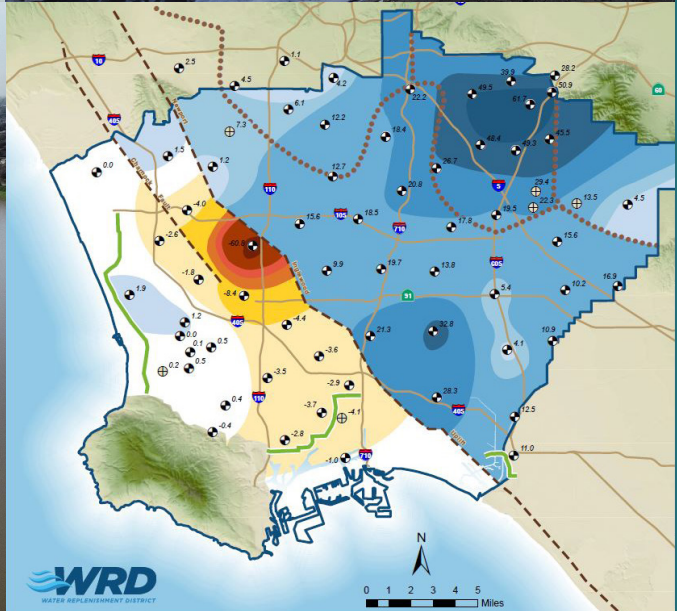
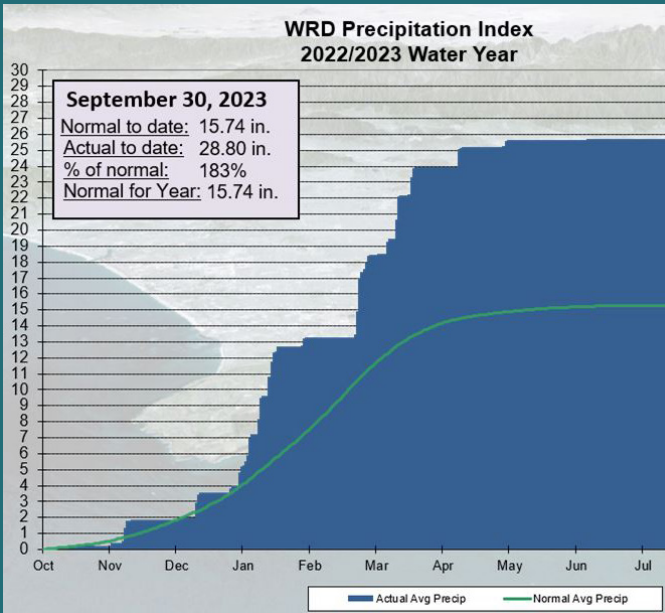


# Water Replenishment District



## REGIONAL GROUNDWATER MONITORING REPORT WATER YEAR 2022-2023

Central and West Coast Basins  
Los Angeles County, California

March 2024





# Water Replenishment District

## REGIONAL GROUNDWATER MONITORING REPORT CENTRAL BASIN AND WEST COAST BASIN LOS ANGELES COUNTY, CALIFORNIA WATER YEAR – 2022 - 2023

MARCH 2024

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Report cover – Clockwise starting at the top left:  
(Top left) WRD’s Precipitation Index graph shows above normal precipitation for the 2022 – 2023 Water Year. (Top right) Photograph shows stormwater being diverted for groundwater replenishment at the Rio Hondo Coastal Spreading Grounds Headworks in Montebello, California. (Bottom right) The map shows an overall increase in groundwater levels in the Central Basin, reflective of the above normal precipitation. (Bottom left) Photograph shows an aerial view towards the south, overlooking groundwater recharge Basin 2 and the San Gabriel River at the San Gabriel Coastal Spreading Grounds in Pico Rivera, California.

## **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. The District's mission is to provide, protect, and preserve safe and sustainable groundwater.

This year marks the 64<sup>th</sup> 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 of Directors (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 354 monitoring wells at 63 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 2022-2023. Detailed information is presented in the body of the report with a summary below:

### **Groundwater Levels**

Across the WRD service area, water levels have increased over the WY. On average water levels rose nearly nine feet across the District in WY 2022-2023. In both the Central and West Coast Basins, local changes in water levels have been variable in WY 2022-2023. Groundwater levels have increased everywhere in the Central Basin; however, in the West Coast Basin they have decreased nearly three feet. Overall, there was an increase in groundwater storage of 206,000 acre-feet (AF); 174,000 AF of that increase in storage occurred in the unconfined Montebello Forebay. There was an



increase in storage in the Los Angeles Forebay of 21,800 AF; the Whittier Area experienced an increase of 7,200 AF; and there was an increase of 3,000 AF of storage in the Central Basin Pressure Area (CBPA). Although groundwater levels decreased by nearly three feet in the West Coast Basin, no appreciable change in groundwater storage was calculated.

### **Groundwater Quality**

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

Analysis for this report uses water quality maps and trend graphs to focus on 11 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. 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 evaluate 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 continues to refine the regional understanding of groundwater occurrence, movement, and quality. Water levels will continue to be recorded using automatic dataloggers to monitor groundwater elevation changes throughout the year, and in select wells telemetry systems have been installed to transmit water level data remotely to the District. Conductivity sensors are also being utilized at selected nested monitoring wells to track changes in conductivity and supplement the automated water level data collected by WRD.

WRD also remains committed to its statutory charge to protect and preserve groundwater resources in its service area and will continue to sample groundwater for general water quality constituents including constituents of emerging concern (CECs). WRD staff will also continue to track various regulatory changes nationally as well as those within California.

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 to improve the framework for understanding the groundwater system and for use as a planning tool. WRD will use data from the RGWMP along with an update to the groundwater model that was developed and published by the United States Geological Survey (USGS) in 2021 as tools in its refinement of the conceptual model.

Consistent with WRD's mission to provide, protect, and preserve safe and sustainable groundwater and as required by the State's *Recycled Water Policy*, a SNMP is in place and will continue to be implemented. Existing and planned implementation measures are and will continue to be protective of groundwater quality and its beneficial uses.

Through the RGWMP, WRD will continue to collect CBWCB groundwater level data, track seasonal and long-term trends, and provide the data to the California Statewide Groundwater Elevation Monitoring (CASGEM) program and the National Groundwater Monitoring Network (NGWMN) administered by the USGS.

Further information is available on the WRD web site at <http://www.wrd.org>, or by calling WRD at (562) 275-4300. WRD welcomes any comments or suggestions to this RGWMP.



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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
Board	Board of Directors
CASGEM	California Statewide Groundwater Elevation Monitoring
CECs	chemicals of emerging concern
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
LACSD	Los Angeles County Sanitation Districts
LACPW	Los Angeles County Public Works
LAX	Los Angeles International Airport
LVL AWTF	Leo J. Vander Lans Advanced Water Treatment Facility
MCL	Primary 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	nanogram per liter
NGWMN	National Groundwater Monitoring Network
NL	Notification Level

## **GLOSSARY OF ACRONYMS (continued)**

OEHHA	Office of Environmental Health Hazard Assessment
PCE	tetrachloroethylene
PDF	Portable Document Format
PFAS	perfluoroalkyl and polyfluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctane sulfonic acid
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
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 provide, protect, and preserve safe and sustainable groundwater.

As part of accomplishing its 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 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 Public Works (LACPW), 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.

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 RGWMPs 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 354 wells at 63 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 monitoring 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 basin wide 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 basin wide monitoring program for the CBWCB. WRD's RGWMP 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 and the National Groundwater Monitoring Network (NGMWN) administered by the USGS.

Beginning in WY 2018-19 and culminating in WY 2019-2020, WRD completed a District-wide assessment for the presence of per- and polyfluoroalkyl substance (PFAS) constituents, including perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA), in WRD nested monitoring wells and CBWCB production wells. Data collected from the two-year PFAS assessment were included in the WY 2019-2020 RGWMP published in March 2021, as were water quality maps illustrating the occurrence of PFOS and PFOA across the District.

## 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 experienced hydrogeologists interpret 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 resulted in changes to designations at some wells from those that were previously used and published by WRD. **Tables 1.1, 1.2, and 2.1** list the specific aquifer or formation assigned to each well used in the RGWMP and indicate 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 in **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-aged San Pedro Formation. Other shallower aquifers, which locally produce potable water, include the Gage and Gardena aquifers of the upper Pleistocene-aged 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, and 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 basin wide 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 were previously 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 groundwater use, 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 2022-2023 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 2022-2023. **Section 3** presents water quality data for the WRD nested monitoring wells, basinwide production wells, and replenishment water. **Section 4** summarizes salt and nutrient management in the CBWCB and presents water quality trends for total dissolved solids (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 2022-2023 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 indicate 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 recharge 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 reference measurement point of each well. **Table 2.1** presents manual groundwater level measurements collected from the District's nested monitoring wells during WY 2022-2023. 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. Recent improvements in cellular telemetry equipment have allowed WRD to equip 51 datalogger-equipped individual wells at 25 nested well sites with telemetry systems that allow near real-time water level data to be remotely transmitted to the District. WRD also obtains water level data from cooperating entities such as pumpers, DWR, and LACPW who measure and 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 elevation 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 2023 is presented in **Figure 2.1**. Specific well zones used to develop the groundwater contour map are identified on Table 2.1. Figure 2.1 shows that in the Central Basin water levels range from highs of nearly 190 feet above MSL to lows of nearly 60 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 90 feet below MSL. The highest water levels occur near the West Coast Basin Seawater Intrusion Barrier, and they decrease to the east where they are generally at their lowest elevations in the City of Gardena near the Charnock Fault and in the City of Carson slightly seaward of the Newport-Inglewood Uplift. The Charnock Fault and Newport-Inglewood Uplift 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 2022 and those measured in fall 2023. Specific well zones used to develop the groundwater level change map are identified on Table 2.1. During WY 2022-2023, changes in groundwater levels have increased within the Central Basin and within the West Coast Basin they have generally decreased or have remained unchanged.



In the Central Basin, groundwater levels measured in fall 2023 increased everywhere compared to those measured in fall 2022. The greatest increase in water levels occurred within the unconfined Montebello Forebay where they are more than 60 feet higher than they were in fall 2022 within and in close vicinity to the spreading grounds. The increase in water levels is less pronounced moving away from the spreading grounds; along the eastern reach of the Forebay they range from more than 40 feet higher in the northeast to almost 30 feet higher in the southeast, and along the western reach they are about 27 feet higher than they were in fall 2022. Along the southernmost reach of the Montebello Forebay, water levels are almost 20 feet higher than they were in fall 2022. Across the unconfined Los Angeles Forebay, water levels are higher than those measured in fall 2022; in the western portion water levels are over four feet higher than were measured in the previous year, while those in the eastern and southern-central portions are over 12 feet higher than were measured in fall 2022. In the Whittier Area, water levels gradually decrease from west to east; in the west they are as much as 45 feet higher, and in the east they are over four feet higher compared to water levels measured in fall 2022.

Water levels increased across the rest of the Central Basin in WY 2022-2023. In the Central Basin Pressure Area (CBPA) downgradient from both Forebays and the Whittier Area, water levels steadily increase towards the south; they are at their highest in the southern-central portion of the CBPA where they are as much as 33 feet higher than they were in fall 2022. In the northwestern portion of the CBPA immediately west of the Los Angeles Forebay, water levels are as much as seven feet higher than were measured in the previous year, and moving south from there along the Newport-Inglewood Uplift they steadily increase. In the area between the Los Angeles and Montebello Forebays, water levels are about 20 feet higher than those measured in fall 2022.

In the West Coast Basin, changes in water levels were somewhat variable in WY 2022-2023. In the northeast portion of the basin between the Newport-Inglewood Uplift and the Charnock Fault water levels are slightly higher in the north but have decreased in the south and southeast by as much as 61 feet below those measured in fall 2022. In the southern portion of the basin near the Newport-Inglewood Uplift and southern coastal area water

levels are as much as four feet lower than they were in fall 2022. In the central portion of the West Coast Basin Barrier Project near the cities of Hermosa Beach and Redondo Beach, water levels have increased slightly and are between one and two feet higher than they were in fall 2022. In the Hawthorne-Lawndale area, water levels are almost three feet lower than they were in fall 2022, and in much of the Torrance and Los Angeles International Airport (LAX) areas, water levels are relatively unchanged from those measured in fall 2022.

District-wide, groundwater levels increased an average of nearly nine feet in WY 2022-2023. Water levels increased throughout the Central Basin; in the Montebello Forebay region water levels increased an average of more than 37 feet, in the Los Angeles Forebay region they increased an average of more than 12 feet, and in the Whittier Area they increased by an average of almost 18 feet. In, the CBPA water levels increased by an average of more than 15 feet. In the West Coast Basin, water levels decreased by an average of nearly three feet.

There was an overall gain of 206,000 acre-feet (AF) in groundwater storage across the District in WY 2022-2023, nearly all of which occurred in the Central Basin. In the unconfined Montebello Forebay, there was a gain in groundwater storage of 174,000 AF, in the Los Angeles Forebay a gain of 21,800 AF, in the Whittier Area a gain of 7,200 AF, and in the CBPA a gain of 3,000 AF. In the West Coast Basin there was no appreciable change in groundwater storage in WY 2022-2023.

### **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 because 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 the 1950s because 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 ESRs 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), 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 Coastal 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 local 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 more than 47 feet this year compared to the previous WY.

**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 Coastal Spreading Grounds. There are six individual wells (zones) that are screened, from shallowest to deepest, in the Gaspar/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. At the end of WY 2022-2023, water levels in the three Sunnyside Zones were between 49 and 50 feet higher than they were at the end of the previous WY, similar to levels last observed at this location in the spring of 2011.

**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 Coastal Spreading Grounds. There are six individual wells (zones) that are screened in the following aquifers (from shallowest to deepest): Gardena, Silverado, and 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 observed 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. Water levels in Zones 3 and 4 increased more than 27 feet from those measured in the fall of 2022.

## **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): Gaspar, Gage, Hollydale, Lynwood, and Silverado, with depths ranging from 114 to 910 feet BGS. Only four of the five zones are shown on the hydrograph because the shallowest well (screened from 114 to 134 feet BGS in the Gaspar 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, screened within the Lynwood and Silverado Aquifers, are generally similar and both increased between eight and 10 feet in WY 2022-2023 compared to the previous WY. Unlike the fluctuations between increasing and decreasing water levels typically observed in the Montebello Forebay, water levels in the Los Angeles Forebay have remained relatively stable over the past 24 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. Water levels in the deepest three aquifers at South Gate #1 increased between 18 and 21 feet in WY 2022-2023 compared to the previous WY. Water levels in Zone 5 increased by more than three feet from the previous WY but have steadily decreased by more than 20 feet over the past 15 years.

**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. Water levels in the upper three zones are typically shallower than those observed in Zone 1. The differences in water levels between Zones 1 and 2, and between Zones 2 and 3, indicate hydraulic separation, and thus suggest the presence of aquitards that separate these zones from one another. Water levels in Zones 3 and 4 track very closely which indicates there is little hydraulic separation between them. Water levels in Zone 1 increased more than 15 feet from those measured in fall 2022, and water levels in the overlying shallower zones have increased between three and five feet. Water levels in Willowbrook #1 have declined since the wells were first installed in 1999, but they have remained relatively stable since the fall of 2008.

**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 the 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 here 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, they 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 show significant seasonal variation. **Figure 2.9** shows that water levels in the deeper five zones increased between 14 and 17 feet from those measured in fall 2022. Water levels in the shallowest zone increased by more than four feet.

**Figure 2.10** is a hydrograph for key nested monitoring well Seal Beach #1, which 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. 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 these water levels have increased by more than 14 feet over WY 2022-2023. Water levels in Zone 4 increased by over nine feet, and in Zone 5 by more than five feet during WY 2022-2023. Water levels within Zones 6 and 7 have increased between one half of one foot and two feet over the WY; here they show a smaller seasonal response than the five deeper zones, with groundwater elevations at or slightly below sea level, suggesting partial isolation from the lower aquifer systems.

## **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 have tracked very closely over time while the Zone 5 groundwater elevation is more than 80 feet higher than elevations in the deeper zones suggesting substantial isolation by an aquitard(s). The Whittier #1 hydrograph indicates that groundwater levels in the Whittier Area have increased between two and six feet over WY 2022-2023 and have decreased about eight feet over the past 23 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. Historically, water levels in Zone 1 (Sunnyside) have been the deepest and were consistently separated from Zone 2 (Silverado) water levels by one or two feet; however, since April 2020 water levels within the two zones have converged and now fluctuate above and below one another. In fall 2023, water levels in Zone 2 were observed to be nearly one foot deeper than those in Zone 1. Water levels in both zones have increased by about one foot over WY 2022-2023. Water levels in Zones 3 and 4 (Lynwood and Gardena) are both about two feet higher than those in Zones 1 and 2 and are essentially unchanged from those measured in the fall of 2022.

**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 30 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 more than four feet over WY 2022-2023 and have steadily decreased over the past five years but have generally increased by about 30 feet over the past 24 years.

**Figure 2.14** is a hydrograph for WRD's Manhattan Beach #1 key nested monitoring well for the West Coast Basin located one half mile inland of the West Coast Basin Seawater Intrusion Barrier. There are seven individual wells (zones) at Manhattan Beach #1 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 all generally track together. Water levels in Zones 6 and 7 track together and are about six to eight feet higher than those in Zones 1, 2, 4, and 5. Seasonal fluctuations are not pronounced at the Manhattan Beach #1 location and in general groundwater levels did not change significantly over the previous WY. Water levels in Zone 3 have decreased less than two feet over the previous WY but have increased nearly 13 feet since the wells were 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 than the deeper zones suggesting hydraulic separation from them. Wilmington #2 water levels decreased as much as three

feet in WY 2022-2023 compared to the previous WY, but over the past 25 years they have increased by as much as 25 feet.

### **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 monitoring 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 into WY 2022-2023, 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 at those wells each year during the spring sampling events. This reduction in sampling has produced net cost savings without sacrificing the quality of data provided by WRD. As the quantity of data from each nested monitoring well site continues to increase, WRD will periodically review that data, and where conditions allow, reduce the sampling frequency at additional nested monitoring 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 38 WRD nested monitoring wells (220 individual well zones) in the Central Basin during WY 2022-2023. **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 2022-2023. Complementing the data from WRD's nested monitoring well network, data for CBWCB production wells were obtained from the DDW based on results submitted by purveyors for their DDW Title 22 drinking water compliance.

Water quality maps for nested monitoring wells for WY 2022-2023, and production wells for the three-year period spanning October 2020 through September 2023, are presented herein for 11 water quality constituents (**Figures 3.1 – 3.22**). The 11 constituents include TDS, iron, manganese, chloride, nitrate, trichloroethylene (TCE), tetrachloroethylene (PCE), arsenic, perchlorate, hexavalent chromium, and 1,4-dioxane. The maps illustrate areal and vertical differences in water quality and compare the aquifer-specific water quality data from WRD's 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 2022-2023 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 20 out of 220 individual well zones (9%). In the West Coast Basin, TDS was detected in WRD nested monitoring wells at concentrations above the SMCL in 44 out of 112 individual well zones (39%). Elevated TDS concentrations in

the West Coast Basin were observed along the coast from Redondo Beach to LAX, in the Torrance, Inglewood, Gardena, and Dominguez Gap areas.

**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 2020-2023. In the Central Basin, TDS was detected above the Upper Level SMCL of 1,000 mg/L in one of the 191 (< 1%) 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 24 production wells (21%). 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 does 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 of 0.3 mg/L in 16 out of 220 individual well zones (7%). In the West Coast Basin, iron was detected in WRD nested monitoring wells at concentrations above the SMCL in 18 out of 112 individual well zones (16%).

**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 2020-2023. In

the Central Basin, iron was detected at concentrations above the SMCL of 0.3 mg/L in 20 out of 200 production wells (10%). In the West Coast Basin, iron was detected at concentrations above the SMCL in two out of 27 production wells (7%).

### 3.1.3 Manganese

Manganese is naturally occurring and in high concentrations may be objectionable in water in the same manner as 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 ( $\mu\text{g/L}$ ) is established for manganese due to its undesirable aesthetic qualities; manganese also has an NL of 500  $\mu\text{g/L}$ .

Manganese concentrations in the WRD nested monitoring wells exhibit widespread vertical and horizontal variations across the WRD service area. In the southeast 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 monitoring well sites, manganese concentrations exceed the SMCL of 50  $\mu\text{g/L}$  in 69 out of 220 individual well zones (31%), and in three of those 69 zones (4%) manganese was detected at concentrations above the NL of 500  $\mu\text{g/L}$ . In West Coast Basin nested monitoring well sites, manganese was detected at concentrations above the SMCL in 50 out of 112 individual well zones (45%), and in eight of those 50 zones (16%) 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 2020-2023. Manganese was detected in Central Basin production wells at concentrations above the SMCL of 50  $\mu\text{g/L}$  in 38 out of 201 production wells (19%), and in one of those 38 wells (3%) manganese was detected at a concentration above the NL of 500  $\mu\text{g/L}$ . Manganese was detected in West Coast Basin production wells at

concentrations above the SMCL in 17 out of 28 production wells (61%) but was not detected at concentrations above the NL in any of those 17 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 2022-2023. In the Central Basin, with only a few exceptions, all 38 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 of 500 mg/L and short term SMCL of 600 mg/L in five out of 220 individual well zones (2%). In the West Coast Basin, chloride was detected in WRD nested monitoring wells at concentrations above the upper SMCL of 500 mg/L in 29 out of 112 individual well zones (26%); in 26 of those 29 individual well zones (90%) 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 2020-2023. Chloride was not detected above the upper SMCL of 500 mg/L in any of the 192 Central Basin production wells sampled for chloride. In the West Coast Basin, four of the 26 (15%) production wells tested, all of which are located on the west side of the basin near the coast, had chloride concentrations above both the upper SMCL of 500 mg/L and 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 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 at concentrations in excess of the MCLs, they reduce the uptake of oxygen causing shortness of breath, lethargy, and 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 2022-2023. In the Central Basin, nitrate (as nitrogen) was detected in WRD nested monitoring well locations at concentrations above the MCL of 10 mg/L in two out of 220 individual well zones (<1%). 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 monitoring 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 2020-2023. None of the 207 Central Basin production wells tested for nitrate contained nitrate (as nitrogen) above the MCL of 10 mg/L. None of the 29 production wells tested in the West Coast Basin for nitrate exceeded the MCL during WYs 2020-2023.

### 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 of 5 µg/L in seven out of 220 individual well zones (3%). The nested wells impacted by TCE are located within or immediately adjacent to the Los Angeles Forebay. In the West Coast Basin, TCE was detected in WRD nested monitoring well locations at concentrations above the MCL in two out of 112 individual well zones (2%). Nested wells impacted by TCE in the West Coast Basin are generally located in the northern eastern portion of the basin in the Inglewood - Hawthorne area.

**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 2020-2023. As shown on Figure 3.12, in the Central Basin TCE was detected at concentrations above the MCL of 5 µg/L in 14 out of 210 production wells (7%). Wells impacted by TCE are generally located in the northern portion of the Central Basin within, between and downgradient of the Montebello and Los Angeles Forebays. In the West Coast Basin, TCE was detected at a concentration above the MCL of 5 µg/L in one of the 28 production wells (4%) tested for TCE during WYs 2020-2023.

### 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 a concentration above the MCL of 5 µg/L in one out of 220 individual well zones (<1%). PCE was not detected at a concentration above the MCL in any of the WRD nested monitoring well sites located in the West Coast Basin.

**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 2020-2023. In the Central Basin, PCE was detected at concentrations above the MCL of 5 µg/L in 11 out of 208 production wells (5%). Production wells with detectable PCE concentrations are primarily located within and in between the Los Angeles and Montebello Forebays; however, several are located to the south and further into the CBPA. PCE was not detected in any of the 28 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 plants and animals. 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 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 2022-2023. In the Central Basin, arsenic was detected in WRD nested monitoring well locations at concentrations above the MCL of 10 µg/L in 22 out of 220 individual well zones (10%). In the West Coast Basin, arsenic was detected at a concentration above the MCL in one out of 112 individual well zones (<1%).

**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 2020-2023. In the Central Basin, arsenic was detected at concentrations above the MCL of 10 µg/L in nine out of 195 (5%) production wells. In the West Coast Basin, arsenic was not detected at a concentration above the MCL in any of the 23 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 2022-2023. In the Central Basin, perchlorate was not detected in WRD nested monitoring well locations at concentrations above the MCL of 6 µg/L in any of the 220 individual well zones. In the West Coast Basin, perchlorate was detected at two WRD nested well sites (three individual well zones) located in Gardena (GAR-1) and

Torrance (PM-4 Mariner) at concentrations above the MCL in three out of 112 individual well zones (3%). Although perchlorate has been observed historically in the two well zones at GAR-1, over the course of 15 years of bi-annual sampling for perchlorate at PM-4 Mariner it has never been detected in the wells there until this most recent fall 2023 sampling event. WRD suspects that the apparent detections in PM-4 Mariner are the result of laboratory error and will continue to be monitored by WRD.

**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 2020-2023. In the Central Basin, perchlorate was detected at concentrations above the MCL of 6 µg/L in two out of 204 production wells (1%). Perchlorate was not detected in any of the 25 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 judgment 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 of 10 µg/L in three out of 220 individual well zones (1%). In the West Coast Basin, hexavalent chromium was not detected at concentrations above the historic 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 2020-2023. In the Central Basin, hexavalent chromium was detected at a concentration above the historic MCL of 10 µg/L in six out of 50 production wells (12%). Testing for hexavalent chromium was not conducted in any of the West Coast Basin production wells during the three-year period.

### **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 several 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. The USEPA 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 of 1 µg/L in 28 out of 220 individual well zones (13%) but was not detected at

concentrations above the RL of 35 µg/L in any of those 28 well zones. In the West Coast Basin, 1,4-dioxane was not detected above the NL of 1 µg/L or the RL of 35 µg/L in any of the 112 individual well zones.

**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 2020-2023. In the Central Basin 1,4-Dioxane was detected at concentrations above the NL of 1 µg/L in 49 of the 74 (66%) production wells that were tested. 1,4-Dioxane was not detected above the RL of 35 µg/L in any of the Central Basin production wells. In the West Coast Basin, testing for 1,4-Dioxane was not conducted in any of the production wells during the three-year period.

### **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, hexavalent chromium, and 1,4-dioxane. 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 via the Colorado River aqueduct and from Northern California via the State Water Project for potable supply and for groundwater recharge. Untreated imported water, when needed and available, is used for recharge at the Montebello Forebay Spreading Grounds. For groundwater recharge at the spreading grounds, Colorado River water deliveries have been suspended due to the

potential presence of quagga mussels and since WY 2018-2019, there has been no imported water received from the State Water Project for groundwater replenishment at the spreading grounds. 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. For WY 2022-2023, approximately 8,556 AF of treated imported water were injected into the West Coast Basin, Dominguez Gap, and Alamitos Gap Barrier Projects combined. Average water quality data for treated and untreated imported water are presented in **Table 3.3**.

In 2022, the average TDS concentration of untreated Colorado River water was 609 mg/L and the average TDS concentration of untreated water from the State Water Project was 204 mg/L.

In 2022, average concentrations of nitrate (as Nitrogen) were below detection limits in both untreated Colorado River water and untreated water from the State Water Project. Recently and historically, both Colorado River and State Water Project nitrate concentrations have remained below the MCL.

In 2022, the average concentration of iron was below detection limits in both untreated Colorado River water and untreated water from the State Water Project. The average concentration of manganese was below detection limits in untreated Colorado River water, but it exceeded the SMCL of 50 µg/L in untreated water from the State Water Project. This is likely due to manganese leaching from natural deposits. Colorado River and State Water Project iron and manganese concentrations have historically been below the SMCL.

The average chloride concentrations in untreated 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 were not detected in water from the Colorado River or State Water Project during calendar year 2022. 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, recycled water is produced by two entities: the Los Angeles County Sanitation Districts (LACSD), and the WRD. Both entities divert their produced water into the Montebello Forebay Spreading Grounds where it percolates into the subsurface to recharge the underlying aquifers. LACSD produces its tertiary-treated recycled water at its Whittier Narrows Water Reclamation Plant (WRP), San Jose Creek East WRP, San Jose Creek West WRP, and Pomona WRP facilities. WRD produces advanced treated recycled water that meets drinking water quality standards and other stringent regulations at its Albert Robles Center for Water Recycling and Environmental Learning (ARC) advanced water treatment facility (AWTF). The effluent from each of these five facilities 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 the five facilities is shown in Table 3.3.

All constituents listed have remained stable over recent WYs. Furthermore, arsenic, TCE, PCE, perchlorate, and hexavalent chromium have either not been detected or have been detected well below their respective MCLs in recycled water from the five facilities. 1,4-Dioxane concentrations in recycled water from the Whittier Narrows, San Jose Creek West, San Jose Creek East, and Pomona WRPs, and from the ARC AWTF do not exceed the NL of 1.0 µg/L or the RL of 35 µg/L. N-Nitrosodimethylamine (NDMA) was detected above its NL of 10 nanograms per liter (ng/L) in recycled water from the 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 3.3 presents average water quality data for the advanced treated recycled water produced by the ELWRF.

The Alamitos Gap Seawater Intrusion Barrier currently receives both treated imported water and advanced treated recycled water produced by WRD's Leo J. Vander Lans Advanced Water Treatment Facility (LVL AWTF) for injection. The LVL AWTF treats the tertiary-treated effluent from the LACSD Long Beach WRP using microfiltration, reverse osmosis, ultraviolet light, and advanced oxidation with hydrogen peroxide. The advanced treated recycled water meets drinking water quality standards and other stringent regulations for direct injection into the aquifers. The LVL 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. The facility has been consistently operational during WY 2022-2023 and has provided approximately 68% of barrier demand. The facility is expected to run at near full capacity in the future. Table 3.3 presents average water quality data for the advanced treated recycled water produced by the LVL 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, ultraviolet light, and advanced oxidation using sodium hypochlorite. 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. In WY 2022-2023, various operational and maintenance issues prevented TIWRP from providing the optimal volume of recycled water to the barrier. Through September 2023, the TIWRP has delivered approximately 65% of barrier demand. It is anticipated that ultimately the advanced treated recycled water produced at the facility will replace nearly all the imported water used for injection into the Dominguez Gap Seawater Intrusion Barrier. Table 3.3 presents average water quality data for the advanced treated recycled water produced by the TIWRP.

### **3.2.3 Quality of Stormwater**

Stormwater infiltrates the subsurface to varying degrees throughout the WRD service area. It is also intentionally diverted from the major storm channels and used for groundwater recharge along with imported and recycled water at the Montebello Forebay Spreading Grounds. Routine stormwater quality analyses are typically performed by LACPW and other entities; however, most of the constituents that are usually reported by LACPW were not analyzed during WY 2021-2022, and therefore those results are not available for inclusion in this report. Average stormwater quality data for those constituents that were provided by LACPW for WY 2021-2022 are presented on Table 3.3.

## **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 3.4**). Research by the USGS led to three distinct groupings of groundwater compositions. Group A groundwater is typically calcium bicarbonate or calcium bicarbonate/sulfate dominant. Group B groundwater has a typically calcium-sodium bicarbonate or sodium bicarbonate character.

Group C has a sodium chloride character. Several of the WRD wells yield results that do not fall into one of the three major groups and are thus classified separately as Group D.

Groundwater from Group A likely represents recent recharge water containing a significant percentage of imported water. Group B represents older native groundwater replenished by natural local recharge. Group C represents groundwater impacted by seawater intrusion or connate saline brines. Table 3.4 lists the groundwater group for each WRD nested monitoring well. Comparison of groundwater groups with well locations indicates that, in general, Group A groundwater is found at and immediately downgradient from the Montebello Forebay Spreading Grounds in all but the deepest zones. Group B groundwater is found farther down the flow path within the Central Basin and inland of the West Coast Basin Seawater Intrusion Barrier. Group C groundwater is generally found near the coastlines or in deeper zones. Several wells, grouped as “Other” on Table 3.4, exhibit a chemical character range different from Groups A, B, or C and indicate unique waters not characteristic of the dominant flow systems in the basins.

## 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 use of recycled water and stormwater for 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 on February 12, 2015, and adopted in July 2015. The full text of the “*Salt Nutrient Management Plan*” (WRD, 2015) can be found at <https://www.wrd.org/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 SNMP, 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 monitoring 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 69 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 2022-2023 are shown on maps (**Figures 3.1, 3.7, and 3.9**, respectively) and are 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 2020-2023 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.

For 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.

- At Rio Hondo #1, TDS and chloride concentrations have historically been and remain below the WQOs and SMCLs.
- At Pico #2, TDS and chloride concentrations have generally remained below the SMCLs and WQOs, with the exception of a one-time detection in September 2008 of TDS in Zone 2 at a concentration slightly above the WQO (750 mg/L), and a

one-time detection in September 2018 of chloride in Zone 6 at the WQO of 150 mg/L. TDS concentrations in Zone 2 have increased slightly since the fall of 2020, but they remain below the WQO.

- At Norwalk #2, TDS and chloride concentrations have historically been and remain below the WQOs and SMCLs.

For 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**.

- At Huntington Park #1, the deeper two zones show stable trends for TDS and chloride at concentrations below the WQOs and SMCLs. The shallower two zones indicate a relatively stable trend in chloride concentrations that are below both the WQO and SMCL. TDS concentrations in the shallower two zones have increased slightly since the wells were first installed. Over the past 13 years, TDS concentrations in the shallowest zone (Zone 4) are consistently above the WQO of 700 mg/L. TDS concentrations in Zone 3 have fluctuated just above and below the WQO over the past 14 years; however, since the fall of 2021 they have been measured at concentrations greater than the WQO. TDS concentrations in both shallow zones remain below the SMCL of 1,000 mg/L.

For 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 slightly since initial sampling but have remained relatively stable over the past 13 years and are below both the WQOs and SMCLs.
- At Willowbrook #1, all four zones show stable trends in TDS and chloride concentrations and are at values well below both the WQOs and SCMLs.
- At Long Beach #6, all six zones show stable chloride trends with concentrations well below both the WQO and SMCL. TDS concentrations in Zones 3, 4, 5 and 6



are stable and below both the WQO and SMCL. In Zone 1, the deepest zone at Long Beach #6, TDS is typically detected close to the WQO of 700 mg/L. TDS concentrations in Zone 2 have historically fluctuated by as much as 50% with highs near or slightly above the WQO; however, over the past 11 years TDS concentrations have remained below the WQO and show a steadily decreasing trend.

- 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 increased over the past five years and have been measured at concentrations above the WQO, but below the SMCL, since 2019. TDS and chloride concentrations in Zone 7 are both at values well above the WQOs and SCMLs and are likely due to the effects of seawater intrusion.

For the Whittier Area, represented by key well Whittier #1 (five zones), TDS and chloride trends are shown on **Figure 4.9**.

- At Whittier #1, TDS concentrations in Zones 4 and 5 have been generally stable since the wells were installed. Concentrations have been consistently below the SMCL but have fluctuated between slightly above and slightly below the WQO. TDS concentrations in Zones 1, 2, and 3 have historically exceeded the WQO and SMCL; however, TDS concentrations in Zones 1 and 2 have remained stable, and in Zone 3 after increasing for several years, TDS concentrations have remained relatively stable for the past seven years. Chloride concentrations in Zones 4 and 5 have been below both the WQO and SMCL since the wells were installed. Chloride concentrations in Zones 1, 2, and 3 have shown a stable trend since the wells were installed; although they have remained well below the SCML, they have consistently exceeded the WQO.

For 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 WQOs and SMCLs. However, in Zone 2 TDS and chloride concentrations are well above the WQOs and SMCLs and both show generally increasing trends since monitoring began in 1998. These increasing concentration trends are 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 WQOs and SMCLs. Here the three deeper zones show relatively stable TDS and chloride concentrations, while concentrations of both constituents in the shallow Zone 4 have decreased from those observed during the first few years of monitoring, concentrations of both have been stable for the past 20 years.
- 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 Zones 1 through 6 at Manhattan Beach #1 appear to be rather stable.
- At Wilmington #2, TDS and chloride concentrations in Zones 1 and 3 have historically been below the WQOs and SMCLs but have increased to values that have exceeded the WQOs for the past several years. In Zones 2 and 5, TDS and chloride concentrations have been consistently above both the WQOs and SMCLs; in Zone 2 they have remained relatively stable, but in Zone 5 they have decreased to values well below those detected during the first years of sampling. In Zone 4, TDS and chloride concentrations initially exceeded both the WQOs and SMCLs, but they have decreased over time to the extent that they have been below both the WQOs and SMCLs for the past several years. Concentration decreases in Zone 4 are likely due to the salt and nutrient loading implementation measures discussed in **Section 4.3** below.

### **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 two shallower zones have relatively stable TDS concentrations at and above the WQO, and the two 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 16 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 and deep 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 using a blend of tertiary treated water produced by the LACSD and advanced treated recycled water produced by WRD at its ARC AWTF (formerly known as the Groundwater Reliability Improvement Program (GRIP)).

In the West Coast Basin, average TDS and chloride concentrations can exceed WQOs due to historical seawater intrusion. However, these concentrations are either relatively stable or generally 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 Barriers. WRD is also in the design phase of a desalter expansion that will result in the installation of additional desalter wells focusing on an area of high chloride concentrations near WRD nested monitoring well PM-4 Mariner. Desalter facility expansion is anticipated to commence in 2025.

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 to be achieving effective management of 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 2022-2023. 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 MWD member agencies, tertiary-treated recycled water produced by the LACSD, 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 in WY 2022-2023 indicate variable changes in groundwater elevations across the CBWCB during WY 2022-2023. In the unconfined Montebello Forebay in the vicinity of the spreading grounds, water levels are more than 60 feet higher than they were in fall 2022. Across the unconfined Los Angeles Forebay, water levels have increased from those measured in fall 2022; in the west they are more than four feet higher, and in the eastern and

southern-central portions they are more than 12 feet higher than those measured in WY 2022-2023. Water levels in the Whittier Area are 45 feet higher in the west, and four feet higher in the east than those measured in WY 2021-2022. Water levels throughout the CBPA are higher this year than in fall 2022, and they steadily increase from north to south. In the northwest portion, immediately west of the Los Angeles Forebay, they are more than seven feet higher; and in the southern portion of the CBPA, along the Newport Inglewood Uplift, they are as much as 28 feet higher than they were in fall 2022.

- In the West Coast Basin, water level changes were somewhat variable in WY 2022-2023. In the northern portion of the basin, between the Newport-Inglewood Uplift and the Charnock Fault, water levels are slightly higher in the north but have decreased in the south and southeast by as much as 61 feet below those measured in fall 2022. In the southern portion of the basin, near the Newport-Inglewood Uplift and southern coastal area, water levels are as much as four feet lower than they were in fall 2022. In the vicinity of the central portion of the West Coast Basin Barrier Project near the cities of Hermosa Beach and Redondo Beach, water levels have increased slightly and are between one and two feet higher than they were in fall 2022. In much of the Torrance and LAX areas, water levels are relatively unchanged from those measured in fall 2022.
- District wide, groundwater levels increased an average of more than nearly nine feet in WY 2022-2023. Across the entire Central Basin, water levels increased: in the Montebello Forebay region, water levels increased an average of more than 37 feet, in the Los Angeles Forebay region, they increased an average of more than 12 feet, and in the Whittier Area, they increased by an average of nearly 18 feet. In the CBPA, water levels increased by an average of more than 15 feet. In the West Coast Basin, water levels decreased by an average of nearly three feet.
- There was an overall gain in groundwater storage across the District of 206,000 AF in WY 2022-2023, essentially all of which occurred in the Central Basin. In the unconfined Montebello Forebay, there was a gain in storage of 174,000 AF; in the Los Angeles Forebay, a gain of 21,800 AF; in the Whittier Area, a gain of 7,200 AF; and in the CBPA, there was a gain of 3,000 AF. In the West Coast Basin, there

was no appreciable change in groundwater storage in WY 2022-2023.

- For the RGWMP 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 for each sample collected for the RGWMP. A discussion of the 11 constituents used is as 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 Torrance, Inglewood-Gardena, 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 just downgradient of the Los Angeles and Montebello Forebays, while in production wells iron concentrations above the SMCL extend further downgradient from the Forebays southward 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 well sites and nearly two-thirds of the production well sites. It is present in the Central Basin at concentrations above the SMCL in approximately 30% of the nested monitoring wells and nearly 20% of production wells, but was only present above its NL in less than 5% of either type 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 wells and more than 55% of the production wells. It was detected above the NL in about 7% of the nested monitoring wells and was not detected above the NL in any of the production wells 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 are 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. Nitrate concentrations in CBWCB production wells are below the MCL.
- TCE detections in Central Basin nested monitoring wells are restricted to within, and in close proximity to, the Los Angeles Forebay; but in Central Basin production wells elevated TCE concentrations are also observed in wells in the vicinity, and downgradient of, both the Los Angeles and Montebello Forebays. In the West Coast Basin, TCE in nested monitoring wells is observed at a concentration above the MCL in one individual well zone in the Hawthorne area, and another in the Inglewood area. TCE was detected, at a concentration above the MCL, in one of the West Coast Basin production wells.
- PCE was detected above the MCL in one Central Basin nested monitoring wells located in the Los Angeles Forebay, and detections below the MCL are observed within, and near, the Los Angeles and Montebello Forebays. Elevated concentrations of PCE in Central Basin production wells are observed in the areas within, between, and downgradient of the Los Angeles and Montebello Forebays. In the West Coast Basin, PCE was detected at a concentration below the MCL in one of the nested monitoring wells, but was not detected in any of the production wells.
- Arsenic is present at low concentrations in groundwater from most of the WRD nested monitoring well sites. Arsenic in nested monitoring wells at concentrations above the MCL is generally restricted to areas within the central and southeastern portions of the Central Basin and in the Gardena area of the West Coast Basin. Arsenic is also common in Central Basin production



wells; however, it was only detected at concentrations above the MCL in about 5% of the wells tested, and these wells are generally restricted to the southeastern portion of the Central Basin. In the West Coast Basin, Arsenic was not detected at a concentration above the MCL in any of the 26 production wells tested.

- Perchlorate is relatively common at low concentrations in the nested monitoring wells within and downgradient of the Los Angeles and Montebello Forebays in the Central Basin but is less common in West Coast Basin nested wells. A recent detection above the MCL in the Torrance area of the West Coast Basin is suspected to be the result of laboratory error and will be monitored closely by WRD. Perchlorate in Central Basin production wells is detected within and just east of the Los Angeles Forebay, within the Montebello Forebay, and between the two Forebays. Perchlorate was not detected in any of the 28 West Coast Basin production wells tested.
- Hexavalent chromium is present in the CBWCB at low concentrations at nearly every nested monitoring well site, but it is only found at concentrations above the historic MCL (10 µg/L) at two nested monitoring well sites located in the Central Basin either in, or just outside of, the Los Angeles Forebay. In production wells, hexavalent chromium is present at concentrations above its historic MCL in a few wells located in the Central Basin within, and downgradient of, the Los Angeles and Montebello Forebays. Testing for hexavalent chromium was not conducted 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 within and between both the Los Angeles and Montebello Forebays, as well as south into the CBPA adjacent to the Los Angeles and San Gabriel Rivers. In the West Coast Basin, 1,4-dioxane was not detected above the NL in any of the nested monitoring well sites, and testing for 1,4-dioxane was not conducted in any of the West Coast Basin production wells. The water quality of key constituents in untreated imported water recharged at the Montebello Forebay Spreading Grounds and treated imported

water injected at the seawater barriers remains in compliance with regulatory limits. Average TDS, iron, manganese, chloride, nitrate, 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, TDS concentrations have been generally stable but exceed the WQO in the two shallowest zones at Huntington Park #1; and they exceed both the WQO and SMCL in the three deepest zones at Whittier #1 and the shallowest zone at Seal Beach #1. Chloride concentrations have also been relatively stable but exceed the WQO in the three deepest zones at Whittier #1; and they exceed both the WQO and SMCL in the shallowest zone at Seal Beach #1. TDS and chloride concentrations have increased in Zone 5 at Seal Beach #1 in recent years, and chloride has been observed at concentrations in excess of the WQO in that zone for the past five years. In each of the remaining six key nested monitoring well sites located in the Central Basin, TDS and chloride concentrations have remained relatively stable within each of the individual monitoring wells at concentrations below both the WQOs and SMCLs.
- In the West Coast Basin, average TDS and chloride concentrations exceed WQOs and SMCLs locally due to historical seawater intrusion. However, except for Zone 2 at PM-4 Mariner, these concentrations are generally rather stable or are

decreasing slightly and are anticipated to achieve WQOs in the future as a result of current groundwater management practices. TDS and Chloride concentrations in Zone 2 at PM-4 Mariner have increased slightly since 2018 but have generally decreased over the past two years.

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.

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## 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 2023-2024 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; and in select wells, telemetry systems will be used to transmit water level data to District computers. Conductivity sensors are being utilized at selected nested monitoring wells to track water quality changes and supplement the automated water level data.
- WRD will continue to sample groundwater from nested monitoring wells and analyze the samples for general water quality constituents. The focus will continue on constituents of interest (such as TCE, PCE, manganese, arsenic, perchlorate, hexavalent chromium, and 1,4-dioxane) to WRD, the pumpers, and other stakeholders. As regulators consider new water quality standards for chemicals of emerging concern (CECs) 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.
- WRD will be working on refining the hydrogeologic conceptual model of the CBWCB to improve the framework for understanding the groundwater system and for use as a planning tool. WRD will use data from the RGWMP along with an update to the groundwater model, that was developed and published by the USGS in 2021, as tools in its refinement of the conceptual model.
- Consistent with WRD's mission to provide, protect, and preserve safe and sustainable groundwater and as required by the State's Recycled Water Policy, a SNMP is in place and will continue to be implemented. Existing and planned

implementation measures are, and will continue to be, protective of groundwater quality and its beneficial uses.

- 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 <sup>1</sup>
Bell #1	1	102041	1750	1730	1750	Pico Formation <sup>2</sup>
	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 <sup>2</sup>
	2	101955	1410	1390	1410	Sunnyside <sup>2</sup>
	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 <sup>2</sup>
Carson #2	1	101787	1250	1230	1250	Sunnyside <sup>2</sup>
	2	101788	870	850	870	Sunnyside <sup>2</sup>
	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 <sup>2</sup>
	2	102076	1240	1220	1240	Sunnyside <sup>2</sup>
	3	102077	1100	1080	1100	Silverado <sup>2</sup>
	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 <sup>2</sup>
	2	100871	1020	1000	1020	Silverado <sup>2</sup>
	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 <sup>2</sup>
	2	101782	935	915	935	Silverado
	3	101783	760	740	760	Lynwood <sup>2</sup>
	4	101784	510	490	510	Hollydale
	5	101785	370	350	370	Gage
	6	101786	170	150	170	Artesia
Cerritos #3	1	103085	2120	2100	2120	Sunnyside
	2	103086	1670	1650	1670	Sunnyside
	3	103087	1395	1375	1395	Sunnyside
	4	103088	1050	1030	1050	Silverado
	5	103089	780	760	780	Hollydale
	6	103090	450	430	450	Hollydale
	7	103091	255	235	255	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 1.1**  
**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 <sup>1</sup>
Chandler #3B	1	100082	363	341	363	Silverado <sup>2</sup>
Chandler #3A	2	100083	192	165	192	Lynwood <sup>2</sup>
Commerce #1	1	100881	1390	1330	1390	Pico Formation <sup>2</sup>
	2	100882	960	940	960	Sunnyside
	3	100883	780	760	780	Sunnyside <sup>2</sup>
	4	100884	590	570	590	Silverado
	5	100885	345	325	345	Jefferson
	6	100886	225	205	225	Hollydale
Compton #1	1	101809	1410	1370	1390	Sunnyside <sup>2</sup>
	2	101810	1170	1150	1170	Sunnyside <sup>2</sup>
	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 <sup>2</sup>
	2	101949	850	830	850	Sunnyside <sup>2</sup>
	3	101950	605	585	605	Silverado
	4	101951	400	380	400	Lynwood <sup>2</sup>
	5	101952	315	295	315	Hollydale <sup>2</sup>
	6	101953	170	150	170	Exposition
Downey #1	1	100010	1190	1170	1190	Sunnyside <sup>2</sup>
	2	100011	960	940	960	Sunnyside <sup>2</sup>
	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 <sup>2</sup>
	2	100021	465	445	465	Silverado
	3	100022	365	345	365	Lynwood <sup>2</sup>
	4	100023	140	120	140	Gage
Gardena #2	1	101804	1335	1275	1335	Pico Formation <sup>2</sup>
	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 <sup>2</sup>
	2	100888	730	710	730	Sunnyside <sup>2</sup>
	3	100889	540	520	540	Sunnyside <sup>2</sup>
	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

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 <sup>1</sup>
Inglewood #1	1	100091	1400	1380	1400	Pico Formation <sup>2</sup>
	2	100092	885	865	885	Pico Formation <sup>2</sup>
	3	100093	450	430	450	Silverado
	4	100094	300	280	300	Lynwood <sup>2</sup>
	5	100095	170	150	170	Gage
Inglewood #2	1	100824	860	800	840	Pico Formation <sup>2</sup>
	2	100825	470	450	470	Silverado <sup>2</sup>
	3	100826	350	330	350	Lynwood <sup>2</sup>
	4	100827	245	225	245	Gage <sup>2</sup>
Inglewood #3	1	102138	1940	1900	1940	Pico Formation <sup>2</sup>
	2	102139	1460	1440	1460	Pico Formation <sup>2</sup>
	3	102140	1275	1255	1275	Pico Formation <sup>2</sup>
	4	102141	910	890	910	Pico Formation <sup>2</sup>
	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 <sup>2</sup>
	2	102152	1760	1740	1760	Sunnyside <sup>2</sup>
	3	102153	1320	1300	1320	Sunnyside <sup>2</sup>
	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 <sup>2</sup>
	3	100878	710	690	710	Lynwood <sup>2</sup>
	4	100879	490	470	490	Jefferson <sup>2</sup>
	5	100880	245	225	245	Gage
Lawndale #1	1	102171	1400	1360	1400	Pico Formation <sup>2</sup>
	2	102172	905	885	905	Sunnyside <sup>2</sup>
	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 <sup>2</sup>
	2	100819	720	700	720	Silverado
	3	100820	570	550	570	Silverado
	4	100821	420	400	420	Lynwood
	5	100822	240	220	240	Gage <sup>2</sup>
	6	100823	120	100	120	Gage <sup>1</sup>

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 <sup>1</sup>
Long Beach #1	1	100920	1470	1430	1450	Sunnyside <sup>2</sup>
	2	100921	1250	1230	1250	Sunnyside
	3	100922	990	970	990	Silverado <sup>2</sup>
	4	100923	619	599	619	Lynwood <sup>2</sup>
	5	100924	420	400	420	Jefferson <sup>2</sup>
	6	100925	175	155	175	Artesia
Long Beach #2	1	101740	1090	970	990	Sunnyside
	2	101741	740	720	740	Silverado <sup>2</sup>
	3	101742	470	450	470	Silverado
	4	101743	300	280	300	Lynwood
	5	101744	180	160	180	Gage
	6	101745	115	95	115	Gaspur
Long Beach #3	1	101751	1390	1350	1390	Pico Formation <sup>2</sup>
	2	101752	1017	997	1017	Silverado
	3	101753	690	670	690	Silverado <sup>2</sup>
	4	101754	550	530	550	Silverado <sup>2</sup>
	5	101755	430	410	430	Lynwood
Long Beach #4	1	101759	1380	1200	1220	Pico Formation <sup>2</sup>
	2	101760	820	800	820	Sunnyside <sup>2</sup>
Long Beach #6	1	101792	1530	1490	1510	Pico Formation <sup>2</sup>
	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 <sup>2</sup>
	2	101820	1040	1020	1040	Sunnyside <sup>2</sup>
	3	101821	800	780	800	Silverado <sup>2</sup>
	4	101822	655	635	655	Silverado <sup>2</sup>
	5	101823	435	415	435	Silverado <sup>2</sup>
	6	101824	185	165	185	Lynwood <sup>2</sup>
Los Angeles #1	1	100926	1370	1350	1370	Sunnyside <sup>2</sup>
	2	100927	1100	1080	1100	Sunnyside
	3	100928	940	920	940	Sunnyside
	4	100929	660	640	660	Silverado
	5	100930	370	350	370	Lynwood <sup>2</sup>
Los Angeles #2	1	102003	1370	1330	1370	Pico Formation <sup>2</sup>
	2	102004	730	710	730	Sunnyside
	3	102005	525	505	525	Silverado
	4	102006	430	410	430	Lynwood
	5	102007	265	245	265	Hollydale <sup>2</sup>
	6	102008	155	135	155	Gardena

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 <sup>1</sup>
Los Angeles #3	1	102069	1570	1210	1230	Pico Formation <sup>2</sup>
	2	102070	895	875	895	Sunnyside <sup>2</sup>
	3	102071	725	705	725	Sunnyside <sup>2</sup>
	4	102072	570	550	570	Sunnyside
	5	102073	350	330	350	Silverado <sup>2</sup>
	6	102074	210	190	210	Gage <sup>2</sup>
Los Angeles #4	1	102131	1780	1740	1780	Pico Formation <sup>2</sup>
	2	102132	1230	1190	1230	Sunnyside <sup>2</sup>
	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 <sup>2</sup>
	2	103030	1255	1235	1255	Sunnyside <sup>2</sup>
	3	103031	770	750	770	Sunnyside
	4	103032	575	555	575	Sunnyside
	5	103033	450	430	450	Silverado
	6	103034	235	215	235	Lynwood <sup>2</sup>
	7	103035	105	95	105	Exposition
Los Angeles #6	1	103047	600	580	600	Pico Formation <sup>2</sup>
	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 <sup>2</sup>
	2	102212	2450	2430	2450	Pico Formation <sup>2</sup>
	3	102213	1670	1650	1670	Sunnyside <sup>2</sup>
	4	102214	1465	1445	1465	Sunnyside <sup>2</sup>
	5	102215	1220	1200	1220	Silverado <sup>2</sup>
	6	102216	900	880	900	Silverado <sup>2</sup>
	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 <sup>2</sup>
	2	102082	1590	1570	1590	Pico Formation <sup>2</sup>
	3	102083	1270	1250	1270	Pico Formation <sup>2</sup>
	4	102084	885	865	885	Sunnyside <sup>2</sup>
	5	102085	660	640	660	Sunnyside <sup>2</sup>
	6	102086	340	320	340	Silverado
	7	102087	200	180	200	Gage
Montebello #1	1	101770	980	900	960	Pico Formation <sup>2</sup>
	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

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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 <sup>1</sup>
Montebello #2	1	103080	780	745	780	Pico Formation
	2	103081	435	415	435	Pico Formation
	3	103082	260	250	260	Sunnyside
	4	103083	200	180	200	Sunnyside
	5	103084	115	100	115	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 <sup>2</sup>
	2	101943	1280	1260	1280	Pico Formation <sup>2</sup>
	3	101944	980	960	980	Sunnyside <sup>2</sup>
	4	101945	820	800	820	Sunnyside <sup>2</sup>
	5	101946	500	480	500	Silverado
	6	101947	256	236	256	Gardena
Paramount #1	1	103093	2100	2080	2100	Pico Formation <sup>2</sup>
	2	103094	1720	1700	1720	Pico Formation <sup>2</sup>
	3	103095	1210	1190	1210	Pico Formation <sup>2</sup>
	4	103096	945	925	945	Sunnyside
	5	103097	640	620	640	Lynwood
	6	103098	440	420	440	Hollydale
	7	103099	235	215	235	Exposition
Pico #1	1	100001	900	860	900	Pico Formation <sup>2</sup>
	2	100002	480	460	480	Silverado
	3	100003	400	380	400	Silverado
	4	100004	190	170	190	Gardena <sup>2</sup>
Pico #2	1	100085	1200	1180	1200	Sunnyside <sup>2</sup>
	2	100086	850	830	850	Sunnyside <sup>2</sup>
	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 <sup>2</sup>
PM-1 Columbia	1	100042	605	555	595	Silverado
	2	100043	510	460	500	Silverado
	3	100044	290	240	280	Lynwood
	4	100045	210	160	200	Gardena
PM-2 Police Station	1	102237	665	645	665	Sunnyside <sup>2</sup>
	2	102238	540	520	540	Silverado
	3	102239	390	370	390	Lynwood/Silverado <sup>2</sup>
	4	102240	260	240	260	Lynwood
PM-3 Madrid	1	100034	685	640	680	Sunnyside <sup>2</sup>
	2	100035	525	480	520	Silverado
	3	100036	285	240	280	Lynwood
	4	100037	190	145	185	Gardena

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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 <sup>1</sup>
PM-4 Mariner	1	100038	720	670	710	Sunnyside <sup>2</sup>
	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 <sup>2</sup>
	2	102048	960	940	960	Pico Formation <sup>2</sup>
	3	102049	790	770	790	Sunnyside <sup>2</sup>
	4	102050	600	580	600	Silverado
	5	102051	340	320	340	Lynwood <sup>2</sup>
	6	102052	160	140	160	Gardena
PM-6 Madrona Marsh	1	102053	1235	1195	1235	Pico Formation <sup>2</sup>
	2	102054	925	905	925	Sunnyside <sup>2</sup>
	3	102055	790	770	790	Sunnyside <sup>2</sup>
	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 <sup>2</sup>
	2	100065	930	910	930	Sunnyside <sup>2</sup>
	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 <sup>2</sup>
	2	102063	1180	1160	1180	Sunnyside <sup>2</sup>
	3	102064	1040	1020	1040	Sunnyside <sup>2</sup>
	4	102065	795	775	795	Silverado
	5	102066	625	605	625	Lynwood <sup>2</sup>
	6	102067	235	215	235	Gage
	7	102068	70	60	70	Artesia
South Gate #1	1	100893	1460	1440	1460	Sunnyside <sup>2</sup>
	2	100894	1340	1320	1340	Sunnyside <sup>2</sup>
	3	100895	930	910	930	Silverado <sup>2</sup>
	4	100896	585	565	585	Lynwood
	5	100897	250	220	240	Exposition <sup>2</sup>
South Gate #2	1	102180	1760	1740	1760	Sunnyside <sup>2</sup>
	2	102181	1430	1410	1430	Sunnyside <sup>2</sup>
	3	102182	1082	1062	1082	Sunnyside
	4	102183	690	670	690	Silverado <sup>2</sup>
	5	102184	430	410	430	Hollydale
	6	102185	225	205	225	Gaspur <sup>2</sup>
Westchester #1	1	101776	860	740	760	Pico Formation <sup>2</sup>
	2	101777	580	560	580	Sunnyside <sup>2</sup>
	3	101778	475	455	475	Sunnyside <sup>2</sup>
	4	101779	330	310	330	Silverado
	5	101780	235	215	235	Silverado

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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 <sup>1</sup>
Whittier #1	1	101735	1298	1180	1200	Pico Formation <sup>2</sup>
	2	101736	940	920	940	Pico Formation <sup>2</sup>
	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 <sup>2</sup>
	2	101937	1110	1090	1110	Pico Formation <sup>2</sup>
	3	101938	675	655	675	Sunnyside
	4	101939	445	425	445	Silverado
	5	101940	335	315	335	Silverado
	6	101941	170	150	170	Gage <sup>2</sup>
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	Gaspar
Whittier Narrows #2	1	100055	720	659	678.4	Pico Formation <sup>2</sup>
	2	100056	720	579	598.2	Pico Formation <sup>2</sup>
	3	100057	720	469	488.2	Pico Formation <sup>2</sup>
	4	100058	720	419	428.2	Pico Formation <sup>2</sup>
	5	100059	720	329	338.3	Pico Formation <sup>2</sup>
	6	100060	720	263	273.3	Lynwood
	7	100061	720	214	223.3	Lynwood
	8	100062	720	136	145.3	Gardena <sup>2</sup>
	9	100063	720	91	100.3	Gardena
Willowbrook #1	1	100016	905	885	905	Sunnyside <sup>2</sup>
	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 <sup>2</sup>
	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 <sup>2</sup>
	2	100076	775	755	775	Silverado
	3	100077	560	540	560	Silverado
	4	100078	410	390	410	Lynwood
	5	100079	140	120	140	Gage

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

**TABLE 1.2**  
**CONSTRUCTION INFORMATION FOR WELLS NOT LISTED IN TABLE 1.1**  
**THAT ARE 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 <sup>1</sup>
Hawkins #1	3	102233	147.75	296	286	296	9/21/2023	59.20	Lynwood
Koontz #1	1	102226	135.17	491	481	491	9/26/2023	42.90	Lynwood
LADWP MW-01	2	102251	133.91	580	510	560	9/12/2023	-13.35	Silverado
La Habra Heights #1	1	102164	151.00	570	540	560	9/11/2023	85.55	Sunnyside
LongBeach #7	2	101899	16.35	670	650	670	9/12/2023	-45.68	Silverado
Sepulveda #1	1	201058	90.00	550	370	530	9/21/2023	2.12	Silverado

<sup>1</sup> - Aquifer designations are based on DWR's Bulletin 104.

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**TABLE 2.1**  
**GROUNDWATER ELEVATIONS, WATER YEAR 2022 - 2023**

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
<b>Bell #1</b> <span style="float:right">Reference Point Elevation: 149.25</span>									
Depth of Screen Interval	1730-1750	1195-1215	965-985	615-635	420-440	250-270			
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Sunnyside	Sunnyside	Silverado	Jefferson	Gage			
12/12/2022	-21.56	-37.54	-21.98	-25.29	-17.16	6.58			
3/13/2023	-14.36	-22.26	-10.90	-15.53	-9.45	8.78			
4/5/2023	-11.11	-20.13	-8.44	-13.67	-6.96	9.52			
6/7/2023	-6.25	-19.71	-4.57	-9.91	-4.01	10.41			
8/2/2023	-4.99	-17.49	-3.51	-9.97	-3.42	10.64			
9/19/2023	-2.17	-16.00	-1.57	-8.44	-2.29	11.15			
<b>Bell Gardens #1</b> <span style="float:right">Reference Point Elevation: 121.03</span>									
Depth of Screen Interval	1775-1795	1390-1410	1090-1110	855-875	555-575	370-390			
Aquifer Name <sup>1</sup>	Sunnyside <sup>2</sup>	Sunnyside <sup>2</sup>	Sunnyside	Sunnyside	Silverado	Lynwood			
12/14/2022	-5.69	-4.51	-0.77	2.17	6.82	6.88			
3/13/2023	7.95	10.59	14.93	15.12	17.44	15.13			
6/1/2023	16.71	20.15	24.99	26.47	27.29	21.80			
6/14/2023	17.69	21.01	26.21	28.36	29.30	23.23			
9/18/2023	21.27	22.84	25.93	27.44	27.98	22.16			
<b>Carson #1</b> <span style="float:right">Reference Point Elevation: 26.86</span>									
Depth of Screen Interval	990-1010	740-760	460-480	250-270					
Aquifer Name <sup>1</sup>	Silverado	Silverado	Lynwood	Gage <sup>2</sup>					
10/26/2022	-43.07	-41.78	-9.45	-8.10					
11/14/2022	-40.74	-39.78	-9.28	-7.97					
12/16/2022	-42.05	-41.00	-9.42	-8.04					
1/12/2023	-42.01	-41.23	-9.50	-8.09					
3/16/2023	-44.85	-43.75	-9.11	-7.67					
5/9/2023	-46.08	-44.66	-8.90	-7.47					
6/12/2023	-45.48	-44.46	-8.97	-7.49					
9/11/2023	-47.21	-45.94	-9.39	-7.70					
9/13/2023	-47.37	-46.04	-9.44	-7.79					
<b>Carson #2</b> <span style="float:right">Reference Point Elevation: 43.04</span>									
Depth of Screen Interval	1230-1250	850-870	600-620	450-470	230-250				
Aquifer Name <sup>1</sup>	Sunnyside <sup>2</sup>	Sunnyside <sup>2</sup>	Silverado	Silverado	Lynwood				
12/13/2022	-27.77	-22.37	-22.14	-19.31	-17.29				
3/15/2023	-28.68	-24.27	-23.93	-20.35	-18.05				
5/8/2023	-28.87	-24.40	-24.06	-20.35	-17.97				
6/16/2023	-29.53	-25.54	-24.83	-21.09	-18.64				
9/19/2023	-30.57	-26.29	-25.89	-22.08	-19.46				
<b>Carson #3</b> <span style="float:right">Reference Point Elevation: 20.18</span>									
Depth of Screen Interval	1600-1620	1220-1240	1080-1100	870-890	620-640	360-380			
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Sunnyside <sup>2</sup>	Silverado <sup>2</sup>	Silverado	Silverado	Lynwood			
12/14/2022	-25.75	-31.51	-30.14	-33.15	-32.79	-10.25			
3/7/2023	-25.72	-32.42	-31.76	-33.99	-33.62	-11.15			
4/18/2023	-25.65	-31.93	-30.21	-33.16	-32.63	-10.44			
6/16/2023	-26.54	-33.12	-33.81	-37.17	-37.10	-11.14			
9/14/2023	-25.89	-33.71	-34.56	-38.14	-37.96	-11.30			
9/19/2023	-25.94	-33.87	-34.87	-38.38	-38.25	-11.46			
<b>Cerritos #1</b> <span style="float:right">Reference Point Elevation: 43.35</span>									
Depth of Screen Interval	1155-1175	1000-1020	610-630	270-290	180-200	125-135			
Aquifer Name <sup>1</sup>	Sunnyside <sup>2</sup>	Silverado <sup>2</sup>	Lynwood	Gage	Artesia	Artesia			
12/8/2022	-31.57	-39.25	-18.94	19.67	20.92	21.03			
3/7/2023	-18.16	-27.75	-10.49	22.77	23.62	23.76			
5/23/2023	-24.43	-36.54	-15.01	23.06	23.82	23.90			
6/6/2023	-23.91	-34.67	-15.06	23.21	24.25	24.33			
9/12/2023	-26.43	-37.68	-17.06	22.95	23.97	24.04			

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- Reference Point Elevations surveyed relative to the NAVD88 reference plane.

**TABLE 2.1  
GROUNDWATER ELEVATIONS, WATER YEAR 2022 - 2023**

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
<b>Cerritos #2</b> <span style="float:right">Reference Point Elevation: 76.47</span>									
Depth of Screen Interval	1350-1370	915-935	740-760	490-510	350-370	150-170			
Aquifer Name <sup>1</sup>	Sunnyside <sup>2</sup>	Silverado	Lynwood <sup>2</sup>	Hollydale	Gage	Artesia			
12/16/2022	-21.13	-26.05	-19.06	-2.71	16.12	22.19			
3/20/2023	-11.78	-18.70	-9.85	2.37	18.21	23.36			
6/6/2023	-8.94	-17.38	-19.49	-2.13	17.08	23.85			
6/12/2023	-8.40	-16.59	-18.64	0.23	17.21	23.85			
9/12/2023	-9.98	-22.56	-20.46	-2.03	17.38	24.19			
9/21/2023	-10.49	-23.13	-21.47	-2.15	17.37	24.22			
<b>Cerritos #3</b> <span style="float:right">Reference Point Elevation: 64.29</span>									
Depth of Screen Interval	2100-2120	1650-1670	1375-1395	1030-1050	760-780	430-450	235-255		
Aquifer Name <sup>1</sup>	Sunnyside	Sunnyside	Sunnyside	Silverado	Hollydale	Hollydale	Gage		
12/15/2022	15.57	-17.92	-10.31	-18.11	-34.85	-20.15	16.24		
3/8/2023	20.59	-11.33	-3.04	-7.91	-18.34	-10.07	18.18		
4/25/2023	24.94	-7.21	0.80	-5.21	-21.05	-12.00	18.67		
6/6/2023	27.93	-5.86	0.27	-9.40	-24.75	-13.96	not measured		
6/23/2023	not measured	not measured	not measured	not measured	not measured	not measured	18.25		
8/22/2023	32.93	1.10	0.82	-9.79	-29.15	-16.21	18.17		
9/11/2023	33.11	-0.75	-0.40	-12.01	-27.53	-15.31	18.44		
<b>Chandler #3</b> <span style="float:right">Reference Point Elevation: 156.01</span>									
Depth of Screen Interval	341-363	165-192							
Aquifer Name <sup>1</sup>	Silverado <sup>2</sup>	Lynwood <sup>2</sup>							
12/8/2022	-9.32	-9.18							
3/16/2023	-8.95	-8.88							
4/13/2023	-8.91	-8.75							
6/15/2023	-9.14	-8.94							
9/21/2023	-9.87	-9.73							
<b>Commerce #1</b> <span style="float:right">Reference Point Elevation: 159.31</span>									
Depth of Screen Interval	1330-1390	940-960	760-780	570-590	325-345	205-225			
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Sunnyside	Sunnyside <sup>2</sup>	Silverado	Jefferson	Hollydale			
12/7/2022	22.80	17.59	14.55	-17.71	-16.44	21.38			
3/7/2023	23.30	25.29	23.18	-8.63	-14.57	21.72			
4/20/2023	23.86	29.99	28.15	-4.22	-10.90	22.32			
6/7/2023	27.35	32.87	31.10	-1.01	-8.55	22.85			
9/13/2023	30.36	35.39	33.69	3.48	-1.84	23.69			
<b>Compton #1</b> <span style="float:right">Reference Point Elevation: 68.84</span>									
Depth of Screen Interval	1370-1390	1150-1170	800-820	460-480	305-325				
Aquifer Name <sup>1</sup>	Sunnyside <sup>2</sup>	Sunnyside <sup>2</sup>	Silverado	Hollydale	Gage				
12/16/2022	-54.86	-54.64	-26.44	-27.66	-12.96				
3/13/2023	-50.05	-49.8	-20.69	-22.15	-8.22				
3/30/2023	-47.63	-47.41	-19.41	-20.28	-6.05				
6/16/2023	-35.59	-35.65	-16.13	-18.33	-4.64				
9/21/2023	-37.23	-37.00	-16.46	-19.12	-5.42				
9/26/2023	-37.77	-37.58	-16.4	-18.79	-5.34				
<b>Compton #2</b> <span style="float:right">Reference Point Elevation: 76.97</span>									
Depth of Screen Interval	1479-1495	830-850	585-605	380-400	295-315	150-170			
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Sunnyside <sup>2</sup>	Silverado	Lynwood <sup>2</sup>	Hollydale <sup>2</sup>	Exposition			
12/16/2022	-29.86	-47.32	-46.11	-44.81	-36.62	-32.32			
3/14/2023	-28.49	-45.13	-44.24	-43.91	-36.51	-31.40			
4/21/2023	-26.59	-43.84	-44.56	-43.22	-34.79	-30.29			
6/13/2023	-23.08	-44.51	-41.58	-43.94	-35.68	-30.44			
9/21/2023	-13.82	-39.12	-43.80	-42.41	-33.57	-29.32			

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**TABLE 2.1**  
**GROUNDWATER ELEVATIONS, WATER YEAR 2022 - 2023**  
 Page 3 of 11

	<b>ZONE 1</b>	<b>ZONE 2</b>	<b>ZONE 3</b>	<b>ZONE 4</b>	<b>ZONE 5</b>	<b>ZONE 6</b>	<b>ZONE 7</b>	<b>ZONE 8</b>	<b>ZONE 9</b>
<b>Downey #1</b> <span style="float:right">Reference Point Elevation: 99.39</span>									
Depth of Screen Interval	1170-1190	940-960	580-600	370-390	250-270	90-110			
Aquifer Name <sup>1</sup>	Sunnyside <sup>2</sup>	Sunnyside <sup>2</sup>	Silverado	Jefferson	Gage	Gaspur			
12/14/2022	-7.89	-6.26	-2.36	0.64	22.13	25.48			
3/16/2023	5.29	5.31	7.69	8.48	23.55	25.74			
4/11/2023	8.85	8.72	10.62	10.32	23.85	26.04			
6/15/2023	14.71	14.33	15.05	14.27	24.78	26.32			
8/16/2023	12.73	11.67	11.90	12.18	25.13	27.08			
9/19/2023	13.22	12.14	13.28	13.69	25.72	27.41			
<b>Gardena #1</b> <span style="float:right">Reference Point Elevation: 84.23</span>									
Depth of Screen Interval	970-990	445-465	345-365	120-140					
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Silverado	Lynwood <sup>2</sup>	Gage					
12/15/2022	-28.42	-31.54	-27.18	-2.09					
3/15/2023	-29.19	-66.35	-30.83	-2.04					
4/18/2023	-29.06	-36.04	-29.14	-1.57					
6/15/2023	-28.58	-77.66	-52.09	-1.74					
9/15/2023	-31.11	-91.96	-59.86	-1.76					
9/18/2023	-31.34	-91.96	-58.98	-1.80					
<b>Gardena #2</b> <span style="float:right">Reference Point Elevation: 29.45</span>									
Depth of Screen Interval	1275-1335	770-790	610-630	340-360	235-255				
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Silverado	Silverado	Lynwood	Gardena				
12/16/2022	-26.52	-38.82	-40.01	-10.94	-2.07				
3/16/2023	-26.93	-40.33	-41.33	-12.17	-2.08				
6/7/2023	-27.09	-43.63	-44.75	-12.27	-1.36				
6/13/2023	-27.25	-44.38	-45.21	-12.54	-1.46				
9/13/2023	-28.47	-45.70	-46.79	-13.02	-1.53				
<b>Hawthorne #1</b> <span style="float:right">Reference Point Elevation: 88.98</span>									
Depth of Screen Interval	910-950	710-730	520-540	400-420	240-260	110-130			
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Sunnyside <sup>2</sup>	Sunnyside <sup>2</sup>	Silverado	Lynwood	Gage			
12/16/2022	-23.35	-0.71	-0.15	0.03	2.79	8.79			
3/17/2023	-24.28	-2.13	-1.35	-1.21	1.68	8.66			
3/30/2023	-23.45	1.50	1.89	1.97	3.97	8.95			
6/7/2023	-23.05	-3.65	-2.98	-2.81	1.01	8.97			
9/14/2023	-24.21	-3.68	-2.95	-2.77	1.08	9.17			
<b>Huntington Park #1</b> <span style="float:right">Reference Point Elevation: 179.44</span>									
Depth of Screen Interval	890-910	690-710	420-440	275-295	114-134				
Aquifer Name <sup>1</sup>	Silverado	Lynwood	Hollydale	Gage	Gaspur				
12/14/2022	-33.21	-36.31	-22.96	6.48	Dry				
3/13/2023	-28.89	-33.11	-20.46	7.13	Dry				
4/27/2023	-25.85	-29.17	-18.09	7.46	Dry				
6/13/2023	-24.11	-26.58	-17.61	7.95	Dry				
7/25/2023	-25.43	-29.93	-18.04	8.15	Dry				
9/19/2023	-21.91	-24.99	-17.81	8.43	Dry				
<b>Inglewood #1</b> <span style="float:right">Reference Point Elevation: 112.82</span>									
Depth of Screen Interval	1380-1400	865-885	430-450	280-300	150-170				
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Pico Form. <sup>2</sup>	Silverado	Lynwood <sup>2</sup>	Gage				
12/14/2022	-24.70	-22.24	-11.27	-0.04	5.88				
12/16/2022	-24.69	-22.25	-12.15	-0.03	5.98				
3/13/2023	-23.70	-21.52	-11.76	0.00	5.97				
6/8/2023	-23.04	-21.30	-10.77	0.44	6.13				
9/22/2023	-24.01	-20.95	-10.94	0.58	6.33				

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GROUNDWATER ELEVATIONS, WATER YEAR 2022 - 2023**

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
<b>Inglewood #2</b> <span style="float:right">Reference Point Elevation: 219.82</span>									
Depth of Screen Interval	800-840	450-470	330-350	225-245					
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Silverado <sup>2</sup>	Lynwood <sup>2</sup>	Gage <sup>2</sup>					
12/15/2022	-27.90	-17.51	-1.69	2.59					
3/14/2023	-27.49	-16.79	-1.42	2.61					
6/14/2023	-26.36	-16.38	-1.59	2.54					
9/22/2023	-25.10	-16.48	-1.68	2.55					
<b>Inglewood #3</b> <span style="float:right">Reference Point Elevation: 72.20</span>									
Depth of Screen Interval	1900-1940	1440-1460	1255-1275	890-910	540-560	370-390	245-265		
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Pico Form. <sup>2</sup>	Pico Form. <sup>2</sup>	Pico Form. <sup>2</sup>	Silverado	Lynwood	Gage		
12/15/2022	-35.89	-25.63	-25.18	-23.53	-24.15	-0.95	7.12		
3/22/2023	-35.40	-24.87	-25.11	-24.10	-24.41	-0.74	7.33		
5/3/2023	-35.61	-25.05	-25.09	-22.92	-23.27	-0.99	7.57		
6/13/2023	-36.15	-25.19	-25.14	-23.65	-24.16	-2.05	7.38		
8/28/2023	-35.71	-25.09	-25.61	-23.92	-24.41	-1.82	7.61		
9/28/2023	-35.61	-25.16	-25.97	-24.69	-25.01	-2.02	7.59		
<b>Lakewood #1</b> <span style="float:right">Reference Point Elevation: 53.87 (Zones 5 and 6) and 53.14 (Zones 1, 2, 3 and 4)</span>									
Depth of Screen Interval	989-1009	640-660	450-470	280-300	140-160	70-90			
Aquifer Name <sup>1</sup>	Sunnyside	Lynwood	Hollydale	Gage	Artesia	Bellflower			
12/15/2022	not measured	-32.91	-31.80	-14.39	-0.14	20.45			
12/16/2022	-53.80	not measured	not measured	not measured	not measured	not measured			
3/15/2023	-38.77	not measured	not measured	-9.94	4.03	22.45			
3/17/2023	not measured	-28.94	-26.83	not measured	not measured	not measured			
4/24/2023	-33.95	-28.52	-26.60	-8.67	5.76	23.49			
6/15/2023	-26.28	-26.03	-23.99	-7.76	5.71	23.71			
9/15/2023	-27.95	-27.91	-26.46	not measured	5.46	not measured			
9/19/2023	not measured	not measured	not measured	-8.61	not measured	24.37			
<b>Lakewood #2</b> <span style="float:right">Reference Point Elevation: 40.51</span>									
Depth of Screen Interval	1960-2000	1740-1760	1300-1320	995-1015	690-710	555-575	255-275	110-120	
Aquifer Name <sup>1</sup>	Sunnyside <sup>2</sup>	Sunnyside <sup>2</sup>	Sunnyside <sup>2</sup>	Silverado	Lynwood	Jefferson	Gage	Artesia	
12/16/2022	-21.31	-34.49	-38.41	-49.99	-20.61	-8.54	17.16	19.30	
3/7/2023	-13.96	-30.12	-32.24	-42.23	-14.08	-3.94	19.14	21.28	
6/6/2023	-10.73	-28.70	-33.17	-54.87	-15.68	-5.10	20.22	22.37	
6/7/2023	-10.70	-28.53	-34.50	-43.26	-15.25	-4.92	20.19	22.29	
9/19/2023	-11.71	-34.02	-44.28	-54.95	-16.69	-6.12	19.98	22.07	
9/21/2023	-11.76	-34.32	-44.51	-54.87	-16.54	-5.91	19.99	22.09	
<b>La Mirada #1</b> <span style="float:right">Reference Point Elevation: 78.30</span>									
Depth of Screen Interval	1130-1150	965-985	690-710	470-490	225-245				
Aquifer Name <sup>1</sup>	Sunnyside	Silverado <sup>2</sup>	Lynwood <sup>2</sup>	Jefferson <sup>2</sup>	Gage				
12/6/2022	-4.72	-3.74	-15.13	-39.19	-6.50				
3/13/2023	4.57	5.79	-2.42	-17.33	3.99				
5/31/2023	5.66	7.48	-8.40	-27.28	-1.21				
6/5/2023	6.40	7.61	-10.61	-27.98	-1.40				
9/12/2023	5.02	5.73	-10.19	-26.97	-1.09				
9/18/2023	1.75	5.11	-8.85	-26.54	-1.02				

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	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
<b>Lawndale #1</b> <span style="float:right">Reference Point Elevation: 48.93</span>									
Depth of Screen Interval	1360-1400	895-905	615-635	395-415	290-310	170-190			
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Sunnyside <sup>2</sup>	Silverado	Silverado	Lynwood	Gardena			
10/3/2022	-24.67	-34.07	-2.77	-2.29	-0.76	0.78			
11/9/2022	-24.61	-34.22	-3.41	-2.71	-1.31	-2.14			
12/14/2022	-24.59	-35.89	-2.01	-1.67	-0.71	-1.41			
1/12/2023	-24.01	-44.22	-3.87	-3.32	-0.94	1.81			
3/17/2023	-23.89	-39.81	-4.08	-2.99	-0.75	1.65			
3/31/2023	-23.89	-28.29	0.46	1.00	1.61	2.90			
6/14/2023	-24.68	-45.05	-3.99	-3.39	-1.96	2.66			
7/27/2023	-24.53	-39.05	-0.54	0.06	1.09	3.08			
9/13/2023	-24.60	-45.72	-4.28	-3.67	-2.23	-0.59			
<b>Lomita #1</b> <span style="float:right">Reference Point Elevation: 79.48</span>									
Depth of Screen Interval	1240-1260	700-720	550-570	400-420	220-240	100-120			
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Silverado	Silverado	Lynwood	Gage <sup>2</sup>	Gage <sup>2</sup>			
12/15/2022	-18.68	-12.36	-8.54	-11.60	-8.13	-8.12			
3/13/2023	-16.78	-12.21	-8.19	-11.65	-7.83	-7.83			
6/14/2023	-22.78	-12.33	-10.88	-11.98	-10.21	-9.90			
6/16/2023	-18.36	-13.82	-10.29	-11.95	-8.26	-8.32			
9/18/2023	-20.13	-13.62	-8.73	-12.37	-8.16	-8.12			
9/25/2023	-20.36	-15.13	-8.98	-12.61	-8.57	not measured			
<b>Long Beach #1</b> <span style="float:right">Reference Point Elevation: 30.86</span>									
Depth of Screen Interval	1430-1450	1230-1250	970-990	599-619	400-420	155-175			
Aquifer Name <sup>1</sup>	Sunnyside <sup>2</sup>	Sunnyside	Silverado <sup>2</sup>	Lynwood <sup>2</sup>	Jefferson <sup>2</sup>	Artesia			
12/13/2022	-37.95	-42.17	-48.18	-28.22	-23.53	-3.59			
3/17/2023	-36.37	-39.81	-45.74	-22.68	-17.38	1.58			
5/2/2023	-30.78	-34.01	-42.46	-28.28	-26.21	-0.73			
6/13/2023	-26.34	-29.57	-37.54	-24.85	-22.77	-0.84			
8/16/2023	-16.37	-19.21	-40.34	-29.23	-28.03	-3.50			
9/21/2023	-22.30	-25.45	-46.67	-31.55	-28.76	-3.51			
<b>Long Beach #2</b> <span style="float:right">Reference Point Elevation: 44.20</span>									
Depth of Screen Interval	970-990	720-740	450-470	280-300	160-180	95-115			
Aquifer Name <sup>1</sup>	Sunnyside	Silverado <sup>2</sup>	Silverado	Lynwood	Gage	Gaspur			
12/15/2022	-71.63	-43.85	-38.04	-13.79	-2.69	-0.57			
3/6/2023	-68.51	-41.79	-36.68	-12.33	-1.77	0.14			
3/14/2023	-68.26	-42.38	-36.82	-13.70	-1.59	0.27			
6/7/2023	-51.11	-39.76	-39.77	-11.37	-0.81	0.97			
9/12/2023	-53.03	-38.23	-39.64	-10.75	-0.35	0.43			
<b>Long Beach #3</b> <span style="float:right">Reference Point Elevation: 26.67</span>									
Depth of Screen Interval	1350-1390	997-1017	670-690	530-550	410-430				
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Silverado	Silverado <sup>2</sup>	Silverado <sup>2</sup>	Lynwood				
12/15/2022	-31.48	-45.28	-45.29	-45.70	-2.03				
3/16/2023	-31.21	-48.04	-48.02	-48.61	0.29				
6/5/2023	-31.66	-48.90	-48.92	-49.54	1.89				
6/16/2023	-31.72	-48.33	-48.33	-48.83	1.92				
9/18/2023	-32.15	-50.01	-49.86	-50.48	-0.18				
9/21/2023	-32.24	-49.95	-49.99	-50.47	-0.37				
<b>Long Beach #4</b> <span style="float:right">Reference Point Elevation: 12.34</span>									
Depth of Screen Interval	1200-1220	800-820							
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Sunnyside <sup>2</sup>							
12/15/2022	-27.56	-9.23							
3/17/2023	-27.41	-8.82							
6/23/2023	-28.97	-10.21							
9/20/2023	-28.66	-10.21							

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- Shaded cell indicates the zone and measurement used in Figures 2.1 and 2.2.  
- Reference Point Elevations surveyed relative to the NAVD88 reference plane.

**TABLE 2.1  
GROUNDWATER ELEVATIONS, WATER YEAR 2022 - 2023**

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
<b>Long Beach #6</b> <span style="float:right">Reference Point Elevation: 34.47</span>									
Depth of Screen Interval	1490-1510	930-950	740-760	480-500	380-400	220-240			
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Sunnyside	Sunnyside	Silverado	Lynwood	Gage			
10/17/2022	-55.98	-78.68	-81.80	-83.23	-83.09	-34.84			
11/8/2022	-56.47	-78.62	-81.67	-82.12	-82.01	-34.21			
12/7/2022	-56.79	-78.16	-81.05	-78.59	-78.48	-32.87			
1/12/2023	-55.47	-77.14	-79.93	-75.43	-74.32	-30.99			
3/9/2023	-55.91	-77.56	-80.29	-77.68	-77.53	-30.21			
4/3/2023	-54.71	-65.47	-65.49	-65.70	-65.65	-29.42			
6/22/2023	-44.67	-46.31	-46.39	-45.50	-45.48	-28.49			
8/14/2023	-31.77	-47.20	-50.20	-53.10	-53.04	-29.97			
9/19/2023	-38.44	-53.01	-53.51	-59.39	-59.35	-31.14			
<b>Long Beach #8</b> <span style="float:right">Reference Point Elevation: 21.20</span>									
Depth of Screen Interval	1435-1455	1020-1040	780-800	635-655	415-435	165-185			
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Sunnyside <sup>2</sup>	Silverado <sup>2</sup>	Silverado <sup>2</sup>	Silverado <sup>2</sup>	Lynwood <sup>2</sup>			
12/16/2022	-10.36	-25.90	-38.65	-36.44	-36.02	4.35			
3/31/2023	-11.23	-26.55	-41.74	-39.48	-38.08	4.86			
5/19/2023	-10.13	-25.62	-41.66	-39.19	-38.71	5.27			
6/21/2023	-9.96	-25.73	-41.01	-38.62	-38.21	5.34			
<b>Los Angeles #1</b> <span style="float:right">Reference Point Elevation:176.21</span>									
Depth of Screen Interval	1350-1370	1080-1100	920-940	640-660	350-370				
Aquifer Name <sup>1</sup>	Sunnyside <sup>2</sup>	Sunnyside	Sunnyside	Silverado	Lynwood <sup>2</sup>				
12/14/2022	-30.96	-25.25	-26.12	-25.72	-17.16				
9/13/2023	-20.63	-17.64	-18.82	-19.62	-13.48				
<b>Los Angeles #2</b> <span style="float:right">Reference Point Elevation: 220.33</span>									
Depth of Screen Interval	1330-1370	710-730	505-525	410-430	245-265	135-155			
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Sunnyside	Silverado	Lynwood	Hollydale <sup>2</sup>	Gardena			
12/14/2022	42.53	-7.12	-7.45	-21.49	-28.00	Dry			
3/27/2023	42.65	-5.47	-5.68	-20.02	-27.24	Dry			
4/6/2023	not measured	-5.61	-5.90	-19.76	-26.92	Dry			
6/14/2023	42.61	-4.97	-4.18	-18.29	-26.20	Dry			
8/29/2023	not measured	-2.51	-2.71	-16.83	-24.11	Dry			
9/22/2023	42.96	-2.33	-2.38	-17.31	-23.80	Dry			
<b>Los Angeles #3</b> <span style="float:right">Reference Point Elevation: 145.35</span>									
Depth of Screen Interval	1210-1230	875-895	705-725	550-570	330-350	190-210			
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Sunnyside <sup>2</sup>	Sunnyside <sup>2</sup>	Sunnyside	Silverado <sup>2</sup>	Gage <sup>2</sup>			
12/15/2022	-21.35	-12.07	-18.82	-15.13	-12.05	2.23			
3/16/2023	-19.03	-7.26	-11.43	-13.90	-11.62	2.54			
4/6/2023	-18.24	-7.04	-11.13	-13.87	-11.49	2.63			
6/13/2023	-15.96	-6.29	-10.27	-13.26	-11.05	2.97			
8/24/2023	-14.11	-5.52	-9.21	-12.10	-10.16	3.47			
9/22/2023	-13.75	-5.35	-9.04	-11.72	-10.13	3.64			
<b>Los Angeles #4</b> <span style="float:right">Reference Point Elevation: 136.04</span>									
Depth of Screen Interval	1740-1780	1190-1230	720-740	490-510	355-375	235-255			
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Sunnyside <sup>2</sup>	Sunnyside	Silverado	Lynwood	Gage			
12/14/2022	-29.51	-37.75	-36.31	-28.95	-28.66	-19.17			
3/24/2023	-27.67	-32.08	-29.15	-26.42	-26.70	-18.56			
4/19/2023	-26.35	-30.72	-28.08	-25.55	-25.91	-18.07			
<b>Los Angeles #5</b> <span style="float:right">Reference Point Elevation: 104.11</span>									
Depth of Screen Interval	1960-2000	1235-1255	750-770	555-575	430-450	215-235	95-105		
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Sunnyside <sup>2</sup>	Sunnyside	Sunnyside	Silverado	Lynwood <sup>2</sup>	Exposition		
12/14/2022	5.46	4.1	9.47	7.18	4.37	32.16	62.33		
9/11/2023	5.5	7.93	12.29	6.87	5.24	33.46	64.85		
9/12/2023	not measured	7.94	12.49	7.90	5.21	33.47	not measured		
9/27/2023	5.52	not measured	not measured	not measured	not measured	not measured	not measured		
9/28/2023	5.52	not measured	not measured	7.61	not measured	not measured	not measured		

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- Shaded cell indicates the zone and measurement used in Figures 2.1 and 2.2.  
- Reference Point Elevations surveyed relative to the NAVD88 reference plane.

**TABLE 2.1**  
**GROUNDWATER ELEVATIONS, WATER YEAR 2022 - 2023**

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
<b>Los Angeles #6</b> <span style="float:right">Reference Point Elevation: 213.59</span>									
Depth of Screen Interval	580-600	420-440	345-365	255-275					
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Sunnyside	Silverado	Lynwood					
12/20/2022	2.40	-3.82	-4.15	-4.78					
3/14/2023	-3.25	-3.04	-3.64	-4.38					
5/11/2023	2.98	-3.16	-3.43	-4.24					
6/27/2023	3.28	-2.84	-3.16	-3.97					
9/19/2023	3.74	-2.45	-2.70	-3.59					
<b>Lynwood #1</b> <span style="float:right">Reference Point Elevation: 88.86 (Zones 3, 4, 5, 6, 7 and 9) and 89.29 (Zones 1, 2 and 8)</span>									
Depth of Screen Interval	2880-2900	2430-2450	1650-1670	1445-1465	1200-1220	880-900	640-660	315-335	160-180
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Pico Form. <sup>2</sup>	Sunnyside <sup>2</sup>	Sunnyside <sup>2</sup>	Silverado <sup>2</sup>	Silverado <sup>2</sup>	Lynwood	Gardena	Gaspur
12/8/2022	-25.44	-42.47	-48.34	-43.22	-31.40	-29.35	-30.62	-24.21	32.07
3/20/2023	not measured	not measured	-41.78	-35.69	-22.05	-22.35	-24.03	not measured	38.55
4/12/2023	-20.80	-35.06	not measured	not measured	not measured	not measured	not measured	-17.21	not measured
5/24/2023	-19.68	-33.50	not measured	not measured	not measured	not measured	not measured	-16.04	not measured
5/25/2023	not measured	not measured	-36.38	-30.41	-17.40	-19.52	-21.75	not measured	32.64
6/14/2023	-18.57	-36.05	-33.14	-27.64	-16.14	-18.65	-20.34	-14.41	32.56
9/22/2023	-12.42	-24.44	-31.68	-26.07	-14.85	-18.57	-20.77	-15.21	32.54
9/27/2023	-12.27	-24.74	not measured	not measured	not measured	not measured	not measured	-15.07	not measured
9/28/2023	not measured	not measured	-32.02	-26.08	-15.20	-18.15	-20.58	not measured	32.78
<b>Manhattan Beach #1</b> <span style="float:right">Reference Point Elevation: 128.71</span>									
Depth of Screen Interval	1950-1990	1570-1590	1250-1270	865-885	640-660	320-340	180-200		
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Pico Form. <sup>2</sup>	Pico Form. <sup>2</sup>	Sunnyside <sup>2</sup>	Sunnyside <sup>2</sup>	Silverado	Gage		
12/5/2022	1.21	-1.38	-23.71	2.43	0.33	9.01	11.11		
3/8/2023	1.50	-1.12	-23.38	2.36	-0.10	8.58	11.51		
3/9/2023	not measured	-0.95	-23.26	not measured	not measured	not measured	not measured		
6/6/2023	1.72	-0.88	-23.24	2.71	0.51	9.44	12.30		
7/20/2023	1.55	-1.00	-23.50	2.46	-0.21	8.92	11.61		
7/21/2023	1.92	not measured	-23.30	not measured	not measured	not measured	not measured		
9/14/2023	1.84	-0.75	-23.48	2.47	0.55	9.65	12.50		
<b>Montebello #1</b> <span style="float:right">Reference Point Elevation: 193.11</span>									
Depth of Screen Interval	900-960	690-710	500-520	370-390	210-230	90-110			
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Sunnyside	Sunnyside	Silverado	Lynwood	Gage			
12/7/2022	48.66	44.26	43.76	41.50	38.61	Dry			
3/13/2023	68.55	75.04	74.75	70.63	50.04	Dry			
5/25/2023	82.09	87.56	87.00	81.47	63.51	Dry			
6/8/2023	83.85	89.17	88.58	82.92	65.61	Dry			
9/13/2023	89.34	91.63	90.90	85.51	74.33	Dry			
9/22/2023	90.57	92.95	92.13	86.65	75.41	Dry			
<b>Montebello #2</b> <span style="float:right">Reference Point Elevation: 182.95</span>									
Depth of Screen Interval	745-780	415-435	250-260	180-200	100-115				
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Pico Form. <sup>2</sup>	Sunnyside	Sunnyside	Gage				
12/7/2022	111.34	94.92	85.37	84.56	96.21				
3/13/2023	114.69	112.29	118.03	117.34	119.73				
6/6/2023	115.93	128.97	137.97	137.77	138.36				
6/8/2023	103.93	129.34	137.32	136.65	138.45				
9/22/2023	118.27	136.83	142.49	142.68	146.79				
9/26/2023	118.04	136.66	142.74	142.72	146.62				
<b>Norwalk #1</b> <span style="float:right">Reference Point Elevation: 96.18</span>									
Depth of Screen Interval	1400-1420	990-1010	720-740	430-450	220-240				
Aquifer Name <sup>1</sup>	Sunnyside	Silverado	Lynwood	Hollydale	Gage				
12/15/2022	25.67	-12.24	4.31	-7.64	-6.40				
3/17/2023	32.52	-3.88	11.98	-3.16	-3.40				
4/27/2023	36.54	-0.20	15.10	-2.47	-2.57				
6/15/2023	40.36	2.96	17.75	-1.43	-2.15				
9/18/2023	44.43	6.57	19.20	-1.09	-1.45				

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- Reference Point Elevations surveyed relative to the NAVD88 reference plane.

**TABLE 2.1  
GROUNDWATER ELEVATIONS, WATER YEAR 2022 - 2023**

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
<b>Norwalk #2</b> <span style="float:right">Reference Point Elevation: 116.73</span>									
Depth of Screen Interval	1460-1480	1260-1280	960-980	800-820	480-500	236-256			
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Pico Form. <sup>2</sup>	Sunnyside <sup>2</sup>	Sunnyside <sup>2</sup>	Silverado	Gardena			
12/8/2022	3.56	3.60	-2.07	0.90	7.40	13.21			
3/20/2023	13.07	13.09	13.85	17.40	19.39	21.49			
5/31/2023	20.14	20.12	21.51	25.10	24.37	26.32			
6/16/2023	21.51	21.51	23.10	26.65	25.83	27.55			
9/26/2023	26.28	26.28	24.07	26.15	25.12	28.44			
9/29/2023	26.22	26.29	23.95	26.11	25.29	28.46			
<b>Paramount #1</b> <span style="float:right">Reference Point Elevation: 70.70</span>									
Depth of Screen Interval	2080-2100	1700-1720	1190-1210	925-945	620-640	420-440	215-235		
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Pico Form. <sup>2</sup>	Pico Form. <sup>2</sup>	Sunnyside	Lynwood	Hollydale	Exposition		
12/6/2022	-16.48	-23.79	-20.75	-11.20	-7.18	19.44	25.60		
3/9/2023	-6.63	-16.45	-12.32	-5.00	-1.10	20.60	25.96		
3/28/2023	-4.11	-14.78	-9.97	-2.23	1.98	21.18	26.16		
6/16/2023	3.42	-10.61	-6.15	-0.24	3.01	21.79	26.62		
9/19/2023	4.44	-11.61	-9.28	-2.68	0.88	22.21	27.16		
9/25/2023	4.26	-11.77	-9.36	-1.60	2.82	22.49	27.14		
<b>Pico #1</b> <span style="float:right">Reference Point Elevation: 182.89</span>									
Depth of Screen Interval	860-900	460-480	380-400	170-190					
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Silverado	Silverado	Gardena <sup>2</sup>					
12/15/2022	not measured	not measured	79.04	75.44					
12/20/2022	93.21	79.90	not measured	not measured					
3/9/2023	not measured	117.36	not measured	not measured					
3/15/2023	120.27	not measured	121.47	120.41					
4/11/2023	132.11	133.67	133.26	132.11					
6/15/2023	145.48	not measured	145.59	144.69					
6/20/2023	not measured	146.20	not measured	not measured					
9/14/2023	not measured	143.05	142.64	141.87					
9/15/2023	146.95	not measured	142.81	142.17					
9/19/2023	not measured	143.67	not measured	not measured					
<b>Pico #2</b> <span style="float:right">Reference Point Elevation: 151.83</span>									
Depth of Screen Interval	1180-1200	830-850	560-580	320-340	235-255	100-120			
Aquifer Name <sup>1</sup>	Sunnyside <sup>2</sup>	Sunnyside <sup>2</sup>	Sunnyside	Silverado	Lynwood	Gaspar/Gage <sup>2</sup>			
12/15/2022	40.64	45.59	51.31	74.17	75.37	81.72			
3/15/2023	77.39	81.27	85.90	95.69	96.46	102.06			
5/24/2023	86.58	89.16	98.05	112.46	113.70	120.30			
6/15/2023	88.72	92.31	100.74	115.72	116.94	123.28			
9/15/2023	88.46	89.27	96.64	111.71	112.61	116.43			
9/26/2023	88.87	87.11	96.29	111.02	111.83	115.11			
<b>PM-1 Columbia</b> <span style="float:right">Reference Point Elevation: 81.39</span>									
Depth of Screen Interval	555-595	460-500	240-280	160-200					
Aquifer Name <sup>1</sup>	Silverado	Silverado	Lynwood	Gardena					
12/5/2022	-0.93	-0.69	not measured	0.28					
2/9/2023	-0.15	0.12	not measured	0.13					
2/23/2023	-0.48	-0.39	not measured	0.72					
3/9/2023	-0.57	0.33	not measured	0.75					
3/30/2023	-0.68	0.08	not measured	0.78					
4/4/2023	0.05	0.62	not measured	not measured					
4/13/2023	0.17	0.14	not measured	0.98					
4/28/2023	-0.12	-0.06	not measured	0.17					
5/12/2023	-0.21	-0.14	not measured	0.82					
5/26/2023	-0.17	-0.55	not measured	0.81					
6/9/2023	-0.09	0.02	not measured	0.16					
6/29/2023	-0.26	-0.10	not measured	0.16					
9/6/2023	-0.46	0.17	not measured	not measured					
9/15/2023	-0.55	-0.49	not measured	0.65					

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- Reference Point Elevations surveyed relative to the NAVD88 reference plane.

**TABLE 2.1  
GROUNDWATER ELEVATIONS, WATER YEAR 2022 - 2023**

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
<b>PM-2 Police Station</b> <span style="float:right">Reference Point Elevation: 87.43</span>									
Depth of Screen Interval	635-655	520-540	370-390	240-260					
Aquifer Name <sup>1</sup>	Sunnyside <sup>2</sup>	Silverado	Silver/Lyn <sup>2</sup>	Lynwood					
12/6/2022	-5.15	0.60	1.09	1.20					
2/9/2023	-4.52	2.11	1.87	2.00					
2/23/2023	-4.76	1.55	1.31	1.41					
3/9/2023	-4.74	1.79	1.51	1.62					
3/16/2023	-4.75	1.59	1.26	1.36					
3/29/2023	-4.42	1.36	1.58	1.69					
4/13/2023	-4.35	1.30	1.53	1.63					
4/28/2023	-4.54	1.07	1.29	1.41					
5/12/2023	-4.61	1.01	1.24	1.35					
5/26/2023	-4.57	1.15	1.37	1.47					
6/9/2023	-4.69	1.37	1.60	1.73					
6/29/2023	-4.63	1.09	1.32	1.34					
8/18/2023	-4.71	0.90	0.97	1.27					
9/15/2023	-5.06	0.35	0.83	0.93					
<b>PM-3 Madrid</b> <span style="float:right">Reference Point Elevation: 73.12</span>									
Depth of Screen Interval	640-680	480-520	240-280	145-185					
Aquifer Name <sup>1</sup>	Sunnyside <sup>2</sup>	Silverado	Lynwood	Gardena					
12/8/2022	-4.80	-2.46	-2.38	-2.41					
3/13/2023	-4.63	-2.04	-1.99	-2.01					
5/19/2023	-3.95	-1.49	-1.51	-1.54					
6/14/2023	-4.15	-1.60	-1.51	-2.13					
8/15/2023	-4.15	-1.73	-1.61	-1.61					
9/15/2023	-4.70	-2.06	-2.00	-1.99					
<b>PM-4 Mariner</b> <span style="float:right">Reference Point Elevation: 100.38</span>									
Depth of Screen Interval	670-710	500-540	340-380	200-240					
Aquifer Name <sup>1</sup>	Sunnyside <sup>2</sup>	Silverado	Lynwood	Gardena					
12/9/2022	-0.23	-0.73	2.82	2.86					
2/9/2023	0.9	0.15	3.02	3.66					
2/23/2023	0.41	-0.86	2.66	2.72					
3/13/2023	-0.12	-1.39	2.06	2.14					
3/30/2023	1.16	-0.53	2.88	2.96					
4/14/2023	1.33	-0.61	2.79	2.92					
4/23/2023	1.24	-0.53	2.87	2.96					
4/28/2023	1.05	-0.98	2.68	2.75					
5/12/2023	0.46	1.06	2.63	2.71					
5/26/2023	0.97	0.14	3.93	3.97					
6/9/2023	1.02	0.39	3.94	3.93					
6/29/2023	0.79	-0.88	2.70	2.80					
9/15/2023	0.41	-1.31	2.20	2.29					
9/24/2023	0.47	-1.01	2.36	2.52					
<b>PM-5 Columbia Park</b> <span style="float:right">Reference Point Elevation: 78.57</span>									
Depth of Screen Interval	1360-1380	940-960	770-790	580-600	320-340	140-160			
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Pico Form. <sup>2</sup>	Sunnyside <sup>2</sup>	Silverado	Lynwood <sup>2</sup>	Gardena			
12/13/2022	-24.60	-28.90	-1.41	0.11	3.07	3.21			
2/15/2023	-24.39	-30.77	-1.40	0.26	3.58	3.72			
2/23/2023	-24.29	-30.26	-1.27	-0.40	2.92	3.05			
3/13/2023	-24.27	-29.42	-3.06	-1.33	2.73	2.86			
3/27/2023	-24.20	-28.69	-0.54	0.63	3.33	3.49			
3/30/2023	-24.09	-28.02	-0.26	0.82	3.23	3.45			
4/14/2023	-24.22	-27.08	0.21	0.54	3.28	3.48			
4/28/2023	-24.20	-28.03	-0.42	0.55	3.02	3.19			
5/12/2023	-24.18	-29.57	-0.66	0.45	3.02	3.21			
5/26/2023	-24.23	-30.61	-0.76	0.02	3.18	3.80			
6/9/2023	-24.27	-31.42	-0.98	0.09	3.94	3.66			
6/29/2023	-24.26	-32.55	-0.98	0.34	3.08	3.26			
8/1/2023	-24.41	-32.32	-0.24	0.88	3.39	3.55			
9/15/2023	-24.54	-33.14	-1.33	-0.08	2.57	2.79			

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- Reference Point Elevations surveyed relative to the NAVD88 reference plane.

**TABLE 2.1  
GROUNDWATER ELEVATIONS, WATER YEAR 2022 - 2023**

	<b>ZONE 1</b>	<b>ZONE 2</b>	<b>ZONE 3</b>	<b>ZONE 4</b>	<b>ZONE 5</b>	<b>ZONE 6</b>	<b>ZONE 7</b>	<b>ZONE 8</b>	<b>ZONE 9</b>
<b>PM-6 Madrona Marsh</b> <span style="float:right">Reference Point Elevation: 80.88</span>									
Depth of Screen Interval	1195-1235	905-925	770-790	530-550	390-410	240-260			
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Sunnyside <sup>2</sup>	Sunnyside <sup>2</sup>	Silverado	Lynwood	Lynwood			
12/14/2022	-26.57	-7.54	-7.03	0.24	1.15	1.55			
2/9/2023	-27.17	-7.26	-6.78	1.04	2.25	2.20			
3/13/2023	-27.30	-7.33	-6.28	0.93	2.29	2.76			
4/7/2023	-25.87	-6.75	-0.40	1.31	2.70	2.97			
5/11/2023	-27.12	-7.21	-6.30	0.90	1.94	2.43			
6/14/2023	-28.31	-7.35	-6.25	1.01	2.08	2.51			
8/25/2023	-28.18	-7.46	-0.89	0.81	2.06	2.36			
9/21/2023	-29.24	-7.90	-5.70	0.56	1.58	2.03			
<b>Rio Hondo #1</b> <span style="float:right">Reference Point Elevation: 146.51</span>									
Depth of Screen Interval	1110-1130	910-930	710-730	430-450	280-300	140-160			
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Sunnyside <sup>2</sup>	Sunnyside	Silverado	Hollydale	Gardena			
12/12/2022	32.28	31.58	31.01	29.76	35.91	39.98			
3/9/2023	58.49	65.60	65.00	61.77	65.86	68.48			
5/17/2023	69.95	75.99	75.38	74.03	80.99	84.29			
6/14/2023	73.34	79.69	79.02	77.17	85.74	89.41			
9/11/2023	72.22	78.85	78.24	74.97	80.71	83.44			
9/15/2023	72.83	79.76	79.15	75.61	81.02	83.63			
<b>Seal Beach #1</b> <span style="float:right">Reference Point Elevation: 9.06</span>									
Depth of Screen Interval	1345-1365	1160-1180	1020-1040	775-795	605-625	215-235	60-70		
Aquifer Name <sup>1</sup>	Sunnyside <sup>2</sup>	Sunnyside <sup>2</sup>	Sunnyside <sup>2</sup>	Silverado	Lynwood <sup>2</sup>	Gage	Artesia		
12/13/2022	-37.04	-37.29	-37.12	-40.87	-29.44	2.29	3.83		
3/17/2023	-34.09	-34.32	-34.08	-36.74	-22.89	5.52	6.98		
4/12/2023	-31.65	-31.79	-31.57	-35.42	-24.78	5.18	6.29		
6/15/2023	-25.01	-25.22	-25.53	-34.42	-26.22	2.34	4.83		
8/17/2023	-15.55	-15.66	-15.49	-37.17	-29.68	0.00	3.63		
9/21/2023	-20.60	-20.80	-20.66	-41.39	-32.44	-2.58	2.45		
<b>South Gate #1</b> <span style="float:right">Reference Point Elevation: 102.50</span>									
Depth of Screen Interval	1440-1460	1320-1340	910-930	565-585	220-240				
Aquifer Name <sup>1</sup>	Sunnyside <sup>2</sup>	Sunnyside <sup>2</sup>	Silverado <sup>2</sup>	Lynwood	Exposition <sup>2</sup>				
12/14/2022	-12.96	-11.26	-5.66	-5.40	26.54				
3/17/2023	-2.10	-0.45	3.76	1.64	27.52				
4/24/2023	1.92	3.58	6.87	2.77	27.88				
6/14/2023	6.48	8.68	11.68	5.80	28.40				
8/15/2023	5.16	6.61	9.47	4.71	28.95				
9/19/2023	6.00	7.74	10.35	5.82	29.32				
<b>South Gate #2</b> <span style="float:right">Reference Point Elevation: 120.29</span>									
Depth of Screen Interval	1740-1760	1410-1430	1062-1082	670-690	410-430	205-225			
Aquifer Name <sup>1</sup>	Sunnyside <sup>2</sup>	Sunnyside <sup>2</sup>	Sunnyside	Silverado <sup>2</sup>	Hollydale	Gaspur <sup>2</sup>			
12/16/2022	-31.71	-32.03	-34.74	-24.85	32.48	38.54			
3/16/2023	-25.65	-26.24	-30.04	-20.83	32.53	38.48			
5/18/2023	-22.80	-23.50	-27.93	-18.28	32.54	38.43			
6/16/2023	-21.21	-21.92	-26.65	-17.47	32.29	38.30			
8/23/2023	-22.07	-22.90	-26.70	-15.49	32.50	38.27			
9/21/2023	-20.81	-21.72	-26.33	-16.79	32.36	38.23			
<b>Westchester #1</b> <span style="float:right">Reference Point Elevation: 126.95</span>									
Depth of Screen Interval	740-760	560-580	455-475	310-330	215-235				
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Sunnyside <sup>2</sup>	Sunnyside <sup>2</sup>	Silverado	Jefferson				
12/15/2022	0.56	8.55	8.92	9.07	9.26				
3/13/2023	0.88	8.69	9.17	9.29	9.50				
6/13/2023	1.04	9.19	9.56	9.73	9.90				
9/22/2023	1.20	9.16	9.67	9.87	10.04				
9/29/2023	1.14	9.32	9.70	9.88	10.06				

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- Reference Point Elevations surveyed relative to the NAVD88 reference plane.

**TABLE 2.1  
GROUNDWATER ELEVATIONS, WATER YEAR 2022 - 2023**

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9
<b>Whittier #1</b> 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 <sup>1</sup>	Pico Form. <sup>2</sup>	Pico Form. <sup>2</sup>	Sunnyside	Silverado	Jefferson				
12/16/2022	102.11	102.12	95.83	94.21	193.84				
3/8/2023	102.10	102.10	97.06	95.16	196.21				
4/19/2023	102.12	102.54	97.49	96.50	197.69				
6/14/2023	103.22	103.25	99.12	98.23	197.54				
9/18/2023	104.62	104.63	100.98	100.49	197.47				
9/28/2023	104.80	104.75	101.17	100.69	197.45				
<b>Whittier #2</b> Reference Point Elevation: 167.55									
Depth of Screen Interval	1370-1390	1090-1110	655-675	425-445	315-335	150-170			
Aquifer Name <sup>1</sup>	Pico Form. <sup>2</sup>	Pico Form. <sup>2</sup>	Sunnyside	Silverado	Silverado	Gage <sup>2</sup>			
12/5/2022	61.66	62.90	52.15	52.85	86.20	94.65			
3/15/2023	79.42	80.38	88.52	90.95	104.37	105.72			
5/1/2023	87.72	88.33	93.40	93.99	114.23	114.11			
6/5/2023	91.90	92.17	100.94	102.30	120.14	119.83			
9/11/2023	93.89	94.34	95.25	92.47	119.20	123.07			
<b>Whittier Narrows #1</b> 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 <sup>1</sup>	Sunnyside	Sunnyside	Sunnyside	Silverado	Silverado	Lynwood	Lynwood	Gardena	Gaspur
4/3/2023	179.91	182.36	184.18	188.05	188.55	not measured	not measured	not measured	not measured
4/4/2023	not measured	not measured	not measured	not measured	not measured	189.20	189.15	189.20	190.02
9/13/2023	180.42	181.20	183.16	187.15	188.08	189.15	189.06	188.97	188.61
<b>Whittier Narrows #2</b> 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 <sup>1</sup>	Pico Form. <sup>2</sup>	Pico Form. <sup>2</sup>	Pico Form. <sup>2</sup>	Pico Form. <sup>2</sup>	Pico Form. <sup>2</sup>	Lynwood	Lynwood	Gardena <sup>2</sup>	Gardena
4/4/2023	-19.27	-19.09	-18.42	not measured	not measured	not measured	not measured	not measured	not measured
4/5/2023	not measured	not measured	not measured	-9.72	108.85	169.79	170.7	169.38	170.63
9/13/2023	-16.96	-16.59	-16.13	-6.71	115.5	169.03	170.2	171.18	176.68
<b>Willowbrook #1</b> Reference Point Elevation: 98.87									
Depth of Screen Interval	885-905	500-520	360-380	200-220					
Aquifer Name <sup>1</sup>	Sunnyside <sup>2</sup>	Silverado	Lynwood	Gage					
12/15/2022	-52.22	-39.12	-44.59	-43.48					
3/16/2023	-46.67	-33.56	-41.56	-41.17					
6/14/2023	-41.70	-37.88	-40.85	-39.97					
9/21/2023	-39.75	-37.30	-40.92	-40.12					
9/27/2023	-39.57	-37.29	-40.89	-40.06					
<b>Wilmington #1</b> Reference Point Elevation: 40.74									
Depth of Screen Interval	915-935	780-800	550-570	225-245	120-140				
Aquifer Name <sup>1</sup>	Sunnyside <sup>2</sup>	Silverado	Silverado	Lynwood	Gage				
11/3/2022	-42.12	-42.37	-42.37	-10.64	-7.55				
12/15/2022	-40.95	-41.20	-41.16	-10.81	-7.77				
3/16/2023	-42.80	-43.07	-43.02	-10.23	-6.96				
5/15/2023	-44.13	-44.37	-44.32	-10.03	-6.62				
6/14/2023	-43.66	-43.86	-44.56	-9.99	-6.66				
9/19/2023	-44.62	-44.95	-44.90	-11.76	-8.26				
<b>Wilmington #2</b> Reference Point Elevation: 32.30									
Depth of Screen Interval	950-970	755-775	540-560	390-410	120-140				
Aquifer Name <sup>1</sup>	Sunnyside <sup>2</sup>	Silverado	Silverado	Lynwood	Gage				
11/1/2022	-26.52	-21.02	-16.71	-15.68	-1.15				
12/15/2022	-26.24	-21.15	-16.90	-15.81	-1.16				
3/16/2023	-27.29	-21.10	-17.13	-16.00	-0.79				
5/16/2023	-27.82	-21.16	-17.15	-16.09	-0.54				
6/6/2023	-28.33	-22.57	-18.01	-16.86	-0.50				
9/26/2023	-29.98	-24.34	-19.79	-18.72	-0.98				

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**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Bell #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/5/2023	8/2/2023	4/5/2023	8/2/2023	4/5/2023	8/2/2023	4/5/2023	8/2/2023	4/5/2023	8/2/2023	4/5/2023	8/2/2023
<b>General Minerals</b>															
Alkalinity	mg/l			650	590	180	150	170	180	190	170	190	180	300	270
Anion Sum	mcq/l			18	17	6	5.4	5.6	5.8	6.3	5.9	8.1	7.7	12	12
Bicarbonate as HCO3	mg/l			790	720	220	180	210	220	230	210	240	210	370	330
Boron	mg/l	1	N	1.6	1.7	0.14	0.15	0.13	0.14	0.16	0.16	0.14	0.14	0.17	0.18
Bromide	ug/l			1.3	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium, Total	mg/l			35	14.1	51.1	51.1	44.9	44.8	56.7	56.4	76.2	75	126	124
Carbon Dioxide	mg/l			572	519	161	134	153	164	170	152	174	158	271	243
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	mcq/l			16	17	5.4	5.5	5.1	5.2	5.8	5.8	7.5	7.5	12	12
Chloride	mg/l	500	S	180	180	24	24	31	31	31	30	56	56	100	100
Fluoride	mg/l	2	P	0.31	0.3	0.2	0.2	0.36	0.35	0.38	0.38	0.34	0.34	0.32	0.32
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			390	380	31	27	41	34	39	35	5	4.5	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	11	10	5.9	6
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	2.4	2.3	1.3	1.3
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			7.4	7.5	2.8	2.8	3.6	3.7	3.5	3.5	3.2	3.2	3.2	3.2
Sodium, Total	mg/l			330	370	45	47	44	46	42	43	48	49	59	60
Sulfate	mg/l	500	S	ND	ND	82	82	60	60	77	77	120	120	160	160
Total Dissolved Solid (TDS)	mg/l	1000	S	1000	1000	330	330	300	270	350	360	450	480	690	770
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	2.4	2.3	1.3	1.3
<b>General Physical Properties</b>															
Apparent Color	ACU	15	S	220	100	ND	3	ND	3	ND	3	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			57.7	60.1	168	169	153	154	194	195	265	263	448	445
Lab pH	Units			8.33	8.27	8.13	8.12	8.05	8.05	8.05	8.03	8.07	7.95	7.94	7.78
Langelier Index - 25 degree	None			0.728	0.638	0.664	0.575	0.512	0.545	0.648	0.575	0.772	0.615	1.01	0.787
Odor	TON	3	S	6	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	1900	1700	600	540	570	510	640	560	820	730	1200	1100
Turbidity	NTU	5	S	ND	0.3	ND	0.4	ND	0.25	0.1	0.4	0.3	0.35	1.2	3.7
<b>Metals</b>															
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	0.91	0.86	3	2.9	1.3	1.2
Barium, Total	ug/l	1000	P	16	14	36	34	36	34	78	73	230	220	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	0.74	0.84	ND	ND	ND	ND	ND	ND	2.1	2.4	4	4.3
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.038	0.11	0.049	0.06	0.028	0.3	0.067	0.059	2.1	2.6	4	4.7
Copper, Total	ug/l	1300	P	0.6	0.82	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.082	0.083	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	mg/l			5.7	6.08	9.79	10.1	9.94	10.3	12.8	13.1	18.1	18.4	32.2	32.6
Manganese, Total	ug/l	50	S	25	23	72	72	49	49	74	75	4.5	21	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	4.4	4.2	4.5	4.4
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
<b>Volatile Organic Compounds</b>															
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	0.93	0.89
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	35
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
<b>Others</b>															
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	ND	ND	0.53	0.66	0.17	0.17
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	2	1.9	1.3	1.3
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			14	13	0.65	0.48	0.54	0.58	0.41	0.38	0.37	0.34	0.5	0.48

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

**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Bell Gardens #1					
				Zone 1 6/1/2023	Zone 2 6/1/2023	Zone 3 6/1/2023	Zone 4 6/1/2023	Zone 5 6/1/2023	Zone 6 6/1/2023
<b>General Minerals</b>									
Alkalinity	mg/l			170	170	140	110	140	160
Anion Sum	meq/l			7.5	5.5	6.9	5	5.9	6.9
Bicarbonate as HCO <sub>3</sub>	mg/l			210	200	170	140	170	190
Boron	mg/l	1	N	0.055	0.12	0.17	0.13	0.14	0.14
Bromide	ug/l			ND	ND	ND	ND	ND	ND
Calcium, Total	mg/l			94.9	44.1	66	43.4	55.6	66
Carbon Dioxide	mg/l			154	149	132	108	139	149
Carbonate as CO <sub>3</sub>	mg/l			ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			7	5.1	6.4	4.6	5.6	6.3
Chloride	mg/l	500	S	53	38	66	42	53	69
Fluoride	mg/l	2	P	0.17	0.24	0.28	0.36	0.19	0.27
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Iodide	ug/l			7.5	14	ND	ND	ND	ND
Nitrate (as NO <sub>3</sub> )	mg/l	45	P	ND	ND	11	9.4	13	14
Nitrate as Nitrogen	mg/l	10	P	ND	ND	2.5	2.1	2.8	3.2
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			2.4	2.7	3.5	3.1	3.2	3.7
Sodium, Total	mg/l			27	51	48	40	42	43
Sulfate	mg/l	500	S	120	53	95	65	67	79
Total Dissolved Solid (TDS)	mg/l	1000	S	440	300	400	290	330	390
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	2.5	2.1	2.8	3.2
<b>General Physical Properties</b>									
Apparent Color	ACU	15	S	ND	3	ND	ND	ND	ND
Hardness (Total, as CaCO <sub>3</sub> )	mg/l			290	144	210	140	183	215
Lab pH	Units			7.87	8	7.59	7.43	7.27	7.41
Langelier Index - 25 degree	None			0.622	0.454	0.109	-0.308	-0.267	-0.01
Odor	TON	3	S	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	690	520	660	490	570	660
Turbidity	NTU	5	S	0.35	0.4	0.5	0.4	0.45	0.45
<b>Metals</b>									
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	0.43	2.7	2.4	0.95	1.6
Barium, Total	ug/l	1000	P	110	77	110	52	65	64
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	0.66	0.72	0.84	0.67
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.029	0.075	0.52	0.65	0.67	0.63
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.04	ND	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	0.32	ND	ND	ND
Magnesium, Total	mg/l			12.9	8.24	11	7.69	10.8	12.3
Manganese, Total	ug/l	50	S	27	40	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	0.56	1	2.1	1.7
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
<b>Volatile Organic Compounds</b>									
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	0.96
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	ug/l	80	P	ND	ND	ND	0.7	1.2	2.2
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
<b>Others</b>									
1,4-Dioxane	ug/l	1	N	3.7	0.52	1.1	0.21	0.38	0.66
Perchlorate	ug/l	6	P	ND	ND	0.5	0.43	0.47	0.42
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.31	0.35	0.35	0.34	0.38	ND

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

**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Cerritos 1						
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	
				5/23/2023	5/23/2023	5/23/2023	5/23/2023	5/23/2023	5/23/2023	
<b>General Minerals</b>										
Alkalinity	mg/l			170	170	170	190	190	200	
Anion Sum	meq/l			5	4.4	5.5	5.2	4.8	4.8	
Bicarbonate as HCO3	mg/l			210	200	210	230	230	240	
Boron	mg/l	1	N	0.09	0.059	0.092	0.092	0.09	0.083	
Bromide	ug/l			ND	ND	ND	ND	ND	ND	
Calcium, Total	mg/l			35.4	36.5	41.4	45.2	38.6	44.6	
Carbon Dioxide	mg/l			149	147	155	170	168	175	
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	
Cation Sum	meq/l			4.5	4	5	4.8	4.4	4.4	
Chloride	mg/l	500	S	16	13	21	16	12	11	
Fluoride	mg/l	2	P	0.25	0.29	0.36	0.49	0.42	0.29	
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	
Iodide	ug/l			9.9	18	28	20	19	97	
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			2.2	2.1	2.1	2	1.9	2.1	
Sodium, Total	mg/l			53	38	54	37	39	33	
Sulfate	mg/l	500	S	54	33	65	46	33	27	
Total Dissolved Solid (TDS)	mg/l	1000	S	270	240	300	270	250	270	
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	
<b>General Physical Properties</b>										
Apparent Color	ACU	15	S	ND	ND	ND	3	3	ND	
Hardness (Total, as CaCO3)	mg/l			108	114	128	155	134	147	
Lab pH	Units			8.29	8.23	8.13	7.8	7.99	7.99	
Langelier Index - 25 degree	None			0.657	0.62	0.557	0.323	0.45	0.529	
Odor	TON	3	S	ND	ND	ND	ND	ND	ND	
Specific Conductance	umho/cm	1600	S	460	400	500	460	440	430	
Turbidity	NTU	5	S	0.1	0.25	0.1	0.35	0.25	0.25	
<b>Metals</b>										
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	<b>15</b>	<b>11</b>	<b>20</b>	5.3	10	<b>38</b>	
Barium, Total	ug/l	1000	P	53	110	130	65	88	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	0.053	0.049	0.054	0.054	0.039	0.043	
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	
Iron, Total	mg/l	0.3	S	ND	ND	ND	0.084	0.06	0.089	
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	
Magnesium, Total	mg/l			4.62	5.64	6.08	10.3	9.24	8.67	
Manganese, Total	ug/l	50	S	27	35	48	<b>85</b>	<b>120</b>	<b>150</b>	
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	
<b>Volatile Organic Compounds</b>										
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	
<b>Others</b>										
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	0.2	
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	
Total Organic Carbon	mg/l			ND	0.36	ND	ND	0.37	0.3	

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

**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Cerritos #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				6/12/2023	9/21/2023	6/12/2023	9/21/2023	6/12/2023	9/21/2023	6/12/2023	9/21/2023	6/12/2023	9/21/2023	6/12/2023	9/21/2023
<b>General Minerals</b>															
Alkalinity	mg/l			150	150	180	170	170	160	200	190	190	190	360	340
Anion Sum	mcq/l			3.7	3.7	8.4	8	4	3.8	4.5	4.3	4.4	4.3	13	12
Bicarbonate as HCO3	mg/l			190	190	220	200	210	200	240	230	230	230	430	420
Boron	mg/l	1	N	0.058	0.06	0.18	0.18	0.063	0.066	0.078	0.081	0.077	0.079	0.1	0.11
Bromide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium, Total	mg/l			43.1	42.3	85.6	84	46.7	45	53.8	52.3	53.1	51.3	150	148
Carbon Dioxide	mg/l			140	136	160	151	152	146	176	170	171	169	331	318
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	mcq/l			3.7	3.7	7.9	7.8	3.9	3.7	4.3	4.2	4.2	4.1	12	12
Chloride	mg/l	500	S	6.7	6.5	7.9	7.7	5.8	5.7	6.3	6.1	6.5	6.4	76	77
Fluoride	mg/l	2	P	0.25	0.24	0.34	0.32	0.26	0.26	0.36	0.38	0.32	0.3	0.31	0.3
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			1.7	2.7	7.2	7.7	5.4	4.2	6	5.1	6.9	5.5	20	20
Nitrate (as NO3)	mg/l	45	P	ND	ND	14	13	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	3.1	2.9	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			2.8	2.9	4.4	4.5	2.5	2.6	2.7	2.7	2.8	2.8	4.4	4.6
Sodium, Total	mg/l			24	24	52	50	22	22	20	19	21	21	48	46
Sulfate	mg/l	500	S	22	22	110	110	17	17	16	16	17	16	150	150
Total Dissolved Solid (TDS)	mg/l	1000	S	210	220	490	490	220	210	230	230	240	240	710	760
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	3.1	2.9	ND	ND	ND	ND	ND	ND	ND	ND
<b>General Physical Properties</b>															
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND	3	ND	10	10
Hardness (Total, as CaCO3)	mg/l			130	127	278	274	141	137	169	166	162	157	492	490
Lab pH	Units			7.64	7.96	7.95	7.75	8.15	8.09	8.03	8	8.04	7.99	7.59	7.61
Langelier Index - 25 degree	None			0.06	0.367	0.67	0.438	0.654	0.556	0.663	0.599	0.642	0.577	0.814	0.796
Odor	TON	3	S	ND	ND	ND	ND	4	ND	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	350	360	770	800	360	380	400	410	390	400	1100	1100
Turbidity	NTU	5	S	0.25	ND	1	ND	1.3	0.6	0.3	0.1	0.3	0.2	1.9	2.1
<b>Metals</b>															
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	2.2	2.4	2	2	3.1	3.1	4.6	4.4	17	17	3.9	4
Barium, Total	ug/l	1000	P	100	110	120	130	110	120	160	170	170	180	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	0.32	0.35	0.69	0.78	0.2	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.24	0.28	0.77	0.65	0.091	ND	0.067	ND	0.081	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	0.59	0.76	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	ND	ND	ND	ND	ND	ND	0.038	0.045	0.074	0.083	<b>0.35</b>	<b>0.4</b>
Lead, Total	ug/l	15	P	ND	ND	0.21	ND	ND	ND	0.27	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			5.39	5.3	15.6	15.7	5.99	5.87	8.51	8.48	7.18	7.07	28.8	29.4
Manganese, Total	ug/l	50	S	5.4	5.6	1.3	1.3	38	42	<b>96</b>	<b>110</b>	<b>110</b>	<b>120</b>	<b>260</b>	<b>310</b>
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
<b>Volatile Organic Compounds</b>															
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	0.91	ND	0.92	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Tert Butyl Ether	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ug/l	1200	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	P	ND	0.8	ND	ND	ND	ND	1.2	ND	0.86	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
<b>Others</b>															
1,4-Dioxane	ug/l	1	N	ND	ND	<b>3</b>	<b>2.6</b>	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	0.55	0.78	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	0.43	0.38	ND	ND	ND	ND	ND	ND	0.86	0.94

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

**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Cerritos #3													
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Zone 7	
				4/25/2023	8/22/2023	4/25/2023	8/22/2023	4/25/2023	8/22/2023	4/25/2023	8/22/2023	4/25/2023	8/22/2023	4/25/2023	8/22/2023	4/25/2023	8/22/2023
<b>General Minerals</b>																	
Alkalinity	mg/l			240	220	120	170	150	140	230	220	160	170	240	220	190	170
Anion Sum	meq/l			7.5	7.1	3	6.1	5.8	5.6	6.4	7	4.7	5	7.4	7.1	6	5.5
Bicarbonate as HCO3	mg/l			280	250	150	200	170	150	260	250	200	200	280	240	230	200
Boron	mg/l	1	N	0.25	0.26	0.12	0.2	0.19	0.11	0.1	0.26	0.18	0.15	0.25	0.26	0.08	0.086
Bromide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium, Total	mg/l			11.6	11.6	23.4	35.5	12.5	13.8	16.1	12.8	12.5	10.4	12.7	12.2	55.9	55.8
Carbon Dioxide	mg/l			213	196	110	151	133	124	200	190	143	147	212	195	168	150
Carbonate as CO3	mg/l			15	ND	ND	ND	16	ND	12	ND	ND	ND	14	25	ND	ND
Cation Sum	meq/l			6.5	6.5	2.8	5.9	5.6	5.2	4.1	6.8	5.6	4.8	6.5	6.7	5.5	5.5
Chloride	mg/l	500	S	59	60	14	73	30	30	39	60	20	29	59	60	39	38
Fluoride	mg/l	2	P	0.23	0.23	0.14	0.23	0.56	0.55	0.33	0.23	0.23	0.23	0.23	0.22	0.3	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			89	130	7.5	23	37	55	54	130	39	75	81	130	28	46
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			1.5	1.5	7.7	13	2	1.7	3.5	1.9	2.1	2.3	1.7	1.7	3.3	3.4
Sodium, Total	mg/l			130	130	26	74	110	100	68	140	110	93	130	130	46	46
Sulfate	mg/l	500	S	43	44	7.2	32	90	91	34	44	42	41	44	44	55	55
Total Dissolved Solid (TDS)	mg/l	1000	S	410	420	170	360	330	340	390	440	250	310	400	410	320	320
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>General Physical Properties</b>																	
Apparent Color	ACU	15	S	10	10	75	100	5	5	10	10	5	10	10	10	ND	ND
Hardness (Total, as CaCO3)	mg/l			39.2	39	73	115	40.8	37.7	54	42.7	40.9	34.9	42.1	40.8	173	173
Lab pH	Units			8.46	8.38	7.89	7.97	8.53	8.54	8.42	8.41	8.23	8.33	8.44	8.42	8.04	7.96
Langelier Index - 25 degree	None			0.453	0.334	-0.038	0.314	0.372	0.392	0.542	0.402	0.125	0.153	0.475	0.398	0.64	0.511
Odor	TON	3	S	ND	ND	4	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	730	680	300	600	580	540	610	680	440	480	730	680	580	530
Turbidity	NTU	5	S	0.1	0.1	9.7	1.4	0.2	0.15	120	27	5.8	12	0.95	1.2	1.1	0.7
<b>Metals</b>																	
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	410	300	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	1.5	2	11	11	14	1.8	2.3	11	3.6	2	19	17
Barium, Total	ug/l	1000	P	9.4	8.9	15	31	24	23	30	19	16	19	15	14	43	46
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	0.54	0.23	ND	ND	ND	0.51	0.3	ND	0.22	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.22	0.11	0.095	ND	0.15	0.05	0.16	0.088	0.42	0.031	0.19	ND	0.066	0.022
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	ND	ND	0.072	0.095	0.092	ND	ND	0.27	0.11	ND	ND	ND	ND	ND
Lead, Total	ug/l	15	P	0.31	ND	ND	ND	ND	ND	0.21	0.37	0.29	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			2.46	2.46	3.51	6.4	2.36	0.785	3.33	2.6	2.37	2.16	2.55	2.52	8.15	8.25
Manganese, Total	ug/l	50	S	3.6	3.6	41	75	6.9	6.5	74	31	25	45	21	17	97	100
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	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
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	44	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>Volatile Organic Compounds</b>																	
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	0.5	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
<b>Others</b>																	
1,4-Dioxane	ug/l	1	N	ND	ND	ND	0.11	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	0.057	0.061	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			1	1.1	6.4	5	0.56	0.58	0.93	0.91	0.62	0.77	0.95	1.1	0.38	0.37

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

**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Commerce #1					
				Zone 1 4/20/2023	Zone 2 4/20/2023	Zone 3 4/20/2023	Zone 4 4/20/2023	Zone 5 4/20/2023	Zone 6 4/20/2023
<b>General Minerals</b>									
Alkalinity	mg/l			520	330	260	200	190	240
Anion Sum	meq/l			270	11	8.6	8.6	8.5	10
Bicarbonate as HCO <sub>3</sub>	mg/l			640	410	320	250	230	300
Boron	mg/l	1	N	<b>6.9</b>	0.7	0.23	0.24	0.16	0.13
Bromide	ug/l			50	0.99	0.52	ND	ND	ND
Calcium, Total	mg/l			175	42.7	55.1	42.6	63.6	87.4
Carbon Dioxide	mg/l			481	296	233	183	174	221
Carbonate as CO <sub>3</sub>	mg/l			ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			210	10	7.6	7.7	7.9	9
Chloride	mg/l	500	S	<b>9100</b>	160	100	84	97	100
Fluoride	mg/l	2	P	ND	0.36	0.3	0.44	0.28	0.38
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Iodide	ug/l			8700	270	150	59	27	ND
Nitrate (as NO <sub>3</sub> )	mg/l	45	P	ND	ND	ND	ND	23	42
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	5.1	9.4
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			81	6.4	3.7	3.8	2.6	2.4
Sodium, Total	mg/l			4300	140	76	94	73	54
Sulfate	mg/l	500	S	ND	3	22	100	73	86
Total Dissolved Solid (TDS)	mg/l	1000	S	<b>15000</b>	610	440	480	490	560
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	5.1	9.4
<b>General Physical Properties</b>									
Apparent Color	ACU	15	S	<b>70</b>	<b>35</b>	5	3	3	ND
Hardness (Total, as CaCO <sub>3</sub> )	mg/l			1050	187	213	179	232	332
Lab pH	Units			7.71	8.06	8.06	7.94	7.82	7.75
Langelier Index - 25 degree	None			0.768	0.718	0.76	0.405	0.435	0.59
Odor	TON	3	S	4	4	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	<b>25000</b>	1200	860	860	880	1000
Turbidity	NTU	5	S	<b>20</b>	0.4	0.25	0.35	0.4	0.5
<b>Metals</b>									
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	3.9	ND	ND	ND	0.79	0.49
Barium, Total	ug/l	1000	P	680	66	82	220	62	85
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	0.27	0.25	ND	ND	6.4	11
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	0.39	0.099	ND	6.1	11
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	<b>1.1</b>	ND	ND	0.083	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			148	19.5	18.4	17.6	17.8	27.7
Manganese, Total	ug/l	50	S	<b>120</b>	7.6	44	<b>61</b>	22	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	0.84	0.87
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
<b>Volatile Organic Compounds</b>									
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	1.5	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	<b>0.56</b>	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	2.5	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	ug/l	80	P	ND	ND	ND	ND	ND	0.81
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	<b>6.6</b>	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
<b>Others</b>									
1,4-Dioxane	ug/l	1	N	ND	ND	ND	<b>6.9</b>	<b>2.3</b>	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	2.7	4.5
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			47	3.9	1.1	0.72	0.44	0.34

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

**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Compton #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				3/30/2023	9/26/2023	3/30/2023	9/26/2023	3/30/2023	9/26/2023	3/30/2023	9/26/2023
<b>General Minerals</b>											
Alkalinity	mg/l			140	120	160	140	180	160	190	170
Anion Sum	meq/l			4.7	4.4	5.2	4.8	5.6	5.2	6.1	5.7
Bicarbonate as HCO3	mg/l			160	150	200	170	210	190	230	210
Boron	mg/l	1	N	0.15	0.16	0.1	0.1	0.11	0.12	0.093	0.098
Bromide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Calcium, Total	mg/l			21.7	22.1	36.9	37.4	48.3	48.7	60.2	61.9
Carbon Dioxide	mg/l			121	108	144	127	157	141	172	154
Carbonate as CO3	mg/l			5.9	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			4	4	4.5	4.4	5	4.9	5.4	5.5
Chloride	mg/l	500	S	22	22	24	24	27	26	24	23
Fluoride	mg/l	2	P	0.26	0.26	0.32	0.31	0.26	0.26	0.24	0.24
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			26	34	28	37	38	47	29	35
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			1.7	1.5	1.8	1.7	2.7	2.6	2.6	2.5
Sodium, Total	mg/l			64	63	53	52	41	40	42	42
Sulfate	mg/l	500	S	67	66	58	58	62	62	76	75
Total Dissolved Solid (TDS)	mg/l	1000	S	260	280	280	280	300	310	330	330
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
<b>General Physical Properties</b>											
Apparent Color	ACU	15	S	12	15	4	10	ND	5	ND	ND
Hardness (Total, as CaCO3)	mg/l			61.4	62.4	105	106	155	156	175	180
Lab pH	Units			8.19	8.3	8.25	8.25	8.13	8.1	8.03	7.98
Langelier Index - 25 degree	None			0.264	0.308	0.606	0.554	0.648	0.568	0.659	0.573
Odor	TON	3	S	ND	ND	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	460	430	480	460	520	500	570	540
Turbidity	NTU	5	S	0.3	0.15	0.25	ND	0.4	0.5	0.4	0.35
<b>Metals</b>											
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	<b>16</b>	<b>16</b>
Barium, Total	ug/l	1000	P	7.8	7.4	12	11	67	65	160	170
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	0.071	0.044	0.025	0.31	0.071	0.024	ND	ND
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	ND	0.064	0.07
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			1.72	1.74	3.07	3.09	8.41	8.45	6.13	6.27
Manganese, Total	ug/l	50	S	8.3	8.2	17	17	<b>51</b>	<b>51</b>	<b>80</b>	<b>79</b>
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
<b>Volatile Organic Compounds</b>											
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	0.7
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
<b>Others</b>											
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			0.99	1.2	0.74	0.87	0.49	0.69	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 (--) Not Analyzed



**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Compton #2					
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
				4/21/2023	4/21/2023	4/21/2023	4/21/2023	4/21/2023	4/21/2023
<b>General Minerals</b>									
Alkalinity	mg/l			510	300	170	190	200	200
Anion Sum	meq/l			11	6.4	5.3	6.8	6.8	8.4
Bicarbonate as HCO3	mg/l			610	360	210	240	240	240
Boron	mg/l	1	N	0.66	0.18	0.1	0.12	0.12	0.92
Bromide	ug/l			ND	ND	ND	ND	ND	ND
Calcium, Total	mg/l			11.5	25.7	42	65.8	63.6	110
Carbon Dioxide	mg/l			446	264	153	174	178	179
Carbonate as CO3	mg/l			5.2	ND	ND	ND	ND	ND
Cation Sum	meq/l			9.1	5.7	4.6	6	6.1	7.5
Chloride	mg/l	500	S	16	15	22	37	35	70
Fluoride	mg/l	2	P	0.36	0.24	0.21	0.22	0.29	0.36
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Iodide	ug/l			ND	ND	ND	ND	25	1.2
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	5.8
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	1.3
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			3.3	4.5	2.5	2.6	3.8	9.7
Sodium, Total	mg/l			190	89	45	39	40	1300
Sulfate	mg/l	500	S	ND	ND	58	90	86	110
Total Dissolved Solid (TDS)	mg/l	1000	S	570	330	290	380	370	460
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	1.3
<b>General Physical Properties</b>									
Apparent Color	ACU	15	S	<b>150</b>	<b>20</b>	5	3	3	ND
Hardness (Total, as CaCO3)	mg/l			37.1	84.4	130	211	214	845
Lab pH	Units			8.31	8.18	8.16	8.06	8.09	7.78
Langelier Index - 25 degree	None			0.594	0.638	0.596	0.715	0.755	0.662
Odor	TON	3	S	4	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	970	610	500	630	630	790
Turbidity	NTU	5	S	1.8	0.4	0.1	0.2	2.8	0.75
<b>Metals</b>									
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	1.1	0.51	ND	0.81	1.2	2.5
Barium, Total	ug/l	1000	P	13	16	30	37	93	30
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	0.23	0.29	ND	ND	ND	4
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.37	0.09	0.042	ND	0.031	0.55
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.045	0.048	ND	0.034	ND	<b>0.61</b>
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			2.05	4.89	6.06	11.3	13.3	139
Manganese, Total	ug/l	50	S	12	33	27	49	<b>110</b>	<b>90</b>
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	ND	2.8
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	1.2
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
<b>Volatile Organic Compounds</b>									
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
<b>Others</b>									
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	0.73
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			12	2.6	0.7	0.39	ND	0.38

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



**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Downey #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/11/2023	8/16/2023	4/11/2023	8/16/2023	4/11/2023	8/16/2023	4/11/2023	8/16/2023	4/11/2023	8/16/2023	4/11/2023	8/16/2023
<b>General Minerals</b>															
Alkalinity	mg/l			170	150	170	140	190	150	200	180	240	210	450	410
Anion Sum	mcq/l			3.9	3.6	6.5	6	8.6	7.9	9.4	9.1	9.1	8.1	20	18
Bicarbonate as HCO3	mg/l			200	180	200	170	240	180	250	220	300	260	550	490
Boron	mg/l	1	N	0.059	0.061	0.064	0.065	0.11	0.12	0.19	0.19	0.094	0.093	0.25	0.25
Bromide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium, Total	mg/l			38.9	39.1	74.4	73.5	92.6	94.1	89.1	90	103	94.3	198	187
Carbon Dioxide	mg/l			148	133	150	122	176	134	190	167	222	193	433	385
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	mcq/l			3.5	3.5	5.8	5.7	7.7	7.7	8.3	8.4	8.1	7.4	18	17
Chloride	mg/l	500	S	5.7	5.8	40	41	75	78	84	88	58	52	140	140
Fluoride	mg/l	2	P	0.29	0.29	0.26	0.26	0.3	0.31	0.36	0.35	0.35	0.37	0.29	0.28
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	4.5	5.1	7.2	8.7	4.5	5.5
Nitrate (as NO3)	mg/l	45	P	ND	ND	10	10	17	17	8.9	9.2	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	2.3	2.3	3.7	3.8	2	2.1	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			2.9	2.9	3.6	3.6	3.9	3.9	4.7	4.6	4.2	4	7.7	7.2
Sodium, Total	mg/l			23	23	24	24	36	36	53	54	28	26	100	98
Sulfate	mg/l	500	S	19	20	92	95	120	120	130	140	120	110	310	310
Total Dissolved Solid (TDS)	mg/l	1000	S	580	220	360	350	490	490	530	540	500	490	<b>1100</b>	<b>1100</b>
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	2.3	2.3	3.7	3.8	2	2.1	ND	ND	ND	ND
<b>General Physical Properties</b>															
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3
Hardness (Total, as CaCO3)	mg/l			119	120	233	230	299	304	295	298	336	308	656	620
Lab pH	Units			7.93	7.93	7.84	7.94	7.74	7.83	7.57	7.6	7.72	7.79	7.41	7.45
Langelier Index - 25 degree	None			0.265	0.303	0.505	0.518	0.518	0.513	0.346	0.332	0.644	0.62	0.797	0.772
Odor	TON	3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	380	350	640	600	880	800	950	870	880	730	<b>2000</b>	<b>1800</b>
Turbidity	NTU	5	S	0.1	ND	0.1	0.3	ND	0.2	0.1	0.2	0.6	<b>6</b>	0.1	2.5
<b>Metals</b>															
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	2.8	2.9	2.2	2.3	2.7	2.8	1.8	1.9	4.3	4	2.5	2.5
Barium, Total	ug/l	1000	P	96	95	160	160	120	120	81	81	250	220	80	75
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	3.9	4.2	2	2.1	1.2	1.3	0.37	0.36	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	3.9	4.2	1.9	2	1.2	1.3	0.35	0.4	ND	0.09	ND	ND
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	0.57	ND	ND
Magnesium, Total	mg/l			5.33	5.38	11.5	11.4	16.4	16.7	17.7	17.9	19.2	17.5	39.4	37
Manganese, Total	ug/l	50	S	ND	ND	ND	ND	ND	ND	1.2	1.7	<b>130</b>	<b>120</b>	<b>180</b>	<b>170</b>
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	0.54	0.57	0.95	0.96	0.68	0.71	0.4	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
<b>Volatile Organic Compounds</b>															
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	0.57	ND	0.56	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
<b>Others</b>															
1,4-Dioxane	ug/l	1	N	ND	ND	<b>4.7</b>	<b>4.3</b>	<b>7.8</b>	<b>6</b>	<b>2.4</b>	<b>1.9</b>	<b>1.8</b>	0.99	<b>1.1</b>	0.77
Perchlorate	ug/l	6	P	ND	ND	2.2	1.9	1.4	1.2	0.31	0.26	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	0.38	0.49	0.47	0.68	0.39	0.36	0.97	0.88

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

**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Huntington Park #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				4/27/2023	7/25/2023	4/27/2023	7/25/2023	4/27/2023	7/25/2023	4/27/2023	7/25/2023
<b>General Minerals</b>											
Alkalinity	mg/l			190	170	200	180	270	250	390	360
Anion Sum	meq/l			6.6	6.2	7	6.6	12	12	14	14
Bicarbonate as HCO3	mg/l			230	210	240	220	330	300	480	430
Boron	mg/l	1	N	0.14	0.14	0.15	0.15	0.21	0.21	0.2	0.2
Bromide	ug/l			ND	ND	ND	ND	ND	ND	2.1	2.1
Calcium, Total	mg/l			63.9	61.1	67.1	65.4	130	124	153	147
Carbon Dioxide	mg/l			178	160	181	164	246	226	366	333
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			6.2	5.9	6.5	6.4	12	11	14	13
Chloride	mg/l	500	S	25	25	31	31	100	100	89	88
Fluoride	mg/l	2	P	0.44	0.44	0.38	0.38	0.3	0.31	0.3	0.3
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			44	51	ND	ND	42	47	11	11
Nitrate (as NO3)	mg/l	45	P	ND	ND	2.8	2.8	4.3	4.6	28	29
Nitrate as Nitrogen	mg/l	10	P	ND	ND	0.62	0.64	0.97	1	6.4	6.6
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			3.4	3.2	3.6	3.4	4.7	4.5	5.6	5.4
Sodium, Total	mg/l			38	37	40	40	59	57	62	61
Sulfate	mg/l	500	S	97	97	98	99	180	180	170	170
Total Dissolved Solid (TDS)	mg/l	1000	S	370	390	370	410	730	780	800	820
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	0.62	0.64	0.97	1	6.4	6.6
<b>General Physical Properties</b>											
Apparent Color	ACU	15	S	5	10	ND	ND	ND	ND	20	ND
Hardness (Total, as CaCO3)	mg/l			221	212	232	227	448	429	542	524
Lab pH	Units			7.58	7.68	7.89	7.91	7.83	7.75	7.6	7.54
Langelier Index - 25 degree	None			0.225	0.252	0.578	0.532	0.864	0.722	0.853	0.738
Odor	TON	3	S	ND	ND	ND	ND	4	4	ND	ND
Specific Conductance	umho/cm	1600	S	600	590	630	620	1100	1100	1300	1300
Turbidity	NTU	5	S	1.1	1	0.1	0.15	0.15	0.1	0.2	ND
<b>Metals</b>											
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	0.82	0.82	0.7	0.69	0.51	0.46	0.59	0.56
Barium, Total	ug/l	1000	P	66	62	84	80	100	92	95	88
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	0.93	1	ND	ND	7.5	8.1
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	ND	0.89	0.87	0.058	0.067	6.8	8.2
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	1.8	0.56	2.4
Iron, Total	mg/l	0.3	S	0.29	0.29	ND	ND	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			14.9	14.4	15.8	15.6	29.9	28.9	38.8	37.9
Manganese, Total	ug/l	50	S	47	45	ND	ND	8.1	7.6	8.2	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	2	2.1	ND	ND	3.6	3.7
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
<b>Volatile Organic Compounds</b>											
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	0.92	ND	ND	ND	ND	1	ND	ND
1,2-Dichloroethane	ug/l	0.5	P	3.2	ND	ND	ND	ND	4.2	4.8	5.7
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	0.73	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	0.8	ND	ND	ND	ND	1.1	ND	ND
Di-Isopropyl Ether	ug/l			ND	ND	ND	ND	ND	ND	24	25
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	0.52	0.99	1.4
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	0.6
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	13	ND	ND	ND	ND	12	8	8
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
<b>Others</b>											
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	0.2	0.12	0.49	0.27
Perchlorate	ug/l	6	P	ND	ND	ND	0.16	0.68	0.73	5.5	5.2
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	0.91	0.98	ND	ND
Total Organic Carbon	mg/l			5.2	ND	ND	ND	ND	5.8	0.65	0.73

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

**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Lakewood #1						
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	
				4/24/2023	4/24/2023	4/24/2023	4/24/2023	4/24/2023	4/24/2023	
<b>General Minerals</b>										
Alkalinity	mg/l			100	160	170	190	190	220	
Anion Sum	meq/l			3.1	3.8	4	4.8	4.6	9.9	
Bicarbonate as HCO <sub>3</sub>	mg/l			110	200	210	230	240	270	
Boron	mg/l	1	N	0.055	0.056	0.068	0.07	0.087	0.082	
Bromide	ug/l			ND	ND	ND	ND	ND	0.87	
Calcium, Total	mg/l			10	37.2	38.8	47.6	48	120	
Carbon Dioxide	mg/l			87.5	141	151	164	172	199	
Carbonate as CO <sub>3</sub>	mg/l			13	ND	ND	ND	ND	ND	
Cation Sum	meq/l			2.7	3.5	3.7	4.3	4.2	8.9	
Chloride	mg/l	500	S	23	8.2	10	29	14	150	
Fluoride	mg/l	2	P	0.41	0.22	0.28	0.28	0.45	0.17	
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	
Iodide	ug/l			41	8.4	16	38	19	110	
Nitrate (as NO <sub>3</sub> )	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			0.99	2.1	2.4	4.2	2.7	4.7	
Sodium, Total	mg/l			49	28	29	32	23	43	
Sulfate	mg/l	500	S	19	19	15	15	15	58	
Total Dissolved Solid (TDS)	mg/l	1000	S	170	200	210	250	240	650	
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	
<b>General Physical Properties</b>										
Apparent Color	ACU	15	S	10	ND	ND	5	ND	5	
Hardness (Total, as CaCO <sub>3</sub> )	mg/l			25.1	109	116	142	155	348	
Lab pH	Units			8.58	8.31	8.27	8.19	8.08	7.91	
Langelier Index - 25 degree	None			0.201	0.696	0.697	0.741	0.638	0.833	
Odor	TON	3	S	4	ND	ND	ND	ND	ND	
Specific Conductance	umho/cm	1600	S	320	360	380	470	430	1000	
Turbidity	NTU	5	S	0.2	0.4	0.45	2.6	0.2	0.65	
<b>Metals</b>										
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	<b>14</b>	<b>13</b>	2.1	8.6	3.3	<b>26</b>	
Barium, Total	ug/l	1000	P	16	28	35	180	110	380	
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	0.32	0.13	0.085	0.14	0.032	ND	
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	
Iron, Total	mg/l	0.3	S	ND	ND	ND	0.046	0.095	0.17	
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	
Magnesium, Total	mg/l			ND	3.87	4.55	5.68	8.63	12.1	
Manganese, Total	ug/l	50	S	3.5	21	28	<b>79</b>	<b>57</b>	<b>310</b>	
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	
<b>Volatile Organic Compounds</b>										
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	
<b>Others</b>										
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	0.051	
Total Organic Carbon	mg/l			0.82	ND	0.38	0.52	ND	0.9	

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



**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	La Mirada #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				5/31/2023	9/18/2023	5/31/2023	9/18/2023	5/31/2023	9/18/2023	5/31/2023	9/18/2023	5/31/2023	9/18/2023
<b>General Minerals</b>													
Alkalinity	mg/l			160	150	150	140	180	180	200	200	180	180
Anion Sum	meq/l			6.1	6	4.4	4.4	5.6	5.6	8.4	8.3	12	10
Bicarbonate as HCO3	mg/l			190	180	170	170	230	220	240	240	220	220
Boron	mg/l	1	N	0.14	0.15	0.1	0.1	0.15	0.15	0.13	0.13	0.15	0.15
Bromide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	0.51	ND
Calcium, Total	mg/l			15.2	15.5	9.66	9.75	20.4	18.5	57.9	56.5	87.9	67.5
Carbon Dioxide	mg/l			139	130	128	124	164	157	183	177	166	165
Carbonate as CO3	mg/l			ND	ND	9.5	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			5.6	5.7	4	4.1	5.2	5.3	7.9	7.8	11	9.3
Chloride	mg/l	500	S	29	30	16	16	20	22	76	77	190	140
Fluoride	mg/l	2	P	0.72	0.74	0.51	0.53	0.69	0.72	0.46	0.48	0.36	0.41
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			31	33	8.9	9	25	29	47	49	5.1	13
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	1.4	1.4	52	32
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	0.33	0.32	12	7.3
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			2.3	2.3	1.7	1.7	2.5	2.4	3.3	3.2	3.9	3.4
Sodium, Total	mg/l			100	110	77	79	84	88	75	75	96	90
Sulfate	mg/l	500	S	100	100	49	50	63	69	100	100	100	100
Total Dissolved Solid (TDS)	mg/l	1000	S	360	360	250	260	310	330	460	470	720	590
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	0.33	0.32	12	7.3
<b>General Physical Properties</b>													
Apparent Color	ACU	15	S	ND	5	ND	5	5	10	ND	5	ND	ND
Hardness (Total, as CaCO3)	mg/l			51.9	52.9	29.6	29.9	75	68.8	229	225	348	267
Lab pH	Units			8.03	8.29	8.45	8.4	8.12	8.18	7.78	7.91	7.63	7.88
Langelier Index - 25 degree	None			-0.021	0.218	0.204	0.125	0.261	0.273	0.383	0.5	0.32	0.477
Odor	TON	3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	600	590	430	420	540	540	800	780	1200	980
Turbidity	NTU	5	S	ND	0.15	ND	0.1	ND	0.2	0.1	ND	0.1	0.2
<b>Metals</b>													
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	5.5	5.7	7.8	8.3	5.3	5.6	3.6	3.6	1.3	1.6
Barium, Total	ug/l	1000	P	54	57	26	27	46	44	58	58	88	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	ND	ND	ND	ND	ND	ND	ND	ND	0.37	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.079	ND	0.16	0.062	0.1	0.042	0.12	ND	0.34	0.15
Copper, Total	ug/l	1300	P	ND	0.72	ND	ND	0.59	ND	ND	0.59	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	mg/l			3.37	3.45	1.33	1.34	5.88	5.45	20.4	20.2	31.2	23.9
Manganese, Total	ug/l	50	S	11	12	2.8	2.8	17	17	15	14	31	26
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	5.5	5.4	7	5
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
<b>Volatile Organic Compounds</b>													
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	0.52	ND	0.65	ND	0.73	ND	0.54
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
<b>Others</b>													
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	3.5	2.5
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			ND	ND	ND	ND	0.49	0.44	ND	ND	0.34	0.33

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

**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Long Beach #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/2/2023	8/16/2023	5/2/2023	8/16/2023	5/2/2023	8/16/2023	5/2/2023	8/16/2023	5/2/2023	8/16/2023	5/2/2023	8/16/2023
<b>General Minerals</b>															
Alkalinity	mg/l			180	150	170	150	130	130	140	130	140	130	270	210
Anion Sum	mcq/l			4.1	3.6	3.8	3.5	3.3	3.2	4	3.8	11	11	18	17
Bicarbonate as HCO3	mg/l			180	190	170	160	130	150	170	160	170	160	330	250
Boron	mg/l	1	N	0.18	0.18	0.16	0.16	0.088	0.088	0.061	0.079	0.16	0.16	0.13	0.13
Bromide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.55	0.55
Calcium, Total	mg/l			4.29	3.43	2.58	2.51	5.35	5.25	22.7	19.3	48.5	46.5	186	186
Carbon Dioxide	mg/l			153	139	141	142	111	326	124	122	127	117	243	190
Carbonate as CO3	mg/l			29	22	30	25	22	26	ND	ND	ND	ND	ND	ND
Cation Sum	mcq/l			3.6	3.5	3.3	3.3	2.9	2.9	3.6	3.5	11	11	17	17
Chloride	mg/l	500	S	18	18	16	16	13	13	13	14	150	140	220	220
Fluoride	mg/l	2	P	0.52	0.51	0.52	0.51	0.59	0.59	0.34	0.37	0.28	0.28	0.22	0.23
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			28	43	20	26	7.1	9	4.9	1	10	14	51	85
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			0.8	0.77	0.53	0.62	0.59	0.7	1.3	1.4	3.3	3.3	4.8	5.1
Sodium, Total	mg/l			77	76	73	72	60	59	52	55	180	180	110	110
Sulfate	mg/l	500	S	0.72	ND	ND	ND	15	15	38	33	200	230	320	310
Total Dissolved Solid (TDS)	mg/l	1000	S	230	230	210	230	180	200	210	240	690	730	<b>1100</b>	<b>1100</b>
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>General Physical Properties</b>															
Apparent Color	ACU	15	S	<b>150</b>	<b>100</b>	<b>75</b>	<b>100</b>	<b>35</b>	<b>40</b>	<b>5</b>	<b>20</b>	<b>3</b>	<b>3</b>	<b>5</b>	<b>10</b>
Hardness (Total, as CaCO3)	mg/l			10.7	8.57	6.45	6.26	13.4	13.1	64.7	55	149	143	600	600
Lab pH	Units			8.89	7.78	8.98	7.58	8.83	6.07	8.25	7.75	8.07	7.72	7.91	7.66
Langelier Index - 25 degree	None			0.372	-0.907	0.222	-1.24	0.286	-2.48	0.36	-0.252	0.396	-0.01	1.05	0.689
Odor	TON	3	S	2	2	<b>4</b>	2	<b>4</b>	2	2	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	380	370	350	340	1200	300	390	370	1200	1200	<b>1900</b>	<b>1800</b>
Turbidity	NTU	5	S	0.2	0.15	0.3	0.1	0.35	0.3	0.75	0.45	0.65	3.7	0.35	0.7
<b>Metals</b>															
Aluminum, Total	ug/l	1000	P	28	28	27	26	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	0.41	0.44	0.76	0.8	7.5	7.1
Barium, Total	ug/l	1000	P	3.2	2.7	2	1.9	1.5	1.4	8.7	8	43	40	180	180
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	0.63	0.54	0.42	0.41	0.24	0.29	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.19	0.37	0.13	0.38	0.12	0.42	0.05	0.11	ND	0.052	ND	ND
Copper, Total	ug/l	1300	P	0.72	0.64	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	0.034	0.19	0.2	
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			ND	ND	ND	ND	ND	ND	1.95	1.65	6.78	6.55	32.7	32.8
Manganese, Total	ug/l	50	S	4.8	3.9	1.2	1.2	2.3	2.3	17	14	<b>52</b>	<b>50</b>	<b>420</b>	<b>420</b>
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
<b>Volatile Organic Compounds</b>															
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	1.8	ND	1.7	ND	ND	0.55	0.87	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
<b>Others</b>															
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.1	0.092
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	3.4	2.5	2.4	1.2	1.4	0.51	0.95	1.2	1.3	1.1	1.3

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

**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Long Beach #2					
				Zone 1 3/6/2023	Zone 2 3/6/2023	Zone 3 3/6/2023	Zone 4 3/6/2023	Zone 5 3/6/2023	Zone 6 3/6/2023
<b>General Minerals</b>									
Alkalinity	mg/l			320	210	170	160	310	330
Anion Sum	meq/l			7.1	4.8	4.1	7.3	16	20
Bicarbonate as HCO3	mg/l			370	250	200	200	370	400
Boron	mg/l	1	N	0.5	0.19	0.15	0.093	0.28	0.22
Bromide	ug/l			ND	ND	ND	ND	0.81	0.93
Calcium, Total	mg/l			6.67	14.2	12.4	58.1	152	207
Carbon Dioxide	mg/l			280	182	148	146	284	307
Carbonate as CO3	mg/l			13	ND	8.6	ND	ND	ND
Cation Sum	meq/l			6.3	4.1	3.5	6.3	14	17
Chloride	mg/l	500	S	24	22	25	70	120	160
Fluoride	mg/l	2	P	0.59	0.41	0.47	0.25	0.16	0.22
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Iodide	ug/l			ND	ND	30	40	31	43
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			3	1.7	1.3	3.3	5.4	5.9
Sodium, Total	mg/l			130	73	64	64	99	93
Sulfate	mg/l	500	S	ND	ND	ND	99	320	410
Total Dissolved Solid (TDS)	mg/l	1000	S	420	230	220	410	940	<b>1200</b>
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND
<b>General Physical Properties</b>									
Apparent Color	ACU	15	S	<b>220</b>	<b>40</b>	<b>30</b>	3	5	5
Hardness (Total, as CaCO3)	mg/l			22.3	41.6	35.5	171	480	650
Lab pH	Units			8.43	8.33	8.42	8.16	7.63	7.61
Langelier Index - 25 degree	None			0.306	0.405	0.347	0.678	0.761	0.87
Odor	TON	3	S	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	660	440	380	700	510	<b>1800</b>
Turbidity	NTU	5	S	0.35	0.15	0.2	0.35	0.9	1
<b>Metals</b>									
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	0.81	4.2	5.5
Barium, Total	ug/l	1000	P	5.8	9.7	5.7	41	57	76
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	0.6	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.082	0.074	0.11	ND	ND	ND
Copper, Total	ug/l	1300	P	1.5	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.079	ND	ND	ND	0.21	0.23
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			1.39	1.51	1.09	6.22	24.2	32.6
Manganese, Total	ug/l	50	S	32	15	7.6	29	<b>180</b>	<b>400</b>
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
<b>Volatile Organic Compounds</b>									
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	1.1	4.8
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	1.9
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	4.4	<b>11</b>
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	10	10
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	12	<b>94</b>	<b>190</b>
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	1.2
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
<b>Others</b>									
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	<b>5.3</b>	<b>13</b>
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			7.7	3.5	2.5	1.4	1.2	1.3

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



**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Long Beach #6											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/3/2023	8/14/2023	4/3/2023	8/14/2023	4/3/2023	8/14/2023	4/3/2023	8/14/2023	4/3/2023	8/14/2023	4/3/2023	8/14/2023
<b>General Minerals</b>															
Alkalinity	mg/l			580	530	350	290	180	170	130	140	130	120	140	140
Anion Sum	mcq/l			12	11	7.7	6.4	4.2	4	3.4	3.5	3.4	3.3	5.4	5.3
Bicarbonate as HCO3	mg/l			680	650	400	350	190	180	140	150	140	130	180	170
Boron	mg/l	1	N	1.1	1.1	0.58	0.53	0.24	0.24	0.09	0.12	0.081	0.081	0.05	0.049
Bromide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium, Total	mg/l			7.8	7.59	5.74	4.97	5.89	5.22	9.78	9.7	12.3	11.9	51.8	50
Carbon Dioxide	mg/l			515	468	315	251	156	145	117	121	112	107	128	123
Carbonate as CO3	mg/l			22	ND	24	ND	21	20	16	ND	12	ND	ND	ND
Cation Sum	mcq/l			11	11	6.8	6.2	3.7	3.6	3	3.2	3	3	4.8	4.7
Chloride	mg/l	500	S	21	21	21	21	19	19	14	14	17	17	71	71
Fluoride	mg/l	2	P	0.64	0.64	0.6	0.6	0.57	0.56	0.54	0.53	0.45	0.44	0.2	0.2
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			120	2.4	67	33	36	45	11	9.4	25	36	100	140
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			2.1	2.1	1.3	1.2	0.69	0.67	1	1.1	1.2	1.2	2.3	2.3
Sodium, Total	mg/l			230	230	150	140	77	76	57	60	53	52	40	40
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	ND	15	13	16	15	22	23
Total Dissolved Solid (TDS)	mg/l	1000	S	680	690	430	400	240	260	180	220	190	200	290	310
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>General Physical Properties</b>															
Apparent Color	ACU	15	S	250	300	200	200	120	150	40	40	20	20	ND	3
Hardness (Total, as CaCO3)	mg/l			25.7	25.2	17.9	15.5	14.7	13	26.9	27	33.9	32.9	149	145
Lab pH	Units			8.27	8.46	8.1	8.61	8.59	8.83	8.57	8.67	8.48	8.61	8.14	8.15
Langelier Index - 25 degree	None			0.421	-0.167	-0.051	0.581	0.211	0.596	0.291	0.488	0.298	0.441	0.582	0.504
Odor	TON	3	S	8	4	4	4	ND	2	ND	2	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	1100	1000	690	610	390	370	330	340	330	310	530	510
Turbidity	NTU	5	S	0.55	0.75	0.2	0.2	0.2	0.15	0.1	0.15	0.1	ND	0.1	ND
<b>Metals</b>															
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	2.5	0.59	0.52	ND	ND	ND	ND	ND	ND	2	2
Barium, Total	ug/l	1000	P	6.4	6.1	5.8	5.1	4.3	3.9	6.4	6.8	2.4	2.3	22	21
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	0.44	0.43	0.62	0.67	0.59	0.59	0.23	0.23	0.2	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.25	0.29	0.18	0.25	0.09	0.2	0.28	0.19	0.18	0.024	0.049	ND
Copper, Total	ug/l	1300	P	0.58	0.68	0.66	0.99	0.75	0.78	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.082	0.075	0.069	0.056	0.04	0.031	ND	ND	ND	ND	0.056	0.05
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			1.51	1.52	0.859	0.756	ND	ND	0.605	0.677	0.775	0.776	4.78	4.78
Manganese, Total	ug/l	50	S	13	13	10	9.7	4.1	3.7	14	18	4.6	4.9	54	53
Mercury	ug/l	2	P	ND	ND	ND	0.16	ND	ND	ND	0.051	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
<b>Volatile Organic Compounds</b>															
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	0.53	ND	ND	ND	ND	ND	ND	ND	0.67
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
<b>Others</b>															
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			18	16	9.2	9.6	3.8	4	1.6	0.79	1.2	1.2	0.69	1.9

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



**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Los Angeles #1				
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
				9/13/2023	9/13/2023	9/13/2023	9/13/2023	9/13/2023
<b>General Minerals</b>								
Alkalinity	mg/l			200	180	180	200	230
Anion Sum	meq/l			6.3	6.1	6.1	7.1	11
Bicarbonate as HCO3	mg/l			250	220	220	240	290
Boron	mg/l	1	N	0.15	0.14	0.16	0.15	0.2
Bromide	ug/l			ND	ND	ND	ND	ND
Calcium, Total	mg/l			55.3	59.3	61.3	70.2	107
Carbon Dioxide	mg/l			181	168	164	180	217
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND
Cation Sum	meq/l			5.7	5.8	6.1	6.8	10
Chloride	mg/l	500	S	25	24	25	32	78
Fluoride	mg/l	2	P	0.26	0.42	0.36	0.38	0.37
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND
Iodide	ug/l			26	21	14	23	8.7
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	4.2	<b>56</b>
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	0.95	<b>13</b>
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND
Potassium, Total	mg/l			4.3	3.5	3.6	4.2	4.9
Sodium, Total	mg/l			43	37	38	42	55
Sulfate	mg/l	500	S	76	86	87	100	140
Total Dissolved Solid (TDS)	mg/l	1000	S	350	350	360	400	640
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	0.95	<b>13</b>
<b>General Physical Properties</b>								
Apparent Color	ACU	15	S	3	3	ND	ND	5
Hardness (Total, as CaCO3)	mg/l			188	206	215	245	380
Lab pH	Units			7.98	7.63	7.72	7.75	7.58
Langelier Index - 25 degree	None			0.589	0.225	0.326	0.451	0.475
Odor	TON	3	S	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	560	570	590	660	980
Turbidity	NTU	5	S	0.2	0.75	ND	0.1	0.15
<b>Metals</b>								
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	0.64	1.7	0.59
Barium, Total	ug/l	1000	P	28	48	73	86	140
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	0.42	16	<b>230</b>
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.2	ND	0.45	<b>15</b>	<b>250</b>
Copper, Total	ug/l	1300	P	0.57	ND	0.89	0.65	0.55
Iron, Total	mg/l	0.3	S	ND	0.17	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			12.1	14.1	15	17	27.4
Manganese, Total	ug/l	50	S	18	49	6.6	18	ND
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	0.59	ND	3.6
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
<b>Volatile Organic Compounds</b>								
1,1-Dichloroethane	ug/l	5	P	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	0.52
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	<b>0.99</b>
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					
Tetrachloroethylene (PCE)	ug/l	5	P	0.74	ND	ND	0.55	2.7
Toluene	ug/l	150	P	ND	ND	ND	ND	ND
Total Trihalomethanes	ug/l	80	P	ND	ND	ND	ND	0.61
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	1.7	ND	ND	2.5	<b>40</b>
Vinyl chloride (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND
Xylenes (Total)	ug/l	1750	P	ND	ND	ND	ND	ND
<b>Others</b>								
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	0.2
Perchlorate	ug/l	6	P	ND	ND	ND	0.24	3.4
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.44	0.32	ND	0.36	0.47

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

**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Los Angeles #2							
				Zone 2		Zone 3		Zone 4		Zone 5	
				4/6/2023	8/29/2023	4/6/2023	8/29/2023	4/6/2023	8/29/2023	4/6/2023	8/29/2023
<b>General Minerals</b>											
Alkalinity	mg/l			330	300	340	290	370	330	330	290
Anion Sum	meq/l			20	19	20	18	20	19	24	24
Bicarbonate as HCO3	mg/l			410	370	410	350	450	400	400	350
Boron	mg/l	1	N	0.24	0.24	0.23	0.23	0.28	0.28	0.42	0.43
Bromide	ug/l			0.6	ND	0.54	ND	0.78	ND	0.76	0.76
Calcium, Total	mg/l			192	195	190	193	180	186	221	229
Carbon Dioxide	mg/l			312	289	321	278	350	325	312	291
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			18	18	18	18	18	18	22	23
Chloride	mg/l	500	S	260	260	260	250	230	230	160	150
Fluoride	mg/l	2	P	0.17	ND	0.28	0.27	0.3	0.3	0.27	0.28
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			97	130	86	110	98	130	61	80
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	11	7.5	7.7	7.9	8.3	10	11
Sodium, Total	mg/l			94	97	96	98	110	120	140	150
Sulfate	mg/l	500	S	290	290	260	260	300	300	<b>640</b>	<b>670</b>
Total Dissolved Solid (TDS)	mg/l	1000	S	<b>1200</b>	<b>1200</b>	<b>1100</b>	<b>1100</b>	<b>1100</b>	<b>1100</b>	<b>1500</b>	<b>1500</b>
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
<b>General Physical Properties</b>											
Apparent Color	ACU	15	S	4	5	ND	<b>25</b>	ND	<b>20</b>	ND	10
Hardness (Total, as CaCO3)	mg/l			682	699	665	681	628	656	791	827
Lab pH	Units			7.58	7.43	7.44	7.36	7.43	7.28	7.43	7.19
Langelier Index - 25 degree	None			0.807	0.622	0.687	0.545	0.691	0.505	0.687	0.406
Odor	TON	3	S	ND	ND	ND	ND	ND	ND	4	2
Specific Conductance	umho/cm	1600	S	<b>2200</b>	<b>2000</b>	<b>2100</b>	<b>2000</b>	<b>2100</b>	<b>1900</b>	<b>2500</b>	<b>2200</b>
Turbidity	NTU	5	S	1.2	2.3	<b>10</b>	<b>14</b>	<b>12</b>	<b>16</b>	<b>31</b>	<b>90</b>
<b>Metals</b>											
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	<b>24</b>	3.5
Arsenic, Total	ug/l	10	P	ND	ND	ND	ND	ND	ND	3.1	4.4
Barium, Total	ug/l	1000	P	81	82	110	110	86	89	49	53
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	0.59	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	0.95	ND
Iron, Total	mg/l	0.3	S	0.17	0.19	<b>1.1</b>	<b>1.1</b>	<b>1.2</b>	<b>1.2</b>	0.063	<b>0.42</b>
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			49.3	51.6	46.3	48.5	43.7	46.6	58	62.1
Manganese, Total	ug/l	50	S	<b>380</b>	<b>370</b>	<b>170</b>	<b>180</b>	<b>110</b>	<b>120</b>	<b>520</b>	<b>630</b>
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	2.4	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	320	220
<b>Volatile Organic Compounds</b>											
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	1.4	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	0.64	0.69
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	5	7.4	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
<b>Others</b>											
1,4-Dioxane	ug/l	1	N	ND	ND	0.099	0.094	<b>1.3</b>	<b>1.1</b>	0.48	0.47
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			0.57	0.7	0.68	0.63	0.72	0.83	1.3	1.1

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

**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Los Angeles #3											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/6/2023	8/24/2023	4/6/2023	8/24/2023	4/6/2023	8/24/2023	4/6/2023	8/24/2023	4/6/2023	8/24/2023	4/6/2023	8/24/2023
<b>General Minerals</b>															
Alkalinity	mg/l			260	240	190	180	200	190	210	190	220	200	260	240
Anion Sum	mcq/l			7	6.5	6.4	6.2	6.5	6.3	7.3	6.9	9.4	9	13	12
Bicarbonate as HCO3	mg/l			320	290	240	220	250	230	250	230	270	240	320	290
Boron	mg/l	1	N	0.33	0.34	0.14	0.14	0.14	0.14	0.15	0.15	0.18	0.18	0.2	0.2
Bromide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.54	0.52
Calcium, Total	mg/l			15.2	15.5	56.8	57.8	57.7	56.7	65.6	65.8	86.2	87	134	132
Carbon Dioxide	mg/l			232	211	173	161	182	180	188	171	199	183	234	218
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	mcq/l			5.7	5.9	5.6	5.7	5.6	5.6	6.3	6.4	8.1	8.3	12	12
Chloride	mg/l	500	S	41	41	34	35	24	24	45	45	62	61	120	120
Fluoride	mg/l	2	P	0.28	0.28	0.29	0.3	0.42	0.42	0.39	0.39	0.3	0.3	0.3	0.31
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			100	110	62	73	34	45	51	68	ND	ND	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	41	41	30	30
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	9.3	9.4	6.8	6.8
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			4.3	4.5	3.5	3.7	3.6	3.7	4.1	4.2	4.2	4.4	4.5	4.6
Sodium, Total	mg/l			100	100	37	38	37	37	41	41	48	50	58	59
Sulfate	mg/l	500	S	26	25	75	75	84	83	87	87	120	120	190	180
Total Dissolved Solid (TDS)	mg/l	1000	S	380	400	340	350	340	350	380	400	530	550	780	760
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	9.3	9.4	6.8	6.8
<b>General Physical Properties</b>															
Apparent Color	ACU	15	S	<b>18</b>	<b>20</b>	3	3	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			59	60.6	194	198	196	193	222	223	296	301	459	452
Lab pH	Units			8.26	8.25	8.07	8.01	7.88	7.5	7.9	7.82	7.85	7.69	7.81	7.73
Langelier Index - 25 degree	None			0.414	0.373	0.671	0.593	0.511	0.099	0.597	0.47	0.653	0.451	0.833	0.715
Odor	TON	3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	700	610	650	570	630	560	720	640	930	840	1300	1100
Turbidity	NTU	5	S	ND	0.2	0.15	0.25	0.1	0.1	0.15	0.2	0.45	0.45	0.2	0.25
<b>Metals</b>															
Aluminum, Total	ug/l	1000	P	ND	ND	ND	25	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	ND	ND	0.83	0.79	ND	ND	0.51	0.5	ND	ND
Barium, Total	ug/l	1000	P	9.5	8.3	20	19	45	42	72	69	130	120	130	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	1.9	1.9	5.3	5.3
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.082	0.095	0.087	ND	0.077	ND	0.021	ND	1.8	1.9	5.1	5.6
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.75
Iron, Total	mg/l	0.3	S	ND	ND	0.032	0.037	ND	ND	0.061	0.067	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			5.13	5.33	12.6	13.1	12.5	12.6	14.1	14.4	19.6	20.3	30	29.9
Manganese, Total	ug/l	50	S	23	22	77	<b>78</b>	42	44	41	42	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	1.6	1.4	9.6	9
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
<b>Volatile Organic Compounds</b>															
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	0.7	ND	ND	ND	0.62	ND	ND	ND	1.3
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	<b>7.8</b>	3.2
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	ug/l	80	P	ND	ND	ND	ND	ND	ND	ND	ND	0.77	0.76	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	5	3.1	1.2	0.94
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
<b>Others</b>															
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	ND	ND	0.17	0.17	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	1.4	1.3	0.98	0.82
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			1.7	1.6	0.32	0.32	ND	0.3	0.39	ND	0.38	0.39	0.38	0.47

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

**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Los Angeles #4						
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	
				4/19/2023	4/19/2023	4/19/2023	4/19/2023	4/19/2023	4/19/2023	
<b>General Minerals</b>										
Alkalinity	mg/l			1700	480	190	190	190	180	
Anion Sum	meq/l			35	9.8	6.1	6.2	6.1	7.1	
Bicarbonate as HCO3	mg/l			2100	580	230	240	230	210	
Boron	mg/l	1	N	6	0.53	0.13	0.13	0.14	0.15	
Bromide	ug/l			0.58	0.069	0.096	0.1	0.1	0.21	
Calcium, Total	mg/l			12.1	17.6	56.9	57.6	58.5	65.7	
Carbon Dioxide	mg/l			1510	425	166	174	167	158	
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	
Cation Sum	meq/l			31	8.5	5.6	5.7	5.6	6.4	
Chloride	mg/l	500	S	37	8.7	22	23	23	58	
Fluoride	mg/l	2	P	0.29	0.23	0.26	0.36	0.32	0.15	
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	
Iodide	ug/l			24	9.5	22	31	23	4.2	
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	11	
Nitrate as Nitrogen	mg/l	10	P	0.023	ND	ND	ND	ND	2.4	
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	
Potassium, Total	mg/l			19	12	3.3	3.9	3.8	3.6	
Sodium, Total	mg/l			670	150	40	39	38	49	
Sulfate	mg/l	500	S	ND	0.24	83	82	84	84	
Total Dissolved Solid (TDS)	mg/l	1000	S	<b>2000</b>	520	330	330	330	380	
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	2.4	
<b>General Physical Properties</b>										
Apparent Color	ACU	15	S	<b>1200</b>	<b>60</b>	ND	ND	ND	ND	
Hardness (Total, as CaCO3)	mg/l			55.8	74.1	188	195	194	210	
Lab pH	Units			8.24	8.18	8.11	7.96	8.07	7.95	
Langelier Index - 25 degree	None			0.903	0.633	0.715	0.57	0.687	0.581	
Odor	TON	3	S	4	4	1	1	1	1	
Specific Conductance	umho/cm	1600	S	<b>3100</b>	900	580	590	590	710	
Turbidity	NTU	5	S	0.25	<b>9.5</b>	0.2	0.15	0.3	0.3	
<b>Metals</b>										
Aluminum, Total	ug/l	1000	P	20	ND	ND	ND	ND	ND	
Antimony, Total	ug/l	6	P	0.11	ND	ND	0.12	ND	0.11	
Arsenic, Total	ug/l	10	P	2.1	6.4	ND	2	1.2	1.5	
Barium, Total	ug/l	1000	P	35	35	17	69	61	73	
Beryllium, Total	ug/l	4	P	0.091	ND	ND	ND	ND	ND	
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	
Chromium, Total	ug/l	50	P	2.5	0.29	ND	ND	ND	0.97	
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	0.023	0.06	0.017	0.024	0.87	
Copper, Total	ug/l	1300	P	0.99	0.29	ND	ND	ND	0.27	
Iron, Total	mg/l	0.3	S	<b>0.58</b>	0.13	ND	ND	0.06	ND	
Lead, Total	ug/l	15	P	0.086	ND	ND	ND	ND	ND	
Magnesium, Total	mg/l			6.2	7.33	11.2	12.5	11.8	11.2	
Manganese, Total	ug/l	50	S	15	46	39	48	<b>64</b>	<b>84</b>	
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	
Nickel, Total	ug/l	100	P	0.81	ND	ND	0.64	ND	ND	
Selenium, Total	ug/l	50	P	0.44	ND	ND	ND	ND	1.2	
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	1.8	ND	ND	ND	ND	ND	
<b>Volatile Organic Compounds</b>										
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	
<b>Others</b>										
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	0.025	ND	ND	ND	ND	
Total Organic Carbon	mg/l			92	5.7	0.53	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 (---) Not Analyzed

**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Los Angeles #5						
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	
				9/28/2023	9/12/2023	9/12/2023	9/12/2023	9/12/2023	9/12/2023	
<b>General Minerals</b>										
Alkalinity	mg/l			820	940	170	240	240	190	
Anion Sum	meq/l			120	30	5.5	11	8.8	7.3	
Bicarbonate as HCO3	mg/l			1000	1100	200	300	300	230	
Boron	mg/l	1	N	7.6	2.7	0.13	0.4	0.16	0.15	
Bromide	ug/l			33	3.4	ND	1.5	0.81	ND	
Calcium, Total	mg/l			41.2	20.5	52.2	106	89.7	73.6	
Carbon Dioxide	mg/l			745	833	147	221	218	173	
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	
Cation Sum	meq/l			100	27	5.3	11	8.7	7	
Chloride	mg/l	500	S	<b>3500</b>	410	23	210	130	36	
Fluoride	mg/l	2	P	ND	ND	0.22	0.2	0.26	0.33	
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	
Iodide	ug/l			11000	1400	38	630	310	58	
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			58	23	3.5	6.3	5.2	3.6	
Sodium, Total	mg/l			2200	570	42	69	53	45	
Sulfate	mg/l	500	S	ND	ND	74	2.2	16	120	
Total Dissolved Solid (TDS)	mg/l	1000	S	<b>6800</b>	<b>1800</b>	320	660	500	430	
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	
<b>General Physical Properties</b>										
Apparent Color	ACU	15	S	<b>200</b>	<b>300</b>	5	10	10	3	
Hardness (Total, as CaCO3)	mg/l			295	101	172	369	312	250	
Lab pH	Units			7.81	8.09	8.06	7.85	7.93	7.79	
Langelier Index - 25 degree	None			0.505	0.741	0.582	0.756	0.794	0.482	
Odor	TON	3	S	4	4	ND	ND	ND	ND	
Specific Conductance	umho/cm	1600	S	<b>11000</b>	<b>3000</b>	520	1100	870	670	
Turbidity	NTU	5	S	0.15	0.2	0.1	0.95	0.55	0.15	
<b>Metals</b>										
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	0.64	ND	ND	0.77	0.68	0.49	
Barium, Total	ug/l	1000	P	64	24	25	100	89	63	
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	0.46	1.3	ND	ND	ND	ND	
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	ND	0.15	ND	ND	0.14	
Copper, Total	ug/l	1300	P	ND	0.55	ND	ND	ND	ND	
Iron, Total	mg/l	0.3	S	<b>0.34</b>	0.22	ND	<b>0.37</b>	0.21	0.03	
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	
Magnesium, Total	mg/l			46.6	12.2	10	25.6	21.4	16	
Manganese, Total	ug/l	50	S	34	42	35	<b>140</b>	<b>170</b>	30	
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	
<b>Volatile Organic Compounds</b>										
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	
<b>Others</b>										
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	0.11	ND	ND	ND	ND	ND	
Total Organic Carbon	mg/l			39	27	0.8	1	0.45	0.51	

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

**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Los Angeles #6			
				Zone 1	Zone 2	Zone 3	Zone 4
				5/11/2023	5/11/2023	5/11/2023	5/11/2023
<b>General Minerals</b>							
Alkalinity	mg/l			310	230	280	260
Anion Sum	meq/l			15	8.6	15	11
Bicarbonate as HCO3	mg/l			380	280	340	320
Boron	mg/l	1	N	0.42	0.26	0.37	0.24
Bromide	ug/l			2.5	0.85	2.8	0.57
Calcium, Total	mg/l			10.7	42.1	71.6	102
Carbon Dioxide	mg/l			277	203	255	249
Carbonate as CO3	mg/l			ND	ND	ND	ND
Cation Sum	meq/l			13	7.8	14	10
Chloride	mg/l	500	S	300	120	330	110
Fluoride	mg/l	2	P	0.2	0.23	0.18	0.36
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND
Iodide	ug/l			570	270	260	94
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND
Potassium, Total	mg/l			17	8.2	12	5.7
Sodium, Total	mg/l			260	100	190	72
Sulfate	mg/l	500	S	0.64	27	ND	150
Total Dissolved Solid (TDS)	mg/l	1000	S	810	470	840	660
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND
<b>General Physical Properties</b>							
Apparent Color	ACU	15	S	<b>25</b>	5	10	3
Hardness (Total, as CaCO3)	mg/l			52	151	250	357
Lab pH	Units			8.13	8.02	7.87	7.46
Langelier Index - 25 degree	None			0.126	0.543	0.643	0.384
Odor	TON	3	S	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	1400	830	1600	1100
Turbidity	NTU	5	S	0.35	0.2	0.2	0.4
<b>Metals</b>							
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	ND	ND	ND	1.3
Barium, Total	ug/l	1000	P	30	38	85	75
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	0.26	ND	ND	0.21
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.025	0.042	0.076	0.028
Copper, Total	ug/l	1300	P	ND	ND	ND	2
Iron, Total	mg/l	0.3	S	0.05	ND	0.077	0.1
Lead, Total	ug/l	15	P	ND	ND	ND	ND
Magnesium, Total	mg/l			6.13	11.1	17.3	24.9
Manganese, Total	ug/l	50	S	28	48	<b>76</b>	<b>110</b>
Mercury	ug/l	2	P	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND
Zinc, Total	ug/l	5000	S	ND	ND	ND	ND
<b>Volatile Organic Compounds</b>							
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	<b>10</b>
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	<b>8.1</b>
Vinyl chloride (VC)	ug/l	0.5	P	ND	ND	ND	ND
Xylenes (Total)	ug/l	1750	P	ND	ND	ND	ND
<b>Others</b>							
1,4-Dioxane	ug/l	1	N	ND	ND	ND	0.15
Perchlorate	ug/l	6	P	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	ND	ND	ND	ND
Total Organic Carbon	mg/l			1.8	0.85	1.9	1.8

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

**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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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	
				5/24/2023	9/27/2023	5/24/2023	9/27/2023	5/25/2023	9/28/2023	5/25/2023	9/28/2023	5/25/2023	9/28/2023	5/25/2023	9/28/2023	5/25/2023	9/28/2023	5/24/2023	9/27/2023	5/25/2023	9/28/2023
<b>General Minerals</b>																					
Alkalinity	mg/l			610	560	150	130	130	120	150	140	170	160	180	160	200	180	200	180	310	300
Anion Sum	meq/l			13	12	4.6	4.3	5	4.6	5.5	5.2	5.1	4.8	5.9	5.5	6.2	5.9	8.2	7.7	18	18
Bicarbonate as HCO3	mg/l			710	670	160	140	160	140	190	170	210	200	200	240	240	220	250	220	380	360
Boron	mg/l	1	N	1.4	1.4	0.18	0.19	0.1	0.11	0.088	0.092	0.089	0.093	0.13	0.13	0.12	0.12	0.14	0.14	0.18	0.18
Bromide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.6	0.58
Calcium, Total	mg/l			10.1	9.87	5.69	5.74	39.8	39.7	46.6	45.7	44.6	44.7	53.6	53.4	57.9	57.5	81.6	82.5	207	205
Carbon Dioxide	mg/l			542	494	127	115	119	104	135	124	155	142	162	147	173	164	181	166	283	281
Carbonate as CO3	mg/l			24	ND	21	23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			11	11	4	4	4.4	4.4	4.9	4.8	4.6	4.6	5.3	5.2	5.6	5.5	7.4	7.5	17	17
Chloride	mg/l	500	S	12	12	23	23	23	23	23	23	21	21	23	22	23	23	57	56	150	150
Fluoride	mg/l	2	P	0.48	0.46	0.37	0.37	0.23	0.26	0.23	0.24	0.24	0.32	0.32	0.29	0.29	0.33	0.35	0.26	0.26	0.26
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			2	25	29	43	24	29	26	32	28	20	27	22	24	36	ND	3.7	170	200
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.5	7.3	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.7	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			3.2	3.1	0.75	0.83	1.4	1.4	2	1.9	2.2	2.2	3.6	3.6	3.1	3	3.6	3.6	5.6	5.5
Sodium, Total	mg/l			240	230	84	84	43	43	48	46	48	48	37	36	38	38	41	41	73	72
Sulfate	mg/l	500	S	ND	ND	46	45	81	79	85	83	49	48	76	74	77	74	120	110	370	360
Total Dissolved Solid (TDS)	mg/l	1000	S	680	680	260	280	270	280	300	290	270	280	320	310	330	330	460	460	1100	1100
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.7	1.6	ND	ND
<b>General Physical Properties</b>																					
Apparent Color	ACU	15	S	200	250	50	50	3	ND	3	ND	ND	ND	ND	3	ND	ND	ND	ND	ND	10
Hardness (Total, as CaCO3)	mg/l			33.7	33.1	14.2	14.3	122	122	140	138	122	123	179	180	191	189	276	280	704	696
Lab pH	Units			8.13	8.29	8.87	8.76	8.09	8.21	8.19	8.16	8.21	8.17	8.16	8.05	8.15	8.02	7.88	7.76	7.85	7.44
Langelier Index - 25 degree	None			0.416	0.53	0.386	0.213	0.392	0.473	0.613	0.548	0.678	0.609	0.718	0.558	0.784	0.606	0.632	0.471	1.09	0.666
Odor	TON	3	S	8	4	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	1100	1000	440	410	500	440	470	470	530	440	530	500	560	520	750	710	1600	1800
Turbidity	NTU	5	S	0.75	1.3	0.2	0.15	0.15	0.1	0.3	0.15	0.1	0.15	0.25	0.25	0.2	0.1	ND	0.2	2.9	2.8
<b>Metals</b>																					
Aluminum, Total	ug/l	1000	P	ND	ND	21	23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	26	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	240	230	0.91	0.75	ND	ND	0.41	0.49	4.8	4.9	0.76	0.73	1.2	1.2	1.7	1.7	7.8	8.2
Barium, Total	ug/l	1000	P	15	14	2.2	2.1	4.2	4.1	160	150	120	120	46	44	110	110	120	120	120	120
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	0.56	0.52	0.49	0.32	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.78	0.86	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.28	ND	0.18	0.036	0.032	ND	0.049	0.022	0.021	ND	0.043	ND	0.045	ND	0.66	0.67	ND	ND
Copper, Total	ug/l	1300	P	0.5	ND	0.7	0.57	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.071	0.064	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.041	0.034	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	mg/l			2.07	2.06	ND	ND	5.45	5.58	5.76	5.74	2.65	2.69	11.1	11.2	11.2	11	17.5	18	45.3	44.8
Manganese, Total	ug/l	50	S	12	12	3	3	14	15	31	31	25	25	60	61	81	80	1.2	1.8	250	260
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	1.1	1.1	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.2	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
<b>Volatile Organic Compounds</b>																					
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	0.55	ND	ND	ND	ND	ND	ND	ND	0.65	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																		



**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Montebello #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				5/25/2023	9/13/2023	5/25/2023	9/13/2023	5/25/2023	9/13/2023	5/25/2023	9/13/2023	5/25/2023	9/13/2023
<b>General Minerals</b>													
Alkalinity	mg/l			930	870	570	560	180	180	190	190	190	160
Anion Sum	meq/l			37	37	15	15	8.2	8.2	8.5	8.4	7.6	6.5
Bicarbonate as HCO3	mg/l			1100	1100	700	690	220	220	230	230	230	190
Boron	mg/l	1	N	<b>6.3</b>	<b>6.7</b>	<b>2.2</b>	<b>2.3</b>	0.14	0.13	0.12	0.11	0.2	0.19
Bromide	ug/l			4.2	3.9	0.8	0.73	ND	ND	ND	ND	ND	ND
Calcium, Total	mg/l			12.9	13.3	17.3	17.6	91.8	92.8	92.5	96	68.3	59.5
Carbon Dioxide	mg/l			822	775	510	500	165	164	171	167	173	148
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			34	33	14	14	7.8	7.8	8.2	8.1	7.1	6.3
Chloride	mg/l	500	S	<b>640</b>	<b>690</b>	120	120	62	63	67	68	62	50
Fluoride	mg/l	2	P	0.37	ND	0.26	0.28	0.15	0.16	0.19	0.19	0.32	0.34
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			1100	880	190	210	28	23	28	34	ND	5.6
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	15	12
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	3.5	2.7
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			12	12	6.9	7.1	4	3.9	4.1	4	3.5	3.5
Sodium, Total	mg/l			750	730	290	290	44	42	52	46	58	53
Sulfate	mg/l	500	S	ND	ND	ND	ND	130	130	140	140	88	81
Total Dissolved Solid (TDS)	mg/l	1000	S	<b>2200</b>	<b>2100</b>	880	850	480	480	500	500	420	390
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	3.5	2.7
<b>General Physical Properties</b>													
Apparent Color	ACU	15	S	<b>500</b>	<b>500</b>	<b>250</b>	<b>200</b>	ND	3	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			55.2	57.9	72.1	73.7	289	294	290	302	225	197
Lab pH	Units			8.19	8.21	8.15	8.16	7.99	8.01	7.92	7.89	7.59	7.6
Langelier Index - 25 degree	None			0.605	0.616	0.609	0.623	0.743	0.768	0.696	0.682	0.252	0.135
Odor	TON	3	S	<b>8</b>	<b>4</b>	<b>8</b>	<b>4</b>	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	<b>3900</b>	<b>3700</b>	1200	1400	780	770	810	790	720	630
Turbidity	NTU	5	S	0.4	0.4	0.1	0.25	0.75	0.55	0.5	0.25	0.35	0.15
<b>Metals</b>													
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	3.2	3.5	ND	ND	ND	ND	1.2	1	1.5	1.6
Barium, Total	ug/l	1000	P	39	37	25	24	45	43	95	88	56	50
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	1.7	1.8	0.93	0.78	ND	ND	ND	ND	ND	0.21
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	ND	0.07	0.056	0.02	ND	ND	ND	0.05	0.079
Copper, Total	ug/l	1300	P	0.55	0.6	0.63	0.59	ND	ND	ND	ND	ND	1.4
Iron, Total	mg/l	0.3	S	0.14	0.15	0.19	0.2	0.03	0.039	ND	0.032	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			5.57	5.96	6.98	7.26	14.7	15.1	14.4	15.2	13.1	11.7
Manganese, Total	ug/l	50	S	7.7	8.1	26	26	<b>84</b>	<b>88</b>	<b>55</b>	<b>56</b>	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	2.3	1.8
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
<b>Volatile Organic Compounds</b>													
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	1.2	ND	ND	ND	0.64	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
<b>Others</b>													
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	<b>7.9</b>	<b>7.6</b>	<b>9.4</b>	<b>8.8</b>	0.64	0.55
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	0.64	0.7	ND
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			25	27	6.9	18	0.72	0.53	0.52	0.8	0.42	0.37

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



**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Montebello #2									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				6/6/2023	9/26/2023	6/6/2023	9/26/2023	6/6/2023	9/26/2023	6/6/2023	9/26/2023	6/6/2023	9/26/2023
<b>General Minerals</b>													
Alkalinity	mg/l			1200	1100	200	190	220	210	180	170	140	140
Anion Sum	meq/l			36	35	7.2	7	7.5	7.3	7.6	7.5	5.2	5.2
Bicarbonate as HCO3	mg/l			1300	1300	250	230	250	200	220	210	170	170
Boron	mg/l	1	N	7.5	7.4	0.2	0.2	0.23	0.23	0.16	0.16	0.14	0.14
Bromide	ug/l			ND	ND	0.63	0.64	0.56	0.57	ND	ND	ND	ND
Calcium, Total	mg/l			10.6	10.5	50.9	51.9	45.7	39.9	73.7	73.7	42.8	40.6
Carbon Dioxide	mg/l			1020	965	183	172	190	177	162	157	128	128
Carbonate as CO3	mg/l			59	24	ND	ND	14	40	ND	ND	ND	ND
Cation Sum	meq/l			33	30	6.7	6.7	6.9	6.9	7.1	7.1	4.8	4.8
Chloride	mg/l	500	S	470	460	94	95	88	90	71	73	36	36
Fluoride	mg/l	2	P	ND	ND	0.32	0.32	0.3	0.3	0.41	0.4	0.39	0.39
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			45	300	150	170	110	130	48	55	2.3	6.5
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	6.3	6.1	14	13
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	1.4	1.4	3.1	3
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			27	20	7.3	7.2	9.4	14	3.5	3.4	3.6	3.8
Sodium, Total	mg/l			710	660	58	58	72	83	49	49	42	43
Sulfate	mg/l	500	S	ND	ND	22	24	31	30	90	92	55	57
Total Dissolved Solid (TDS)	mg/l	1000	S	<b>2000</b>	<b>2000</b>	380	390	400	410	440	440	290	300
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	1.4	1.4	3.2	3.1
<b>General Physical Properties</b>													
Apparent Color	ACU	15	S	<b>350</b>	<b>400</b>	5	3	5	10	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			57.2	55.3	197	201	176	146	244	246	145	139
Lab pH	Units			8.41	8.22	7.93	7.93	8.43	8.89	7.8	7.69	7.63	7.6
Langelier Index - 25 degree	None			0.864	0.633	0.496	0.48	0.984	1.36	0.467	0.332	-0.009	-0.065
Odor	TON	3	S	<b>8</b>	<b>4</b>	ND	ND	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	<b>3600</b>	<b>3500</b>	700	710	720	720	730	730	500	500
Turbidity	NTU	5	S	2.4	4.2	0.9	0.7	1	2.1	0.9	0.65	1	1.4
<b>Metals</b>													
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	38	ND	24	ND	ND
Antimony, Total	ug/l	6	P	0.92	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	0.6	0.57	ND	ND	0.68	0.98	1.9	1.8	2	2
Barium, Total	ug/l	1000	P	58	57	61	63	61	57	92	96	58	57
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	1.6	1.6	ND	ND	0.22	0.22	0.2	ND	ND	0.21
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.18	0.49	0.066	ND	0.069	0.023	0.18	0.12	0.099	0.078
Copper, Total	ug/l	1300	P	ND	0.61	0.93	ND	ND	ND	ND	ND	0.62	0.6
Iron, Total	mg/l	0.3	S	0.17	0.15	0.077	0.077	ND	ND	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	0.23	ND	ND	ND	ND
Magnesium, Total	mg/l			7.48	7.05	16.9	17.4	15.1	11.2	14.6	15	9.33	9.08
Manganese, Total	ug/l	50	S	43	41	<b>110</b>	<b>120</b>	<b>130</b>	<b>98</b>	21	26	72	<b>78</b>
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	2	ND	2.9	ND
Selenium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	0.45	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
<b>Volatile Organic Compounds</b>													
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	0.72	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
<b>Others</b>													
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	0.13	0.14	<b>1.8</b>	<b>1.9</b>	0.18	0.14
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	0.33	0.29
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			36	26	0.9	0.74	1.3	1.3	0.72	0.77	0.76	0.76

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

**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Norwalk #1				
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
				4/27/2023	4/27/2023	4/27/2023	4/27/2023	4/27/2023
<b>General Minerals</b>								
Alkalinity	mg/l			310	190	160	140	220
Anion Sum	mcq/l			8.4	5.6	6.3	3.7	9.2
Bicarbonate as HCO3	mg/l			380	380	190	170	260
Boron	mg/l	1	N	0.39	0.2	0.072	0.052	0.087
Bromide	ug/l			ND	ND	ND	ND	0.75
Calcium, Total	mg/l			11.6	9.51	41.4	28.5	81.7
Carbon Dioxide	mg/l			277	166	138	125	197
Carbonate as CO3	mg/l			ND	16	ND	ND	ND
Cation Sum	mcq/l			7.5	4.9	5.7	3.4	8.6
Chloride	mg/l	500	S	70	61	90	27	160
Fluoride	mg/l	2	P	0.44	0.52	0.18	0.28	0.23
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND
Iodide	ug/l			73	83	96	32	120
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			2.7	1.4	2.8	1.8	4.2
Sodium, Total	mg/l			150	99	75	34	68
Sulfate	mg/l	500	S	3.9	ND	29	6.4	7.9
Total Dissolved Solid (TDS)	mg/l	1000	S	460	280	320	190	500
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND
<b>General Physical Properties</b>								
Apparent Color	ACU	15	S	<b>20</b>	<b>30</b>	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			51	28.7	119	92.6	279
Lab pH	Units			8.28	8.59	8.17	8.2	7.82
Langelier Index - 25 degree	None			0.374	0.429	0.564	0.416	0.605
Odor	TON	3	S	<b>16</b>	ND	ND	ND	<b>8</b>
Specific Conductance	umho/cm	1600	S	770	510	600	340	900
Turbidity	NTU	5	S	0.25	0.3	0.15	0.4	2.5
<b>Metals</b>								
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	<b>13</b>	9.9
Barium, Total	ug/l	1000	P	10	7.2	150	120	400
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	0.22	0.24	ND	ND	0.22
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.14	0.16	ND	0.051	0.048
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	ND	ND	0.046	0.033	0.12
Lead, Total	ug/l	15	P	ND	ND	ND	0.21	0.22
Magnesium, Total	mg/l			5.38	1.21	3.82	5.22	18.2
Manganese, Total	ug/l	50	S	2.5	6.9	28	38	<b>180</b>
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
<b>Volatile Organic Compounds</b>								
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	5.7
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
<b>Others</b>								
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	0.13
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	0.1
Total Organic Carbon	mg/l			2	2.1	0.59	0.43	1.8

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

**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Norwalk #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/31/2023	9/29/2023	5/31/2023	9/29/2023	5/31/2023	9/29/2023	5/31/2023	9/29/2023	5/31/2023	9/29/2023	5/31/2023	9/29/2023
<b>General Minerals</b>															
Alkalinity	mg/l			180	190	200	190	170	150	170	160	160	160	180	170
Anion Sum	mcq/l			7.4	7.3	5.4	5.2	5	4.4	6.2	6.2	7.7	7.9	7.6	7.6
Bicarbonate as HCO3	mg/l			220	230	230	210	210	180	210	200	190	190	220	210
Boron	mg/l	1	N	0.23	0.26	0.23	0.24	0.039	0.041	0.057	0.059	0.12	0.15	0.16	0.16
Bromide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium, Total	mg/l			40.9	23.1	13.3	14	44.8	44.9	68	71.6	77.2	82.1	69.5	72.5
Carbon Dioxide	mg/l			164	173	173	163	154	132	152	146	145	145	178	160
Carbonate as CO3	mg/l			ND	ND	8.8	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	mcq/l			6.9	6.6	4.8	4.9	4.2	4.2	5.7	6	7	7.5	7	7.2
Chloride	mg/l	500	S	72	70	40	39	18	17	35	36	74	78	63	65
Fluoride	mg/l	2	P	0.29	0.32	0.39	0.4	0.17	0.17	0.24	0.25	0.22	0.21	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			65	100	45	57	7.5	12	ND	2.4	5.2	9.4	ND	ND
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	7.3	7.7	11	12	11	11
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	1.6	1.7	2.4	2.7	2.4	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			3.9	4.4	2.7	2.8	2.6	2.8	3.4	3.6	4.1	4.4	3.9	4.1
Sodium, Total	mg/l			95	110	89	90	34	33	30	30	42	46	52	52
Sulfate	mg/l	500	S	83	73	16	17	47	46	83	87	110	110	99	99
Total Dissolved Solid (TDS)	mg/l	1000	S	420	420	300	310	250	250	360	360	440	480	430	440
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	1.6	1.7	2.4	2.7	2.4	2.4
<b>General Physical Properties</b>															
Apparent Color	ACU	15	S	10	10	15	15	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			134	76	43.4	45.9	133	134	216	228	254	272	232	242
Lab pH	Units			7.96	7.83	8.38	8.34	8.18	8.15	7.9	7.89	7.81	7.79	7.26	7.66
Langelier Index - 25 degree	None			0.375	0.021	0.383	0.34	0.656	0.573	0.526	0.512	0.446	0.444	-0.096	0.295
Odor	TON	3	S	ND	ND	ND	ND	ND	2	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	750	700	520	490	440	410	590	570	750	750	720	700
Turbidity	NTU	5	S	0.1	0.2	0.1	0.1	0.15	4.1	0.1	0.2	0.1	0.5	ND	0.1
<b>Metals</b>															
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	2.4	3.1	ND	ND	ND	ND	1.9	1.9	2.1	2.1	1.3	1.4
Barium, Total	ug/l	1000	P	43	35	13	13	33	31	160	170	74	80	51	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	3.2	3.2	1	0.97	1.1	1.1
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.11	0.073	0.11	ND	0.065	ND	3.2	3.1	1.2	0.91	1.2	1.1
Copper, Total	ug/l	1300	P	0.81	1.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	ND	ND	ND	ND	ND	0.037	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	mg/l			7.85	4.46	2.45	2.65	5.08	5.22	11.2	12	14.9	16.2	14.1	14.9
Manganese, Total	ug/l	50	S	11	8.9	19	19	20	21	ND	ND	12	20	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	0.92	0.99	1	0.69	2.7	2.6
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
<b>Volatile Organic Compounds</b>															
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	0.87	ND	ND	ND	ND	ND	0.52	ND	ND	ND	0.67
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	1.1	0.89	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
<b>Others</b>															
1,4-Dioxane	ug/l	1	N	0.9	ND	ND	ND	ND	ND	1.2	1.3	3.8	2.6	0.29	0.27
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	0.54	1.9	2.6	0.74	0.66	0.71	0.75
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			1.1	1.5	1.1	1.3	0.39	0.41	0.3	0.3	0.45	0.37	0.4	0.38

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

**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Paramount #1													
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Zone 7	
				3/28/2023	9/25/2023	3/28/2023	9/25/2023	3/28/2023	9/25/2023	3/28/2023	9/25/2023	3/28/2023	9/25/2023	3/28/2023	9/25/2023	3/28/2023	9/25/2023
<b>General Minerals</b>																	
Alkalinity	mg/l			130	120	160	140	180	170	200	180	230	200	190	180	310	280
Anion Sum	meq/l			3.3	3.1	3.7	3.4	5.2	4.8	6.2	5.8	8.2	7.7	4.3	4.1	9.8	9.3
Bicarbonate as HCO3	mg/l			160	150	190	170	220	200	240	220	270	250	230	220	370	340
Boron	mg/l	1	N	0.047	0.048	0.054	0.054	0.087	0.088	0.11	0.12	0.14	0.14	0.08	0.081	0.086	0.085
Bromide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium, Total	mg/l			23	22.5	35.6	34.6	46.9	48.4	49	49.4	85.8	85.5	50.9	49.9	101	101
Carbon Dioxide	mg/l			113	105	138	125	163	149	181	164	204	186	172	161	277	256
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			3	2.9	3.4	3.3	4.8	4.7	5.7	5.5	7.6	7.5	4.1	4	9	8.7
Chloride	mg/l	500	S	12	12	6.6	6.5	22	21	29	28	52	51	7.1	6.9	54	54
Fluoride	mg/l	2	P	0.3	0.3	0.25	0.25	0.27	0.26	0.4	0.39	0.32	0.31	0.28	0.27	0.38	0.37
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			21	25	7.2	7.4	31	33	19	18	4	4	8	7.8	20	21
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	2.1	2.1	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	0.48	0.47	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			1.7	1.5	2.5	2.3	3.5	3.1	3.7	3.4	4.3	3.9	2.8	2.6	4.8	4.5
Sodium, Total	mg/l			39	37	29	28	45	41	55	49	43	40	23	22	55	49
Sulfate	mg/l	500	S	18	17	17	16	42	41	66	62	110	100	14	13	100	100
Total Dissolved Solid (TDS)	mg/l	1000	S	180	190	190	200	300	280	310	330	450	470	220	230	510	520
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	0.48	0.47	ND	ND	ND	ND
<b>General Physical Properties</b>																	
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3	3
Hardness (Total, as CaCO3)	mg/l			64.3	62.8	105	102	137	141	162	164	281	281	150	148	323	324
Lab pH	Units			8.25	8.34	8.15	8.2	8	8.02	7.92	7.93	7.8	7.71	7.94	7.95	7.85	7.71
Langelier Index - 25 degree	None			0.345	0.386	0.521	0.497	0.506	0.521	0.488	0.45	0.637	0.48	0.531	0.505	0.874	0.688
Odor	TON	3	S	ND	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2
Specific Conductance	umho/cm	1600	S	320	290	350	320	490	440	590	520	770	700	410	370	880	810
Turbidity	NTU	5	S	0.2	0.35	0.2	0.1	0.2	ND	0.2	0.1	0.15	0.15	0.15	0.2	0.6	0.45
<b>Metals</b>																	
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	5.5	4.9	10	9.8	<b>36</b>	<b>30</b>	5.6	5.1	5	3.8	<b>88</b>	<b>81</b>	<b>11</b>	10
Barium, Total	ug/l	1000	P	52	53	61	63	120	110	72	67	140	140	140	140	98	100
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	0.21	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.054	ND	0.044	ND	0.039	ND	0.032	ND	0.2	0.23	0.034	ND	ND	ND
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	ND	ND	ND	ND	0.048	0.053	ND	ND	ND	ND	ND	0.032	0.16	0.17
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			1.65	1.64	3.86	3.83	4.82	4.87	9.71	9.87	16.3	16.4	5.58	5.63	17.4	17.7
Manganese, Total	ug/l	50	S	15	14	36	34	77	<b>82</b>	35	39	<b>87</b>	<b>78</b>	<b>80</b>	<b>83</b>	<b>170</b>	<b>180</b>
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	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
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
<b>Volatile Organic Compounds</b>																	
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	0.6	ND	ND	1.5	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
<b>Others</b>																	
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	ND	ND	<b>2</b>	<b>2.4</b>	ND	ND	0.097	0.089
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	0.21	ND	0.15	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			0.55	0.43	0.3	ND	0.54	0.38	0.65	0.38	0.5	0.49	0.31	0.48	2.1	0.38

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

**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Pico #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				4/11/2023	4/11/2023	9/14/2023	4/11/2023	9/14/2023	4/11/2023	9/14/2023	
<b>General Minerals</b>											
Alkalinity	mg/l			320	160	170	200	190	250	220	
Anion Sum	meq/l			6.6	4.5	4.6	9.3	9.1	12	11	
Bicarbonate as HCO3	mg/l			400	200	200	250	230	310	270	
Boron	mg/l	1	N	0.66	0.067	0.072	0.1	0.099	0.25	0.25	
Bromide	ug/l			ND	ND	ND	ND	ND	ND	ND	
Calcium, Total	mg/l			8.5	48.4	51.5	107	111	102	101	
Carbon Dioxide	mg/l			291	152	151	193	179	249	216	
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	
Cation Sum	meq/l			5.7	4	4.2	8.3	8.6	10	10	
Chloride	mg/l	500	S	3.4	10	10	81	84	110	110	
Fluoride	mg/l	2	P	0.22	0.26	0.25	0.28	0.28	0.23	0.23	
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	
Iodide	ug/l			8.2	3.1	2.7	9.5	7.3	ND	2	
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	21	20	
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	4.8	4.6	
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	
Potassium, Total	mg/l			4.2	2.5	2.8	4.2	4.3	6	5.9	
Sodium, Total	mg/l			110	18	19	32	33	84	84	
Sulfate	mg/l	500	S	0.55	45	45	140	140	150	150	
Total Dissolved Solid (TDS)	mg/l	1000	S	350	250	250	550	550	660	660	
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	4.8	4.6	
<b>General Physical Properties</b>											
Apparent Color	ACU	15	S	40	5	10	10	15	ND	ND	
Hardness (Total, as CaCO3)	mg/l			33.4	155	166	339	355	332	332	
Lab pH	Units			8	7.65	7.82	7.45	7.41	7.27	7.37	
Langelier Index - 25 degree	None			0	0.134	0.357	0.301	0.255	0.177	0.217	
Odor	TON	3	S	4	ND	ND	ND	ND	ND	ND	
Specific Conductance	umho/cm	1600	S	600	450	410	930	860	1200	1100	
Turbidity	NTU	5	S	4.4	0.9	1	4.4	3.6	0.1	0.1	
<b>Metals</b>											
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	
Antimony, Total	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	
Arsenic, Total	ug/l	10	P	5.4	0.48	0.47	0.53	0.52	2.3	2.4	
Barium, Total	ug/l	1000	P	17	64	64	72	70	70	66	
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	0.81	0.89	
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.073	0.048	ND	ND	ND	0.73	0.9	
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	25	
Iron, Total	mg/l	0.3	S	0.079	0.23	0.25	<b>0.44</b>	<b>0.47</b>	ND	ND	
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	
Magnesium, Total	mg/l			2.95	8.33	9.01	17.6	18.7	19	19.1	
Manganese, Total	ug/l	50	S	33	17	18	15	14	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	2.5	2.7	
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	
<b>Volatile Organic Compounds</b>											
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	0.51	
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	ND	ND	
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	
Vinyl chloride (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	
Xylenes (Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	
<b>Others</b>											
1,4-Dioxane	ug/l	1	N	ND	0.14	0.13	0.59	0.44	0.33	0.25	
Perchlorate	ug/l	6	P	ND	1.6	ND	ND	ND	1.3	1.1	
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	
Total Organic Carbon	mg/l			2.5	ND	0.35	0.4	0.47	0.45	0.43	

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

**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Pico #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/24/2023	9/26/2023	5/24/2023	9/26/2023	5/24/2023	9/26/2023	5/24/2023	9/26/2023	5/24/2023	9/26/2023	5/24/2023	9/26/2023
<b>General Minerals</b>															
Alkalinity	mg/l			230	200	210	200	190	180	150	140	140	130	110	130
Anion Sum	mcq/l			9.5	9.1	10	10	9.3	9	8.7	8.4	7.7	7.7	3.8	4.4
Bicarbonate as HCO3	mg/l			270	250	260	240	230	220	190	170	180	160	130	160
Boron	mg/l	1	N	0.06	0.063	0.16	0.16	0.17	0.17	0.26	0.26	0.22	0.22	0.081	0.11
Bromide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium, Total	mg/l			115	116	118	118	96.9	97.9	65.7	62.1	52.6	50.4	22.5	32.5
Carbon Dioxide	mg/l			209	187	197	184	177	165	142	135	137	130	103	144
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	mcq/l			8.6	8.7	9.7	9.7	8.5	8.6	8.1	7.8	7	7.1	3.5	4.3
Chloride	mg/l	500	S	70	73	110	110	94	96	110	110	94	100	23	29
Fluoride	mg/l	2	P	0.2	0.2	0.23	0.22	0.26	0.25	0.27	0.27	0.29	0.27	0.28	0.26
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			ND	1.8	ND	2.6	ND	2.7	ND	2.1	ND	1.7	ND	3.8
Nitrate (as NO3)	mg/l	45	P	15	14	17	17	19	19	22	21	17	18	3.9	1.7
Nitrate as Nitrogen	mg/l	10	P	3.3	3.2	3.8	3.9	4.3	4.3	5.1	4.7	3.8	4	0.87	0.39
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			4.2	4	4.4	4.2	4.6	4.6	4.8	4.5	4.7	5.1	5.7	6.9
Sodium, Total	mg/l			25	25	41	41	47	47	82	80	73	74	40	39
Sulfate	mg/l	500	S	130	130	140	140	120	120	99	96	91	92	45	46
Total Dissolved Solid (TDS)	mg/l	1000	S	550	550	620	620	530	550	500	510	430	460	200	250
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	3.3	3.2	3.8	3.9	4.3	4.3	5.1	4.7	3.8	4	0.87	0.39
<b>General Physical Properties</b>															
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			372	375	390	392	320	324	221	209	185	185	82.6	119
Lab pH	Units			7.62	7.66	7.6	7.59	7.62	7.59	7.52	7.48	7.45	7.33	7.38	6.94
Langelier Index - 25 degree	None			0.563	0.546	0.502	0.471	0.41	0.357	0.045	-0.052	-0.136	-0.314	-0.613	-0.838
Odor	TON	3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	840	860	970	960	860	870	840	840	750	770	370	430
Turbidity	NTU	5	S	0.1	ND	ND	ND	0.1	0.15	0.1	0.2	ND	0.15	0.3	0.45
<b>Metals</b>															
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	0.53	0.56
Arsenic, Total	ug/l	10	P	1.5	1.5	2	2.1	1.5	1.5	2.3	2.3	0.95	0.75	7.5	7.1
Barium, Total	ug/l	1000	P	97	97	93	96	84	87	71	68	80	90	61	91
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	1.2	1.1	1.1	1	1.5	1.6	0.84	0.71	1.6	0.75	0.33	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	1.1	1	0.94	0.88	1.5	1.4	0.71	0.71	1.6	0.75	0.23	0.084
Copper, Total	ug/l	1300	P	1.1	ND	1.5	ND	0.58	ND	0.81	0.53	1.3	1.1	1.4	1.4
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	mg/l			20.6	20.8	23.2	23.4	18.9	19.2	13.8	13.1	13.1	14.4	6.39	9.31
Manganese, Total	ug/l	50	S	ND	ND	2	1.2	ND	1	ND	ND	12	24	ND	1.2
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	0.25	0.093	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	2.8	ND	ND	ND	2.2	ND	2.7	2.8	ND	ND
Selenium, Total	ug/l	50	P	1.1	1	1.2	1.2	0.95	0.89	0.48	0.49	0.82	1.4	0.42	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
<b>Volatile Organic Compounds</b>															
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	0.54	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	0.58	1.2	ND	0.55	1	0.74	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	3	1.6	2.1	2	ND	6.9	7.6	7.9	2.8	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
<b>Others</b>															
1,4-Dioxane	ug/l	1	N	2.7	2.1	0.9	0.58	1.1	1.4	0.79	0.53	0.59	0.47	ND	ND
Perchlorate	ug/l	6	P	1	1.2	0.53	0.83	0.68	0.76	0.25	0.34	0.37	0.46	0.2	ND
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.31	0.33	0.31	0.37	0.37	0.34	0.44	0.49	0.54	0.63	0.96	0.86

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

**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Rio Hondo #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/17/2023	9/15/2023	5/17/2023	9/15/2023	5/17/2023	9/15/2023	5/17/2023	9/15/2023	5/17/2023	9/15/2023	5/17/2023	9/15/2023
<b>General Minerals</b>															
Alkalinity	mg/l			160	150	170	160	210	180	130	110	130	120	99	78
Anion Sum	mcq/l			5	4.7	7	6.8	9	8.5	5	4.8	5.8	5.4	3.2	2.5
Bicarbonate as HCO3	mg/l			200	180	210	200	260	220	150	140	160	140	120	95
Boron	mg/l	1	N	0.069	0.07	0.056	0.058	0.16	0.16	0.14	0.14	0.14	0.15	0.1	0.082
Bromide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium, Total	mg/l			40.8	40.5	85.3	84.5	95.6	95.6	37	38.4	45.7	45.2	21.5	17.1
Carbon Dioxide	mg/l			147	133	159	149	195	166	116	103	123	109	95.1	73.5
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	mcq/l			4.4	4.5	6.6	6.6	8.3	8.4	4.3	4.5	5.1	5.2	2.7	2.3
Chloride	mg/l	500	S	21	22	44	44	80	82	37	41	56	56	18	13
Fluoride	mg/l	2	P	0.23	0.23	0.2	0.2	0.26	0.26	0.31	0.3	0.26	0.26	0.37	0.39
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			24	29	5.1	5.3	ND	4.6	ND	2.7	ND	2.6	ND	2
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	11	11	7.9	8.4	12	12	7	4.9
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	2.5	2.6	1.8	1.9	2.8	2.7	1.6	1.1
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			3	2.9	3.4	3.4	4.3	4.3	3.1	3.2	3.5	3.6	2.7	2.4
Sodium, Total	mg/l			38	40	23	23	47	48	41	44	45	47	26	23
Sulfate	mg/l	500	S	54	54	110	110	110	110	62	58	68	64	28	20
Total Dissolved Solid (TDS)	mg/l	1000	S	280	270	420	420	520	520	280	270	330	310	170	140
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	2.5	2.6	1.8	1.9	2.8	2.7	1.6	1.1
<b>General Physical Properties</b>															
Apparent Color	ACU	15	S	ND	ND	ND	3	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			134	134	274	272	308	309	121	127	153	153	76.6	61.9
Lab pH	Units			7.76	8.02	7.75	7.83	7.6	7.76	7.63	7.64	7.43	7.47	7.41	7.49
Langelier Index - 25 degree	None			0.161	0.392	0.46	0.51	0.43	0.522	-0.102	-0.145	-0.224	-0.218	-0.637	-0.747
Odor	TON	3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	440	450	640	630	830	810	450	460	540	530	300	240
Turbidity	NTU	5	S	0.2	1	0.3	0.3	0.15	0.1	0.1	0.4	0.2	1.9	0.9	1.7
<b>Metals</b>															
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	0.53	0.53	0.71	0.68	2	2	2.6	2.5	1.5	1.6	1.3	1.4
Barium, Total	ug/l	1000	P	24	23	51	48	130	120	53	55	62	59	48	39
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	0.27	ND	ND	ND	0.67	0.75	0.82	0.76	0.84	0.8	0.66	0.49
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.13	ND	0.099	ND	0.62	0.63	0.82	0.67	0.84	0.75	0.59	0.4
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	0.65	ND	0.53	ND	0.57	ND	0.57	ND
Iron, Total	mg/l	0.3	S	ND	ND	0.066	0.076	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	mg/l			7.82	7.94	14.8	14.9	16.9	17	7.01	7.47	9.45	9.61	5.58	4.63
Manganese, Total	ug/l	50	S	39	39	27	27	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	0.76	0.76	0.62	0.64	0.9	0.9	1.1	0.56
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
<b>Volatile Organic Compounds</b>															
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	0.67	ND	0.62	ND	1.1	ND	0.64	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	3	ND	5	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
<b>Others</b>															
1,4-Dioxane	ug/l	1	N	ND	ND	5.7	4.7	1.3	1	0.15	0.18	0.32	0.26	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	0.35	0.35	0.44	0.5	0.53	0.57	0.45	0.3
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	0.34	0.33	0.34	ND	ND	ND	ND	0.42

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



**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Seal Beach #1													
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Zone 7	
				4/12/2023	8/17/2023	4/12/2023	8/17/2023	4/12/2023	8/17/2023	4/12/2023	8/17/2023	4/12/2023	8/17/2023	4/12/2023	8/17/2023	4/12/2023	8/17/2023
<b>General Minerals</b>																	
Alkalinity	mg/l			260	230	170	150	160	140	150	170	73	88	130	160	200	110
Anion Sum	meq/l			5.7	5.1	3.9	3.5	3.7	3.2	3.5	3.9	10	12	9.2	9.6	32	28
Bicarbonate as HCO3	mg/l			280	280	180	150	170	140	160	210	89	110	160	200	250	130
Boron	mg/l	1	N	0.25	0.25	0.14	0.15	0.2	0.2	0.14	0.22	0.062	0.061	0.17	0.17	0.15	0.15
Bromide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1	ND	ND	ND	3.3
Calcium, Total	mg/l			5.91	5.94	3.52	3.67	3.72	3.65	13.1	8.73	69	78.7	82.4	81.8	269	276
Carbon Dioxide	mg/l			223	195	147	126	140	117	129	146	68.9	86.6	121	146	185	100
Carbonate as CO3	mg/l			27	ND	29	27	29	24	14	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			5	5.1	3.3	3.5	3.4	3.3	3.1	3.9	10	11	8.5	8.5	28	29
Chloride	mg/l	500	S	20	20	16	16	15	15	13	19	290	330	98	97	<b>860</b>	<b>780</b>
Fluoride	mg/l	2	P	0.34	0.33	0.46	0.45	0.52	0.51	0.49	0.64	ND	0.19	0.26	0.26	ND	0.24
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			65	78	29	34	24	23	39	40	9	8.9	14	15	180	270
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			0.96	0.86	0.67	0.67	0.64	0.57	1.4	1.1	2.9	3	2.9	2.9	7.6	7.5
Sodium, Total	mg/l			110	110	72	75	72	71	53	76	140	150	74	74	220	220
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	ND	8.4	ND	42	49	180	180	180	190
Total Dissolved Solid (TDS)	mg/l	1000	S	320	340	220	230	210	220	190	250	730	800	550	520	<b>2500</b>	<b>2100</b>
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>General Physical Properties</b>																	
Apparent Color	ACU	15	S	<b>300</b>	<b>300</b>	<b>150</b>	<b>150</b>	<b>100</b>	<b>100</b>	<b>120</b>	<b>200</b>	ND	ND	3	3	3	3
Hardness (Total, as CaCO3)	mg/l			14.8	14.8	8.79	9.17	9.29	9.12	38.2	25.6	188	215	263	262	910	937
Lab pH	Units			8.64	8.75	8.85	9.03	8.88	9.04	8.47	8.64	7.51	7.29	7.85	7.97	7.7	7.71
Langelier Index - 25 degree	None			0.397	0.449	0.226	0.362	0.257	0.343	0.377	0.403	-0.299	-0.392	0.4	0.613	0.748	0.536
Odor	TON	3	S	<b>8</b>	<b>2</b>	<b>8</b>	<b>2</b>	ND	<b>2</b>	ND	<b>4</b>	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	550	470	390	330	370	320	350	370	1300	1300	380	820	<b>3700</b>	<b>3200</b>
Turbidity	NTU	5	S	0.25	0.15	0.25	0.15	0.2	0.25	3	0.85	0.6	1.3	0.2	ND	0.75	0.7
<b>Metals</b>																	
Aluminum, Total	ug/l	1000	P	30	30	30	31	26	26	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	0.72	0.77	ND	ND	ND	ND	3.7	1.6	0.44	0.43	0.49	0.53	2.2	2.7
Barium, Total	ug/l	1000	P	9	8.7	4	3.9	3.6	3.6	9.5	7.2	71	78	150	140	95	94
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	0.94	1.1	0.54	0.64	0.46	0.47	0.53	1	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.44	0.27	0.44	0.34	0.32	0.26	0.43	0.28	ND	0.028	0.92	0.079	ND	ND
Copper, Total	ug/l	1300	P	1	0.79	0.66	ND	0.52	ND	0.65	0.69	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.05	0.045	ND	ND	ND	ND	0.045	ND	ND	0.034	0.037	0.19	0.18	
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			ND	ND	ND	ND	ND	ND	1.32	0.911	3.9	4.41	13.9	14.1	58	60.3
Manganese, Total	ug/l	50	S	6.4	6.8	3.3	3.7	2.2	2.2	13	14	27	29	<b>120</b>	<b>120</b>	<b>640</b>	<b>660</b>
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	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
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
<b>Volatile Organic Compounds</b>																	
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	1.5	ND	ND	ND	1.2	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
<b>Others</b>																	
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	0.12	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			6.8	7.3	2.8	3	2.2	2.4	3.6	4.2	0.32	0.34	1	1.2	0.63	0.75

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



**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	South Gate #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				4/24/2023	8/15/2023	4/24/2023	8/15/2023	4/24/2023	8/15/2023	4/24/2023	8/15/2023	4/24/2023	8/15/2023
<b>General Minerals</b>													
Alkalinity	mg/l			180	170	150	150	160	150	200	190	220	200
Anion Sum	meq/l			5.5	5.3	6.8	6.8	7	6.8	8.6	8.6	9.6	9.2
Bicarbonate as HCO3	mg/l			220	210	180	180	200	190	240	240	270	240
Boron	mg/l	1	N	0.11	0.11	0.15	0.15	0.13	0.12	0.17	0.17	0.14	0.14
Bromide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium, Total	mg/l			48.7	46.7	65.2	62.4	70.9	66.3	86.7	83.9	93.7	90.7
Carbon Dioxide	mg/l			159	154	133	135	145	139	180	176	201	180
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			4.9	4.8	6.2	6	6.4	6.1	8	7.8	8.9	8.6
Chloride	mg/l	500	S	23	23	56	57	52	53	66	69	93	96
Fluoride	mg/l	2	P	0.27	0.28	0.28	0.28	0.34	0.32	0.33	0.33	0.39	0.39
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			23	34	6.7	8.7	ND	ND	ND	ND	94	140
Nitrate (as NO3)	mg/l	45	P	ND	ND	10	10	10	11	8.1	8.4	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	2.3	2.3	2.3	2.4	1.8	1.9	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			2.5	2.4	3.4	3.4	2.9	2.9	3.7	3.7	3.2	3.1
Sodium, Total	mg/l			42	41	44	44	38	37	52	50	50	48
Sulfate	mg/l	500	S	60	60	98	98	100	100	120	130	120	120
Total Dissolved Solid (TDS)	mg/l	1000	S	300	300	370	400	380	400	480	500	530	550
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	2.3	2.3	2.3	2.4	1.8	1.9	ND	ND
<b>General Physical Properties</b>													
Apparent Color	ACU	15	S	ND	ND	ND	ND	ND	ND	ND	3	ND	3
Hardness (Total, as CaCO3)	mg/l			152	147	209	201	235	221	284	275	331	321
Lab pH	Units			8.18	7.99	7.99	7.94	8.03	7.93	7.9	7.81	7.98	7.86
Langelier Index - 25 degree	None			0.702	0.469	0.541	0.464	0.643	0.481	0.674	0.543	0.819	0.639
Odor	TON	3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	530	480	670	620	680	630	840	780	920	880
Turbidity	NTU	5	S	0.1	0.2	0.1	0.15	ND	0.4	ND	0.3	0.3	0.55
<b>Metals</b>													
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	1.9	2.8	2.7	2.7	2.6	1.9	1.8	2	2
Barium, Total	ug/l	1000	P	130	130	85	81	140	130	82	77	210	210
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	0.73	0.6	0.65	0.62	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.04	0.13	0.029	0.16	0.67	0.61	0.61	0.81	0.02	0.06
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.035	0.04	ND	ND	ND	ND	ND	ND	0.11	0.12
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			7.43	7.27	11.3	11	14.1	13.4	16.3	16	23.6	23
Manganese, Total	ug/l	50	S	42	43	3.1	3.5	3.2	ND	ND	ND	<b>110</b>	<b>110</b>
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	0.81	0.81	0.84	0.72	1.3	1.3	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
<b>Volatile Organic Compounds</b>													
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	0.99	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	0.54	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	2.6	3.1	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	1.4	1.4	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
<b>Others</b>													
1,4-Dioxane	ug/l	1	N	ND	ND	<b>1.5</b>	<b>0.95</b>	<b>3.1</b>	<b>1.8</b>	<b>1.5</b>	<b>1.1</b>	ND	ND
Perchlorate	ug/l	6	P	ND	ND	0.54	0.52	1.2	1	0.3	0.32	ND	ND
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			ND	ND	ND	0.31	ND	ND	ND	ND	0.7	0.88

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

**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	South Gate #2											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				5/18/2023	8/23/2023	5/18/2023	8/23/2023	5/18/2023	8/23/2023	5/18/2023	8/23/2023	5/18/2023	8/23/2023	5/18/2023	8/23/2023
<b>General Minerals</b>															
Alkalinity	mg/l			190	170	200	180	190	170	190	170	180	170	200	200
Anion Sum	mcq/l			6.1	5.8	6.4	5.9	6	5.7	6.9	6.6	6	5.8	6.5	6.4
Bicarbonate as HCO3	mg/l			230	210	250	220	230	210	230	210	220	210	250	240
Boron	mg/l	1	N	0.13	0.13	0.13	0.13	0.1	0.1	0.14	0.14	0.13	0.14	0.15	0.15
Bromide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium, Total	mg/l			56.7	56.2	58.1	59.4	57.7	57.7	64.1	65	56	56.4	62	62.8
Carbon Dioxide	mg/l			167	155	181	162	167	152	172	159	162	158	184	180
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	mcq/l			5.5	5.5	5.6	5.8	5.4	5.5	6.2	6.4	5.4	5.6	6	6.2
Chloride	mg/l	500	S	22	22	22	22	22	22	37	37	23	23	25	25
Fluoride	mg/l	2	P	0.36	0.37	0.35	0.34	0.22	0.21	0.39	0.39	0.39	0.39	0.44	0.44
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			22	35	21	36	25	46	ND	ND	24	34	14	20
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	3.3	3.4	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	0.75	0.77	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			3.3	3.3	3.5	3.6	2.1	2.1	3.4	3.5	3.1	3.2	2.8	2.9
Sodium, Total	mg/l			36	37	37	39	39	41	38	41	38	39	38	40
Sulfate	mg/l	500	S	82	82	80	80	79	79	98	98	83	83	83	83
Total Dissolved Solid (TDS)	mg/l	1000	S	340	340	350	340	320	340	380	390	330	360	370	360
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	0.75	0.77	ND	ND	ND	ND
<b>General Physical Properties</b>															
Apparent Color	ACU	15	S	ND	ND	ND	3	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			192	191	195	199	180	180	223	227	186	188	213	216
Lab pH	Units			7.97	8.03	8.06	7.96	8.04	8.11	7.77	7.75	7.91	7.69	7.79	7.76
Langelier Index - 25 degree	None			0.571	0.578	0.691	0.557	0.654	0.67	0.414	0.349	0.485	0.235	0.444	0.422
Odor	TON	3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	540	530	560	540	540	520	620	610	540	540	600	580
Turbidity	NTU	5	S	0.2	0.2	0.4	0.5	0.25	0.25	0.15	0.25	0.25	0.2	0.25	0.2
<b>Metals</b>															
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	2	1.9	2	0.85	0.82	0.8	0.77	0.7	0.76
Barium, Total	ug/l	1000	P	61	57	73	68	100	97	85	81	110	99	100	96
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	2.3	2.3	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.06	ND	0.068	ND	0.11	ND	2.2	2.3	0.1	ND	0.068	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	0.92	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.048	0.049	0.12	0.13	0.037	0.04	ND	ND	ND	ND	0.041	0.045
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			12.3	12.3	12.1	12.4	8.75	8.78	15.3	15.6	11.3	11.5	14.2	14.5
Manganese, Total	ug/l	50	S	<b>60</b>	<b>58</b>	38	38	<b>97</b>	<b>98</b>	3.2	2.6	20	20	<b>63</b>	<b>66</b>
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.074	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	2.1	2.2	ND	ND	ND	ND
Silver, Total	ug/l	100	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium, Total	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	ug/l	5000	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>Volatile Organic Compounds</b>															
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	0.65	ND	0.69	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
<b>Others</b>															
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	0.43	0.37	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	0.4	ND	ND	ND	0.37	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 (--) Not Analyzed

**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Whittier #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				4/19/2023	9/28/2023	4/19/2023	9/28/2023	4/19/2023	9/28/2023	4/19/2023	9/28/2023	4/19/2023	9/28/2023
<b>General Minerals</b>													
Alkalinity	mg/l			290	260	310	290	320	300	280	250	240	230
Anion Sum	meq/l			39	42	38	39	34	34	12	11	12	11
Bicarbonate as HCO3	mg/l			350	320	380	350	390	360	340	310	290	280
Boron	mg/l	1	N	0.88	0.88	0.96	0.96	0.79	0.82	0.2	0.2	0.16	0.16
Bromide	ug/l			1.4	ND	1.2	ND	1	ND	ND	ND	ND	ND
Calcium, Total	mg/l			188	187	181	180	179	185	79.4	80.7	81.2	80.5
Carbon Dioxide	mg/l			263	249	282	265	287	280	252	238	219	219
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			38	38	36	37	31	32	11	11	11	11
Chloride	mg/l	500	S	260	300	240	250	220	230	81	80	90	89
Fluoride	mg/l	2	P	0.24	ND	0.26	ND	0.41	ND	0.17	0.17	0.29	0.28
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			200	270	190	200	150	170	100	110	1.7	42
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	19	19	26	25
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	4.4	4.2	5.9	5.7
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			14	14	13	12	10	10	4.6	4.6	4	3.8
Sodium, Total	mg/l			420	420	390	400	310	310	97	97	84	82
Sulfate	mg/l	500	S	<b>1200</b>	<b>1400</b>	<b>1200</b>	<b>1300</b>	<b>1000</b>	<b>1000</b>	190	180	180	180
Total Dissolved Solid (TDS)	mg/l	1000	S	<b>2800</b>	<b>2700</b>	<b>2600</b>	<b>2600</b>	<b>2100</b>	<b>2200</b>	690	730	700	680
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	4.4	4.2	5.9	5.7
<b>General Physical Properties</b>													
Apparent Color	ACU	15	S	15	<b>25</b>	15	<b>20</b>	15	15	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			995	997	949	950	863	895	339	348	360	359
Lab pH	Units			7.76	7.48	7.76	7.59	7.84	7.49	7.78	7.51	7.77	7.51
Langelier Index - 25 degree	None			0.796	0.472	0.82	0.619	0.942	0.571	0.622	0.304	0.553	0.275
Odor	TON	3	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	<b>4300</b>	<b>3800</b>	<b>4100</b>	<b>3700</b>	<b>3400</b>	<b>3200</b>	1200	1000	1100	1000
Turbidity	NTU	5	S	2.8	2.6	2.5	1.8	2.1	2	0.15	ND	0.2	0.4
<b>Metals</b>													
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	1.4	0.75	0.79
Barium, Total	ug/l	1000	P	18	18	17	17	25	25	33	33	28	28
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	3.8	3.8
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	0.043	3.6	3.8
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	<b>0.56</b>	<b>0.57</b>	<b>0.44</b>	<b>0.45</b>	<b>0.36</b>	<b>0.39</b>	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			128	128	121	121	101	105	34.2	35.5	38.2	38.5
Manganese, Total	ug/l	50	S	49	<b>51</b>	<b>65</b>	<b>67</b>	<b>76</b>	<b>79</b>	22	26	2.4	2.4
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	11	10	17	16
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
<b>Volatile Organic Compounds</b>													
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	0.84	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
<b>Others</b>													
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	1.1	1.2	2.3	2.5
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			1.8	1.8	2.1	2.2	1.7	1.9	ND	ND	ND	ND

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

**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Whittier #2						
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	
				5/1/2023	5/1/2023	5/1/2023	5/1/2023	5/1/2023	5/1/2023	
<b>General Minerals</b>										
Alkalinity	mg/l			260	160	220	420	270	360	
Anion Sum	meq/l			12	10	5.6	17	25	15	
Bicarbonate as HCO <sub>3</sub>	mg/l			310	200	270	520	330	430	
Boron	mg/l	1	N	0.72	0.2	0.26	0.81	0.2	0.36	
Bromide	ug/l			1	1	ND	0.61	0.91	ND	
Calcium, Total	mg/l			36.5	23	90	122	130	146	
Carbon Dioxide	mg/l			237	144	204	401	246	335	
Carbonate as CO <sub>3</sub>	mg/l			ND	ND	ND	ND	ND	ND	
Cation Sum	meq/l			11	4	12	26	12	16	
Chloride	mg/l	500	S	170	170	22	130	220	130	
Fluoride	mg/l	2	P	0.41	0.41	0.3	0.27	0.46	0.23	
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	
Iodide	ug/l			200	27	17	140	2.1	ND	
Nitrate (as NO <sub>3</sub> )	mg/l	45	P	ND	ND	ND	3.5	12	31	
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	0.8	2.6	6.9	
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	
Potassium, Total	mg/l			3.5	2.4	4.6	5	5.2	5.4	
Sodium, Total	mg/l			180	57	110	300	81	120	
Sulfate	mg/l	500	S	120	110	24	240	<b>620</b>	180	
Total Dissolved Solid (TDS)	mg/l	1000	S	660	230	760	<b>1600</b>	740	970	
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	0.8	2.6	6.9	
<b>General Physical Properties</b>										
Apparent Color	ACU	15	S	15	ND	ND	ND	ND	ND	
Hardness (Total, as CaCO <sub>3</sub> )	mg/l			175	73	375	642	429	509	
Lab pH	Units			7.61	8.07	7.8	7.46	7.74	7.5	
Langelier Index - 25 degree	None			0.088	0.237	0.58	0.554	0.772	0.674	
Odor	TON	3	S	ND	ND	ND	ND	ND	ND	
Specific Conductance	umho/cm	1600	S	1200	420	1200	<b>2600</b>	1200	1600	
Turbidity	NTU	5	S	1.8	0.1	0.1	0.15	0.9	0.2	
<b>Metals</b>										
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	2.8	ND	1.1	0.44	1.1	1.2	
Barium, Total	ug/l	1000	P	16	25	51	13	80	27	
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	3.6	0.43	3.2	4	
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	0.083	3.4	0.4	3.1	3.7	
Copper, Total	ug/l	1300	P	ND	ND	0.56	1.4	0.69	1.2	
Iron, Total	mg/l	0.3	S	<b>0.72</b>	ND	ND	ND	ND	ND	
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	
Magnesium, Total	mg/l			20.3	3.79	36.5	81.9	25.4	35.4	
Manganese, Total	ug/l	50	S	<b>88</b>	37	22	<b>110</b>	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	4.1	1.1	1.4	
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	
<b>Volatile Organic Compounds</b>										
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	0.58	
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND	
Total Trihalomethanes	ug/l	80	P	ND	ND	ND	ND	ND	0.85	
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	
<b>Others</b>										
1,4-Dioxane	ug/l	1	N	ND	ND	0.61	ND	<b>3.6</b>	0.46	
Perchlorate	ug/l	6	P	ND	ND	1.4	1.5	2.8	1.8	
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	
Total Organic Carbon	mg/l			0.75	0.4	0.37	0.56	0.48	0.53	

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

**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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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
				4/3/2023	4/3/2023	4/3/2023	4/3/2023	4/3/2023	4/4/2023	4/4/2023	4/4/2023	4/4/2023
<b>General Minerals</b>												
Alkalinity	mg/l			110	120	150	160	170	200	180	180	180
Anion Sum	meq/l			20	3.3	8	8.5	9.3	9.1	8.5	9.2	10
Bicarbonate as HCO3	mg/l			130	150	180	200	200	240	220	220	230
Boron	mg/l	1	N	1.5	0.17	0.11	0.15	0.18	0.24	0.21	0.2	0.26
Bromide	ug/l			6.4	ND	ND	ND	ND	ND	ND	ND	ND
Calcium, Total	mg/l			60.4	9.68	98.3	96.4	102	75.3	64.1	70.2	67.6
Carbon Dioxide	mg/l			114	107	134	146	150	175	161	165	171
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			19	3.1	7.4	7.9	8.6	8.4	7.9	8.4	9.4
Chloride	mg/l	500	S	650	21	95	99	120	110	96	110	120
Fluoride	mg/l	2	P	0.76	0.38	0.2	0.19	0.19	0.25	0.24	0.25	0.39
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			1600	32	ND	15	9	8.8	6.1	5.7	6.9
Nitrate (as NO3)	mg/l	45	P	ND	ND	7.4	5	13	5.5	7.9	20	25
Nitrate as Nitrogen	mg/l	10	P	ND	ND	1.7	1.1	2.9	1.3	1.8	4.5	5.6
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	0.17	ND	0.17	0.8	ND	ND
Potassium, Total	mg/l			4.8	1.6	3.3	4.9	5.1	5.7	5.6	5.7	11
Sodium, Total	mg/l			340	59	38	48	53	83	84	87	99
Sulfate	mg/l	500	S	ND	15	110	110	110	99	98	110	130
Total Dissolved Solid (TDS)	mg/l	1000	S	1200	190	460	490	540	510	470	510	570
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	1.7	1.3	3	1.4	2.6	4.6	5.7
<b>General Physical Properties</b>												
Apparent Color	ACU	15	S	10	ND	ND	ND	ND	ND	ND	ND	4
Hardness (Total, as CaCO3)	mg/l			201	26.4	284	287	309	233	205	223	240
Lab pH	Units			7.01	8.02	8.05	8.05	7.97	8.03	8.1	7.87	7.65
Langelier Index - 25 degree	None			-0.742	-0.299	0.758	0.771	0.731	0.736	0.699	0.5	0.252
Odor	TON	3	S	4	ND	ND	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	2300	310	760	810	900	840	820	880	980
Turbidity	NTU	5	S	140	0.65	3.2	0.3	0.4	0.45	0.35	0.3	0.7
<b>Metals</b>												
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	3.6	2.7	0.84	1.4	1.2	1.7	2	1.3	0.54
Barium, Total	ug/l	1000	P	460	25	150	140	210	81	76	70	87
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	0.53	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	1.1	ND	ND	0.23	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	ND	0.21	0.73	0.095	0.041	0.06	ND	0.059
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	1.3	1.1	2.3	5.8
Iron, Total	mg/l	0.3	S	7.7	0.081	ND	ND	ND	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			12.2	0.538	9.37	11.2	13	10.8	11	11.7	17.3
Manganese, Total	ug/l	50	S	630	20	2.8	23	20	37	17	19	240
Mercury	ug/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	4.5	9	19	4.7	3.9	4.8	15
Selenium, Total	ug/l	50	P	ND	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	33	ND	ND	ND	ND	ND	ND	ND	ND
<b>Volatile Organic Compounds</b>												
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	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	ug/l	0.5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>Others</b>												
1,4-Dioxane	ug/l	1	N	ND	ND	0.6	0.58	0.67	0.52	0.37	0.35	0.37
Perchlorate	ug/l	6	P	ND	ND	0.15	0.1	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	0.094	0.057	ND	0.056	0.068	0.1	0.067	0.083	0.063
Total Organic Carbon	mg/l			12	0.57	0.47	0.52	0.69	1.1	0.94	0.95	1.5

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

**TABLE 3.1**  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Willowbrook #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				6/14/2023	9/27/2023	6/14/2023	9/27/2023	6/14/2023	9/27/2023	6/14/2023	9/27/2023
<b>General Minerals</b>											
Alkalinity	mg/l			250	250	210	200	190	190	200	200
Anion Sum	meq/l			5.6	5.6	5.1	4.9	6.2	6.1	6.3	6.3
Bicarbonate as HCO3	mg/l			310	310	250	240	230	230	240	240
Boron	mg/l	1	N	0.17	0.17	0.13	0.13	0.13	0.13	0.13	0.13
Bromide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Calcium, Total	mg/l			35.2	33.3	48.7	48	60.2	58.9	63.3	61.8
Carbon Dioxide	mg/l			223	226	184	175	168	168	178	178
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			5.4	5.2	4.9	4.8	5.8	5.7	6.1	6
Chloride	mg/l	500	S	19	19	22	22	25	24	35	35
Fluoride	mg/l	2	P	0.26	0.26	0.25	0.27	0.36	0.36	0.32	0.32
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iodide	mg/l			1.7	37	24	36	27	37	48	64
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			4.8	4.7	2.7	2.6	3.7	3.6	3.3	3.2
Sodium, Total	mg/l			68	65	40	38	40	38	46	44
Sulfate	mg/l	500	S	3.3	1.7	13	17	82	81	63	63
Total Dissolved Solid (TDS)	mg/l	1000	S	310	320	270	270	350	340	350	340
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
<b>General Physical Properties</b>											
Apparent Color	ACU	15	S	10	10	3	ND	5	ND	5	3
Hardness (Total, as CaCO3)	mg/l			116	111	156	155	201	198	201	198
Lab pH	Units			8.15	8.04	8.21	8.09	8.01	7.88	8.07	7.9
Langelier Index - 25 degree	None			0.671	0.534	0.808	0.661	0.634	0.497	0.738	0.561
Odor	TON	3	S	4	4	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	500	510	460	470	550	560	580	590
Turbidity	NTU	5	S	2.3	0.55	0.2	0.1	0.15	0.25	<b>14</b>	<b>11</b>
<b>Metals</b>											
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	3.1	3	ND	ND	3.1	3.1	6.3	6.4
Barium, Total	ug/l	1000	P	42	41	53	53	76	75	150	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	0.2	ND	0.47	2.3
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.051	ND	0.14	ND	0.047	ND	0.078	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.055	0.053	ND	ND	0.085	0.085	ND	0.037
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			6.77	6.7	8.31	8.57	12.2	12.4	10.5	10.6
Manganese, Total	ug/l	50	S	47	46	45	47	29	29	<b>110</b>	<b>100</b>
Mercury	ug/l	2	P	ND	0.05	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
<b>Volatile Organic Compounds</b>											
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	1.2	ND	0.97	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
<b>Others</b>											
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			1.4	1.3	0.35	0.33	0.34	ND	0.3	ND

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

**TABLE 3.2**  
**WEST COAST BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Carson #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				5/9/2023	9/11/2023	5/9/2023	9/11/2023	5/9/2023	9/11/2023	5/9/2023	9/11/2023
<b>General Minerals</b>											
Alkalinity	mg/l			150	150	180	170	170	170	200	190
Anion Sum	meq/l			3.7	3.6	4.3	4.1	5.6	5.4	7.3	7.1
Bicarbonate as HCO3	mg/l			190	180	220	210	210	200	240	230
Boron	mg/l	1	N	0.098	0.11	0.11	0.12	0.11	0.12	0.13	0.14
Bromide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Calcium, Total	mg/l			20.5	20.6	32.7	32.5	45.1	44.2	58.1	58.5
Carbon Dioxide	mg/l			137	130	160	154	155	149	178	171
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			3.4	3.5	3.9	4	5.2	5.2	6.7	6.8
Chloride	mg/l	500	S	23	22	23	23	25	25	58	57
Fluoride	mg/l	2	P	0.22	0.22	0.18	0.18	0.26	0.26	0.34	0.34
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			24	41	22	39	27	46	72	110
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			2.9	3.1	2.6	2.5	3.2	3.1	4	4.1
Sodium, Total	mg/l			45	47	39	40	43	43	56	57
Sulfate	mg/l	500	S	ND	ND	ND	ND	68	64	82	79
Total Dissolved Solid (TDS)	mg/l	1000	S	200	200	230	240	310	310	400	400
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
<b>General Physical Properties</b>											
Apparent Color	ACU	15	S	5	10	3	3	ND	3	3	3
Hardness (Total, as CaCO3)	mg/l			66.7	67.4	109	109	163	161	211	213
Lab pH	Units			8.06	8.12	8.12	8.22	8.15	8.16	7.85	7.96
Langelier Index - 25 degree	None			0.16	0.222	0.491	0.56	0.611	0.612	0.469	0.559
Odor	TON	3	S	ND	ND	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	350	350	400	390	510	510	670	670
Turbidity	NTU	5	S	0.15	ND	0.1	0.5	0.1	ND	0.45	0.35
<b>Metals</b>											
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	0.51	0.61	ND	ND	ND	ND	0.46	0.53
Barium, Total	ug/l	1000	P	15	15	38	37	67	64	170	180
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	0.1	0.09	0.075	0.066	0.14	0.062	0.12	0.041
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	ND	0.038	ND	ND	ND	ND	0.085	0.09
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			3.76	3.89	6.53	6.68	12.3	12.4	16	16.3
Manganese, Total	ug/l	50	S	19	20	13	13	30	30	<b>100</b>	<b>110</b>
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
<b>Volatile Organic Compounds</b>											
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
<b>Others</b>											
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			0.7	0.82	0.47	0.5	0.42	0.44	0.69	0.44

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



**TABLE 3.2**  
**WEST COAST BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Carson #2				
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
				5/8/2023	5/8/2023	5/8/2023	5/8/2023	5/8/2023
<b>General Minerals</b>								
Alkalinity	mg/l			180	190	180	210	180
Anion Sum	meq/l			4.1	4.5	4.7	5	4.9
Bicarbonate as HCO3	mg/l			210	220	210	260	220
Boron	mg/l	1	N	0.14	0.14	0.13	0.12	0.12
Bromide	ug/l			ND	ND	ND	ND	ND
Calcium, Total	mg/l			2.93	16.3	32.4	36.2	43.1
Carbon Dioxide	mg/l			151	167	156	189	163
Carbonate as CO3	mg/l			ND	10	ND	ND	ND
Cation Sum	meq/l			3.6	4.3	4.6	4.5	4.6
Chloride	mg/l	500	S	20	23	24	25	23
Fluoride	mg/l	2	P	0.28	0.21	0.25	0.17	0.26
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND
Iodide	ug/l			28	22	22	25	22
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			2.1	4.8	4.7	4.6	3.4
Sodium, Total	mg/l			78	66	47	38	37
Sulfate	mg/l	500	S	ND	1.1	24	ND	26
Total Dissolved Solid (TDS)	mg/l	1000	S	230	250	260	250	260
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND
<b>General Physical Properties</b>								
Apparent Color	ACU	15	S	35	10	5	5	ND
Hardness (Total, as CaCO3)	mg/l			7.32	63.2	123	136	145
Lab pH	Units			8.91	8.5	8.27	8.17	8.15
Langelier Index - 25 degree	None			0.227	0.584	0.627	0.645	0.631
Odor	TON	3	S	4	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	380	430	450	440	440
Turbidity	NTU	5	S	0.2	0.15	0.25	0.6	0.7
<b>Metals</b>								
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	1.7	8.3	16	23	26
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	0.086	0.11	0.1	0.06	0.047
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	ND	ND	ND	ND	0.047
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			ND	5.47	10.2	11	9.17
Manganese, Total	ug/l	50	S	3	8.4	13	20	37
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
<b>Volatile Organic Compounds</b>								
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
<b>Others</b>								
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			1.8	0.75	0.47	0.61	ND

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



**TABLE 3.2**  
**WEST COAST BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Carson #3											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/18/2023	9/14/2023	4/18/2023	9/14/2023	4/18/2023	9/14/2023	4/18/2023	9/14/2023	4/18/2023	9/14/2023	4/18/2023	9/14/2023
<b>General Minerals</b>															
Alkalinity	mg/l			380	360	180	150	180	160	180	160	190	180	190	170
Anion Sum	meq/l			8	7.6	4.4	3.9	4.2	3.9	4.2	3.8	4.5	4.3	5.5	5.2
Bicarbonate as HCO3	mg/l			450	420	210	180	220	200	220	190	230	220	230	210
Boron	mg/l	1	N	0.66	0.69	0.11	0.11	0.11	0.11	0.094	0.099	0.11	0.12	0.13	0.13
Bromide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium, Total	mg/l			8.06	8.29	20	19.6	17.1	17	25.2	25.2	31.6	31.8	48.1	47.3
Carbon Dioxide	mg/l			336	315	155	134	158	145	157	138	168	161	167	156
Carbonate as CO3	mg/l			13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			6.9	7.3	3.7	3.7	3.7	3.7	3.8	3.8	4	4.1	5.2	5.2
Chloride	mg/l	500	S	13	13	22	21	22	22	22	22	23	22	23	23
Fluoride	mg/l	2	P	0.48	0.47	0.2	0.2	0.25	0.25	0.22	0.22	0.22	0.22	0.31	0.31
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			100	58	19	25	19	16	17	21	19	19	21	19
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			2.9	2.9	3.3	3.3	3.4	3.4	3.9	3.9	3.1	3.1	3.8	3.7
Sodium, Total	mg/l			140	150	53	54	58	59	44	45	40	41	39	40
Sulfate	mg/l	500	S	ND	ND	11	10	ND	ND	ND	ND	0.57	0.56	55	52
Total Dissolved Solid (TDS)	mg/l	1000	S	440	460	210	210	210	230	210	220	220	240	300	300
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>General Physical Properties</b>															
Apparent Color	ACU	15	S	<b>150</b>	<b>150</b>	5	10	10	15	5	5	3	5	ND	3
Hardness (Total, as CaCO3)	mg/l			28.9	30	64.9	64	54.8	54.9	88.7	89.5	111	113	169	167
Lab pH	Units			8.38	8.39	8.28	8.31	8.28	8.3	8.19	8.24	8.19	8.21	8.07	8.05
Langelier Index - 25 degree	None			0.408	0.403	0.444	0.386	0.376	0.335	0.455	0.45	0.573	0.565	0.61	0.535
Odor	TON	3	S	<b>4</b>	<b>8</b>	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	750	680	410	380	410	370	410	380	430	400	540	500
Turbidity	NTU	5	S	0.2	0.15	0.2	0.25	0.2	ND	0.25	0.1	0.1	0.25	0.7	0.35
<b>Metals</b>															
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	0.71	0.73	0.54	0.44	ND	ND	1.9	1.9
Barium, Total	ug/l	1000	P	7.1	6.7	16	16	20	19	25	23	29	28	66	64
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	0.64	0.69	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.15	0.28	0.096	0.19	0.11	0.22	0.068	0.19	0.03	0.22	ND	0.15
Copper, Total	ug/l	1300	P	ND	0.99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.045	0.049	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.034
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			2.13	2.26	3.64	3.66	2.94	3	6.26	6.44	7.89	8.18	11.8	11.9
Manganese, Total	ug/l	50	S	15	14	16	15	35	36	48	45	22	25	<b>56</b>	<b>54</b>
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
<b>Volatile Organic Compounds</b>															
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
<b>Others</b>															
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			8.4	9.6	0.96	0.92	0.97	1.3	0.59	ND	0.4	0.69	0.3	0.49

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

**TABLE 3.2**  
**WEST COAST BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Chandler #3			
				Zone 1		Zone 2	
				4/13/2023	9/21/2023	4/13/2023	9/21/2023
<b>General Minerals</b>							
Alkalinity	mg/l			400	380	390	360
Anion Sum	meq/l			13	13	17	14
Bicarbonate as HCO3	mg/l			480	460	480	430
Boron	mg/l	1	N	0.21	0.23	0.24	0.26
Bromide	ug/l			0.64	0.6	0.84	0.66
Calcium, Total	mg/l			101	99	155	130
Carbon Dioxide	mg/l			366	347	372	352
Carbonate as CO3	mg/l			ND	ND	ND	ND
Cation Sum	meq/l			12	12	16	14
Chloride	mg/l	500	S	150	150	240	180
Fluoride	mg/l	2	P	0.19	0.18	0.14	0.16
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND
Iodide	ug/l			81	99	1.1	85
Nitrate (as NO3)	mg/l	45	P	ND	ND	<b>60</b>	32
Nitrate as Nitrogen	mg/l	10	P	ND	ND	<b>13</b>	7.2
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND
Potassium, Total	mg/l			5.1	5.3	4.9	4.5
Sodium, Total	mg/l			120	120	100	91
Sulfate	mg/l	500	S	55	52	57	56
Total Dissolved Solid (TDS)	mg/l	1000	S	710	730	990	800
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	<b>13</b>	7.2
<b>General Physical Properties</b>							
Apparent Color	ACU	15	S	10	5	ND	ND
Hardness (Total, as CaCO3)	mg/l			367	362	568	480
Lab pH	Units			7.67	7.67	7.42	7.26
Langelier Index - 25 degree	None			0.768	0.734	0.652	0.408
Odor	TON	3	S	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	1400	1200	<b>1800</b>	1500
Turbidity	NTU	5	S	0.95	1	<b>14</b>	1.3
<b>Metals</b>							
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	2.5	2.6	1.7	1.9
Barium, Total	ug/l	1000	P	30	29	150	110
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	0.94	0.95
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.034	ND	0.79	0.44
Copper, Total	ug/l	1300	P	0.76	ND	0.74	0.76
Iron, Total	mg/l	0.3	S	0.22	0.23	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND
Magnesium, Total	mg/l			27.7	27.9	44	37.7
Manganese, Total	ug/l	50	S	77	<b>81</b>	7.9	13
Mercury	ug/l	2	P	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	<b>160</b>	<b>180</b>
Selenium, Total	ug/l	50	P	ND	ND	15	13
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
<b>Volatile Organic Compounds</b>							
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
<b>Others</b>							
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	3.3	1.9
Surfactants	mg/l	0.5	S	ND	ND	ND	ND
Total Organic Carbon	mg/l			1.1	0.79	0.65	1.2

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

**TABLE 3.2**  
**WEST COAST BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Gardena #1							
				Zone 1		Zone 2		Zone 3		Zone 4	
				4/18/2023	9/18/2023	4/18/2023	9/18/2023	4/18/2023	9/18/2023	4/18/2023	9/18/2023
<b>General Minerals</b>											
Alkalinity	mg/l			300	270	210	190	180	170	270	250
Anion Sum	meq/l			6.6	5.9	5.6	5.2	5.8	5.5	32	28
Bicarbonate as HCO3	mg/l			360	330	260	230	220	200	330	310
Boron	mg/l	1	N	0.35	0.34	0.13	0.13	0.13	0.13	0.15	0.15
Bromide	ug/l			ND	ND	ND	ND	ND	ND	ND	2
Calcium, Total	mg/l			13.6	13	47.7	47.4	52.3	51	327	306
Carbon Dioxide	mg/l			265	237	190	169	161	151	261	265
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			5.5	5.4	5.2	5.3	5.3	5.2	30	29
Chloride	mg/l	500	S	20	20	41	47	24	24	<b>810</b>	<b>690</b>
Fluoride	mg/l	2	P	0.17	0.18	0.39	0.38	0.36	0.38	ND	0.13
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			28	32	27	40	23	27	ND	11
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	<b>130</b>	<b>120</b>
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	<b>29</b>	<b>27</b>
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			12	11	3.8	3.7	3.3	3.2	8.4	7.6
Sodium, Total	mg/l			90	89	43	46	39	39	130	120
Sulfate	mg/l	500	S	ND	ND	10	7.2	71	70	80	92
Total Dissolved Solid (TDS)	mg/l	1000	S	320	340	280	320	300	320	<b>3000</b>	<b>2200</b>
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	<b>29</b>	<b>27</b>
<b>General Physical Properties</b>											
Apparent Color	ACU	15	S	<b>30</b>	<b>35</b>	3	5	ND	3	ND	5
Hardness (Total, as CaCO3)	mg/l			62.7	60.8	161	161	177	174	1230	1160
Lab pH	Units			8.23	8.18	8.04	7.78	7.98	7.94	7.35	7.08
Langelier Index - 25 degree	None			0.414	0.293	0.626	0.309	0.533	0.452	0.585	0.301
Odor	TON	3	S	<b>4</b>	2	ND	<b>4</b>	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	620	560	550	560	560	540	<b>3700</b>	<b>3300</b>
Turbidity	NTU	5	S	2.3	1.9	3.2	2.3	1.2	0.65	2.4	<b>6.5</b>
<b>Metals</b>											
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	<b>15</b>	<b>14</b>	ND	ND	ND	ND	ND	ND
Barium, Total	ug/l	1000	P	15	15	43	44	44	46	400	370
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	0.22	0.36	ND	0.32	ND	ND	8.4	9.7
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.085	ND	0.13	ND	0.052	ND	7.1	10
Copper, Total	ug/l	1300	P	ND	0.64	ND	ND	ND	0.68	ND	0.62
Iron, Total	mg/l	0.3	S	0.15	0.15	ND	ND	0.058	0.058	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			6.96	6.87	10.2	10.3	11.2	11.3	101	95.2
Manganese, Total	ug/l	50	S	40	40	37	41	<b>53</b>	<b>55</b>	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	2.4	2.2
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
<b>Volatile Organic Compounds</b>											
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	0.9	ND	0.94	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	0.53
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	0.56	0.55
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
<b>Others</b>											
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	<b>7.4</b>	ND	ND	<b>8.4</b>
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			2	2.2	0.47	0.65	ND	0.35	0.97	1.1

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

**TABLE 3.2**  
**WEST COAST BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Gardena #2				
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
				6/13/2023	6/13/2023	6/13/2023	6/13/2023	6/13/2023
<b>General Minerals</b>								
Alkalinity	mg/l			300	180	200	180	200
Anion Sum	meq/l			6.4	5.8	6	4.2	5.6
Bicarbonate as HCO3	mg/l			360	220	240	220	240
Boron	mg/l	1	N	0.32	0.15	0.14	0.11	0.13
Bromide	ug/l			ND	ND	ND	ND	ND
Calcium, Total	mg/l			16.1	43	50.6	30.6	51.7
Carbon Dioxide	mg/l			262	161	176	159	174
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND
Cation Sum	meq/l			6	5.5	5.5	4.1	5.5
Chloride	mg/l	500	S	15	24	24	23	57
Fluoride	mg/l	2	P	0.21	0.23	0.32	0.24	0.26
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND
Iodide	ug/l			29	25	26	23	28
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			6.3	6.4	4.2	3.5	3.4
Sodium, Total	mg/l			100	49	43	42	45
Sulfate	mg/l	500	S	ND	72	63	ND	1.1
Total Dissolved Solid (TDS)	mg/l	1000	S	330	320	320	230	300
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND
<b>General Physical Properties</b>								
Apparent Color	ACU	15	S	25	5	ND	5	3
Hardness (Total, as CaCO3)	mg/l			64.3	163	174	111	173
Lab pH	Units			8.34	8.15	8.12	8.11	8.16
Langelier Index - 25 degree	None			0.594	0.612	0.699	0.452	0.754
Odor	TON	3	S	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	570	540	520	390	540
Turbidity	NTU	5	S	0.45	0.1	0.15	0.3	1.2
<b>Metals</b>								
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	20	18	20	35	95
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	0.068	0.18	0.052	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.03	0.033	0.035	0.076	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			5.85	13.5	11.5	8.51	10.6
Manganese, Total	ug/l	50	S	27	27	34	47	43
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
<b>Volatile Organic Compounds</b>								
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					
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
<b>Others</b>								
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			2.7	0.36	0.52	0.65	0.33

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

**TABLE 3.2**  
**WEST COAST BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Hawthorne #1						
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	
				3/30/2023	3/30/2023	3/30/2023	3/30/2023	3/30/2023	3/30/2023	
<b>General Minerals</b>										
Alkalinity	mg/l			750	720	450	350	250	350	
Anion Sum	meq/l			16	16	11	8.2	13	25	
Bicarbonate as HCO3	mg/l			920	870	550	420	300	430	
Boron	mg/l	1	N	<b>1.3</b>	<b>1.1</b>	0.51	0.39	0.14	0.24	
Bromide	ug/l			ND	ND	ND	ND	0.8	1.1	
Calcium, Total	mg/l			14.3	20.6	34.4	30.4	119	195	
Carbon Dioxide	mg/l			670	635	404	308	223	323	
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	
Cation Sum	meq/l			14	14	9.5	7.4	13	23	
Chloride	mg/l	500	S	52	56	60	46	240	420	
Fluoride	mg/l	2	P	ND	0.2	0.19	0.35	0.24	0.22	
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	
Iodide	ug/l			76	100	77	44	61	150	
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	2	
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	0.46	
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	
Potassium, Total	mg/l			25	17	15	10	9.1	7.8	
Sodium, Total	mg/l			260	260	130	100	87	200	
Sulfate	mg/l	500	S	ND	4.5	ND	ND	68	310	
Total Dissolved Solid (TDS)	mg/l	1000	S	860	500	540	420	900	<b>1500</b>	
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	0.46	
<b>General Physical Properties</b>										
Apparent Color	ACU	15	S	<b>200</b>	<b>300</b>	<b>30</b>	<b>25</b>	ND	ND	
Hardness (Total, as CaCO3)	mg/l			84.7	98	179	133	461	723	
Lab pH	Units			8.06	8.16	8.07	8.08	7.92	7.61	
Langelier Index - 25 degree	None			0.558	0.861	0.782	0.655	0.856	0.838	
Odor	TON	3	S	ND	<b>4</b>	ND	ND	ND	ND	
Specific Conductance	umho/cm	1600	S	1500	1500	970	750	1600	<b>2700</b>	
Turbidity	NTU	5	S	0.2	4	0.2	0.3	0.25	1.7	
<b>Metals</b>										
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	0.54	ND	ND	ND	1.5	
Barium, Total	ug/l	1000	P	34	36	34	28	140	55	
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	0.68	1.5	ND	ND	ND	ND	
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.064	0.17	0.034	ND	ND	ND	
Copper, Total	ug/l	1300	P	0.59	1.1	ND	ND	ND	ND	
Iron, Total	mg/l	0.3	S	0.14	0.14	0.16	0.09	ND	0.12	
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	
Magnesium, Total	mg/l			11.9	11.3	22.5	13.9	39.9	57.4	
Manganese, Total	ug/l	50	S	14	<b>59</b>	<b>57</b>	33	<b>120</b>	<b>630</b>	
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	0.48	
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	
<b>Volatile Organic Compounds</b>										
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	1	
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	1.8	
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	3.9	
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	<b>140</b>	
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	5	
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	<b>22</b>	
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	
<b>Others</b>										
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	0.79	
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	0.63	
Surfactants	mg/l	0.5	S	ND	ND	ND	0.052	ND	0.087	
Total Organic Carbon	mg/l			7.4	8.1	3.6	2.4	1.2	1.5	

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

**TABLE 3.2**  
**WEST COAST BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Inglewood #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				6/8/2023	9/22/2023	6/8/2023	9/22/2023	6/8/2023	9/22/2023	6/8/2023	9/22/2023	6/8/2023	9/22/2023
<b>General Minerals</b>													
Alkalinity	mg/l			1400	1400	910	900	350	350	250	250	300	280
Anion Sum	meq/l			67	72	28	25	23	22	16	16	23	23
Bicarbonate as HCO3	mg/l			1800	1700	1100	1100	430	430	300	300	360	340
Boron	mg/l	1	N	<b>9.3</b>	<b>10</b>	<b>2.1</b>	<b>2.1</b>	0.51	0.5	0.21	0.2	0.24	0.23
Bromide	ug/l			15	17	ND	1.7	3.8	3.9	1.4	1.5	ND	2.1
Calcium, Total	mg/l			34.7	37.4	46.5	46.7	155	149	132	128	206	197
Carbon Dioxide	mg/l			1290	1290	829	828	328	332	228	229	303	286
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			64	65	27	110	22	21	16	15	23	22
Chloride	mg/l	500	S	<b>1400</b>	<b>1600</b>	330	230	430	400	300	300	500	480
Fluoride	mg/l	2	P	ND	0.19	ND	0.2	ND	0.38	0.3	0.32	ND	0.23
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			6300	3400	24	160	1000	1000	120	130	1.1	44
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	<b>65</b>	<b>62</b>
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	<b>15</b>	<b>14</b>
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			47	49	23	23	10	9.7	12	12	11	10
Sodium, Total	mg/l			1400	1400	510	2400	210	190	110	100	150	140
Sulfate	mg/l	500	S	ND	ND	ND	ND	160	160	110	110	110	120
Total Dissolved Solid (TDS)	mg/l	1000	S	<b>3900</b>	<b>4400</b>	<b>1500</b>	<b>1500</b>	<b>1400</b>	<b>1300</b>	990	930	<b>1600</b>	<b>1400</b>
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	<b>15</b>	<b>14</b>
<b>General Physical Properties</b>													
Apparent Color	ACU	15	S	<b>400</b>	<b>300</b>	<b>300</b>	<b>300</b>	15	15	10	10	ND	ND
Hardness (Total, as CaCO3)	mg/l			199	212	201	203	636	616	546	538	816	791
Lab pH	Units			7.92	7.87	7.75	7.72	7.5	7.45	7.62	7.61	7.14	7.17
Langelier Index - 25 degree	None			0.854	0.818	0.77	0.737	0.638	0.582	0.589	0.574	0.316	0.316
Odor	TON	3	S	<b>8</b>	<b>8</b>	<b>8</b>	<b>4</b>	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	<b>6700</b>	<b>7300</b>	<b>2600</b>	<b>2600</b>	<b>2400</b>	<b>2300</b>	<b>1700</b>	<b>1800</b>	<b>2500</b>	<b>2500</b>
Turbidity	NTU	5	S	0.1	0.4	0.85	3.2	3.1	3.4	1.9	2.2	ND	0.65
<b>Metals</b>													
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	0.45	0.5	8.8	7.8	ND	ND	ND	ND	0.42	0.42
Barium, Total	ug/l	1000	P	110	130	87	89	55	55	130	140	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	1	0.95	0.94	0.97	ND	ND	ND	ND	0.56	0.47
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	0.55	0.49
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	1	0.91
Iron, Total	mg/l	0.3	S	<b>0.69</b>	<b>0.92</b>	<b>1</b>	<b>1.1</b>	<b>0.55</b>	<b>0.55</b>	<b>0.43</b>	<b>0.43</b>	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	0.47	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			27.2	28.8	20.5	20.9	60	59.3	52.6	52.7	73.5	72.5
Manganese, Total	ug/l	50	S	30	39	<b>53</b>	50	<b>390</b>	<b>400</b>	<b>260</b>	<b>270</b>	2	1.2
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	0.42	0.45	ND	ND	ND	ND	ND	ND	3.4	3.3
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
<b>Volatile Organic Compounds</b>													
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	0.97	1.2
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	0.78
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	1.2	1.7
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	0.56	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	ND	ND	ND	ND	ND	ND	ND	ND	4.6	7.3
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
<b>Others</b>													
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	0.83	0.83	0.29	0.28
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	3.7	ND
Surfactants	mg/l	0.5	S	0.072	0.13	ND	0.093	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			81	80	21	17	ND	1.7	0.88	0.64	0.88	0.64

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

**TABLE 3.2**  
**WEST COAST BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Inglewood #3													
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Zone 7	
				5/3/2023	8/28/2023	5/3/2023	8/28/2023	5/3/2023	8/28/2023	5/3/2023	8/28/2023	5/3/2023	8/28/2023	5/3/2023	8/28/2023	5/3/2023	8/28/2023
<b>General Minerals</b>																	
Alkalinity	mg/l			740	670	1200	1100	600	550	850	750	480	430	220	200	250	220
Anion Sum	meq/l			46	47	26	23	13	12	18	16	12	11	8.7	8.4	18	18
Bicarbonate as HCO3	mg/l			910	820	1400	1300	710	670	1000	920	580	520	270	250	300	270
Boron	mg/l	1	N	4.2	4.2	5.3	5.2	1.2	1.1	2.2	2.1	0.57	0.57	0.12	0.12	0.11	0.11
Bromide	ug/l			8.5	9.3	1.8	ND	ND	ND	ND	ND	0.58	0.6	0.5	0.5	ND	ND
Calcium, Total	mg/l			19.8	19.6	11.6	11.1	5.9	5.58	15.5	14.9	53.3	53.4	75	72.2	173	169
Carbon Dioxide	mg/l			666	602	1060	941	530	486	760	677	431	393	201	183	225	204
Carbonate as CO3	mg/l			ND	ND	12	ND	17	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			41	39	23	22	11	10	18	15	11	11	8.3	8	17	16
Chloride	mg/l	500	S	1100	1200	58	58	18	18	30	31	97	100	150	150	420	450
Fluoride	mg/l	2	P	ND	ND	0.42	ND	0.19	0.19	0.17	ND	0.21	0.21	0.28	0.28	ND	ND
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			2400	3000	89	820	45	12	52	44	11	210	36	60	63	100
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			26	25	19	18	8.8	8.5	22	21	13	13	7.9	7.7	8	7.9
Sodium, Total	mg/l			890	840	480	470	230	220	370	300	150	150	57	55	89	87
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.3	5.8	41	43
Total Dissolved Solid (TDS)	mg/l	1000	S	2600	2700	1500	1500	670	690	970	980	640	650	500	520	1100	1300
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>General Physical Properties</b>																	
Apparent Color	ACU	15	S	250	250	1500	1500	400	500	750	500	30	30	ND	3	ND	5
Hardness (Total, as CaCO3)	mg/l			90.9	90.7	54.8	52.7	27.1	25.8	79.9	76.8	202	203	280	270	639	623
Lab pH	Units			8	7.95	8.18	8.12	8.31	8.23	8.09	7.96	7.91	7.75	7.95	7.82	7.82	7.72
Langelier Index - 25 degree	None			0.477	0.373	0.717	0.6	0.356	0.211	0.662	0.46	0.822	0.613	0.698	0.506	0.893	0.704
Odor	TON	3	S	4	4	64	8	4	4	4	4	ND	ND	ND	ND	17	4
Specific Conductance	umho/cm	1600	S	5000	4700	2200	2200	1000	1100	1500	1300	1100	1100	850	870	1800	1900
Turbidity	NTU	5	S	0.1	0.2	0.1	0.15	0.3	1.4	0.15	0.65	0.1	0.1	0.1	0.1	0.75	0.6
<b>Metals</b>																	
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	32	31	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	1.6	1.2	0.87	0.86	1.7	2	2.7	2.5	ND	ND	0.56	0.52	1.5	1.3
Barium, Total	ug/l	1000	P	62	56	26	24	13	12	44	40	57	54	82	76	270	250
Beryllium, Total	ug/l	4	P	ND	ND	0.12	0.17	ND	ND	0.11	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	0.56	0.52	5.4	5.2	1.7	1.6	2.6	2.5	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	ND	ND	0.11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	3.4	3.1	1.6	1.5	1.9	1.6	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.22	0.19	0.49	0.45	0.14	0.13	0.36	0.34	0.15	0.13	0.03	ND	0.14	0.14
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	0.22	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			10.1	10.2	6.28	6.05	3	2.87	9.97	9.64	16.8	16.8	22.5	21.9	50.3	49
Manganese, Total	ug/l	50	S	58	53	23	22	21	20	41	37	50	47	120	120	310	310
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	2.3	2.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	ug/l	50	P	ND	ND	0.5	0.49	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
<b>Volatile Organic Compounds</b>																	
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	1.5	1.4
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	0.71	ND	1.1	ND	0.54	ND	ND	ND	ND	ND	0.66	0.66
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	31	32
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	5.9	5.9
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	0.73	0.67
Xylenes (Total)	ug/l	1750	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>Others</b>																	
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	0.054	ND	ND	ND	ND	ND	ND	ND	ND	0.072	0.078	0.42	0.38
Total Organic Carbon	mg/l			18	19	70	61	11	5.7	12	12	2.9	3.6	2.1	2.3	4.2	4.5

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



**TABLE 3.2**  
**WEST COAST BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Lawndale #1											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				3/31/2023	7/27/2023	3/31/2023	7/27/2023	3/31/2023	7/27/2023	3/31/2023	7/27/2023	3/31/2023	7/27/2023	3/31/2023	7/27/2023
<b>General Minerals</b>															
Alkalinity	mg/l			500	410	440	540	260	220	210	200	98	200	310	280
Anion Sum	meq/l			11	8.8	9.5	12	5.9	5.3	7.3	7.2	3.1	7.3	27	27
Bicarbonate as HCO3	mg/l			610	500	500	640	310	270	260	250	120	250	380	350
Boron	mg/l	1	N	0.89	0.84	0.63	0.99	0.19	0.19	0.12	0.12	0.045	0.1	0.3	0.36
Bromide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.6	1.6
Calcium, Total	mg/l			11.5	12.7	13.8	11.5	18.6	17.5	60.6	58.6	26.9	53.3	232	235
Carbon Dioxide	mg/l			452	360	383	476	228	198	189	181	87.2	190	299	267
Carbonate as CO3	mg/l			ND	ND	36	20	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			9.3	9	8.3	11	5.4	5.2	6.8	6.6	2.8	6.4	26	26
Chloride	mg/l	500	S	18	19	19	31	27	28	67	68	22	67	<b>580</b>	<b>560</b>
Fluoride	mg/l	2	P	0.38	0.39	0.24	0.21	0.29	0.29	0.34	0.34	0.2	0.37	0.17	0.17
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			150	85	44	74	33	33	37	35	9.9	30	12	17
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	23
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.9	5.2
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			7	6.4	7.2	11	10	9.5	4.7	4.4	2.6	5.2	11	11
Sodium, Total	mg/l			190	180	160	230	78	76	49	48	20	52	200	210
Sulfate	mg/l	500	S	ND	5.1	1.2	ND	0.57	0.56	56	57	26	63	180	260
Total Dissolved Solid (TDS)	mg/l	1000	S	560	560	500	700	300	310	380	400	160	400	<b>1700</b>	<b>2000</b>
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.9	5.2
<b>General Physical Properties</b>															
Apparent Color	ACU	15	S	<b>88</b>	<b>100</b>	<b>120</b>	<b>180</b>	5	10	3	5	5	3	ND	ND
Hardness (Total, as CaCO3)	mg/l			43.1	48.3	52.2	49.2	87.4	84.6	227	222	94.6	202	821	839
Lab pH	Units			7.91	8.27	8.7	8.44	8.21	8.23	7.96	8.05	8.11	7.6	7.39	7.51
Langelier Index - 25 degree	None			0.188	0.504	1.01	0.725	0.473	0.391	0.623	0.672	0.159	0.181	0.623	0.68
Odor	TON	3	S	4	4	4	2	ND	ND	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	940	880	840	1100	540	530	690	650	310	670	<b>2900</b>	<b>3100</b>
Turbidity	NTU	5	S	0.15	0.25	2.8	0.4	0.2	0.15	0.2	0.15	2.5	0.8	0.15	0.3
<b>Metals</b>															
Aluminum, Total	ug/l	1000	P	ND	ND	28	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	0.53	0.56	5.6	1.5	ND	ND	1.1	1.4	4.6	1.3	1	1.1
Barium, Total	ug/l	1000	P	13	14	14	17	16	15	40	40	61	100	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	0.32	0.34	0.61	0.7	ND	ND	ND	ND	ND	ND	0.48	0.48
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.079	0.042	0.11	0.047	0.027	ND	ND	ND	0.056	ND	0.42	0.32
Copper, Total	ug/l	1300	P	ND	ND	2.9	0.92	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.078	0.076	0.089	0.069	0.045	0.048	0.075	0.084	ND	0.041	ND	ND
Lead, Total	ug/l	15	P	ND	ND	0.21	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			3.48	4.02	4.34	4.97	9.97	9.95	18.4	18.4	6.68	16.7	58.9	61.4
Manganese, Total	ug/l	50	S	15	17	35	34	45	46	<b>65</b>	<b>67</b>	49	<b>97</b>	<b>53</b>	<b>83</b>
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	1.9	2
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
<b>Volatile Organic Compounds</b>															
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	0.5	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
<b>Others</b>															
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.8	0.47
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.1	2.9
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			9.7	1.3	4.6	7.1	1.3	8.6	0.53	0.64	1.4	0.57	0.77	0.96

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



**TABLE 3.2**  
**WEST COAST BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Lomita #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				6/14/2023	9/25/2023	6/14/2023	9/25/2023	6/14/2023	9/25/2023	6/14/2023	9/25/2023	6/14/2023	9/25/2023
<b>General Minerals</b>													
Alkalinity	mg/l			280	280	260	270	290	280	270	230	240	280
Anion Sum	meq/l			29	32	27	29	16	19	32	12	13	35
Bicarbonate as HCO3	mg/l			340	350	320	320	360	340	330	280	300	340
Boron	mg/l	1	N	0.6	0.69	0.51	0.56	0.46	0.51	0.78	0.4	0.42	0.75
Bromide	ug/l			8.8	9.6	7.9	8.3	2.9	3.5	9.5	ND	ND	10
Calcium, Total	mg/l			249	281	236	226	94.2	116	279	81.6	93.3	265
Carbon Dioxide	mg/l			252	265	239	247	265	264	252	209	217	265
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			30	33	28	27	16	18	33	12	13	32
Chloride	mg/l	500	S	<b>830</b>	<b>910</b>	<b>760</b>	<b>820</b>	340	410	<b>910</b>	260	300	<b>1000</b>
Fluoride	mg/l	2	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			2400	3200	2000	2700	35	1100	2400	740	630	3000
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			21	22	19	19	12	13	22	9.5	10	21
Sodium, Total	mg/l			250	260	240	240	190	210	280	140	140	280
Sulfate	mg/l	500	S	4.4	12	22	27	33	68	32	6	5.7	34
Total Dissolved Solid (TDS)	mg/l	1000	S	<b>2000</b>	<b>2200</b>	<b>1800</b>	<b>2000</b>	910	<b>1100</b>	<b>2900</b>	740	810	<b>2300</b>
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>General Physical Properties</b>													
Apparent Color	ACU	15	S	5	5	15	10	<b>20</b>	15	5	<b>25</b>	<b>30</b>	5
Hardness (Total, as CaCO3)	mg/l			920	1030	868	835	350	434	1020	299	339	980
Lab pH	Units			7.73	7.56	7.72	7.6	7.81	7.51	7.65	7.85	8.01	7.53
Langelier Index - 25 degree	None			0.925	0.793	0.875	0.737	0.708	0.459	0.821	0.61	0.836	0.731
Odor	TON	3	S	2	4	4	2	4	ND	2	ND	ND	ND
Specific Conductance	umho/cm	1600	S	<b>3400</b>	<b>3500</b>	<b>3300</b>	<b>3200</b>	<b>1700</b>	480	<b>3800</b>	<b>4900</b>	1400	<b>3700</b>
Turbidity	NTU	5	S	<b>18</b>	<b>8.3</b>	3.3	2.7	<b>20</b>	<b>6.9</b>	1.3	0.3	0.55	0.85
<b>Metals</b>													
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	0.97	0.91	ND	ND	ND	ND
Barium, Total	ug/l	1000	P	150	170	140	140	57	74	170	51	55	170
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.16	0.073	0.12	0.084	ND	ND	0.15	0.092	0.091	0.15
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			72.3	80.9	67.4	65.9	27.8	35.2	77.9	23.2	25.7	77.6
Manganese, Total	ug/l	50	S	<b>530</b>	<b>600</b>	<b>510</b>	<b>480</b>	<b>63</b>	<b>73</b>	<b>540</b>	<b>150</b>	<b>180</b>	<b>530</b>
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
<b>Volatile Organic Compounds</b>													
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	0.51	ND	ND	ND	ND	ND	0.72	ND	0.73
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
<b>Others</b>													
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	0.27	ND	ND	ND	0.12
Surfactants	mg/l	0.5	S	0.063	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			2	2	1.9	1.9	2.3	2.3	1.8	1.8	2	2

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

**TABLE 3.2**  
**WEST COAST BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Long Beach #3									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				6/5/2023	9/18/2023	6/5/2023	9/18/2023	6/5/2023	9/18/2023	6/5/2023	9/18/2023	6/5/2023	9/18/2023
<b>General Minerals</b>													
Alkalinity	mg/l			390	380	140	140	160	160	130	130	160	140
Anion Sum	meq/l			8.3	8.1	3.9	3.8	4.1	4.1	27	26	24	23
Bicarbonate as HCO3	mg/l			470	440	160	170	200	190	160	150	190	170
Boron	mg/l	1	N	0.38	0.36	0.13	0.13	0.13	0.12	0.11	0.11	0.11	0.11
Bromide	ug/l			ND	ND	ND	ND	ND	ND	7.4	7	5.9	6
Calcium, Total	mg/l			11.3	10.6	16.6	15.7	19.8	18.5	264	244	229	220
Carbon Dioxide	mg/l			337	330	125	122	143	140	118	116	141	129
Carbonate as CO3	mg/l			ND	ND	10	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			7.6	7.3	3.6	3.5	3.8	3.6	26	24	22	21
Chloride	mg/l	500	S	20	20	22	22	32	31	<b>820</b>	<b>780</b>	<b>670</b>	<b>660</b>
Fluoride	mg/l	2	P	0.43	0.43	0.28	0.31	0.24	0.28	0.1	0.13	0.12	0.13
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			63	65	32	33	55	56	1900	1200	1600	1100
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			4	3.8	2.2	2	2.6	2.4	17	16	11	11
Sodium, Total	mg/l			150	150	58	56	58	55	150	140	140	140
Sulfate	mg/l	500	S	ND	ND	22	21	ND	ND	78	77	84	81
Total Dissolved Solid (TDS)	mg/l	1000	S	450	450	220	210	230	230	<b>2600</b>	<b>2000</b>	<b>2100</b>	<b>1700</b>
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>General Physical Properties</b>													
Apparent Color	ACU	15	S	<b>75</b>	<b>100</b>	15	15	<b>20</b>	<b>20</b>	5	5	5	5
Hardness (Total, as CaCO3)	mg/l			41.7	39.5	52.2	49.6	62.7	58.7	957	881	796	763
Lab pH	Units			8.47	8.39	8.48	8.42	8.31	8.24	7.77	7.73	7.88	7.8
Langelier Index - 25 degree	None			0.654	0.535	0.449	0.369	0.411	0.312	0.616	0.583	0.788	0.664
Odor	TON	3	S	2	2	2	ND	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	730	750	380	380	390	380	<b>3200</b>	<b>2900</b>	<b>2700</b>	<b>2700</b>
Turbidity	NTU	5	S	0.2	3.6	0.35	0.1	0.25	0.1	0.9	0.7	0.7	0.6
<b>Metals</b>													
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	0.49	0.41	0.75	0.75
Barium, Total	ug/l	1000	P	9	9	14	16	7.8	7.6	88	85	99	110
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	0.28	0.3	0.2	0.2	ND	0.53	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.053	0.054	0.077	0.022	0.12	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.039	0.037	ND	ND	0.033	0.033	0.2	0.19	0.17	0.18
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			3.28	3.14	2.6	2.51	3.2	3.06	72.1	66.3	54.4	51.9
Manganese, Total	ug/l	50	S	11	11	7.2	8.3	9	9.2	<b>220</b>	<b>230</b>	<b>250</b>	<b>260</b>
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
<b>Volatile Organic Compounds</b>													
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	0.68
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	9.2	3.1	8.1	2.7
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
<b>Others</b>													
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			9.3	6.8	1.4	1.3	1.8	2.2	1.2	1.2	1.1	1.2

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

**TABLE 3.2**  
**WEST COAST BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Long Beach #8					
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
				5/19/2023	5/19/2023	5/19/2023	5/19/2023	5/19/2023	5/19/2023
<b>General Minerals</b>									
Alkalinity	mg/l			560	480	660	420	320	220
Anion Sum	meq/l			12	11	16	24	19	19
Bicarbonate as HCO3	mg/l			690	590	800	510	390	270
Boron	mg/l	1	N	<b>1.2</b>	0.79	<b>1.3</b>	<b>1.1</b>	0.6	0.2
Bromide	ug/l			ND	ND	0.71	4.5	3.6	1.6
Calcium, Total	mg/l			7.66	9.56	10.3	46.4	61.9	107
Carbon Dioxide	mg/l			492	422	580	372	289	206
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			11	9.7	13	22	17	17
Chloride	mg/l	500	S	25	38	92	<b>560</b>	450	480
Fluoride	mg/l	2	P	0.74	0.76	0.51	0.18	0.15	0.45
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND
Iodide	ug/l			71	57	43	880	890	79
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	4.2	8.4	15	11	7.7
Sodium, Total	mg/l			240	200	280	380	260	200
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	25
Total Dissolved Solid (TDS)	mg/l	1000	S	680	590	880	<b>1300</b>	<b>1100</b>	<b>1100</b>
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND
<b>General Physical Properties</b>									
Apparent Color	ACU	15	S	<b>500</b>	<b>300</b>	<b>350</b>	<b>75</b>	<b>50</b>	5
Hardness (Total, as CaCO3)	mg/l			27.3	36.8	45.4	252	266	412
Lab pH	Units			8.48	8.37	8.35	8.01	7.99	7.64
Langelier Index - 25 degree	None			0.607	0.543	0.647	0.713	0.723	0.449
Odor	TON	3	S	<b>32</b>	<b>8</b>	<b>32</b>	<b>4</b>	<b>4</b>	ND
Specific Conductance	umho/cm	1600	S	1000	950	1400	<b>2300</b>	<b>1900</b>	<b>1900</b>
Turbidity	NTU	5	S	0.2	0.35	0.4	0.65	1	<b>8</b>
<b>Metals</b>									
Aluminum, Total	ug/l	1000	P	31	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	0.76	1	0.46	0.46	ND
Barium, Total	ug/l	1000	P	9.5	9.7	13	21	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	1.3	1.2	1.5	0.37	0.32	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.18	0.15	0.18	ND	ND	ND
Copper, Total	ug/l	1300	P	3.2	1.6	1	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.18	0.15	0.21	0.17	0.22	<b>0.69</b>
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			1.99	3.13	4.81	33	27.1	35.2
Manganese, Total	ug/l	50	S	16	23	21	12	41	<b>310</b>
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
<b>Volatile Organic Compounds</b>									
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	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	P	ND	ND	ND	ND	ND	ND
Toluene	ug/l	150	P	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	ug/l	80	P	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	P	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/l	5	P	ND	ND	ND	ND	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
<b>Others</b>									
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			12	18	22	7.4	12	0.93

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

**TABLE 3.2**  
**WEST COAST BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Manhattan Beach #1													
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Zone 7	
				3/8/2023	7/21/2023	3/9/2023	7/20/2023	3/9/2023	7/21/2023	3/8/2023	7/20/2023	3/8/2023	7/20/2023	3/8/2023	7/20/2023	3/8/2023	7/20/2023
<b>General Minerals</b>																	
Alkalinity	mg/l			620	560	480	430	1000	880	520	470	140	130	170	150	170	150
Anion Sum	meq/l			130	160	49	49	24	21	11	10	360	380	130	130	12	12
Bicarbonate as HCO3	mg/l			750	690	590	530	1200	1100	630	570	170	150	210	190	210	180
Boron	mg/l	1	N	15	15	6.6	6.9	3.6	3.7	0.41	0.41	0.52	0.55	0.098	0.1	0.19	0.19
Bromide	ug/l			26	34	9.5	10	2.3	2.4	ND	ND	ND	ND	ND	ND	ND	ND
Calcium, Total	mg/l			46.4	46.5	31.3	32.1	15.3	15.7	26	25.7	1770	1860	885	899	60.6	62.3
Carbon Dioxide	mg/l			557	514	429	384	892	790	460	414	141	134	162	148	152	132
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			110	110	42	43	19	20	10	9.8	350	370	120	120	11	11
Chloride	mg/l	500	S	4100	5300	1400	1400	130	130	38	39	12000	12000	4100	4200	140	140
Fluoride	mg/l	2	P	ND	ND	ND	ND	0.32	0.31	0.18	0.18	ND	ND	ND	ND	0.21	ND
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			5100	6800	2600	2600	200	940	110	100	170	210	22	29	46	37
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	15	19
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.5	4.4
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			36	35	25	24	32	33	12	11	180	180	56	57	6.2	5.9
Sodium, Total	mg/l			2400	2500	890	920	380	390	180	170	4200	4500	1300	1400	150	140
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	ND	ND	ND	1600	1600	560	530	230	210
Total Dissolved Solid (TDS)	mg/l	1000	S	7400	7500	2600	2800	1300	1300	610	660	30000	32000	10000	12000	720	750
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.5	4.4
<b>General Physical Properties</b>																	
Apparent Color	ACU	15	S	75	80	150	160	300	300	30	35	4	5	ND	ND	ND	ND
Hardness (Total, as CaCO3)	mg/l			253	252	128	131	86.4	88.8	106	105	8230	8650	3210	3230	209	214
Lab pH	Units			7.91	7.79	8.05	8.14	8.13	8.04	8.2	8.16	7.21	7.02	7.56	7.37	8.03	8
Langelier Index - 25 degree	None			0.524	0.359	0.537	0.579	0.728	0.594	0.839	0.742	0.775	0.592	0.859	0.608	0.533	0.455
Odor	TON	3	S	4	4	4	4	4	4	ND	ND	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	13000	5000	5300	13000	2000	2100	1000	980	34000	34000	13000	13000	420	1200
Turbidity	NTU	5	S	0.15	0.25	0.3	0.15	0.2	0.35	0.1	0.1	34	65	19	21	0.45	0.3
<b>Metals</b>																	
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	1.2	1.1	ND	0.48	ND	0.55	0.58	0.53	0.58	0.67	0.5	0.5	4.1	3.7
Barium, Total	ug/l	1000	P	710	670	190	190	89	87	41	38	200	180	210	200	41	42
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	0.3	0.25	ND	0.29	1.7	1.8	0.41	0.2	0.2	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	ND	ND	0.022	ND	0.31	0.12	0.1	2.8	ND	ND	ND	0.021	ND
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	0.42	0.42	0.16	0.16	0.2	0.21	0.086	0.086	4	4.1	1.6	1.6	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			33.3	33	12.2	12.4	11.7	12	10	9.85	923	971	242	240	14	14.2
Manganese, Total	ug/l	50	S	43	41	41	38	41	39	59	55	850	820	950	950	130	140
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	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.2	2.6
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
<b>Volatile Organic Compounds</b>																	
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
<b>Others</b>																	
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	0.96	1.2
Surfactants	mg/l	0.5	S	0.087	0.093	0.084	0.051	0.14	0.061	ND	ND	0.1	0.067	0.083	ND	ND	ND
Total Organic Carbon	mg/l			22	28	27	35	45	40	4.4	5.8	1.7	1.4	0.67	0.38	1.3	1

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

**TABLE 3.2**  
**WEST COAST BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	PM-2 Police Station							
				Zone 1		Zone 2		Zone 3		Zone 4	
				3/16/2023	8/18/2023	3/16/2023	8/18/2023	3/16/2023	8/18/2023	3/16/2023	8/18/2023
<b>General Minerals</b>											
Alkalinity	mg/l			130	94	140	140	150	130	160	150
Anion Sum	meq/l			180	190	32	43	14	15	12	11
Bicarbonate as HCO3	mg/l			160	110	170	170	180	160	200	180
Boron	mg/l	1	N	0.16	0.16	0.18	0.24	0.3	0.3	0.31	0.3
Bromide	ug/l			ND	ND	ND	ND	ND	ND	0.78	0.83
Calcium, Total	mg/l			1150	1180	254	384	91.1	92.6	62.8	63.3
Carbon Dioxide	mg/l			122	91.9	124	136	134	119	146	130
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			180	190	28	43	14	14	11	11
Chloride	mg/l	500	S	<b>5900</b>	<b>6300</b>	<b>990</b>	<b>1400</b>	250	280	160	160
Fluoride	mg/l	2	P	ND	ND	ND	ND	0.29	0.3	0.33	0.31
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			90	130	61	180	18	30	130	170
Nitrate (as NO3)	mg/l	45	P	ND	ND	5.9	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	1.3	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			120	120	17	23	9.7	9.8	8	8.1
Sodium, Total	mg/l			1800	1800	190	280	150	150	130	140
Sulfate	mg/l	500	S	<b>690</b>	<b>710</b>	45	54	210	200	190	190
Total Dissolved Solid (TDS)	mg/l	1000	S	<b>13000</b>	<b>18000</b>	<b>2100</b>	<b>3100</b>	880	910	690	700
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	1.6	ND	ND	ND	ND	ND
<b>General Physical Properties</b>											
Apparent Color	ACU	15	S	5	10	5	<b>30</b>	4	3	3	3
Hardness (Total, as CaCO3)	mg/l			5190	5350	984	1490	339	349	236	240
Lab pH	Units			7.46	7.29	7.69	7.45	7.88	7.95	8	8.06
Langelier Index - 25 degree	None			0.761	0.437	0.59	0.464	0.489	0.492	0.504	0.53
Odor	TON	3	S	ND	ND	<b>4</b>	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	<b>19000</b>	<b>17000</b>	<b>3700</b>	<b>4600</b>	<b>1700</b>	1500	1200	1100
Turbidity	NTU	5	S	1.6	1.5	0.35	<b>6.8</b>	0.15	0.1	0.1	ND
<b>Metals</b>											
Aluminum, Total	ug/l	1000	P	ND	ND	ND	ND	ND	ND	ND	ND
Antimony, Total	ug/l	6	P	ND	ND	0.56	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	2.3	6.5	1.4	1.2	0.97	0.89
Barium, Total	ug/l	1000	P	250	240	230	330	40	40	37	36
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	0.31	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	ND	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	ND	ND	ND	ND	0.077	0.024	0.1
Copper, Total	ug/l	1300	P	ND	ND	0.73	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	<b>0.33</b>	<b>0.35</b>	ND	<b>1</b>	ND	ND	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			562	584	84.9	130	27.2	28.7	19.1	20
Manganese, Total	ug/l	50	S	<b>360</b>	<b>370</b>	<b>190</b>	<b>370</b>	<b>130</b>	<b>130</b>	<b>59</b>	<b>63</b>
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	69	ND	ND	ND	ND	ND
<b>Volatile Organic Compounds</b>											
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	0.64	ND	ND	ND	ND	ND	0.61
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
<b>Others</b>											
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	ND	ND
Perchlorate	ug/l	6	P	ND	ND	0.23	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			0.9	0.98	2.7	1.4	1.5	1.5	1.3	1.4

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

**TABLE 3.2**  
**WEST COAST BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	PM-3 Madrid							
				Zone 1		Zone 2		Zone 3		Zone 4	
				5/19/2023	8/15/2023	5/19/2023	8/15/2023	5/19/2023	8/15/2023	5/19/2023	8/15/2023
<b>General Minerals</b>											
Alkalinity	mg/l			330	310	200	190	210	180	190	180
Anion Sum	meq/l			7.4	7	9.6	9.3	14	14	13	15
Bicarbonate as HCO3	mg/l			410	380	250	240	260	230	230	220
Boron	mg/l	1	N	0.35	0.35	0.15	0.15	0.24	0.24	0.41	0.41
Bromide	ug/l			ND	ND	1	ND	2.2	2.1	2.1	2
Calcium, Total	mg/l			11.8	11.4	83.5	78.5	111	109	110	108
Carbon Dioxide	mg/l			292	274	183	176	193	170	178	168
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			6.5	6.5	9.1	8.8	13	13	14	14
Chloride	mg/l	500	S	27	28	200	190	300	310	260	320
Fluoride	mg/l	2	P	0.26	0.27	0.24	0.24	0.27	0.26	0.29	0.27
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			25	16	120	180	310	470	290	450
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	13	5.4	5.2	7	7.1	7.2	7.6
Sodium, Total	mg/l			110	110	68	68	100	110	130	140
Sulfate	mg/l	500	S	ND	ND	1	ND	60	59	100	110
Total Dissolved Solid (TDS)	mg/l	1000	S	390	400	580	570	840	870	850	920
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
<b>General Physical Properties</b>											
Apparent Color	ACU	15	S	<b>30</b>	<b>35</b>	10	10	3	5	10	<b>20</b>
Hardness (Total, as CaCO3)	mg/l			65.6	63.7	300	286	408	402	403	398
Lab pH	Units			8.33	8.33	7.83	7.87	7.79	7.68	7.62	7.65
Langelier Index - 25 degree	None			0.475	0.43	0.568	0.56	0.629	0.44	0.41	0.399
Odor	TON	3	S	ND	ND	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	650	650	1000	960	1400	1500	1500	1600
Turbidity	NTU	5	S	0.8	0.3	0.35	0.9	<b>5.9</b>	<b>5.7</b>	2.8	<b>5.3</b>
<b>Metals</b>											
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	0.86	0.47	ND	ND	8.6	8.5
Barium, Total	ug/l	1000	P	20	18	39	33	91	84	83	78
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	0.28	ND	ND	ND	0.22	3.3	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.23	0.1	0.064	ND	0.057	0.033	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.041	0.037	0.055	0.22	0.075	0.084	<b>0.62</b>	<b>0.59</b>
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			8.79	8.55	22.2	22	31.8	31.7	31.1	31.2
Manganese, Total	ug/l	50	S	22	20	<b>63</b>	<b>60</b>	<b>69</b>	<b>68</b>	<b>370</b>	<b>370</b>
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
<b>Volatile Organic Compounds</b>											
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	1.4	1.2	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	0.84	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	P	ND	ND	ND	ND	ND	ND	0.85	0.97
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	0.57	0.52
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
<b>Others</b>											
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	0.18	0.14
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			2.5	2.9	0.89	0.73	1	1	1.1	1.1

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

**TABLE 3.2**  
**WEST COAST BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	PM-4 Mariner							
				Zone 1		Zone 2		Zone 3		Zone 4	
				4/23/2023	9/24/2023	4/23/2023	9/24/2023	4/23/2023	9/24/2023	4/23/2023	9/24/2023
<b>General Minerals</b>											
Alkalinity	mg/l			280	250	170	150	170	150	240	210
Anion Sum	meq/l			6.4	5.9	230	220	9.4	9	12	11
Bicarbonate as HCO3	mg/l			340	310	200	190	210	190	290	260
Boron	mg/l	1	N	0.17	0.17	0.23	0.2	0.23	0.23	0.24	0.23
Bromide	ug/l			ND	ND	ND	ND	ND	ND	ND	ND
Calcium, Total	mg/l			27.2	27	1460	1380	42.7	46.2	78.2	76.4
Carbon Dioxide	mg/l			244	225	158	152	149	137	210	189
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			5.8	5.7	220	200	8.7	8.6	11	11
Chloride	mg/l	500	S	30	30	<b>7300</b>	<b>7200</b>	94	93	130	130
Fluoride	mg/l	2	P	0.31	0.3	ND	ND	0.4	0.32	0.21	0.2
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			37	70	61	81	20	34	53	70
Nitrate (as NO3)	mg/l	45	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
Nitrite, as Nitrogen	mg/l	1	P	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/l			7.6	7.6	86	84	6.1	5.9	7.3	7.1
Sodium, Total	mg/l			75	75	2400	2200	130	120	120	120
Sulfate	mg/l	500	S	ND	ND	<b>980</b>	<b>920</b>	160	160	160	160
Total Dissolved Solid (TDS)	mg/l	1000	S	330	340	<b>16000</b>	<b>14000</b>	540	560	670	670
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND
<b>General Physical Properties</b>											
Apparent Color	ACU	15	S	10	10	5	5	10	10	5	5
Hardness (Total, as CaCO3)	mg/l			114	114	5550	5230	152	166	278	274
Lab pH	Units			8.31	8.06	7.5	7.26	8.34	8.23	8.2	8.1
Langelier Index - 25 degree	None			0.762	0.457	0.994	0.677	0.722	0.588	0.971	0.803
Odor	TON	3	S	ND	ND	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	580	540	<b>21000</b>	<b>20000</b>	960	870	1200	1100
Turbidity	NTU	5	S	0.1	0.1	1.4	1.3	0.85	1.2	0.25	0.15
<b>Metals</b>											
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	19	20	210	200	72	77	61	61
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	0.044	ND	1	ND	0.035	0.1	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	0.59	ND	0.64	ND
Iron, Total	mg/l	0.3	S	0.059	0.054	0.19	0.19	ND	ND	0.13	0.12
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			11.2	11.4	464	436	11	12.3	20.1	20.2
Manganese, Total	ug/l	50	S	28	29	<b>880</b>	<b>910</b>	32	37	<b>76</b>	<b>77</b>
Mercury	ug/l	2	P	ND	ND	ND	0.052	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
<b>Volatile Organic Compounds</b>											
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
<b>Others</b>											
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	0.099	0.097
Perchlorate	ug/l	6	P	ND	ND	ND	<b>9.3*</b>	ND	ND	ND	4.5*
Surfactants	mg/l	0.5	S	ND	ND	0.05	0.073	ND	ND	ND	ND
Total Organic Carbon	mg/l			1.4	1.5	1	1.1	1.2	1.4	0.91	0.98

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

\*Anomalous result considering historical results have always been non-detect (ND).



**TABLE 3.2**  
**WEST COAST BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	PM-5 Columbia Park											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				3/27/2023	8/1/2023	3/27/2023	8/1/2023	3/27/2023	8/1/2023	3/27/2023	8/1/2023	3/27/2023	8/1/2023	3/27/2023	8/1/2023
<b>General Minerals</b>															
Alkalinity	mg/l			740	680	980	870	450	410	330	290	200	180	230	210
Anion Sum	meq/l			18	16	20	18	10	9.2	7.5	6.8	36	39	13	13
Bicarbonate as HCO3	mg/l			910	830	1200	1100	540	500	400	350	250	220	280	250
Boron	mg/l	1	N	<b>2.5</b>	<b>2.5</b>	<b>1.9</b>	<b>1.9</b>	0.36	0.37	0.18	0.19	0.19	0.2	0.21	0.21
Bromide	ug/l			1.6	1.5	ND	ND	ND	ND	ND	ND	2.9	ND	0.59	0.56
Calcium, Total	mg/l			13.3	12.7	7.24	6.73	13.9	13.1	26.2	25.4	279	261	88.4	83.5
Carbon Dioxide	mg/l			659	607	863	773	397	362	289	256	188	163	205	185
Carbonate as CO3	mg/l			ND	ND	ND	ND	6.3	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			16	16	18	18	8.9	8.7	6.5	6.5	34	34	12	12
Chloride	mg/l	500	S	99	100	17	17	33	33	35	34	<b>840</b>	<b>960</b>	160	160
Fluoride	mg/l	2	P	0.53	0.54	0.26	0.26	0.24	0.24	0.28	0.27	0.16	ND	0.3	0.29
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			540	670	54	100	120	140	63	67	34	39	79	82
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			16	16	13	13	17	17	12	12	14	14	7	6.9
Sodium, Total	mg/l			330	320	380	380	160	160	90	90	320	350	140	130
Sulfate	mg/l	500	S	ND	ND	ND	ND	ND	ND	ND	ND	380	390	190	190
Total Dissolved Solid (TDS)	mg/l	1000	S	1000	1000	1000	<b>1100</b>	560	530	370	380	<b>2600</b>	<b>2800</b>	770	780
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>General Physical Properties</b>															
Apparent Color	ACU	15	S	<b>300</b>	<b>300</b>	<b>750</b>	<b>750</b>	<b>80</b>	<b>75</b>	<b>20</b>	<b>20</b>	4	3	3	3
Hardness (Total, as CaCO3)	mg/l			57.6	55.8	39.2	37.1	64.1	61.5	116	114	982	929	303	289
Lab pH	Units			8.17	8.11	8.26	8.22	8.35	8.31	8.15	8.14	7.72	7.72	7.98	8.07
Langelier Index - 25 degree	None			0.612	0.495	0.559	0.423	0.663	0.563	0.647	0.565	0.778	0.691	0.77	0.794
Odor	TON	3	S	<b>4</b>	<b>8</b>	<b>4</b>	<b>4</b>	2	ND	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	<b>1700</b>	1600	<b>1800</b>	<b>1700</b>	900	860	680	640	<b>4100</b>	<b>4000</b>	1300	1400
Turbidity	NTU	5	S	0.1	0.1	0.15	1	0.25	0.6	0.1	0.25	0.35	0.65	ND	0.5
<b>Metals</b>															
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	0.43	0.42	3.4	3.2	0.7	0.67	0.6	0.62	0.81	0.92	ND	ND
Barium, Total	ug/l	1000	P	89	84	23	21	26	25	22	23	100	98	160	150
Beryllium, Total	ug/l	4	P	ND	ND	ND	0.12	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	0.89	0.91	3.1	3	0.51	0.53	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	0.13	0.048	ND	ND	0.089	0.068	0.038	0.048	ND	ND	0.13	0.043
Copper, Total	ug/l	1300	P	0.66	0.59	2.7	2.4	ND	ND	0.67	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.18	0.17	0.29	0.28	0.048	0.049	0.037	0.041	0.099	0.095	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			5.95	5.88	5.13	4.93	7.14	7.01	12.3	12.4	69	67.5	20	19.6
Manganese, Total	ug/l	50	S	43	42	27	25	36	36	26	28	<b>240</b>	<b>260</b>	<b>120</b>	<b>120</b>
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
<b>Volatile Organic Compounds</b>															
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
<b>Others</b>															
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.073	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	0.072	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			26	28	18	20	5.2	6.4	2.6	2.7	1.7	1.6	1.1	1.2

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



**TABLE 3.2**  
**WEST COAST BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	PM-6 Madrona Marsh											
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6	
				4/7/2023	8/25/2023	4/7/2023	8/25/2023	4/7/2023	8/25/2023	4/7/2023	8/25/2023	4/7/2023	8/25/2023	4/7/2023	8/25/2023
<b>General Minerals</b>															
Alkalinity	mg/l			440	420	130	120	140	76	260	230	170	160	160	160
Anion Sum	meq/l			59	62	86	91	200	170	7.9	7.3	41	44	9.3	9.7
Bicarbonate as HCO3	mg/l			540	510	160	140	180	92	310	280	210	190	200	200
Boron	mg/l	1	N	0.74	0.74	0.55	0.58	0.22	0.18	0.24	0.24	0.37	0.38	0.18	0.18
Bromide	ug/l			7.2	ND	12	ND	27	ND	ND	ND	4.1	ND	ND	ND
Calcium, Total	mg/l			261	249	213	223	1080	894	22.3	22.5	192	198	52.3	58.6
Carbon Dioxide	mg/l			395	379	118	105	136	71.5	227	205	157	145	147	146
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	6.4	ND	ND	ND	ND	ND
Cation Sum	meq/l			56	55	78	82	180	150	6.7	6.8	38	39	8.2	9
Chloride	mg/l	500	S	<b>1800</b>	<b>1900</b>	<b>3000</b>	<b>3200</b>	<b>7000</b>	<b>6000</b>	95	94	<b>1100</b>	<b>1200</b>	120	130
Fluoride	mg/l	2	P	0.33	ND	ND	ND	ND	ND	0.44	0.46	0.13	ND	0.26	0.24
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			180	230	410	620	190	270	28	110	91	130	53	94
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			43	42	68	71	130	110	6.2	6.5	22	22	5.4	5.9
Sodium, Total	mg/l			620	600	1300	1400	1600	1300	98	100	520	530	98	110
Sulfate	mg/l	500	S	2.5	ND	ND	ND	83	45	ND	ND	350	390	120	140
Total Dissolved Solid (TDS)	mg/l	1000	S	<b>4200</b>	<b>4000</b>	<b>5700</b>	<b>5800</b>	<b>17000</b>	<b>13000</b>	400	420	<b>2700</b>	<b>2700</b>	530	580
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>General Physical Properties</b>															
Apparent Color	ACU	15	S	<b>220</b>	<b>200</b>	5	10	5	15	<b>18</b>	<b>20</b>	<b>18</b>	<b>20</b>	5	10
Hardness (Total, as CaCO3)	mg/l			1410	1360	943	1000	5510	4610	111	114	732	765	188	213
Lab pH	Units			7.92	7.86	7.88	7.82	7.5	7.47	8.31	8.23	7.73	7.67	8.03	7.95
Langelier Index - 25 degree	None			1.22	1.12	0.512	0.435	0.779	0.406	0.625	0.491	0.549	0.476	0.477	0.437
Odor	TON	3	S	<b>16</b>	ND	ND	2	<b>400</b>	ND	ND	<b>32</b>	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	<b>6300</b>	<b>6000</b>	<b>9300</b>	<b>9100</b>	<b>19000</b>	<b>16000</b>	790	710	<b>4300</b>	<b>4500</b>	980	940
Turbidity	NTU	5	S	3.2	2.4	0.3	0.65	0.15	0.6	0.2	0.95	2.3	3	0.3	0.35
<b>Metals</b>															
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	0.66	ND	ND	ND	ND	ND	ND
Arsenic, Total	ug/l	10	P	ND	ND	ND	ND	0.5	0.88	ND	ND	1.9	2	1.8	1.8
Barium, Total	ug/l	1000	P	750	650	670	600	<b>3300</b>	<b>2200</b>	28	25	120	110	15	17
Beryllium, Total	ug/l	4	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	ug/l	5	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ug/l	50	P	1.2	1.3	ND	ND	0.38	0.75	0.21	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	ug/l	1300	P	1.1	1.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.034	0.047	0.13	0.14	ND	ND	0.092	0.099	<b>0.56</b>	<b>0.59</b>	0.17	0.2
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			183	180	99.9	108	682	577	13.5	14	61.3	65.6	14	16.3
Manganese, Total	ug/l	50	S	8	7	<b>200</b>	<b>180</b>	<b>68</b>	50	<b>64</b>	<b>60</b>	<b>470</b>	<b>450</b>	<b>69</b>	<b>79</b>
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
<b>Volatile Organic Compounds</b>															
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	0.71	ND	1.1	ND	0.64	ND	1.4	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
<b>Others</b>															
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	0.06	0.062	ND	ND	ND	ND	ND	ND
Total Organic Carbon	mg/l			5.1	5.6	1.8	2.1	1.7	2.5	1.7	1.8	1.9	1.9	1.2	1.3

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

**TABLE 3.2**  
**WEST COAST BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Westchester #1									
				Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
				6/13/2023	9/29/2023	6/13/2023	9/29/2023	6/13/2023	9/29/2023	6/13/2023	9/29/2023	6/13/2023	9/29/2023
<b>General Minerals</b>													
Alkalinity	mg/l			800	750	550	530	430	420	350	330	280	270
Anion Sum	meq/l			20	19	13	13	11	11	11	10	9.3	9.3
Bicarbonate as HCO3	mg/l			980	920	680	650	530	520	430	400	340	340
Boron	mg/l	1	N	<b>1.8</b>	<b>1.7</b>	0.83	0.84	0.4	0.4	0.25	0.24	0.23	0.23
Bromide	ug/l			0.78	0.81	ND	ND	ND	ND	ND	ND	ND	ND
Calcium, Total	mg/l			45	39.3	32.7	31.3	57.7	56.2	71.4	68.3	64.1	60.9
Carbon Dioxide	mg/l			710	671	492	477	388	380	316	299	251	251
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cation Sum	meq/l			19	17	13	12	11	10	10	9.8	9.2	8.7
Chloride	mg/l	500	S	120	120	75	76	66	68	70	70	69	71
Fluoride	mg/l	2	P	0.19	0.21	0.22	0.22	0.21	0.22	0.23	0.23	0.27	0.28
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodide	ug/l			210	140	130	49	100	86	82	81	71	76
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			20	18	18	18	12	12	11	9.8	8.2	7.6
Sodium, Total	mg/l			340	310	210	200	130	120	98	90	89	82
Sulfate	mg/l	500	S	14	14	ND	ND	17	17	82	83	86	88
Total Dissolved Solid (TDS)	mg/l	1000	S	<b>1100</b>	<b>1200</b>	710	710	580	580	580	580	520	510
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>General Physical Properties</b>													
Apparent Color	ACU	15	S	<b>500</b>	<b>400</b>	<b>75</b>	<b>70</b>	<b>20</b>	<b>20</b>	10	10	10	10
Hardness (Total, as CaCO3)	mg/l			188	167	153	150	239	236	293	283	258	248
Lab pH	Units			8.15	8.03	8.15	8.02	8.04	7.92	7.95	7.85	7.93	7.73
Langelier Index - 25 degree	None			1.14	0.924	0.896	0.731	0.949	0.808	0.862	0.718	0.711	0.475
Odor	TON	3	S	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	ND	ND	ND	ND	ND	ND
Specific Conductance	umho/cm	1600	S	<b>1800</b>	<b>1800</b>	1200	1100	990	970	970	940	890	840
Turbidity	NTU	5	S	1.1	<b>7.1</b>	0.85	1.1	0.35	0.6	0.25	0.3	0.5	0.5
<b>Metals</b>													
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	0.51	ND	ND	ND	0.87	0.85	ND	ND	0.66	0.59
Barium, Total	ug/l	1000	P	110	110	110	110	68	73	73	77	71	73
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	2	1.9	0.24	0.29	ND	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	ug/l	10	P	ND	0.33	ND	0.037	ND	ND	ND	ND	0.032	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	0.13	0.12	0.13	0.13	0.2	0.23	0.13	0.14	0.2	0.21
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			18.4	16.8	17.5	17.4	23.1	23.3	27.8	27.3	23.7	23.2
Manganese, Total	ug/l	50	S	<b>84</b>	<b>75</b>	47	47	<b>130</b>	<b>140</b>	<b>120</b>	<b>120</b>	<b>120</b>	<b>130</b>
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	25	ND
<b>Volatile Organic Compounds</b>													
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	0.6	ND	ND	ND	0.7	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
<b>Others</b>													
1,4-Dioxane	ug/l	1	N	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.085
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			19	20	6.1	6.9	3.1	3	1.7	1.7	1.5	1.3

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

**TABLE 3.2**  
**WEST COAST BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Wilmington #1				
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
				2/27/2023	2/27/2023	2/27/2023	2/27/2023	2/27/2023
<b>General Minerals</b>								
Alkalinity	mg/l			140	180	190	150	190
Anion Sum	meq/l			16	25	24	19	18
Bicarbonate as HCO3	mg/l			170	220	240	190	230
Boron	mg/l	1	N	0.24	0.24	0.29	0.22	0.21
Bromide	ug/l			2.6	2.9	3.2	ND	ND
Calcium, Total	mg/l			100	188	152	91.5	116
Carbon Dioxide	mg/l			ND	3.83	3.41	ND	5.11
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND
Cation Sum	meq/l			15	23	22	17	16
Chloride	mg/l	500	S	470	<b>660</b>	<b>660</b>	430	360
Fluoride	mg/l	2	P	ND	ND	ND	ND	ND
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND
Iodide	ug/l			840	460	700	48	80
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			12	9.7	9.8	8.4	9.3
Sodium, Total	mg/l			160	210	260	220	170
Sulfate	mg/l	500	S	7	120	88	190	210
Total Dissolved Solid (TDS)	mg/l	1000	S	<b>1100</b>	<b>1600</b>	<b>1600</b>	<b>1100</b>	1000
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND
<b>General Physical Properties</b>								
Apparent Color	ACU	15	S	3	4	4	4	5
Hardness (Total, as CaCO3)	mg/l			379	666	527	356	444
Lab pH	Units			8.09	7.92	7.95	8.03	7.95
Langelier Index - 25 degree	None			0.672	0.834	0.795	0.604	0.742
Odor	TON	3	S	4	4	4	4	4
Specific Conductance	umho/cm	1600	S	<b>1800</b>	<b>2600</b>	<b>2700</b>	<b>2000</b>	<b>1800</b>
Turbidity	NTU	5	S	0.2	0.15	0.1	0.15	0.2
<b>Metals</b>								
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	0.52	0.75	ND	ND
Barium, Total	ug/l	1000	P	19	13	18	37	120
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	ND	ND	0.1	ND	ND
Copper, Total	ug/l	1300	P	ND	ND	ND	ND	ND
Iron, Total	mg/l	0.3	S	ND	<b>50</b>	ND	ND	<b>200</b>
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			31.1	47.6	35.9	31	37.2
Manganese, Total	ug/l	50	S	36	23	5.6	14	<b>84</b>
Mercury	ug/l	2	P	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	2.4	2	ND	ND
Selenium, Total	ug/l	50	P	3.6	4.3	4.7	1.6	1.4
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
<b>Volatile Organic Compounds</b>								
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			6.7	25	22	2	3.5
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	12	<b>84</b>
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	<b>93</b>	<b>110</b>	<b>100</b>	<b>16</b>	<b>61</b>
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
<b>Others</b>								
1,4-Dioxane	ug/l	1	N	0.22	0.66	0.92	ND	ND
Perchlorate	ug/l	6	P	ND	ND	ND	ND	ND
Surfactants	mg/l	0.5	S	0.18	0.32	0.28	0.21	0.28
Total Organic Carbon	mg/l			3.2	4.4	4.7	1.9	3.4

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

**TABLE 3.2**  
**WEST COAST BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2022-23**  
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Constituents	Units	MCL	MCL Type	Wilmington #2				
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
				2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023
<b>General Minerals</b>								
Alkalinity	mg/l			260	460	150	300	180
Anion Sum	meq/l			21	29	17	11	62
Bicarbonate as HCO3	mg/l			310	560	190	360	220
Boron	mg/l	1	N	0	0	0	0	0
Bromide	ug/l			2.1	7.7	3.6	1.2	7.2
Calcium, Total	mg/l			12.9	29.5	89.7	18.9	177
Carbon Dioxide	mg/l			226	412	139	265	165
Carbonate as CO3	mg/l			ND	ND	ND	ND	ND
Cation Sum	meq/l			19	26	16	9.8	58
Chloride	mg/l	500	S	<b>550</b>	<b>700</b>	490	180	<b>1800</b>
Fluoride	mg/l	2	P	0.47	0.42	0.14	0.71	0.17
Hydroxide as OH, Calculated	mg/l			ND	ND	ND	ND	ND
Iodide	ug/l			150	150	63	400	54
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			13	17	12	6.1	24
Sodium, Total	mg/l			380	510	190	190	940
Sulfate	mg/l	500	S	ND	ND	ND	ND	340
Total Dissolved Solid (TDS)	mg/l	1000	S	<b>1200</b>	<b>1600</b>	1000	610	<b>3600</b>
Nitrate + Nitrite, as Nitrogen	mg/l	10	P	ND	ND	ND	ND	ND
<b>General Physical Properties</b>								
Apparent Color	ACU	15	S	<b>38</b>	<b>75</b>	5	<b>75</b>	12
Hardness (Total, as CaCO3)	mg/l			74.5	165	361	81.3	802
Lab pH	Units			8.31	8.08	7.91	8.16	7.67
Langelier Index - 25 degree	None			0.259	0.596	0.488	0.422	0.433
Odor	TON	3	S	ND	2	ND	4	ND
Specific Conductance	umho/cm	1600	S	<b>2200</b>	<b>3000</b>	<b>1900</b>	1000	<b>6200</b>
Turbidity	NTU	5	S	0.15	0.2	0.15	0.85	0.15
<b>Metals</b>								
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	0.58	ND	ND	0.53
Barium, Total	ug/l	1000	P	10	50	26	15	62
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	0.044	0.14	ND	0.57	ND
Copper, Total	ug/l	1300	P	3.4	4.8	1.6	1.9	9
Iron, Total	mg/l	0.3	S	ND	<b>46</b>	<b>39</b>	ND	ND
Lead, Total	ug/l	15	P	ND	ND	ND	ND	ND
Magnesium, Total	mg/l			10.3	22.3	33.3	8.31	87.5
Manganese, Total	ug/l	50	S	5.4	7.5	14	5.4	39
Mercury	ug/l	2	P	ND	ND	ND	ND	ND
Nickel, Total	ug/l	100	P	ND	ND	ND	ND	3.1
Selenium, Total	ug/l	50	P	3.3	13	6	1.6	11
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
<b>Volatile Organic Compounds</b>								
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	5	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
<b>Others</b>								
1,4-Dioxane	ug/l	1	N	ND	0.17	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			3.6	14	2	6.3	2.2

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

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**TABLE 3.3**  
**QUALITY OF REPLENISHMENT WATER**

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Constituent	Units	Regulatory Limit	IMPORTED WATER			RECYCLED WATER								LOCAL WATER
			Treated Blend of Colorado River & State Water Project <sup>A</sup>	Untreated Colorado River <sup>B</sup>	Untreated State Water Project <sup>C</sup>	WBMWD ELWRF <sup>D</sup>	LADWP TIWRP <sup>E</sup>	WRD LVL AWTF <sup>F</sup>	WRD ARC AWTF <sup>G</sup>	LACSD Pomona WRP <sup>H</sup>	LACSD San Jose Creek East WRP <sup>H</sup>	LACSD San Jose Creek West WRP <sup>H</sup>	LACSD Whittier Narrows WRP <sup>H</sup>	Stormwater <sup>I</sup>
			2022	2022	2022	2022	2022	2023	2023	2022-2023	2022-2023	2022-2023	2022-2023	2021-2022
Arsenic	µg/L	MCL = 10	ND/ 2.4	2.0	3.7	ND	ND	ND	ND	0.54	1.4	0.26	ND	NA
Chloride	mg/L	SMCL = 500	78 <sup>J</sup> / 61 <sup>J</sup>	101 <sup>J</sup>	46 <sup>J</sup>	12	134 <sup>K</sup>	50	11	145	138	116	115	NA
Hexavalent Chromium	µg/L	MCL = 10	ND / ND	ND	ND	0.83	ND	0.75	0.06	0.16	0.21	0.22	0.14	NA
Iron	µg/L	SMCL = 300	ND / ND	ND	ND	ND	16	ND	0.02	27	28	30	39	NA
Manganese	µg/L	SMCL = 50	ND / ND	ND	112	ND	6.5	1.7	1.5	5.7	7.1	2.3	8.0	NA
Nitrate (as N)	mg/L	MCL = 10	ND / 0.90	ND	ND	0.34	0.82	2.8	0.82	6.6	5.8	5.5	6.1	NA
Perchlorate	µg/L	MCL = 6	ND / ND	ND	ND	ND	ND	ND	ND	0.21	0.24	0.25	0.19	NA
Tetrachloroethylene (PCE)	µg/L	MCL = 5	ND / ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Trichloroethylene (TCE)	µg/L	MCL = 5	ND / ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Total Dissolved Solids (TDS)	mg/L	SMCL = 1,000	456 <sup>J</sup> / 348 <sup>J</sup>	609 <sup>J</sup>	204 <sup>J</sup>	88	381 <sup>K</sup>	158	86	583	647	578	603	NA
Alkalinity	mg/L	None	99 <sup>J</sup> / 89 <sup>J</sup>	131 <sup>J</sup>	61 <sup>J</sup>	58	NA	63	43	156	180	176	159	NA
Boron	µg/L	NL = 1,000	130/220	130	180	250	619 <sup>K</sup>	343	250	320	370	380	310	NA
Chromium, Total	µg/L	MCL = 50	ND / ND	ND	ND	ND	0.46	0.14	ND	1.0	0.66	1.1	0.93	NA
Copper, Total	µg/L	SMCL = 1,000	ND / ND	ND	ND	2.0	3.3	0.11	0.42	4.1	2.8	3.7	3.2	16
1,4-Dioxane	µg/L	NL = 1	NA	NA	NA	ND	ND	0.10	0.16	0.70	0.62	0.49	0.53	NA
Hardness	mg/L	None	201 <sup>J</sup> / 129 <sup>J</sup>	288 <sup>J</sup>	71 <sup>J</sup>	38	107	33	38	216	229	209	208	122
Lead, Total	µg/L	AL = 15	ND / ND	ND	ND	ND	0.12	0.02	ND	0.09	0.04	0.02	0.04	3.9
Methyl tertiary butyl ether (MTBE)	µg/L	SMCL = 5	ND / ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Nitrite (as N)	mg/L	MCL = 1	ND / ND	ND	ND	0.07	ND	0.18	ND	0.19	ND	0.06	0.33	NA
n-Nitrosodimethylamine (NDMA)	ng/L	NL = 10	ND / ND	NA	NA	2.4	ND	0.17	ND	37	46	16	8.0	NA
pH	pH Units	None	8.1 / 8.3	8.3	8.3	7.4	8.0	8.3	7.8	7.2	7.3	7.3	7.3	NA
Selenium	µg/L	MCL = 50	ND / ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Specific Conductance	µS/cm	SMCL = 1,600	745 <sup>J</sup> / 580 <sup>J</sup>	994 <sup>J</sup>	356 <sup>J</sup>	65	544	323	137	853	907	893	906	NA
Sulfate	mg/L	SMCL = 500	156 <sup>J</sup> / 95 <sup>J</sup>	218 <sup>J</sup>	37 <sup>J</sup>	0.66	13 <sup>K</sup>	0.79	2.3	68.8	116	91	111	NA
Total Organic Carbon (TOC)	mg/L	None <sup>L</sup>	2.6 / 1.5	2.9 <sup>J</sup>	3.7 <sup>J</sup>	0.18	0.21	0.53	0.13	7.1	5.7	6.0	6.0	NA
Turbidity	NTU	SMCL = 5	0.04 <sup>J</sup> / 0.04 <sup>J</sup>	1.5 <sup>J</sup>	2.5 <sup>J</sup>	0.04	0.10	0.18	0.31	0.50	0.50	0.50	0.11	NA

See footnotes on following page.

## TABLE 3.3 QUALITY OF REPLENISHMENT WATER

Page 2 of 2

**Notes:**

- A = Used at the seawater intrusion barriers: generally, Diemer Plant effluent / Jensen Plant effluent (Data Source #1).
- B = Historically used at the Montebello Forebay spreading grounds (Lake Mathews) (Data Source #1).
- C = Historically 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 Albert Robles Center for Water Recycling and Environmental Learning Advanced Water Treatment Facility (ARC AWTF); used at the Montebello Forebay spreading grounds (Data Source #8).
- H = Effluent of water reclamation plants (WRPs); used at the Montebello Forebay spreading grounds (Data Source #3).
- I = Average concentration of water samples collected from LACPW San Gabriel River Monitoring Station S14 from July 2021 through June 2022 (four storm events total) (Data Source #5).
- J = Average concentration for Water Year October 2022 through September 2023 (Data Source #2).
- K = Average concentration in blended water (treatment plant effluent & treated water from Colorado River/State Water Project), which is delivered to the Dominguez Gap Seawater Intrusion Barrier (Data Source #6).
- L = 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

LACPW = Los Angeles County Public Works

LACSD = Los Angeles County Sanitation Districts

LADWP = Los Angeles Department of Water and Power

MWD = Metropolitan Water District of Southern California

WBMWD = West Basin Municipal Water District

WRD = Water Replenishment District of Southern California

**Sources of Data:**

- (1) 2022 Water Quality Report to MWD Member Agencies (Metropolitan Water District of Southern California, March 2023)
- (2) Table D, Monthly Analyses of the District Water Supplies (Metropolitan Water District of Southern California, October 2022 - September 2023)
- (3) October 2022 - September 2023 Annual Monitoring Report, Montebello Forebay Groundwater Recharge (Los Angeles County Sanitation Districts [LACSD], December 15, 2023)
- (4) Annual West Coast Basin Barrier Project Monitoring Report for 2022, Edward C. Little Water Recycling Facility (West Basin Municipal Water District [WBMWD], March 24, 2023)
- (5) Annual stormwater monitoring data provided by Los Angeles County (Los Angeles County Public Works [LACPW])
- (6) Annual Monitoring Report - January - December 2022, Harbor Water Recycling/Dominguez Gap Barrier Project (City of Los Angeles, Bureau of Sanitation)
- (7) 2023 Preliminary Annual Summary Data for Alamitos Barrier Recycled Water Project, Leo J. Vander Lans Water Treatment Facility (LVL AWTF).
- (8) 2023 Preliminary Annual Summary Data for Albert Robles Center for Water Recycling and Environmental Learning Advanced Water Treatment Facility (ARC AWTF).

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**TABLE 3.4  
MAJOR MINERAL WATER QUALITY GROUPS**

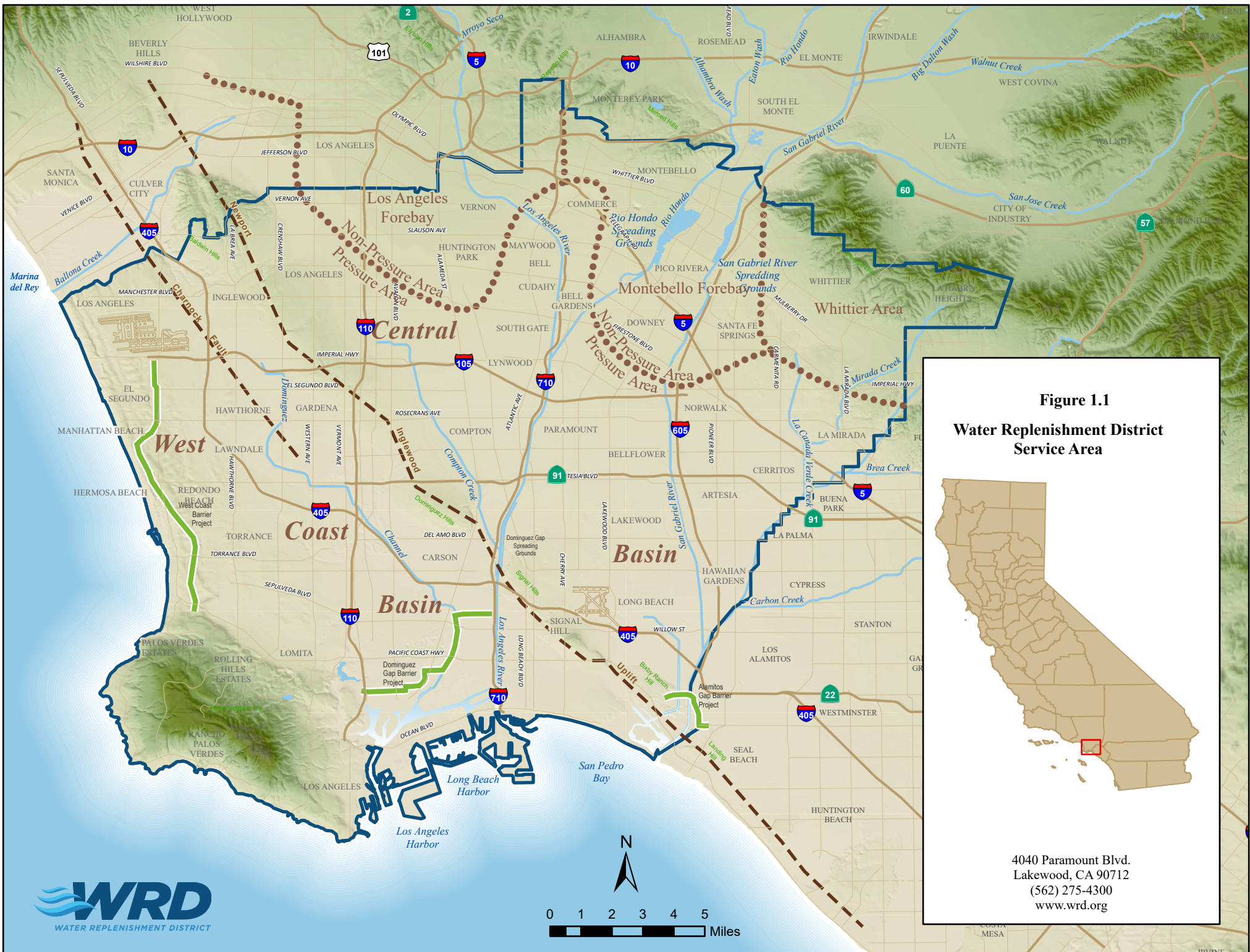
<b>NESTED MONITORING WELL LOCATIONS</b>	<b>GROUP A ZONES</b> Generally Calcium Bicarbonate or Calcium Bicarbonate/Sulfate Dominant	<b>GROUP B ZONES</b> Generally Calcium-Sodium-Bicarbonate or Sodium-Bicarbonate Dominant	<b>GROUP C ZONES</b> Generally Sodium-Chloride Dominant	<b>GROUP D ZONES</b> Generally Different Than Groups A, B, and C
<b>CENTRAL BASIN</b>				
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			
Cerritos #3		1, 2, 4, 5, 6		3, 7
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
Montebello #2		1		2, 3, 4, 5
Norwalk #1	4, 5	1, 2, 3		
Norwalk #2	3, 4, 5, 6	1, 2		
Paramount #1				1, 2, 3, 4, 5, 6, 7
Pico #1	2, 3, 4	1		
Pico #2	1, 2, 3, 4, 5, 6			
Rio Hondo #1	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	
<b>WEST COAST BASIN</b>				
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.

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## **FIGURES**

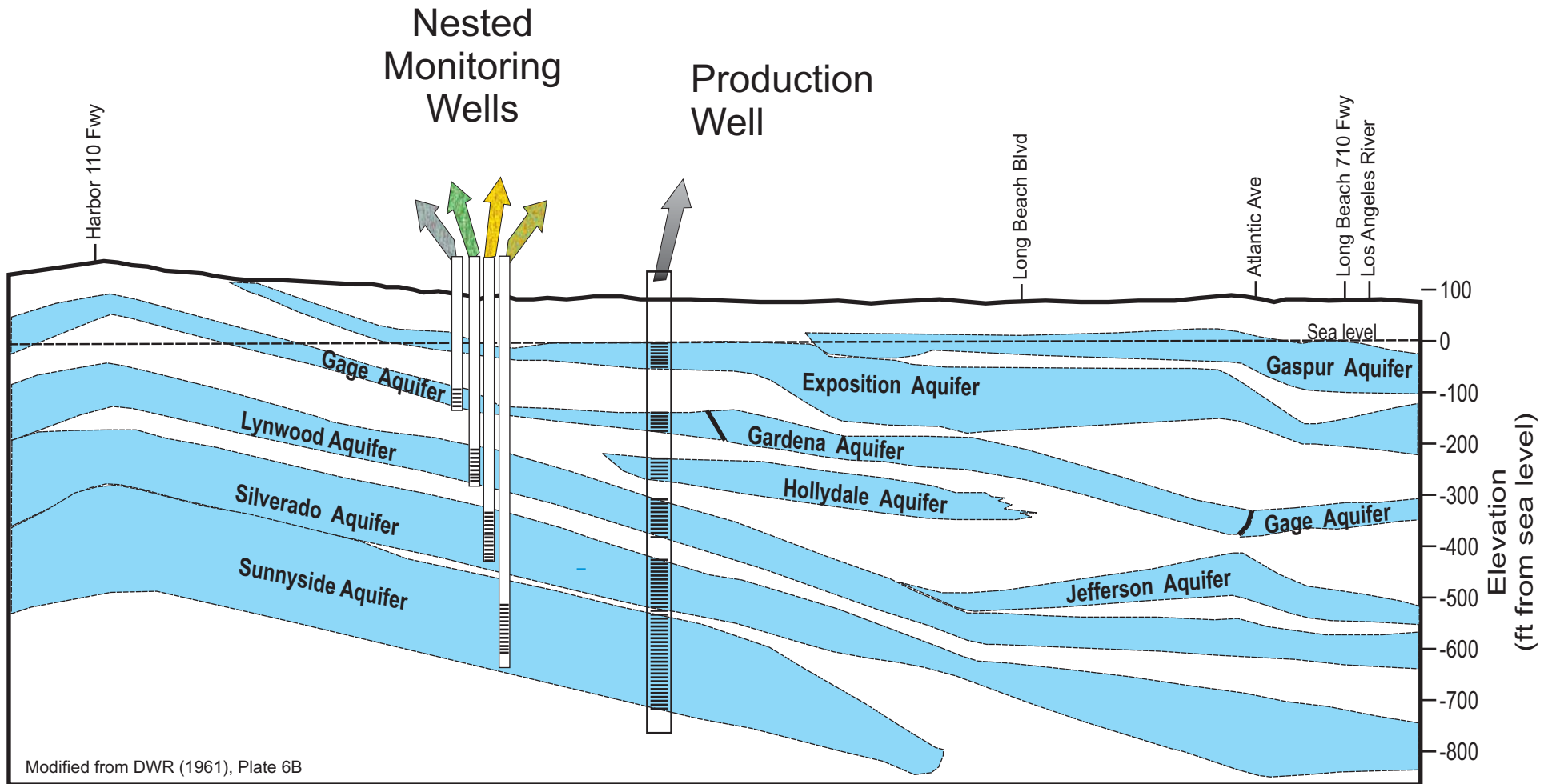




**Figure 1.1**  
**Water Replenishment District**  
**Service Area**

4040 Paramount Blvd.  
 Lakewood, CA 90712  
 (562) 275-4300  
 www.wrd.org

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



Modified from DWR (1961), Plate 6B

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**  
**Monitoring Well Locations**

**Legend**

- WRD Key Nested Monitoring Well\*
- WRD Nested Monitoring Well
- Other Monitoring Well with Groundwater Elevation (feet mean sea level)
- Central Basin Sub-Area Boundary
- Seawater Intrusion Barrier
- WRD Service Area Boundary

A-A' Location of Cross Section (Figure 1.5)

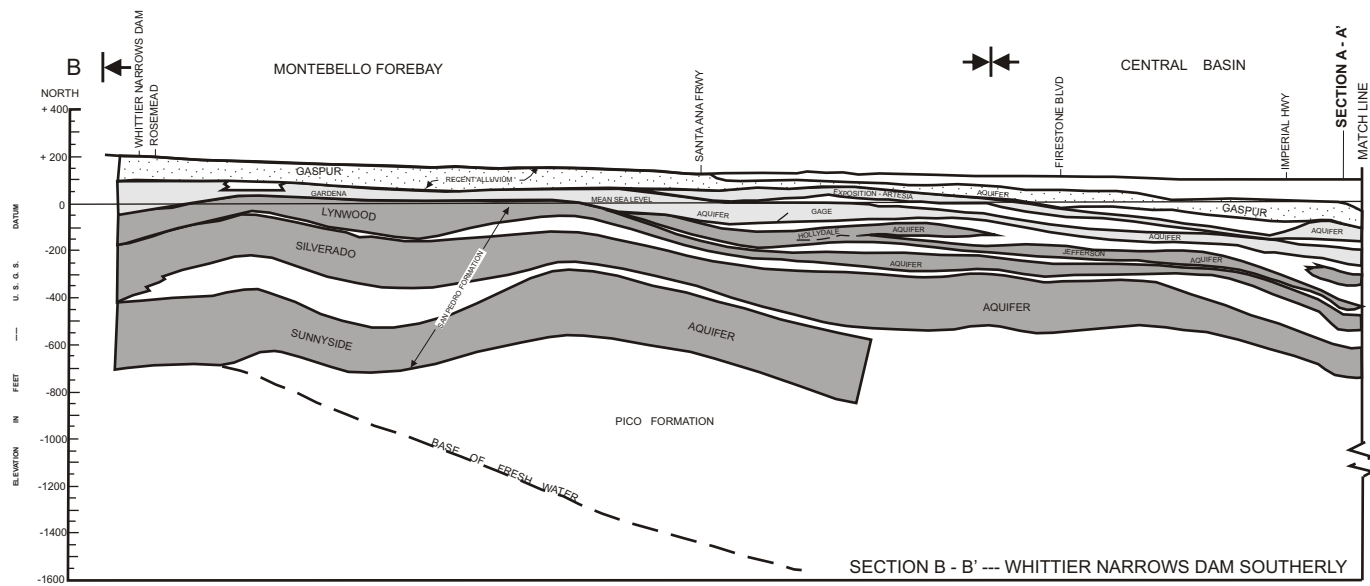
B-B' Location of Cross Section (Figure 1.4)

*\*WRD Key Monitoring Wells used for Hydrograph Figures (Section 2) and for Salt and Nutrient Monitoring (Section 4).*





*See Figure 1.1 for Details*

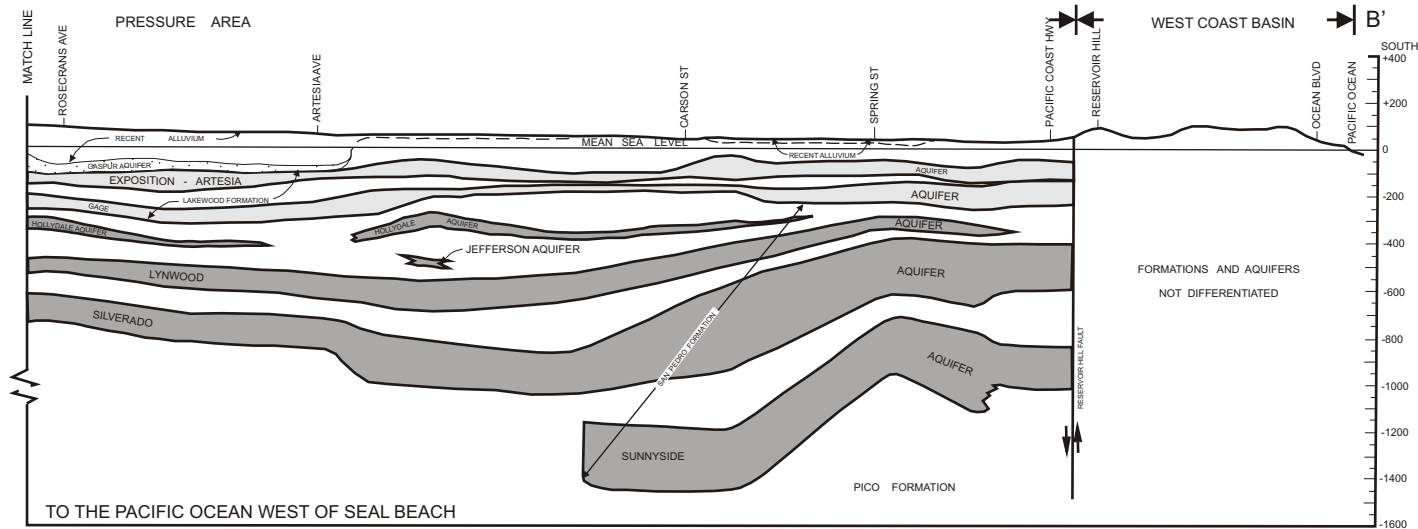






### LEGEND

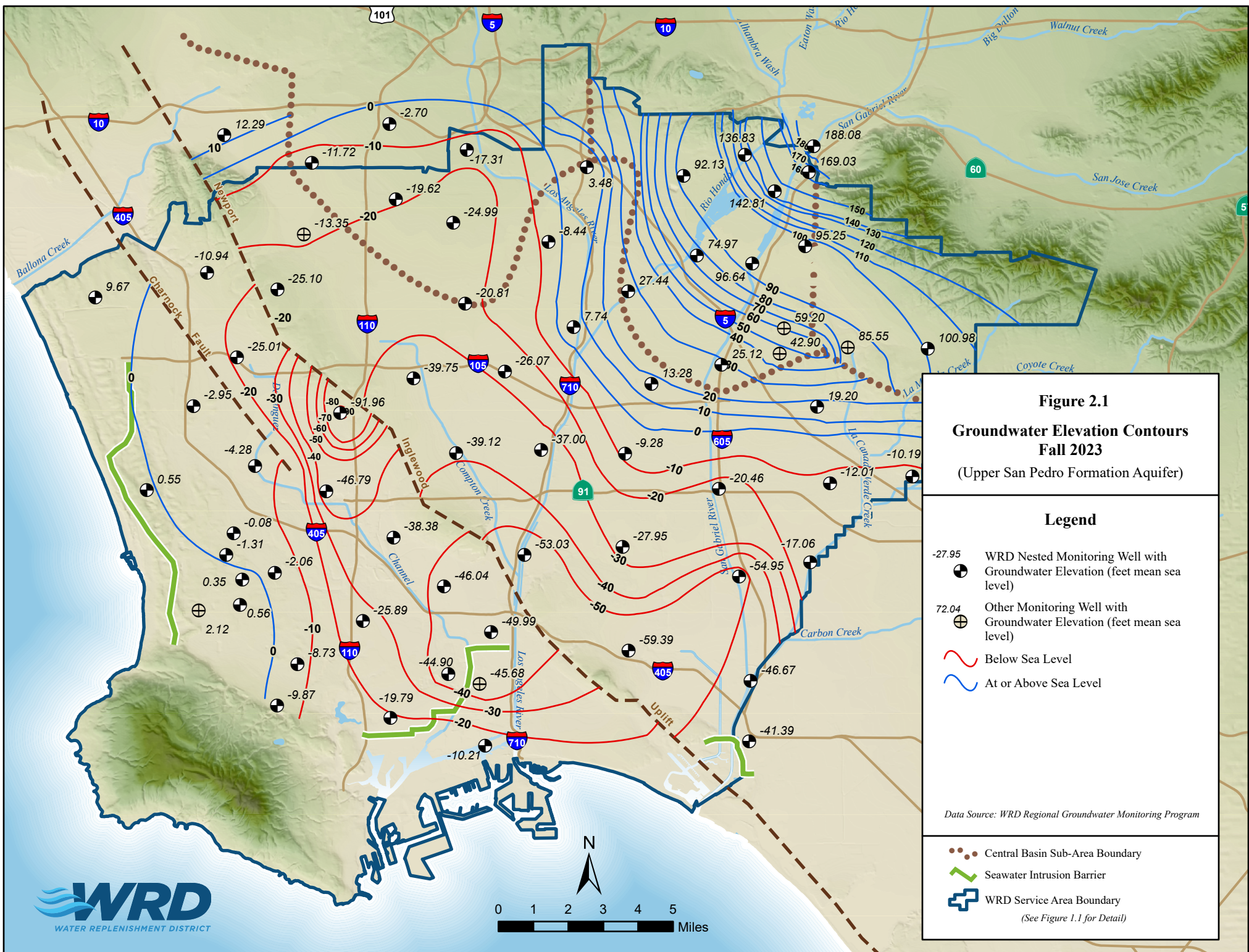
-  AQUICLIDES AND DEEPER UNDIFFERENTIATED FORMATIONS
-  AQUIFERS IN RECENT ALLUVIUM (INCLUDES THE GASPUR AND BALLONA AQUIFERS)
-  AQUIFERS IN LAKEWOOD FORMATION (INCLUDES THE ARTESIA, EXPOSITION, GAGE, AND GARDENA AQUIFERS)
-  AQUIFERS IN THE SAN PEDRO FORMATION (INCLUDES THE HOLLYDALE, JEFFERSON, LYNWOOD,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



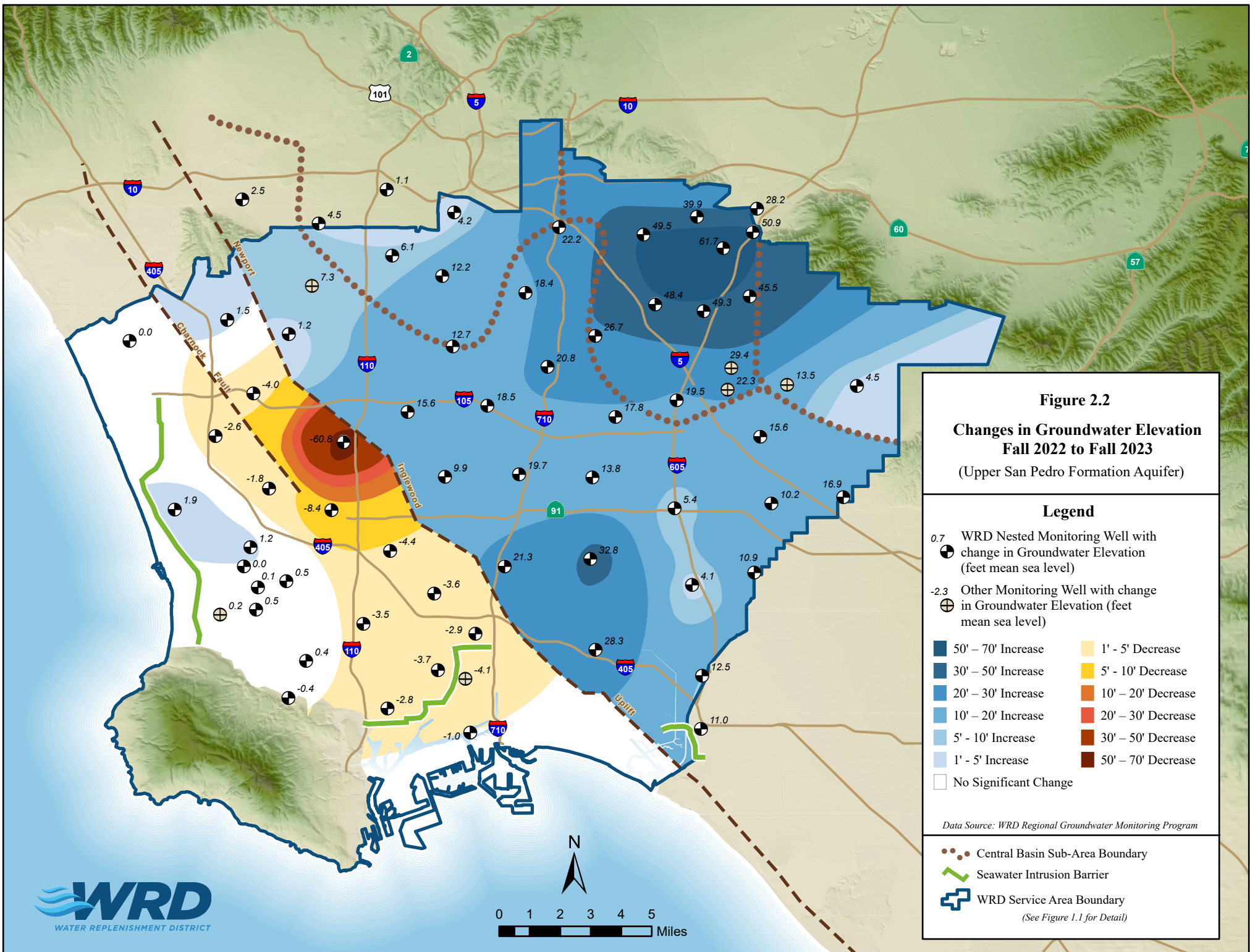
### IDEALIZED GEOLOGIC CROSS SECTION BB'

Adapted from  
CDWR Bull. 104 App. B

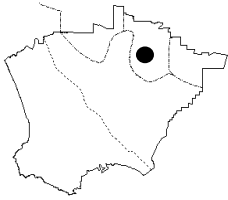
FIGURE 1.5



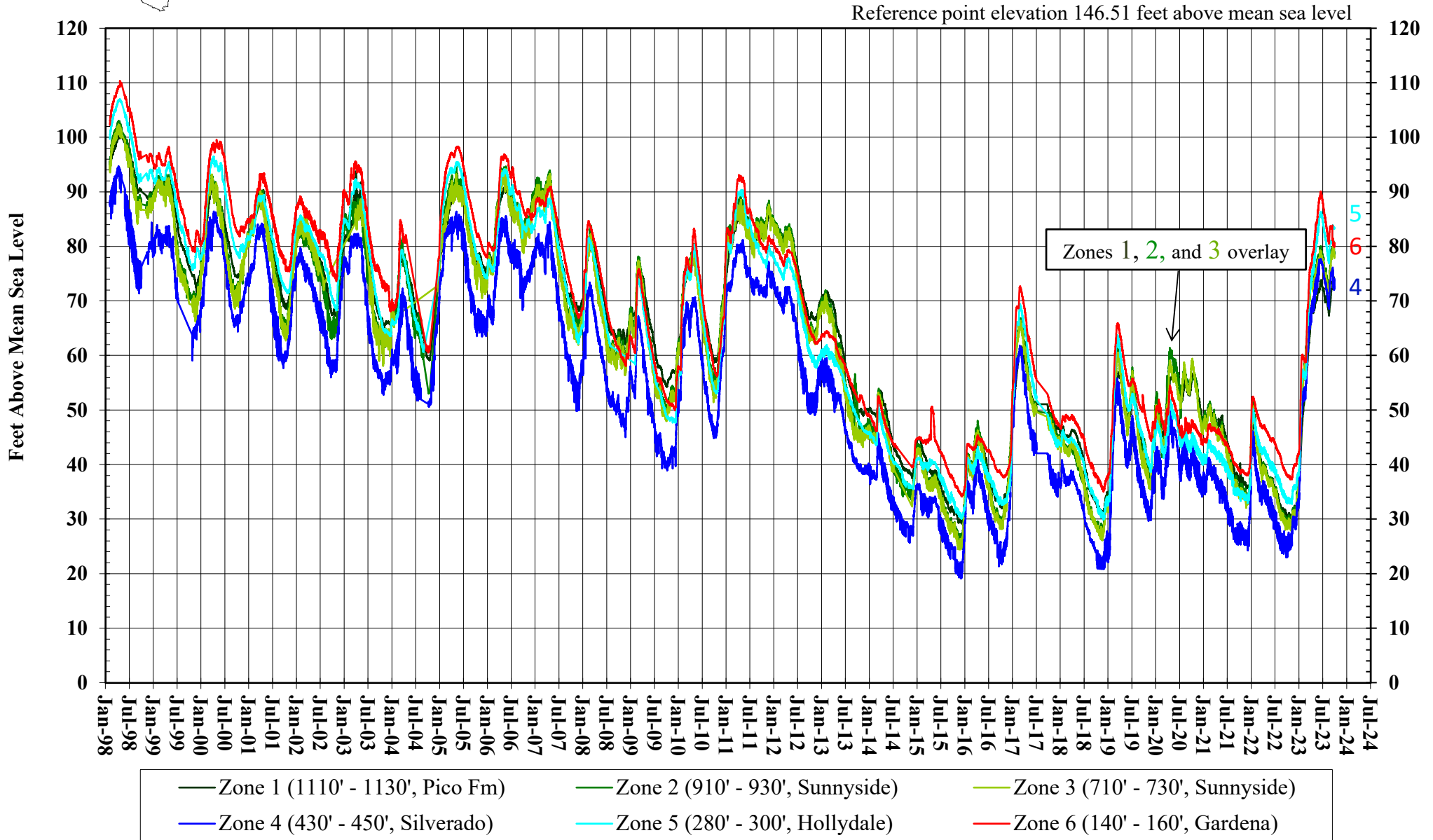


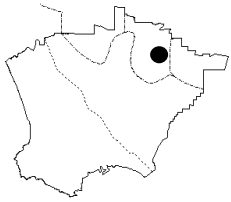


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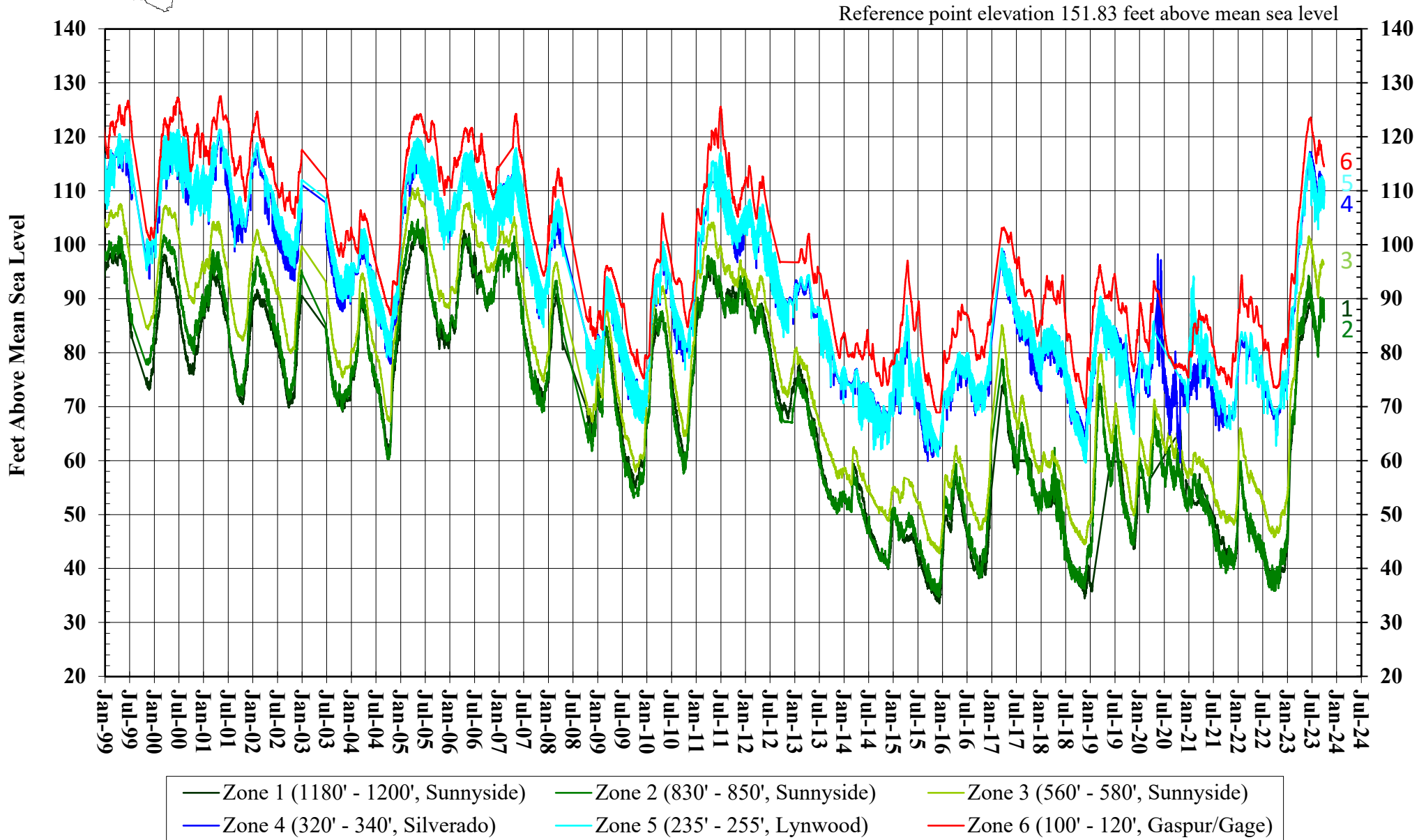


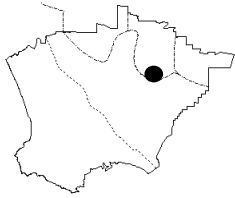
**FIGURE 2.3**  
**WATER LEVELS IN WRD KEY NESTED**  
**MONITORING WELL RIO HONDO #1**



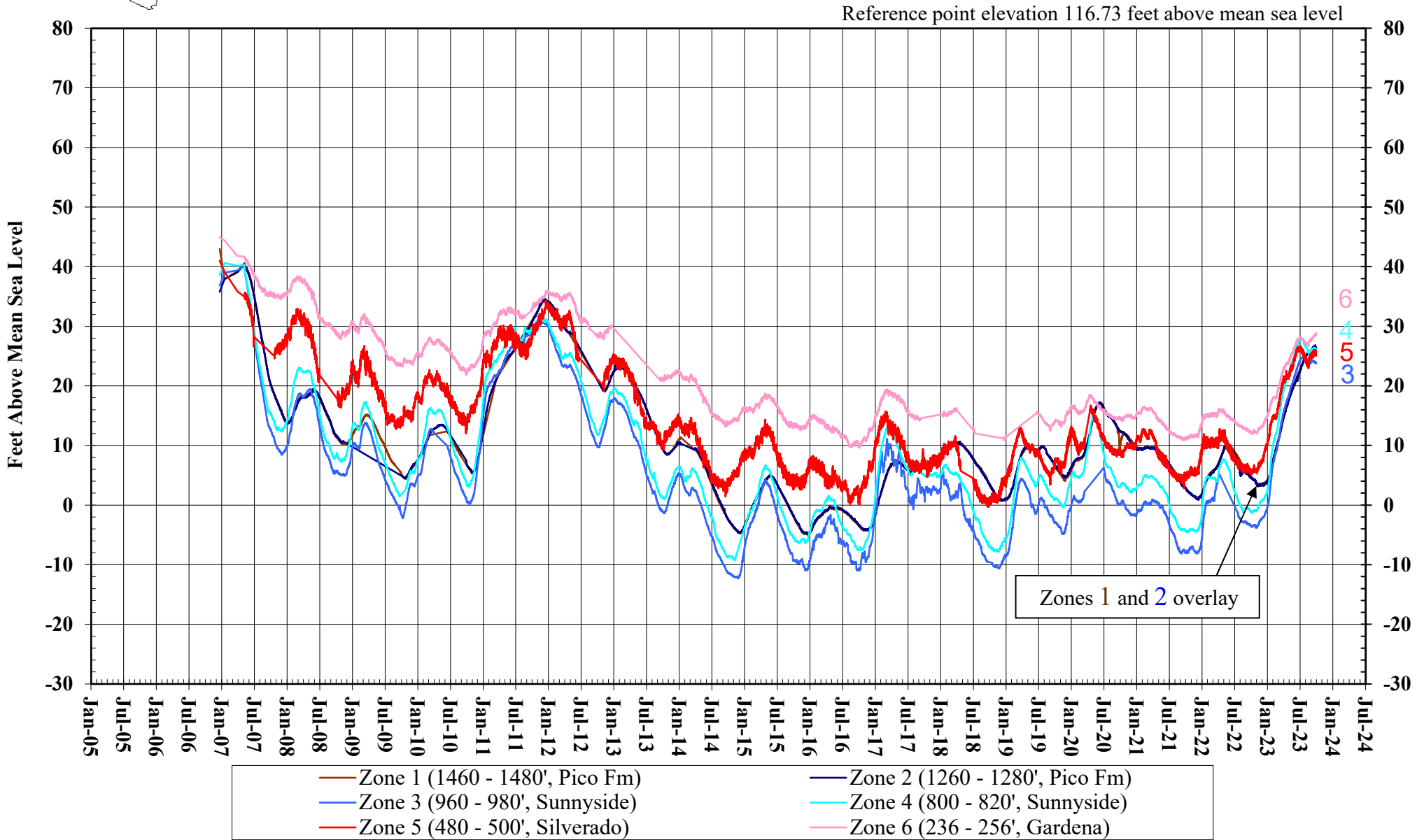


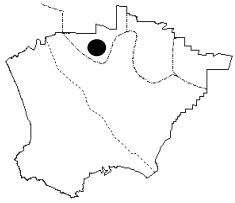
**FIGURE 2.4**  
**WATER LEVELS IN WRD KEY NESTED**  
**MONITORING WELL PICO #2**



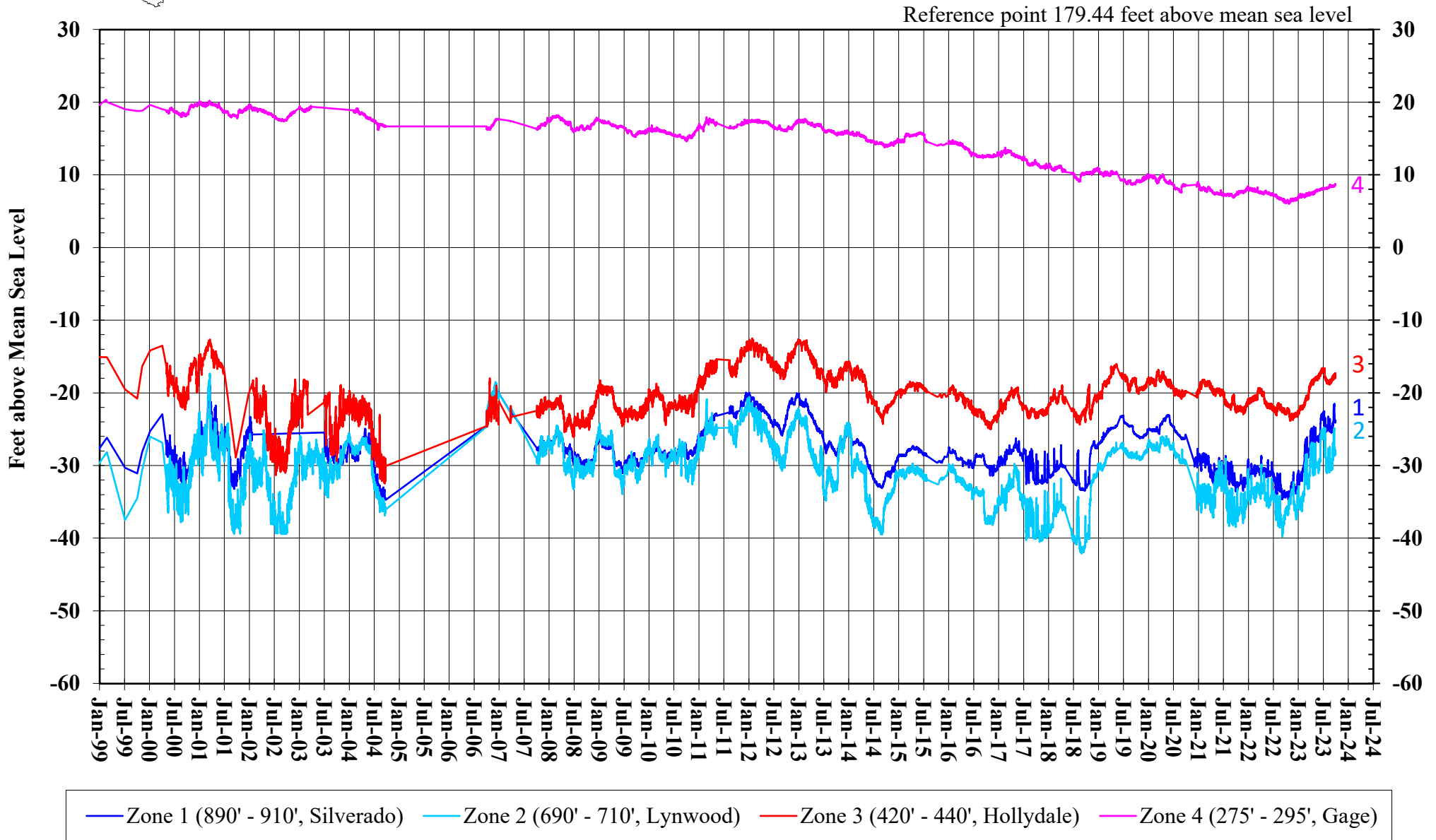


**FIGURE 2.5**  
**WATER LEVELS IN WRD KEY NESTED**  
**MONITORING WELL NORWALK #2**

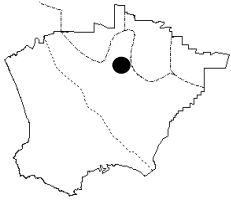




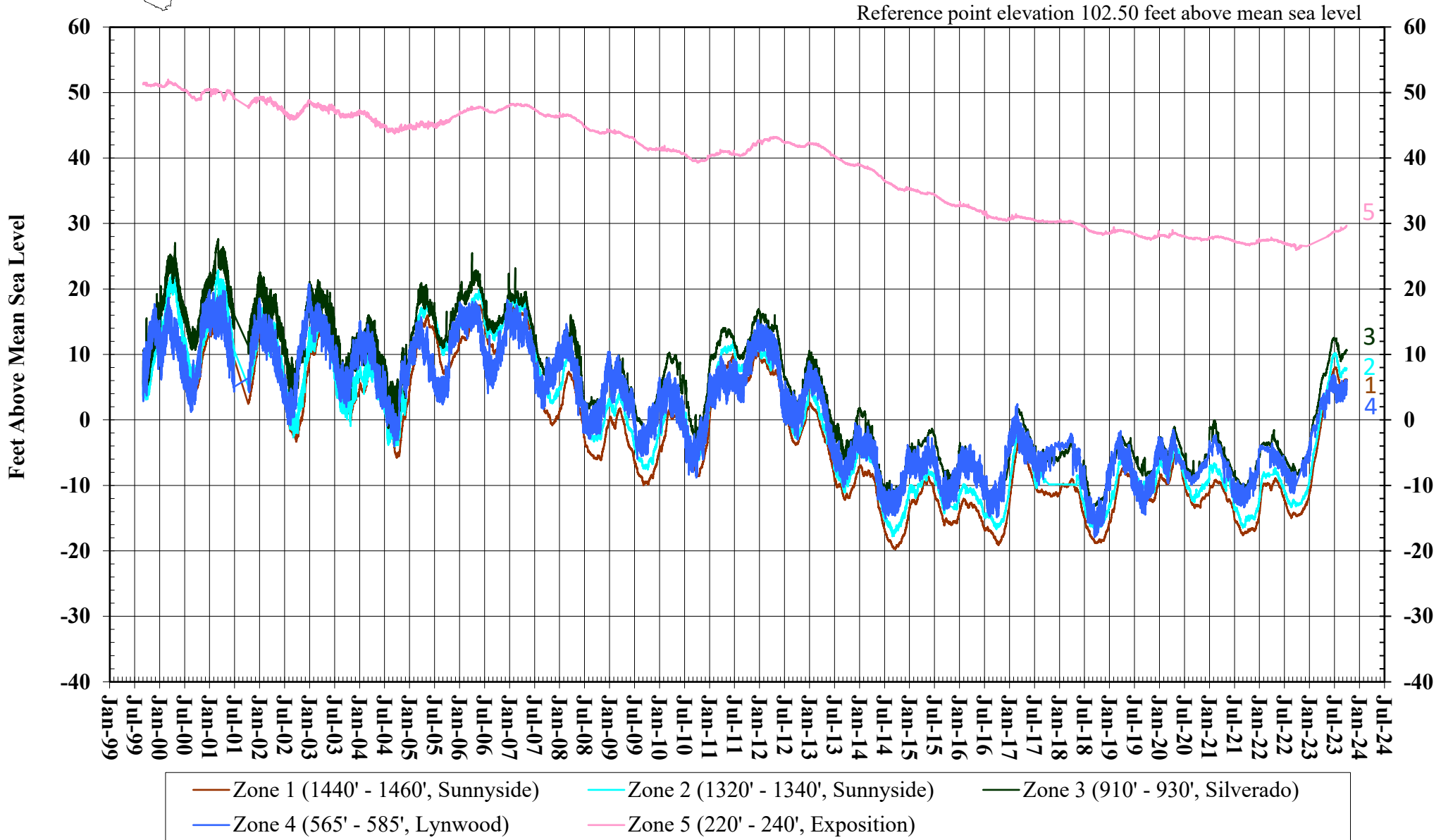
**FIGURE 2.6**  
**WATER LEVELS IN WRD KEY NESTED**  
**MONITORING WELL HUNTINGTON PARK #1**

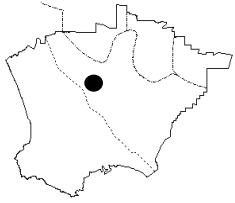




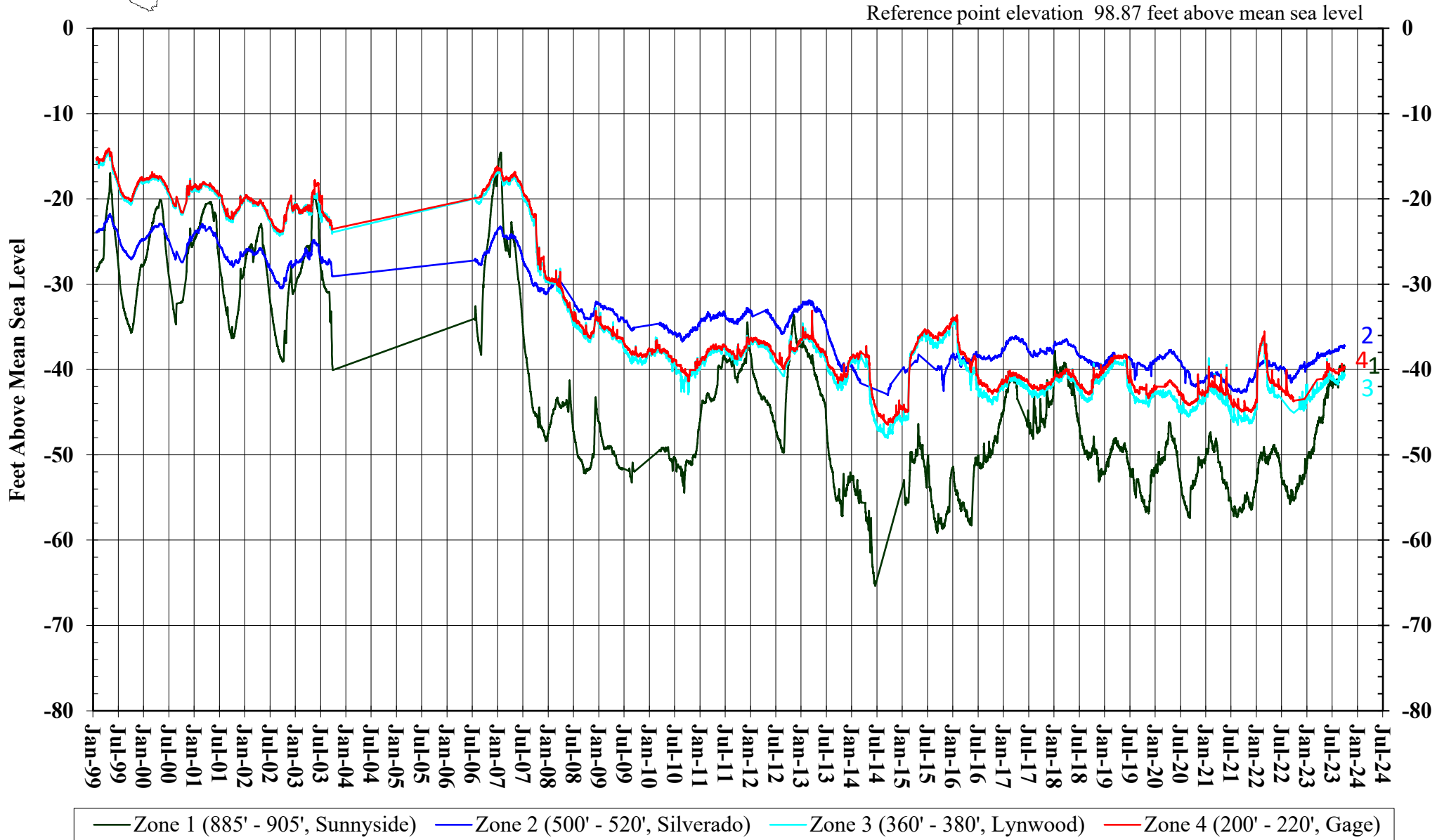


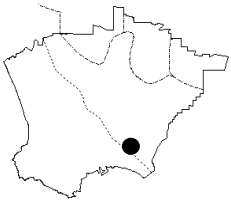
**FIGURE 2.7**  
**WATER LEVELS IN WRD KEY NESTED**  
**MONITORING WELL SOUTH GATE #1**



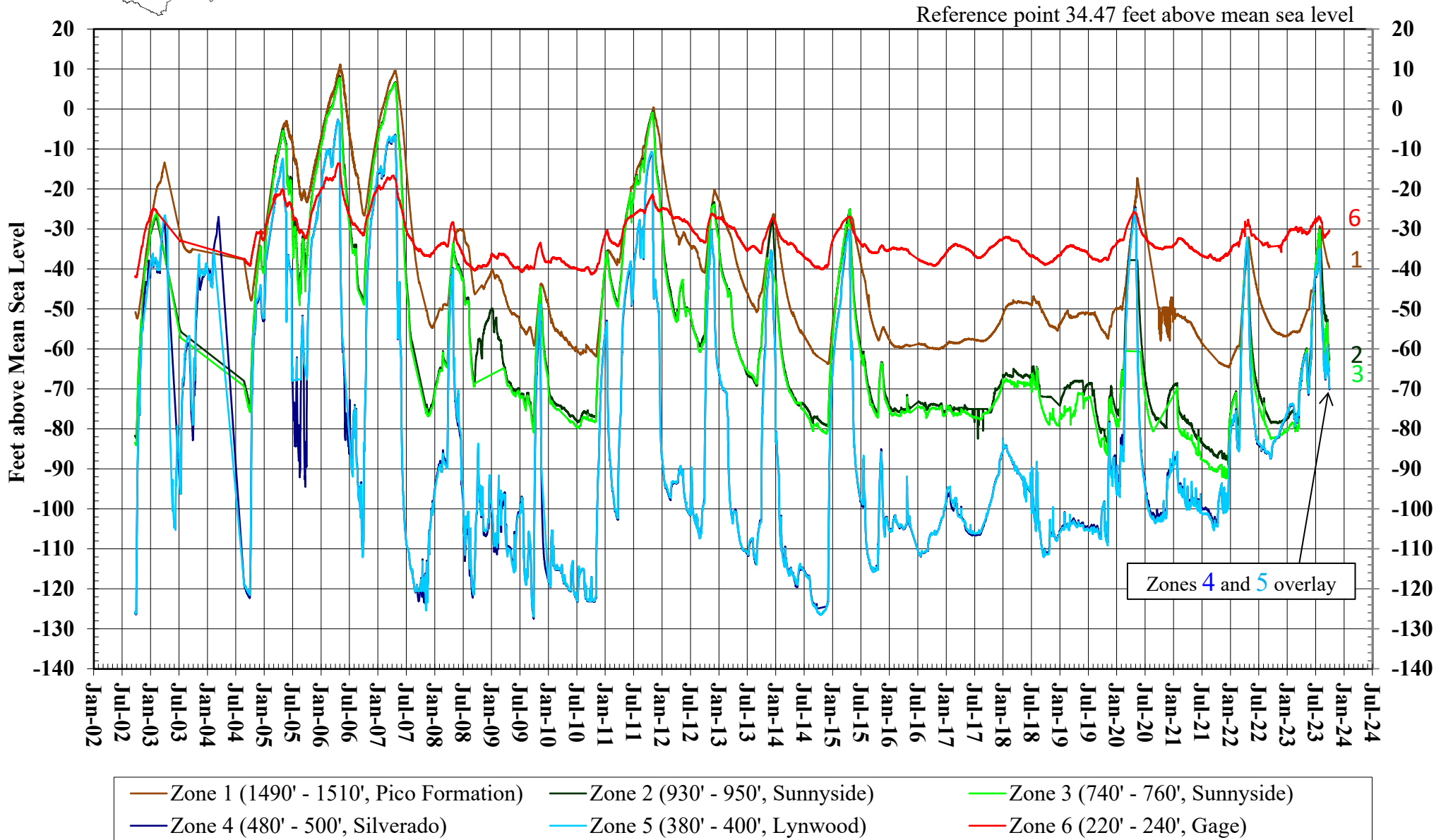


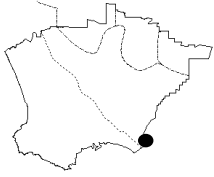
**FIGURE 2.8**  
**WATER LEVELS IN WRD KEY NESTED**  
**MONITORING WELL WILLOWBROOK #1**



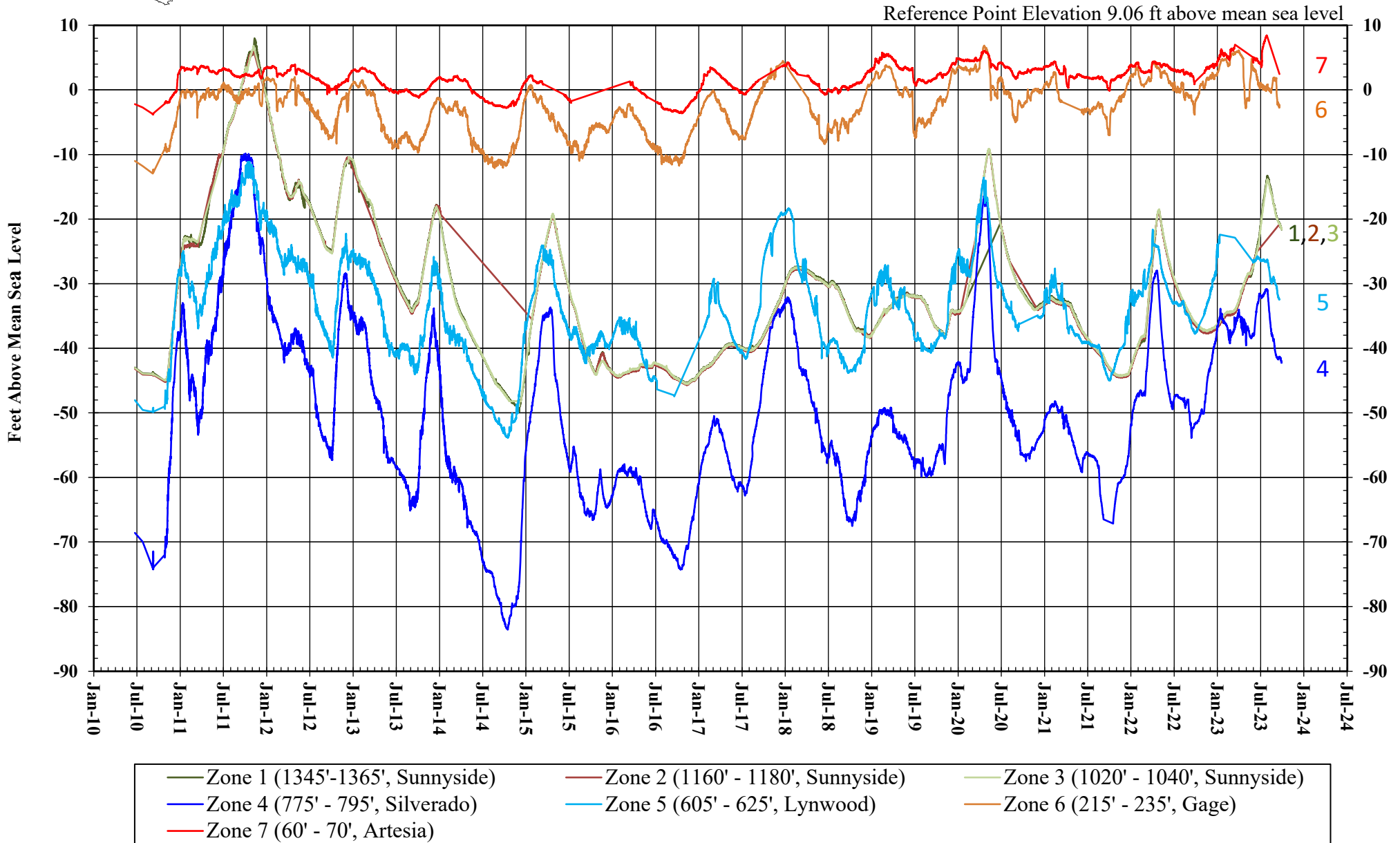


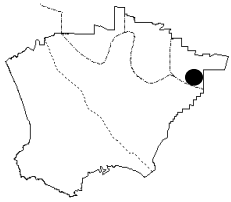
**FIGURE 2.9**  
**WATER LEVELS IN WRD KEY NESTED**  
**MONITORING WELL LONG BEACH #6**



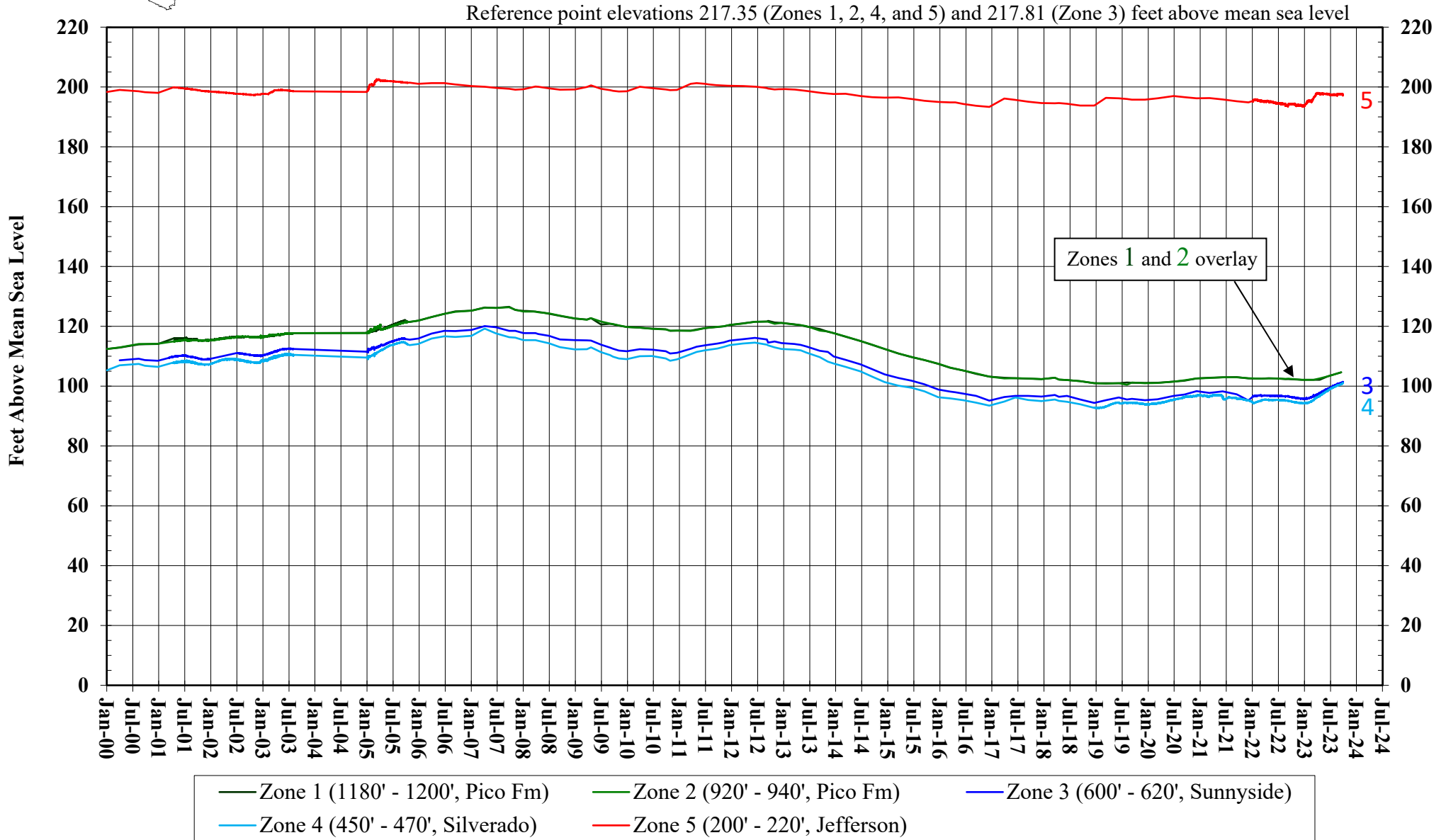


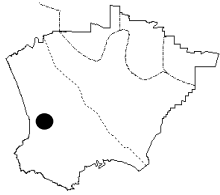
**FIGURE 2.10**  
**WATER LEVELS IN WRD KEY NESTED**  
**MONITORING WELL SEAL BEACH #1**



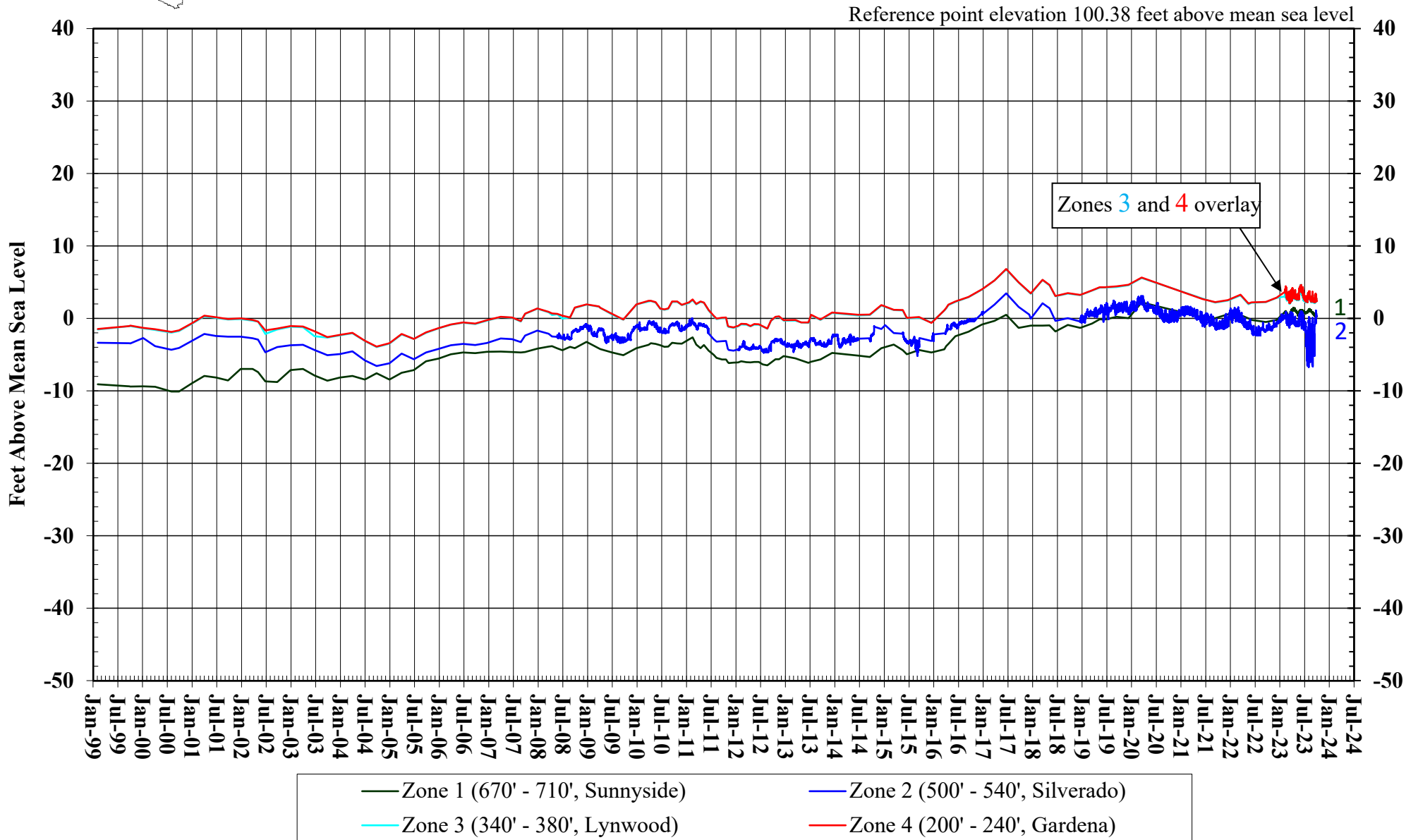


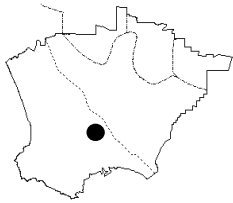
**FIGURE 2.11**  
**WATER LEVELS IN WRD KEY NESTED**  
**MONITORING WELL WHITTIER #1**



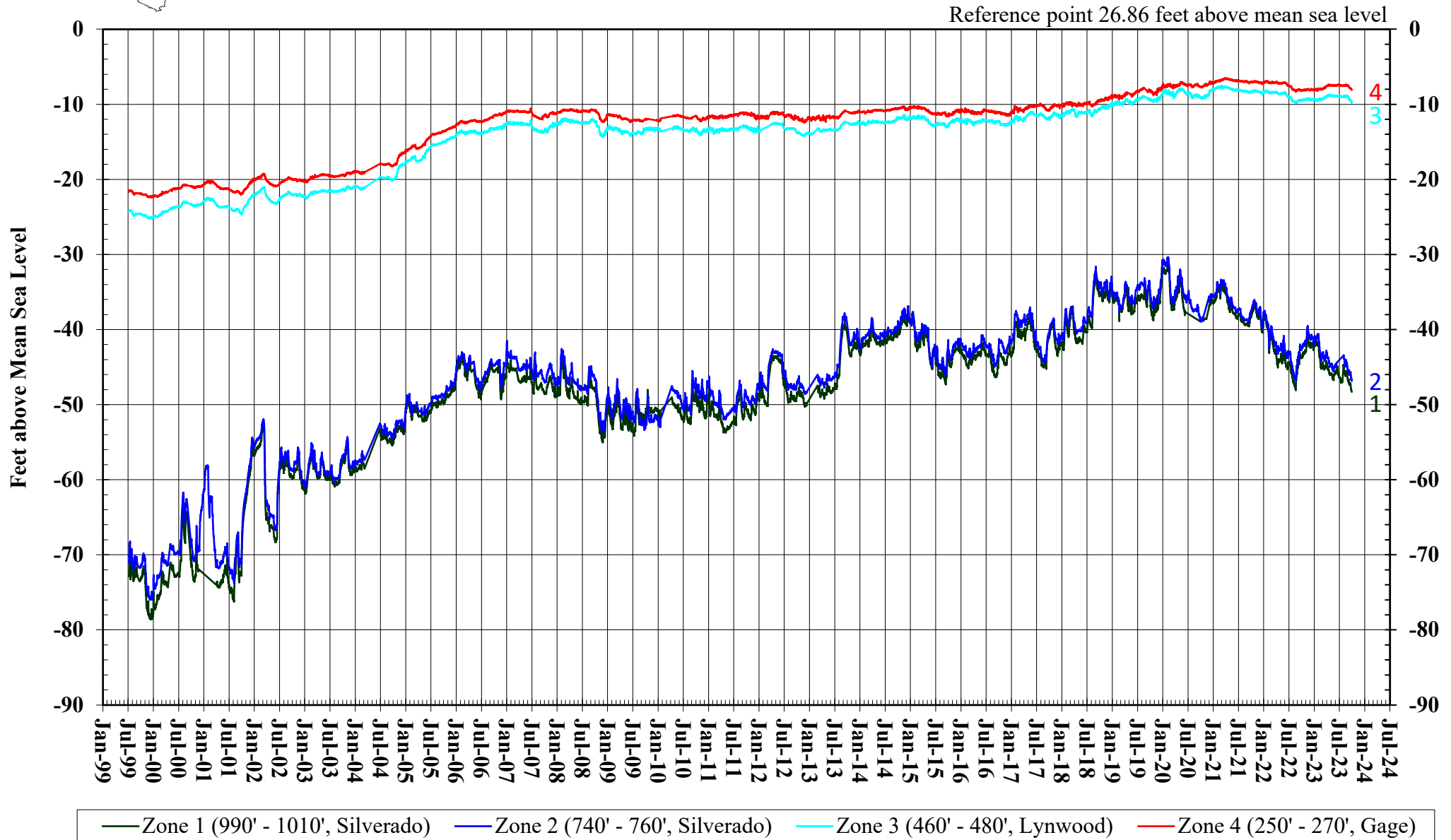


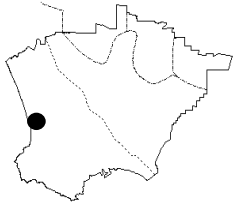
**FIGURE 2.12**  
**WATER LEVELS IN WRD KEY NESTED**  
**MONITORING WELL PM-4 MARINER**



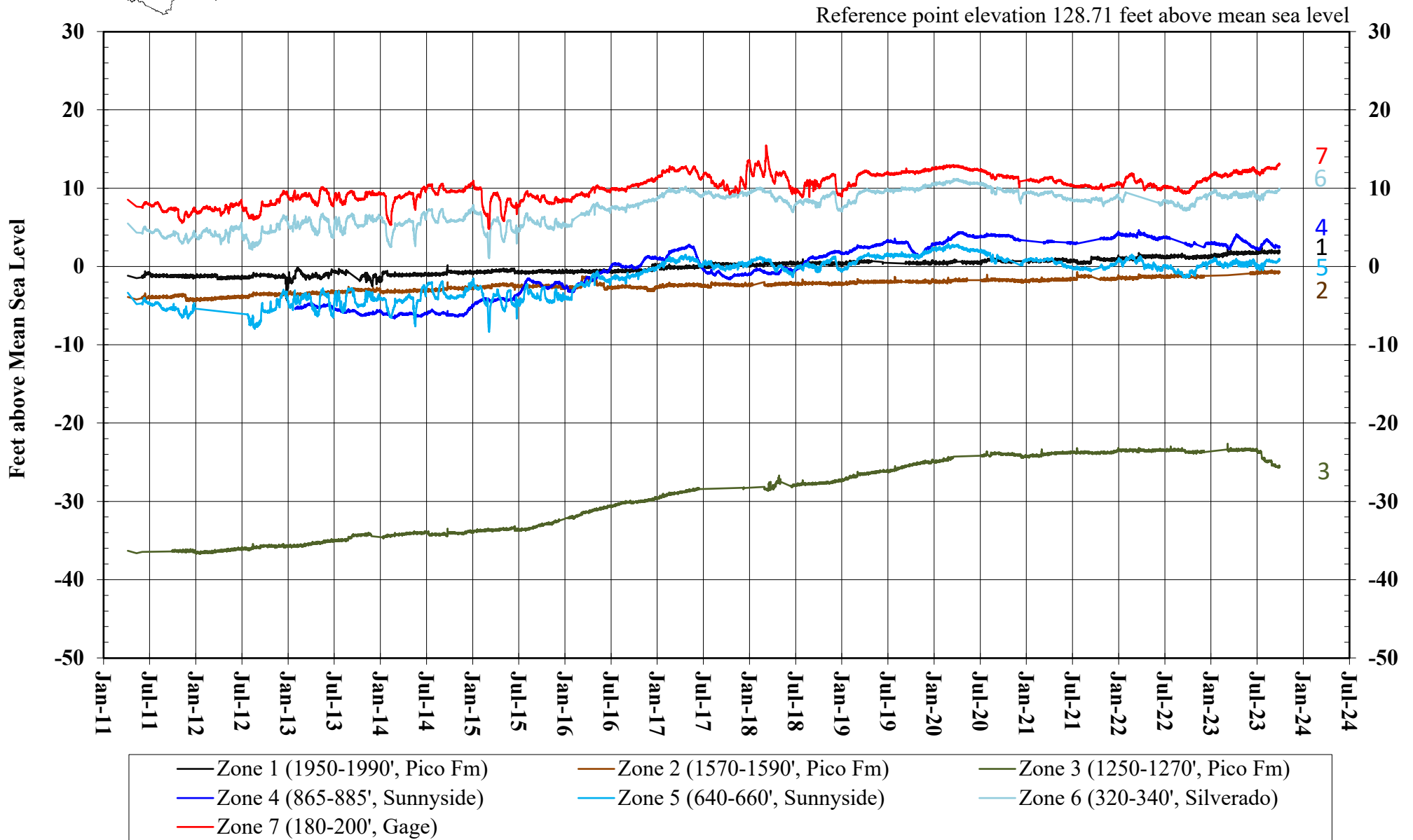


**FIGURE 2.13**  
**WATER LEVELS IN WRD KEY NESTED**  
**MONITORING WELL CARSON #1**

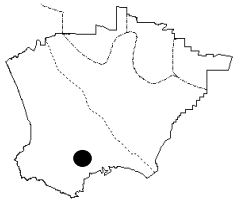




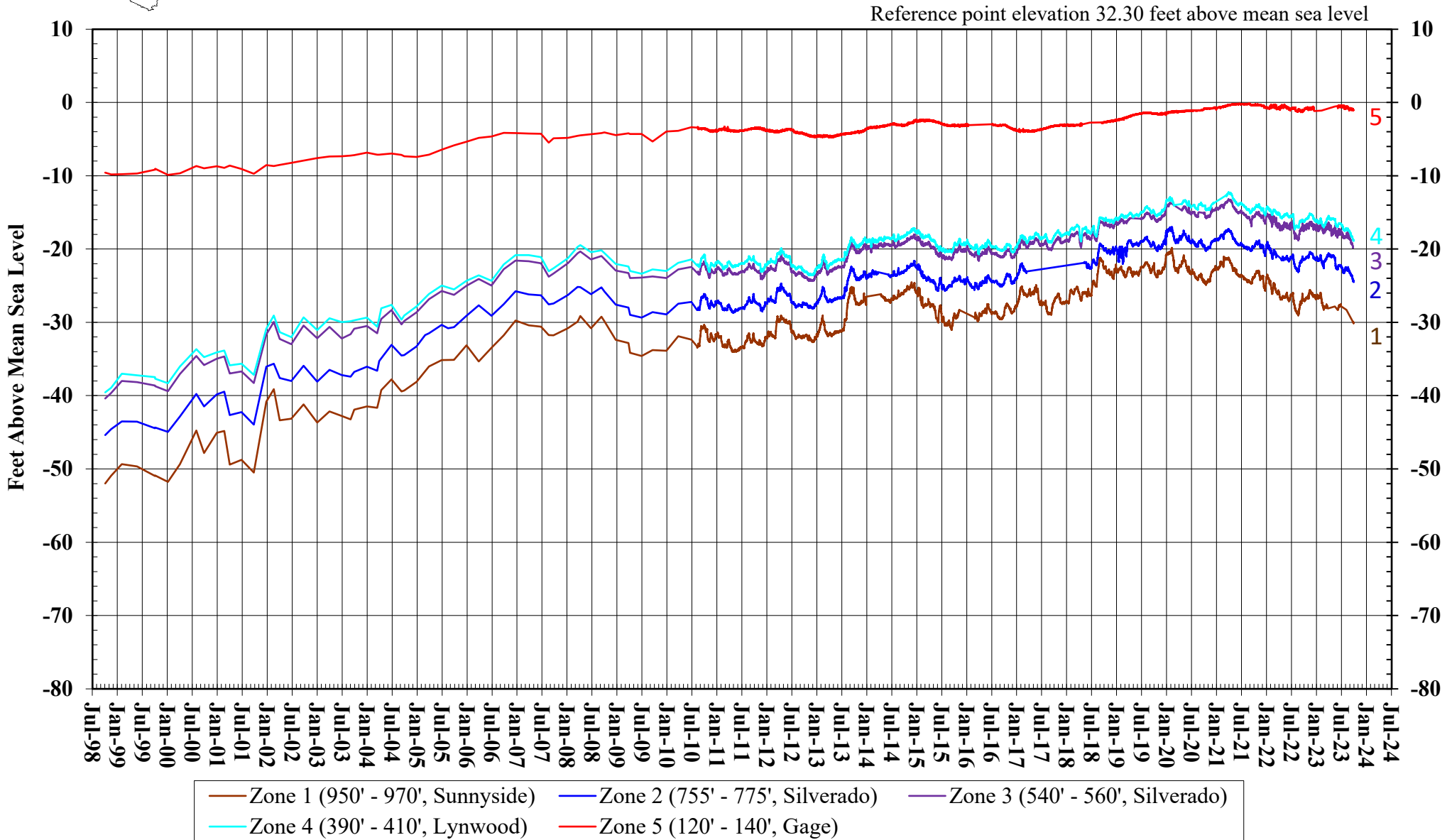
**FIGURE 2.14**  
**WATER LEVELS IN WRD KEY NESTED**  
**MONITORING WELL MANHATTAN BEACH #1**

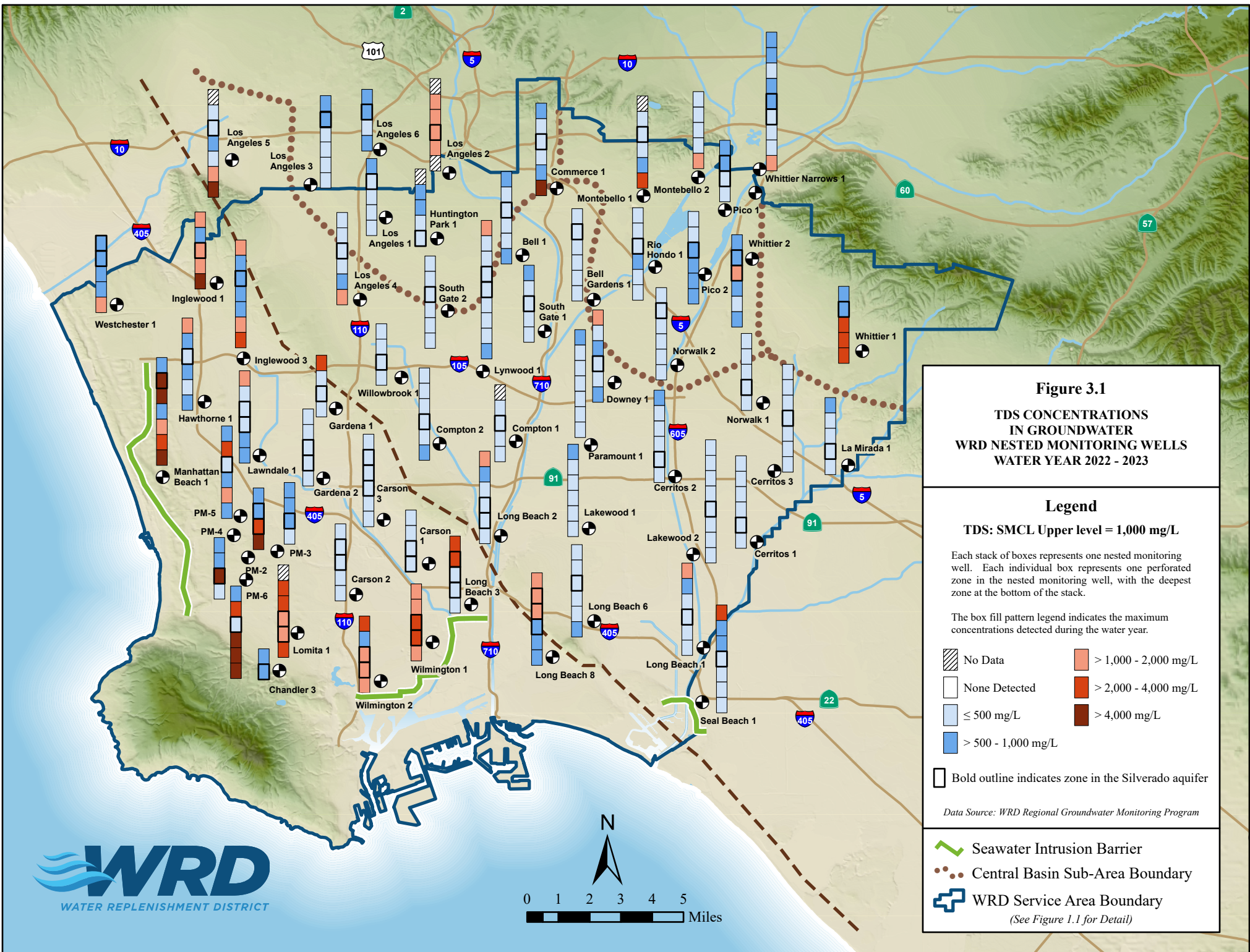




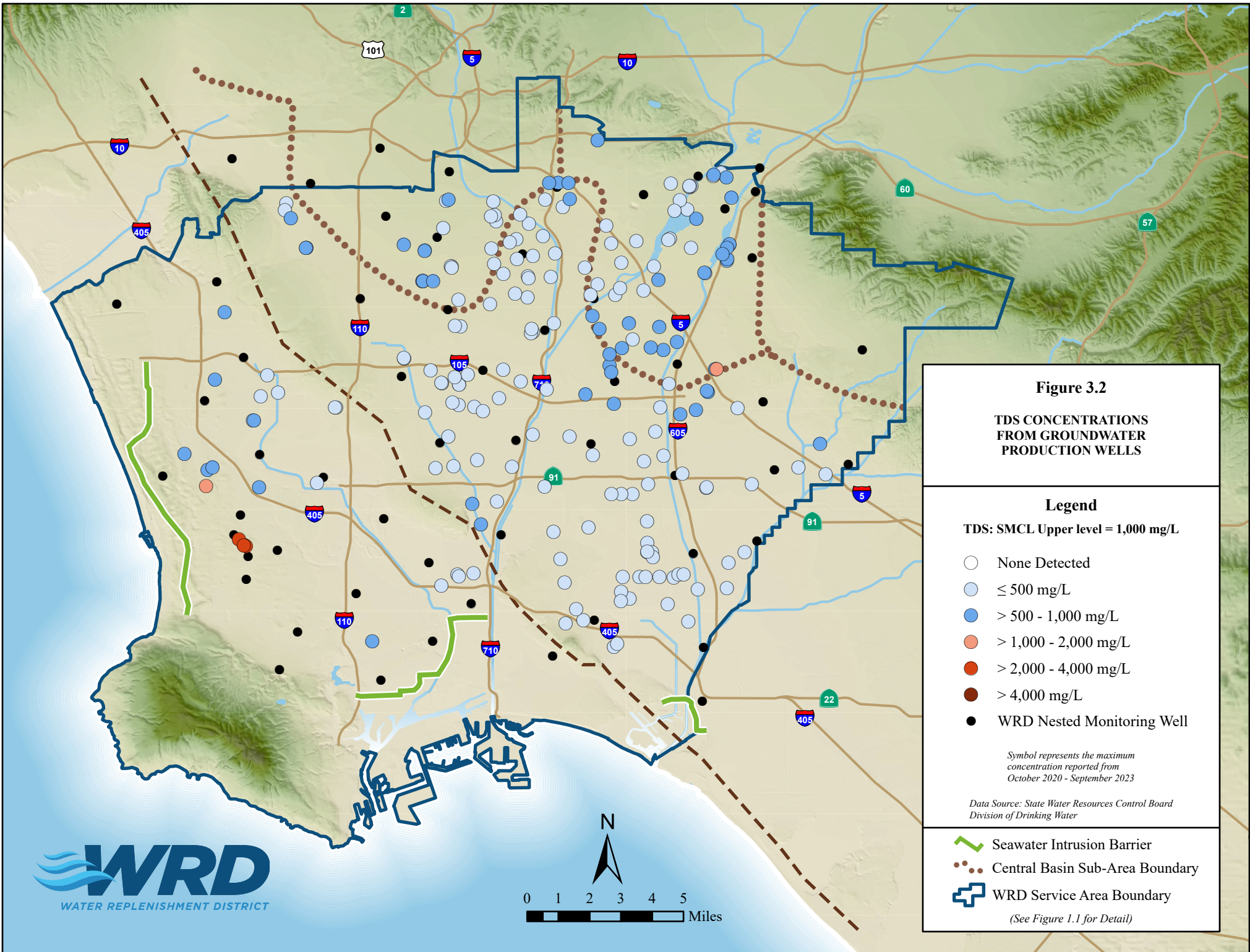


**FIGURE 2.15**  
**WATER LEVELS IN WRD KEY NESTED**  
**MONITORING WELL WILMINGTON #2**

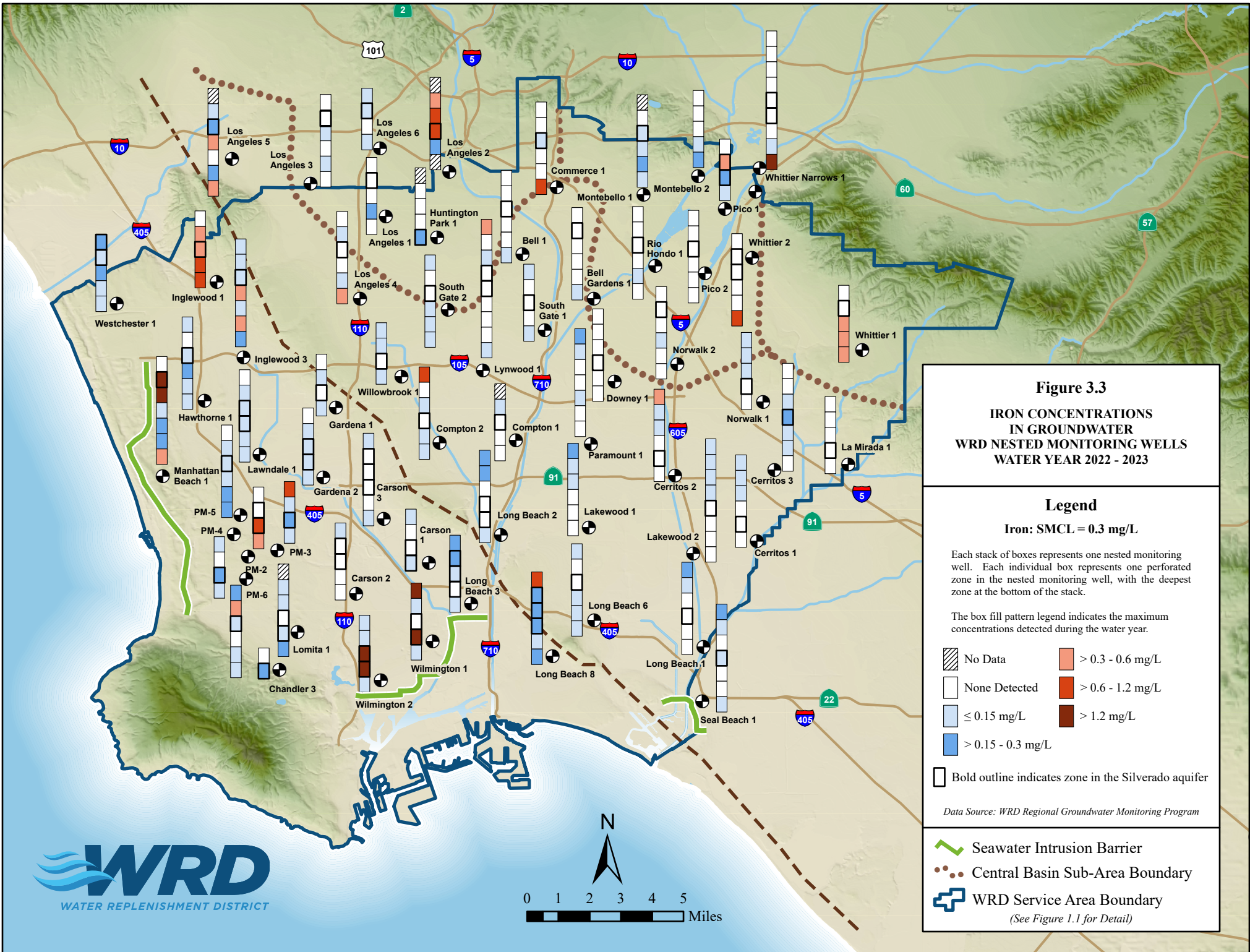




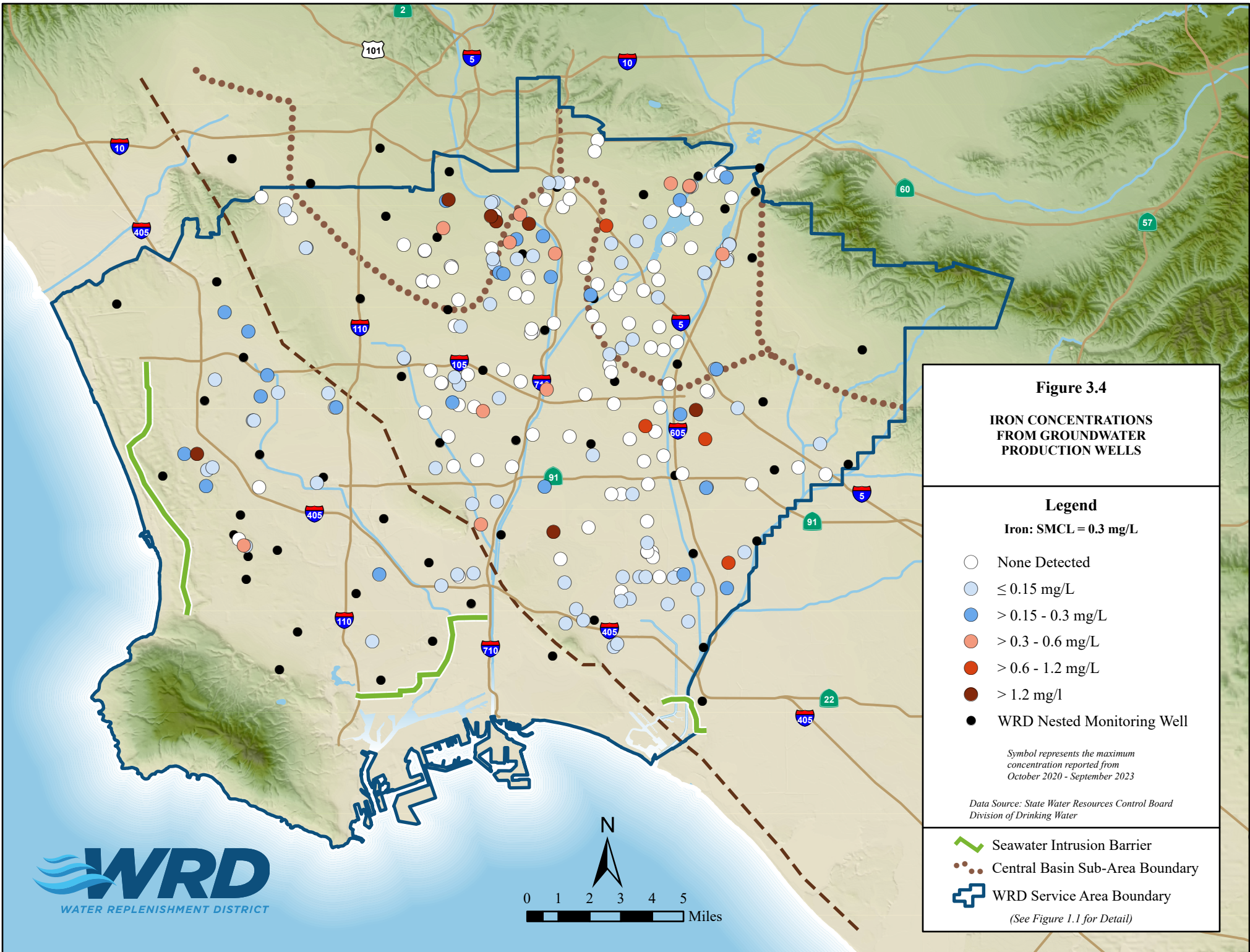












**Figure 3.4**

**IRON CONCENTRATIONS FROM GROUNDWATER PRODUCTION WELLS**

**Legend**

Iron: SMCL = 0.3 mg/L

- None Detected
- ≤ 0.15 mg/L
- > 0.15 - 0.3 mg/L
- > 0.3 - 0.6 mg/L
- > 0.6 - 1.2 mg/L
- > 1.2 mg/l
- WRD Nested Monitoring Well

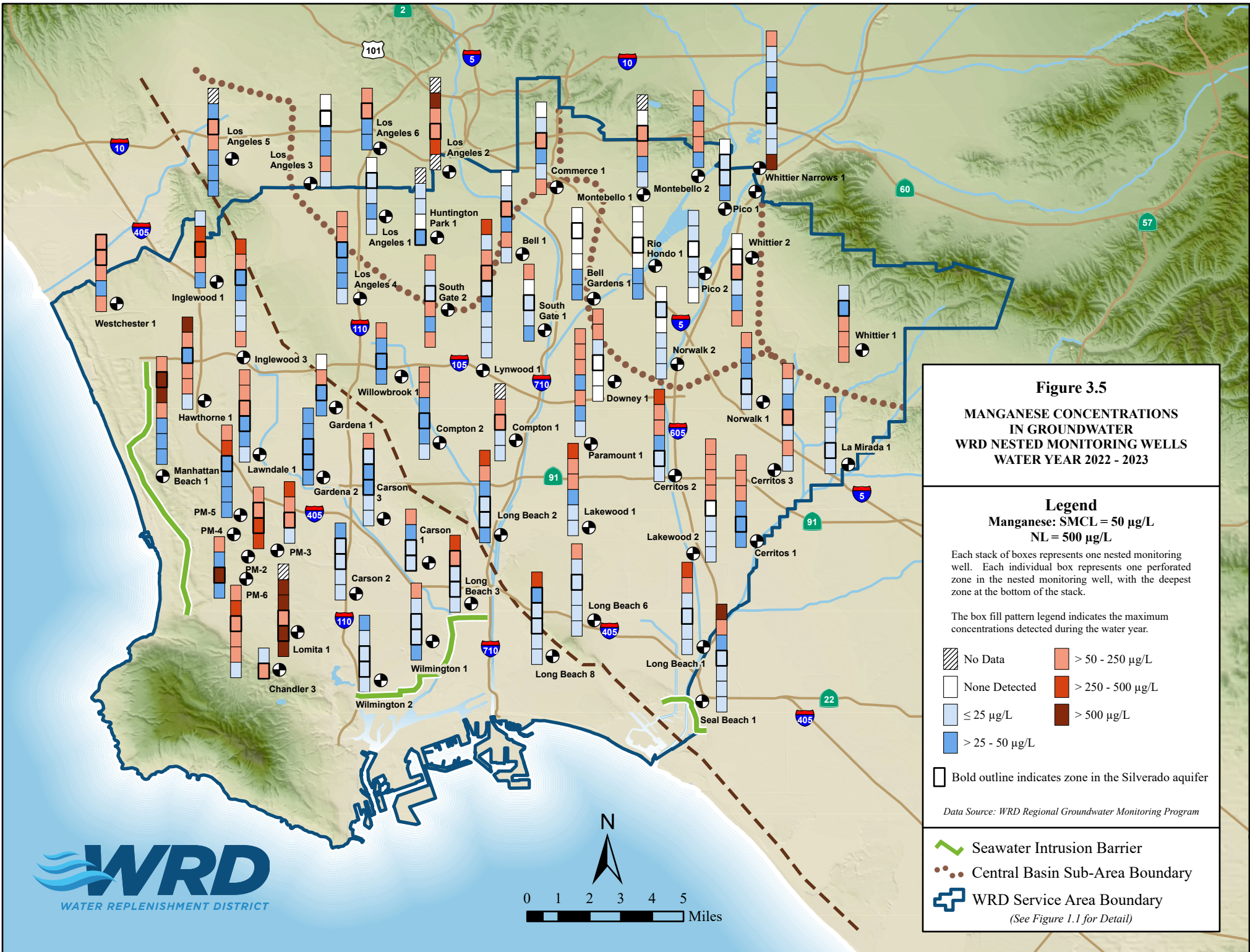
*Symbol represents the maximum concentration reported from October 2020 - September 2023*

*Data Source: State Water Resources Control Board  
Division of Drinking Water*

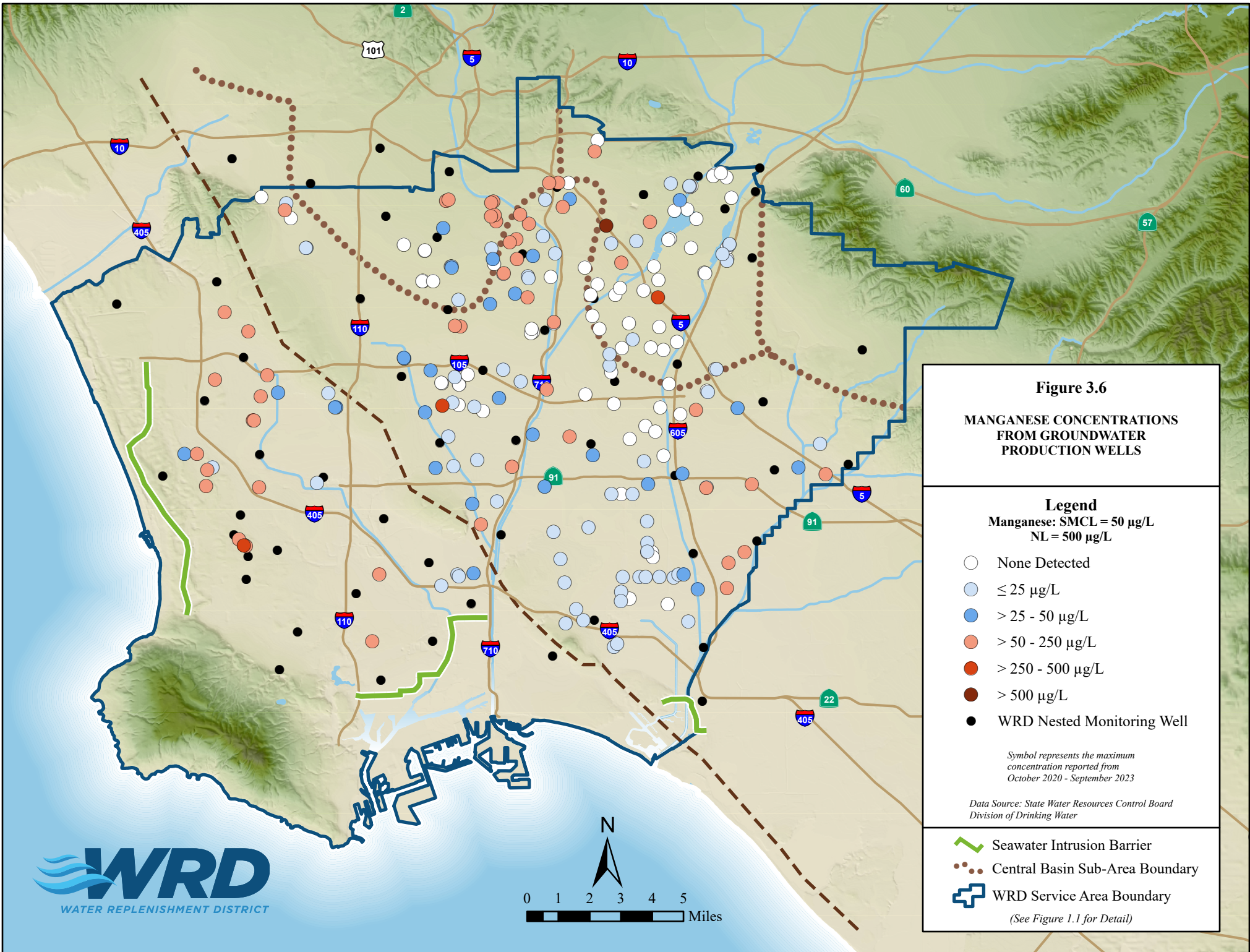
- Seawater Intrusion Barrier
- ⋯ Central Basin Sub-Area Boundary
- ⊕ WRD Service Area Boundary

*(See Figure 1.1 for Detail)*









**Figure 3.6**

**MANGANESE CONCENTRATIONS FROM GROUNDWATER PRODUCTION WELLS**

**Legend**

Manganese: SMCL = 50 µg/L  
NL = 500 µg/L

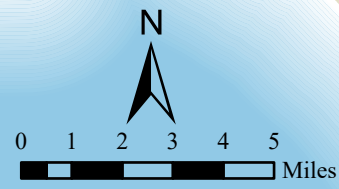
- None Detected
- ≤ 25 µg/L
- > 25 - 50 µg/L
- > 50 - 250 µg/L
- > 250 - 500 µg/L
- > 500 µg/L
- WRD Nested Monitoring Well

*Symbol represents the maximum concentration reported from October 2020 - September 2023*

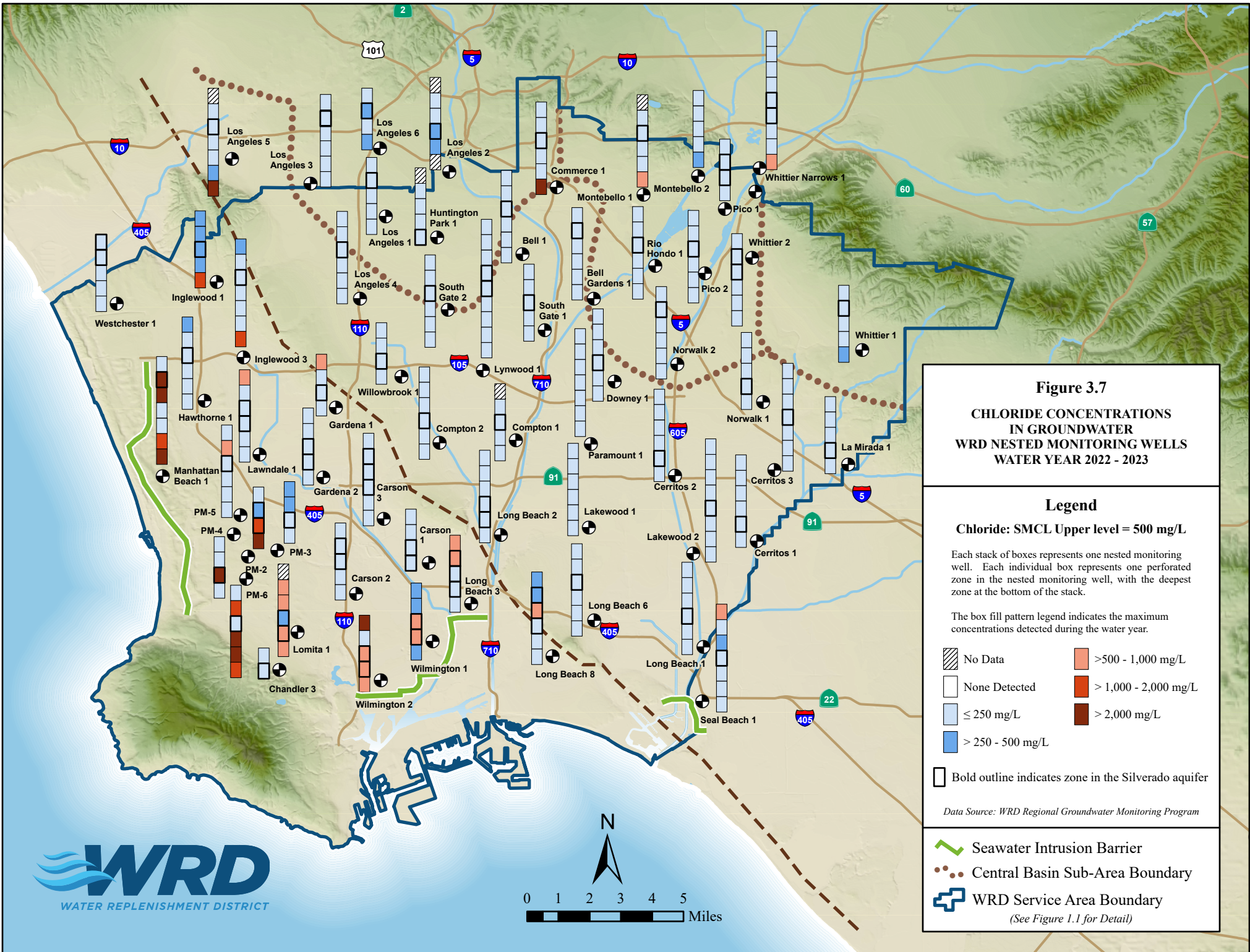
*Data Source: State Water Resources Control Board  
Division of Drinking Water*

- Seawater Intrusion Barrier
- ⋯ Central Basin Sub-Area Boundary
- ⊕ WRD Service Area Boundary

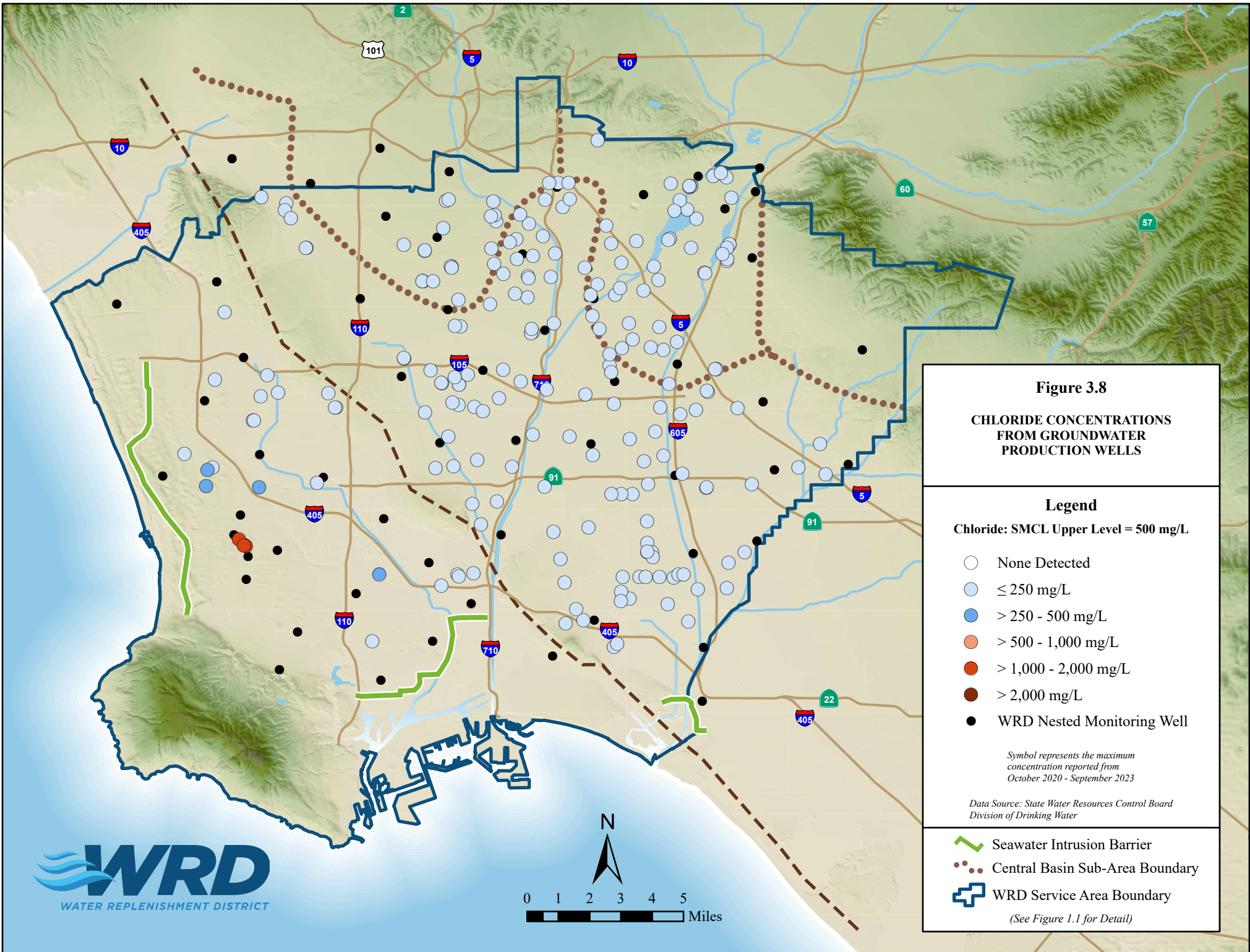
*(See Figure 1.1 for Detail)*



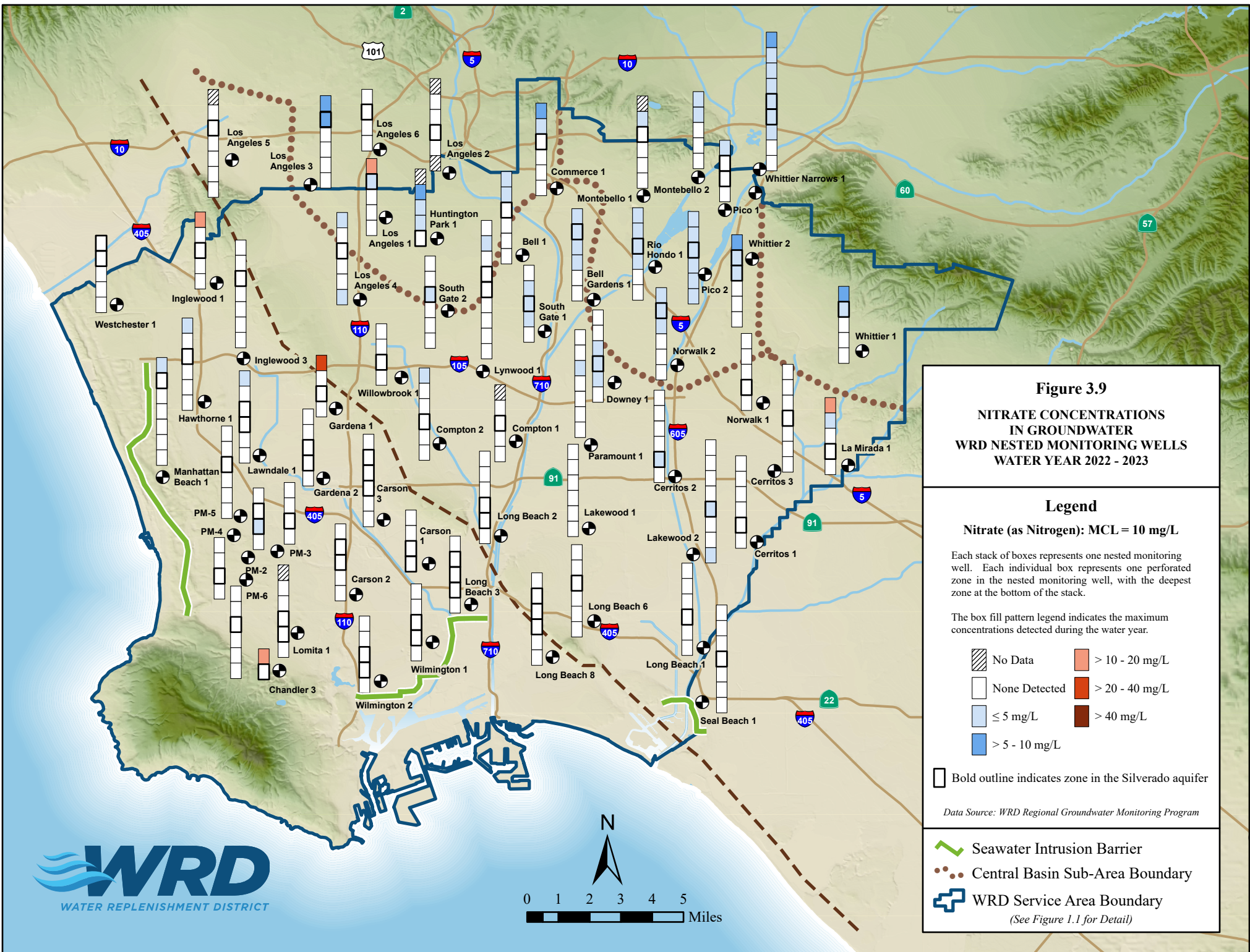








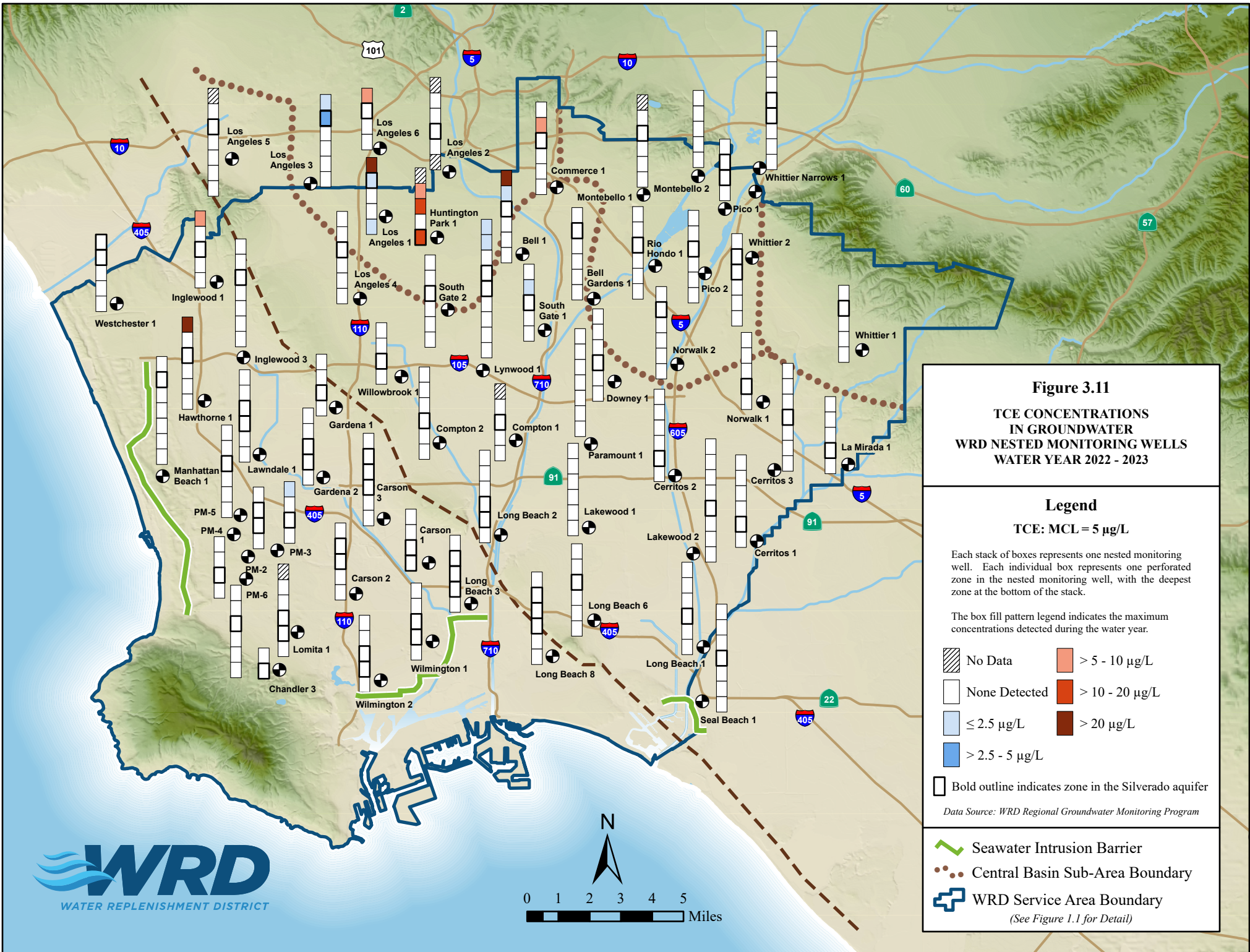












**Figure 3.11**  
**TCE CONCENTRATIONS**  
**IN GROUNDWATER**  
**WRD NESTED MONITORING WELLS**  
**WATER YEAR 2022 - 2023**

**Legend**

TCE: MCL = 5 µg/L

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

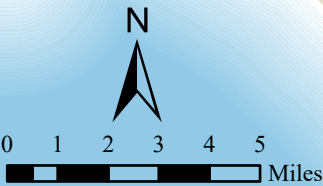
The box fill pattern legend indicates the maximum concentrations detected during the water year.

- No Data
- None Detected
- ≤ 2.5 µg/L
- > 2.5 - 5 µg/L
- > 5 - 10 µg/L
- > 10 - 20 µg/L
- > 20 µg/L

Bold outline indicates zone in the Silverado aquifer

*Data Source: WRD Regional Groundwater Monitoring Program*

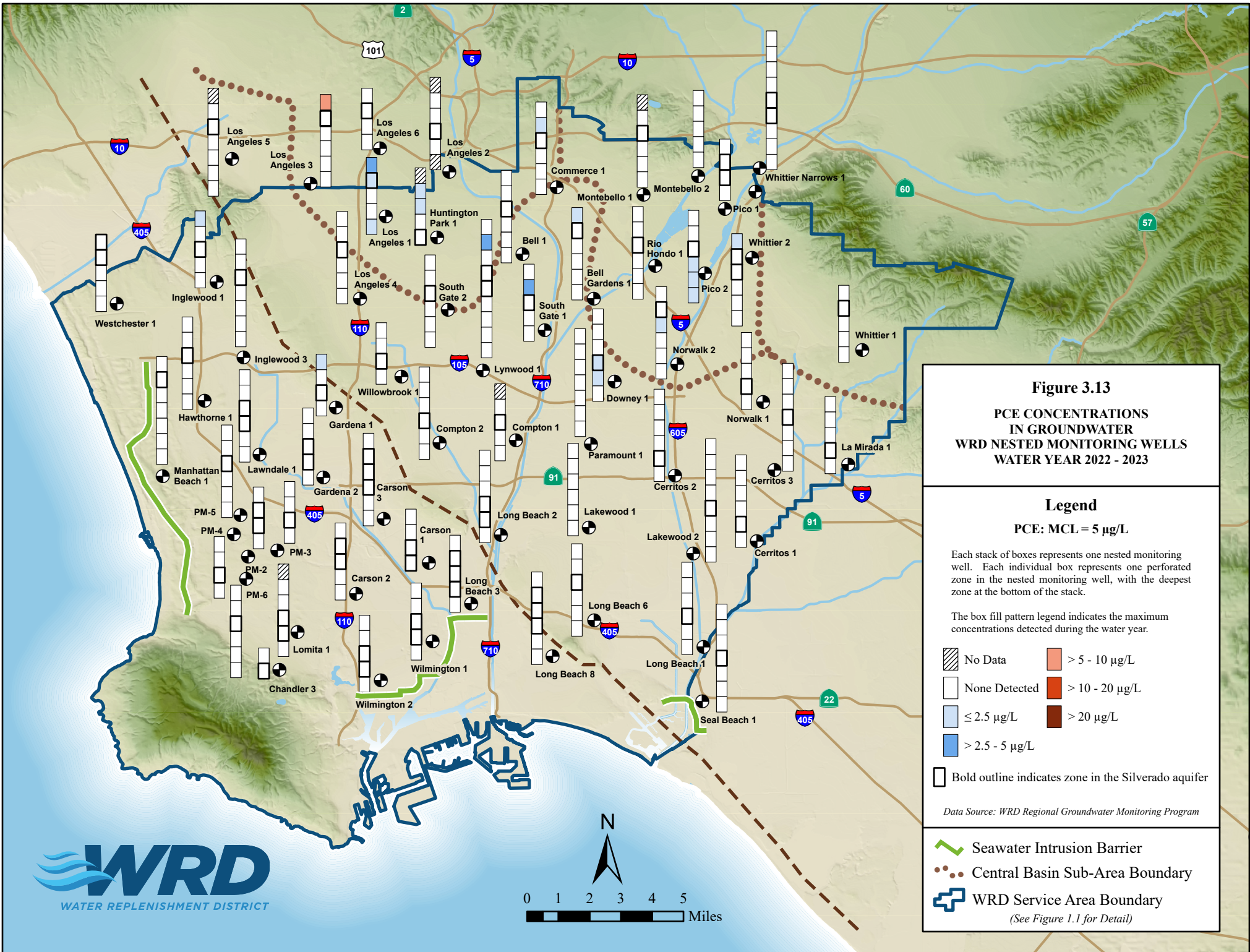
- Seawater Intrusion Barrier
  - Central Basin Sub-Area Boundary
  - WRD Service Area Boundary
- (See Figure 1.1 for Detail)*











**Figure 3.13**  
**PCE CONCENTRATIONS**  
**IN GROUNDWATER**  
**WRD NESTED MONITORING WELLS**  
**WATER YEAR 2022 - 2023**

**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.

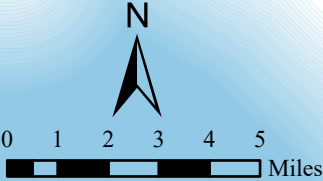
The box fill pattern legend indicates the maximum concentrations detected during the water year.

- No Data
- ≤ 2.5 µg/L
- > 2.5 - 5 µg/L
- > 5 - 10 µg/L
- > 10 - 20 µg/L
- > 20 µg/L

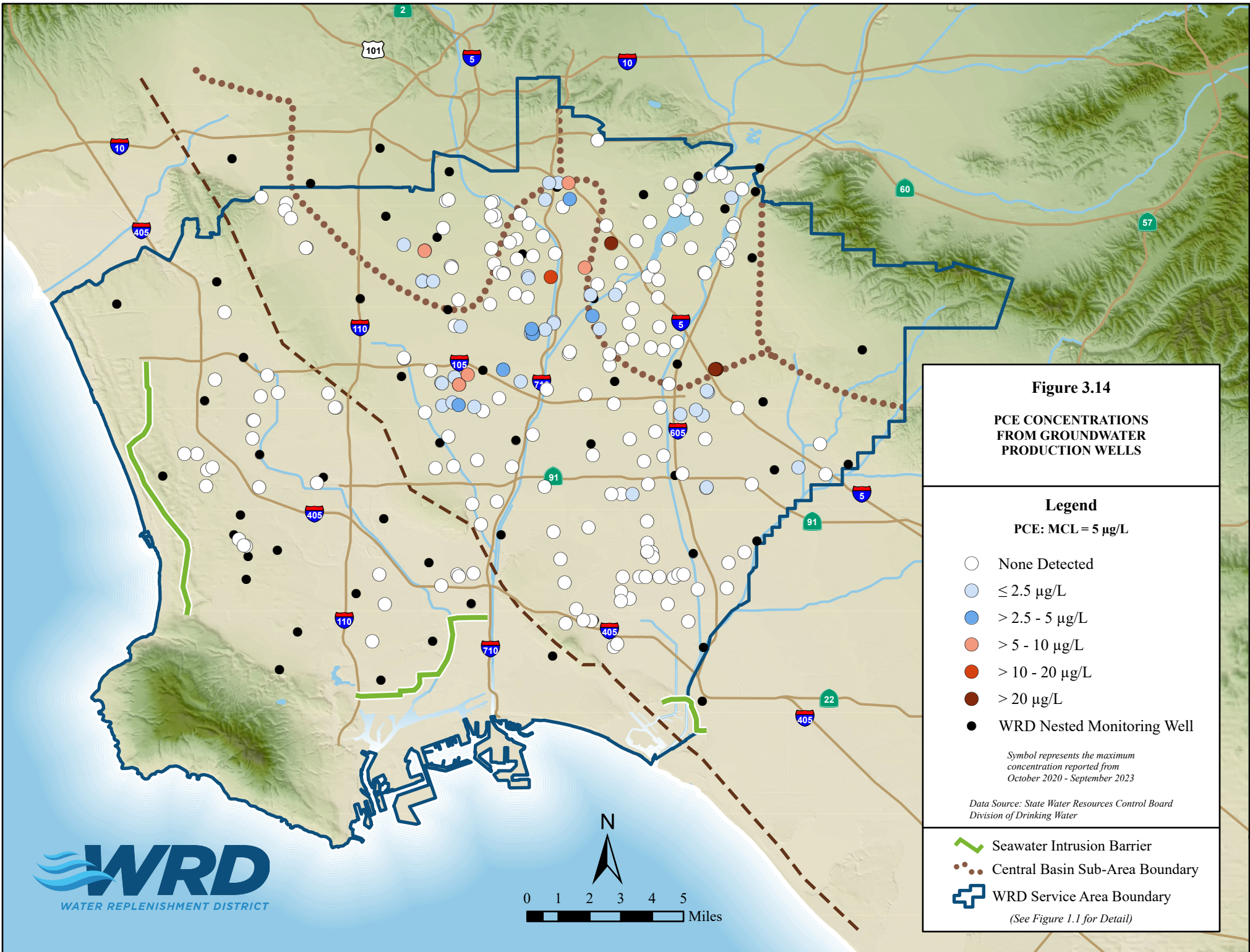
Bold outline indicates zone in the Silverado aquifer

Data Source: WRD Regional Groundwater Monitoring Program

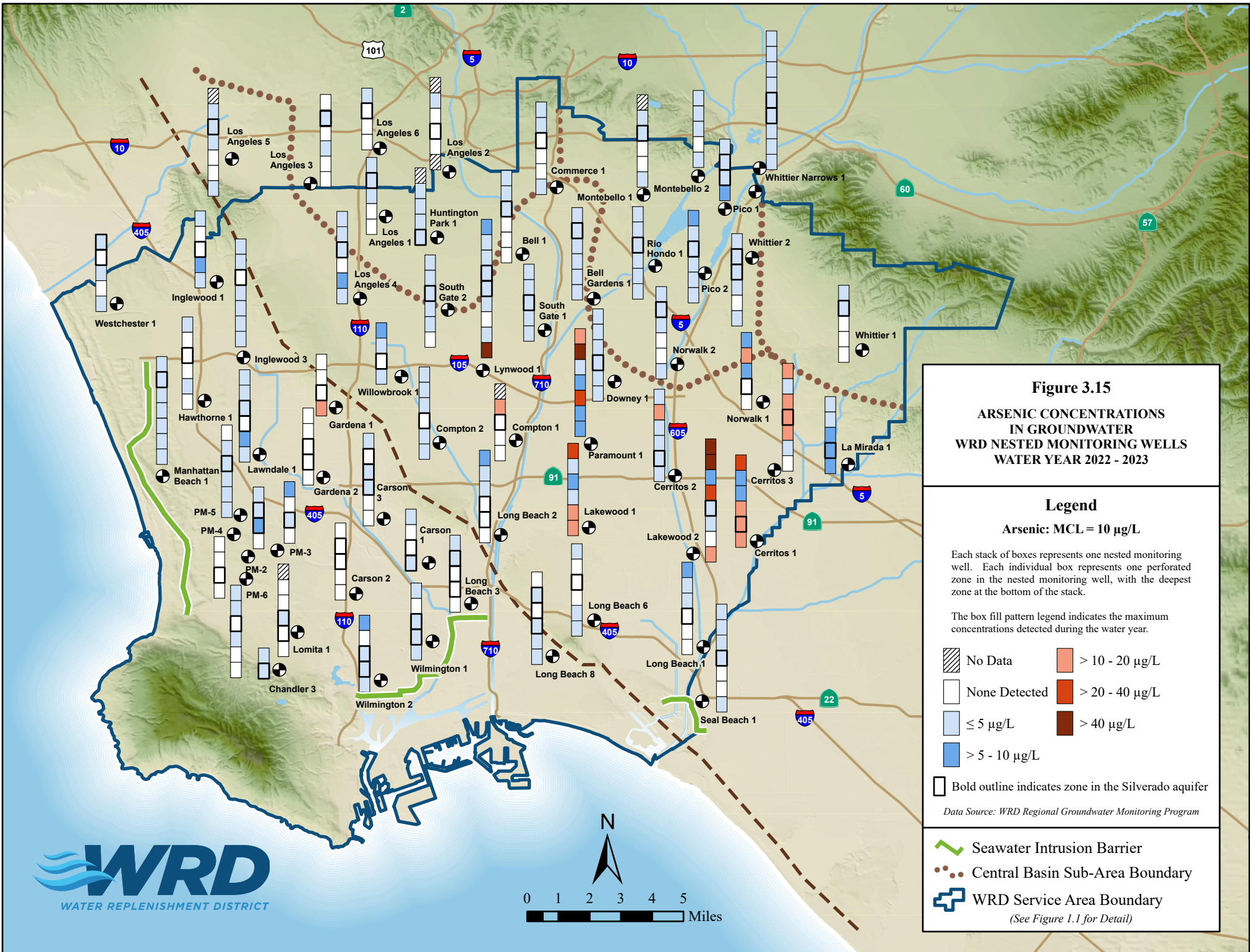
- Seawater Intrusion Barrier
- Central Basin Sub-Area Boundary
- WRD Service Area Boundary  
 (See Figure 1.1 for Detail)



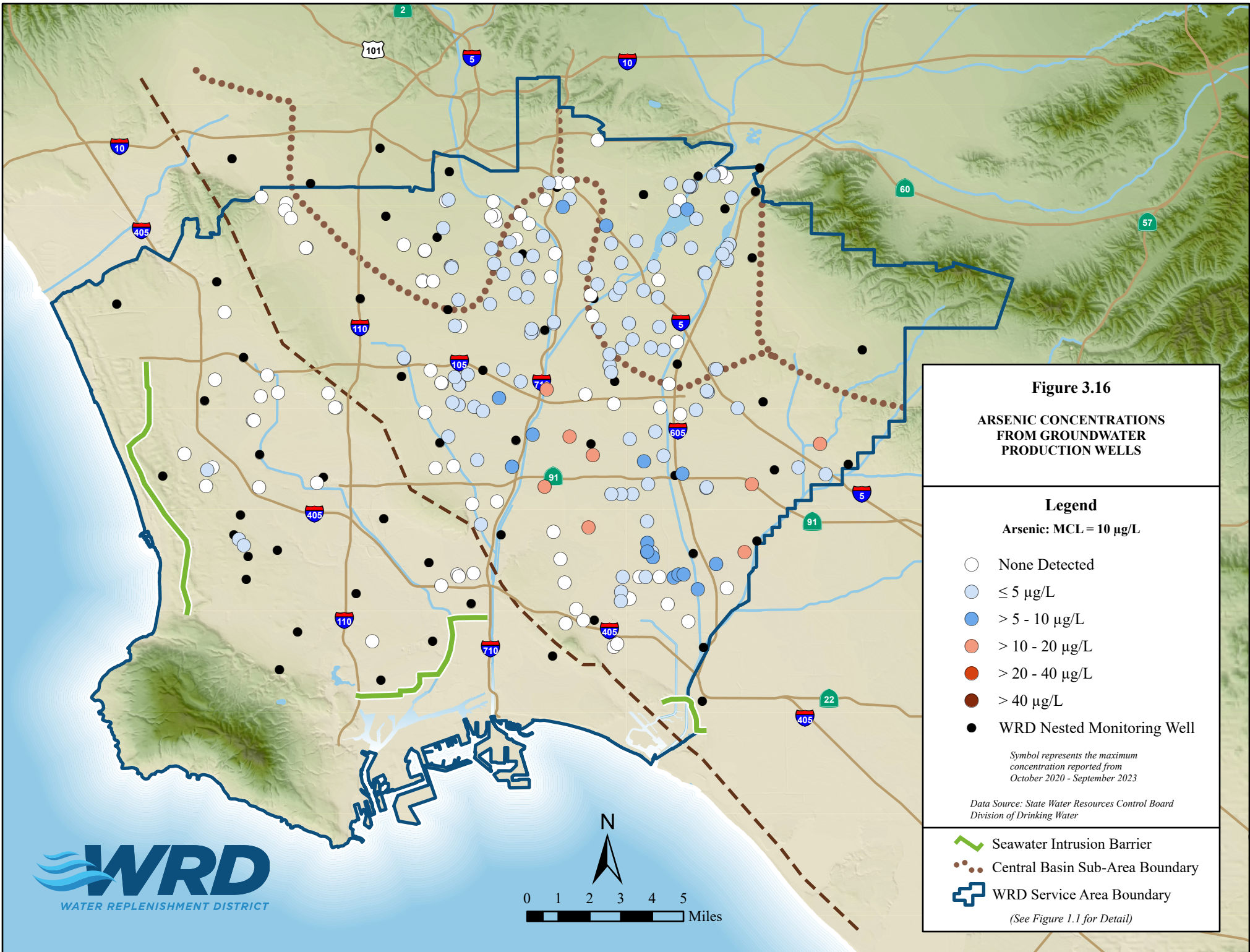












**Figure 3.16**

**ARSENIC CONCENTRATIONS FROM GROUNDWATER PRODUCTION WELLS**

**Legend**

Arsenic: MCL = 10 µg/L

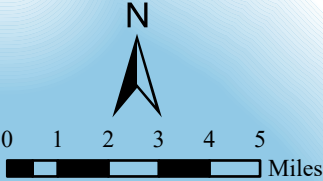
- None Detected
- ◐ ≤ 5 µg/L
- ◑ > 5 - 10 µg/L
- ◒ > 10 - 20 µg/L
- ◓ > 20 - 40 µg/L
- ◔ > 40 µg/L
- WRD Nested Monitoring Well

*Symbol represents the maximum concentration reported from October 2020 - September 2023*

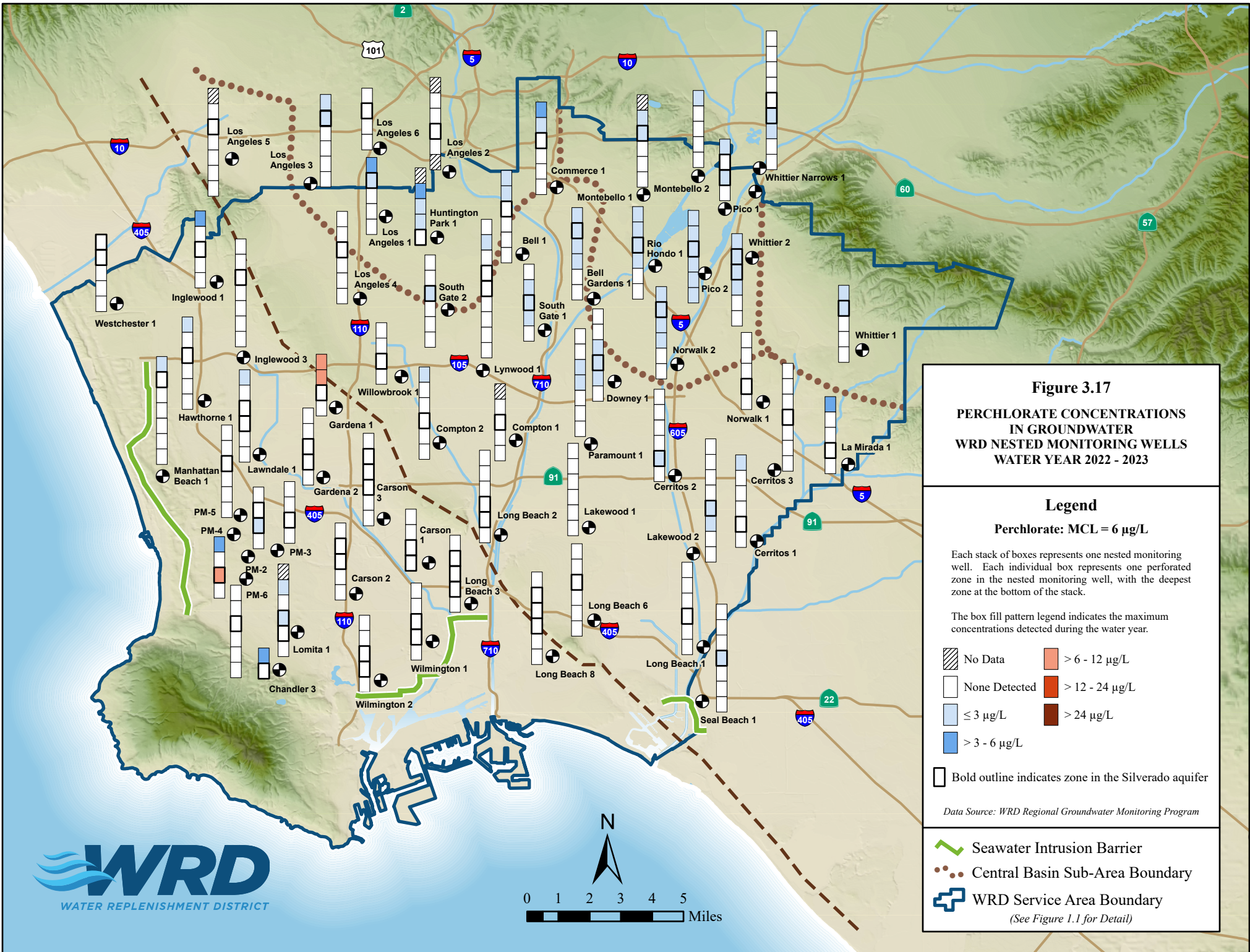
*Data Source: State Water Resources Control Board  
Division of Drinking Water*

- Seawater Intrusion Barrier
- ⋯ Central Basin Sub-Area Boundary
- ⊕ WRD Service Area Boundary

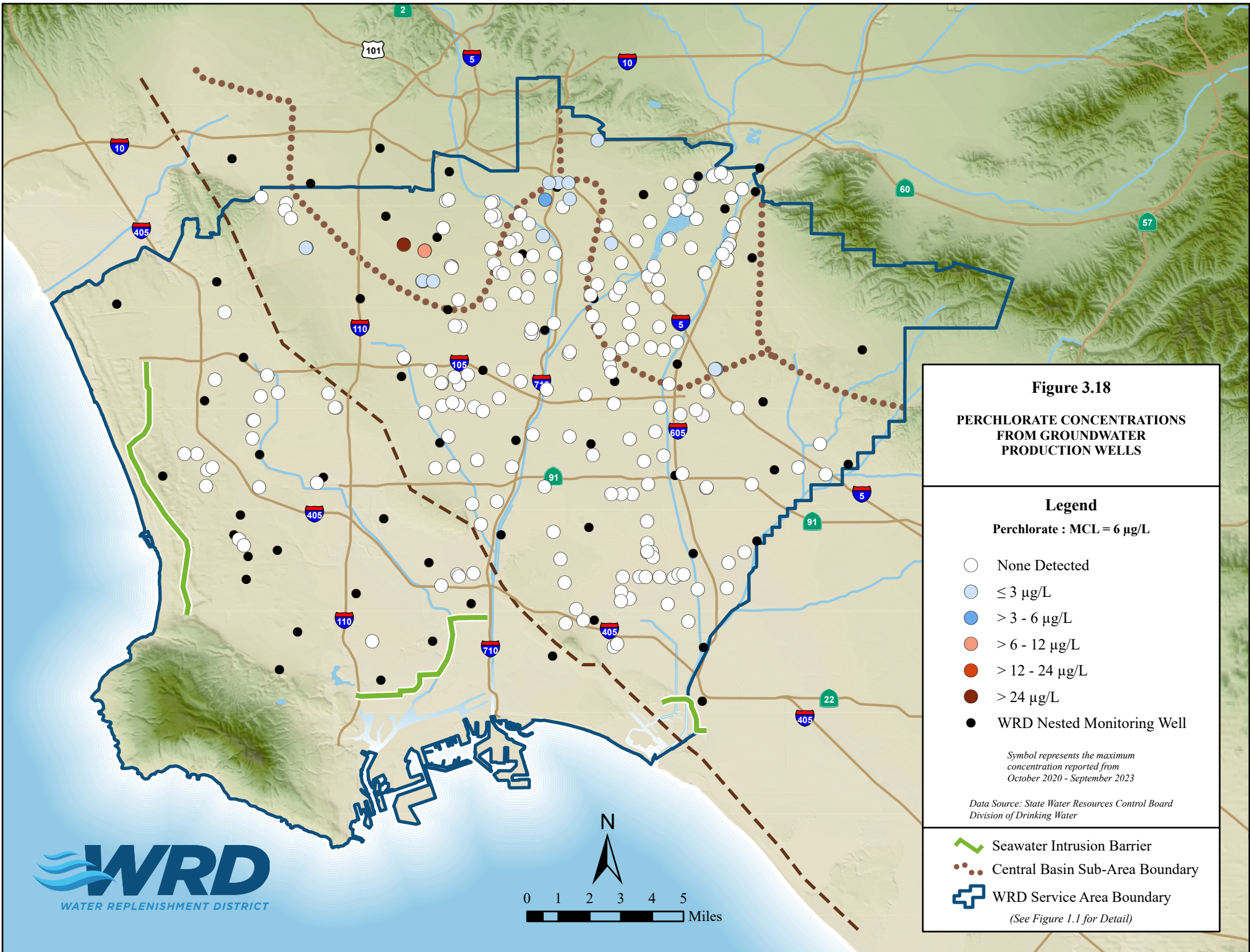
*(See Figure 1.1 for Detail)*



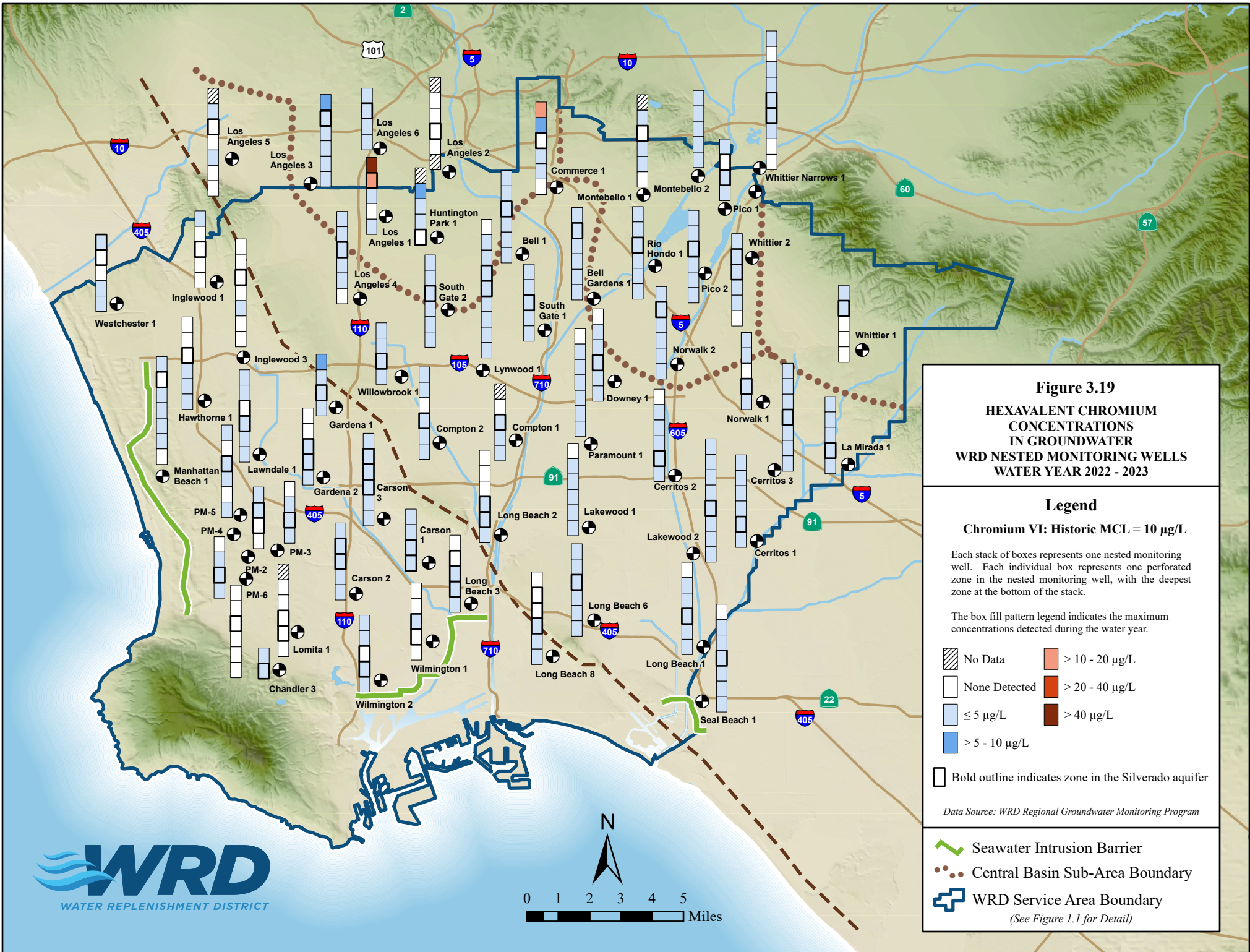




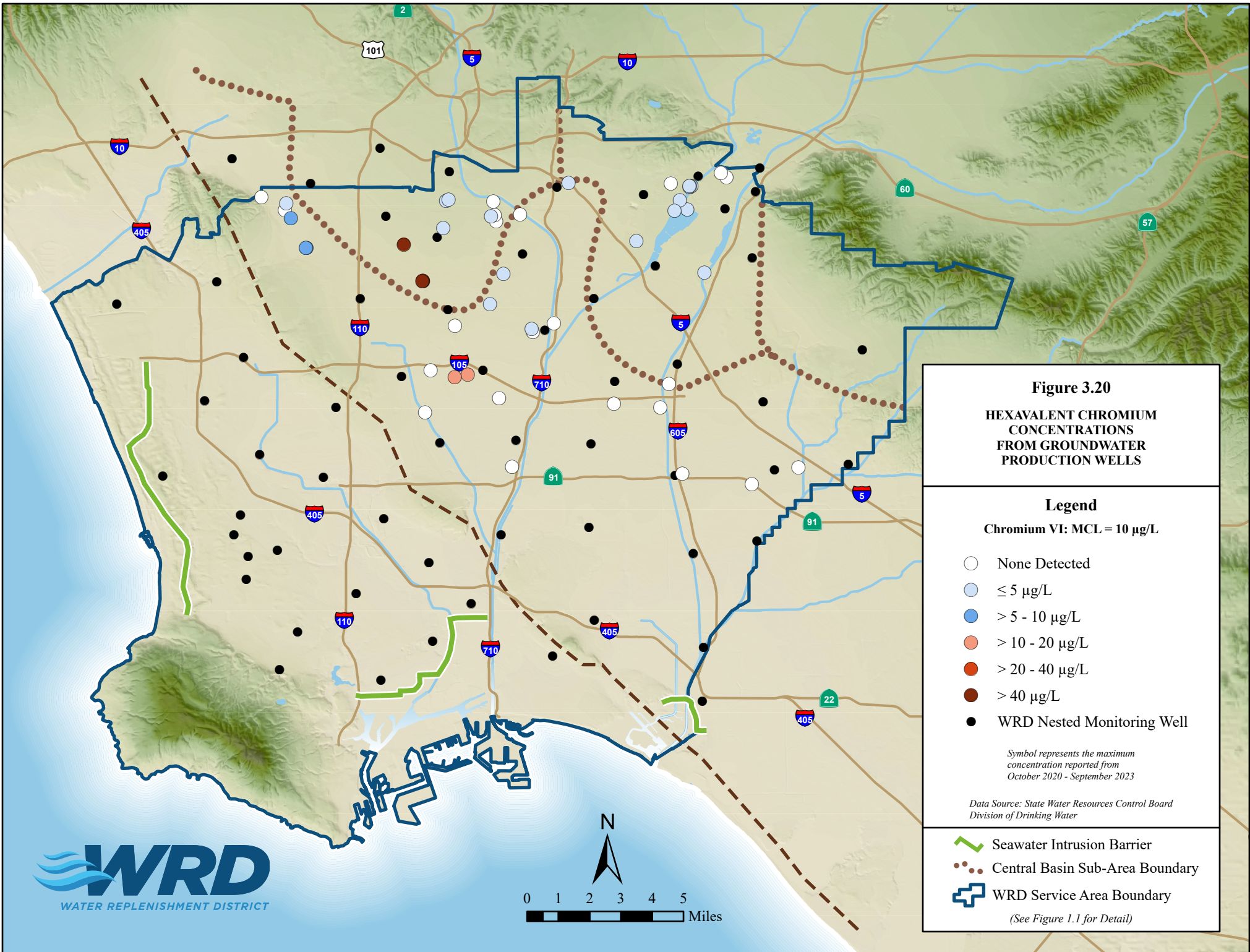












**Figure 3.20**  
**HEXAVALENT CHROMIUM**  
**CONCENTRATIONS**  
**FROM GROUNDWATER**  
**PRODUCTION WELLS**

**Legend**

Chromium VI: MCL = 10 µg/L

- None Detected
- ≤ 5 µg/L
- > 5 - 10 µg/L
- > 10 - 20 µg/L
- > 20 - 40 µg/L
- > 40 µg/L
- WRD Nested Monitoring Well

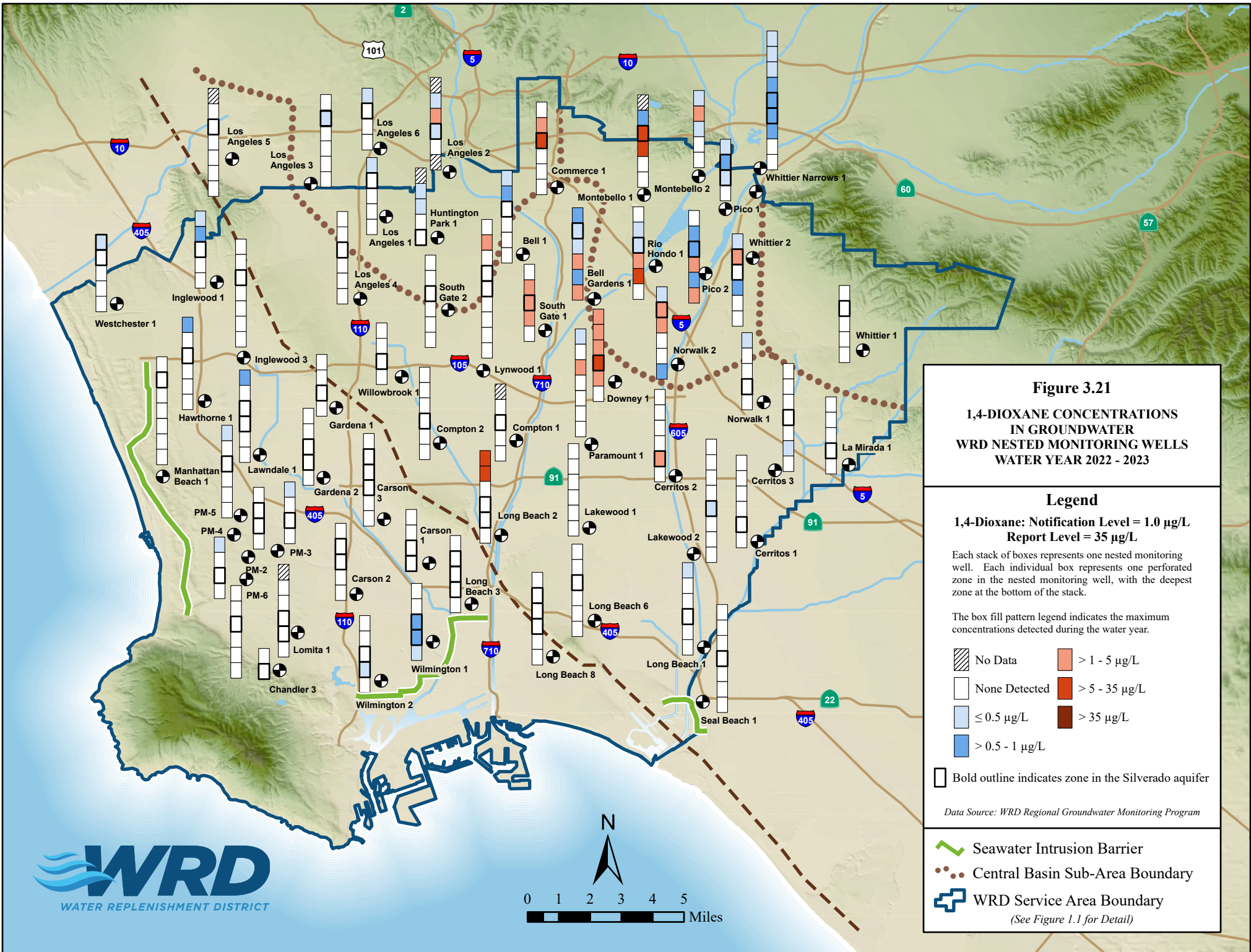
*Symbol represents the maximum concentration reported from October 2020 - September 2023*

*Data Source: State Water Resources Control Board  
 Division of Drinking Water*

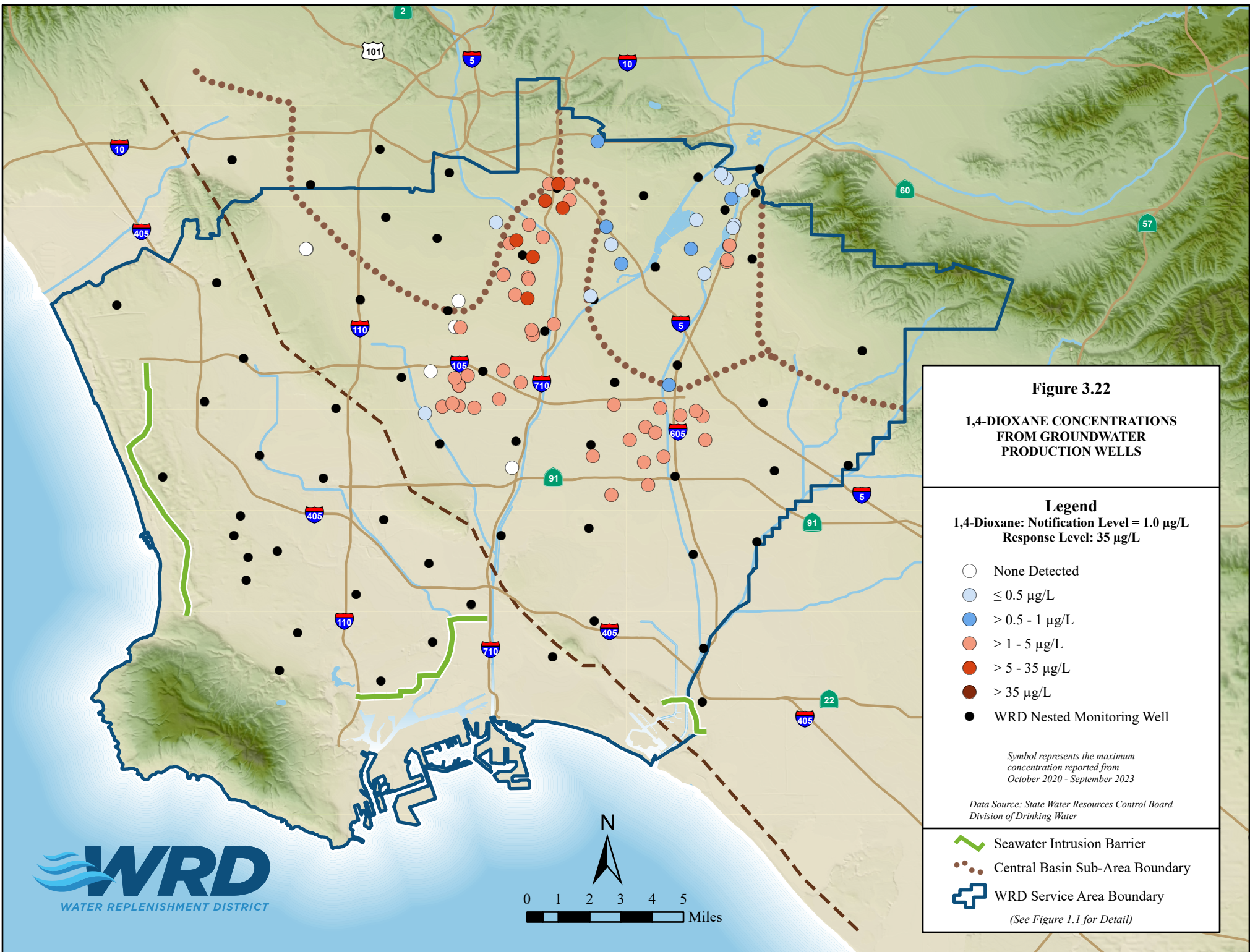
- Seawater Intrusion Barrier
- ⋯ Central Basin Sub-Area Boundary
- ⊕ WRD Service Area Boundary

*(See Figure 1.1 for Detail)*









**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

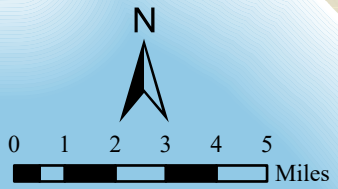
- None Detected
- ≤ 0.5 µg/L
- > 0.5 - 1 µg/L
- > 1 - 5 µg/L
- > 5 - 35 µg/L
- > 35 µg/L
- WRD Nested Monitoring Well

*Symbol represents the maximum concentration reported from October 2020 - September 2023*

*Data Source: State Water Resources Control Board  
Division of Drinking Water*

- Seawater Intrusion Barrier
- Central Basin Sub-Area Boundary
- WRD Service Area Boundary

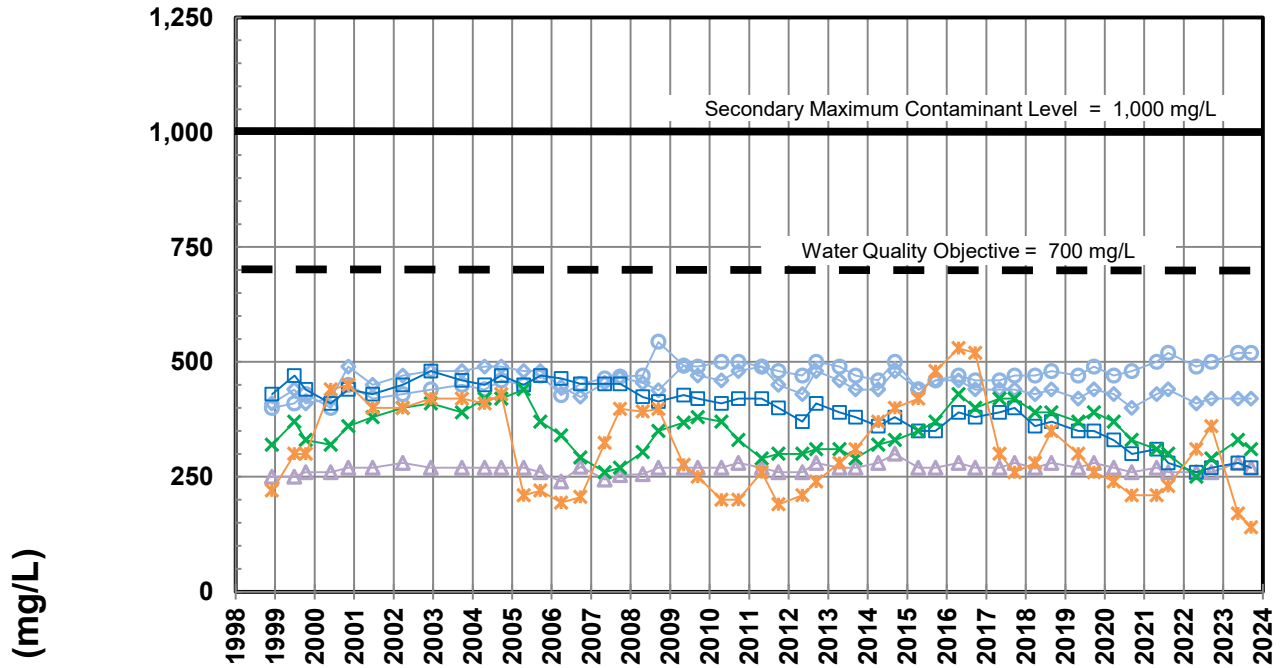
*(See Figure 1.1 for Detail)*



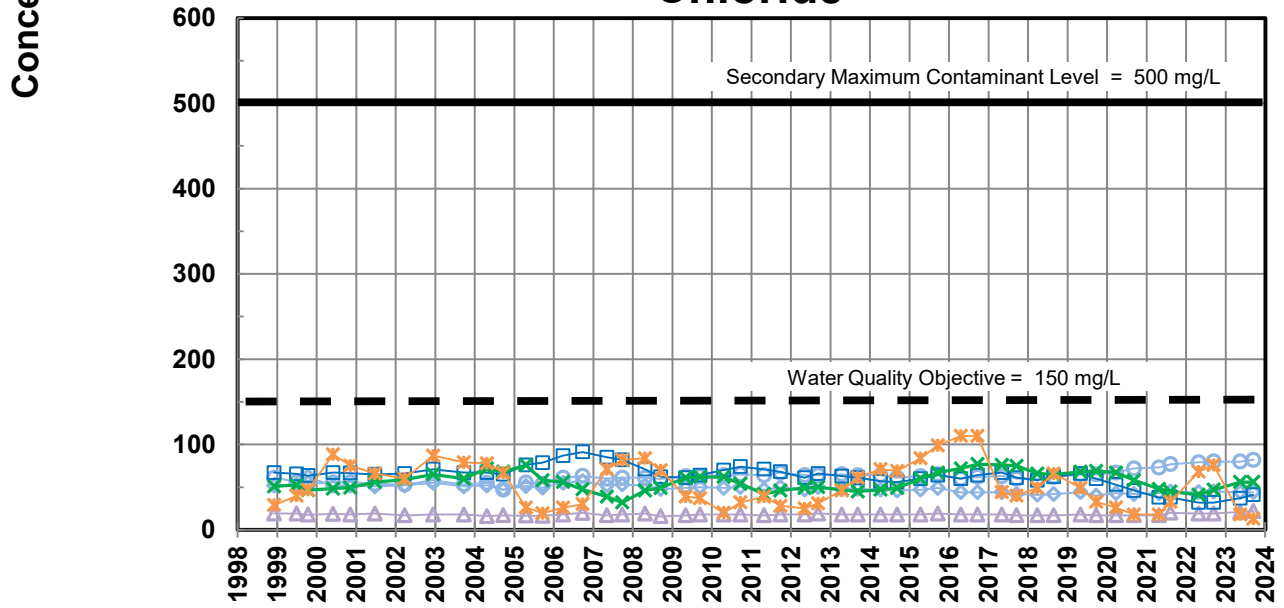


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# Total Dissolved Solids



# Chloride

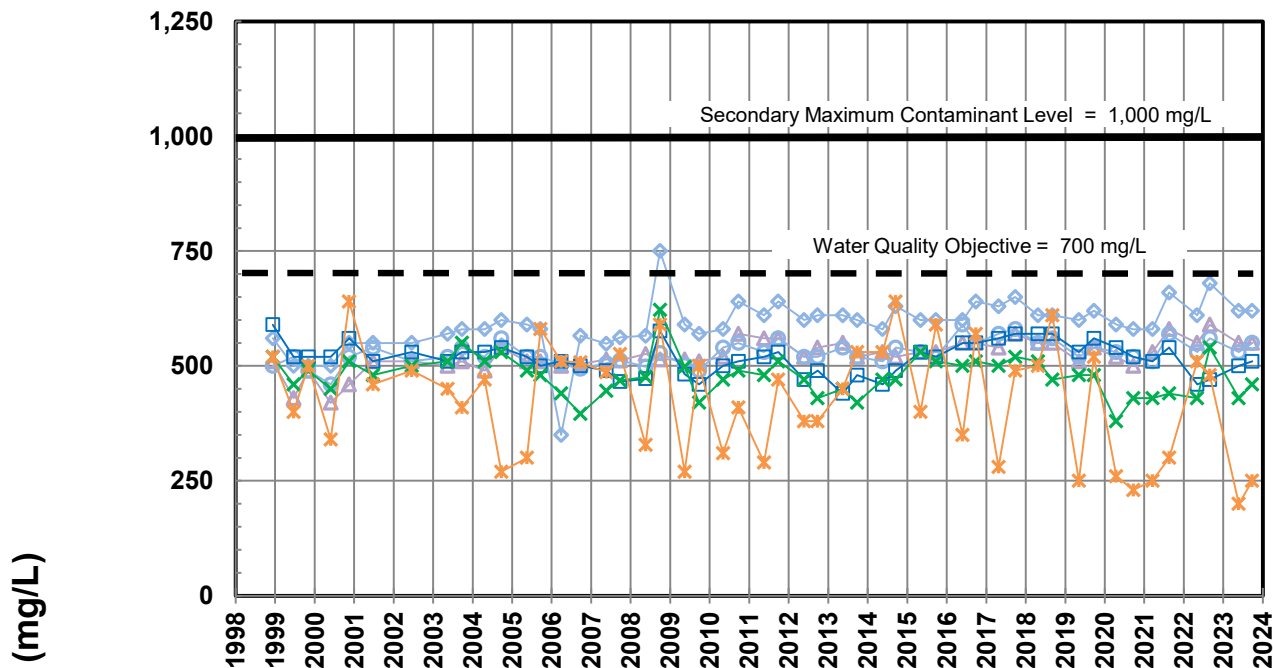


- ▲— Zone 1 (1110'-1130', Pico Formation)
- ◇— Zone 2 (910'-930', Sunnyside)
- Zone 3 (710'-730', Sunnyside)
- Zone 4 (430'-450', Silverado)
- ×— Zone 5 (280'-300', Hollydale)
- \*— Zone 6 (140'-160', Gardena)

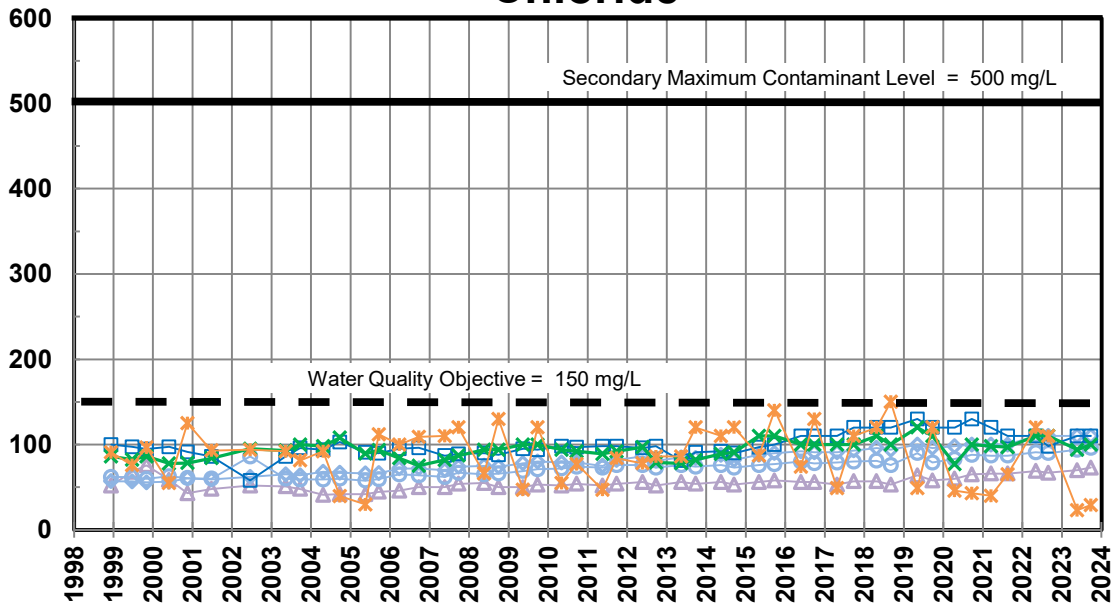
**TDS AND CHLORIDE IN WRD KEY NESTED MONITORING WELL RIO HONDO #1**

**FIGURE 4.1**

# Total Dissolved Solids



# Chloride

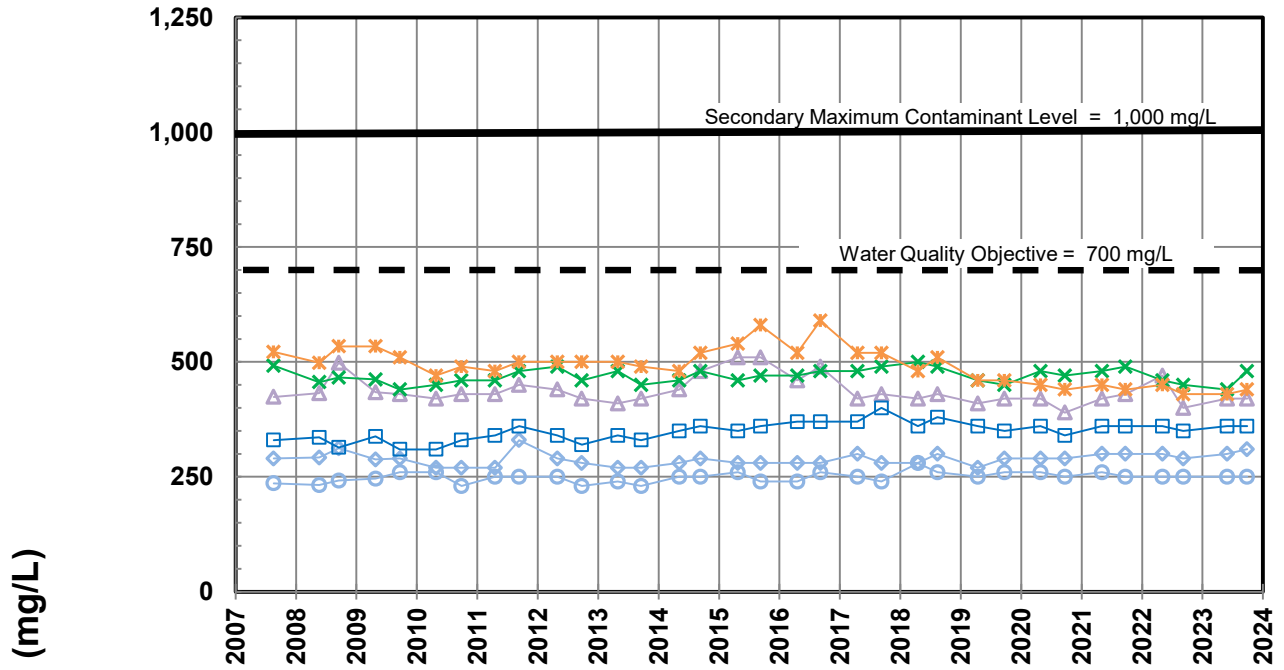


- |  |                                     |
|--|-------------------------------------|
| —▲— Zone 1 (1180'-1200', Pico Formation) | —◇— Zone 2 (830'-850', Sunnyside)   |
| —○— Zone 3 (560'-580', Sunnyside)        | —□— Zone 4 (320'-340', Silverado)   |
| —×— Zone 5 (235'-255', Lynwood)          | —*— Zone 6 (100'-120', Gaspar/Gage) |

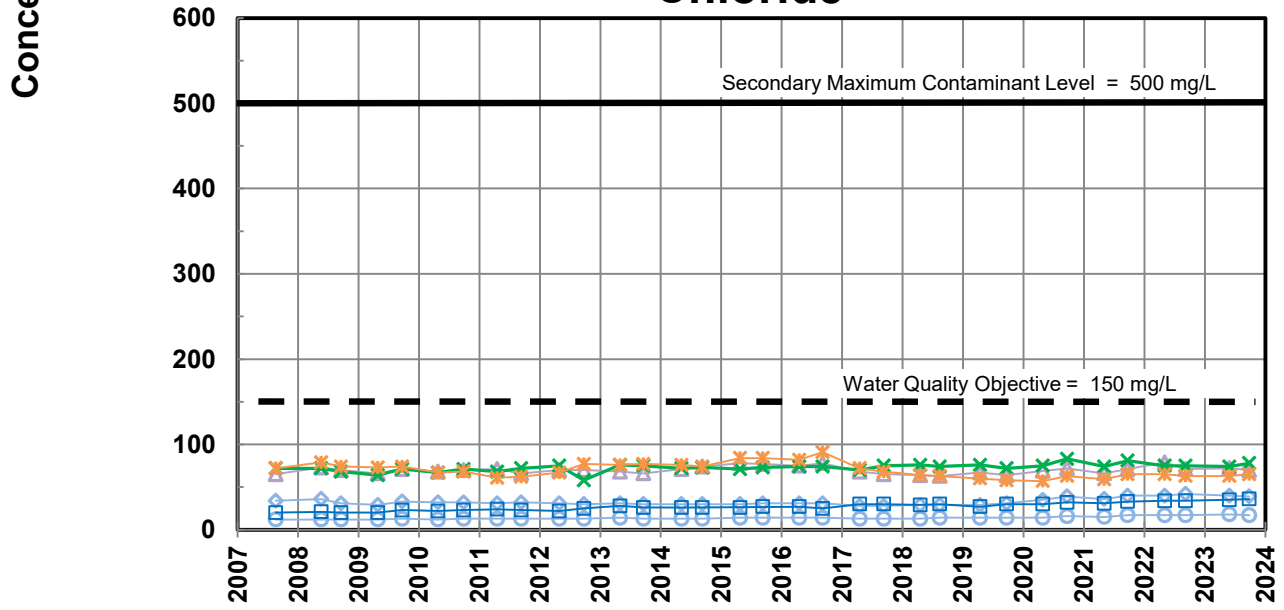
**TDS AND CHLORIDE IN WRD KEY NESTED MONITORING WELL PICO #2**

**FIGURE 4.2**

# Total Dissolved Solids



# Chloride

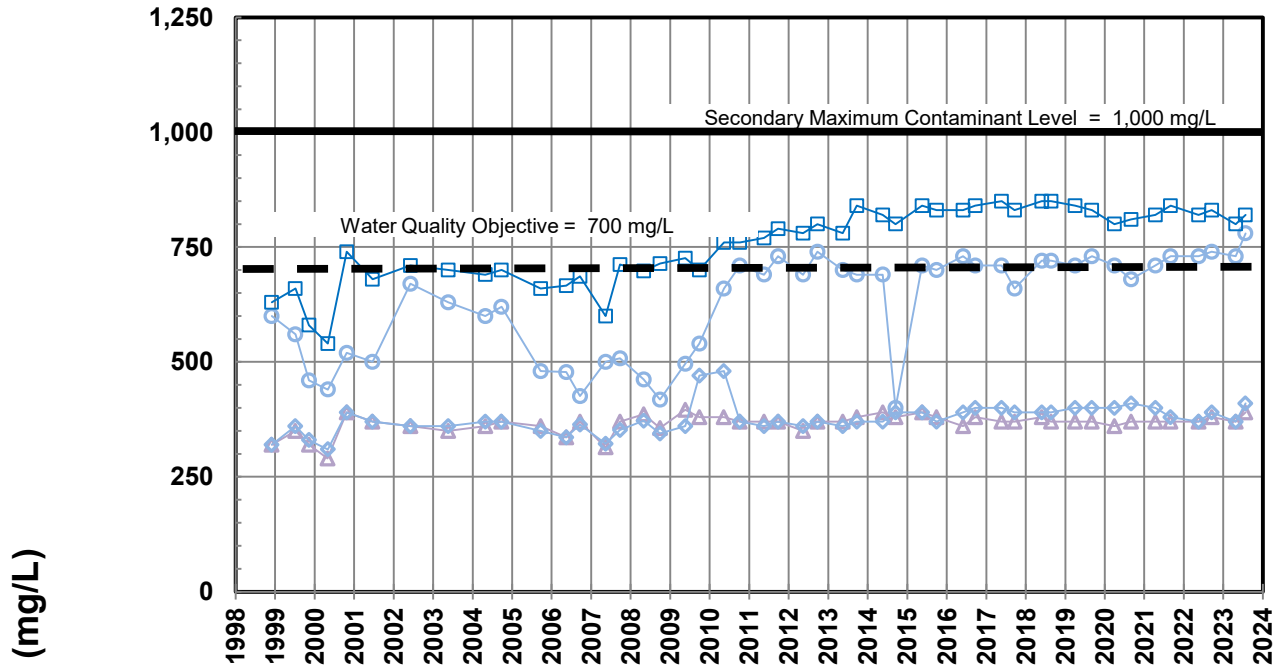


- △— Zone 1 (1460'-1480', Pico Formation)
- ◇— Zone 2 (1260'-1280', Pico Formation)
- Zone 3 (960'-980', Sunnyside)
- Zone 4 (800'-820', Sunnyside)
- \*— Zone 5 (480'-500', Silverado)
- \*— Zone 6 (236'-256', Gardena)

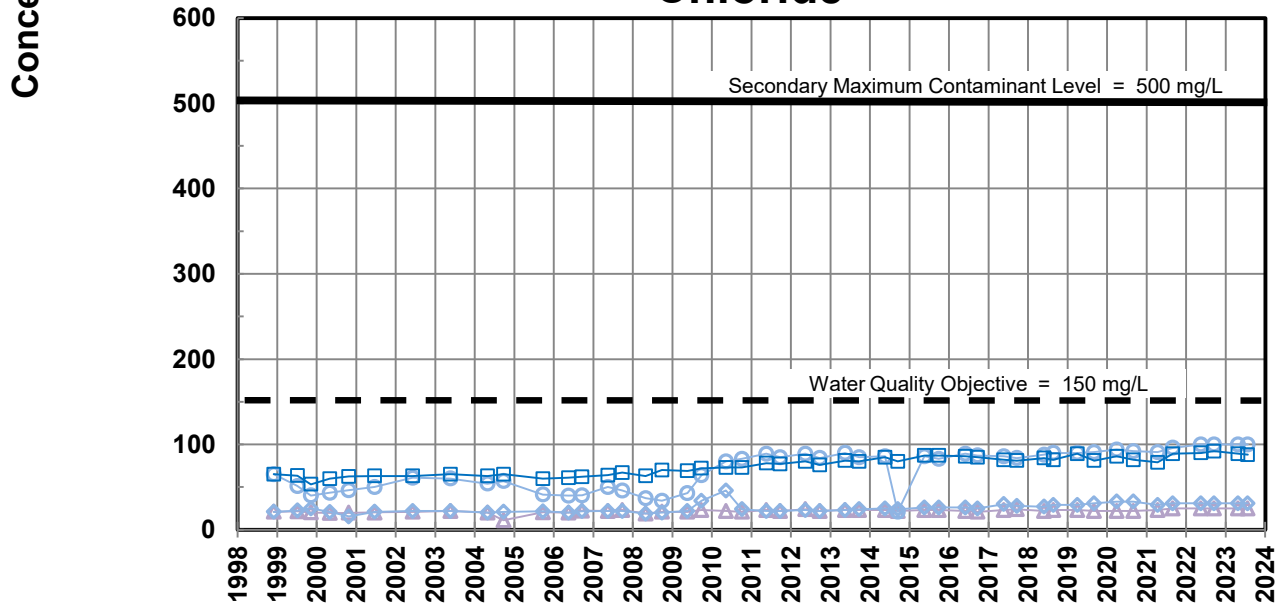
**TDS AND CHLORIDE IN WRD KEY NESTED MONITORING WELL NORWALK #2**

**FIGURE 4.3**

# Total Dissolved Solids



# Chloride

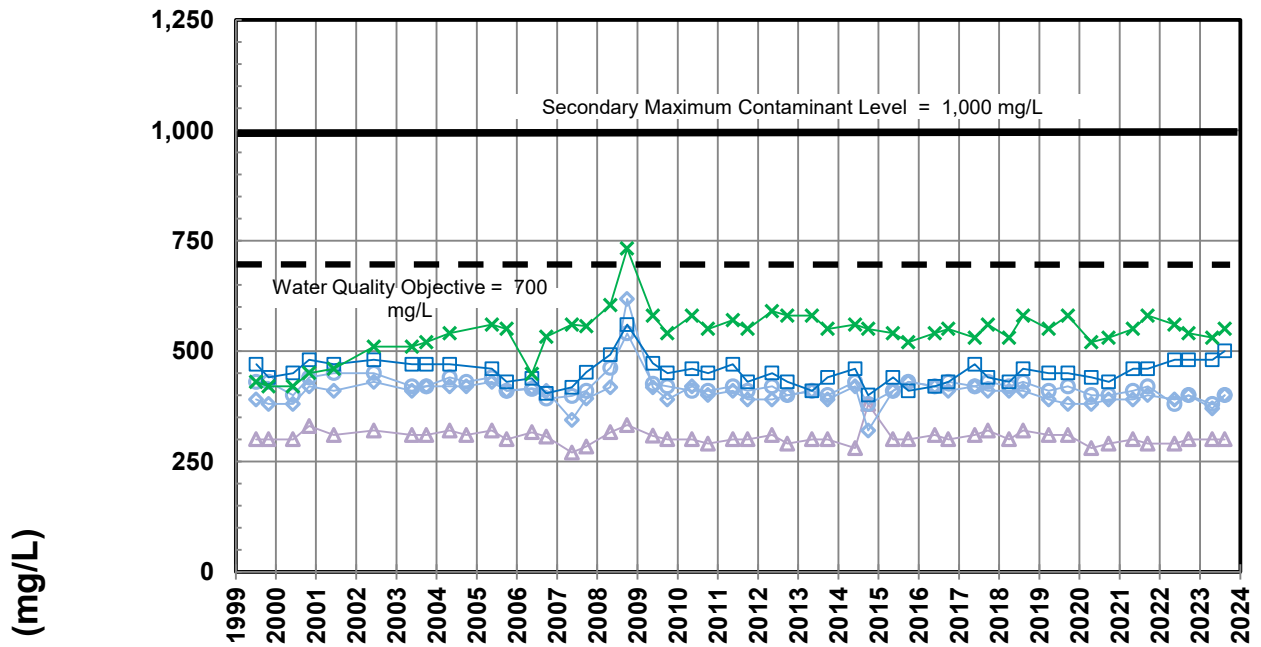


- △— Zone 1 (890'-910', Silverado)
- ◇— Zone 2 (690'-710', Lynwood)
- Zone 3 (420'-440', Hollydale)
- Zone 4 (275'-295', Gage)

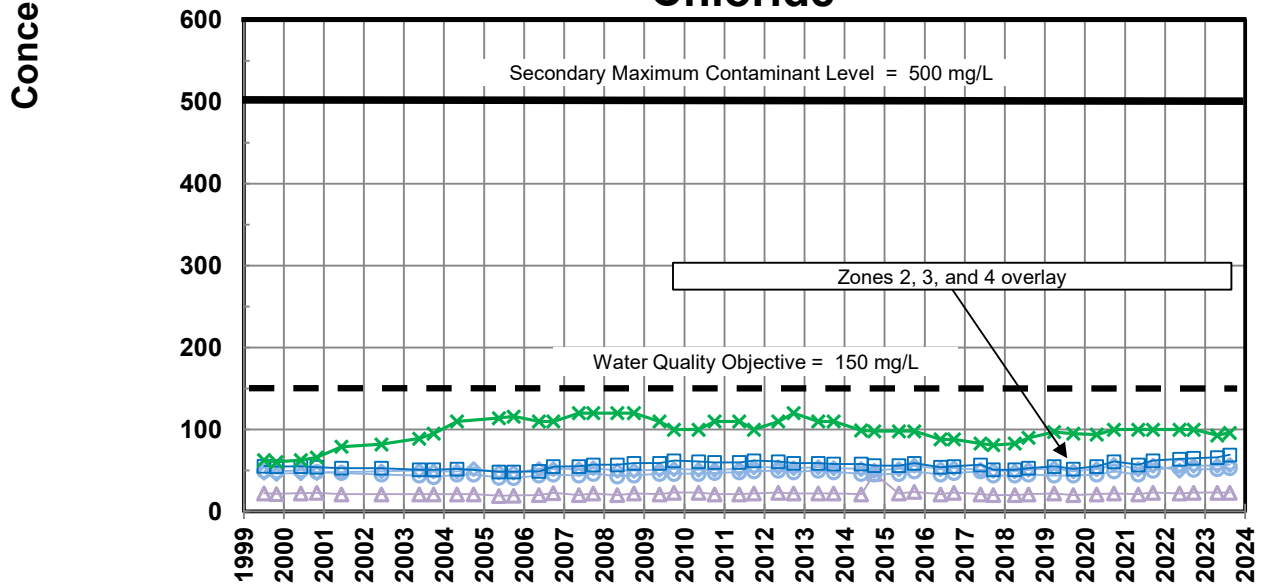
**TDS AND CHLORIDE IN WRD KEY NESTED MONITORING WELL HUNTINGTON PARK #1**

**FIGURE 4.4**

# Total Dissolved Solids



# Chloride



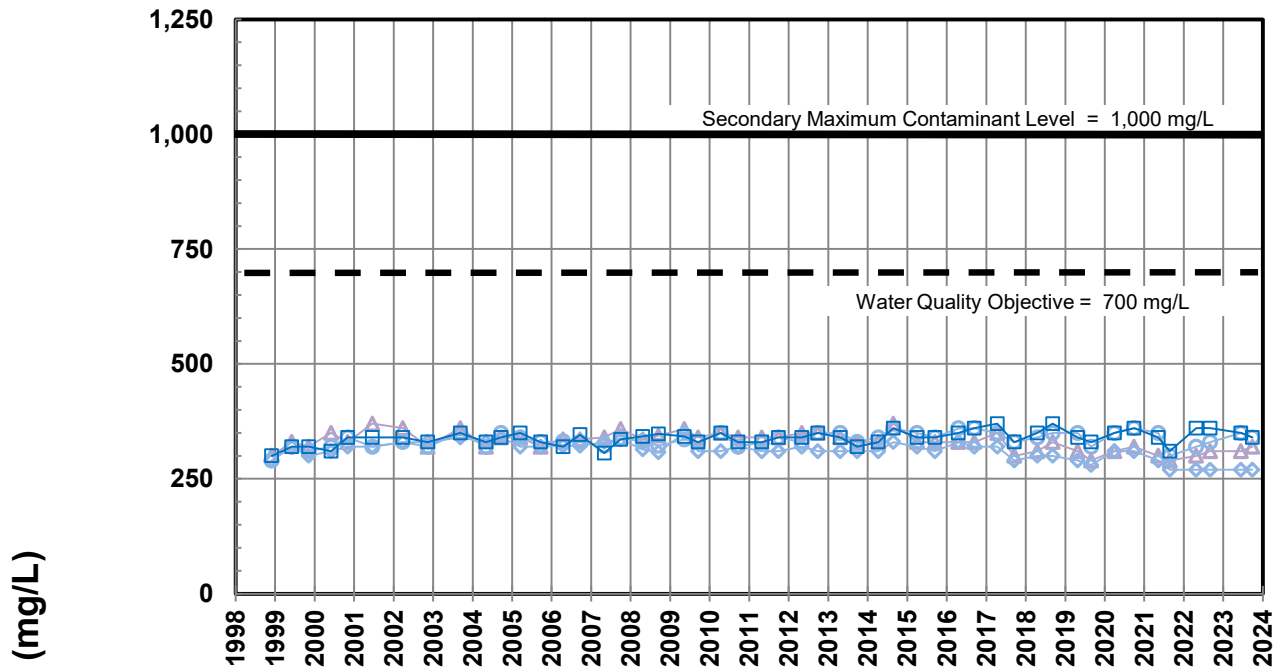
- ▲ Zone 1 (1440'-1460', Sunnyside)
 ◆ Zone 2 (1320'-1340', Sunnyside)
- Zone 3 (910'-930', Silverado)
 ◻ Zone 4 (565'-585', Lynwood)
- ✕ Zone 5 (220'-240', Exposition)

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

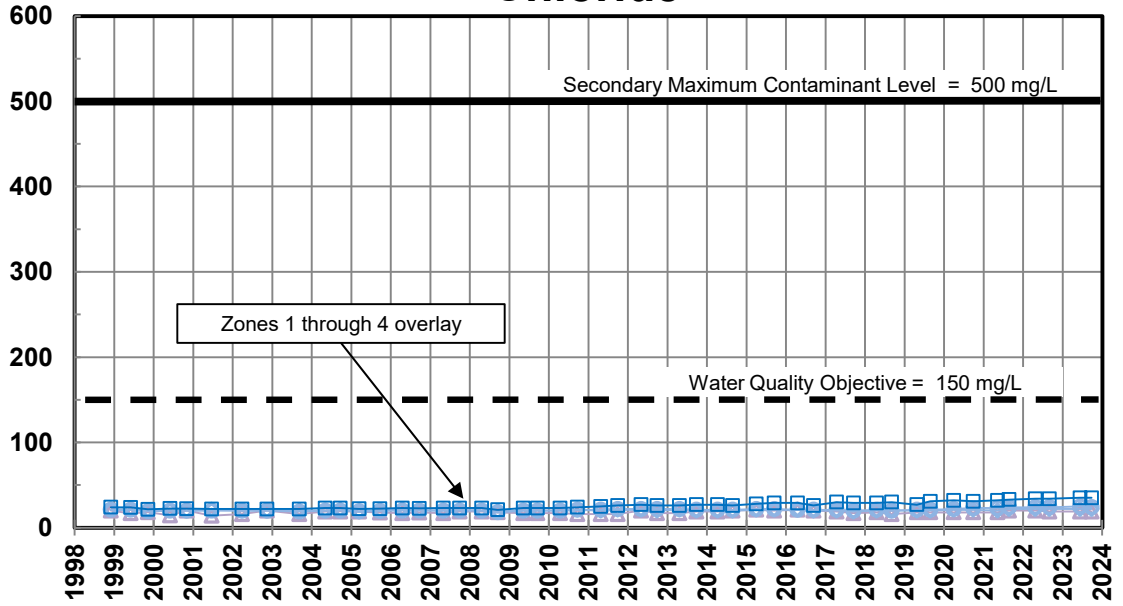
**FIGURE 4.5**



# Total Dissolved Solids



# Chloride

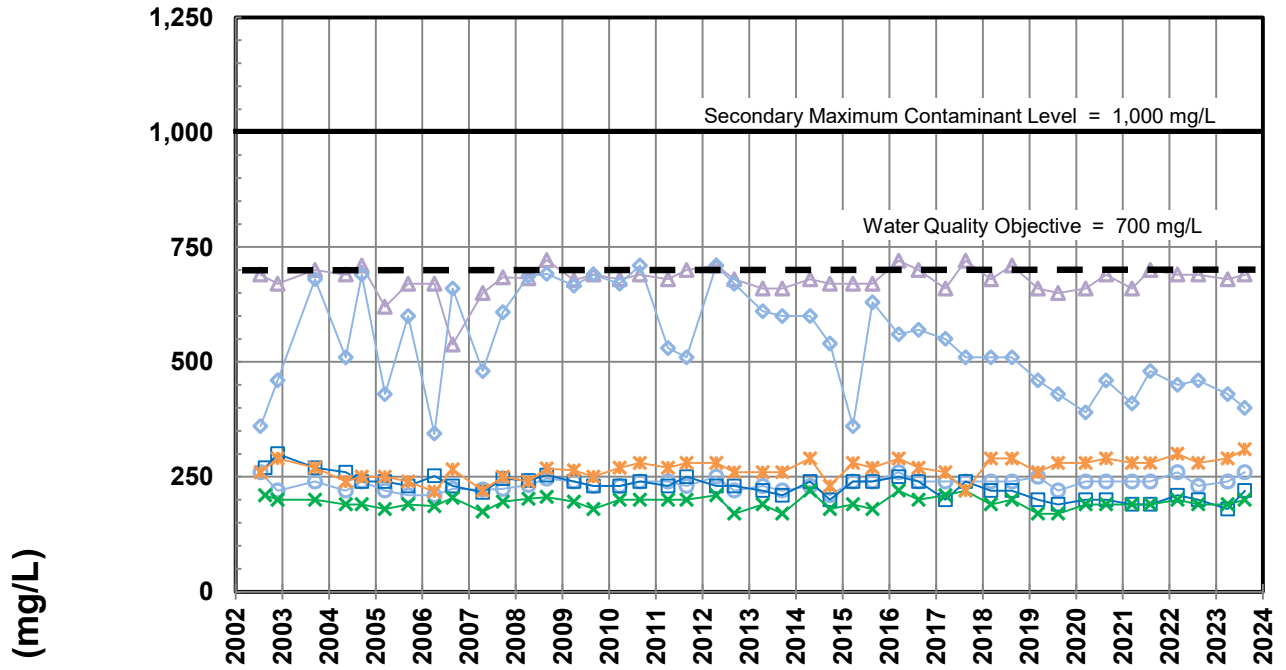


- ▲— Zone 1 (885'-905', Sunnyside)
- ◆— Zone 2 (500'-520', Silverado)
- Zone 3 (360'-380', Lynwood)
- Zone 4 (200'-220', Gage)

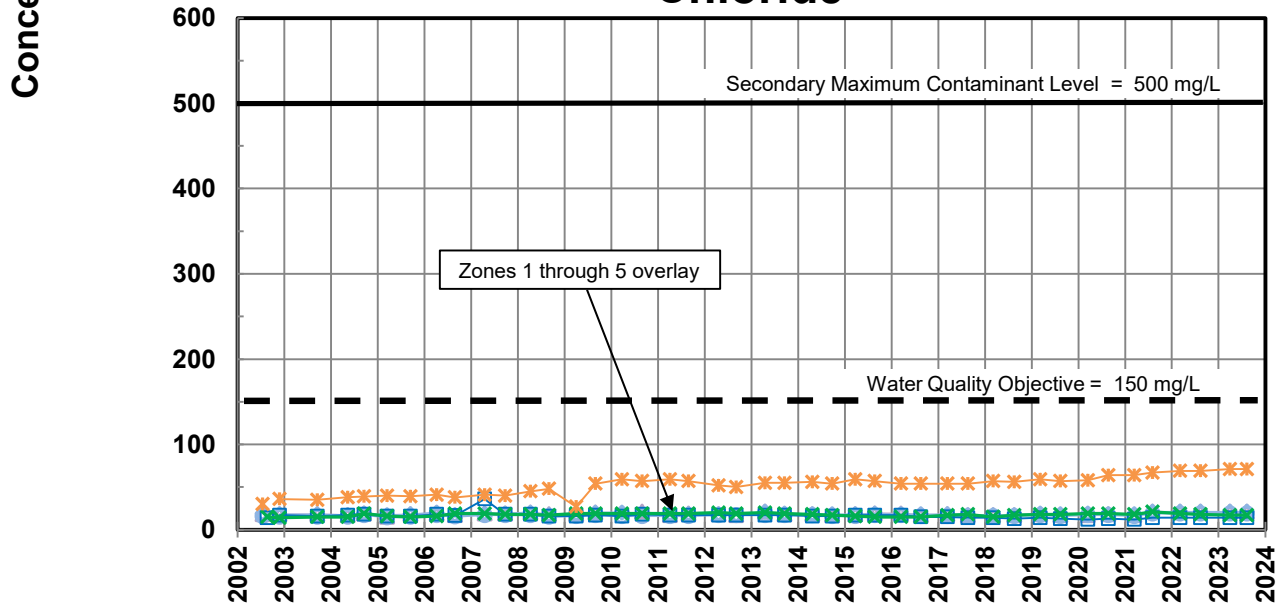
**TDS AND CHLORIDE IN WRD KEY NESTED MONITORING WELL WILLOWBROOK #1**

**FIGURE 4.6**

# Total Dissolved Solids



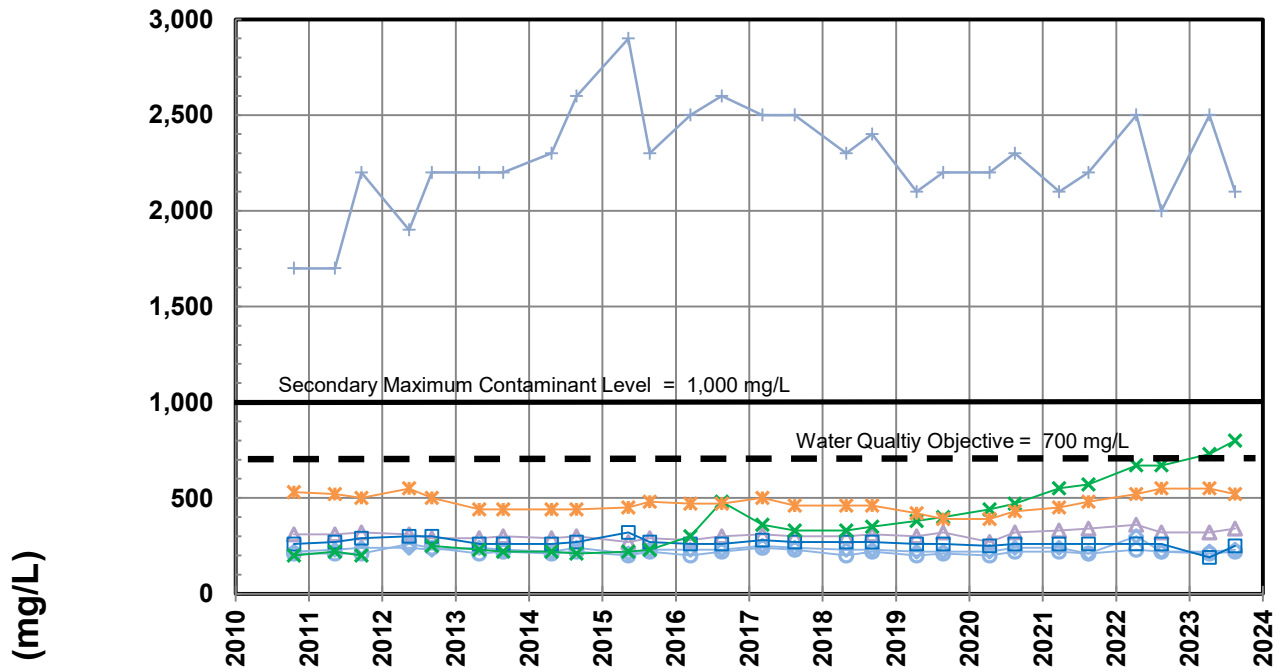
# Chloride



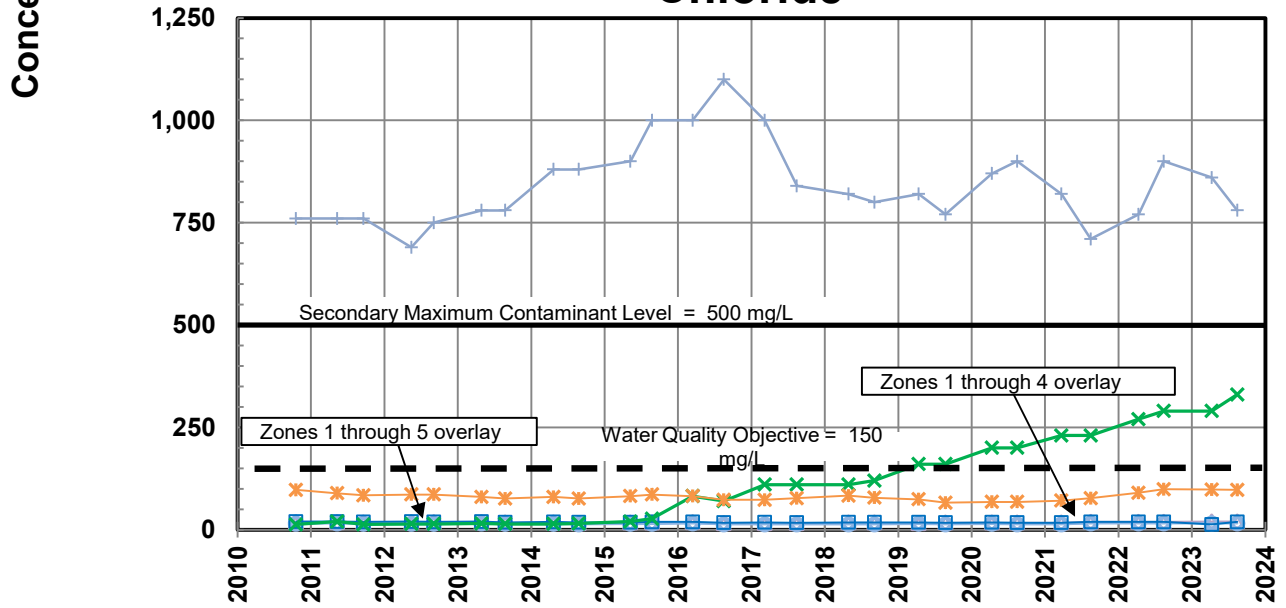
- ▲— Zone 1 (1490'-1510', Pico Formation)
- ◆— Zone 2 (930'-950', Sunnyside)
- ◊— Zone 3 (740'-760', Sunnyside)
- ◻— Zone 4 (480'-500', Silverado)
- \*— Zone 5 (380'-400', Lynwood)
- \*— Zone 6 (220'-240', Gage)

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

# Total Dissolved Solids



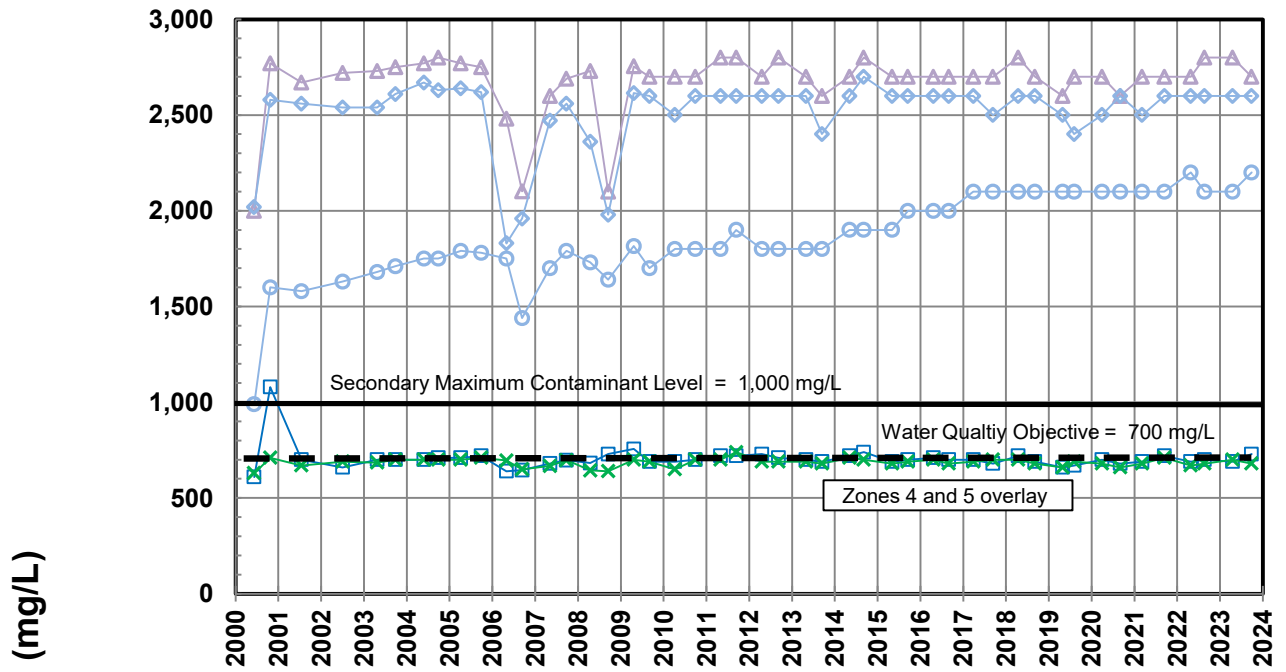
# Chloride



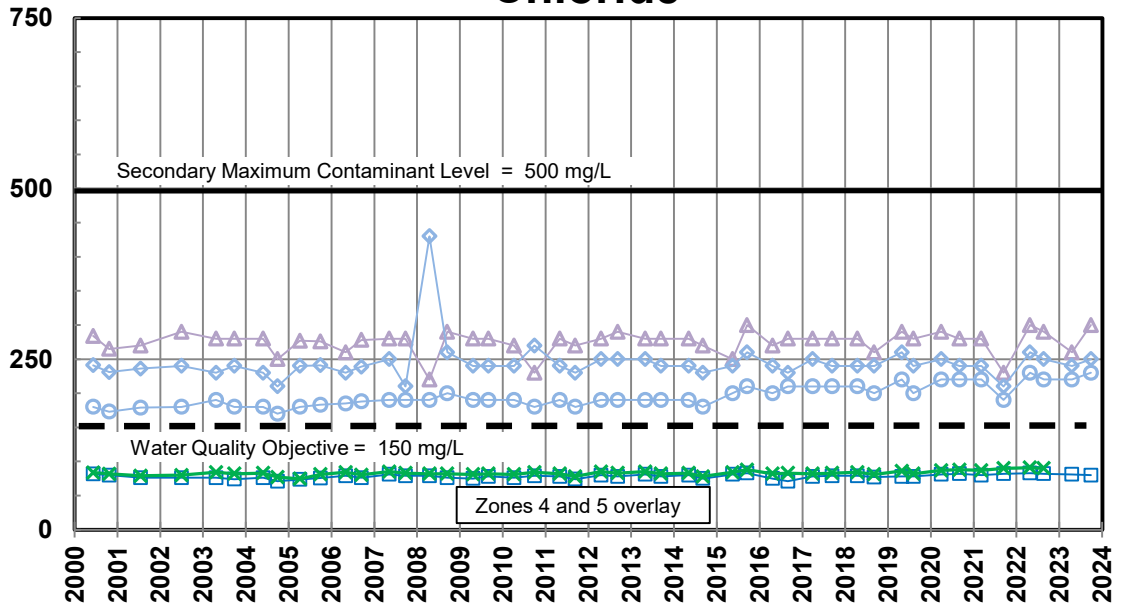
- ▲— Zone 1 (1345'-1365', Sunnyside)
- ◇— Zone 2 (1160'-1180', Sunnyside)
- Zone 3 (1020'-1040', Sunnyside)
- Zone 4 (775'-795', Silverado)
- ×— Zone 5 (605'-625', Lynwood)
- \*— Zone 6 (215'-235', Gage)
- +— Zone 7 (60'-70', Artesia)

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

# Total Dissolved Solids



# Chloride



Concentration (mg/L)

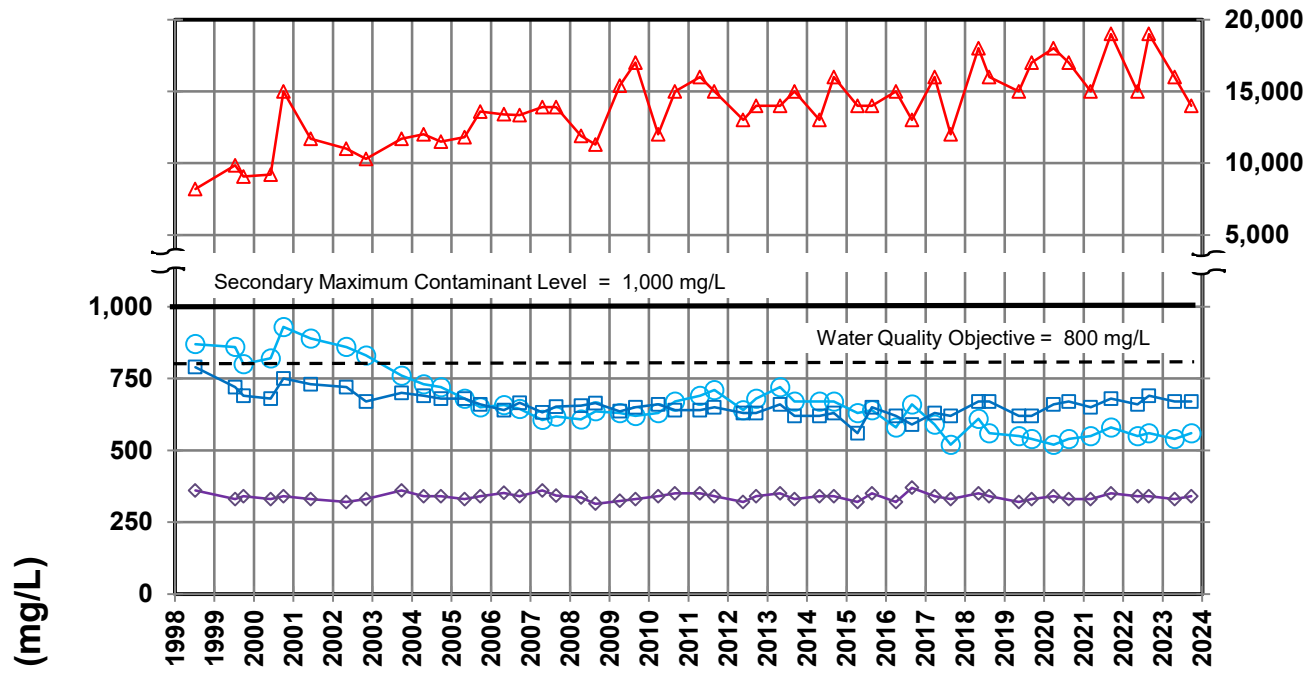


- ▲— Zone 1 (1180'-1200', Pico Formation)
- ◆— Zone 2 (920'-940', Pico Formation)
- Zone 3 (770'-790', Sunnyside)
- Zone 4 (450'-470', Silverado)
- ×— Zone 5 (200'-220', Jefferson)

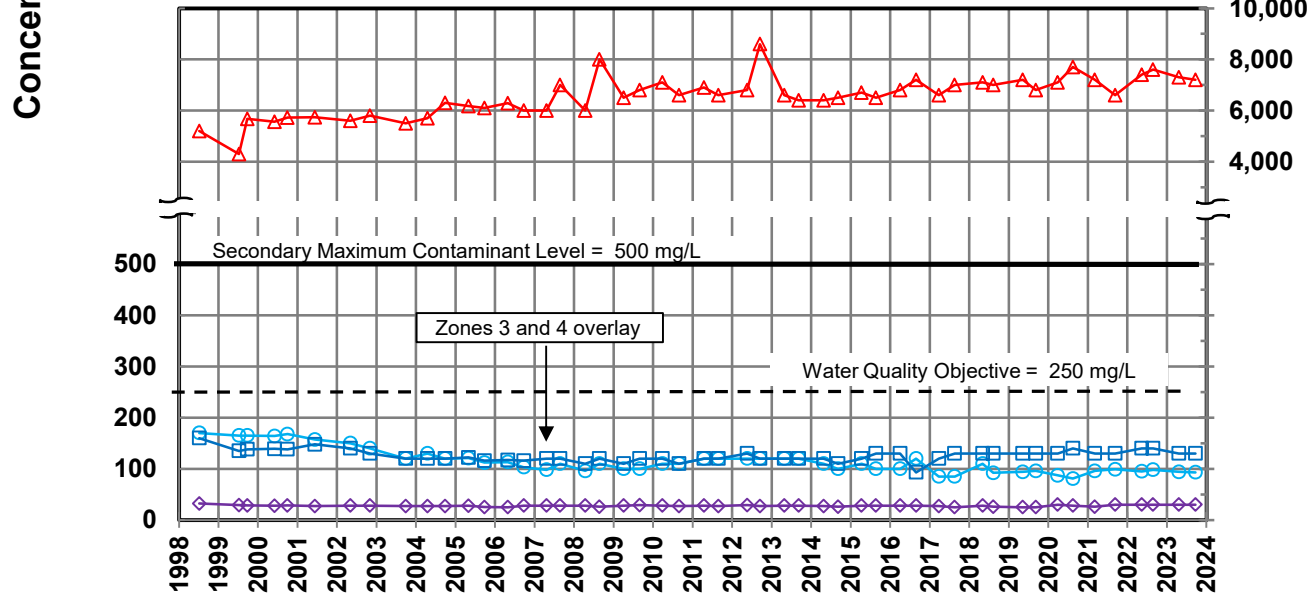
**TDS AND CHLORIDE IN WRD KEY NESTED MONITORING WELL WHITTIER #1**

**FIGURE 4.9**

# Total Dissolved Solids



# Chloride

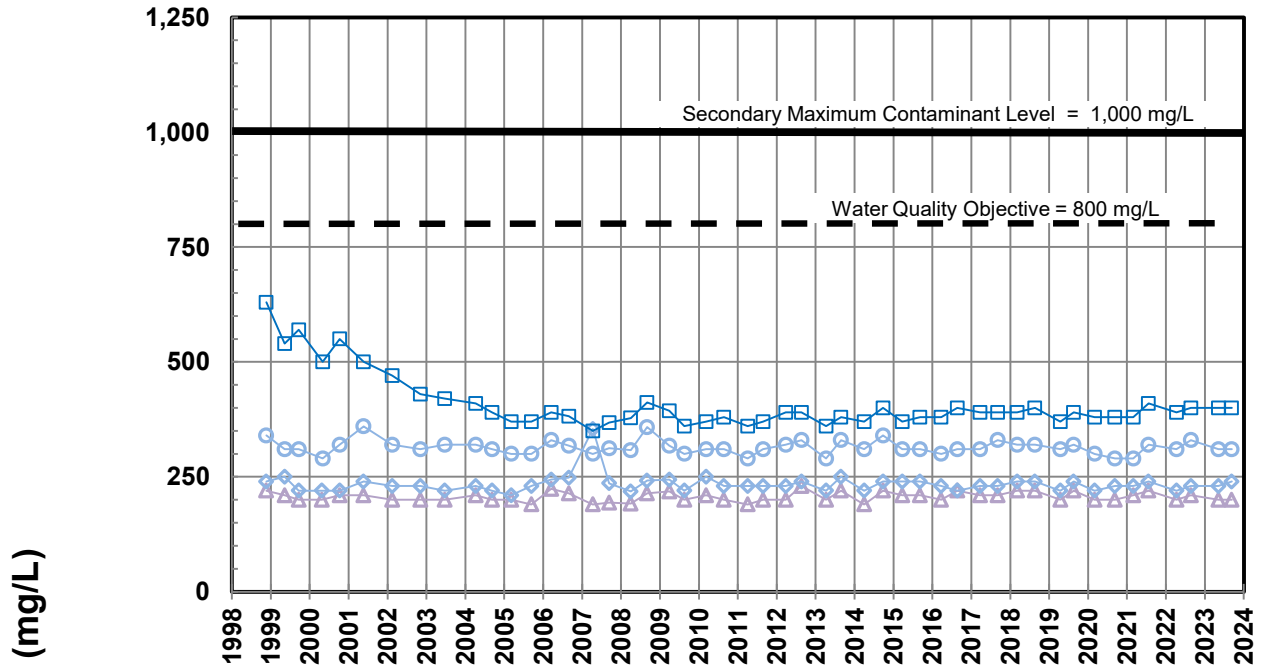


- ◆ Zone 1 (670'-710', Sunnyside)
- ◆ Zone 2 (500'-540', Silverado)
- Zone 3 (340'-380', Lynwood)
- Zone 4 (200'-240', Gardena)

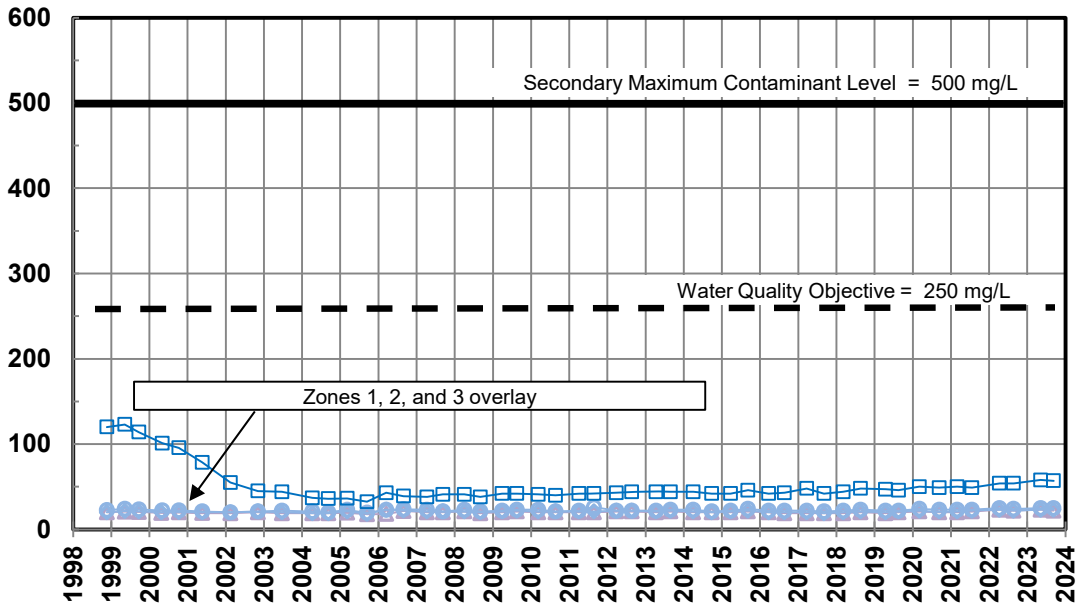
**TDS AND CHLORIDE IN WRD KEY NESTED MONITORING WELL PM-4 MARINER**

**FIGURE 4.10**

# Total Dissolved Solids



# Chloride



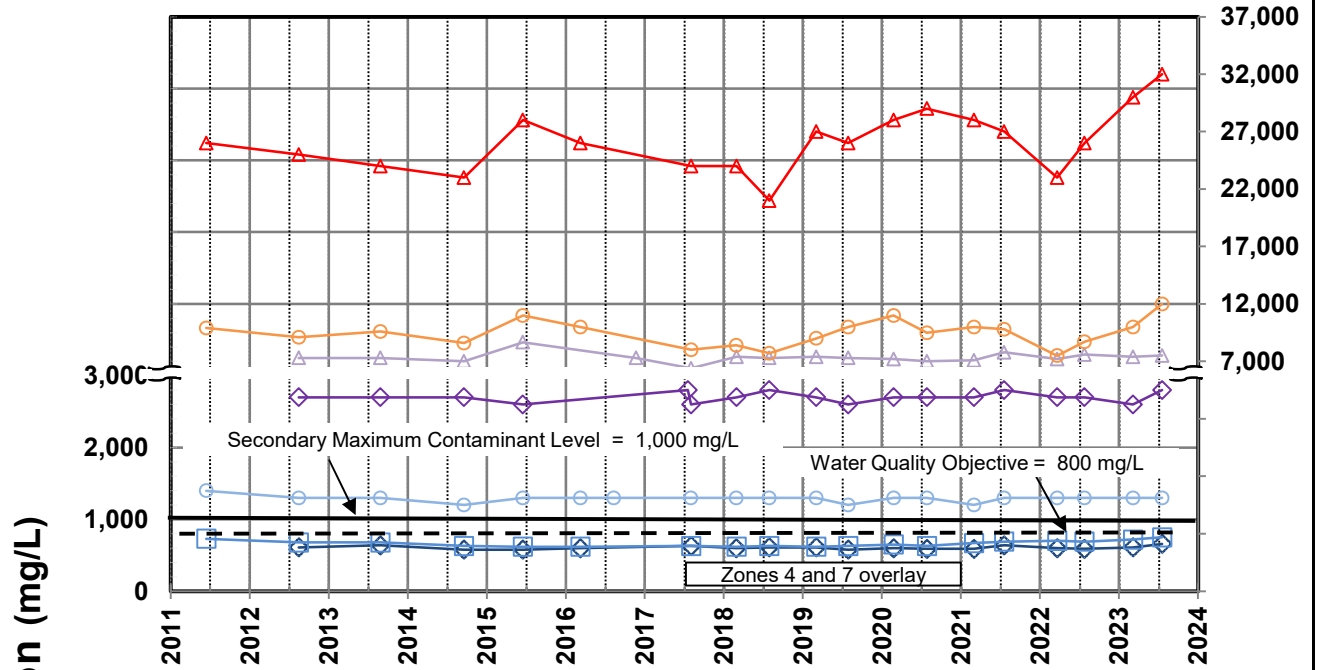
- ▲— Zone 1 (990'-1010', Silverado)
- ◆— Zone 2 (740'-760', Silverado)
- Zone 3 (460'-480', Lynwood)
- Zone 4 (250'-270', Gage)

**TDS AND CHLORIDE IN WRD KEY NESTED MONITORING WELL CARSON #1**

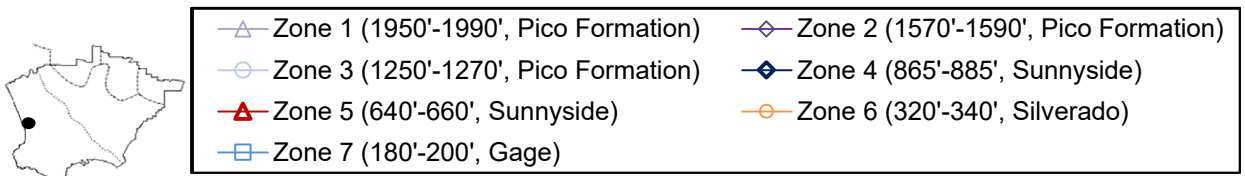
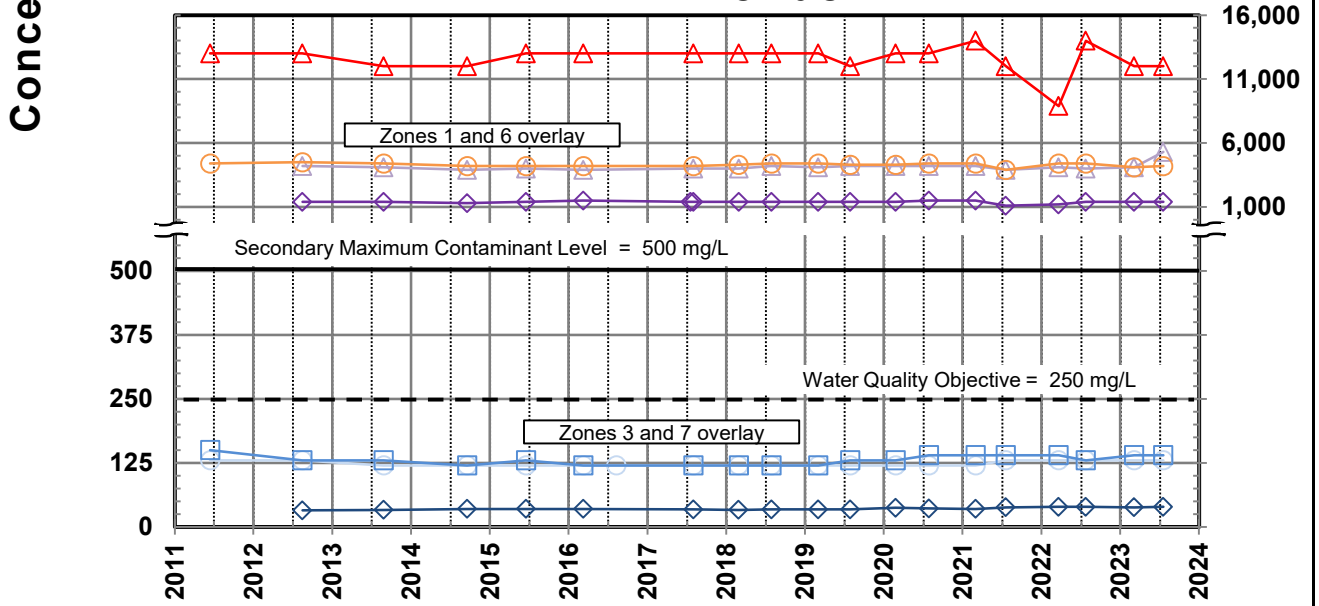
**FIGURE 4.11**



# Total Dissolved Solids



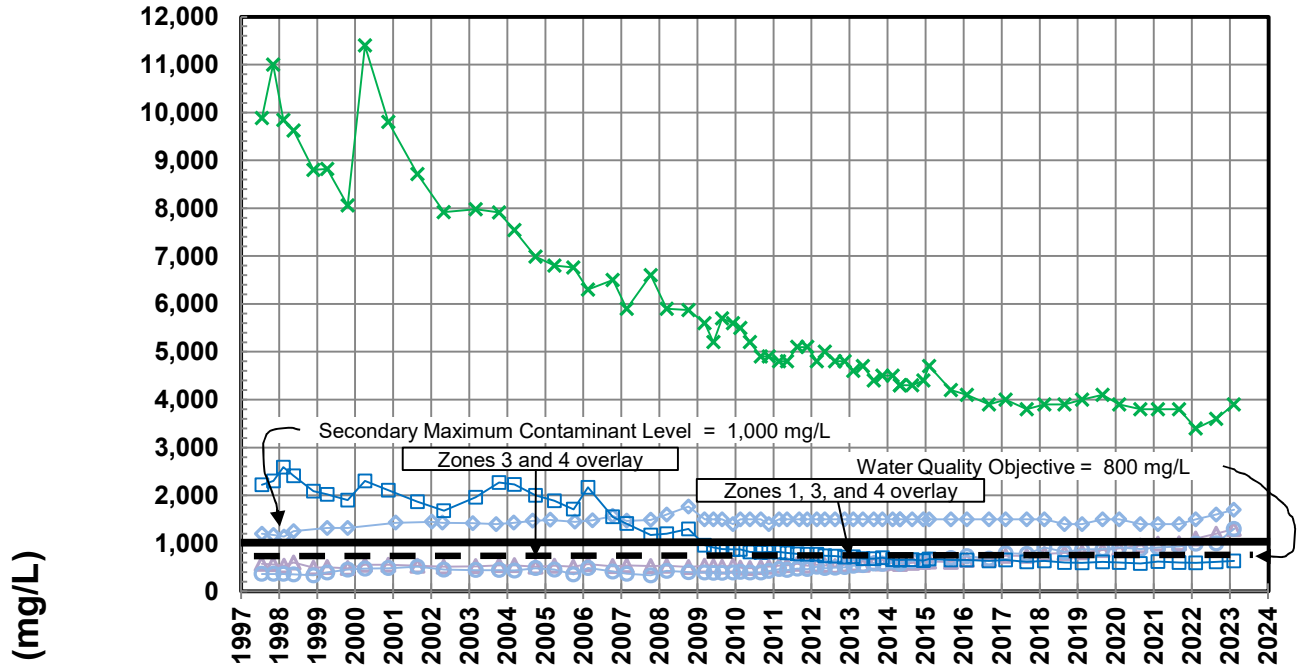
# Chloride



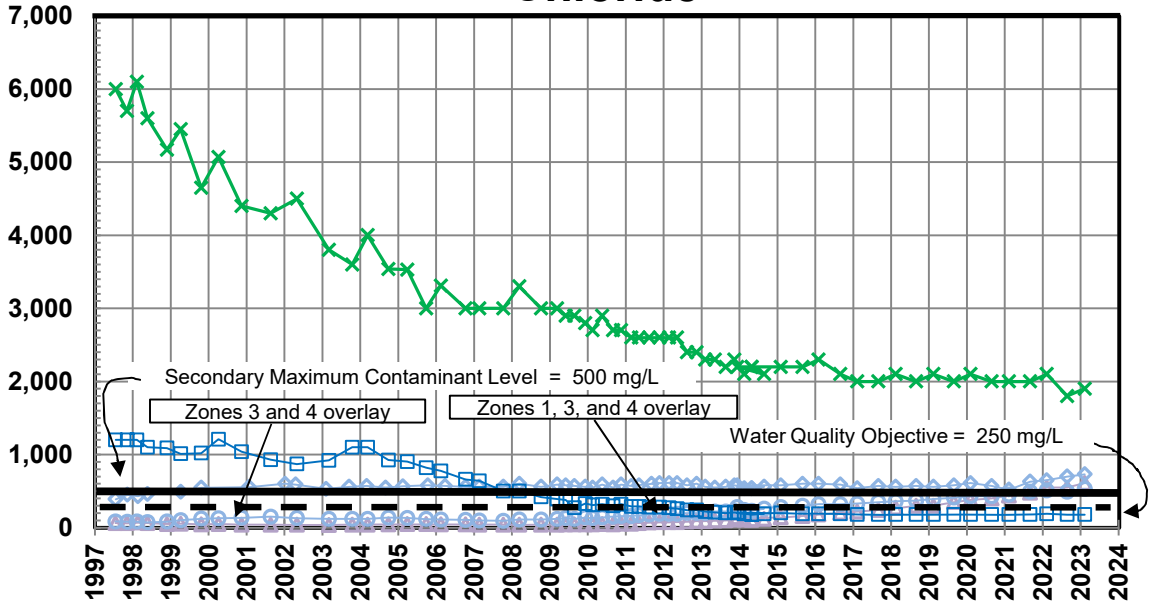
**TDS AND CHLORIDE IN WRD KEY NESTED MONITORING WELL MANHATTAN BEACH #1**

**FIGURE 4.12**

# Total Dissolved Solids



# Chloride



- △— Zone 1 (950'-970', Sunnyside)
- ◇— Zone 2 (755'-775', Silverado)
- Zone 3 (540'-560', Silverado)
- Zone 4 (390'-410', Lynwood)
- x— Zone 5 (120'-140', Gage)

**TDS AND CHLORIDE IN WRD KEY NESTED MONITORING WELL WILMINGTON #2**

**FIGURE 4.13**

*Mission:*

*“To provide, protect and preserve safe and sustainable groundwater”*



Water Replenishment District  
4040 Paramount Boulevard  
Lakewood, CA 90712  
Tel. (562) 275-4300  
[www.wrd.org](http://www.wrd.org)