:2-Fluorotelomersulfonate (4:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6:2-Fluorotelomersulfonate (6:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8:2-Fluorotelomersulfonate (8:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethylperfluorooctane-1-sulfonamide (NEtPFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl-N-perfluorooctylsulfonylaminoethanol (NEtPFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl-perfluorooctane-1-sulfonamide (NMePFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methylperfluorooctanesulfonamidoethanol (NMePFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NL - Drinking Water Notification Level
RL - Response Level

TABLE 3.3
WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS
REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19

Constituent	Units	NL	RL	Whittier Narrows #1																	
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Zone 7		Zone 8		Zone 9	
				3/13/2019	10/30/2019	3/13/2019	10/30/2019	3/13/2019	10/30/2019	3/13/2019	10/30/2019	3/14/2019	10/30/2019	3/14/2019	10/30/2019	3/14/2019	10/30/2019	3/14/2019	10/30/2019	3/14/2019	10/31/2019
Perfluorobutanesulfonate (PFBS)	ng/L	---	---	ND	ND	ND	ND	1.9	2.1	4.2	2.7	4.6	4.3	5	4.3	4.6	4.6	4.8	5.1	6.8	7.7
Perfluorobutanoic Acid (PFBA)	ng/L	---	---	ND	ND	ND	ND	7.2	7.6	12	9	13	12	12	13	14	13	11	12	9.8	12
Perfluorodecanesulfonate (PFDS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanoic Acid (PFDA)	ng/L	---	---	ND	ND	ND	ND	ND	2.2	3.1	2.1	2.6	2.7	2.5	ND	2.7	ND	2.3	1.8	ND	2.5
Perfluorododecanesulfonate (PFDoS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanoic Acid (PFDoA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanesulfonate (PFHpS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanoic Acid (PFHpA)	ng/L	---	---	ND	ND	ND	ND	1.8	2.1	1.8	1.9	1.9	1.9	1.3	ND	2	ND	1.9	2	4	4.1
Perfluorohexadecanoic Acid (PFHxDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanesulfonate (PFHxS)	ng/L	---	---	ND	ND	ND	ND	6.1	6.9	4.7	6	3.5	4.1	2.1	1.9	2.1	2.2	ND	2.1	3	4.8
Perfluorohexanoic Acid (PFHxA)	ng/L	---	---	ND	ND	ND	ND	2.1	2.2	3.8	2.7	4.2	4.1	5.5	4.9	6	3.2	6	5.9	13	9.7
Perfluorononanesulfonate (PFNS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorononanoic Acid (PFNA)	ng/L	---	---	ND	ND	ND	ND	1.7	2.5	3.5	2.5	2.6	3.3	ND	ND	2.9	ND	ND	ND	2.2	2.5
Perfluorooctadecanoic Acid (PFOcDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanesulfonamide (PFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoro-octanesulfonate (PFOS)	ng/L	6.5	40	ND	ND	ND	ND	**24**	**38**	**28**	**31**	**13**	**19**	**8.8**	5.8	**21**	**8.9**	**10**	**6.9**	**9.7**	**26**
Perfluorooctanoic Acid (PFOA)	ng/L	5.1	10	1.2	**5.3**	ND	ND	**13**	**15**	**19**	**15**	**13**	**15**	**9.1**	**8.6**	**12**	**8.3**	**8.6**	**8.3**	**12**	**13**
Perfluoropentanesulfonate (PFPeS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoropentanoic Acid (PFPeA)	ng/L	---	---	ND	ND	ND	ND	ND	2.5	ND	2.7	ND	3.9	6.3	6.1	6.5	4	8.1	7.6	13	12
Perfluorotetradecanoic Acid (PFTA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotridecanoic Acid (PFTrDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroundecanoic Acid (PFUnA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10:2-Fluorotelomersulfonate (10:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4:2-Fluorotelomersulfonate (4:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6:2-Fluorotelomersulfonate (6:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8:2-Fluorotelomersulfonate (8:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethylperfluorooctane-1-sulfonamide (NEtPFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl-N-perfluorooctylsulfonylaminoethanol (NEtPFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl-perfluorooctane-1-sulfonamide (NMePFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methylperfluorooctanesulfonamidoethanol (NMePFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NL - Drinking Water Notification Level
RL - Response Level

TABLE 3.3
WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS
REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19

Constituent	Units	NL	RL	Whittier Narrows #2																	
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Zone 7		Zone 8		Zone 9	
				3/28/2019	10/31/2019	3/28/2019	10/31/2019	3/28/2019	10/31/2019	3/28/2019	10/31/2019	3/29/2019	10/31/2019	3/29/2019	10/31/2019	3/29/2019	10/31/2019	3/29/2019	10/31/2019	3/29/2019	10/31/2019
Perfluorobutanesulfonate (PFBS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.98	ND	6.8	5.6
Perfluorobutanoic Acid (PFBA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanesulfonate (PFDS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanoic Acid (PFDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanesulfonate (PFDoS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanoic Acid (PFDoA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanesulfonate (PFHpS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanoic Acid (PFHpA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.1	ND
Perfluorohexadecanoic Acid (PFHxDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanesulfonate (PFHxS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.9	2.6
Perfluorohexanoic Acid (PFHxA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	3	ND	ND	ND	ND	ND	ND	15	4.9
Perfluorononanesulfonate (PFNS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorononanoic Acid (PFNA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctadecanoic Acid (PFOcDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanesulfonamide (PFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoro-octanesulfonate (PFOS)	ng/L	6.5	40	ND	ND	ND	ND	ND	ND	ND	ND	1.8	3.7	ND	ND	ND	ND	ND	ND	2.4	ND
Perfluorooctanoic Acid (PFOA)	ng/L	5.1	10	ND	ND	ND	ND	ND	ND	ND	ND	1.7	5.1	ND	ND	ND	ND	ND	ND	**6.3**	3.4
Perfluoropentanesulfonate (PFPeS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoropentanoic Acid (PFPeA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	15	6.5
Perfluorotetradecanoic Acid (PFTA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotridecanoic Acid (PFTrDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroundecanoic Acid (PFUnA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10:2-Fluorotelomersulfonate (10:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4:2-Fluorotelomersulfonate (4:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6:2-Fluorotelomersulfonate (6:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8:2-Fluorotelomersulfonate (8:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethylperfluorooctane-1-sulfonamide (NEtPFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl-N-perfluorooctylsulfonylaminoethanol (NEtPFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl-perfluorooctane-1-sulfonamide (NMePFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methylperfluorooctanesulfonamidoethanol (NMePFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.6	ND	ND	ND	ND	ND	ND	ND	ND

NL - Drinking Water Notification Level
RL - Response Level

TABLE 3.3
WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS
REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19

Constituent	Units	NL	RL	Whittier #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/23/2019	9/25/2019	4/23/2019	9/25/2019	4/23/2019	9/25/2019	4/23/2019	9/25/2019	4/23/2019	9/25/2019	4/23/2019	9/25/2019
Perfluorobutanesulfonate (PFBS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	1.3	ND	4	4.2
Perfluorobutanoic Acid (PFBA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	5.3	5.4	6	6.1
Perfluorodecanesulfonate (PFDS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanoic Acid (PFDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanesulfonate (PFDoS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanoic Acid (PFDoA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanesulfonate (PFHpS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanoic Acid (PFHpA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.2	2.2
Perfluorohexadecanoic Acid (PFHxDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanesulfonate (PFHxS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	7.1	6.6	5.7	5
Perfluorohexanoic Acid (PFHxA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.7	3.6
Perfluorononanesulfonate (PFNS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorononanoic Acid (PFNA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctadecanoic Acid (PFOcDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanesulfonamide (PFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoro-octanesulfonate (PFOS)	ng/L	6.5	40	ND	ND	ND	ND	ND	ND	ND	ND	**39**	**39**	**13**	**11**
Perfluorooctanoic Acid (PFOA)	ng/L	5.1	10	ND	ND	ND	ND	ND	ND	ND	ND	**7.9**	**7.9**	**8.4**	**8.7**
Perfluoropentanesulfonate (PFPeS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoropentanoic Acid (PFPeA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.8
Perfluorotetradecanoic Acid (PFTA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotridecanoic Acid (PFTrDA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroundecanoic Acid (PFUnA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10:2-Fluorotelomersulfonate (10:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4:2-Fluorotelomersulfonate (4:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6:2-Fluorotelomersulfonate (6:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8:2-Fluorotelomersulfonate (8:2 FTS)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethylperfluorooctane-1-sulfonamide (NEtPFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethyl-N-perfluorooctylsulfonylaminoethanol (NEtPFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methyl-perfluorooctane-1-sulfonamide (NMePFOSA)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methylperfluorooctanesulfonamidoethanol (NMePFOSAE)	ng/L	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NL - Drinking Water Notification Level
RL - Response Level

TABLE 3.4
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]**
			2018	**2018**	**2018**	**2018**	**2018**	**2019**	**2018-2019**	**2018-2019**	**2018-2019**	**2018-2019**	**2017-2018**
Arsenic	μg/L	MCL = 10	ND/ ND	2.3	ND	ND	0.04	ND	ND	0.95	0.265	0.353	NA
Chloride	mg/L	SMCL = 500	77.6 [I] / 62 [I]	90 [I]	68 [I]	16	124 [J]	44	143	145	122	116	NA
Hexavalent Chromium	μg/L	MCL = 10	ND / ND	ND	ND	0.75	ND	0.58	0.1	0.1	0.09	0.07	NA
Iron	μg/L	SMCL = 300	ND / ND	ND	ND	ND	6.4	6.6	33	45	43	36	NA
Manganese	μg/L	SMCL = 50	ND / ND	ND	ND	ND	5.14	0.26	7.02	14.5	9.61	1.24	NA
Nitrate (as N)	mg/L	MCL = 10	ND / 0.5	ND	0.4	0.52	1.05	1.6	6.15	4.97	5.56	6.48	NA
Perchlorate	μg/L	MCL = 6	ND / ND	ND	ND	ND	ND	ND	0.52	0.4	0.4	0.4	NA
Tetrachloroethylene (PCE)	μg/L	MCL = 5	ND / ND	ND	ND	ND	ND	ND	0.2	ND	ND	ND	NA
Trichloroethylene (TCE)	μg/L	MCL = 5	ND / ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Total Dissolved Solids (TDS)	mg/L	SMCL = 1,000	423 [I] / 268 [I]	591 [I]	217 [I]	101	329 [J]	145	566	611	562	591	NA
Alkalinity	mg/L	None	88 [I] / 80 [I]	125 [I]	64 [I]	73	NA	NA	158	173	172	160	NA
Boron	μg/L	NL = 1,000	130/140	130	150	290	568 [J]	280	260	300	320	270	NA
Chromium, Total	μg/L	MCL = 50	ND / ND	ND	ND	ND	ND	ND	1.34	0.85	0.98	0.9	NA
Copper, Total	μg/L	SMCL = 1,000	ND / ND	ND	ND	5.3	1.79	ND	5.31	3.95	5.09	3.55	16.2
1,4-Dioxane	ug/L	NL = 1	NA	NA	NA	ND	ND	ND	1.3	1.0	1.1	1.1	NA
Hardness	mg/L	None	183 [I] / 108 [I]	278 [I]	82 [I]	52	89	37	198	197	193	194	68.6
Lead, Total	μg/L	AL = 15	ND / ND	ND	ND	ND	0.18	NA	0.33	0.20	0.24	0.099	6.54
Methyl tertiary butyl ether (MTBE)	μg/L	SMCL = 5	ND / ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Nitrite (as N)	mg/L	MCL = 1	ND / ND	ND	ND	0.12	ND	0.030	0.26	0.017	0.12	0.052	NA
n-Nitrosodimethylamine (NDMA)	ng/L	NL = 10	ND / ND	NA	NA	2.0	3.6	6.5	233	80	128	28	NA
pH	pH Units	None	8.1 / 8.5	8.2	8.4	7.5	8.1	8.3	7.4	7.3	7.5	7.3	NA
Selenium	μg/L	MCL = 50	ND / ND	ND	ND	ND	0.14	1.41	ND	ND	ND	ND	NA
Specific Conductance	μS/cm	SMCL = 1,600	715 [I] / 479 [I]	960 [I]	409 [I]	84	459	290	NA	NA	939	968	NA
Sulfate	mg/L	SMCL = 500	141 [I] / 52 [I]	222 [I]	25 [I]	0.71	9.0 [J]	1.15	63.6	99.6	83.3	109	NA
Total Organic Carbon (TOC)	mg/L	None [K]	2.7 / 2.6	2.9 [I]	3.3 [I]	0.32	0.23	0.2	6.93	6.14	5.7	5.41	NA
Turbidity	NTU	SMCL = 5	0.04 [I] / 0.05 [I]	1.0 [I]	1.6 [I]	0.079	0.13	ND	0.71	0.63	0.77	0.35	NA

See footnotes on following page.

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 2017 through March 2018 (four storm events total) (Data Source #5).

I = Average concentration for Water Year October 2018 through September 2019 (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 Dominguez Gap Seawater Intrusion Barrier (Data Source #6).

K = 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) 2018 Water Quality Report to MWD Member Agencies (Metropolitan Water District of Southern California, March 2019)

(2) Table D, Monthly Analyses of the District Water Supplies (Metropolitan Water District of Southern California, October 2018 - September 2019)

(3) October 2018 - September 2019 Annual Monitoring Report, Montebello Forebay Groundwater Recharge (County Sanitation Districts of Los Angeles County [SDLAC], December 12, 2019)

(4) Annual West Coast Basin Barrier Project Monitoring Report for 2018, Edward C. Little Water Recycling Facility (West Basin Municipal Water District [WBMWD], March 26, 2019)

(5) Annual stormwater monitoring data provided by Los Angeles County (Los Angeles County Department of Public Works [LACDPW])

(6) Annual Monitoring Report - January-December 2018, Harbor Water Recycling/Dominguez Gap Barrier Project (City of Los Angeles, Bureau of Sanitation)

(7) 2019 Annual Summary Report, Alamitos Barrier Recycled Water Project, Leo J. Vander Lans Water Treatment Facility (Water Replenishment District of Southern California [WRD], April 2020). Only two sampling events were conducted in 2019 (April) due to plant inoperation.

TABLE 3.5
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	GROUP D 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		
Los Angeles #5			1, 2	3, 4, 5, 6
Los Angeles #6		2	1, 3	4
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

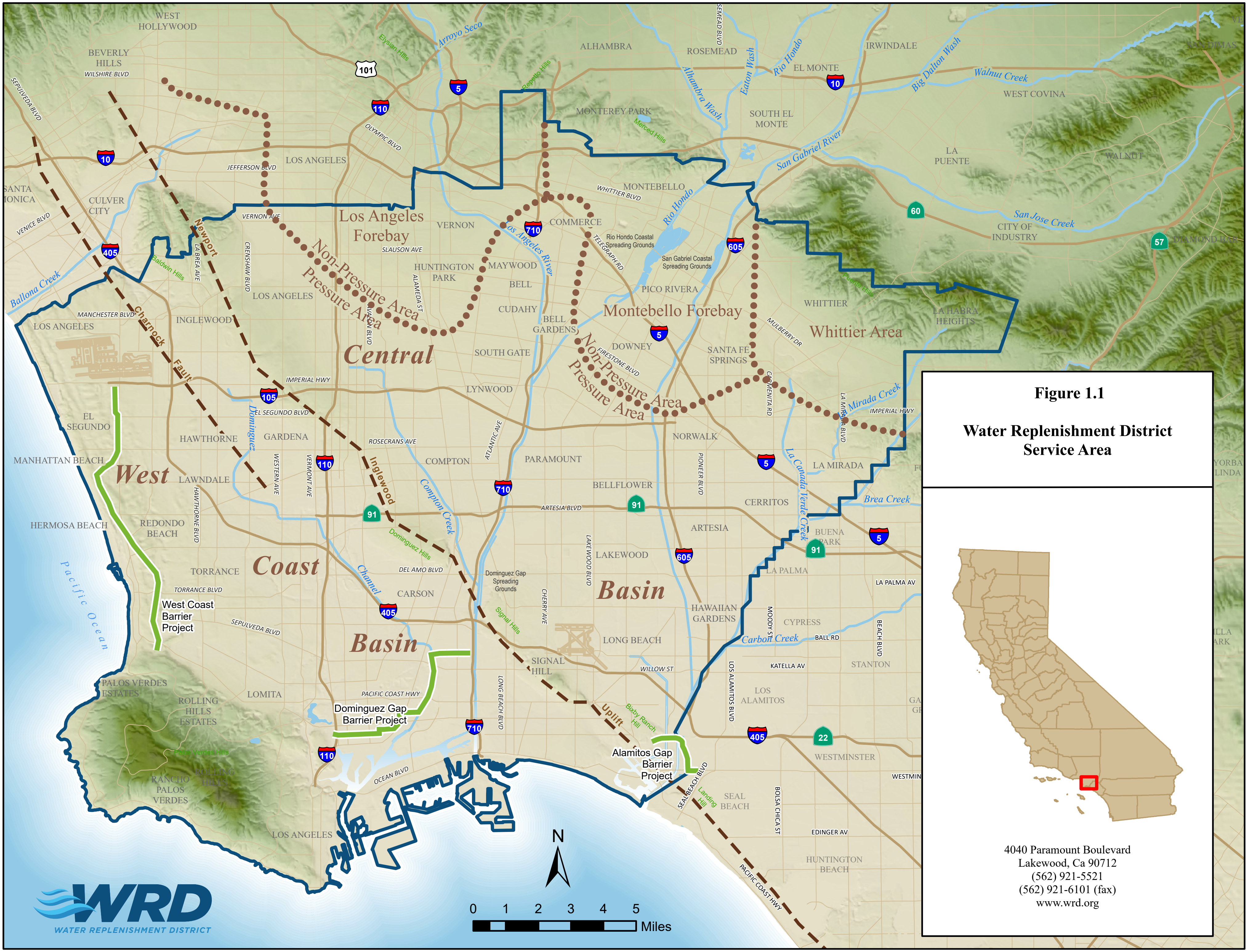
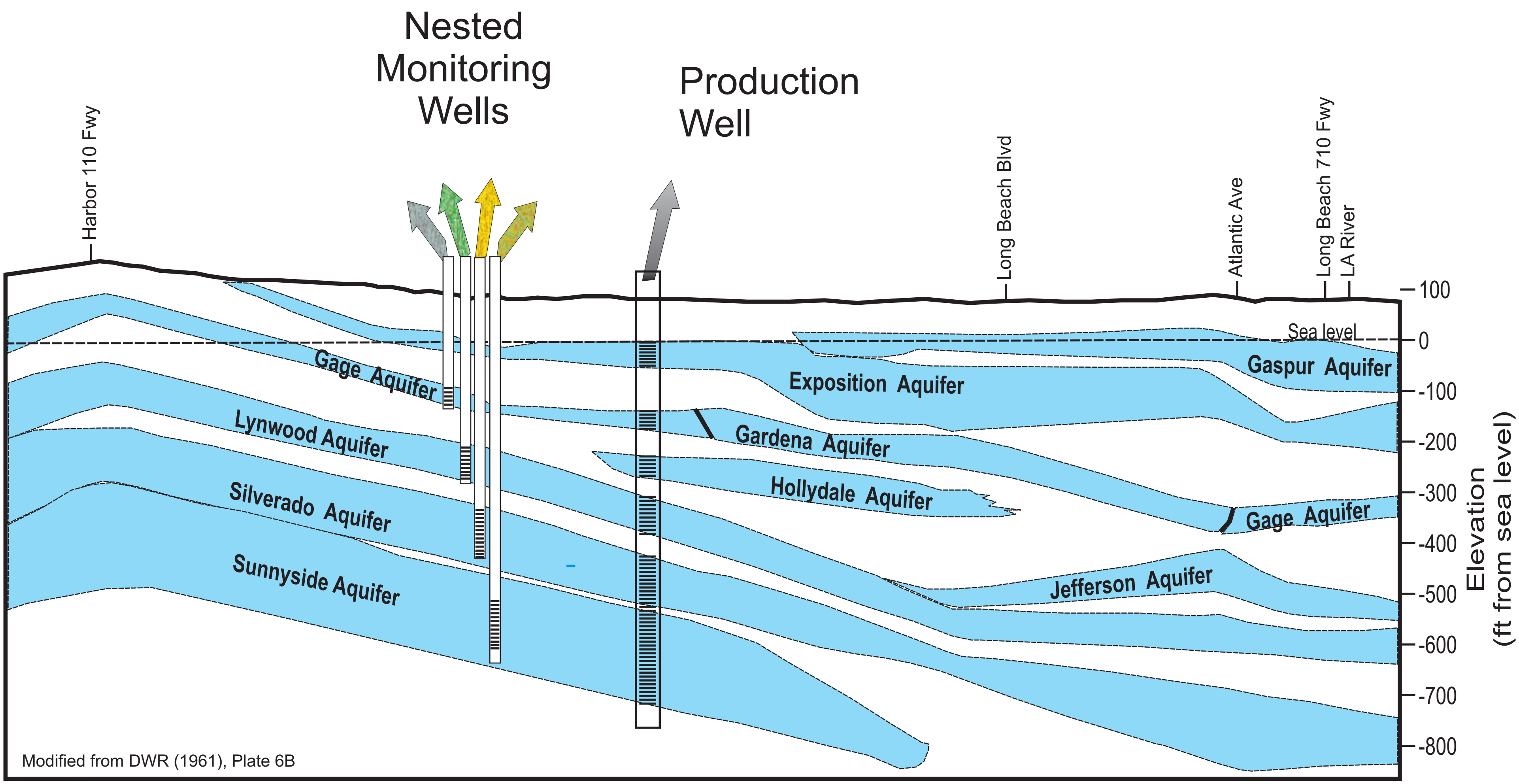


Figure 1.1
Water Replenishment District Service Area
4040 Paramount Boulevard
Lakewood, Ca 90712
(562) 921-5521
(562) 921-6101 (fax)
www.wrd.org
Los Angeles Forebay
Montebello Forebay
Whittier Area
Central
Basin
West
Coast
Basin
Non-Pressure Area
Pressure Area
Newport
Charnock
Fault
Inglewood
Uplift
West Coast Barrier Project
Dominguez Gap Barrier Project
Alamitos Gap Barrier Project
Rio Hondo Coastal Spreading Grounds
San Gabriel Coastal Spreading Grounds
Dominguez Gap Spreading Grounds
Pacific Ocean
Ballona Creek
Los Angeles River
San Gabriel River
Rio Hondo
Compton Creek
Dominguez Channel
Arroyo Seco
Alhambra Wash
Eaton Wash
Big Dalton Wash
Walnut Creek
San Jose Creek
La Mirada Creek
La Canada Verde Creek
Brea Creek
Carbon Creek
WEST HOLLYWOOD
BEVERLY HILLS
LOS ANGELES
CULVER CITY
INGLEWOOD
EL SEGUNDO
MANHATTAN BEACH
HERMOSA BEACH
REDONDO BEACH
TORRANCE
HAWTHORNE
LAWNDALE
GARDENA
CARSON
LOMITA
PALOS VERDES ESTATES
ROLLING HILLS ESTATES
RANCHO PALOS VERDES
COMPTON
VERNON
HUNTINGTON PARK
MAYWOOD
BELL
CUDAHY
BELL GARDENS
SOUTH GATE
LYNWOOD
PARAMOUNT
COMMERCE
MONTEBELLO
MONTEREY PARK
ALHAMBRA
ROSEMEAD
EL MONTE
SOUTH EL MONTE
IRWINDALE
WEST COVINA
LA PUENTE
WALNUT
CITY OF INDUSTRY
PICO RIVERA
WHITTIER
LA HABRA HEIGHTS
DOWNEY
SANTA FE SPRINGS
NORWALK
BELLFLOWER
CERRITOS
LA MIRADA
ARTESIA
LAKEWOOD
BUENA PARK
LA PALMA
HAWAIIAN GARDENS
CYPRESS
LONG BEACH
SIGNAL HILL
LOS ALAMITOS
STANTON
WESTMINSTER
SEAL BEACH
HUNTINGTON BEACH
N
0 1 2 3 4 5 Miles
WRD
WATER REPLENISHMENT DISTRICT

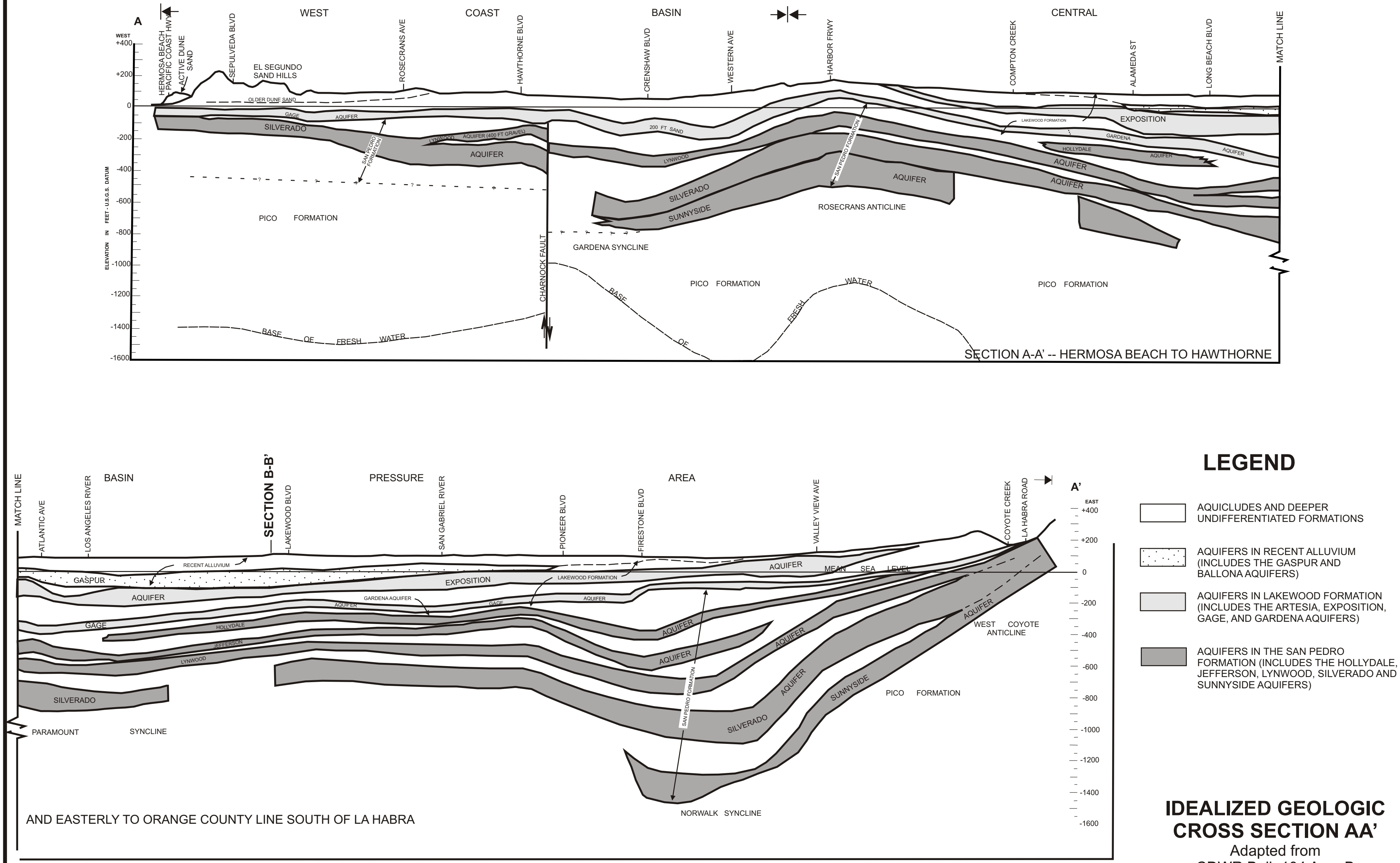
FIGURE 1.2
NESTED WELLS vs. PRODUCTION WELLS
FOR AQUIFER-SPECIFIC DATA



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.

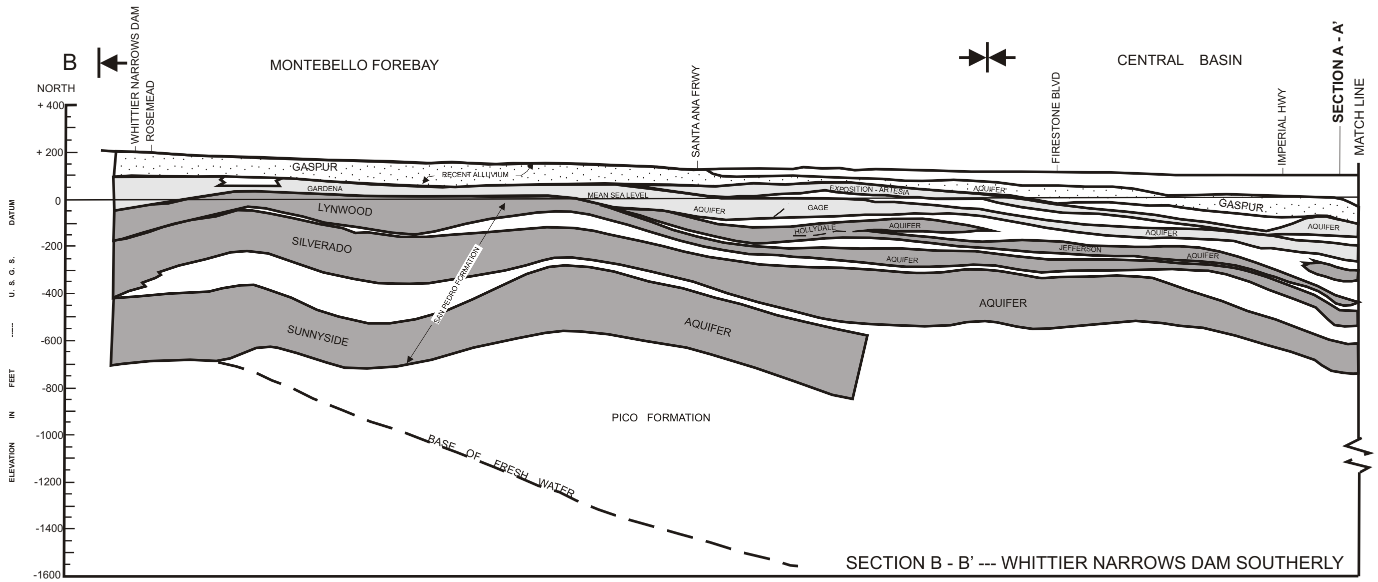
Figure 1.3

WRD Nested Monitoring Wells



IDEALIZED GEOLOGIC CROSS SECTION AA'
Adapted from
CDWR Bull. 104 App. B

FIGURE 1.4



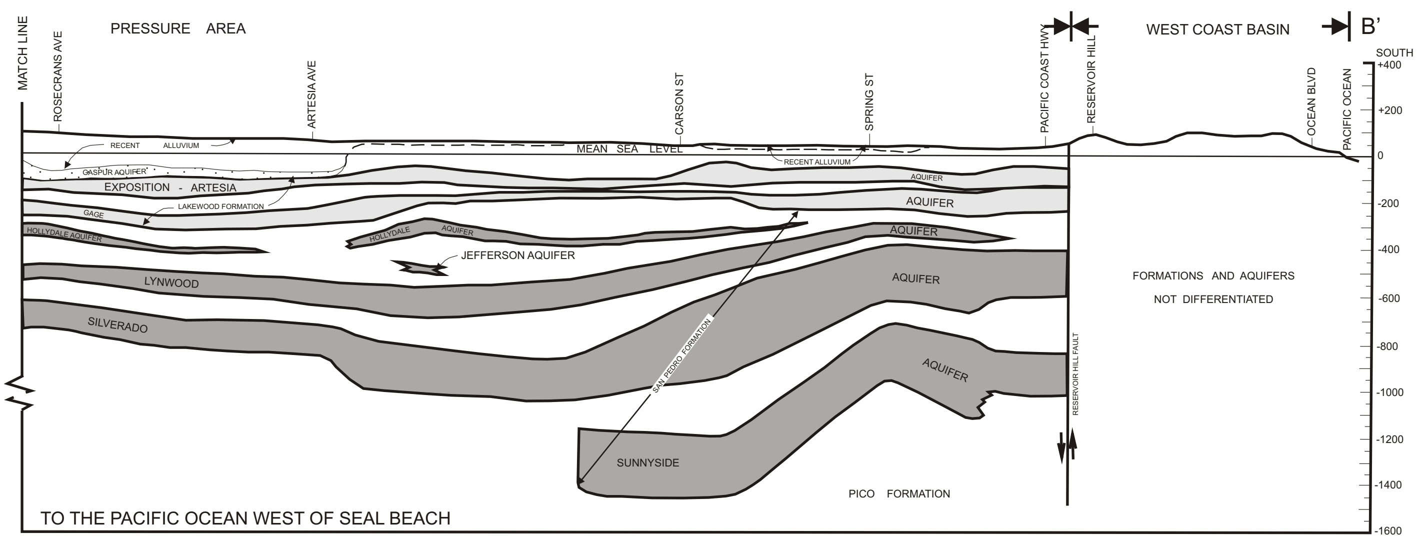
LEGEND

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

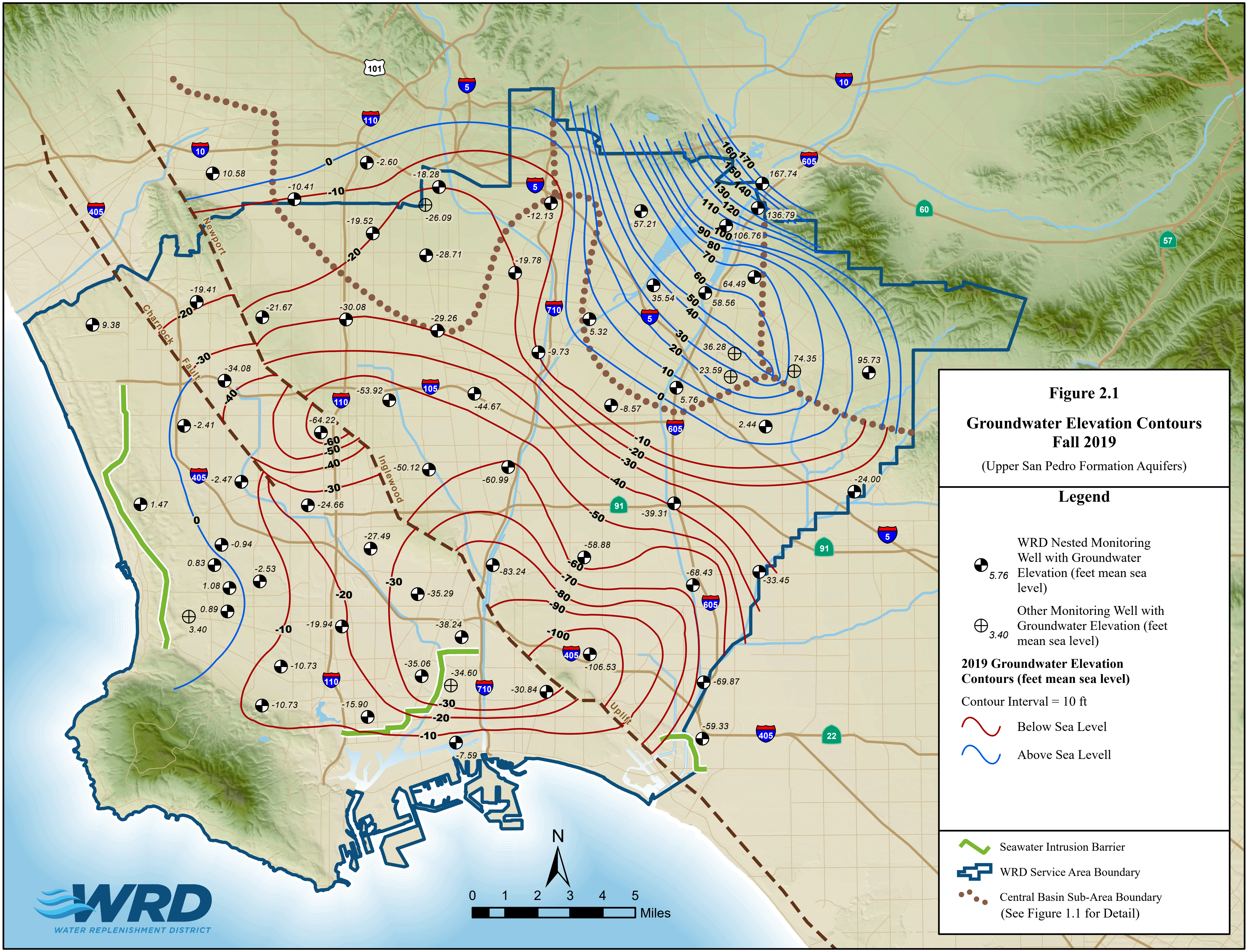


Figure 2.1
Groundwater Elevation Contours
Fall 2019
(Upper San Pedro Formation Aquifers)
Legend
WRD Nested Monitoring Well with Groundwater Elevation (feet mean sea level)
Other Monitoring Well with Groundwater Elevation (feet mean sea level)
2019 Groundwater Elevation Contours (feet mean sea level)
Contour Interval = 10 ft
Below Sea Level
Above Sea Levell
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 1.1 for Detail)
0 1 2 3 4 5 Miles
N
WRD
WATER REPLENISHMENT DISTRICT
Newport
Charnock Fault
Inglewood
Uplift

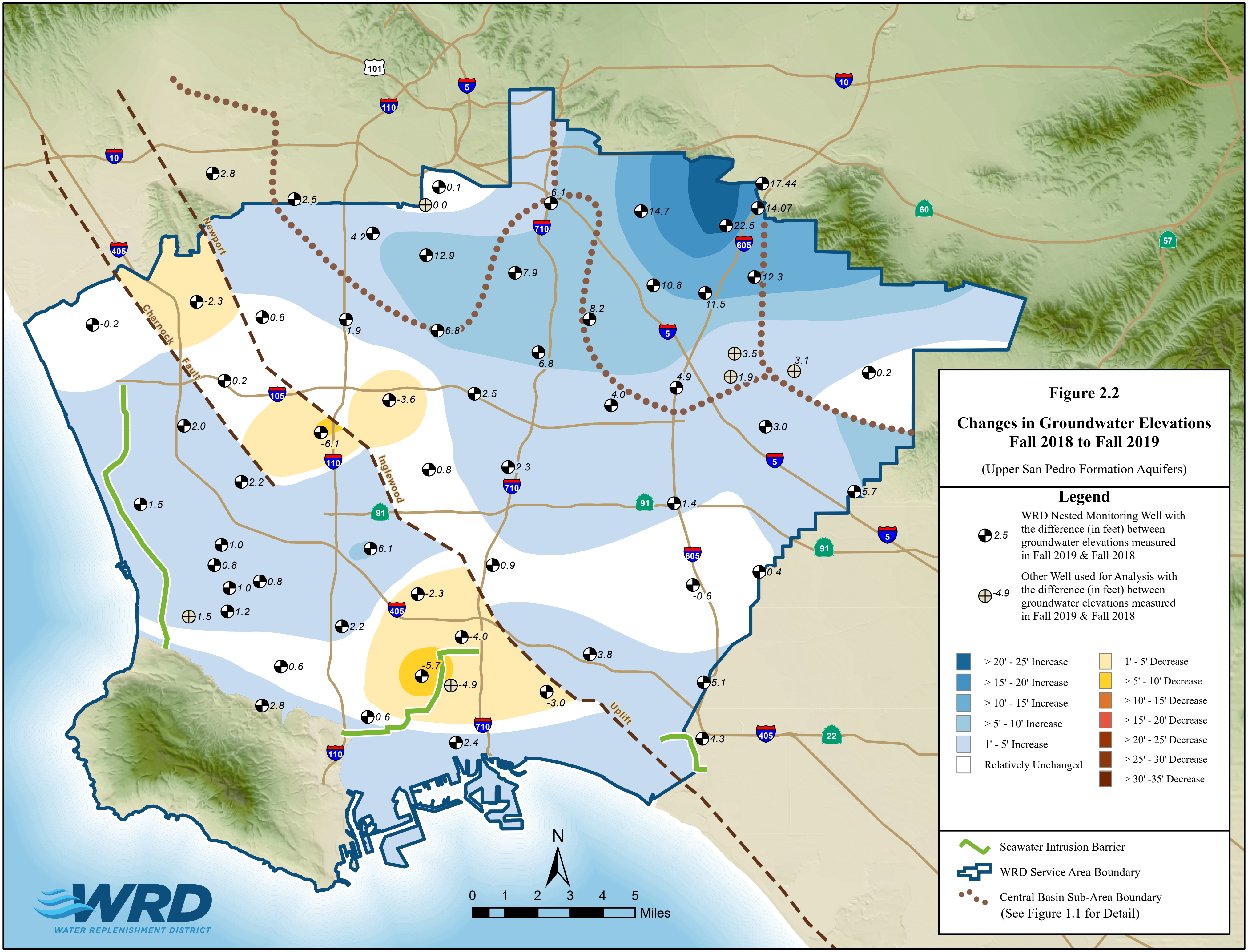


Figure 2.2

Changes in Groundwater Elevations Fall 2018 to Fall 2019

(Upper San Pedro Formation Aquifers)

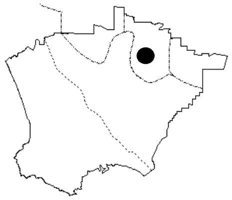
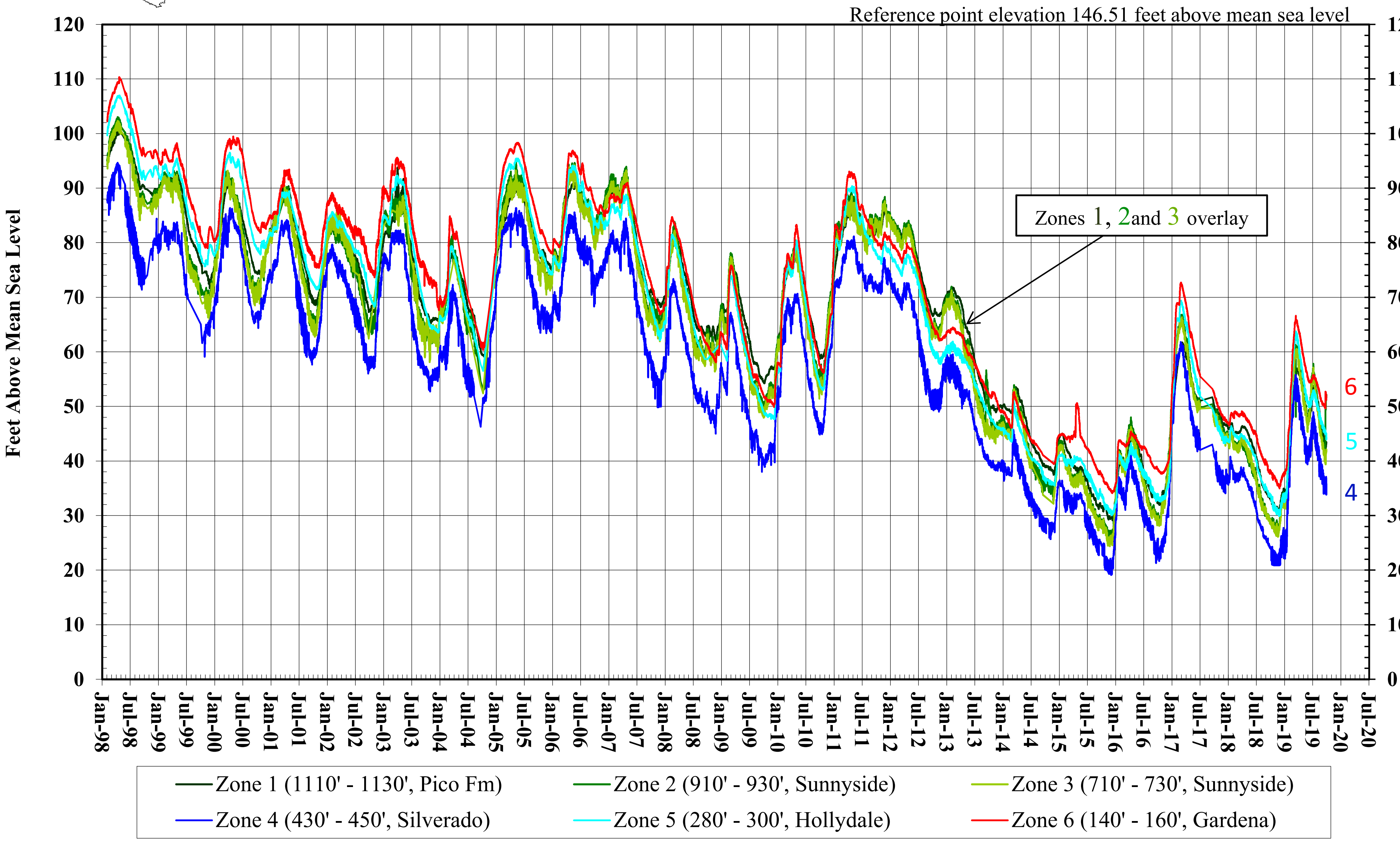


FIGURE 2.3
WATER LEVELS IN WRD KEY NESTED MONITORING WELL RIO HONDO #1



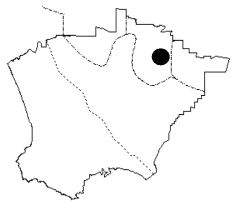


FIGURE 2.4
WATER LEVELS IN WRD KEY NESTED
MONITORING WELL PICO #2

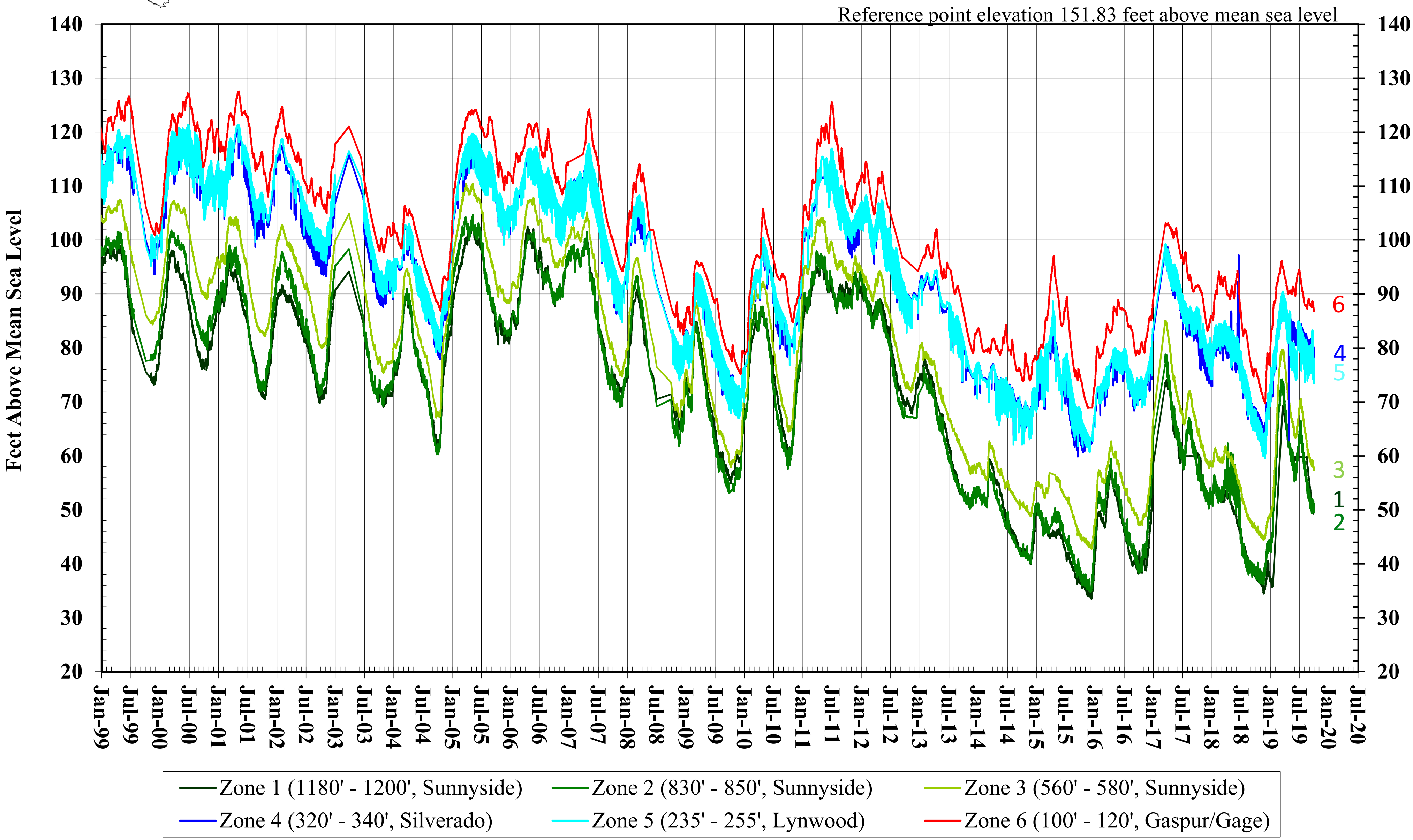


FIGURE 2.5
WATER LEVELS IN WRD KEY NESTED MONITORING WELL NORWALK #2

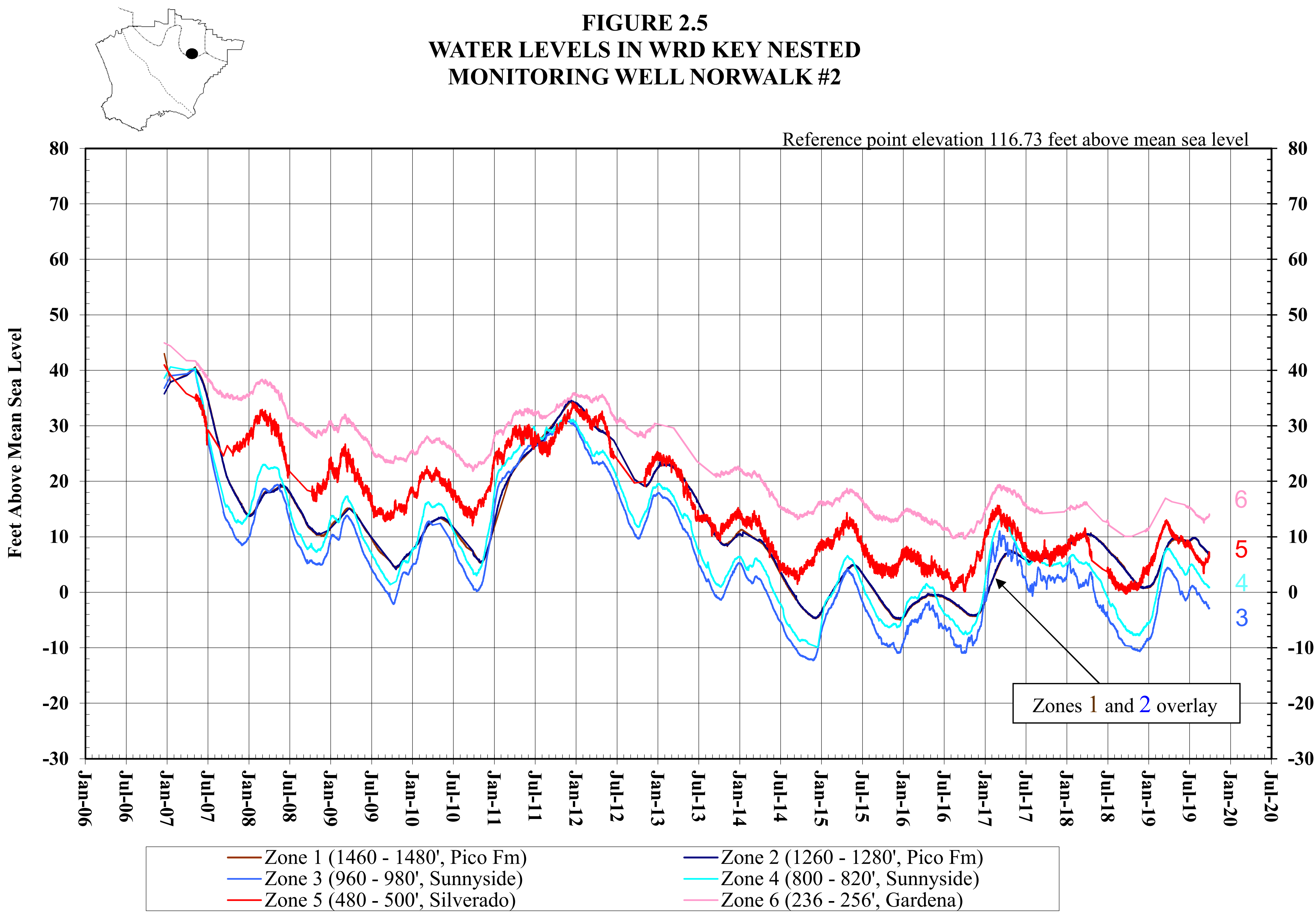


FIGURE 2.6
WATER LEVELS IN WRD KEY NESTED MONITORING WELL HUNTINGTON PARK #1

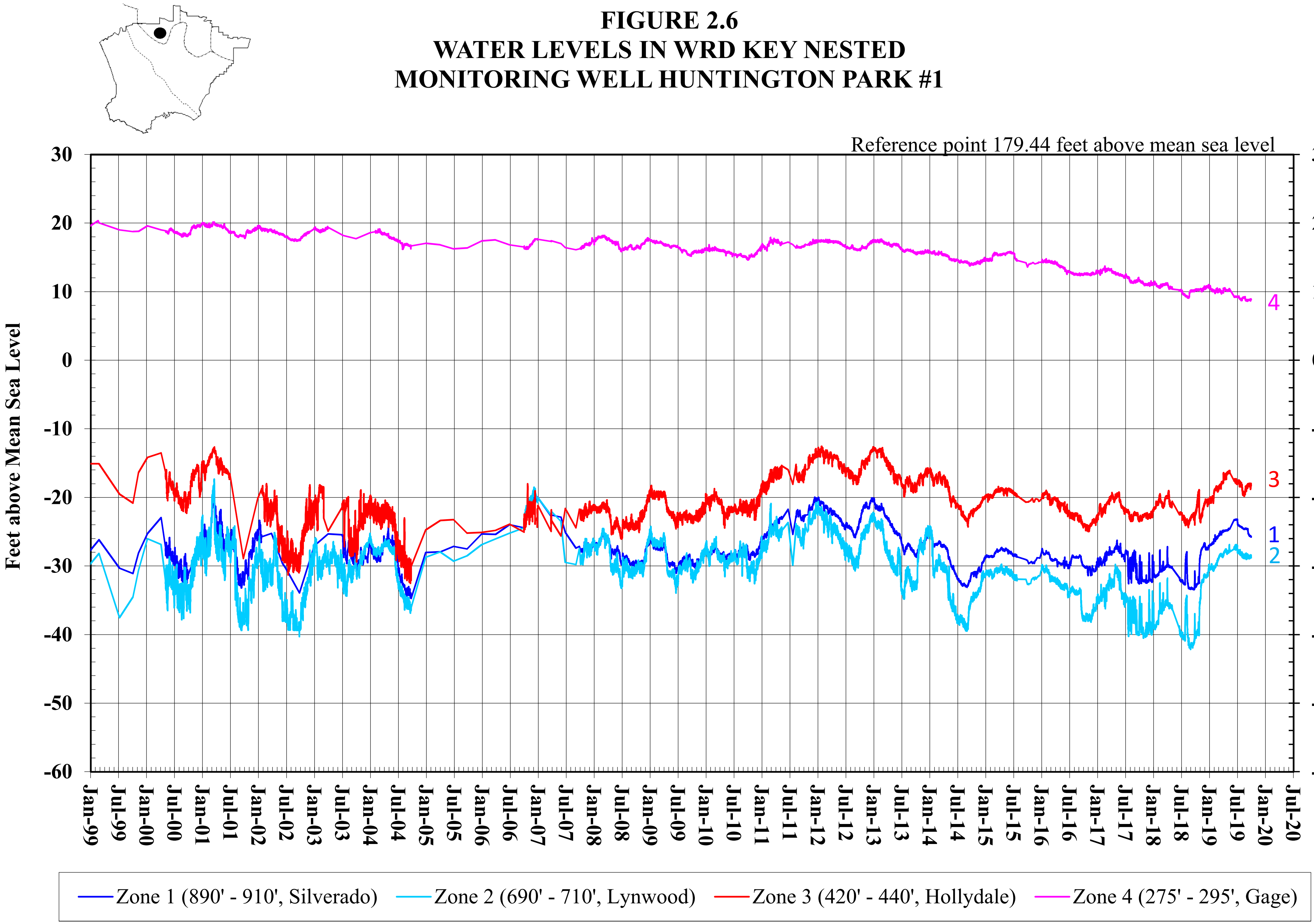


FIGURE 2.7
WATER LEVELS IN WRD KEY NESTED MONITORING WELL SOUTH GATE #1

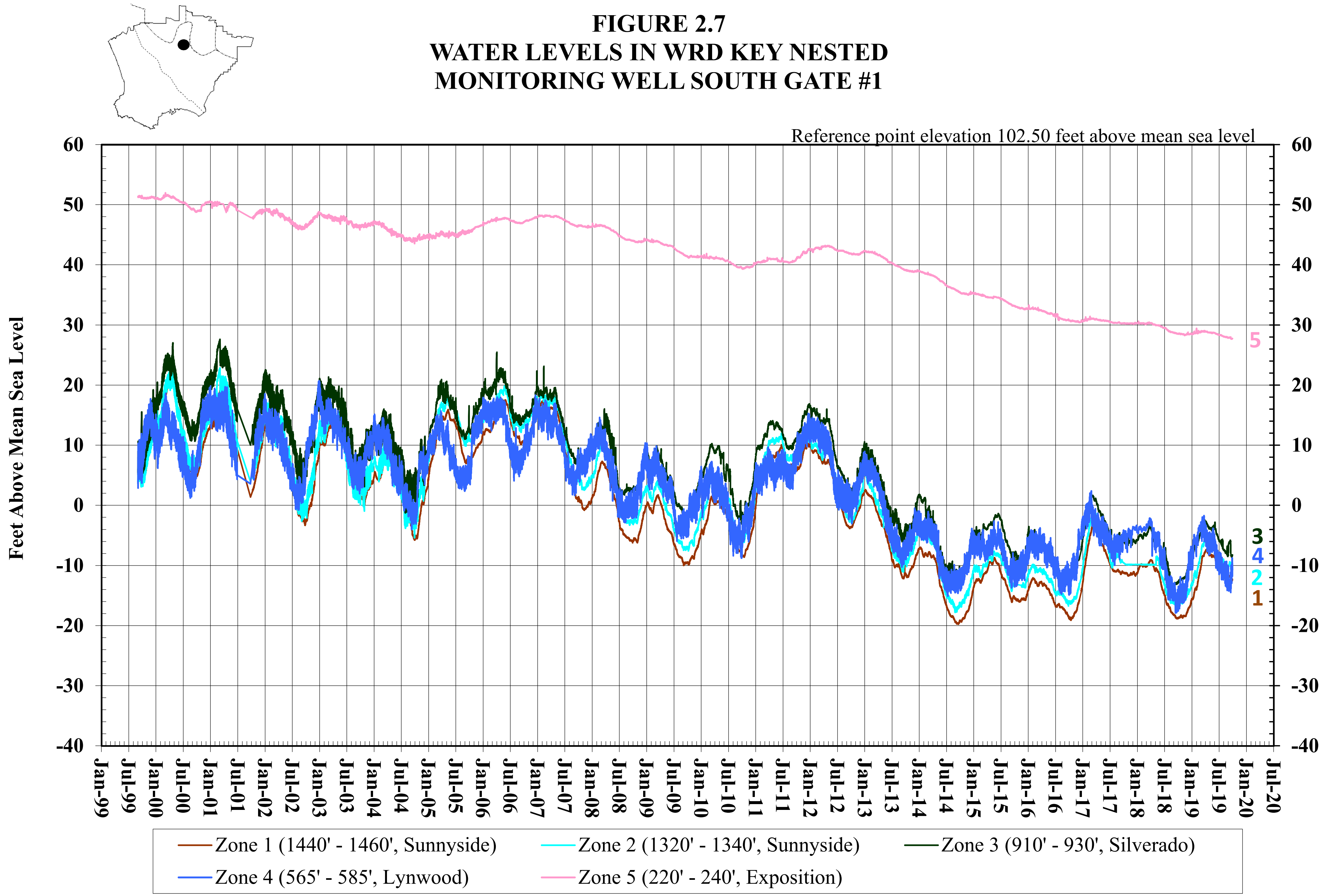


FIGURE 2.8
WATER LEVELS IN WRD KEY NESTED MONITORING WELL WILLOWBROOK #1

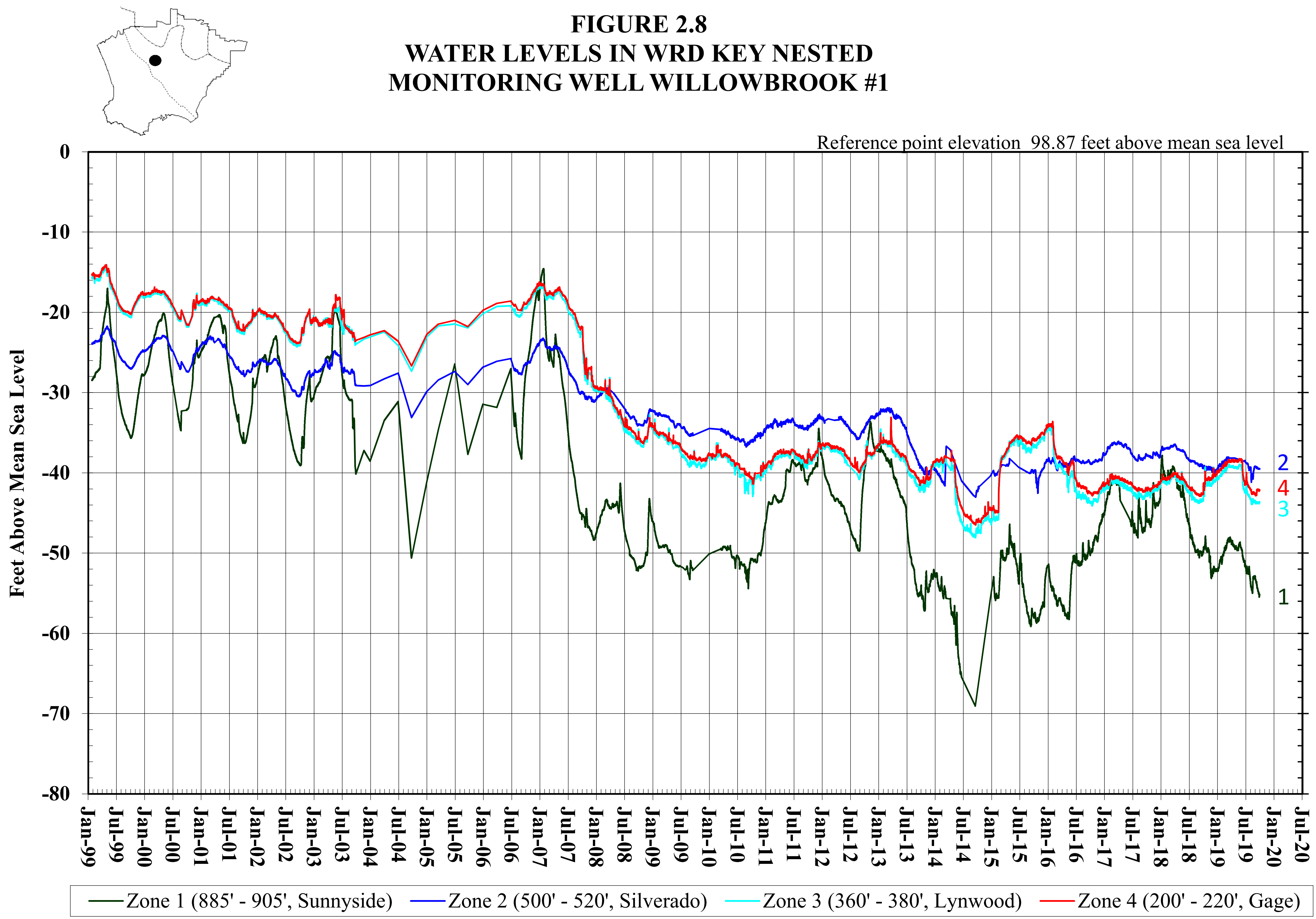
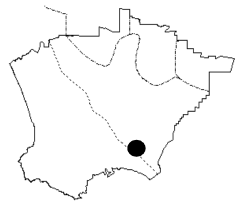


FIGURE 2.9
WATER LEVELS IN WRD KEY NESTED MONITORING WELL LONG BEACH #6



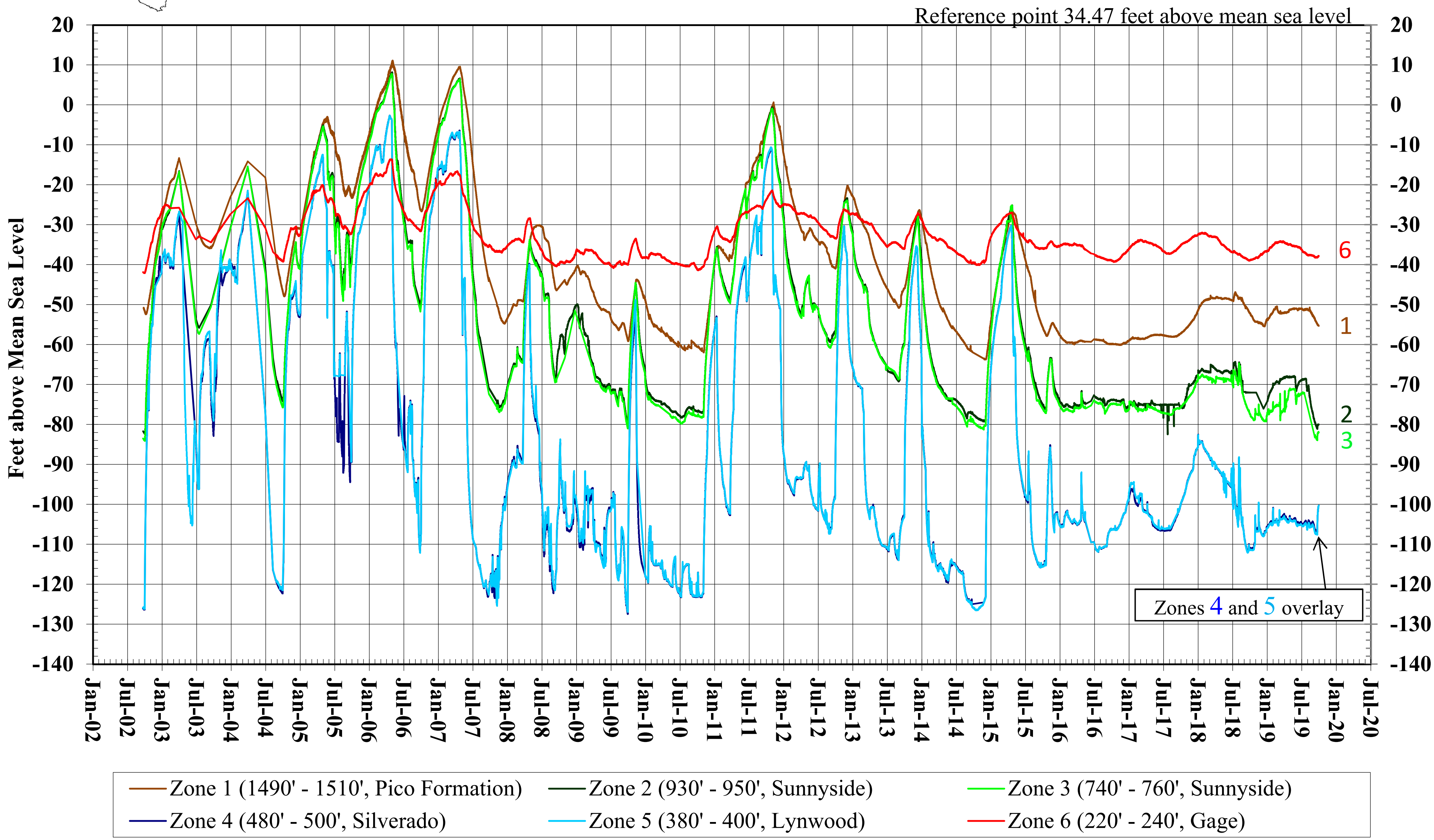


FIGURE 2.10
WATER LEVELS IN WRD KEY NESTED MONITORING WELL SEAL BEACH #1

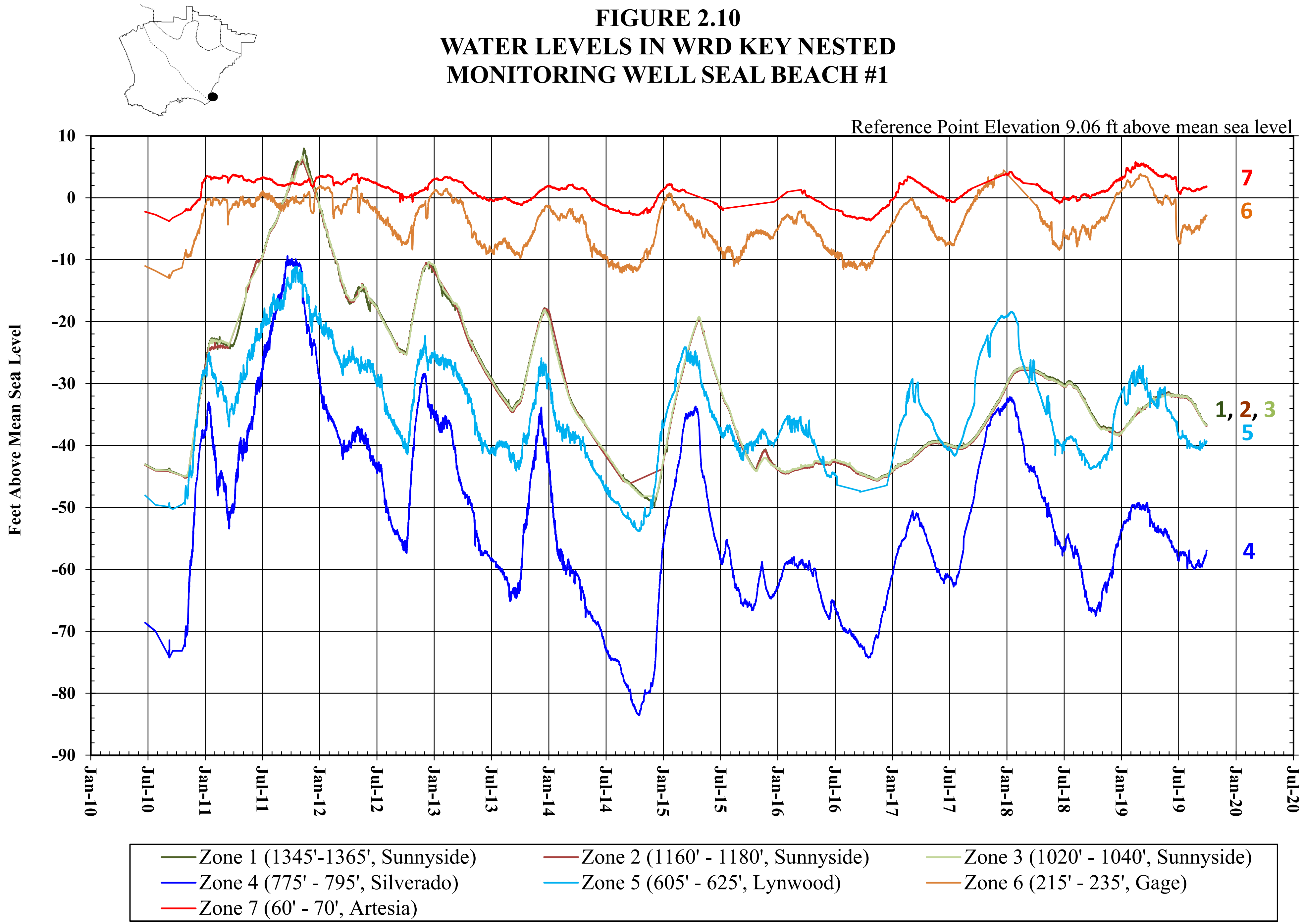
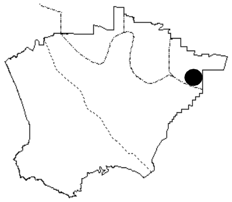


FIGURE 2.11
WATER LEVELS IN WRD KEY NESTED MONITORING WELL WHITTIER #1



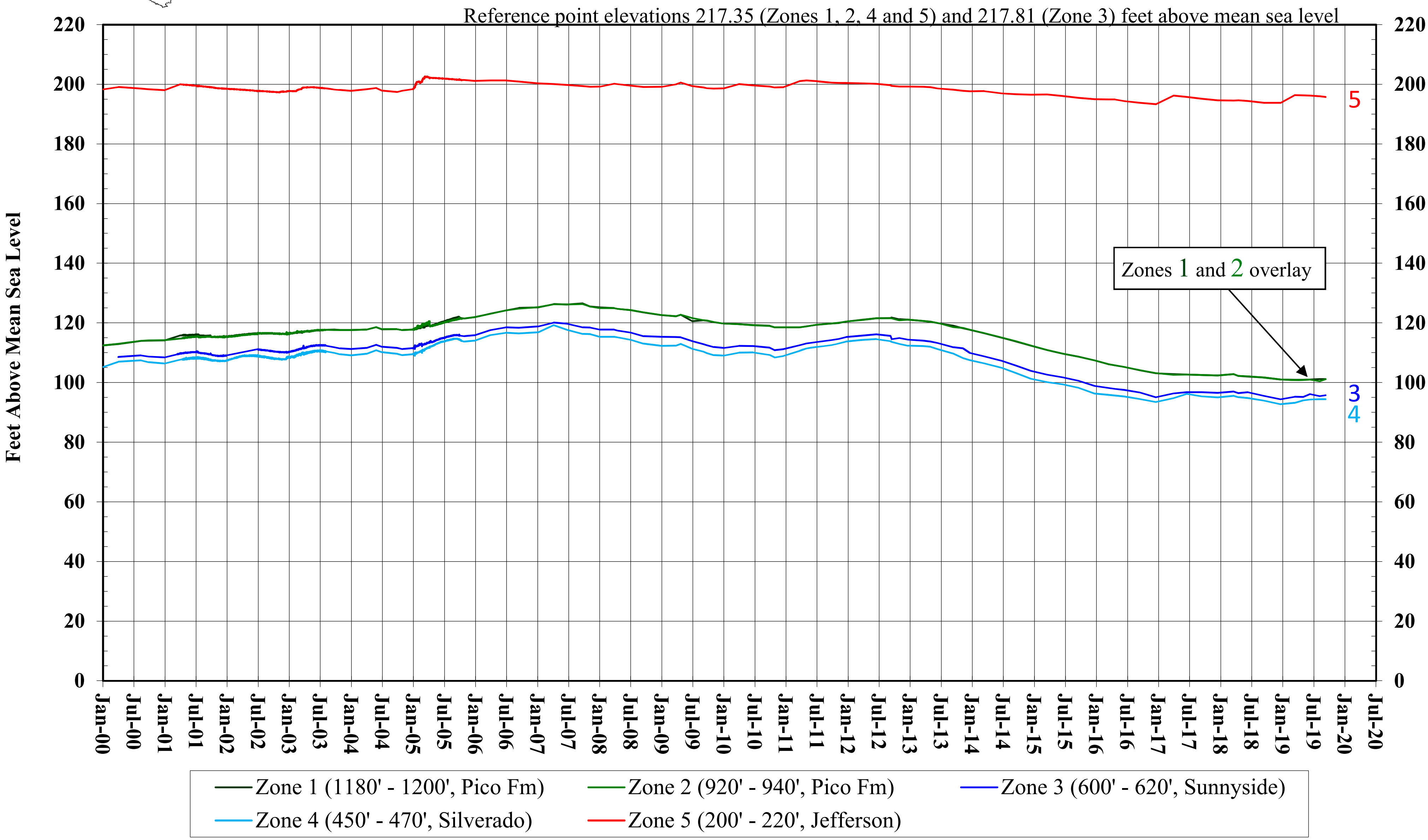
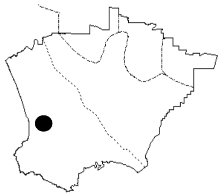


FIGURE 2.12
WATER LEVELS IN WRD NESTED MONITORING WELL PM-4 MARINER



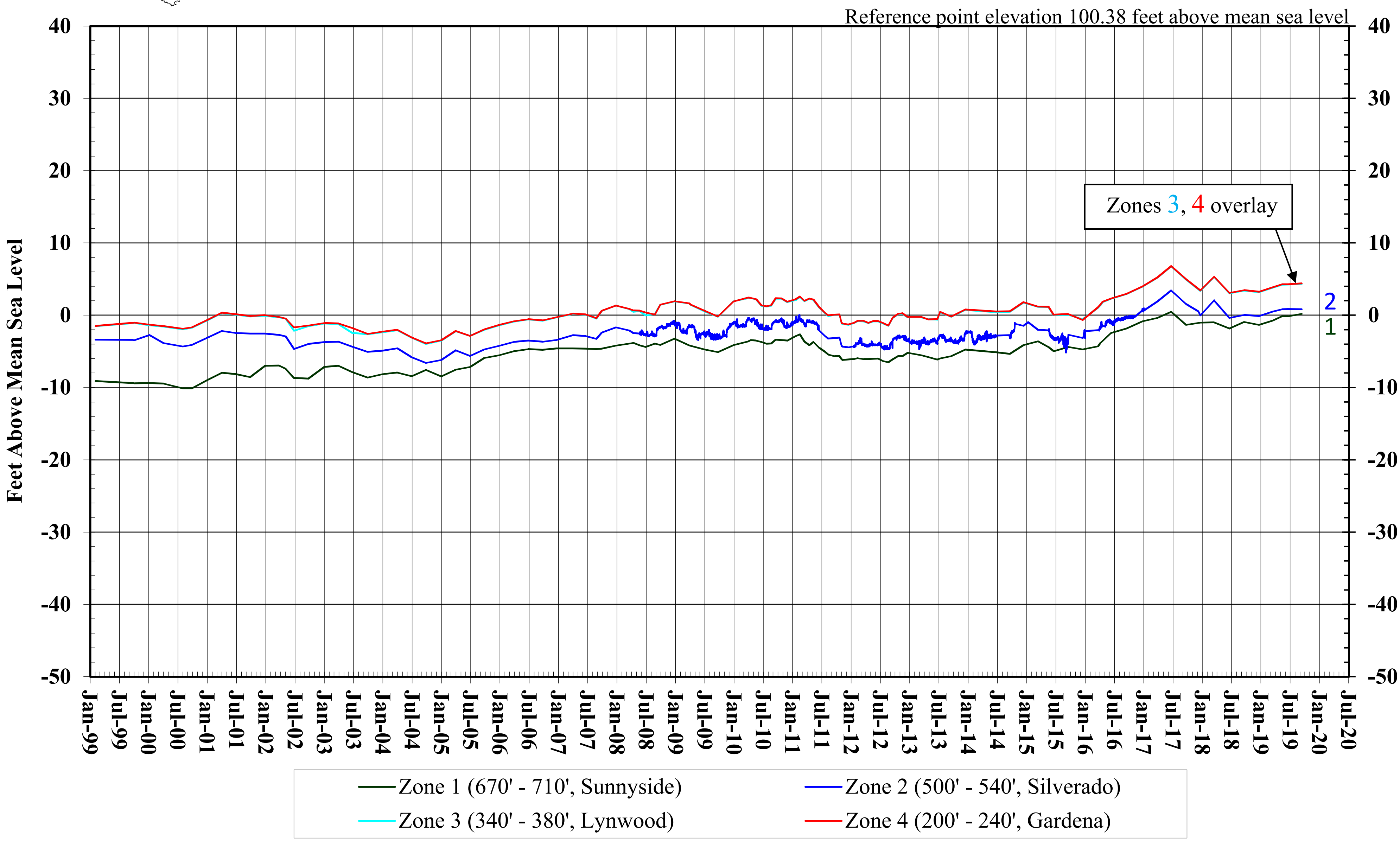


FIGURE 2.13
WATER LEVELS IN WRD KEY NESTED MONITORING WELL CARSON #1

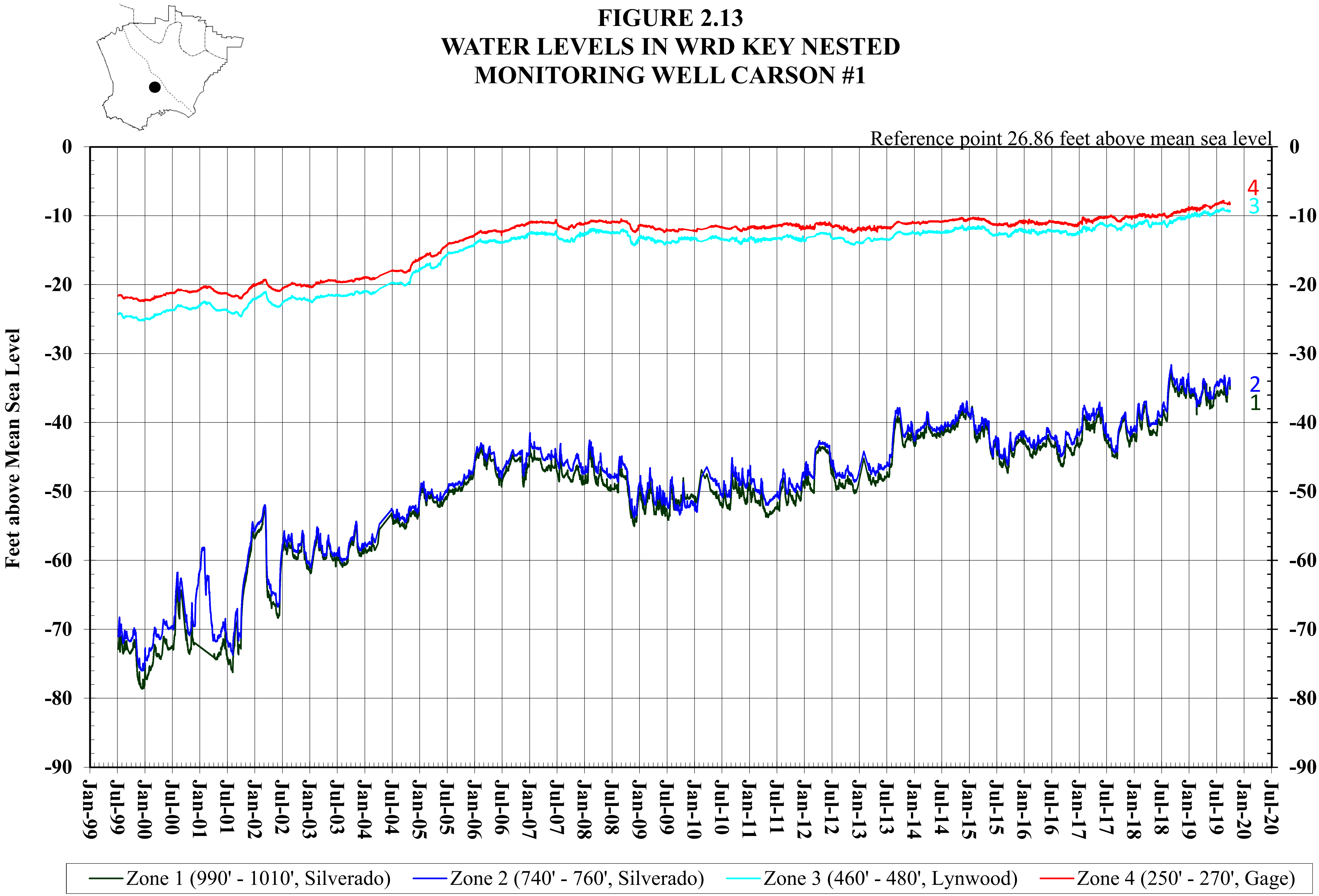
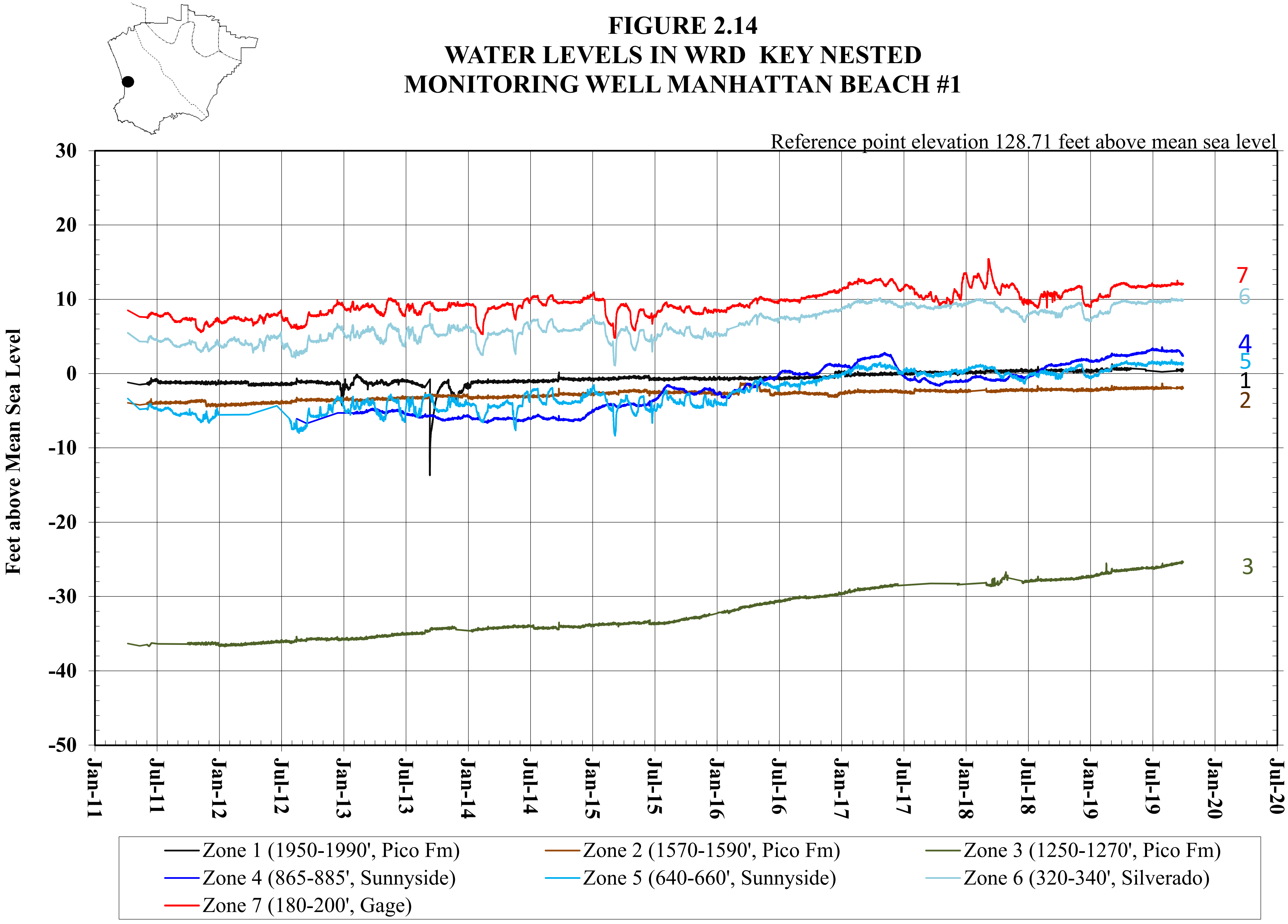


FIGURE 2.14
WATER LEVELS IN WRD KEY NESTED MONITORING WELL MANHATTAN BEACH #1



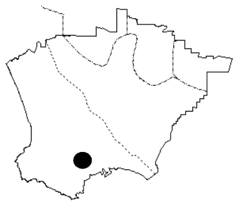
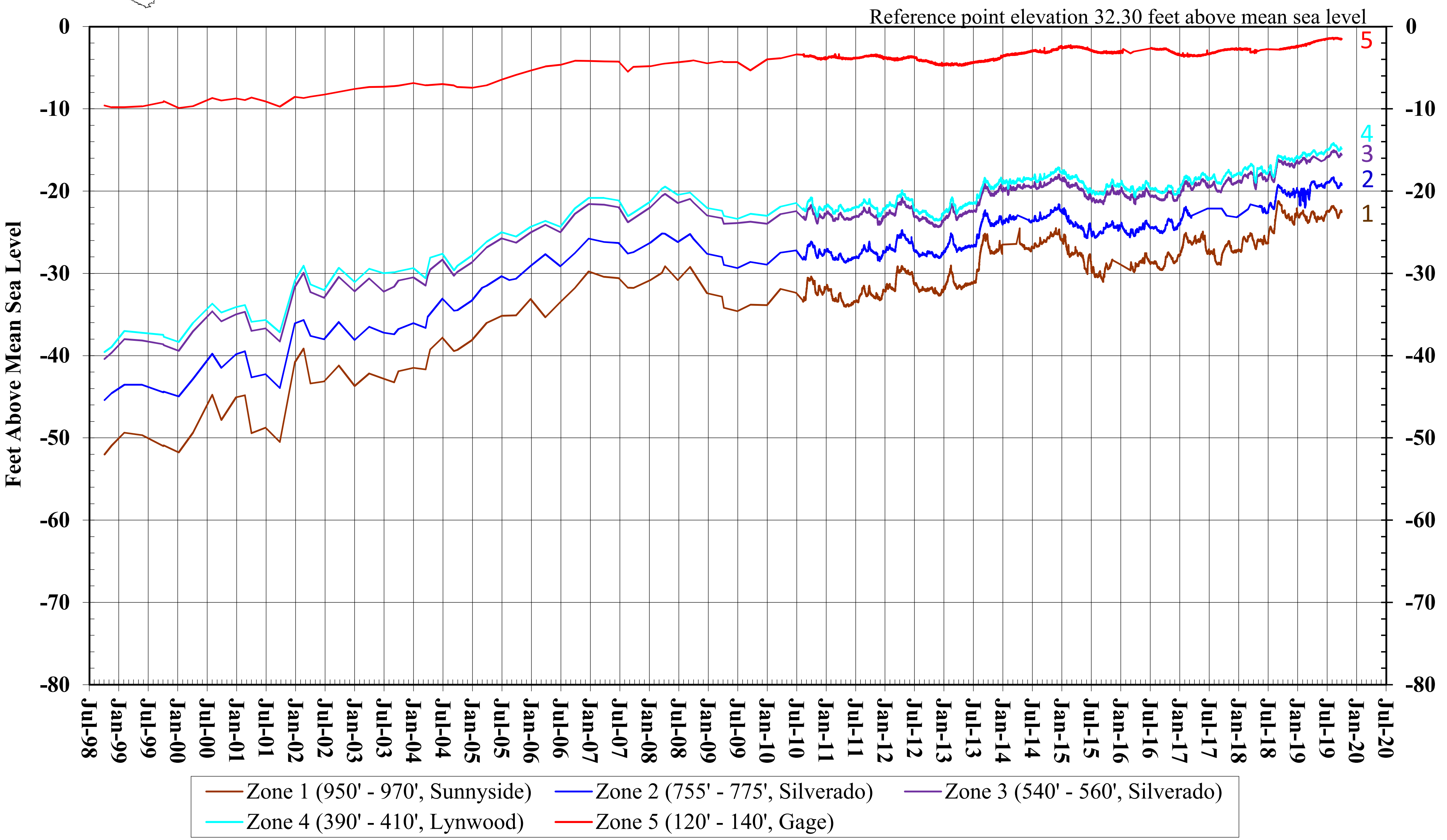


FIGURE 2.15
WATER LEVELS IN WRD KEY NESTED MONITORING WELL WILMINGTON #2



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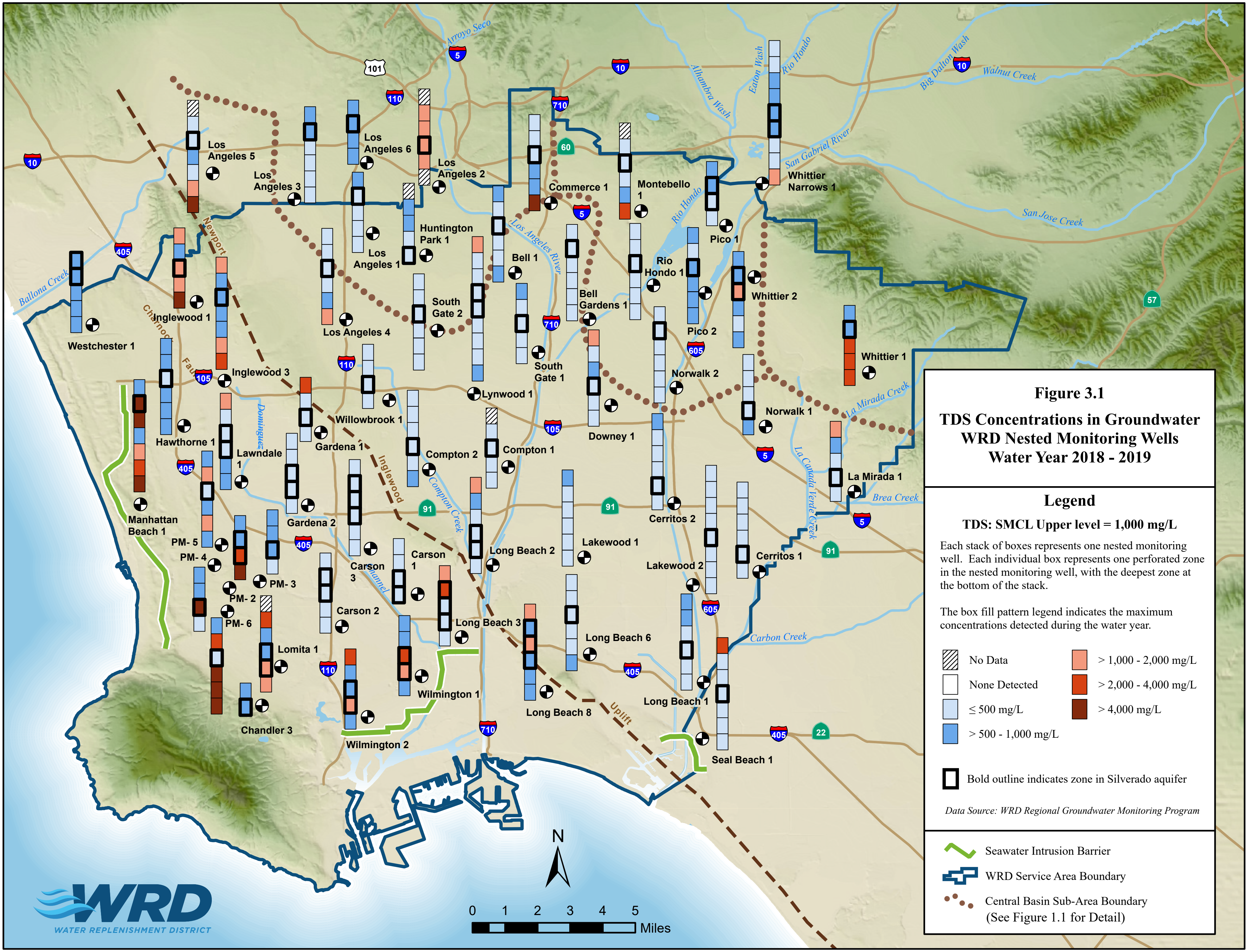


Figure 3.1
TDS Concentrations in Groundwater WRD Nested Monitoring Wells Water Year 2018 - 2019

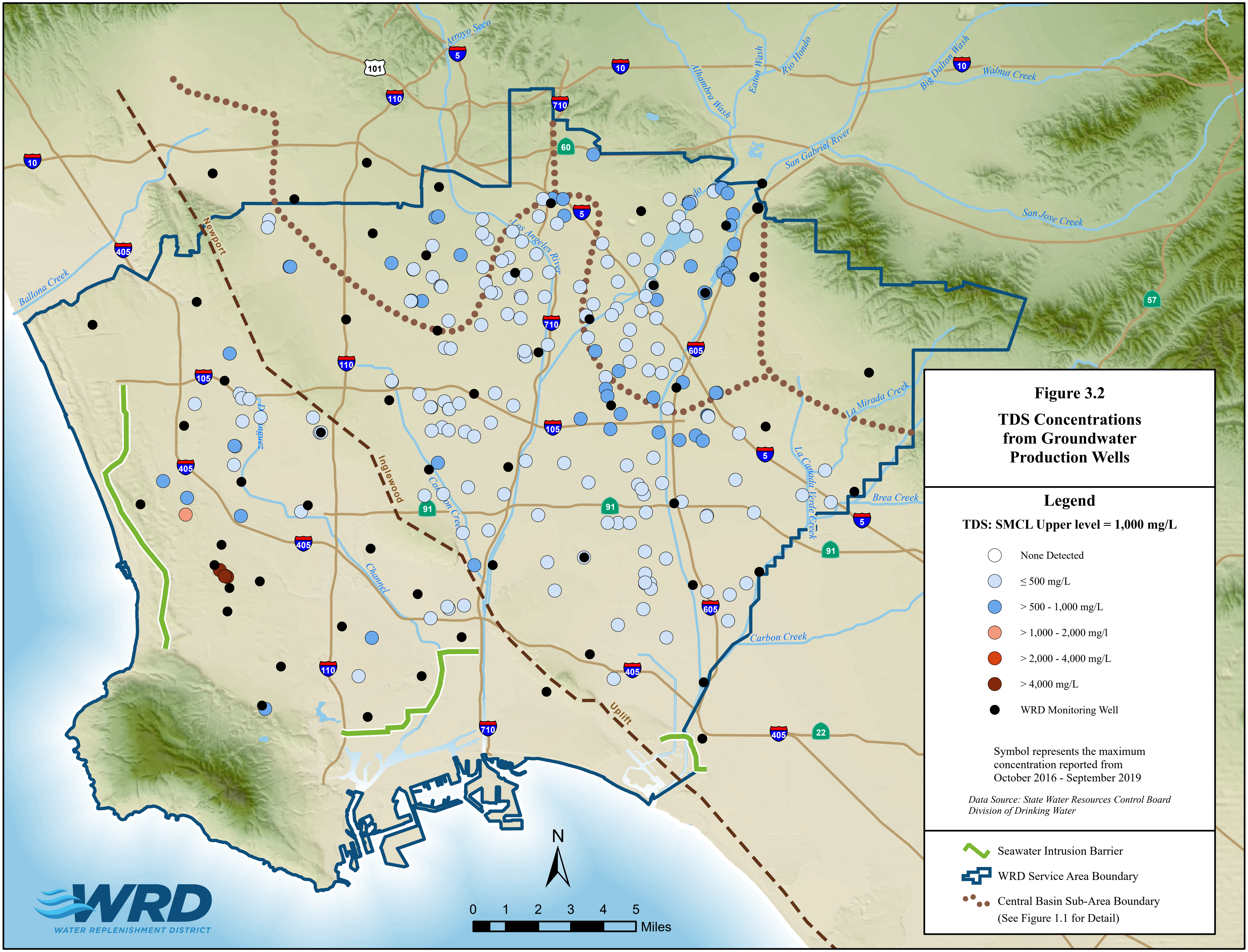


Figure 3.2

TDS Concentrations from Groundwater Production Wells

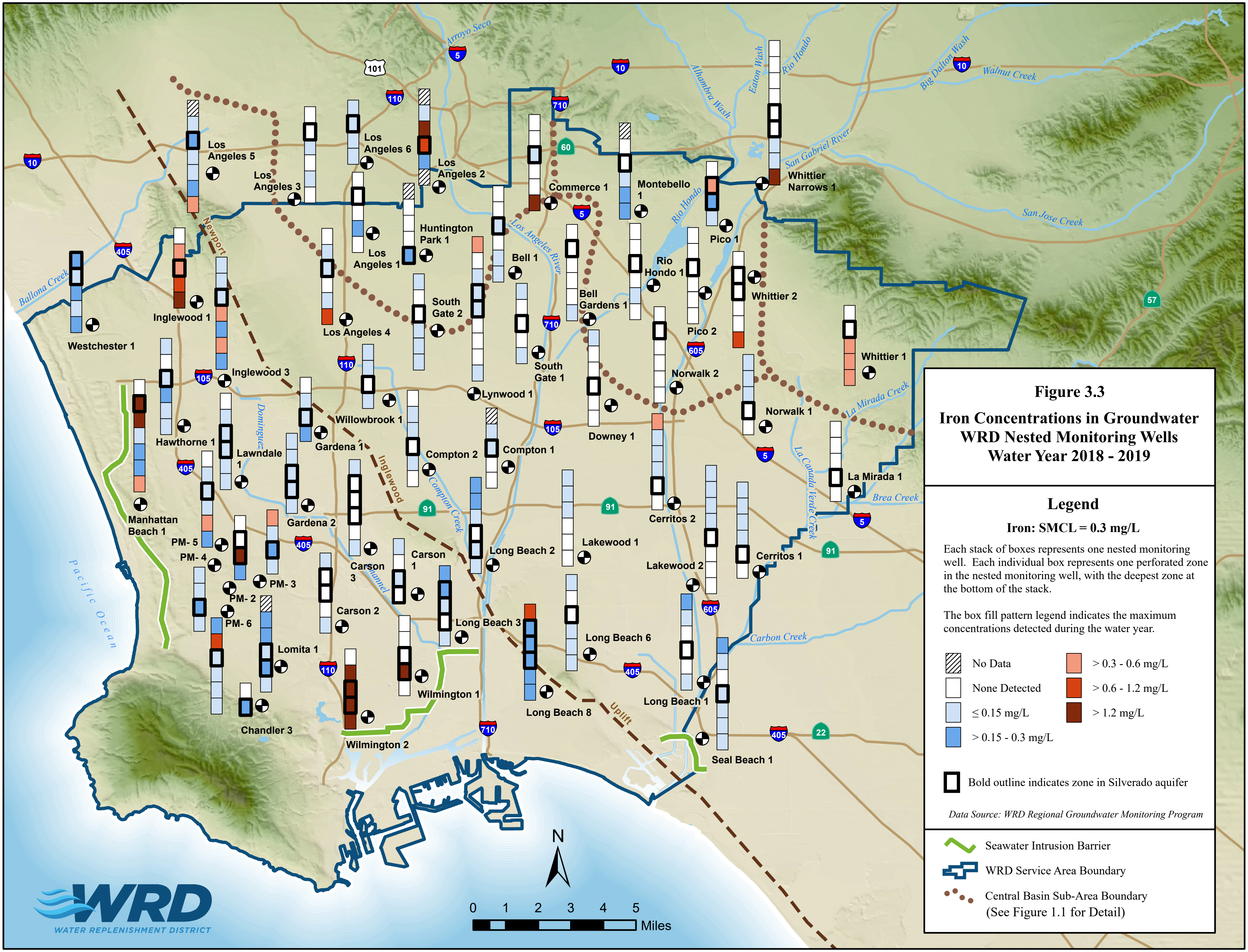


Figure 3.3
Iron Concentrations in Groundwater WRD Nested Monitoring Wells Water Year 2018 - 2019

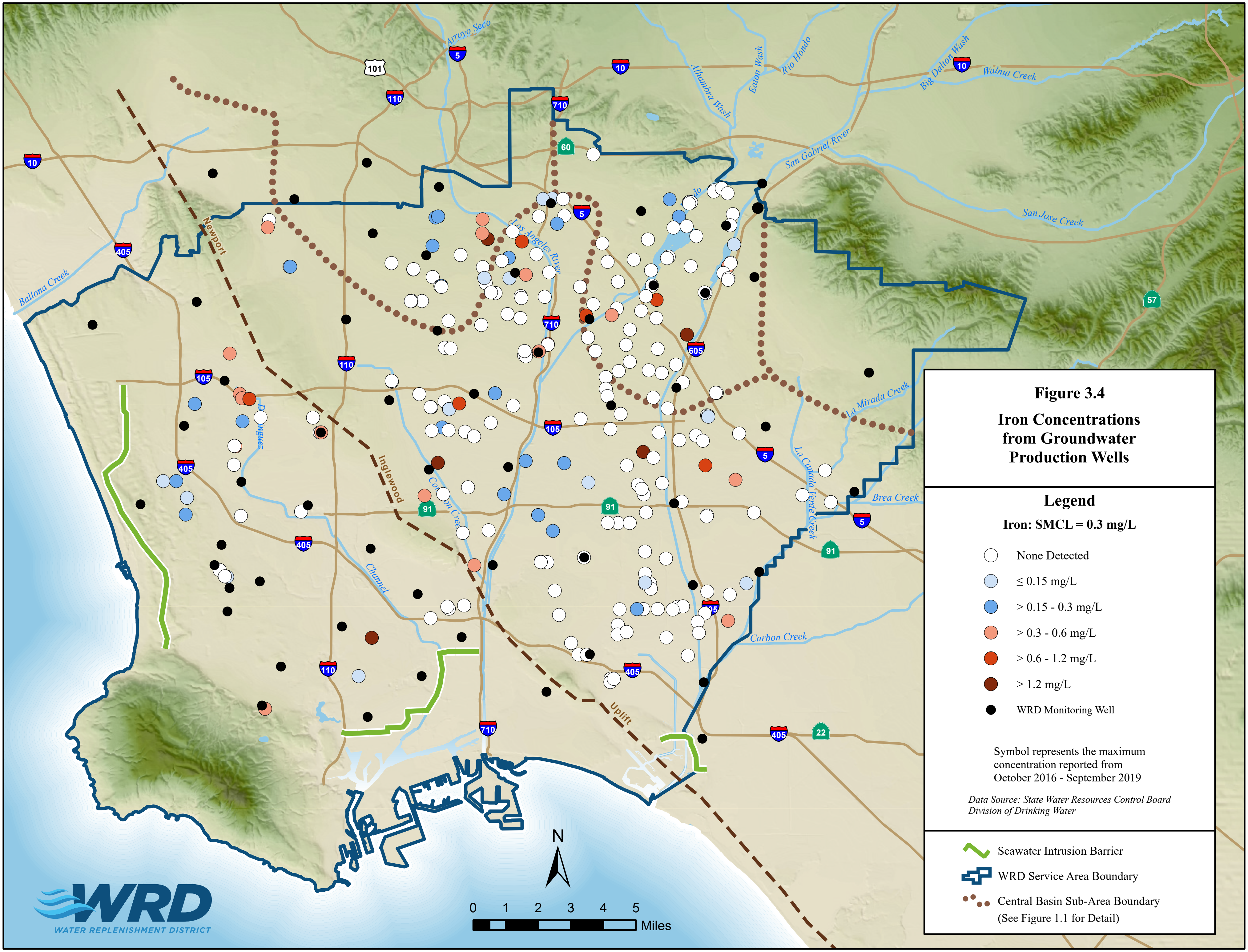


Figure 3.4
Iron Concentrations from Groundwater Production Wells

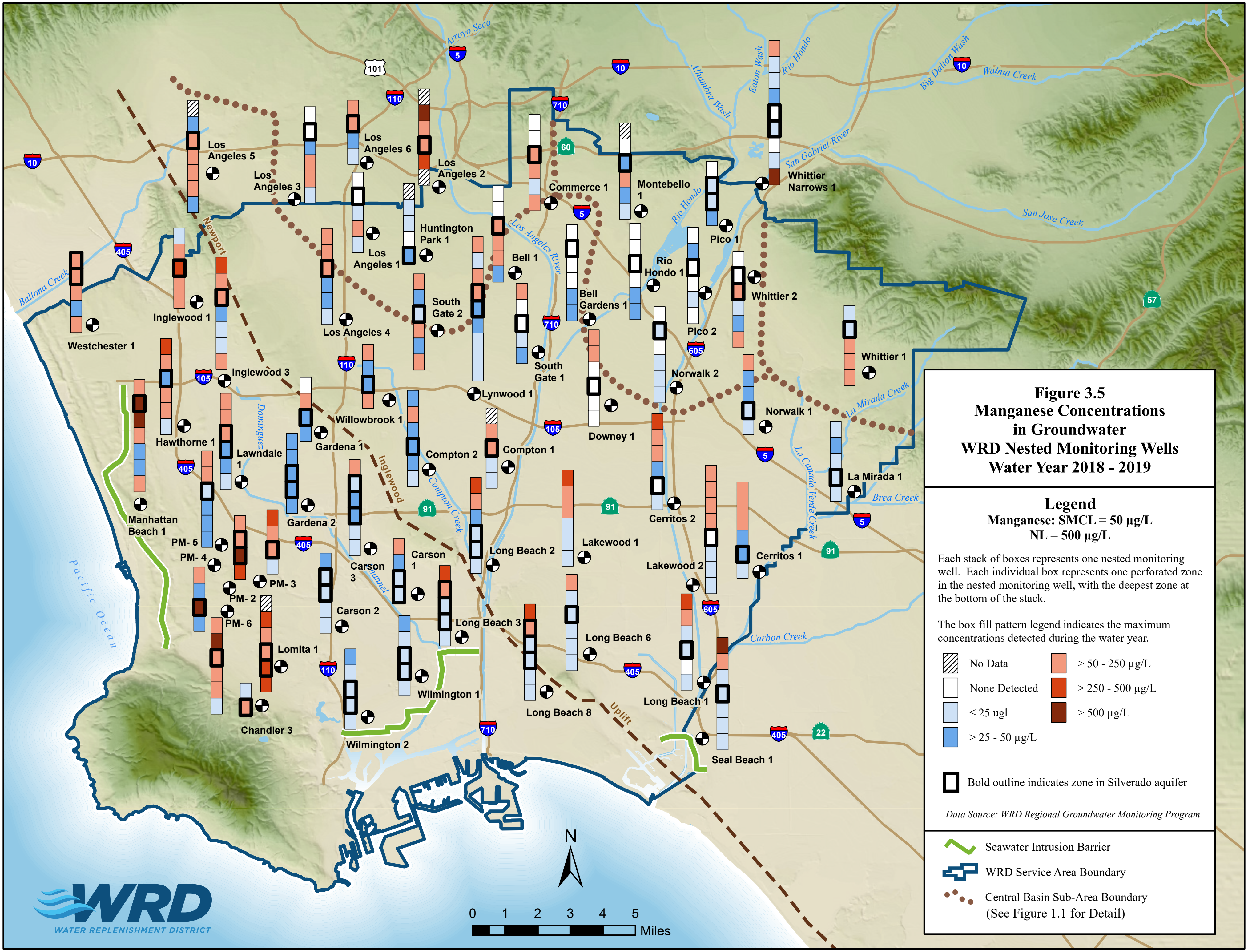


Figure 3.5
Manganese Concentrations
in Groundwater
WRD Nested Monitoring Wells
Water Year 2018 - 2019
Legend
Manganese: SMCL = 50 µg/L
NL = 500 µg/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest 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 ugl
> 25 - 50 µg/L
> 50 - 250 µg/L
> 250 - 500 µg/L
> 500 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 5
Los Angeles 3
Los Angeles 6
Los Angeles 2
Los Angeles 1
Los Angeles 4
Huntington Park 1
Commerce 1
Montebello 1
Whittier Narrows 1
Pico 1
Pico 2
Rio Hondo 1
Whittier 2
Whittier 1
Bell 1
Bell Gardens 1
South Gate 2
South Gate 1
Lynwood 1
Westchester 1
Inglewood 1
Inglewood 3
Hawthorne 1
Lawndale 1
Gardena 1
Gardena 2
Willowbrook 1
Compton 2
Compton 1
Downey 1
Norwalk 2
Norwalk 1
La Mirada 1
Cerritos 2
Cerritos 1
Lakewood 1
Lakewood 2
Manhattan Beach 1
PM- 5
PM- 4
PM- 2
PM- 3
PM- 6
Carson 3
Carson 1
Carson 2
Long Beach 2
Long Beach 3
Long Beach 6
Long Beach 8
Long Beach 1
Seal Beach 1
Lomita 1
Chandler 3
Wilmington 1
Wilmington 2
Arroyo Seco
Eaton Wash
Rio Hondo
Alhambra Wash
Big Dalton Wash
Walnut Creek
San Gabriel River
San Jose Creek
Los Angeles River
Ballona Creek
Dominguez Channel
Compton Creek
La Mirada Creek
La Canada Verde Creek
Brea Creek
Carbon Creek
Newport
Inglewood
Uplift
Pacific Ocean
5
10
60
101
105
110
405
605
710
91
57
22
N
0 1 2 3 4 5 Miles
WRD
WATER REPLENISHMENT DISTRICT

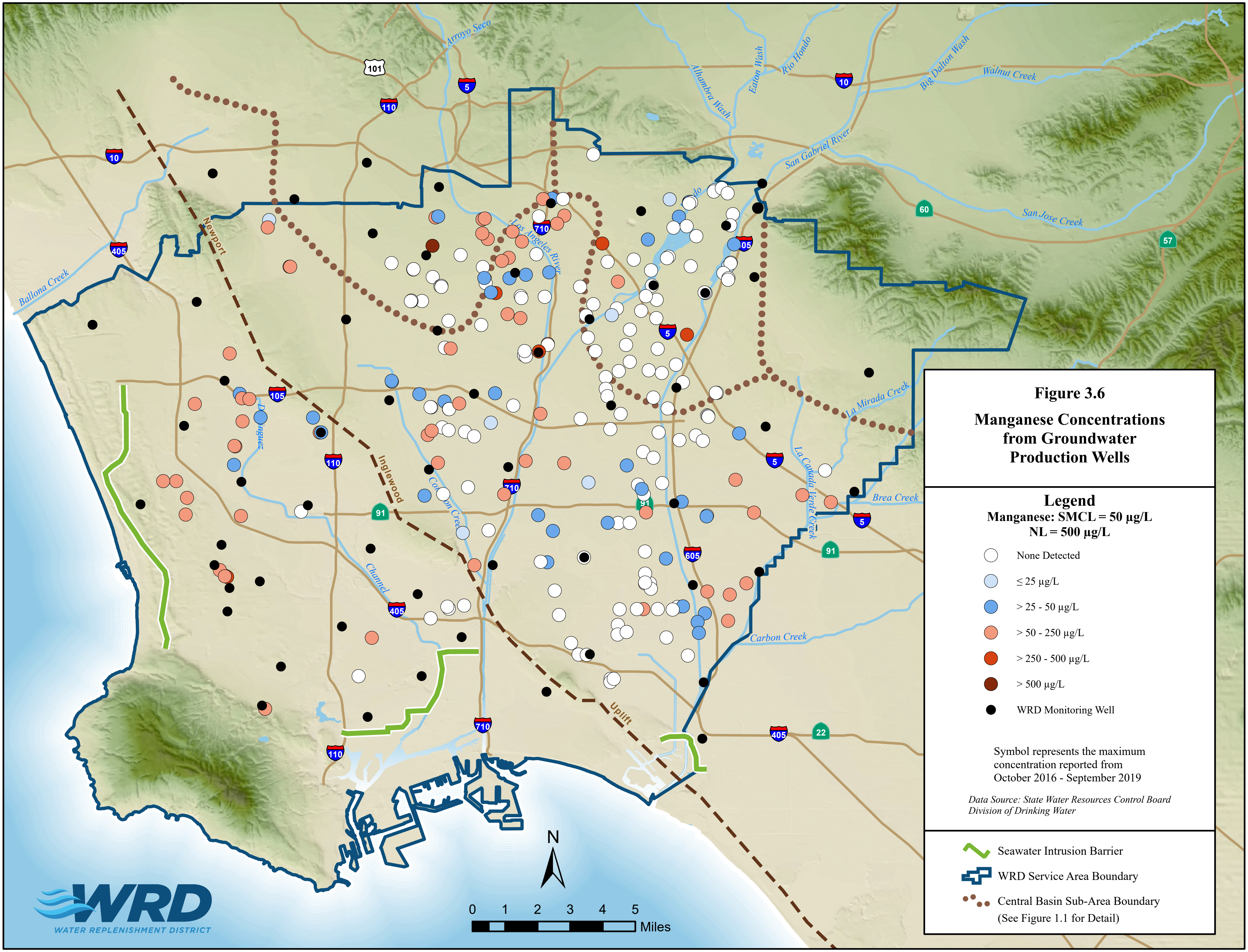


Figure 3.6

Manganese Concentrations from Groundwater Production Wells

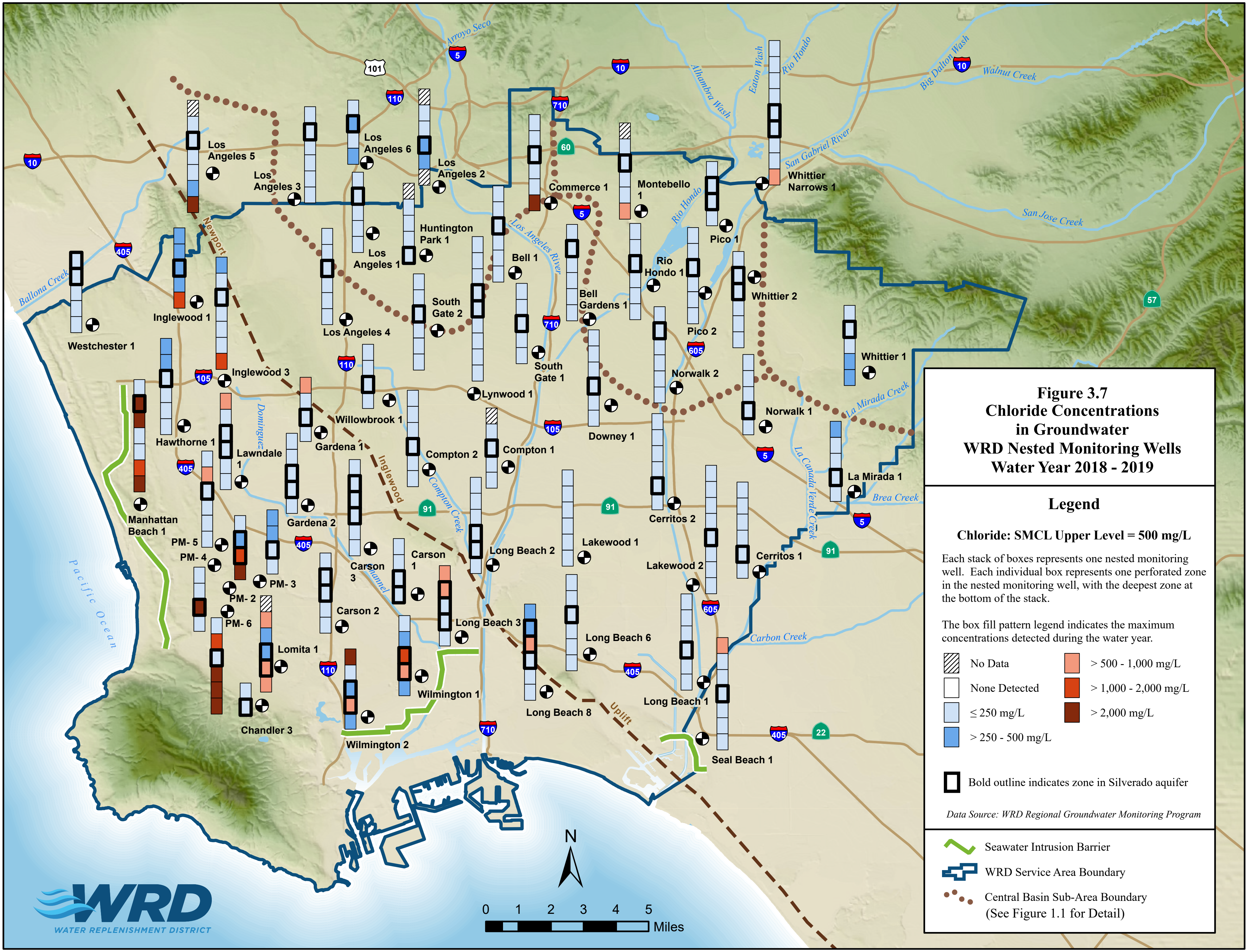


Figure 3.7
Chloride Concentrations in Groundwater WRD Nested Monitoring Wells Water Year 2018 - 2019

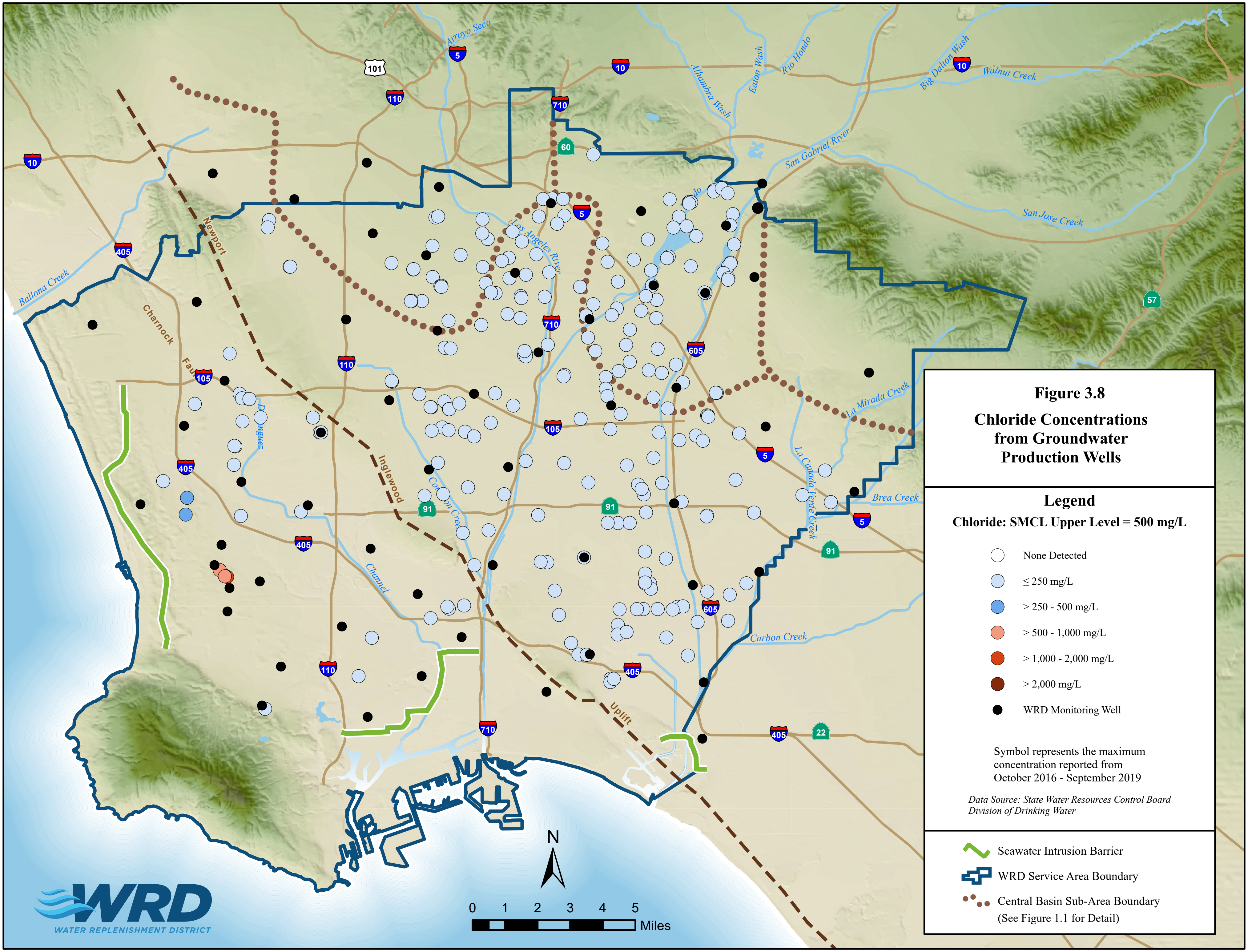


Figure 3.8
Chloride Concentrations from Groundwater Production Wells

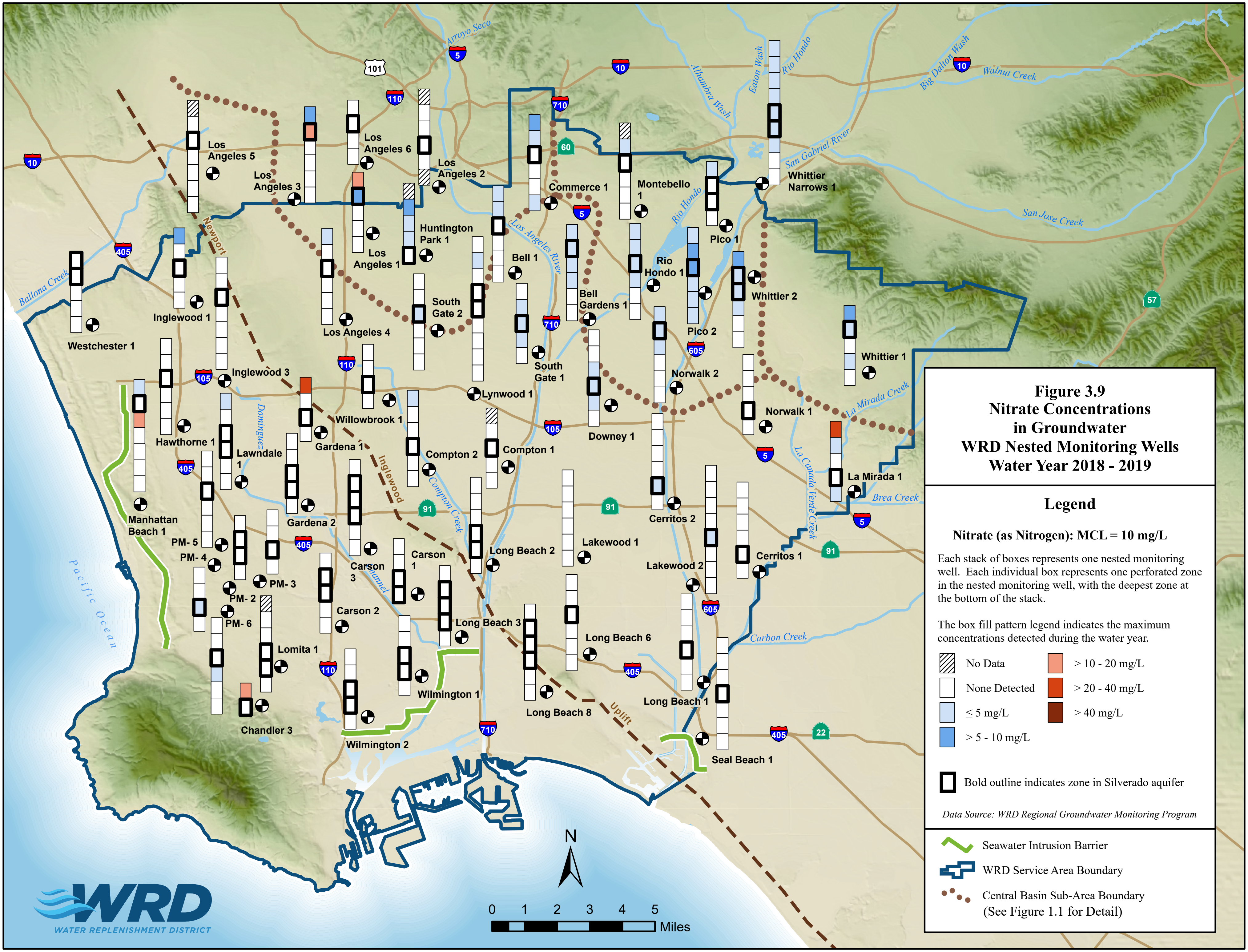


Figure 3.9
Nitrate Concentrations in Groundwater
WRD Nested Monitoring Wells
Water Year 2018 - 2019
Legend
Nitrate (as Nitrogen): MCL = 10 mg/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest 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)
N
0 1 2 3 4 5
Miles
WRD
WATER REPLENISHMENT DISTRICT
Pacific Ocean
Los Angeles 5
Los Angeles 3
Los Angeles 6
Los Angeles 2
Los Angeles 1
Los Angeles 4
Huntington Park 1
Commerce 1
Montebello 1
Whittier Narrows 1
Pico 1
Pico 2
Rio Hondo 1
Whittier 2
Whittier 1
Bell 1
Bell Gardens 1
South Gate 2
South Gate 1
Lynwood 1
Norwalk 2
Norwalk 1
Downey 1
La Mirada 1
Westchester 1
Inglewood 1
Inglewood 3
Hawthorne 1
Lawndale 1
Willowbrook 1
Gardena 1
Gardena 2
Compton 2
Compton 1
Manhattan Beach 1
PM- 5
PM- 4
PM- 3
PM- 2
PM- 6
Carson 3
Carson 1
Carson 2
Long Beach 2
Long Beach 3
Long Beach 6
Long Beach 8
Long Beach 1
Lakewood 1
Lakewood 2
Cerritos 2
Cerritos 1
Lomita 1
Chandler 3
Wilmington 1
Wilmington 2
Seal Beach 1
Arroyo Seco
Alhambra Wash
Eaton Wash
Rio Hondo
Big Dalton Wash
Walnut Creek
San Gabriel River
San Jose Creek
Los Angeles River
La Mirada Creek
Brea Creek
La Canada Verde Creek
Carbon Creek
Ballona Creek
Dominguez Channel
Compton Creek
Newport
Inglewood
Uplift
5
10
101
110
710
60
105
405
605
91
57
22

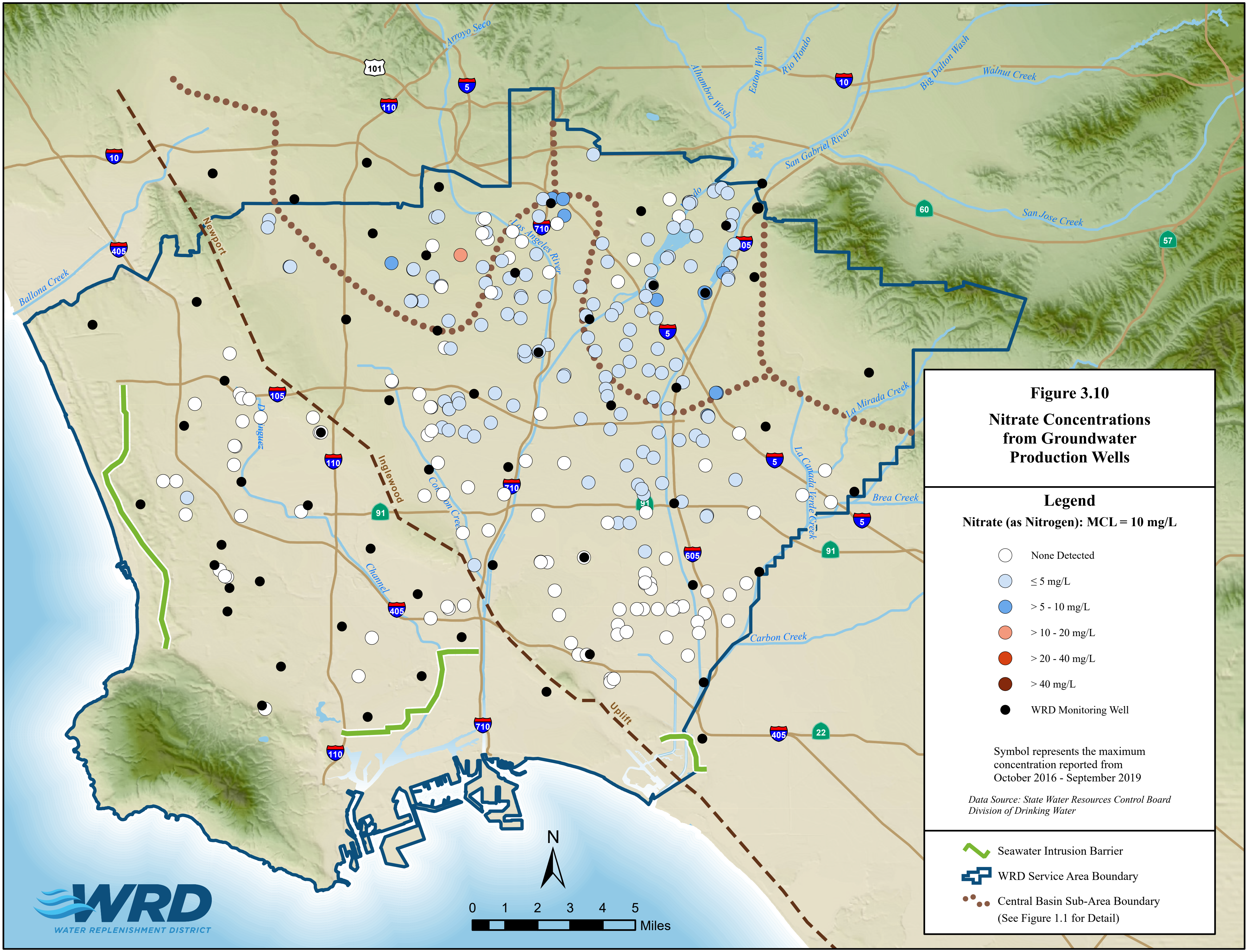


Figure 3.10
Nitrate Concentrations from Groundwater Production Wells
Legend
Nitrate (as Nitrogen): MCL = 10 mg/L
None Detected
≤ 5 mg/L
> 5 - 10 mg/L
> 10 - 20 mg/L
> 20 - 40 mg/L
> 40 mg/L
WRD Monitoring Well
Symbol represents the maximum concentration reported from October 2016 - September 2019
Data 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)
Arroyo Seco
Alhambra Wash
Eaton Wash
Rio Hondo
Big Dalton Wash
Walnut Creek
San Gabriel River
San Jose Creek
Los Angeles River
Ballona Creek
Newport
Inglewood
Uplift
Dominguez Channel
Compton Creek
La Mirada Creek
La Canada Verde Creek
Brea Creek
Carbon Creek
0 1 2 3 4 5 Miles
N
WRD
WATER REPLENISHMENT DISTRICT

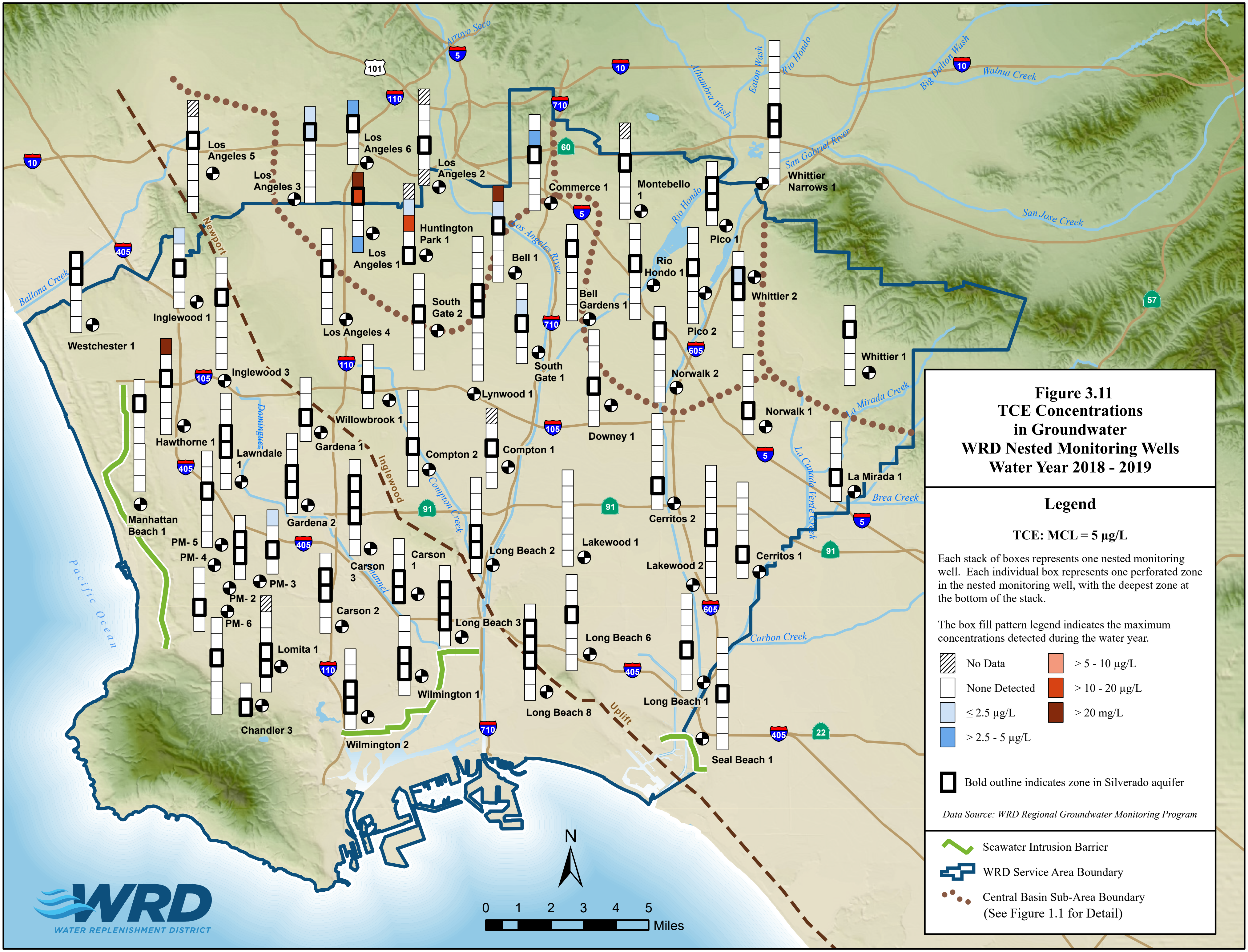


Figure 3.11
TCE Concentrations in Groundwater WRD Nested Monitoring Wells Water Year 2018 - 2019

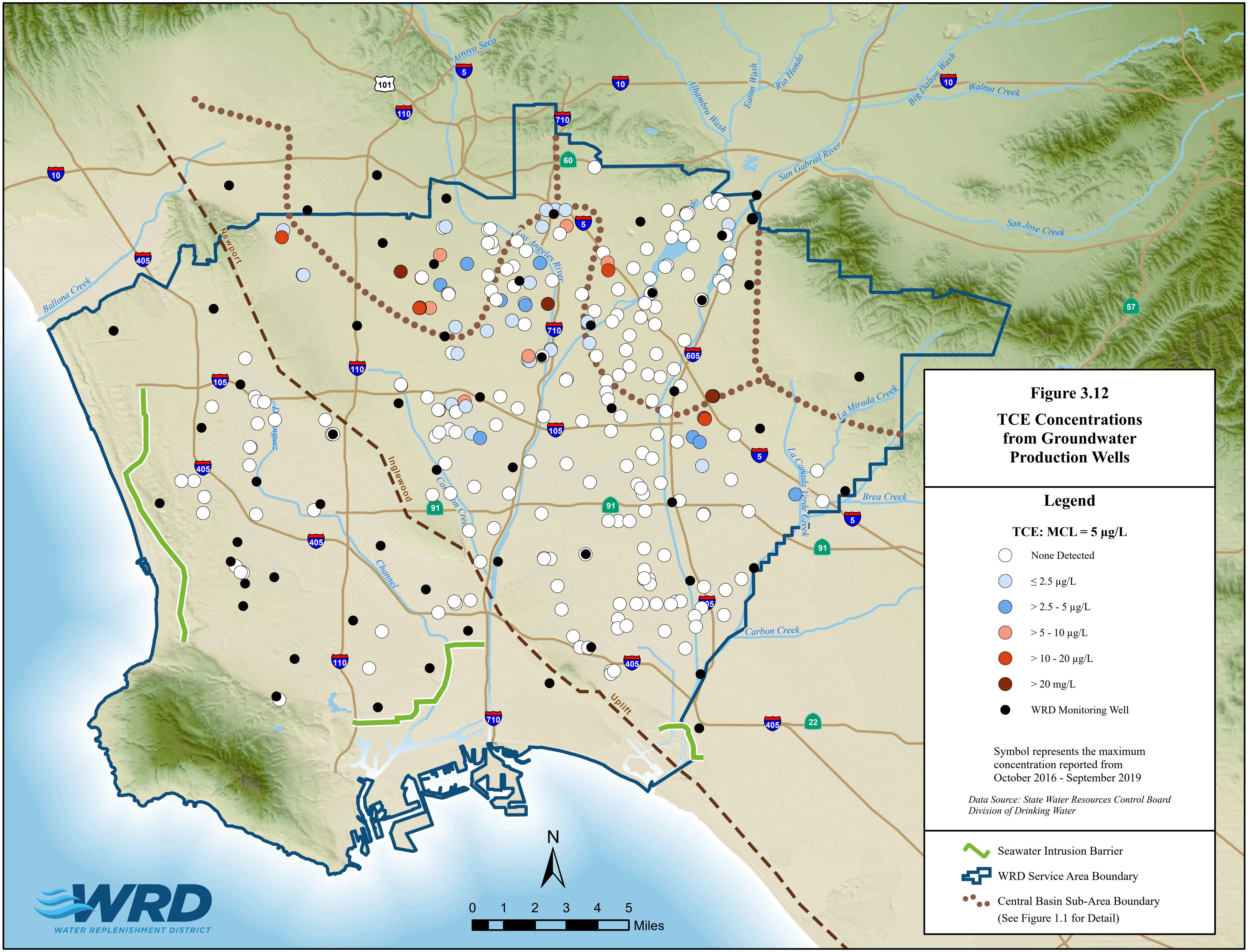


Figure 3.12
TCE Concentrations from Groundwater Production Wells
Legend
TCE: MCL = 5 µg/L
None Detected
≤ 2.5 µg/L
> 2.5 - 5 µg/L
> 5 - 10 µg/L
> 10 - 20 µg/L
> 20 mg/L
WRD Monitoring Well
Symbol represents the maximum concentration reported from October 2016 - September 2019
Data Source: State Water 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)
N
0 1 2 3 4 5
Miles
WRD
WATER REPLENISHMENT DISTRICT
Arroyo Seco
Alhambra Wash
Eaton Wash
Rio Hondo
Big Dalton Wash
Walnut Creek
San Gabriel River
San Jose Creek
Ballona Creek
Los Angeles River
La Mirada Creek
Brea Creek
La Canada Verde Creek
Carbon Creek
Newport
Inglewood
Uplift
Dominguez Channel
Compton Creek

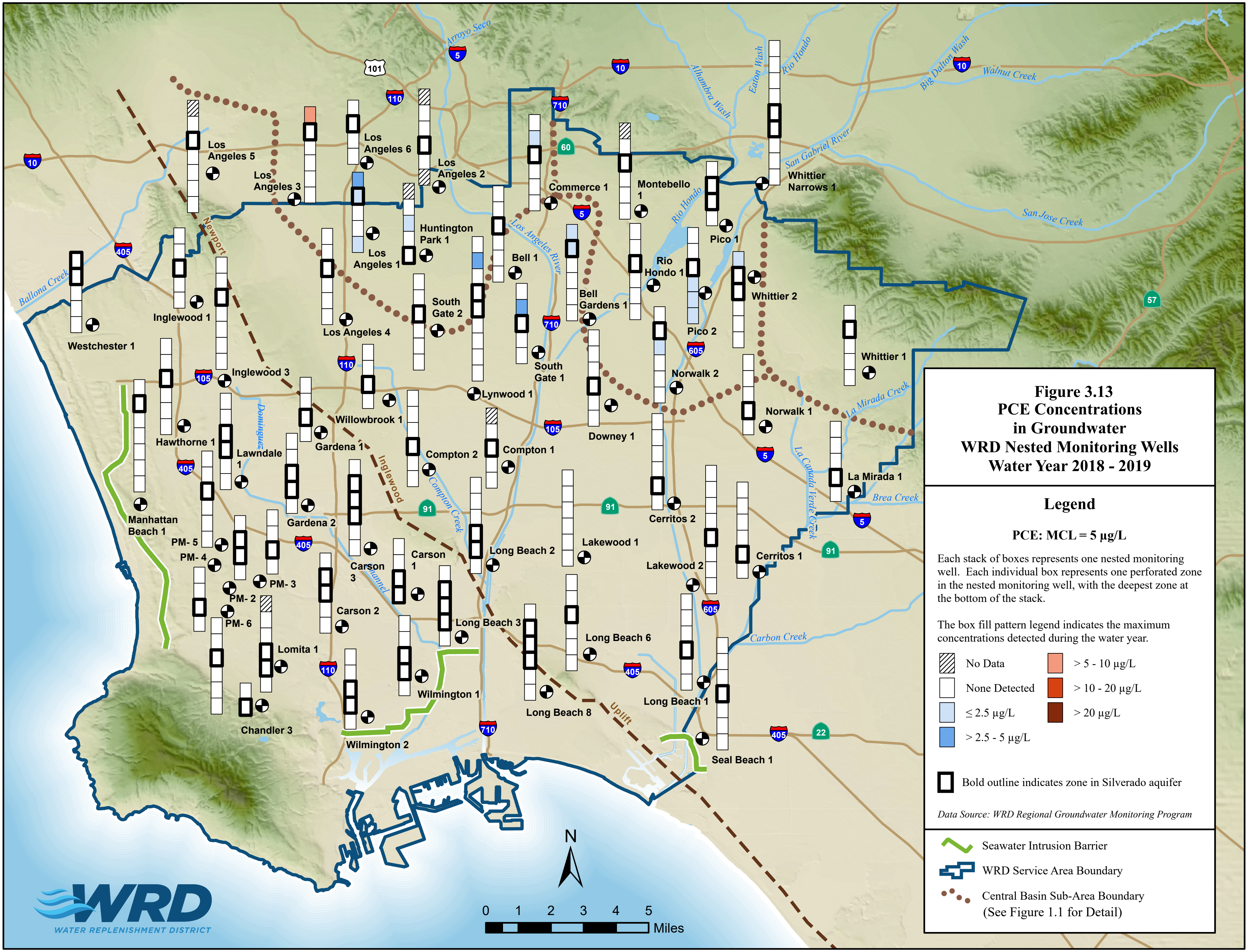


Figure 3.13
PCE Concentrations
in Groundwater
WRD Nested Monitoring Wells
Water Year 2018 - 2019
Legend
PCE: MCL = 5 µg/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of 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)
N
0 1 2 3 4 5
Miles
WRD
WATER REPLENISHMENT DISTRICT
Los Angeles 5
Los Angeles 3
Los Angeles 6
Los Angeles 2
Los Angeles 1
Los Angeles 4
Huntington Park 1
Commerce 1
Montebello 1
Whittier Narrows 1
Pico 1
Rio Hondo 1
Whittier 2
Pico 2
Whittier 1
Norwalk 2
Norwalk 1
La Mirada 1
Westchester 1
Inglewood 1
Inglewood 3
South Gate 2
South Gate 1
Bell 1
Bell Gardens 1
Lynwood 1
Downey 1
Hawthorne 1
Lawndale 1
Willowbrook 1
Gardena 1
Compton 2
Compton 1
Manhattan Beach 1
Gardena 2
PM- 5
PM- 4
PM- 3
PM- 2
PM- 6
Carson 3
Carson 1
Carson 2
Long Beach 2
Lakewood 1
Cerritos 2
Lakewood 2
Cerritos 1
Lomita 1
Long Beach 3
Long Beach 6
Chandler 3
Wilmington 1
Wilmington 2
Long Beach 8
Long Beach 1
Seal Beach 1
Arroyo Seco
Alhambra Wash
Eaton Wash
Rio Hondo
Big Dalton Wash
Walnut Creek
San Gabriel River
San Jose Creek
Los Angeles River
Ballona Creek
Newport
Inglewood
Uplift
Dominguez
Compton Creek
La Mirada Creek
La Canada Verde Creek
Brea Creek
Carbon Creek

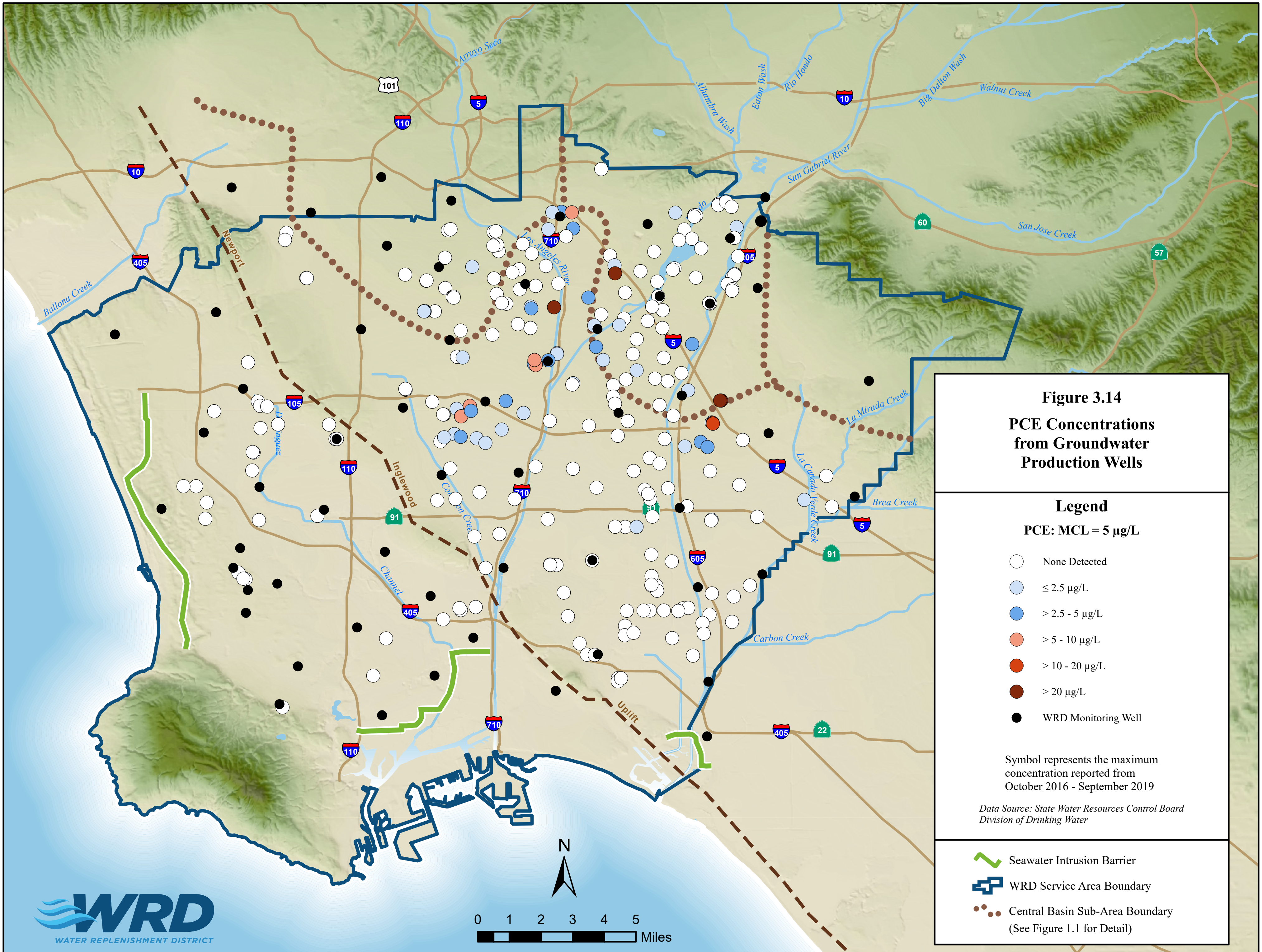


Figure 3.14
PCE Concentrations from Groundwater Production Wells
Legend
PCE: MCL = 5 µg/L
None Detected
≤ 2.5 µg/L
> 2.5 - 5 µg/L
> 5 - 10 µg/L
> 10 - 20 µg/L
> 20 µg/L
WRD Monitoring Well
Symbol represents the maximum concentration reported from October 2016 - September 2019
Data Source: State Water 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)
Arroyo Seco
Alhambra Wash
Eaton Wash
Rio Hondo
Big Dalton Wash
Walnut Creek
San Gabriel River
San Jose Creek
Ballona Creek
Newport
Inglewood
Uplift
Los Angeles River
La Mirada Creek
Brea Creek
La Canada Verde Creek
Carbon Creek
Dominguez Channel
N
0 1 2 3 4 5 Miles
WRD
WATER REPLENISHMENT DISTRICT

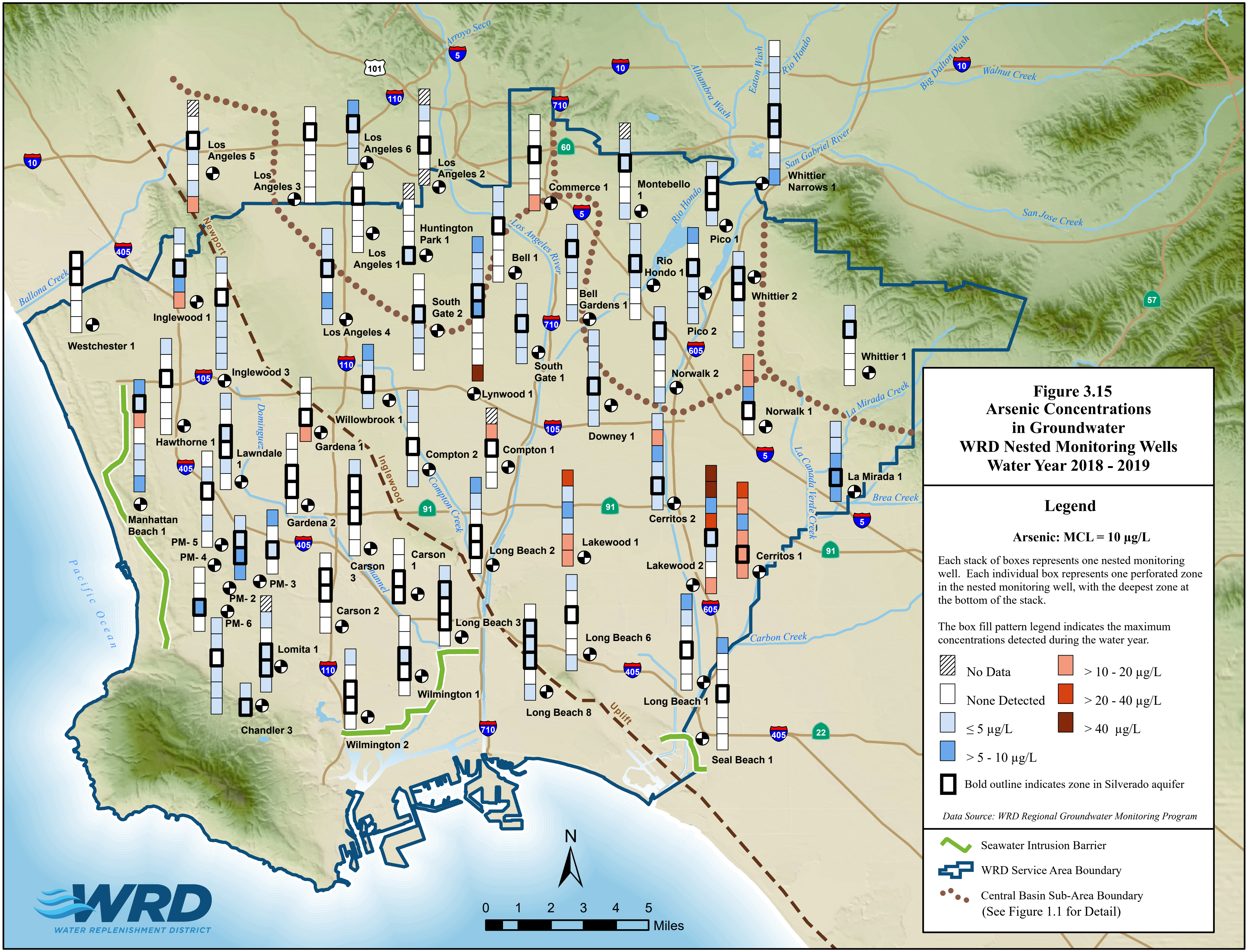


Figure 3.15
Arsenic Concentrations in Groundwater
WRD Nested Monitoring Wells
Water Year 2018 - 2019

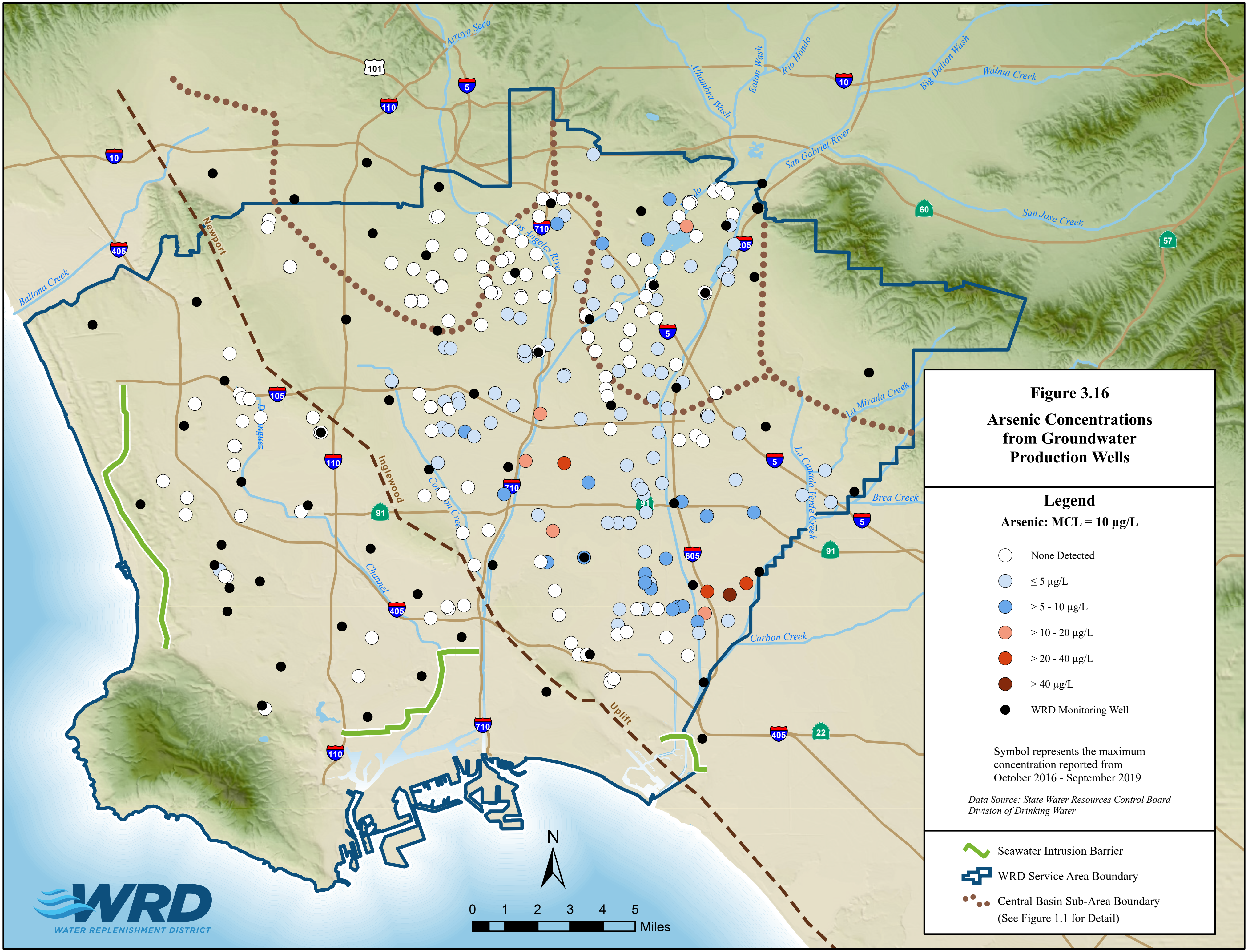


Figure 3.16

Arsenic Concentrations from Groundwater Production Wells

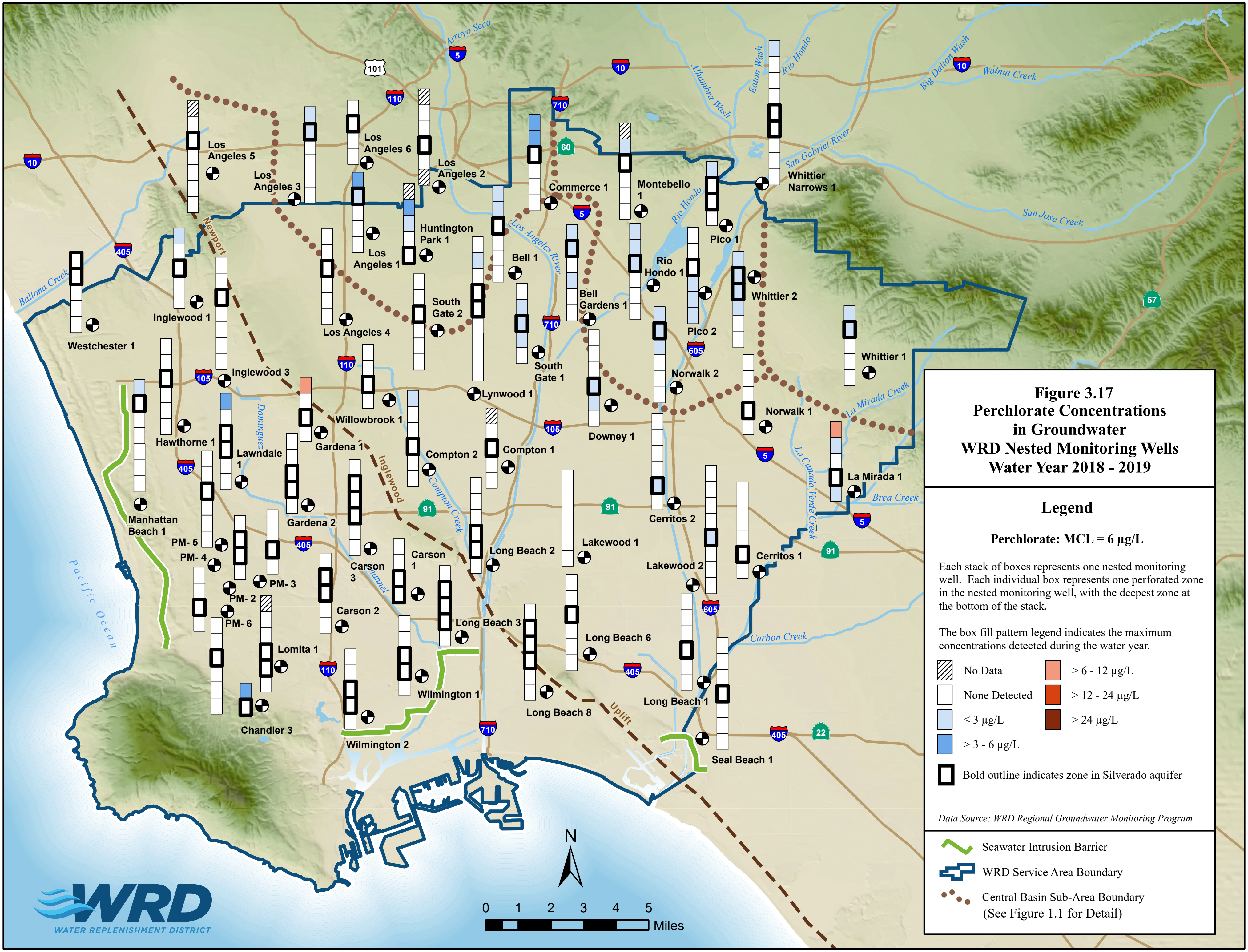


Figure 3.17
Perchlorate Concentrations in Groundwater
WRD Nested Monitoring Wells
Water Year 2018 - 2019

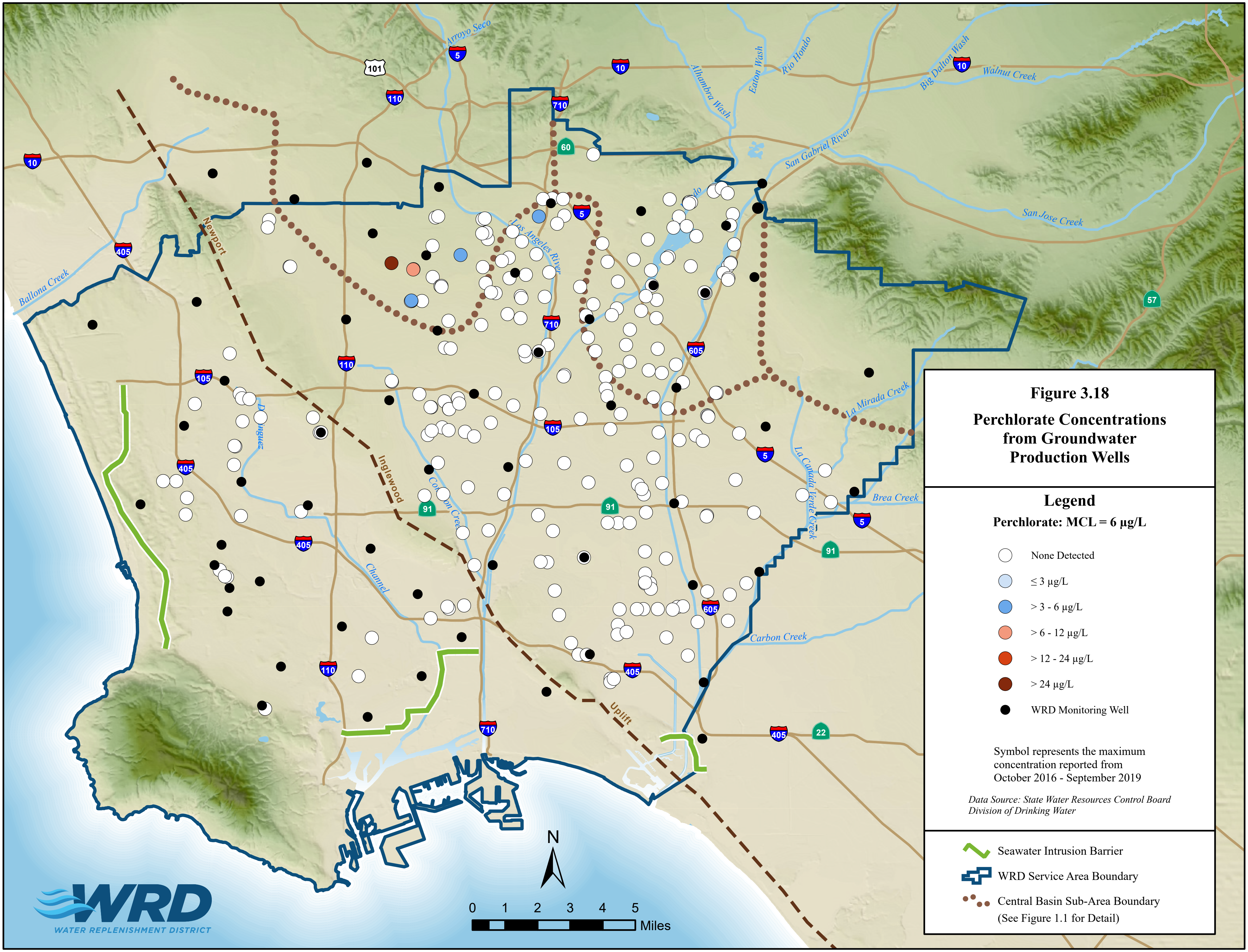


Figure 3.18
Perchlorate Concentrations from Groundwater Production Wells
Legend
Perchlorate: MCL = 6 µg/L
None Detected
≤ 3 µg/L
> 3 - 6 µg/L
> 6 - 12 µg/L
> 12 - 24 µg/L
> 24 µg/L
WRD Monitoring Well
Symbol represents the maximum concentration reported from October 2016 - September 2019
Data Source: 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)
Arroyo Seco
Alhambra Wash
Eaton Wash
Rio Hondo
Big Dalton Wash
Walnut Creek
San Gabriel River
San Jose Creek
Los Angeles River
Ballona Creek
Newport
Inglewood
Uplift
Dominguez
Channel
Compton Creek
La Mirada Creek
La Canada Verde Creek
Brea Creek
Carbon Creek
0 1 2 3 4 5 Miles
N
WRD
WATER REPLENISHMENT DISTRICT

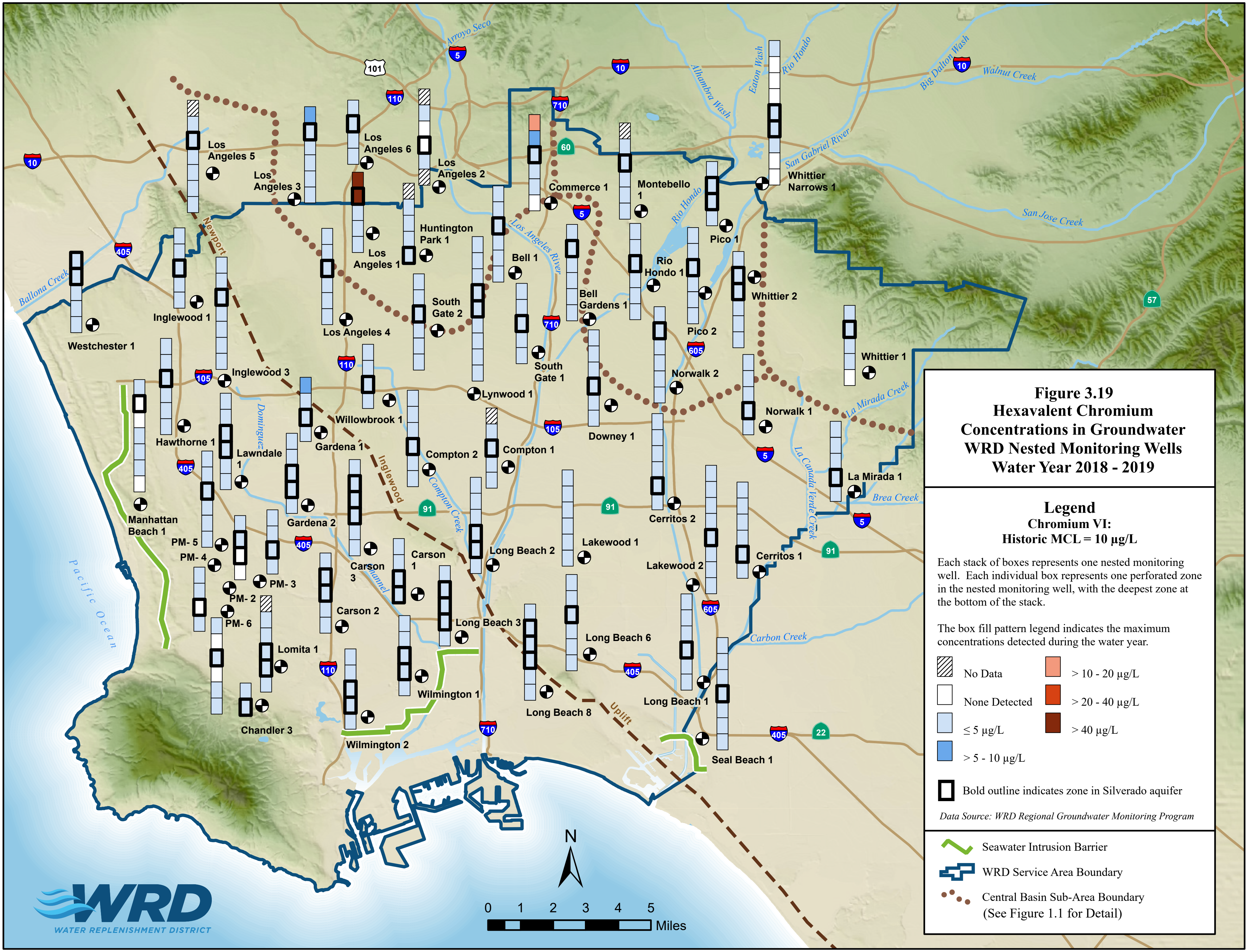


Figure 3.19
Hexavalent Chromium Concentrations in Groundwater
WRD Nested Monitoring Wells
Water Year 2018 - 2019

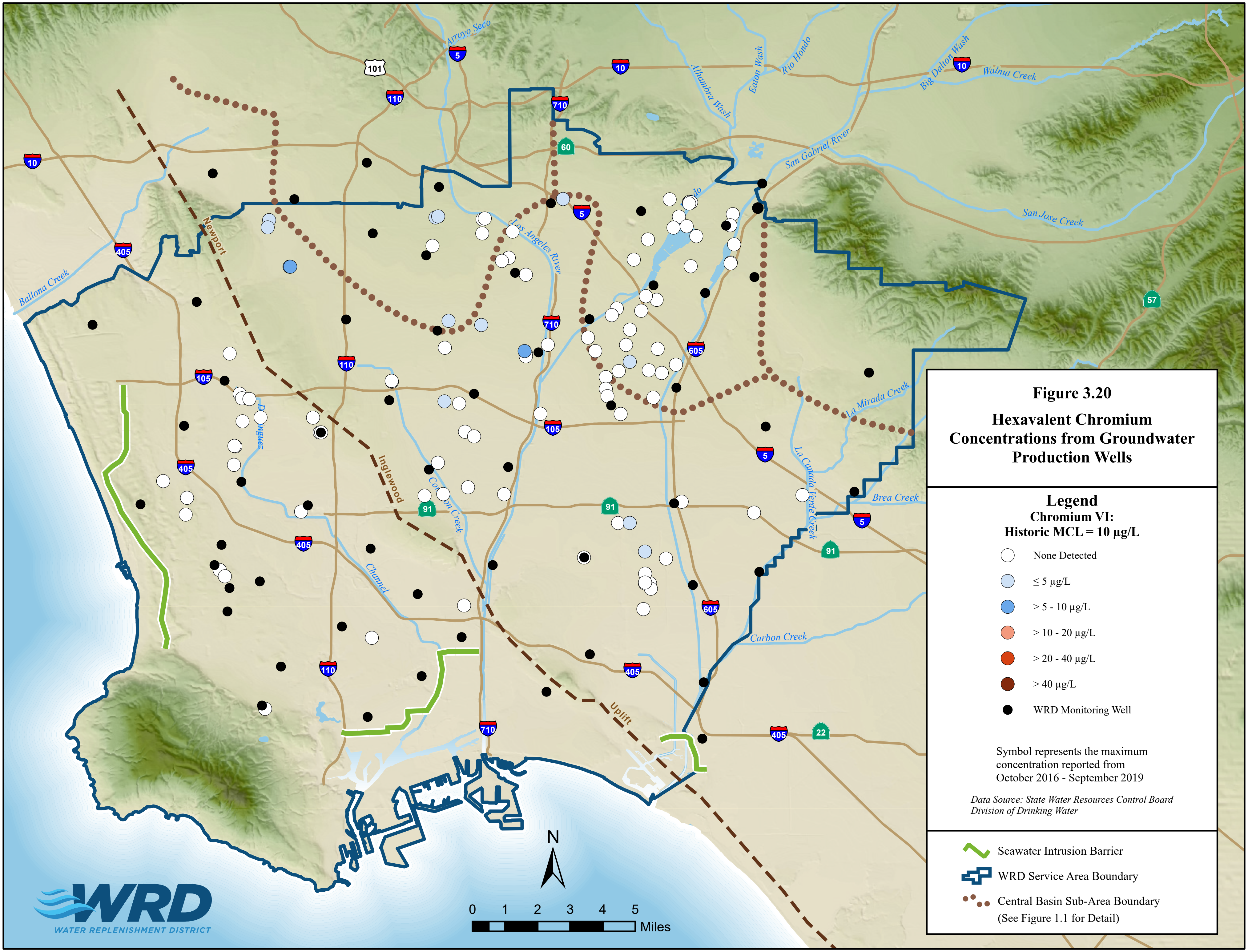


Figure 3.20

Hexavalent Chromium Concentrations from Groundwater Production Wells

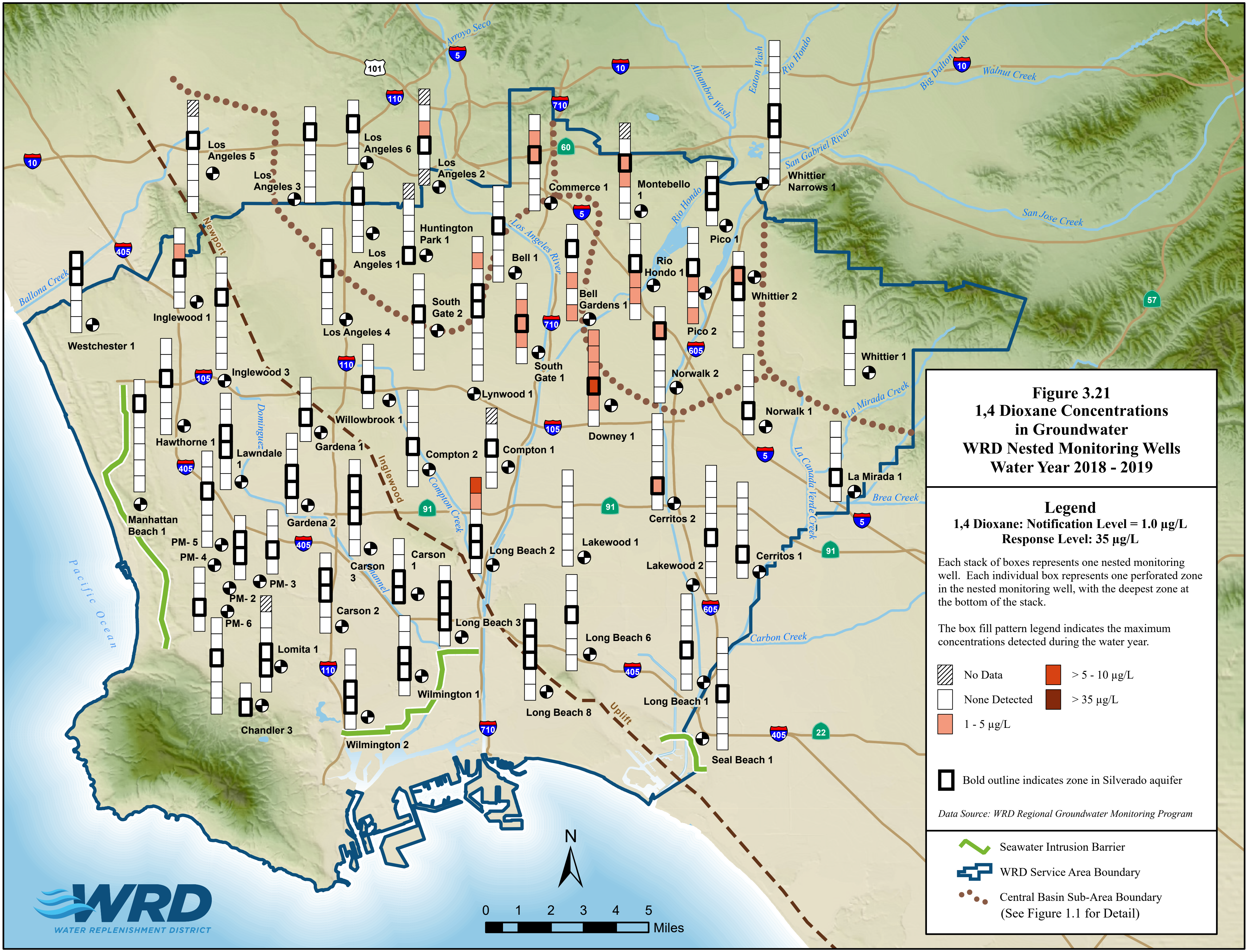


Figure 3.21
1,4 Dioxane Concentrations in Groundwater
WRD Nested Monitoring Wells
Water Year 2018 - 2019

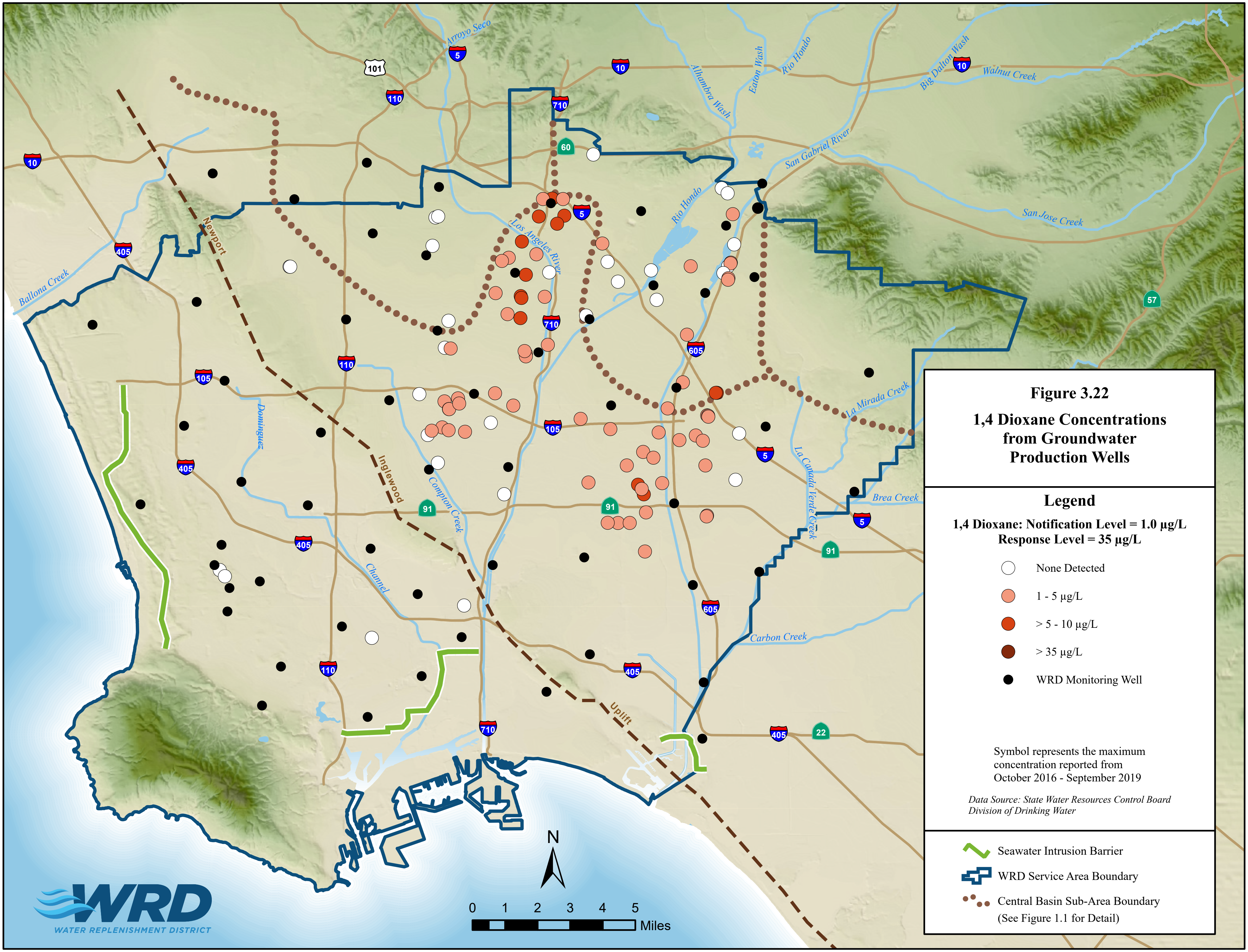


Figure 3.22
1,4 Dioxane Concentrations from Groundwater Production Wells
Legend
1,4 Dioxane: Notification Level = 1.0 µg/L
Response Level = 35 µg/L
None Detected
1 - 5 µg/L
> 5 - 10 µg/L
> 35 µg/L
WRD Monitoring Well
Symbol represents the maximum concentration reported from October 2016 - September 2019
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)
N
0 1 2 3 4 5
Miles
WRD
WATER REPLENISHMENT DISTRICT
Arroyo Seco
Alhambra Wash
Eaton Wash
Rio Hondo
Big Dalton Wash
Walnut Creek
San Gabriel River
San Jose Creek
Los Angeles River
Ballona Creek
Newport
Inglewood
Uplift
Dominguez
Compton Creek
Channel
La Mirada Creek
Brea Creek
La Canada Verde Creek
Carbon Creek
5
10
101
110
710
60
405
105
605
91
57
22

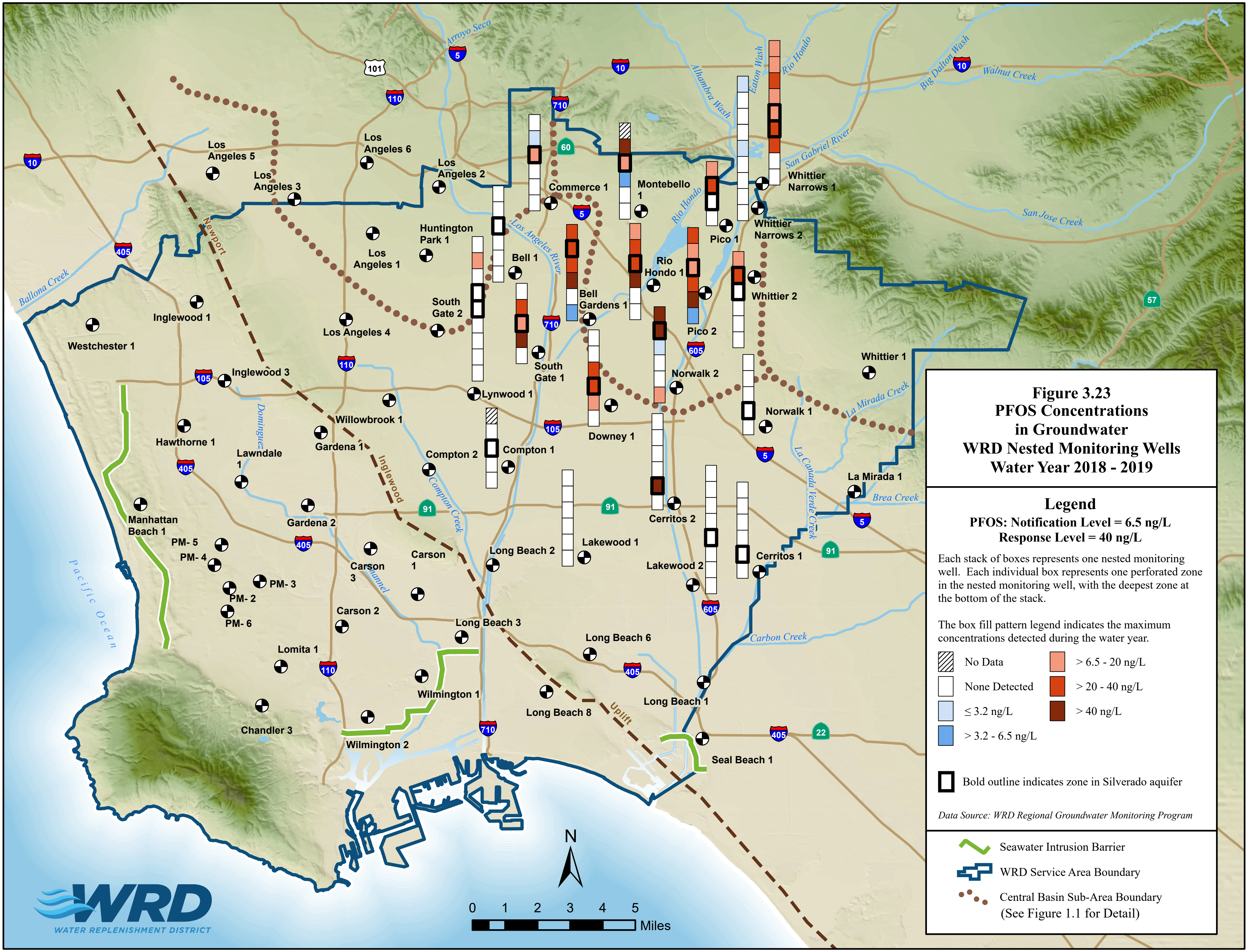


Figure 3.23
PFOS Concentrations
in Groundwater
WRD Nested Monitoring Wells
Water Year 2018 - 2019
Legend
PFOS: Notification Level = 6.5 ng/L
Response Level = 40 ng/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring 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
≤ 3.2 ng/L
> 3.2 - 6.5 ng/L
> 6.5 - 20 ng/L
> 20 - 40 ng/L
> 40 ng/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)
N
0 1 2 3 4 5
Miles
WRD
WATER REPLENISHMENT DISTRICT
Los Angeles 5
Los Angeles 6
Los Angeles 2
Los Angeles 3
Los Angeles 1
Los Angeles 4
Huntington Park 1
Commerce 1
Montebello 1
Whittier Narrows 1
Whittier Narrows 2
Pico 1
Pico 2
Rio Hondo 1
Whittier 2
Whittier 1
Bell 1
Bell Gardens 1
South Gate 2
South Gate 1
Lynwood 1
Norwalk 2
Norwalk 1
Downey 1
Inglewood 1
Inglewood 3
Westchester 1
Hawthorne 1
Lawndale 1
Willowbrook 1
Gardena 1
Gardena 2
Compton 2
Compton 1
Cerritos 2
Cerritos 1
La Mirada 1
Manhattan Beach 1
PM- 5
PM- 4
PM- 3
PM- 2
PM- 6
Carson 3
Carson 1
Carson 2
Long Beach 2
Lakewood 1
Lakewood 2
Long Beach 3
Long Beach 6
Long Beach 1
Long Beach 8
Lomita 1
Wilmington 1
Wilmington 2
Chandler 3
Seal Beach 1
Arroyo Seco
Eaton Wash
Rio Hondo
Alhambra Wash
San Gabriel River
Big Dalton Wash
Walnut Creek
San Jose Creek
Los Angeles River
Ballona Creek
Dominguez
Compton Creek
La Mirada Creek
Brea Creek
La Canada Verde Creek
Carbon Creek
Pacific Ocean
Newport
Inglewood
Uplift
5
10
101
110
710
60
405
105
605
91
57
22

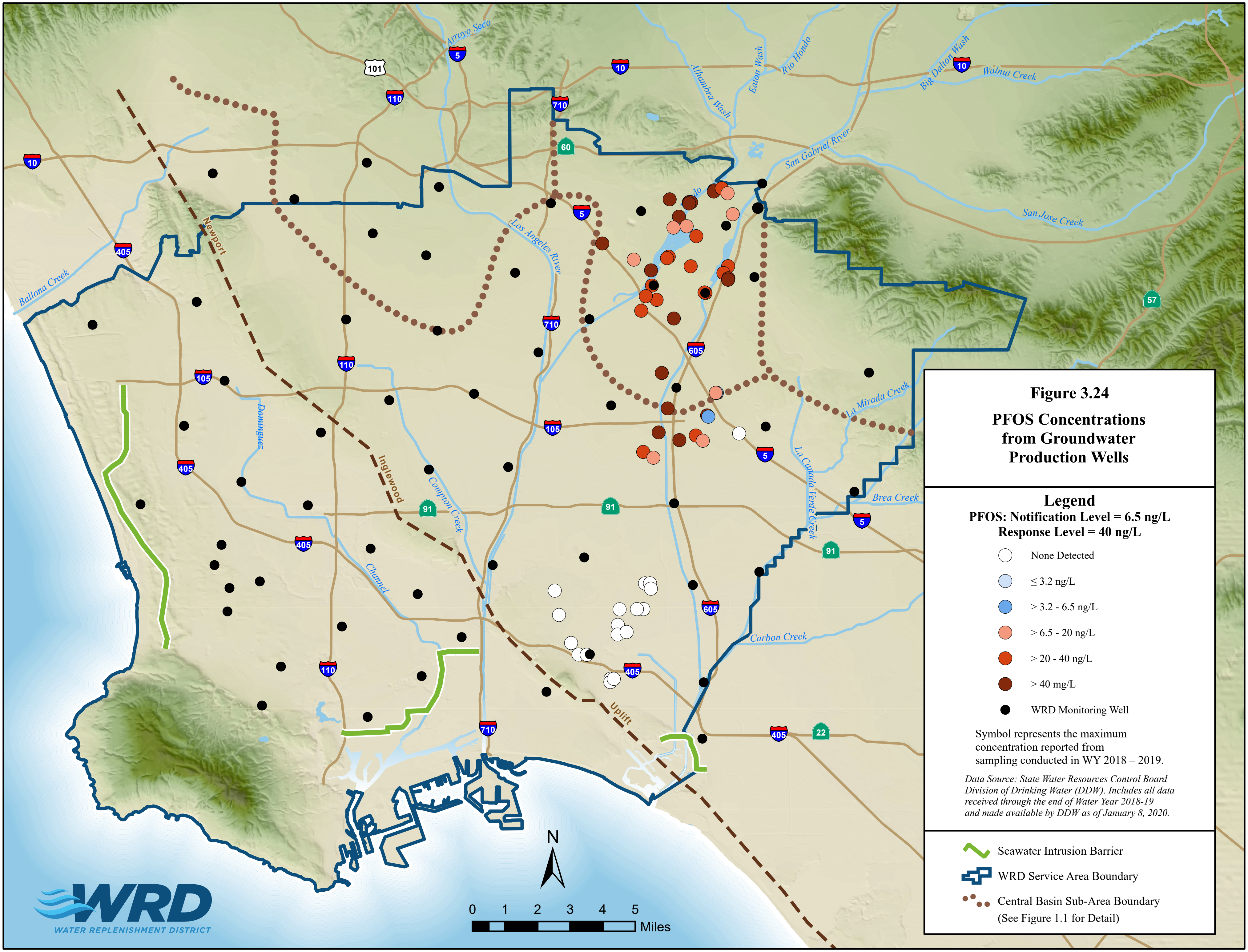


Figure 3.24
PFOS Concentrations from Groundwater Production Wells
Legend
PFOS: Notification Level = 6.5 ng/L
Response Level = 40 ng/L
None Detected
≤ 3.2 ng/L
> 3.2 - 6.5 ng/L
> 6.5 - 20 ng/L
> 20 - 40 ng/L
> 40 mg/L
WRD Monitoring Well
Symbol represents the maximum concentration reported from sampling conducted in WY 2018 – 2019.
Data Source: State Water Resources Control Board Division of Drinking Water (DDW). Includes all data received through the end of Water Year 2018-19 and made available by DDW as of January 8, 2020.
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 1.1 for Detail)
Arroyo Seco
Alhambra Wash
Eaton Wash
Rio Hondo
Big Dalton Wash
Walnut Creek
San Gabriel River
San Jose Creek
Los Angeles River
Ballona Creek
Newport
Inglewood
Uplift
Dominguez
Compton Creek
Channel
La Mirada Creek
La Canada Verde Creek
Brea Creek
Carbon Creek
N
0 1 2 3 4 5
Miles
WRD
WATER REPLENISHMENT DISTRICT

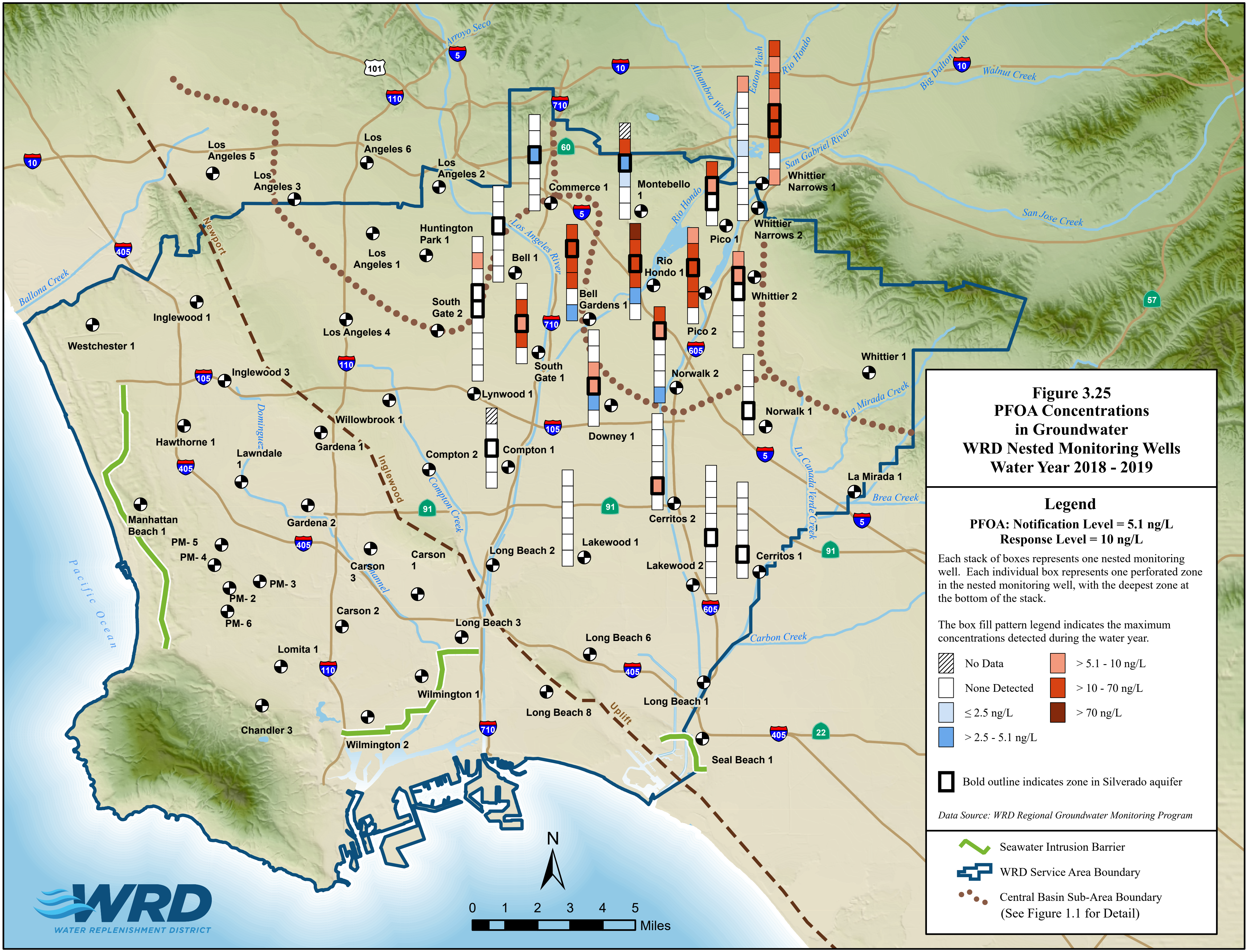


Figure 3.25
PFOA Concentrations in Groundwater
WRD Nested Monitoring Wells
Water Year 2018 - 2019

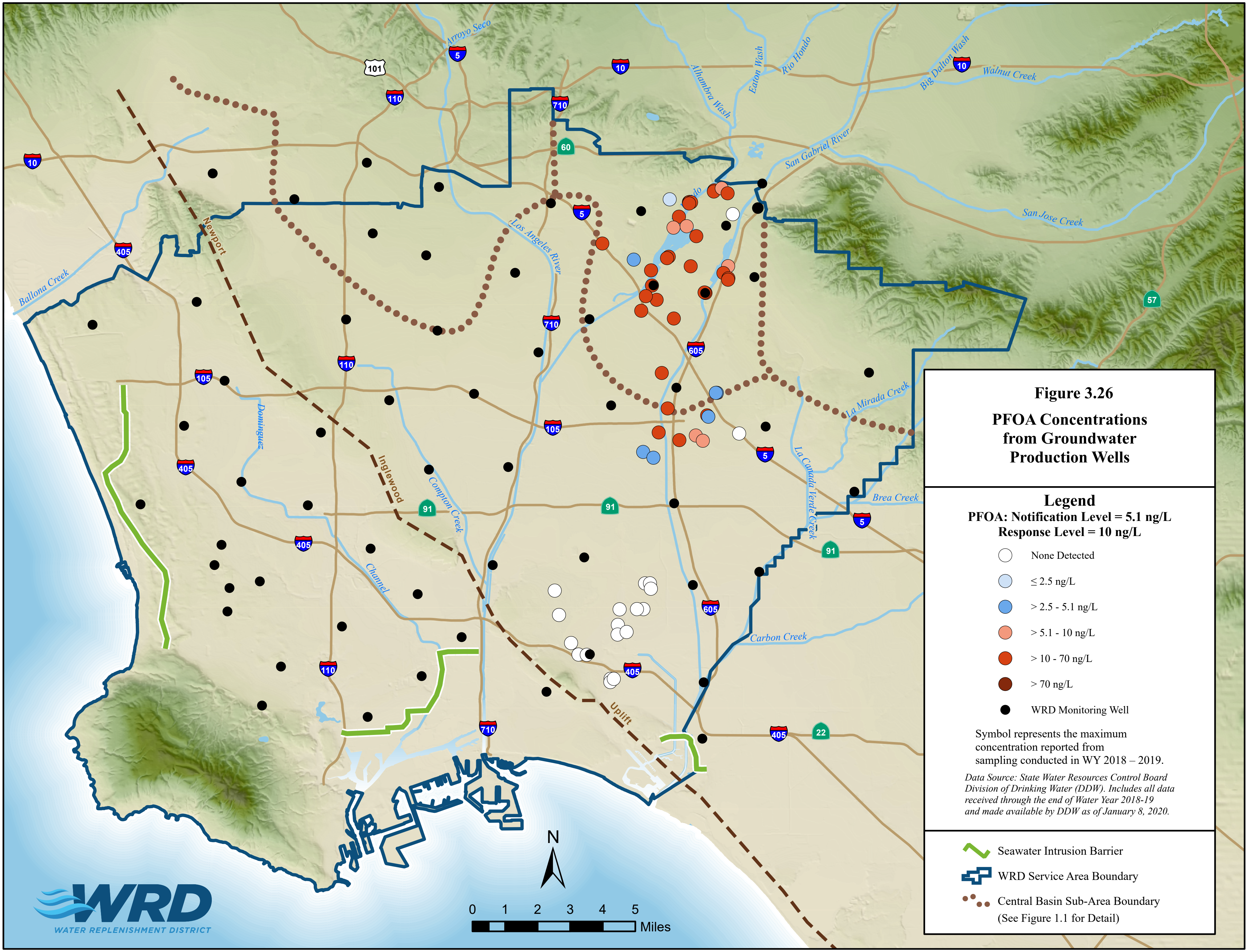
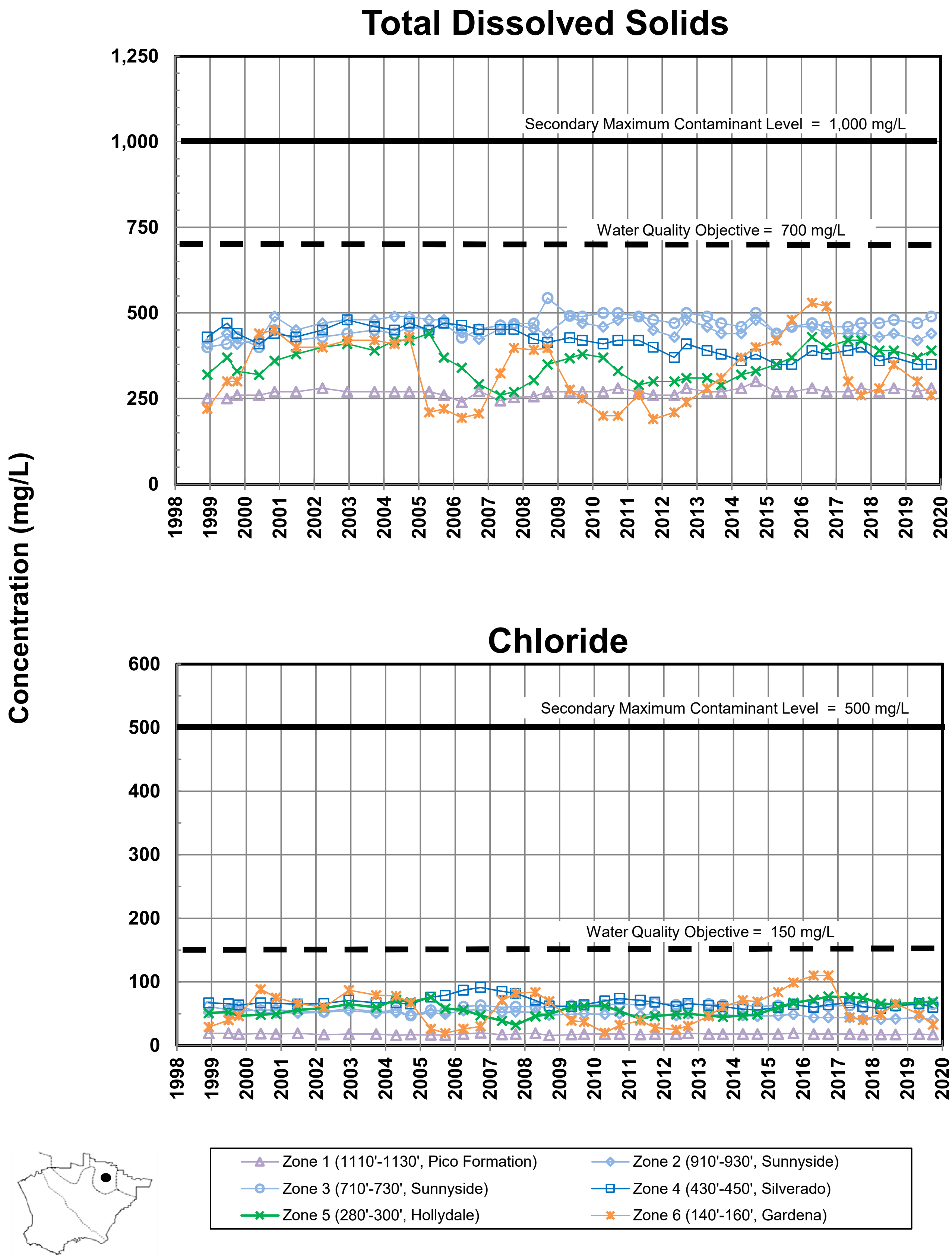
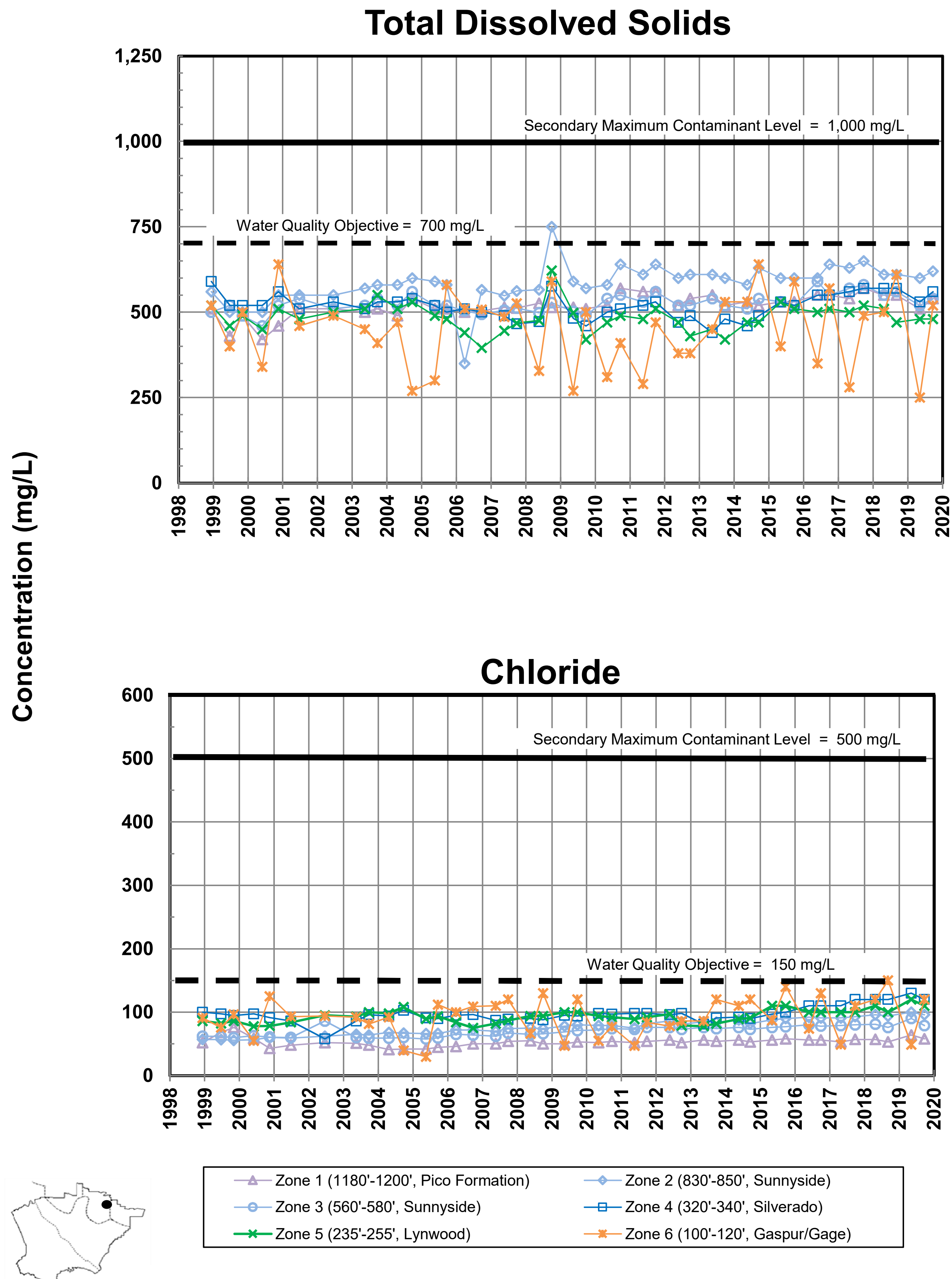


Figure 3.26
PFOA Concentrations from Groundwater Production Wells
Legend
PFOA: Notification Level = 5.1 ng/L
Response Level = 10 ng/L
None Detected
≤ 2.5 ng/L
> 2.5 - 5.1 ng/L
> 5.1 - 10 ng/L
> 10 - 70 ng/L
> 70 ng/L
WRD Monitoring Well
Symbol represents the maximum concentration reported from sampling conducted in WY 2018 – 2019.
Data Source: State Water Resources Control Board Division of Drinking Water (DDW). Includes all data received through the end of Water Year 2018-19 and made available by DDW as of January 8, 2020.
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 1.1 for Detail)
Arroyo Seco
Eaton Wash
Rio Hondo
Big Dalton Wash
Walnut Creek
Alhambra Wash
San Gabriel River
San Jose Creek
Los Angeles River
Ballona Creek
Newport
Dominguez
Inglewood
Compton Creek
Channel
La Mirada Creek
La Canada Verde Creek
Brea Creek
Carbon Creek
Uplift
N
0 1 2 3 4 5
Miles
WRD
WATER REPLENISHMENT DISTRICT



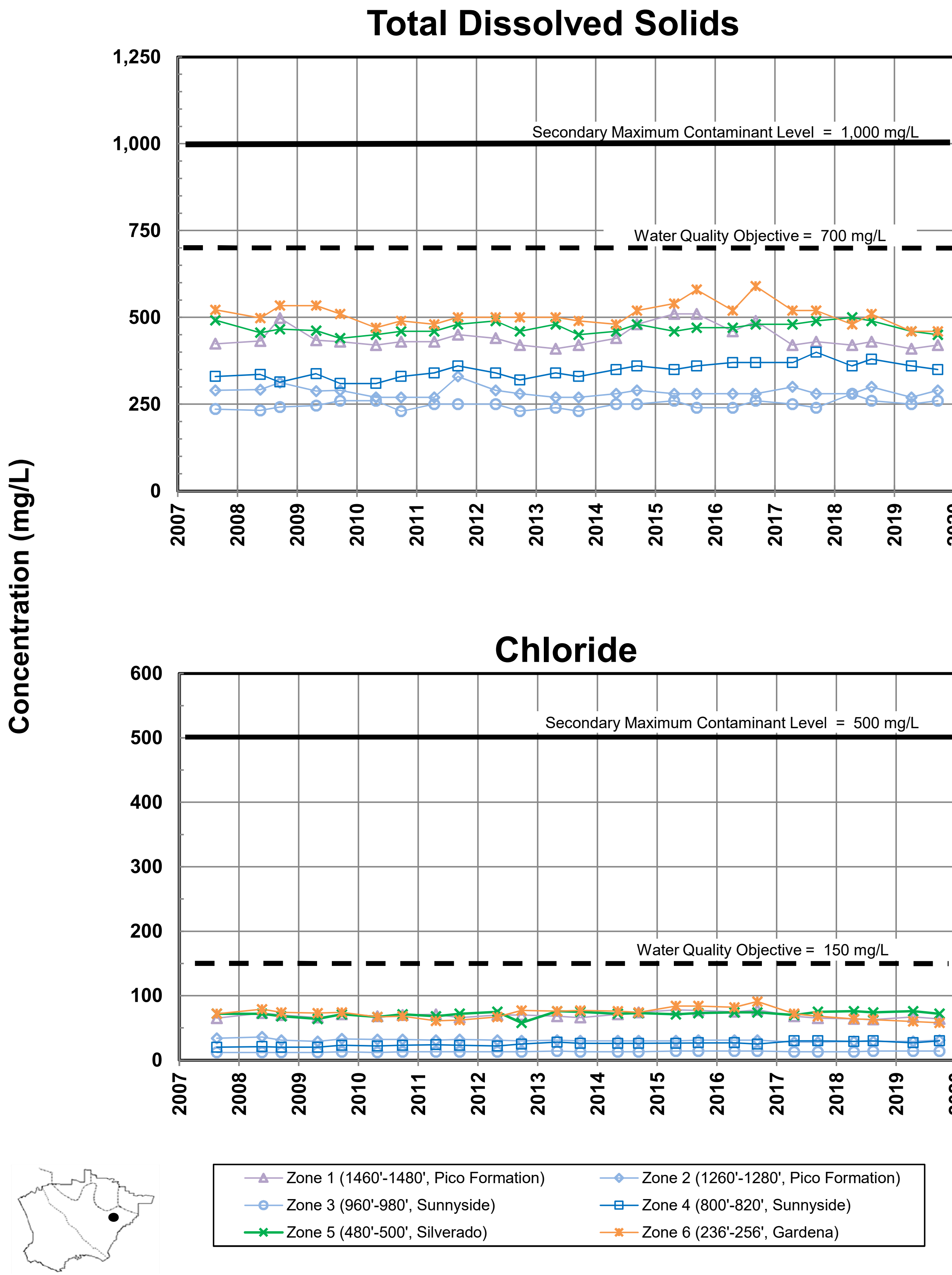
TDS AND CHLORIDE IN
WRD KEY MONITORING WELL RIO HONDO #1

FIGURE 4.1



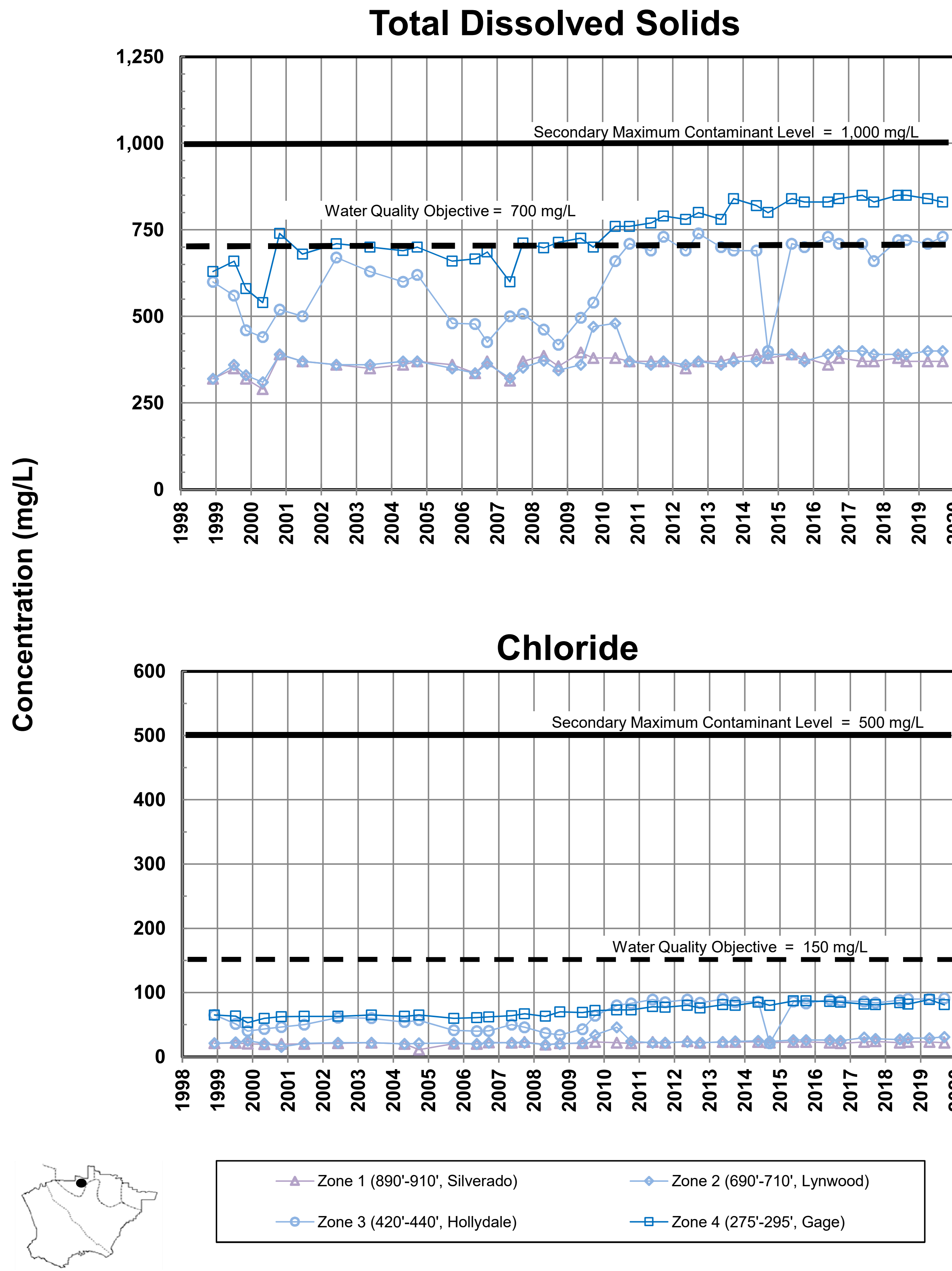
TDS AND CHLORIDE IN
WRD KEY MONITORING WELL PICO #2

FIGURE 4.2



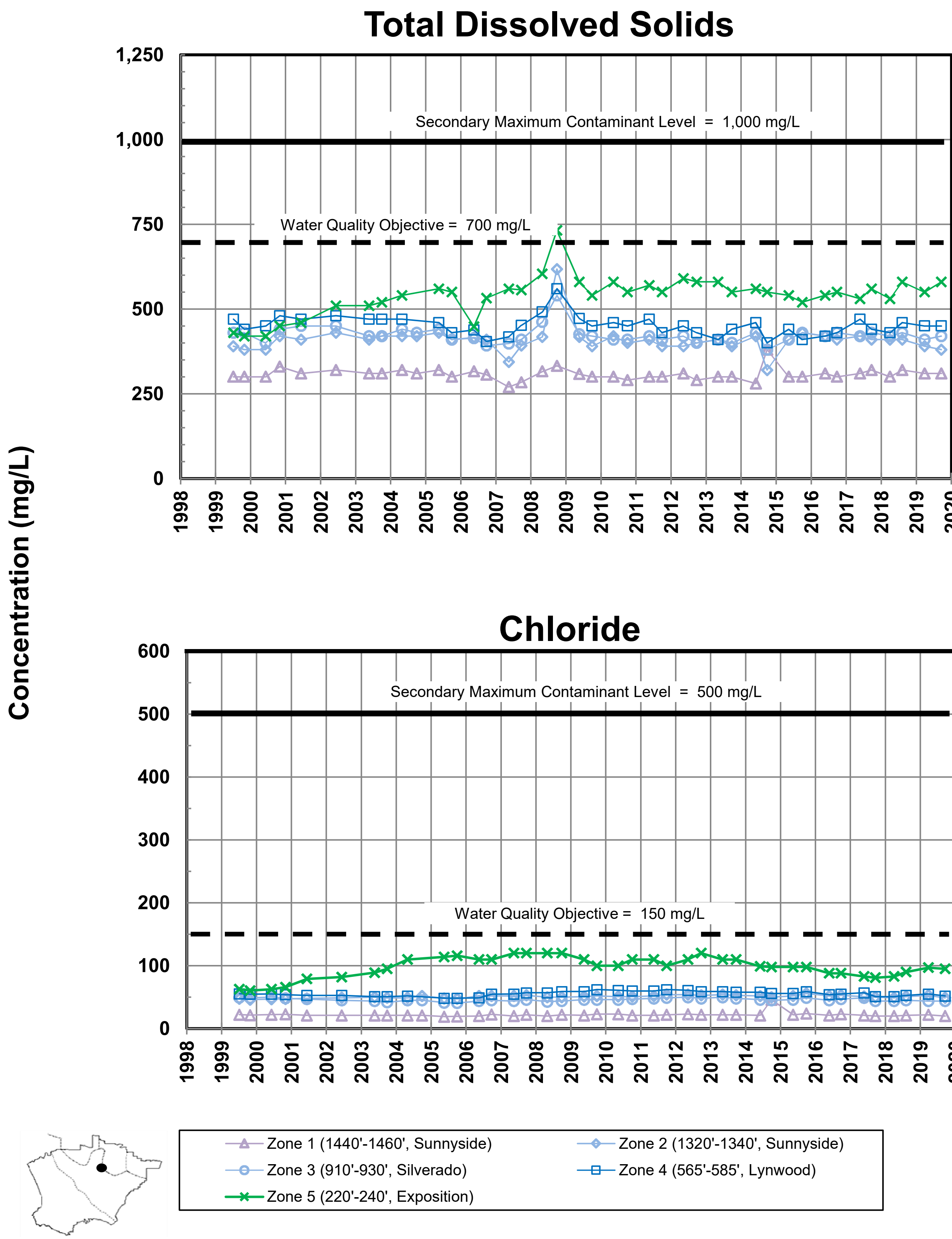
**TDS AND CHLORIDE IN
WRD KEY MONITORING WELL NORWALK #2**

FIGURE 4.3



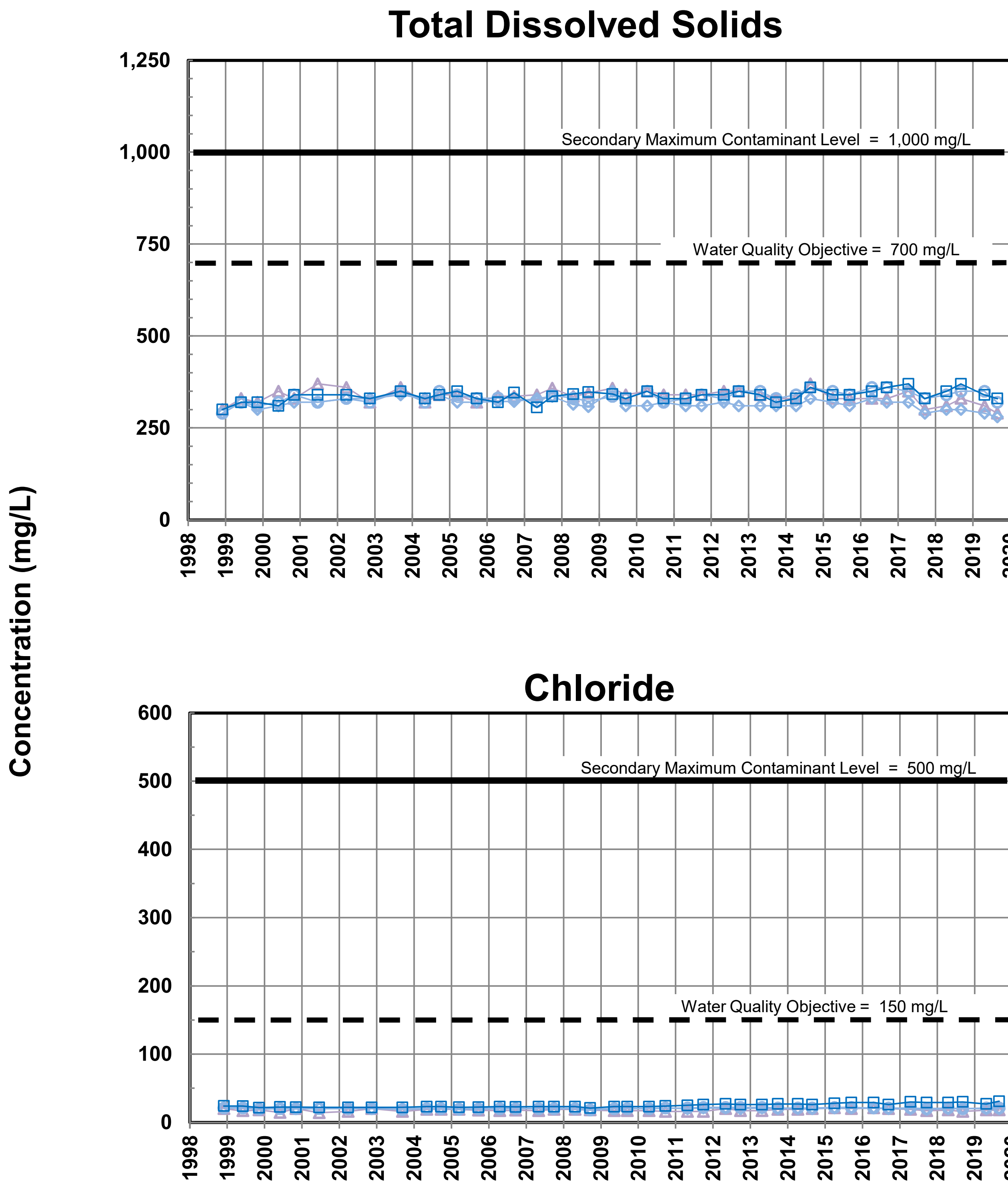
TDS AND CHLORIDE IN
WRD KEY MONITORING WELL HUNTINGTON PARK #1

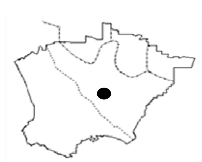
FIGURE 4.4



TDS AND CHLORIDE IN WRD KEY MONITORING WELL SOUTH GATE #1

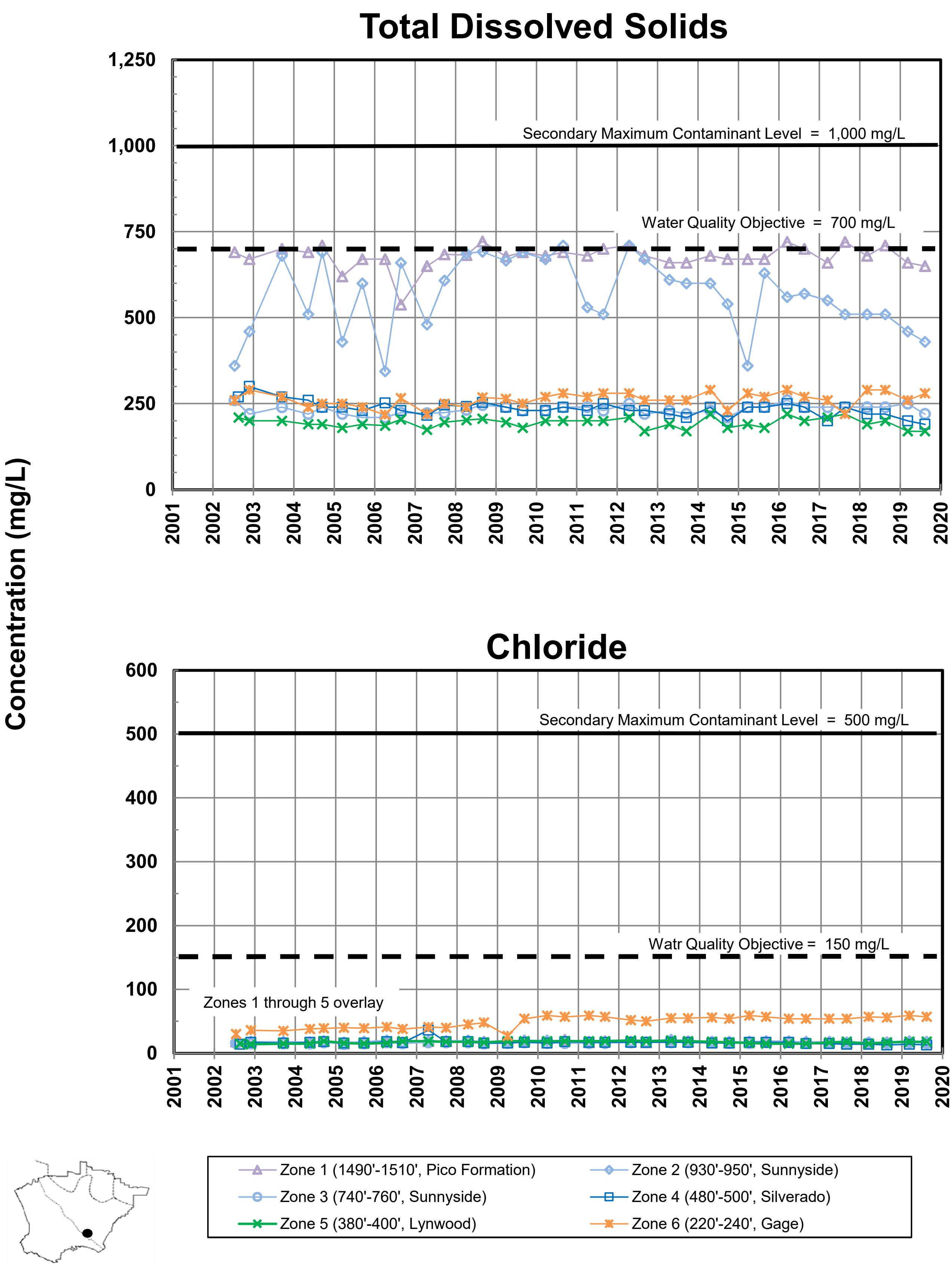
FIGURE 4.5





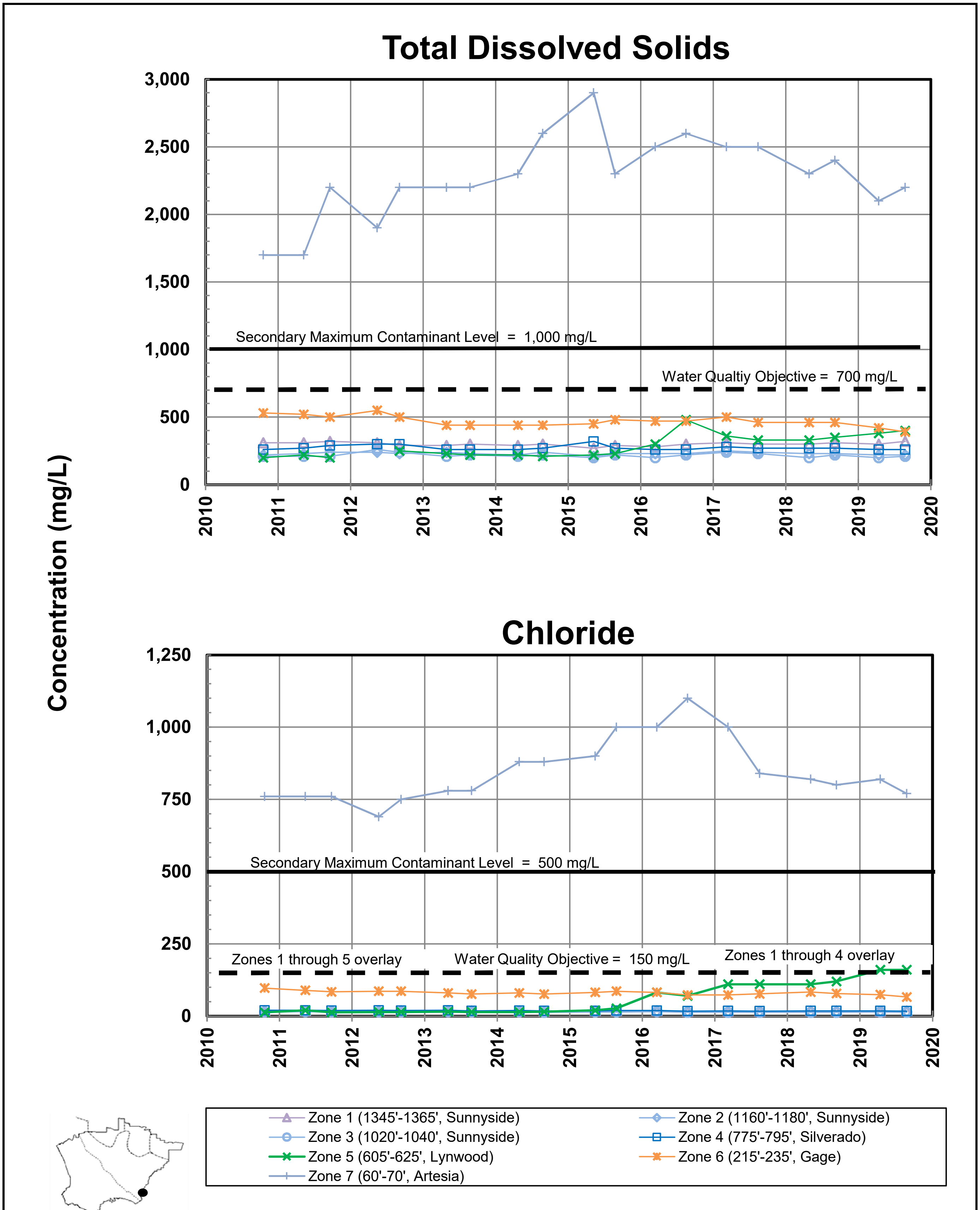
TDS AND CHLORIDE IN
WRD KEY MONITORING WELL WILLOWBROOK #1

FIGURE 4.6



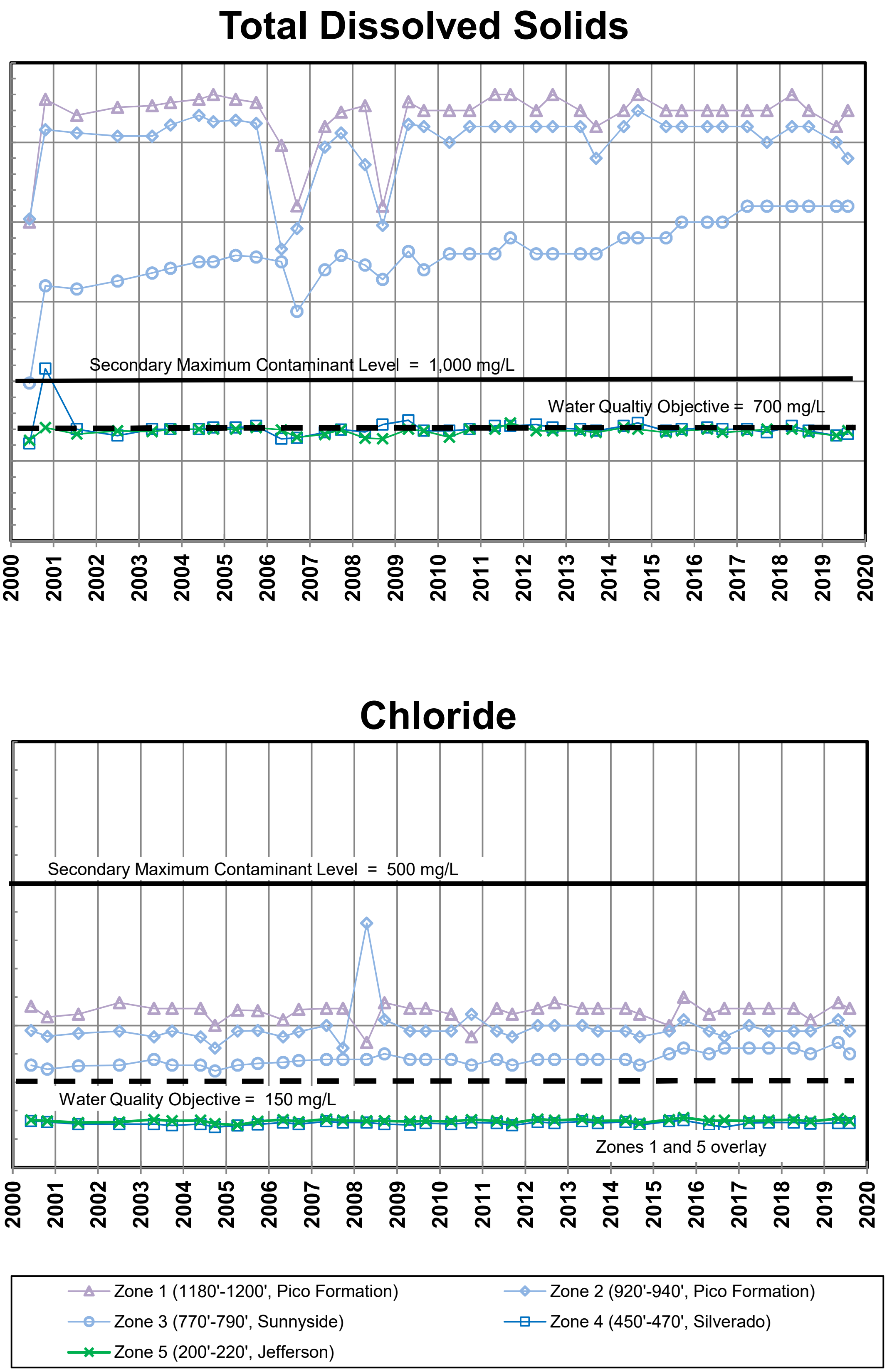
TDS AND CHLORIDE IN
WRD KEY MONITORING WELL LONG BEACH #6

FIGURE 4.7



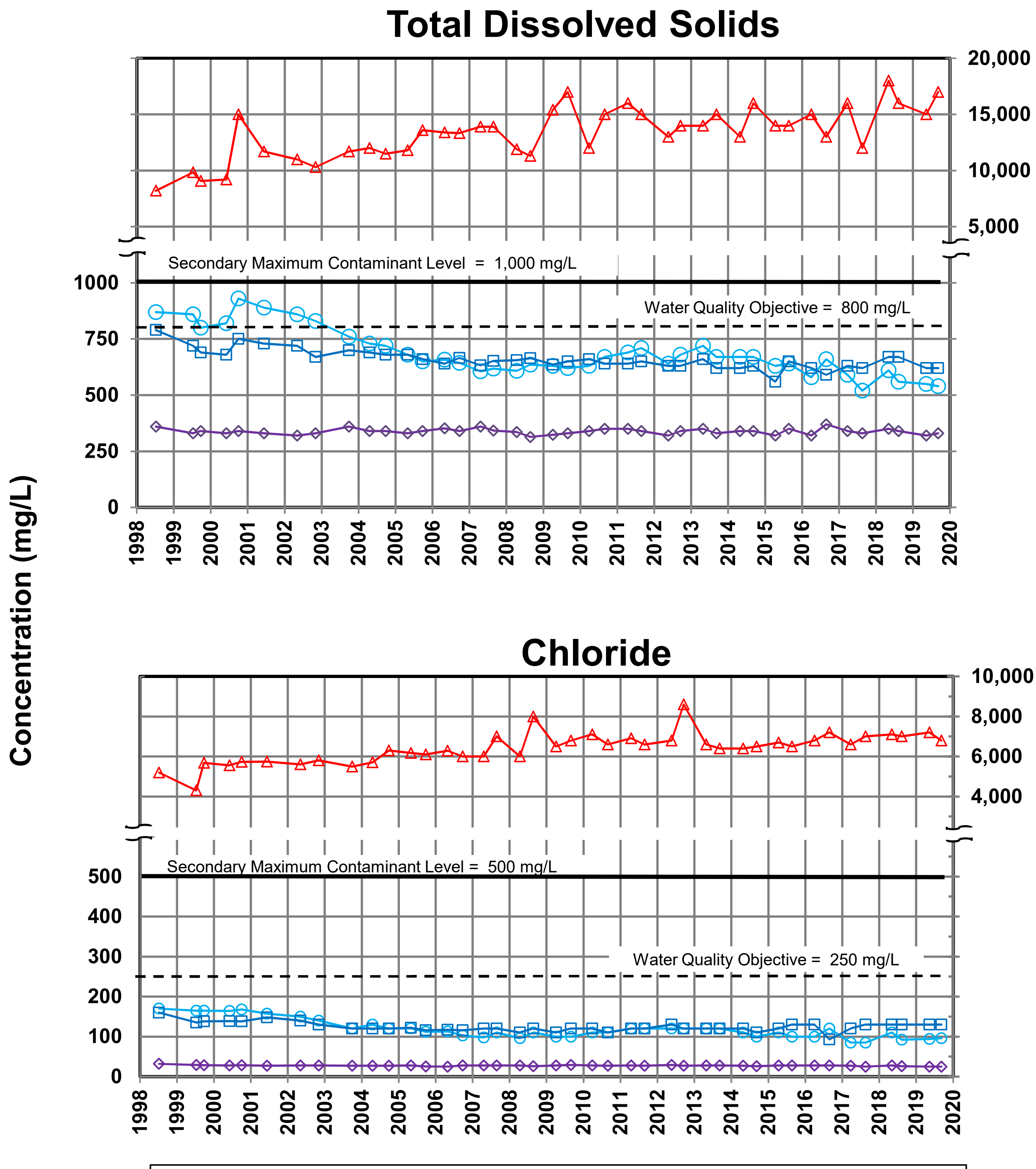
TDS AND CHLORIDE IN
WRD KEY MONITORING WELL SEAL BEACH #1

FIGURE 4.8



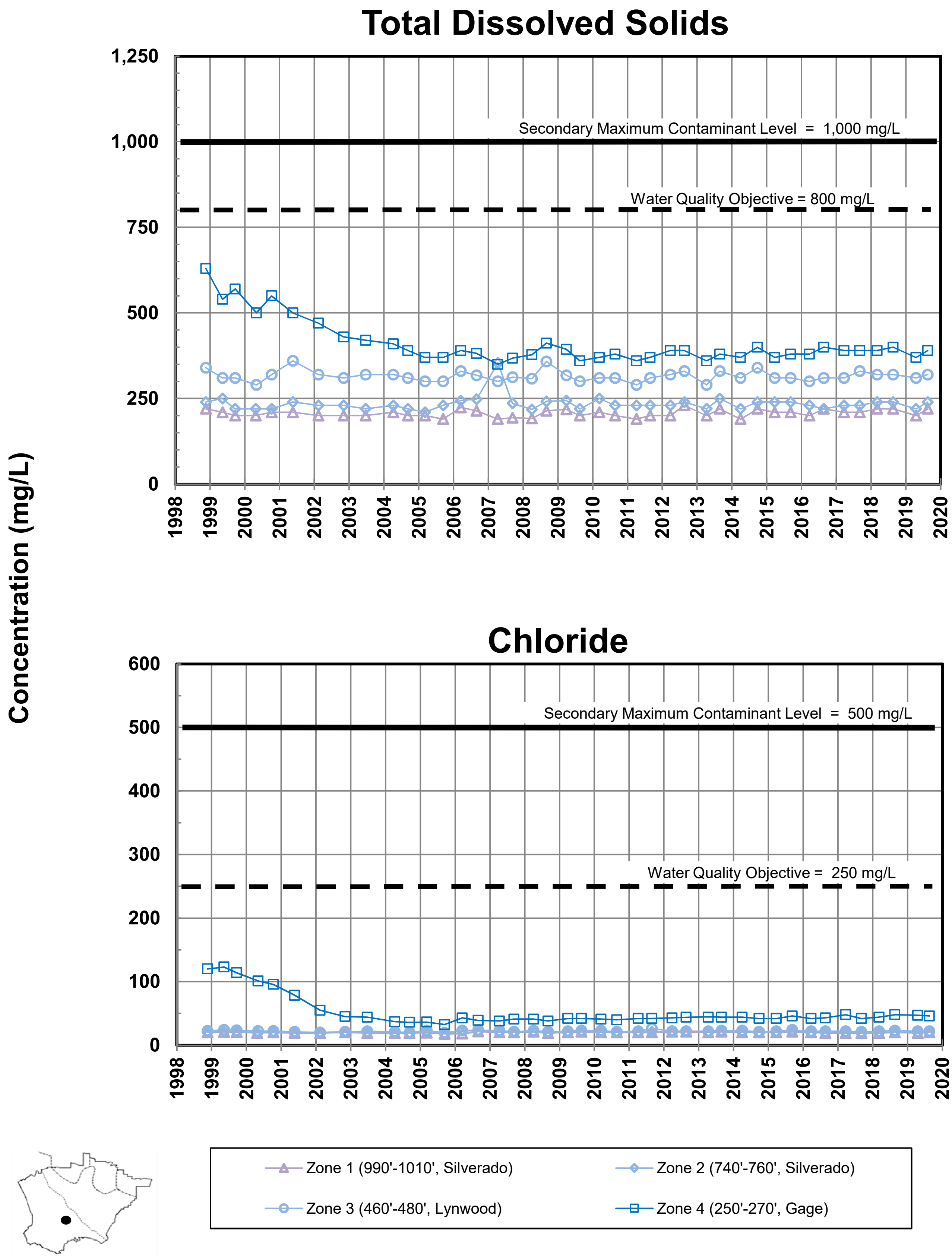
TDS AND CHLORIDE IN
WRD KEY MONITORING WELL WHITTIER #1

FIGURE 4.9



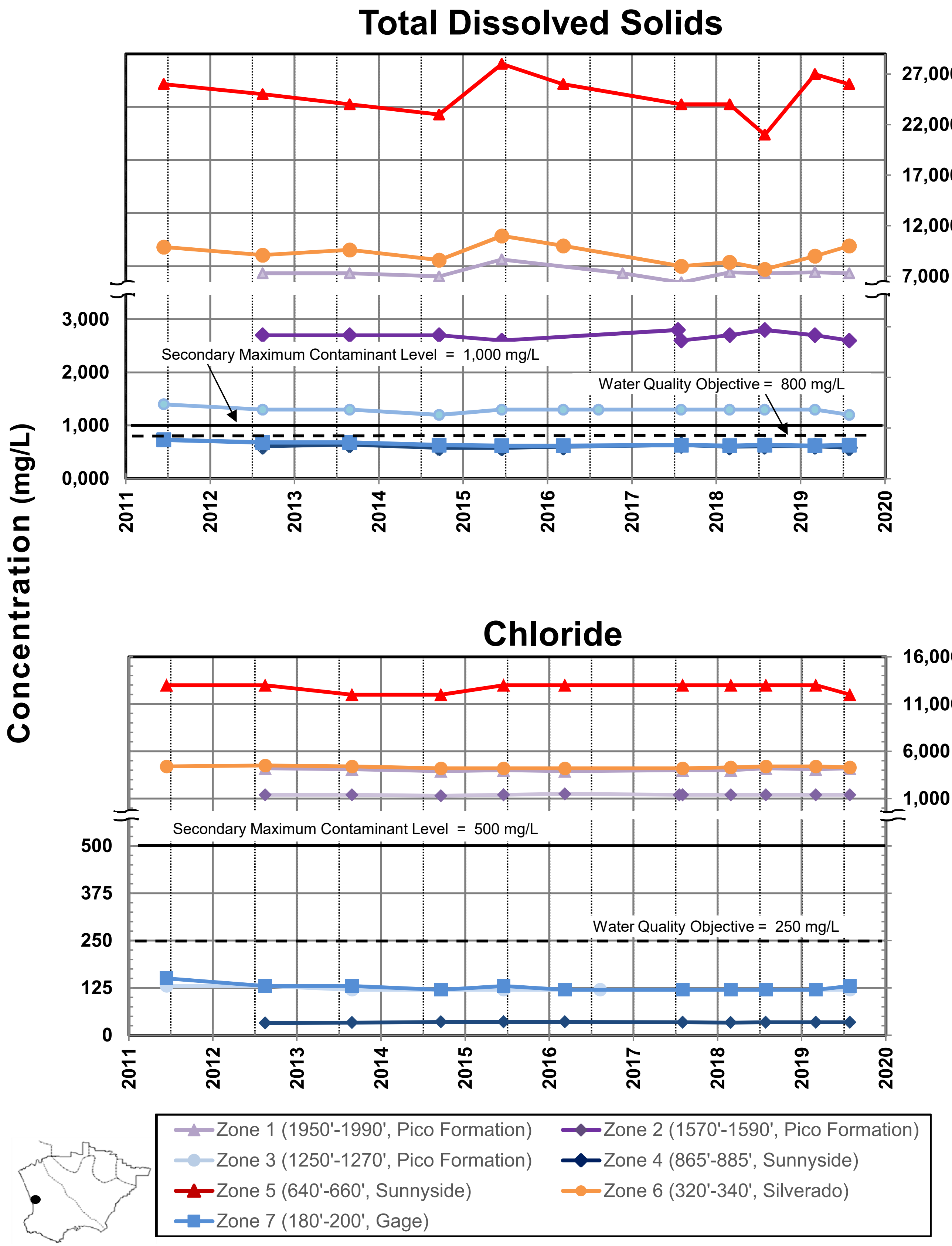
TDS AND CHLORIDE IN
WRD KEY MONITORING WELL PM-4 MARINER

FIGURE 4.10



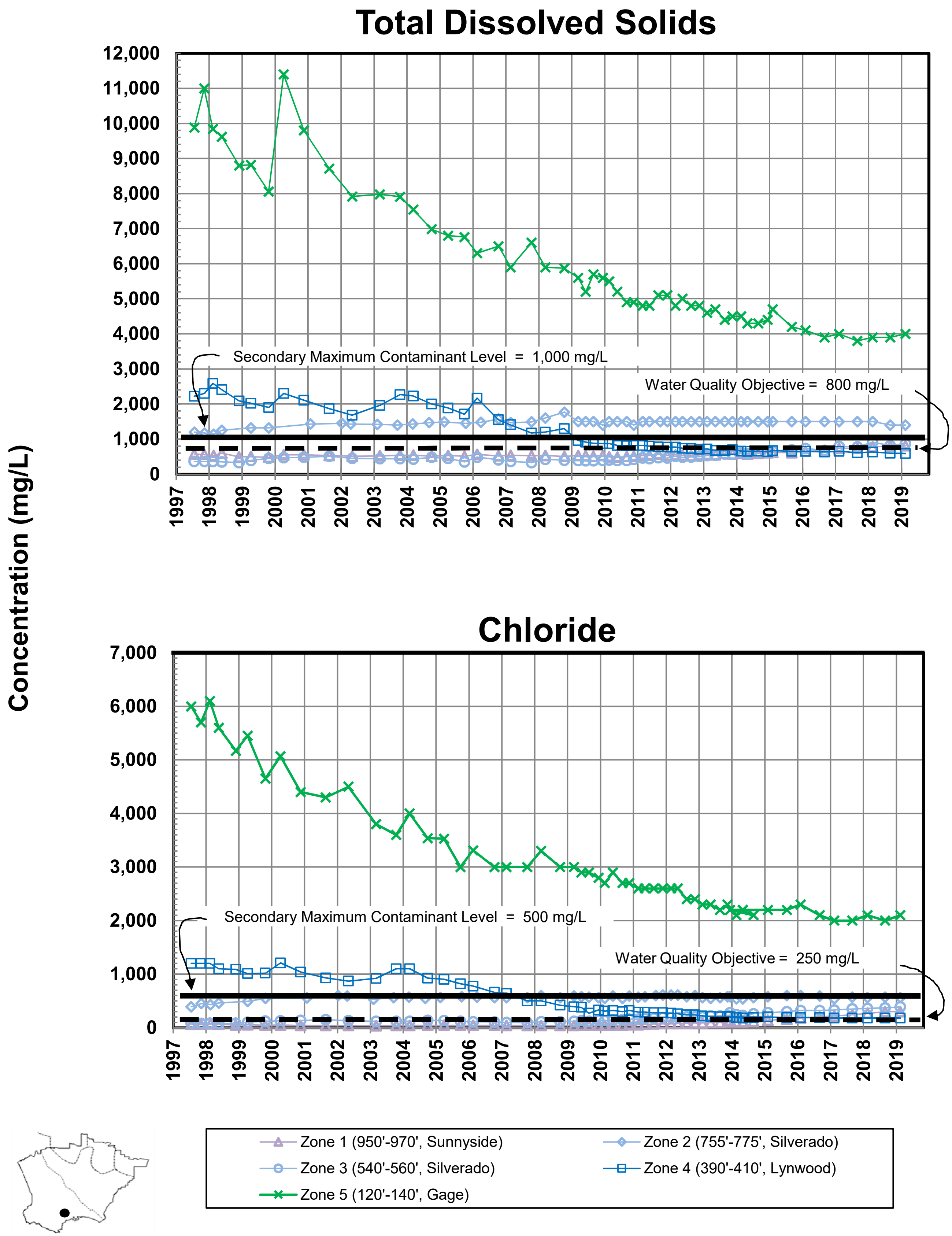
TDS AND CHLORIDE IN
WRD KEY MONITORING WELL CARSON #1

FIGURE 4.11



TDS AND CHLORIDE IN WRD KEY MONITORING WELL MANHATTAN BEACH #1

FIGURE 4.12



TDS AND CHLORIDE 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

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