CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

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ORDER R4-2018-0XXX
FILE NO. 17-008

WASTE DISCHARGE REQUIREMENTS AND WATER RECLAMATION REQUIREMENTS

WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

GROUNDWATER RELIABILITY IMPROVEMENT PROJECT (GRIP) ADVANCED WATER TREATMENT FACILITY (AWTF) SPREADING AND INJECTION PROJECT

The following entity is subject Waste Discharge Requirements (WDRs) and Water Reclamation Requirements (WRRs) set forth in this Order:

Table 1. Project Sponsor Information

Project Sponsor/ Permittee	Water Replenishment District of Southern California (WRD or District)
Name of Facility	Groundwater Reliability Improvement Project Advanced Water Treatment Facility (GRIP-AWTF or Facility)
Facility Address	4320 San Gabriel River Parkway
	Pico Rivera, CA 90660
	Los Angeles County

Table 2. Administrative Information

This Order was adopted and shall become effective on:	**September 13, 2018**

I, Deborah J. Smith, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, Los Angeles Region (Regional Water Board), on the date indicated above.

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Deborah J. Smith, Executive Officer

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The California Regional Water Quality Control Board, Los Angeles Region (Regional Water Board), finds that:

I. BACKGROUND INFORMATION

A. Project Sponsor

The Water Replenishment District of Southern California (hereinafter referred to as Project Sponsor, WRD, or District) was established in 1959 pursuant to the Water Replenishment District Act of 1955 (Section 60000 et seq. of the California Water Code (CWC)) and manages two interconnecting groundwater subbasins, the Central Basin and the West Coast Basin. WRD manages groundwater for nearly four million residents in 43 cities of southern Los Angeles County. The 420 square mile service area uses about 220,000 acre-feet per year (AFY) of groundwater, which equates to over 40 percent of the total demand for water. WRD ensures that a reliable supply of high quality groundwater is available through its clean water projects, water supply programs, and effective management principles.

B. Facility and Project Description

WRD has developed the Groundwater Reliability Improvement Project – Advanced Water Treatment Facility (GRIP-AWTF) with the overarching goal of offsetting and replacing the current use of imported water for groundwater replenishment with advanced treated recycled water. The facility is located at 4320 San Gabriel River Parkway, Pico Rivera, California (see, Attachment B). The GRIP-AWTF has a treatment capacity of 14.8 million gallons per day (MGD) but is typically operated to produce up to 9 MGD (10,000 AFY) of advanced treated recycled water for groundwater recharge. The GRIP-AWTF treats the tertiary treated effluent from the Los Angeles County Sanitation Districts' (LACSD) San Jose Creek Water Reclamation Plants (San Jose Creek WRP), East and/or West facilities, using ultrafiltration (UF), reverse osmosis (RO), ultraviolet advanced oxidation process (UVAOP), post-treatment stabilization, and dechlorination to produce advanced treated recycled water for groundwater recharge. The GRIP-AWTF enables WRD to help achieve its goal of recharging the aquifers with locally-derived sources by producing up to 10,000 AFY of advanced treated recycled water. Recharge of the advanced treated recycled water is accomplished via (1) surface spreading in the Montebello Forebay Spreading Grounds (MFSGs), after blending with San Jose Creek WRP's tertiary treated effluent (the resulting combined water is referred to as the "blended tertiary treated water"), and (2) injecting the advanced treated recycled water into the supplemental recharge wells located at the GRIP-AWTF. The GRIP-AWTF infrastructure is designed with a provision to expand to an ultimate production capacity of 29.6 MGD.

A brine pipeline will convey RO concentrate and other AWTF waste streams to a trunk sewer, in Beverly Boulevard, for treatment at LACSD's Joint Water Pollution Control Plant (JWPCP) in Carson.

C. Source Water to GRIP-AWTF

The GRIP-AWTF uses the tertiary treated effluent from the San Jose Creek WRP (East and/or West) as influent water for the AWTF. The San Jose Creek WRP is located at 1965 South Workman Mill Road, Whittier, California. From the San Jose Creek WRP facility, the tertiary treated effluent is conveyed through a 66-inch pipeline, with a portion of the discharge routed to the GRIP-AWTF via a diversion structure. WRD purchases from LACSD the recycled water (tertiary treated effluent) used for groundwater recharge.

D. Montebello Forebay Spreading Grounds (MFSGs)

The Montebello Forebay is a geographic region in the northeasterly portion of the Central Basin immediately south of the Whittier Narrows. This region is characterized by unconfined aquifers, which allow surface water to infiltrate and replenish deeper potable aquifers. In light

of this fact, the MFSGs were constructed in the late 1930s by Los Angeles County Flood Control District to capture and infiltrate stormwater flowing in the Rio Hondo and the San Gabriel River. Over the years, imported water and recycled water have also been used to replenish groundwater at the MFSGs, which is the most important area of groundwater recharge for the Central Basin.

The MFSGs consist of two facilities, the Rio Hondo Coastal Spreading Grounds (RHSGs) and the San Gabriel Coastal Spreading Grounds (SGSGs). The SGSGs also includes the unlined reaches of the San Gabriel River where instream recharge occurs, facilitated by the use of rubber dams.

The Los Angeles County Department of Public Works (LACDPW) owns and operates the MFSGs for storm water conservation and flood control. As part of the Montebello Forebay Groundwater Recharge Project (MFGRP), the tertiary treated effluent from the San Jose Creek WRP, Whittier Narrows WRP, and Pomona WRP, storm water, local urban runoff, and when available, untreated imported water from Metropolitan Water District of Southern California (MWD), were historically used for recharge at the MFSGs. The GRIP-AWTF will replace up to 10,000 AFY of the imported water component with advanced treated recycled water. This Order does not regulate the MFGRP. Rather, the MFGRP is regulated under Water Reclamation Requirements Order No. 91-100 and associated amendments, Order Numbers R4-2009-0048 and No. R4-2009-0048-A-01 (collectively referred to herein as the MFGRP Permit)

II. PURPOSE OF ORDER

A. On January 11, 2017, the Project Sponsor filed a report of waste discharge (ROWD) and submitted an application for WDRs and WRRs. Supplemental information was requested on February 10, 2017 and received on March 6, 2017. The application was deemed complete on March 30, 2017. A site visit was conducted on April 10, 2018, to observe operations and collect additional data to develop permit limitations and requirements for waste discharge.

B. According to the ROWD, the advanced treated recycled water produced by the GRIP-AWTF will be used for injection at the supplemental recharge wells. The surplus advanced treated recycled water that was not used for injection will combine with the tertiary treated effluent from the San Jose Creek WRPs, otherwise known as the blended tertiary treated water, and will be used for surface spreading at the MFSGs.

This Order was developed to establish the requirements for the treatment process of the AWTF and to establish requirements of surface spreading at the MFSGs and injecting into the supplemental recharge wells with the advanced treated recycled water.

C. On September 30, 2016, the Project Sponsor submitted a draft Title 22 Engineering Report for the GRIP-AWTF project to the Regional Water Board and State Water Resources Control Board's (State Water Board) Division of Drinking Water (DDW). The draft Engineering Report focused primarily on how the proposed injection of the GRIP-AWTF's advanced treated recycled water would comply with the applicable water quality and groundwater recharge using recycled water regulations. At the request of the DDW and Regional Water Board, the Project Sponsor submitted Appendix I on January 6, 2017, in order to address the surface spreading activity associated with the GRIP-AWTF. The draft Engineering Report, including Appendix I, was later revised and resubmitted on August 15, 2017, in response to the comments from DDW and Regional Water Board issued on May 25, 2017, and June 29, 2017, respectively. DDW and Regional Water Board provided written comments on the August 15, 2017, revised Engineering Report on November 20, 2017, and October 26, 2017, respectively. An updated Engineering Report was submitted on December 11, 2017, and approved by the Regional Water Board on December 15, 2017. A public hearing on the

GRIP-AWTF Title 22 Engineering Report was held on January 18, 2018 by the Project Sponsor in collaboration with DDW. After the public hearing, DDW requested additional modifications to the Engineering Report delaying DDW approval of the Engineering Report until June 6, 2018. DDW's recommendations were incorporated into this Order (Refer to Attachment F and to Section XIV).

III. GRIP-AWTF SPREADING AND INJECTION PROJECT

A. As detailed above, the GRIP-AWTF receives tertiary treated effluent from the San Jose Creek WRP, East and West facilities. Depending on the availability of the tertiary treated effluent and operational conditions, the influent to the GRIP-AWTF may consist entirely of the San Jose Creek WRP East tertiary treated effluent, San Jose Creek WRP West tertiary treated effluent, or the combined tertiary treated effluent from the San Jose Creek WRP East and/or West.

B. The influent to the GRIP-AWTF flows through a 66-inch pipeline located just east of the GRIP-AWTF site. A diversion structure is built on the 66-inch line to divert the flows to the GRIP-AWTF Equalization Basin.

C. As set forth above, some of the tertiary treated effluent from the San Jose Creek WRP flows into the GRIP-AWTF. Following treatment at the GRIP-AWTF, this water is then either spread on the MFSGs or injected into the ground. The treatment at the GRIP-AWTF consists of UF, RO, UVAOP, post treatment stabilization, and dechlorination, as depicted in Attachment C and as presented below:

1. **Flow Equalization**

   To operate the AWTF at a constant flow rate and to maximize production of the advanced treated recycled water, an Equalization Basin is used to receive the San Jose Creek WRP's tertiary treated effluent, which is conveyed through a 66-inch pipeline located just east of the AWTF site. The UF Feed Pumps transfer up to 16.6 MGD to the Primary UF System and the remainder of the tertiary treated effluent flows back to the diversion structure. The AWTF's advanced treated recycled water intended for surface application is also discharged to the diversion structure to blend with the tertiary water. The resulting blended tertiary treated water then flows into the 66-inch pipe to the MFSGs for spreading. The secondary UF filtrate is discharged to the Equalization Basin where it either is pumped to the UF system or flows over the weir to the diversion structure.

2. **UF**

   The UF process removes particulates ahead of the RO to increase system reliability and to prevent RO membrane fouling. The UF treatment process is capable of consistently producing a high quality filtrate from the tertiary treated effluent feed supply, and exceeding standard prerequisites (in terms of turbidity and silt density index) for the subsequent RO process.

3. **RO**

   Following primary UF treatment, flow is pumped through the RO system, which removes dissolved inorganic and organic components in the UF filtrate. To control scaling and to protect the RO membranes, pretreatment consisting of chemical dosing with threshold inhibitor and sulfuric acid for pH control are provided. A clean in place (CIP) system and flushing water system for the RO membranes are also essential to maintaining the RO performance. RO concentrate is discharged to the brine and waste tank for ultimate brine disposal in the sanitary sewer.

4. **UVAOP**

   The UVAOP at the GRIP-AWTF consists of UV irradiation with chlorine addition upstream of the UV trains. UVAOP is used to disinfect RO permeate and destroy constituents of emerging concern (CECs) that pass through RO membranes due to their low molecular weight and low ionic charge, notably N-Nitrosodimethylamine (NDMA) and 1,4-dioxane. UVAOP effectively reduces and inactivates pathogenic microorganisms and achieves the maximum disinfection credits allowed for target microorganisms. The chlorine used for oxidation also provides the disinfectant residuals necessary to protect the supplemental recharge wells from biofouling. The inactivation of microorganisms and reduction of micropollutants vary with the UV dose, which is a product of the UV light intensity and the exposure time, and the chlorine dose.

5. **Post-Treatment Stabilization**

   To stabilize the product water and protect the distribution system against corrosion, a portion of the flow from the UVAOP is treated by the decarbonator to remove carbon dioxide (CO_2). The remainder of the flow bypasses the decarbonator. Downstream of the decarbonator, calcium hydroxide and sodium hydroxide are then added to the combined flow to adjust the pH before it enters the Product Water Tank.

6. **Dechlorination**

   The advanced treated recycled water is dechlorinated using sodium bisulfite, prior to blending with the tertiary treated effluent. The blended tertiary treated water is used for spreading at the MFSGs (including the unlined portion of the San Gabriel River between rubber dams) or it can bypass the MFSG and be discharged to the lined portion of the San Gabriel River and unavailable for groundwater recharge. Dechlorination ensures compliance with the total residual chlorine limitation in the GRIP-AWTF NPDES permit CA0064645, Order No. R4-2017-0187, which regulates the blended tertiary treated water discharge to the San Gabriel River. The advanced treated recycled water used for groundwater injection is not dechlorinated.

D. During normal operation, the main line slide gate in the diversion structure to the 66-inch conveyance pipeline remains closed as depicted in Attachment C. This diverts all of the tertiary treated effluent from the San Jose Creek WRP to the GRIP AWTF influent Equalization Basin. The UF feed pumps transfer the tertiary treated effluent in the Equalization Basin to the treatment train consisting of UF, RO, UVAOP, post-treatment stabilization, and dechlorination. The dechlorinated advanced treated recycled water from the Product Water Storage Tank flows by gravity through a slide gate back to the diversion structure where it blends with the tertiary treated effluent. The secondary UF filtrate, which is the water recovered from the UF backwash water for the purpose of achieving a higher plant recovery rate, is returned to the Equalization Basin. The excess flow in the Equalization Basin that is not pumped to UF treatment, overflows a weir to the diversion structure where it is blended with the dechlorinated advanced treated recycled water. The blended tertiary treated water then flows back into the 66-inch conveyance pipeline to the MFSGs or the San Gabriel River discharge outfalls. The flows from the Equalization Basin (consisting primarily of the tertiary treated effluent and a very small fraction of the secondary UF filtrate) to the diversion structure are not to be considered an untreated waste, overflow, spill, or bypass.

A portion of the advanced treated recycled water from the Product Water Storage Tank, which has undergone UF, RO, UVAOP, and post-treatment stabilization (but not dechlorination), is pumped to the supplemental recharge wells for injection into the aquifers.

E. The San Jose Creek WRP tertiary treated water in the conveyance pipeline discharged for spreading at the MFSGs (i.e., the RHSGs and the SGSG) is regulated by the MFGRP Permit (WDR Order NO. 91-100, CI 5728 and amendments). The San Jose Creek WRP tertiary effluent discharged to the San Gabriel River via the three outfalls (i.e., Discharge Points 001, 001A, and 001B) is also regulated by the National Pollutant Discharge Elimination System (NPDES) Permit No. CA0053922, Regional Water Board Order No. R4-2015-0070. The GRIP-AWTF discharge of advanced treated recycled water to the San Gabriel River via the same three outfalls is regulated under the NPDES permit No. CA0064645, Regional Water Board Order No. R4-2017-0187.

IV. GROUNDWATER BASIN

A. Description of Central Groundwater Basin

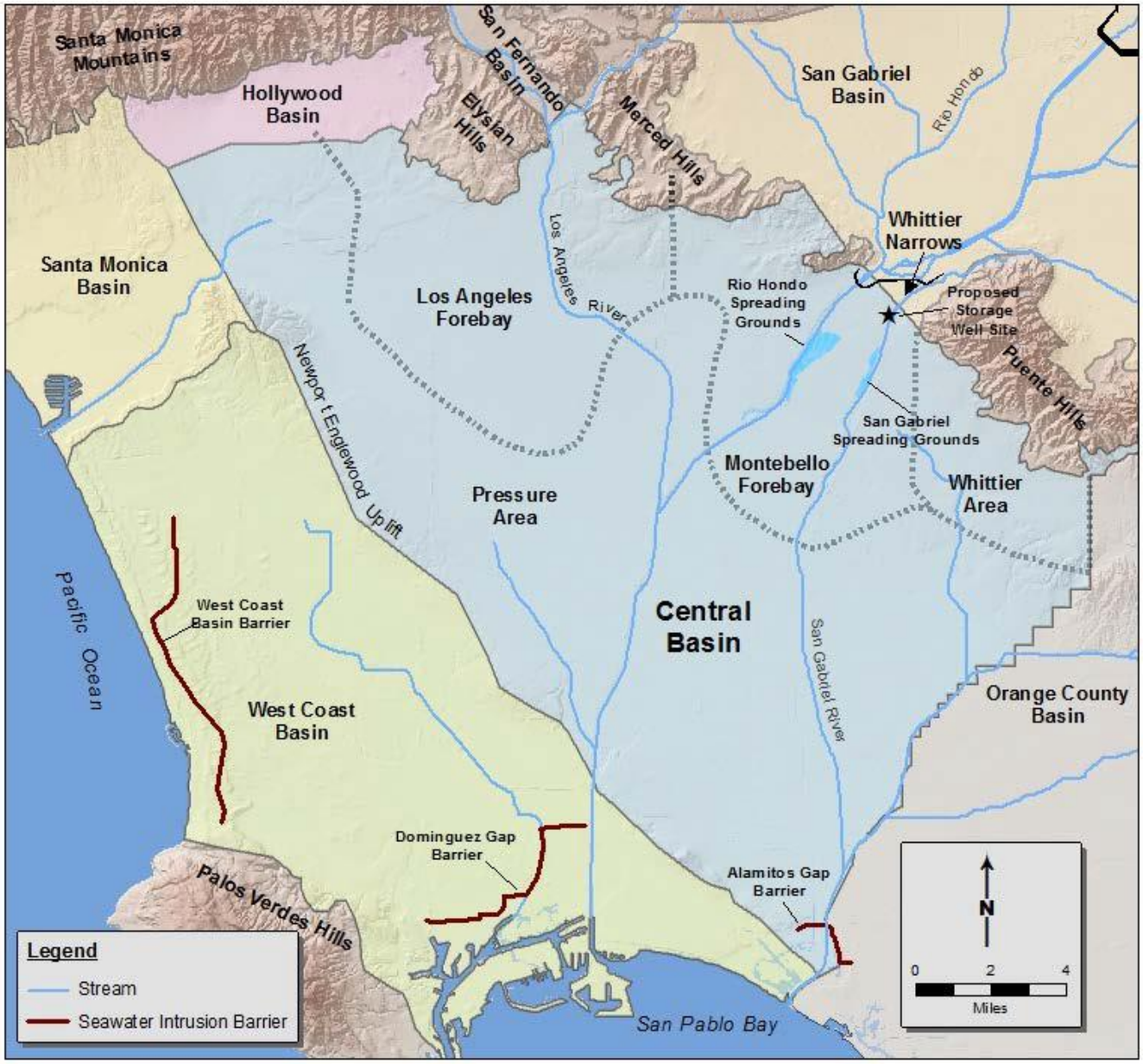
The MFSGs and the GRIP-AWTF are located in the Montebello Forebay Subarea of the Central Basin (Figure 1). The Central Basin is an important source of local groundwater to the overlying residents and businesses, and typically meets approximately 50% of overall water supply needs in the basin.

The Central Basin is hydrogeologically divided into four subareas including the Los Angeles Forebay, Montebello Forebay, Whittier Area, and Pressure Area. The forebays are areas where confining layers are thin, absent, or more permeable than elsewhere in the basin and infiltration of precipitation and surface water can recharge deeper potable production aquifers (referred to herein as the "unconfined Forebay areas"). The Montebello Forebay is the most significant area of recharge in the Central Basin. The Central Basin Pressure Area, largest of the four subareas, is characterized by aquifers that are generally confined by relatively impermeable clay layers over most of the area, but areas of semi-permeable confining layers allow some interaction between the aquifers (California Department of Water Resources (DWR), 1961, *Planned Utilization of the Ground Water Basins of the Coastal Plain of Los Angeles County*, Appendix A, Ground Water Geology: Bulletin 104, 191 p.) ~~(DWR, 1961)~~.

The productive groundwater bearing sediments in the Central Basin are comprised of Quaternary-age unconsolidated to semi-consolidated gravel and sand separated by aquitards (low permeability units) of silt and clay. Underlying these Quaternary sediments are basement rocks of the Pliocene Pico Formation that generally do not provide sufficient quantities of groundwater to wells for economic development. Aquifer depths can reach over 2,200 feet in the Central Basin. The aquifer systems in the Central Basin are recharged mostly in the unconfined Forebay areas. The basin is recharged in the subsurface mainly by the groundwater flow through the Whittier Narrows from the San Gabriel Basin, the Los Angeles Narrows from the San Fernando Basin, and by lesser flows from the Hollywood and Orange County Basins. Groundwater outflow can occur from the Central Basin to the West Coast Basin based on the hydraulic gradients between the two basins and transmissivity of the Newport-Inglewood Uplift.

The Los Angeles River and its tributary, the Rio Hondo, together with the San Gabriel River, are the main surface water features in the Central Basin. The Los Angeles and San Gabriel Rivers empty into San Pedro Bay. The Los Angeles River and Rio Hondo are concrete lined within most of the Central Basin and are not direct sources of surface infiltration. There is a small, unlined section of the Los Angeles River near San Pedro Bay. The San Gabriel River is unlined in the Montebello Forebay Subarea, where it provides significant recharge to the basin.

Figure 1. Central Basin and Surrounding Groundwater Basins



B. Hydrogeology of Montebello Forebay

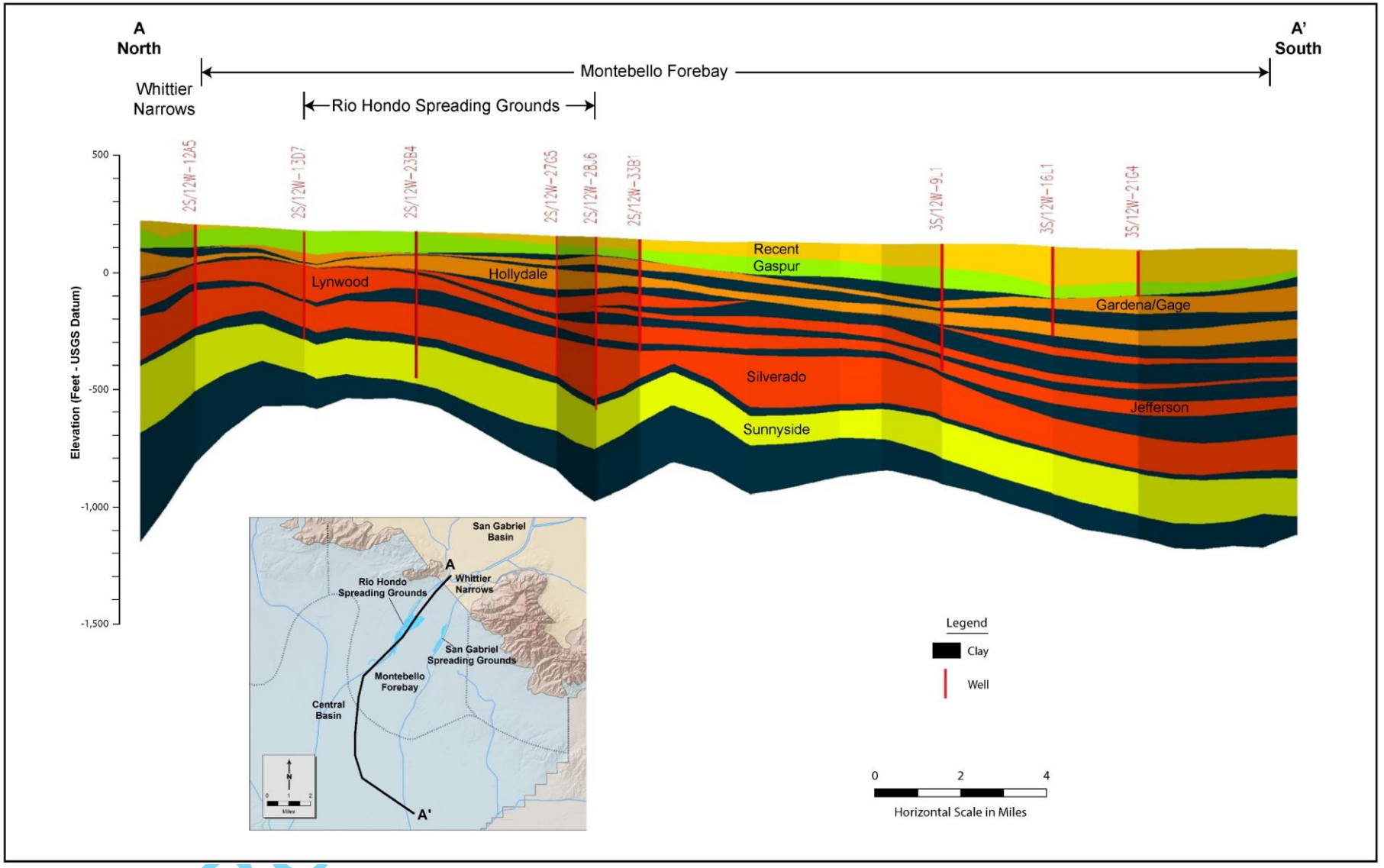
The aquifers within the Central Basin consist of unconsolidated sand and gravel layers. Aquitards consisting of clay and silt separate the aquifers. As such, the Central Basin is characterized by a layered aquifer/aquitard system. Table 3 summarizes the aquifers and aquitards of the Central Basin, age and associated formations as defined by DWR (DWR, 1961). The aquifers are illustrated in cross section on Figure 2. This cross section runs from north to south across the Montebello Forebay and Rio Hondo Coastal Spreading Grounds as shown in the small map inset of the figure. The aquifers include the following, from shallowest to deepest: the Semi-Perched and Gaspur Aquifers of the Holocene Alluvium Formation; the Exposition, Artesia, Gage, and Gardena Aquifers of the Upper Pleistocene Lakewood Formation; the Hollydale, Jefferson, Lynwood, and Silverado Aquifers of the Lower

Pleistocene Upper San Pedro Formation; and the Sunnyside Aquifer of the Lower Pleistocene Lower San Pedro Formation.

Table 3. Central Basin Aquifer Systems

Age	Formation	DWR-Defined Aquifer/Aquitard
Holocene (Recent)	Active Dune Sand	Semi-Perched Aquifer
	Alluvium	Bellflower Aquitard (reasonably permeable or absent in the Montebello Forebay)
		Gaspur Aquifer
Upper Pleistocene	Lakewood	Exposition-Artesia Aquifer
		Gardena-Gage Aquifer
Lower Pleistocene	San Pedro	Hollydale Aquifer
		Jefferson Aquifer
		Lynwood Aquifer
		Silverado Aquifer
		Sunnyside Aquifer
Upper Pliocene	Pico	---

Figure 2. Montebello Forebay Aquifers



V. MFSGS AND GRIP-AWTF INJECTION FACILITIES

A. MFSGs Facilities

Spreading of recharge water occurs at the MFSGs, which includes the RHSGs, the SGSGs and the unlined (soft bottom) portion of the San Gabriel River where instream recharge occurs, facilitated by the use of rubber dams. As shown in Figures 3 and 4, the MFSGs facilities include 23 shallow spreading basins adjacent to the Rio Hondo and San Gabriel River, seven rubber dams in the San Gabriel River, two headworks (intakes) and associated diversion structures for each spreading ground, five recycled water discharge locations (three to the San Gabriel River and two into the SGSGs), and an interconnection pipeline between the RHSGs and SGSGs to allow distribution of flows. DDW has approved spreading of the advanced treated recycled water to occur without any diluent water, based on the level of treatment provided by the GRIP-AWTF. The diluent water requirement for the tertiary treated water in the blended tertiary treated water will be addressed in the future MFGRP permit renewal.

Figure 3. Montebello Forebay Spreading Grounds Facilities

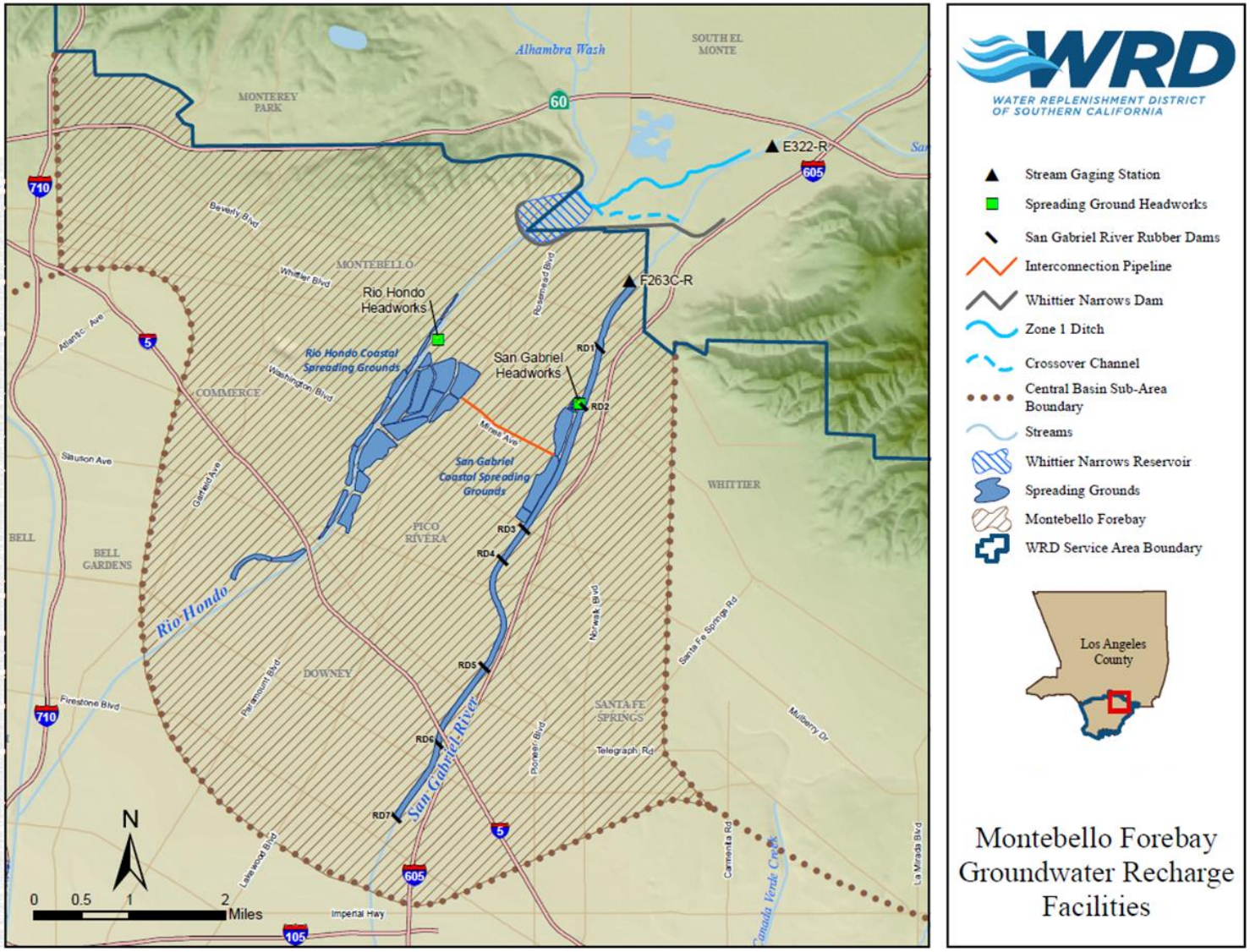
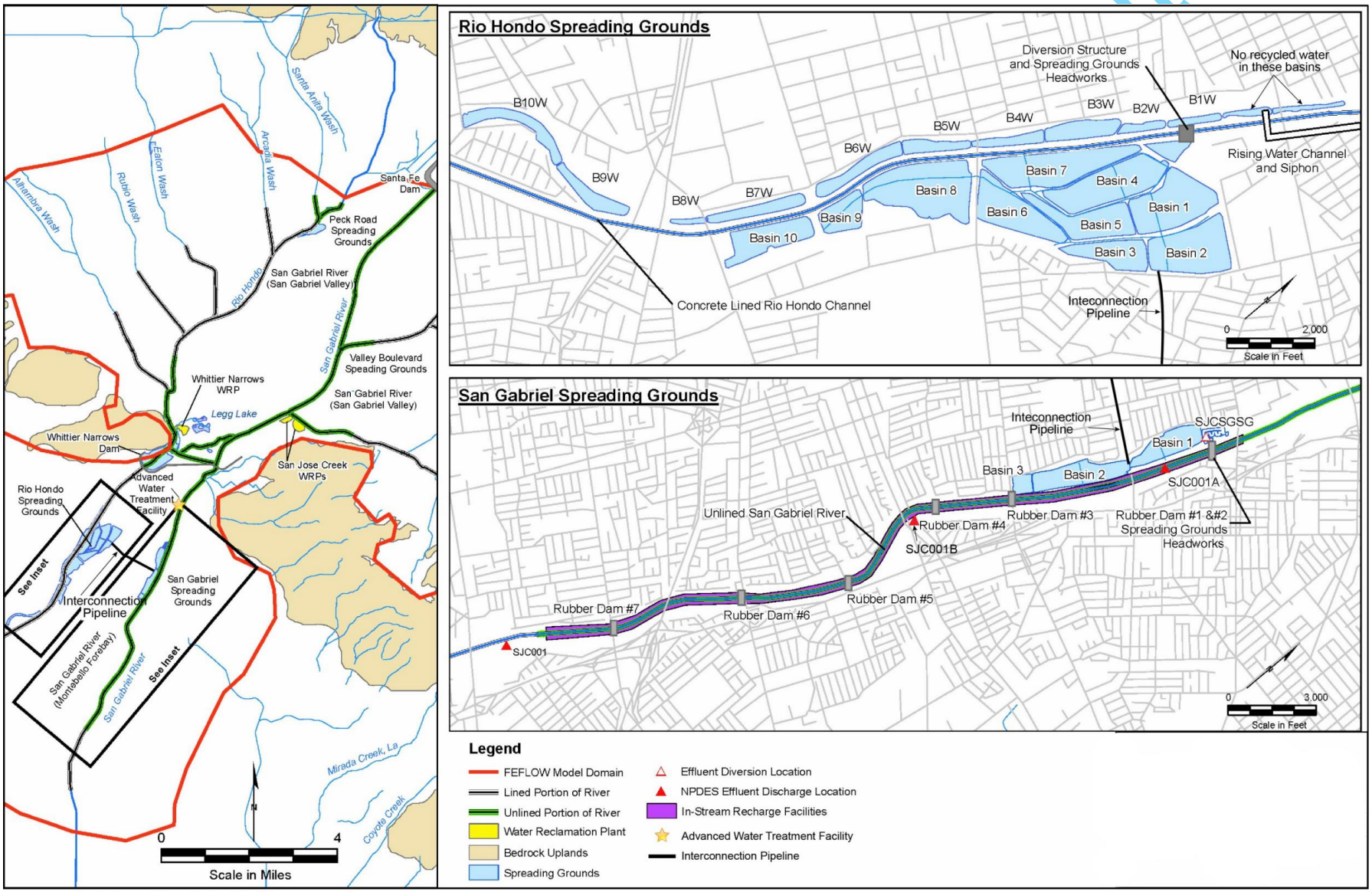


Figure 4. Expanded View of Montebello Forebay Spreading Grounds Facilities



Modified From: KJT and LBNL, 2008.

1. **Rio Hondo Coastal Spreading Grounds**

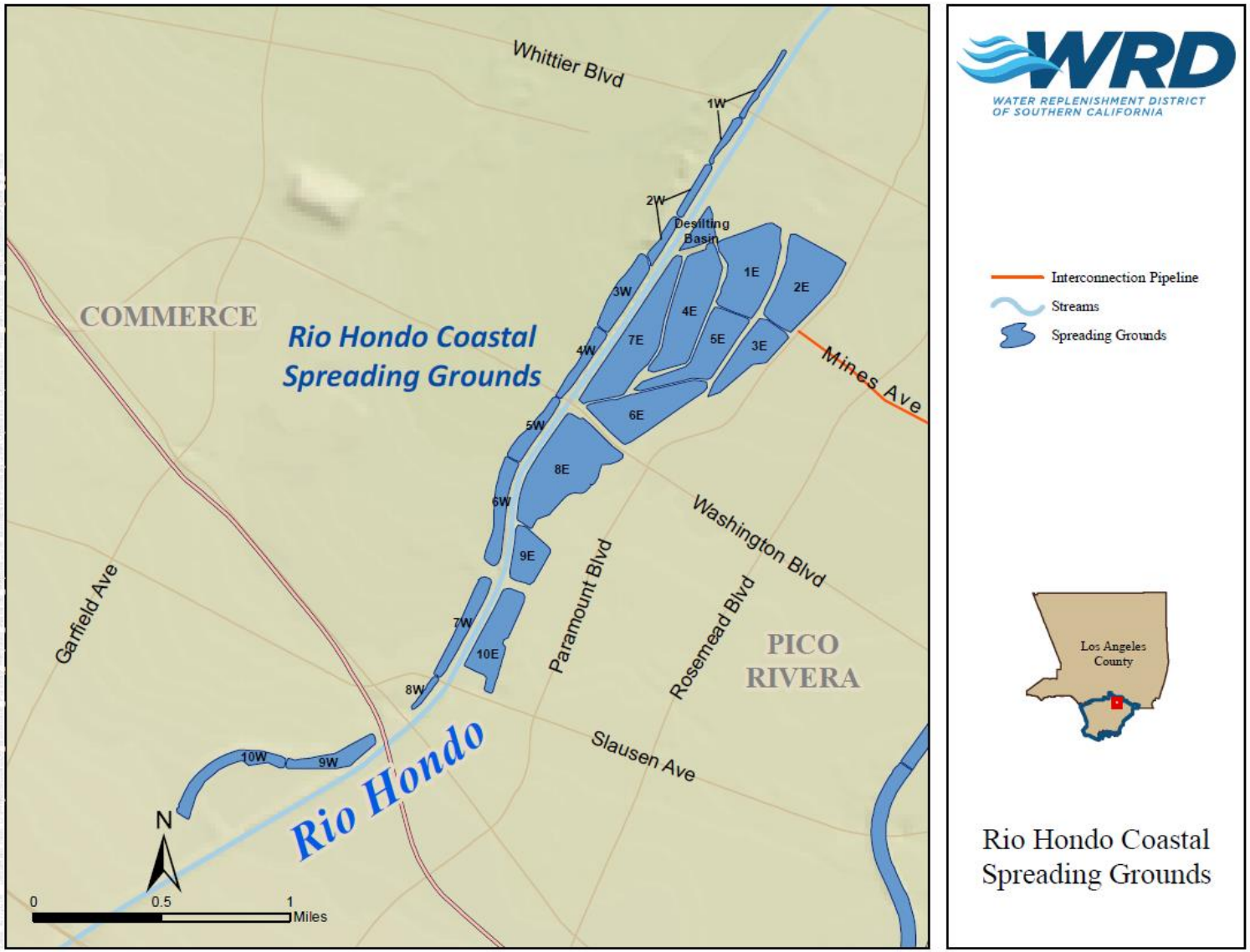
The RHSGs is located adjacent to the Rio Hondo River, nearly 1.5 miles south of the Whittier Narrows Dam as shown in Figure 5. The RHSGs consists of off-channel spreading grounds located on the east and west side of Rio Hondo. There are approximately 430 wetted acres of spreading grounds with a storage capacity of approximately 3,700 acre-feet (AF). Water enters the spreading grounds at the intake facility known as the "headworks" or diversion structure, which has a gate that opens to allow river water into the RHSGs. Water can also enter the RHSGs through the "interconnection pipeline" that connects the RHSGs to the SGSGs, effectively making a single MFSGs system. A description of the interconnection pipeline is presented below. Operational Guidelines for the RHSGs are prepared and updated by the Los Angeles County Department of Public Works (LACDPW).

The following sources of water are used to recharge the RHSGs: local water (storm water runoff and dry weather urban runoff), recycled water, and imported water. Storm water runoff refers to the rainwater that enters storm drains or river channels that end up at the headworks of the RHSGs for diversion into the facility for groundwater recharge. Dry weather urban runoff consists of minimal, incidental flows from the urban landscape entering the Rio Hondo from storm drains, which may be captured at the RHSGs through the headworks. Recycled water is produced and discharged from the San Jose Creek WRP, Pomona WRP, and Whittier Narrows WRP. If flowing in the Rio Hondo, recycled water may be diverted into the RHSGs. Imported water purchased by WRD is provided by MWD though two primary service connections, CenB-28 and CenB-48, located nearly 20 miles away from the RHSG to the northeast in the San Gabriel Valley. Imported water released from CenB-28 or CenB-48 may eventually end up in the Rio Hondo, where it may be diverted into the RHSGs at the headworks.

The RHSGs consist of 20 basins, which are grouped into four sets of basins that can be operated in series called batteries. Three batteries are located on the east side of the Rio Hondo channel (Batteries 1-3: B1E through B3E; B4E through B6E; and B7E through B10E). One battery (Battery 4) is located on the west side of the Rio Hondo channel and consists of ten basins (B1W through B10W). The Basin 1W does not receive recycled water. Basins BW2 through BW10 are typically reserved for local and imported water only, although they were included within the boundary of the GRRP.

Inflow into the RHSGs is via the Rio Hondo at the headworks or the interconnection pipeline from the SGSGs. Inflow into the east side of the RHSGs is via an East Flume, 8-foot Intake, or the interconnection pipeline. The East Flume provides flow to Batteries 1 and 2. The 8-foot Intake provides flow to Battery 3. The interconnection pipeline provides flow to B2E in Battery 1. Inflow into the west side of the RHSGs is through a West Flume and the Rising Water Flume at Whittier Narrows Dam. In addition, storm flows can be diverted into Basin 3W (B3W) via a storm drain (DDI No.23).

Figure 5. Rio Hondo Coastal Spreading Grounds



2. **San Gabriel Coastal Spreading Grounds**

The SGSGs is located adjacent to and within the San Gabriel River, approximately two miles downstream of the Whittier Narrows Dam as shown on Figure 6. The SGSGs consist of both off-channel and in-channel spreading grounds. The off-channel spreading grounds have approximately 90 wetted acres with a storage capacity of approximately 550 AF. The in-channel spreading grounds are controlled by seven rubber dams located in the river channel and comprise approximately 200 wetted acres with a storage capacity of approximately 1,000 AF. Water enters the spreading grounds at the intake facility known as the headworks, which has a gate that opens to allow river water into the spreading basins portion of the SGSGs. Alternatively, if the headworks gate is closed, water remains in the soft bottom portion of the San Gabriel River (also part of the SGSGs) for instream recharge, assisted by inflatable rubber dams. In addition, the 66-inch recycled water pipeline originating at the San Jose Creek WRP travels down the west bank of the San Gabriel River and has two discharge points to the SGSGs and three discharge points to the San Gabriel River. Of the three discharge points to the San Gabriel River, Discharge Outfalls 001A and 001B convey flow to the unlined portion for groundwater recharge, and Discharge Outfall 001 is the furthest downstream and discharges to the lined portion of the San Gabriel River, where groundwater recharge does not occur. Water may also enter the SGSGs through the interconnection pipeline that connects the SGSGs to the RHSGs, effectively combining them into a single MFSGs system. A description of the interconnection pipeline is presented in section V.A.3. Operational Guidelines for the SGSGs are prepared and updated by LACDPW.

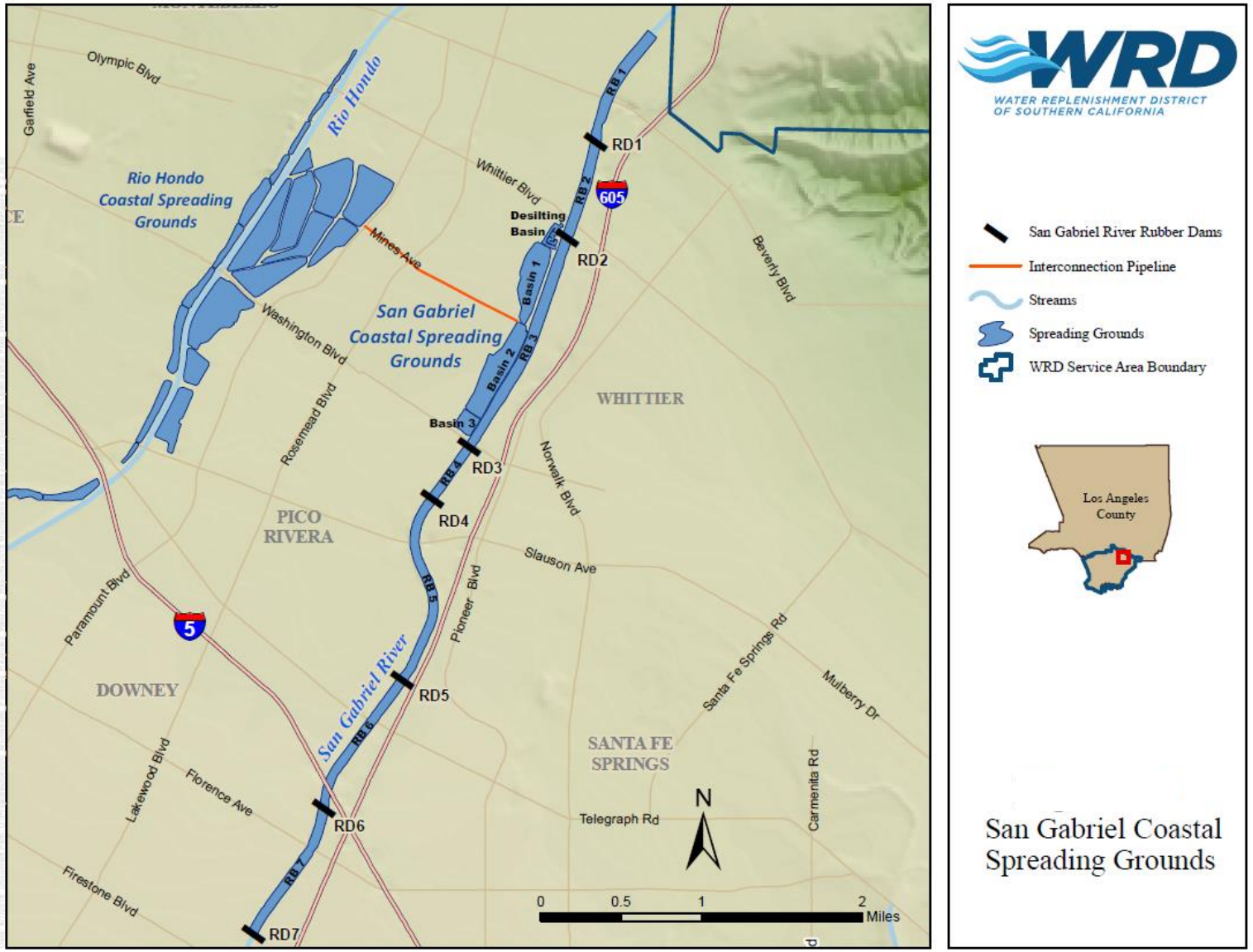
The source waters used for recharge at the SGSGs are identical to those for the RHSG, which are detailed in section V.A.1.

The SGSGs consist of 10 basins divided into off-channel (non-river) and in-channel (river) spreading grounds. The off-channel spreading grounds are comprised of three interconnected basins (SGB-1, SGB-2, and SGB-3) located on the west side of the San Gabriel River between Whittier and Washington Boulevards. The three off-channel spreading basins have a combined wetted area of 96 acres and a storage capacity of 550 AF. The SGSGs also consist of seven river basins (RB-1 to RB-7) utilizing rubber dams with a combined wetted area of 200 acres and a storage capacity of 1,012 AF extending from Beverly Boulevard to just north of Firestone Boulevard.

3. **Interconnection Pipeline**

Completed in 2012, the bidirectional Interconnection Pipeline (Figure 6) allows for gravity flow of water from the RHSGs to the SGSGs or pumping of water from the SGSGs to the RHSGs. The operation of the Interconnection Pipeline optimizes the flows into each spreading facility and maximizes groundwater recharge. After the Interconnection Pipeline was constructed, gravity flow was found to also occur from the SGSGs to the RHSGs due to the large pipeline diameter and shallow gradient.

Figure 6. San Gabriel Coastal Spreading Grounds



4. **Monitoring Wells at MFSGS**

To assess any potential impact(s) of spreading using tertiary treated recycled water for groundwater recharge, groundwater quality is currently monitored in the MFSGs according to the MFGRP Permit. The MFGRP Permit requires monitoring of six groundwater monitoring wells and 19 production wells (shown in Figure 7). This Order requires monitoring of the same monitoring wells and production wells that are required in the MFGRP Permit. However, it is not the intent of this Order to duplicate the MFGRP Permit monitoring requirements. To avoid duplication of sampling and monitoring activities, monitoring of the wells in the MFGRP Permit is not required in this Order if the activities performed, and the constituents for which monitoring is required under the MFGRP Permit both (a) satisfy the requirements of this Order and (b) monitoring results from the MFGRP Permit wells are submitted to the Regional Board by WRD as required in this Order. Please see section III.F.4 of the MRP of this Order for monitoring and frequency details regarding these monitoring wells and production wells.

Figure 7. Monitoring Wells Associated with Spreading Activities at MFSGs

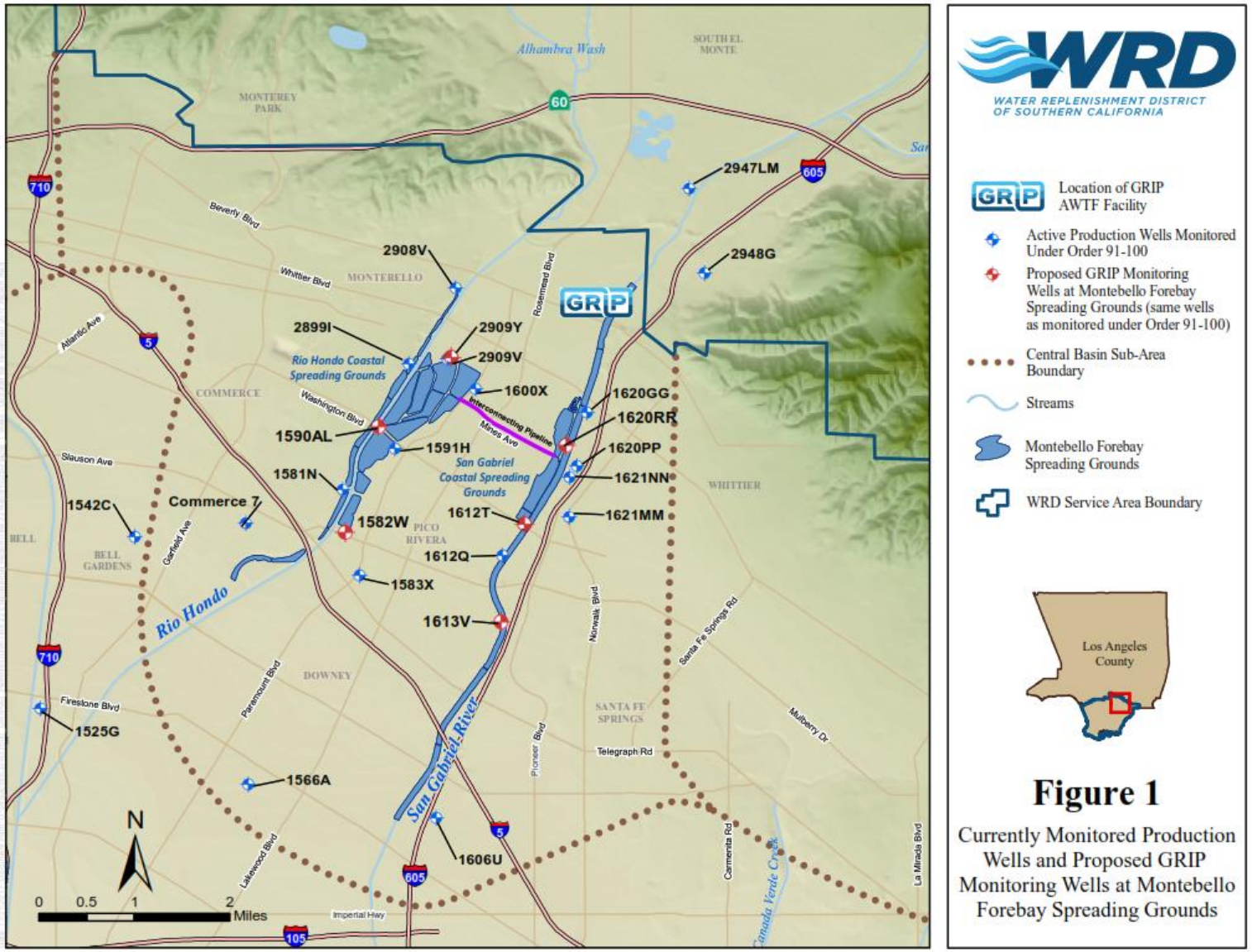


Figure 1

Currently Monitored Production Wells and Proposed GRIP Monitoring Wells at Montebello Forebay Spreading Grounds

B. Injection Facility

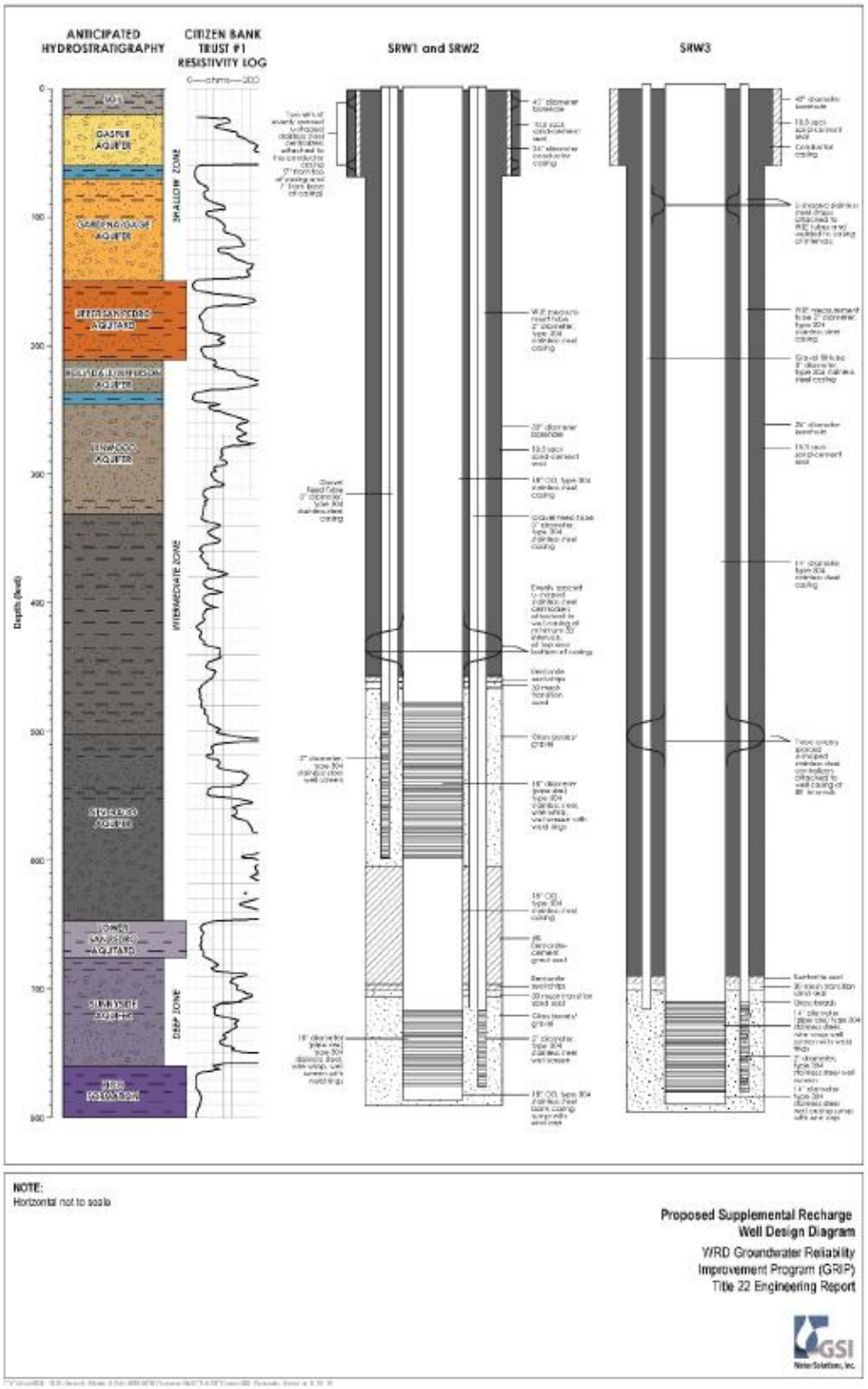
1. Supplemental Recharge Wells

The three supplemental recharge wells are located at the GRIP-AWTF site (Figure 8) and are referred to as 'SRW1', 'SRW2' and 'SRW3'. These wells are installed in below grade vaults with traffic-rated, water-tight lids. Figure 9 provides the schematic representation of the well designs.

The purpose of the supplemental recharge wells is to facilitate the injection of the advanced treated recycled water into the aquifers, which will allow recharge using the advanced treated recycled water even when the spreading grounds' capacity is limited due to high precipitation and storm water flow. Pumps located in the product water storage tank convey the advanced treated recycled water flow to the supplemental recharge wells. DDW has approved injection of the advanced treated recycled water without any diluent water, based on the level of treatment provided by the GRIP-AWTF. The three supplemental recharge wells are intended to operate at a combined reduced capacity of approximately 4.5 MGD; however, the use of these wells and their individual and combined flow rates may vary based on operational needs and aquifer characteristics.

Figure 8. Supplemental Recharge Well Project Vicinity Map

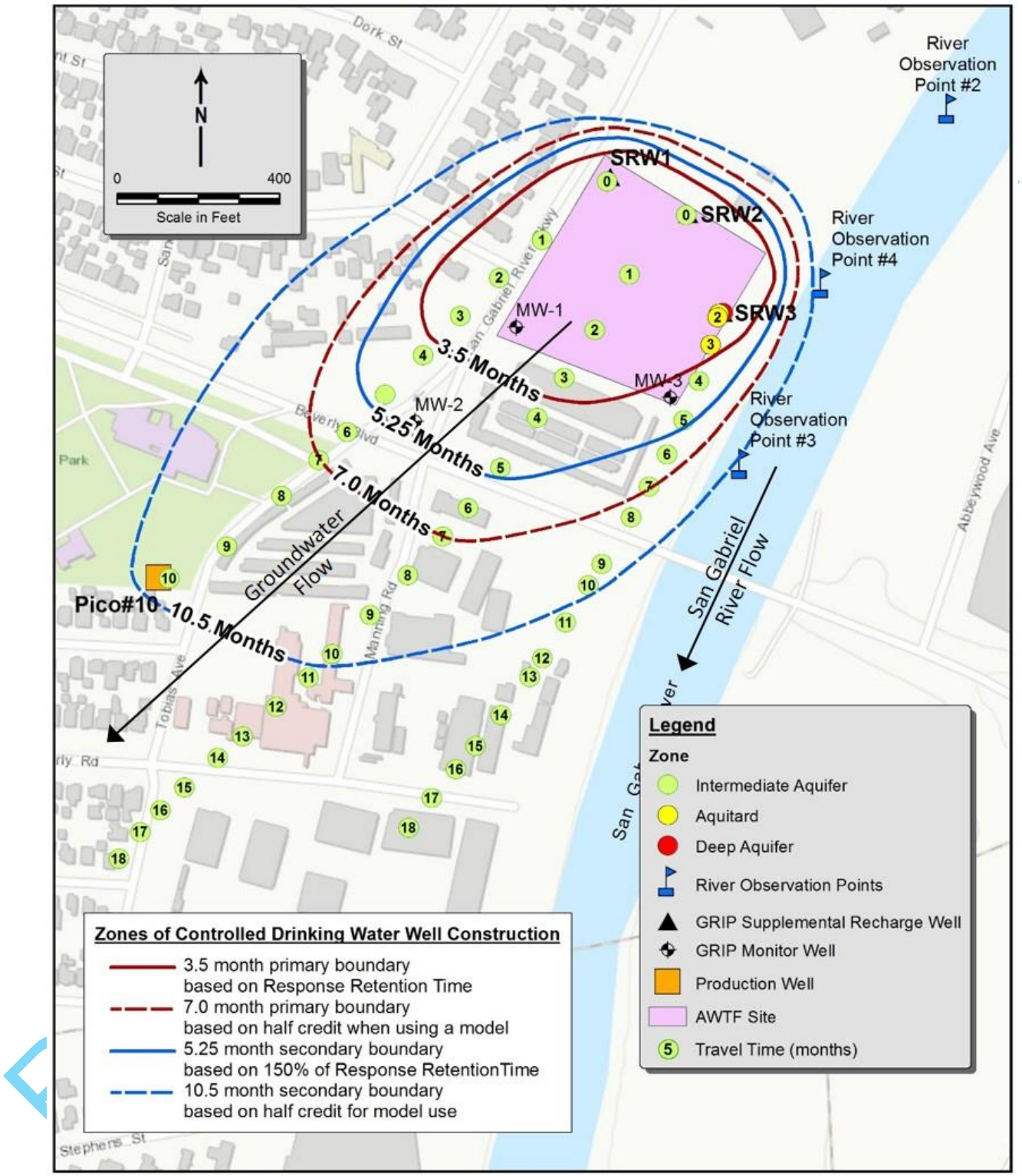
Figure 9. Supplemental Recharge Well Design Diagram



2. **Monitoring Wells Associated with Subsurface Application (Injection Activity)**

In accordance with California Code of Regulations (CCR) Title 22 section 60320.226, three monitoring wells (MW-1, MW-2, and MW-3) have been constructed for the GRIP supplemental recharge wells. The two on-site monitoring wells (MW-1 and MW-3) are located no less than two weeks but no more than six months of travel downgradient from the GRIP supplemental recharge wells, and at least 30 days upgradient from the nearest drinking water well (Pico No.10), based on groundwater modeling (*Todd Groundwater, 2015. Groundwater Modeling Results for Recycled Water Storage Fatal Flaws Analysis for Groundwater Reliability Improvement Program (GRIP) Advanced Water Treatment Facility (AWTF). Technical Memorandum. December 9, 2015*). The off-site monitoring well (MW-2) provides additional monitoring between the GRIP supplemental recharge wells and the nearest downgradient drinking water well, Pico No.10. Based on modeling, the estimated arrival times to MW-1 and MW-3 are 2.5 and 4 months, respectively, and MW-2 is located approximately 5 months upgradient of Pico No. 10 (see Figure 10). The three monitoring wells monitor groundwater in the Silverado and Sunnyside aquifers as those are the two aquifers into which the advanced treated recycled water is injected. Pico No.10 is not screened in this deeper zone and, therefore, is not expected to receive the advanced treated recycled water.

Figure 10. Map of Supplemental Recharge Wells, Monitoring Wells, and Nearest Production Well



VI. HISTORICAL GROUNDWATER QUALITY

A. Vicinity of Supplemental Recharge Wells

The historical groundwater quality at the supplemental recharge wells site, prior to the start of the GRIP-AWTF, was characterized using monitoring data from nine wells consisting of five upgradient wells and four downgradient wells (including Pico 10, the nearest downgradient supply well), as shown in Figure 11. Six wells are production wells, each perforated in more than one aquifer, and three wells are multiple-completion monitoring wells, with each completion perforated in a discrete aquifer. The aquifers at the supplemental recharge site are grouped into three overall zones: Shallow, Intermediate, and Deep.

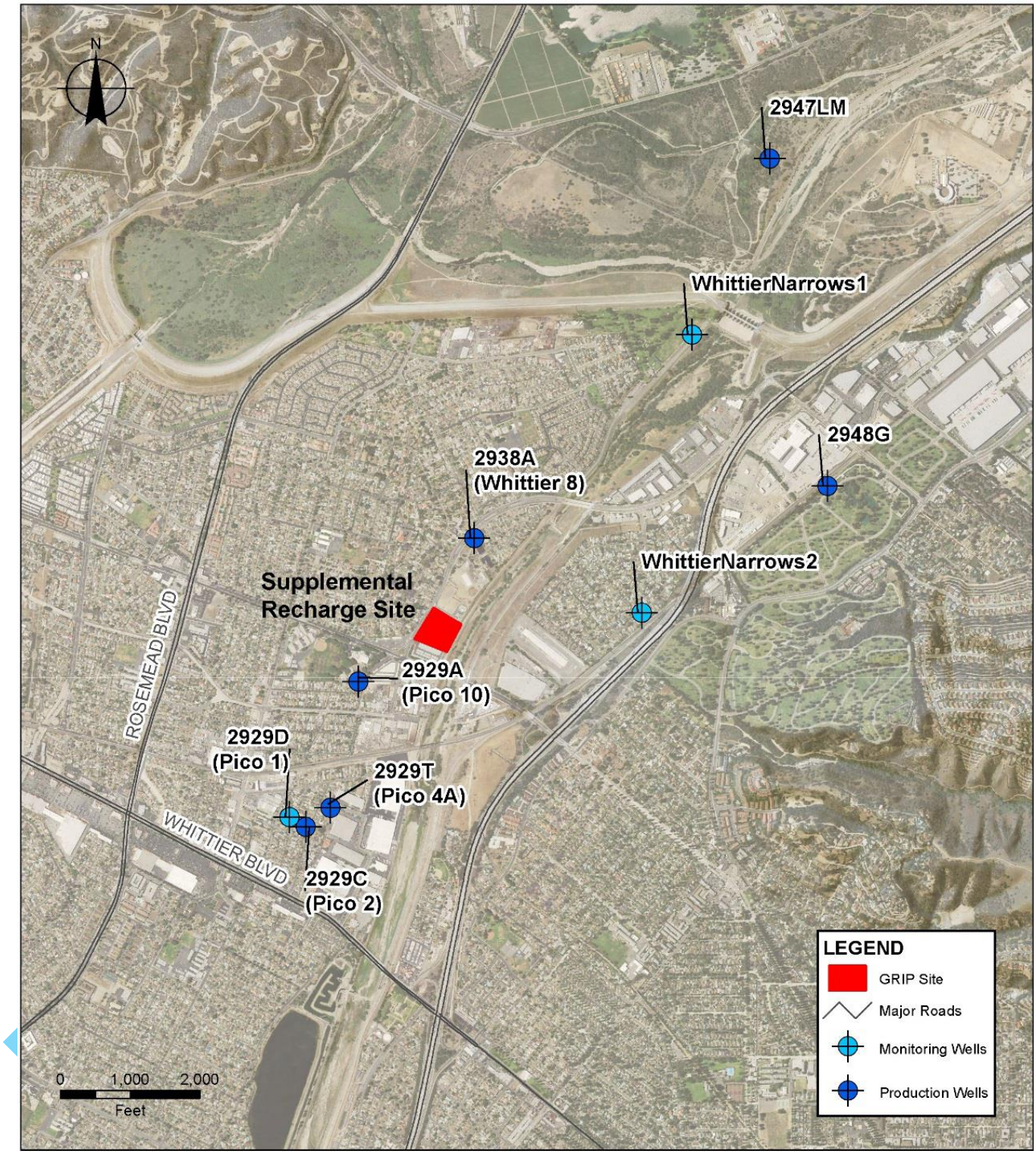
Groundwater quality data from January 2010 to end of 2015 have been evaluated to determine compliance with limitations as indicated in the MFGRP Permit. The quality of the groundwater downgradient of the supplemental recharge wells site was generally better than the upgradient site.

Primary Maximum Contaminant Level (MCL) exceedances were detected only in groundwater upgradient of the supplemental recharge wells site for the following pollutants, frequency, and wells: arsenic (single exceedance at WhittierNarrows1_1), total chromium (three exceedances at WhittierNarrows2_8), methyl tert-butyl ether (MTBE) (single exceedance at 2948G), and nickel (single exceedance at WhittierNarrows2_8). Exceedances of secondary Maximum Contaminant Levels (SMCLs) and Basin Plan Objectives (BPOs) for the Central Basin and water quality results greater than State Notification Levels (NLs) for various constituents were detected in groundwater both upgradient and downgradient of the supplemental recharge wells site.

Additionally, for NDMA, historical conditions were evaluated using semiannual monitoring data from June 2010 to June 2015 for the two upgradient production wells, 2947LM and 2948G, which are part of the Monitoring and Reporting Program (MRP) for the MFGRP Permit. These are the only wells in the vicinity of the supplemental recharge wells that had NDMA data for the period considered. In both wells, NDMA was not detected (i.e., <2 nanogram per liter or ng/L).

Water quality in the nearest downgradient supply well Pico No. 10 to the proposed supplemental recharge site was examined to evaluate background groundwater quality prior to installation and testing of the proposed monitoring wells. Examination of the data from Pico 10 indicates that the water from the well generally meets all water quality standards, although there were detections of trichloroethylene (TCE) and tetrachloroethylene (PCE) below their respective MCLs, and three 1,4-dioxane detections at its NL. The presence of these constituents indicates that the contaminants associated with historical environmental release(s) have reached Pico No. 10, and are part of the background water quality in the groundwater at this location prior to implementation of the proposed supplemental recharge well operations.

Figure 11. Map of Nine Production Wells and Monitoring Wells Used to Characterize the Groundwater Quality



B. Montebello Forebay Recharge Project Water Quality

The monitoring and reporting requirements for the Montebello Forebay Groundwater Recharge Project are contained in Monitoring and Reporting Program MRP No. 5728, adopted by the Regional Water Board on September 9, 1991, and amended on April 2, 2009.

A detailed review of groundwater quality data for the Montebello Forebay Groundwater Recharge Project from 2012 to 2017 indicates that in general, groundwater quality meets primary MCLs (PMCL), secondary MCLs (SMCL), and NLs. Exceedances are observed for constituents such as arsenic, chromium, di(2-ethylhexyl)phthalate, perchlorate, aluminum, iron, manganese, surfactants, and NDMA. A table summarizing the exceedances is presented below in Table 4, Groundwater Wells Compliance Summary. At the headworks of the MFSGs, exceedances are observed for constituents such as aluminum, color, iron, and NDMA, and are presented in Table 5, "Headworks Compliance Summary."

Table 4. Groundwater Wells Compliance Summary

WRD_ID	Sample Date	DPW_ID	Unit	Constituent	Result	PMCL/SMCL/NL Value	Exceedances
100833	10/3/2012	1620RR	µg/L	Arsenic, Total	11	10	Exceed PMCL
100829	6/8/2016	1582W	µg/L	Chromium, Total	57	50	Exceed PMCL
100829	6/13/2017	1582W	µg/L	Chromium, Total	100	50	Exceed PMCL
100834	10/3/2013	2909Y	µg/L	Chromium, Total	63	50	Exceed PMCL
100831	4/24/2017	1612T	µg/L	Di(2-Ethylhexyl)phthalate	5	4	Exceed PMCL
100832	4/3/2014	1613V	µg/L	Perchlorate	6.9	6	Exceed PMCL
100829	6/13/2017	1582W	µg/L	Aluminum, Total	310	200	Exceed SMCL
100830	2/8/2017	1590AL	µg/L	Aluminum, Total	610	200	Exceed SMCL
100830	4/10/2017	1590AL	µg/L	Aluminum, Total	260	200	Exceed SMCL
100832	8/1/2016	1613V	µg/L	Aluminum, Total	240	200	Exceed SMCL
100834	10/3/2013	2909Y	µg/L	Aluminum, Total	260	200	Exceed SMCL
100834	6/8/2016	2909Y	µg/L	Aluminum, Total	300	200	Exceed SMCL
100829	12/4/2012	1582W	mg/L	Iron, Total	0.31	0.3	Exceed SMCL
100829	10/3/2013	1582W	mg/L	Iron, Total	0.55	0.3	Exceed SMCL
100829	6/8/2016	1582W	mg/L	Iron, Total	0.48	0.3	Exceed SMCL
100829	6/13/2017	1582W	mg/L	Iron, Total	0.94	0.3	Exceed SMCL
100830	2/8/2017	1590AL	mg/L	Iron, Total	0.52	0.3	Exceed SMCL
100831	4/6/2017	1612T	mg/L	Iron, Total	0.36	0.3	Exceed SMCL
100832	8/1/2016	1613V	mg/L	Iron, Total	0.31	0.3	Exceed SMCL
100834	10/3/2013	2909Y	mg/L	Iron, Total	0.95	0.3	Exceed SMCL
100834	6/8/2016	2909Y	mg/L	Iron, Total	0.46	0.3	Exceed SMCL
100832	8/18/2015	1613V	µg/L	Manganese, Total	93	50	Exceed SMCL
100832	12/9/2015	1613V	µg/L	Manganese, Total	53	50	Exceed SMCL
100832	8/1/2016	1613V	µg/L	Manganese, Total	120	50	Exceed SMCL
100831	8/1/2016	1612T	mg/L	Surfactants	0.59	0.5	Exceed SMCL
100833	6/11/2013	1620RR	ng/L	NDMA	15	10	Exceed NL
100833	8/14/2013	1620RR	ng/L	NDMA	81	10	Exceed NL
100833	12/11/2013	1620RR	ng/L	NDMA	18	10	Exceed NL

WRD_ID	Sample Date	DPW_ID	Unit	Constituent	Result	PMCL/SMCL/NL Value	Exceedances
100833	2/18/2014	1620RR	ng/L	NDMA	79	10	Exceed NL
100833	8/21/2014	1620RR	ng/L	NDMA	14	10	Exceed NL
100833	10/28/2014	1620RR	ng/L	NDMA	62	10	Exceed NL
100833	6/4/2015	1620RR	ng/L	NDMA	19	10	Exceed NL
100833	8/23/2015	1620RR	ng/L	NDMA	14	10	Exceed NL
100833	12/9/2015	1620RR	ng/L	NDMA	30	10	Exceed NL
100833	12/8/2016	1620RR	ng/L	NDMA	28	10	Exceed NL
100833	8/18/2017	1620RR	ng/L	NDMA	63	10	Exceed NL

Table 5. Headworks Compliance Summary

Headworks Location	Sample Date	Units	Constituent	Result	PMCL/SMCL/NL Value	Exceedances
RHSG	1/12/2015	µg/L	Aluminum, Total	970	1000/200	Exceed SMCL
RHSG	2/24/2015	µg/L	Aluminum, Total	2700	1000/200	Exceed PMCL/SMCL
RHSG	2/24/2015	µg/L	Aluminum, Total	2700	1000/200	Exceed PMCL/SMCL
RHSG	2/8/2017	µg/L	Aluminum, Total	290	1000/200	Exceed SMCL
RHSG	2/14/2012	ACU	Apparent Color	35	15	Exceed SMCL
RHSG	8/24/2012	ACU	Apparent Color	25	15	Exceed SMCL
RHSG	12/6/2012	ACU	Apparent Color	25	15	Exceed SMCL
RHSG	2/22/2013	ACU	Apparent Color	30	15	Exceed SMCL
RHSG	2/20/2014	ACU	Apparent Color	25	15	Exceed SMCL
RHSG	1/12/2015	ACU	Apparent Color	75	15	Exceed SMCL
RHSG	2/24/2015	ACU	Apparent Color	150	15	Exceed SMCL
RHSG	2/8/2017	ACU	Apparent Color	50	15	Exceed SMCL
RHSG	6/15/2017	ACU	Apparent Color	25	15	Exceed SMCL
RHSG	8/2/2017	ACU	Apparent Color	25	15	Exceed SMCL
RHSG	12/15/2017	ACU	Apparent Color	20	15	Exceed SMCL
RHSG	1/12/2015	mg/L	Iron, Total	0.98	0.3	Exceed SMCL
RHSG	2/24/2015	mg/L	Iron, Total	2.9	0.3	Exceed SMCL
RHSG	2/8/2017	mg/L	Iron, Total	0.35	0.3	Exceed SMCL
RHSG	2/24/2015	µg/L	Manganese	61	50	Exceed SMCL

Headworks Location	Sample Date	Units	Constituent	Result	PMCL/SMCL/NL Value	Exceedances
RHSG	2/14/2012	ng/L	NDMA	35	10	Exceed NL
RHSG	12/6/2012	ng/L	NDMA	36	10	Exceed NL
RHSG	2/20/2014	ng/L	NDMA	20	10	Exceed NL
SGSG	3/18/2012	µg/L	Aluminum, Total	210	1000/200	Exceed SMCL
SGSG	2/25/2015	µg/L	Aluminum, Total	760	1000/200	Exceed SMCL
SGSG	12/22/2016	µg/L	Aluminum, Total	430	1000/200	Exceed SMCL
SGSG	2/21/2017	µg/L	Aluminum, Total	870	1000/200	Exceed SMCL
SGSG	3/18/2012	ACU	Apparent Color	40	15	Exceed SMCL
SGSG	2/26/2013	ACU	Apparent Color	40	15	Exceed SMCL
SGSG	2/21/2014	ACU	Apparent Color	20	15	Exceed SMCL
SGSG	2/25/2015	ACU	Apparent Color	50	15	Exceed SMCL
SGSG	11/5/2015	ACU	Apparent Color	20	15	Exceed SMCL
SGSG	12/22/2016	ACU	Apparent Color	50	15	Exceed SMCL
SGSG	2/21/2017	ACU	Apparent Color	120	15	Exceed SMCL
SGSG	12/12/2017	µg/L	Benzene	1.2	1.0	Exceed PMCL
SGSG	3/18/2012	mg/L	Iron, Total	0.58	0.3	Exceed SMCL
SGSG	2/25/2015	mg/L	Iron, Total	1	0.3	Exceed SMCL
SGSG	12/22/2016	mg/L	Iron, Total	0.72	0.3	Exceed SMCL
SGSG	2/21/2017	mg/L	Iron, Total	1.3	0.3	Exceed SMCL
SGSG	3/18/2012	µg/L	Manganese	65	50	Exceed SMCL
SGSG	6/7/2012	ng/L	NDMA	250	10	Exceed NL
SGSG	9/11/2012	ng/L	NDMA	72	10	Exceed NL
SGSG	12/26/2012	ng/L	NDMA	200	10	Exceed NL
SGSG	6/11/2013	ng/L	NDMA	120	10	Exceed NL
SGSG	8/20/2013	ng/L	NDMA	610	10	Exceed NL
SGSG	12/20/2013	ng/L	NDMA	150	10	Exceed NL
SGSG	2/21/2014	ng/L	NDMA	65	10	Exceed NL
SGSG	7/2/2014	ng/L	NDMA	140	10	Exceed NL
SGSG	8/22/2014	ng/L	NDMA	180	10	Exceed NL
SGSG	12/31/2014	ng/L	NDMA	210	10	Exceed NL
SGSG	6/10/2015	ng/L	NDMA	430	10	Exceed NL

Headworks Location	Sample Date	Units	Constituent	Result	PMCL/SMCL/NL Value	Exceedances
SGSG	11/5/2015	ng/L	NDMA	130	10	Exceed NL
SGSG	12/15/2015	ng/L	NDMA	58	10	Exceed NL
SGSG	2/23/2016	ng/L	NDMA	40	10	Exceed NL
SGSG	6/14/2016	ng/L	NDMA	100	10	Exceed NL
SGSG	8/11/2016	ng/L	NDMA	200	10	Exceed NL
SGSG	6/14/2017	ng/L	NDMA	230	10	Exceed NL
SGSG	8/9/2017	ng/L	NDMA	96	10	Exceed NL
SGSG	12/12/2017	ng/L	NDMA	74	10	Exceed NL

VII. REGULATION OF RECYCLED WATER

A. State authority to oversee recycled water use is shared by Division of Drinking Water (DDW), the State Water Board, and the Regional Water Boards. DDW is the agency with the primary responsibility for establishing water recycling criteria under Title 22 of the California Code of Regulations (CCR) to protect the health of the public using the groundwater basins as a source of potable water. The State Water Board and Regional Water Boards are responsible for issuing waste discharge requirements (WDRs) and water recycling requirements (WRRs) for water that is used or proposed to be used as recycled water.

B. On January 6, 1977, the State Water Board adopted Resolution No. 77-1, Policy with Respect to Water Reclamation in California, which includes principles that encourage and recommend funding for water recycling and its use in water-short areas of the state. On September 26, 1988, the Regional Water Board also adopted Resolution No. 88-012, which encourages the beneficial use of recycled wastewater and supports water recycling projects.

C. The State Water Board adopted the Recycled Water Policy (State Water Board Resolution No. 2009-0011) on February 3, 2009, and amended the Policy on January 22, 2013 (State Water Board Resolution No. 2013-0003). In part, the purpose of the Recycled Water Policy is to protect groundwater resources and to increase the beneficial use of recycled water from municipal wastewater sources in a manner consistent with state and federal water quality laws and regulations.

D. In sections 5 and 8 of the Recycled Water Policy, two agencies are described with jurisdiction over the use of recycled water including the State and Regional Water Boards and the California Department of Public Health (CDPH). CDPH responsibilities for recycled water use were later transferred to the State Water Board, and specifically to DDW (Cal. Health & Safety Code, § 116271(a)(8)). The State Water Board develops general policies governing the permitting of recycled water projects and exercises general oversight of recycled water projects, including review of Regional Water Board permitting practices. DDW is charged with protection of public health and drinking water supplies and with the development of uniform water recycling criteria appropriate to particular uses of water. The Regional Water Boards shall rely on the expertise of DDW for the establishment of permit conditions needed to protect human health. The Regional Water Boards are charged with protection of surface water and groundwater resources and with the issuance of permits that implement DDW recommendations, the Recycled Water Policy, and applicable law, and will use their authority to the fullest extent possible to encourage the use of recycled water. This Order includes requirements consistent with the Recycled Water Policy.

E. A 1996 Memorandum of Agreement (MOA) between DDW and the State Water Board on behalf of itself and the Regional Water Boards allocates the primary areas of responsibility

and authority between them regarding the use of recycled water. The MOA provides methods and mechanisms necessary to ensure ongoing and continuous future coordination of activities relative to the use of recycled water in California. This Order includes requirements consistent with the MOA.

F. CWC section 13523(a) provides that a Regional Water Board, after consulting with and receiving recommendations from DDW, and after any necessary hearing, shall, if it determines such action to be necessary to protect the health, safety, or welfare of the public, prescribe WRRs for water that is used or proposed to be used as recycled water. On January 18, 2018, the Project Sponsor in collaboration with DDW, held a public hearing to consider the proposed GRIP-AWTF project and the use of advanced treated recycled water for injection into the local groundwater using supplemental recharge wells and the use of the blended tertiary treated water for surface spreading at MFSGs. On June 6, 2018, DDW transmitted to the Regional Water Board a conditional approval letter with recommendations concerning the GRIP-AWTF project.

G. Section 13540 of the CWC provides that recycled water may be injected by a well into a water-bearing stratum, provided that (1) the Regional Water Board finds that water quality considerations do not preclude controlled recharge of the stratum by direct injection, and (2) the DDW, following a public hearing, finds that the proposed recharge will not degrade the quality of water in the receiving aquifer as a source of water supply for domestic purposes. As described above, DDW conducted the requisite hearing on January 18, 2018 and concluded that the recharge will not degrade receiving water quality, provided that the conditions specified in the June 6, 2018 conditional approval letter (Attachment F to this Order) are met.

H. CWC section 13523(b) requires that reclamation requirements be established in conformance with the uniform statewide water recycling criteria established pursuant to Water Code section 13521. Section 13562 of the Water Code requires DDW to adopt uniform water recycling criteria for indirect potable reuse for groundwater recharge. DDW developed the final water recycling criteria for Groundwater Replenishment Reuse Projects (GRRPs) that became effective on June 18, 2014.

VIII. OTHER APPLICABLE PLANS, POLICIES AND REGULATIONS.

A. The Regional Water Board adopted a revised Water Quality Control Plan for the Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties (Basin Plan) on June 13, 1994, as amended by various Regional Water Board resolutions. The Basin Plan designates beneficial uses for surface and groundwater; establishes narrative and numeric water quality objectives that must be attained or maintained to protect the designated (existing and potential) beneficial uses and to conform with the state's antidegradation policy; and includes implementation provisions, programs, and policies to protect all waters in the region. In addition, the Basin Plan incorporates all applicable State Water Board and Regional Water Board plans and policies and other pertinent water quality policies and regulations.

B. The Basin Plan incorporates the 22 CCR primary Maximum Contaminant Levels (MCLs) by reference. This incorporation is prospective, including future changes to the incorporated provisions as the changes take effect. Groundwater designated for use as domestic or municipal supply shall not contain concentrations of chemicals constituents and radionuclides in excess of the MCLs. The Basin Plan also specifies that groundwaters shall not contain taste or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses.

C. The Basin Plan contains water quality objectives for groundwater in the Central Groundwater Basin which is part of the Coastal Plain of Los Angeles. The beneficial uses of the Central Groundwater Basin are as follows:

Table 6. Beneficial Uses of Groundwater in Central Basin

DWR Basin No.	Beneficial Use(s)
Coastal Plain of Los Angeles (Central) DWR Basin No. 4-11.04	Existing Beneficial Uses: Municipal and Domestic Water Supply (MUN); industrial service supply (IND); industrial process supply (PROC); and agricultural supply (AGR).

The limitations contained in this Order are intended to protect these uses and maintain water quality in this subbasin. Since MUN is a beneficial use, limitations are based on DDW's primary and secondary drinking water standards (MCLs) in the Domestic Water Quality and Monitoring Regulations, CCR, title 22, chapter 15, and Basin Plan objectives. These limitations are necessary to assure the protection of public health and the use of the groundwater basin for domestic supply.

D. The water quality objectives of the groundwater in Central Basin are:

Table 7. Water Quality Objectives for Groundwater in Central Basin

DWR Basin No.	Basin	Objectives (mg/L)			
		Total Dissolved Solids (TDS)	Sulfate	Chloride	Boron
Coastal Plain of Los Angeles (Central) DWR Basin No. 4-11.04	Central Basin	700	250	150	1.0

E. Pursuant to CWC section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking and sanitary purposes. This Order promotes that policy by requiring injected water to meet MCLs designed to protect public health and ensure that water is safe for domestic use.

F. Pursuant to CWC section 13263(g), discharges of waste into waters of the state are privileges, not rights. Nothing in this Order creates a vested right to continue the discharge. Water Code section 13263 authorizes the Regional Water Board to issue waste discharge requirements that implement any relevant water quality control plan.

G. This Order includes limits on quantities, rates, and concentrations of chemical, physical, biological, and other constituents in the advanced treated recycled water that is used for injecting into the groundwater aquifer and for surface spreading at MFSGs.

H. A goal of the Recycled Water Policy (State Water Board Resolution No. 2013-0003) is to increase the beneficial use of recycled water from municipal wastewater sources in a manner consistent with state and federal water quality laws and regulations. The Recycled Water Policy directs the Regional Water Quality Control Boards to collaborate with generators of municipal wastewater and interested parties in the development of Salt and Nutrient Management Plans (SNMPs) to manage the loadings of salts and nutrients to groundwater basins in a manner that is protective of beneficial uses, thereby supporting the sustainable use of local waters. A Salt and Nutrient Management Plan and its associated California

Environmental Quality Act (CEQA) documentation were jointly prepared by the Central Basin and West Coast Basin stakeholders and approved by the Regional Water Board on February 12, 2015, with the adoption of Resolution No. R15-001, *Amendment to the Water Quality Control Plan for the Los Angeles Region to Incorporate Stakeholder-Proposed Groundwater Quality Control Measures for Salts and Nutrients in the Central and West Coast Groundwater Basins*. The State Water Board and the Office of the Administrative Law approved the resolution on July 21, 2015, and May 6, 2016, respectively.

I. DDW has established NLs for constituents in drinking water, including NDMA, that do not pose a significant human health risk based on the most current scientific data, but warrant notification. NLs are established as precautionary measures for contaminants that may be considered candidates for establishment of MCLs, but have not yet undergone or completed the regulatory standard process prescribed for the development of MCLs and are not drinking water standards. A list of these constituents and their current associated NLs is provided in Table E-11 of the Monitoring and Reporting Program (MRP) and Attachment G, respectively. A response level is the concentration of a contaminant in drinking water delivered for human consumption at which DDW recommends that additional steps beyond notification be taken to reduce public exposure to the contaminant. For example, NDMA includes a NL of 10 ng/L and a response level of 300 ng/L.

J. CWC section 13267 authorizes the Regional Water Board to require technical and monitoring reports. The attached MRP establishes monitoring and reporting requirements to implement federal and state requirements.

Section 13267(b) of the Water Code states, in part:

> In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging or who proposes to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste outside of its region shall furnish under penalty of perjury, technical or monitoring program reports which the Regional Board requires. The burden, including costs of these reports shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

Section 13267(d) of the Water Code states, in part:

> The state board or a regional board may require any person, including a person subject to waste discharge requirements under section 13263, who is discharging, or who proposes to discharge, wastes or fluid into an injection well, to furnish the state board or regional board with a complete report on the condition and operation of the facility or injection well, or any other information that may be reasonably required to determine whether the injection well could affect the quality of the waters of the state.

K. The need for the technical and monitoring reports required by this Order, including the MRP, are based on the Report of Waste Discharge (ROWD) and Engineering Report; the recommendations from DDW; and other information in the Regional Water Board's files for the facility. The technical and monitoring reports are necessary to assure compliance with these WDRs and WRRs. The burden, including costs, of providing the technical reports required by this Order bears a reasonable relationship to the need for the reports and the benefits to be obtained from the reports.

L. On October 28, 1968, the State Water Board adopted Resolution No. 68-16, Statement of Policy with Respect to Maintaining High Quality of Waters in California (Resolution 68-16), establishing an antidegradation policy for the State Water Board and Regional Water Boards. Resolution No. 68-16 requires that existing high quality waters be maintained unless a change is demonstrated to be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial uses of waters, and will not result in water quality less than that prescribed in applicable policies. Resolution No. 68-16 also prescribes WDRs for dischargers to high quality waters that will result in the best practicable treatment or control of the discharge necessary to assure that a pollution or nuisance will not occur and the highest water quality consistent with maximum benefit to the people of the State will be maintained. The Regional Water Board's Basin Plan implements and coordinates, by reference, the state antidegradation policy.

M. On February 12, 2015, the Regional Water Board adopted a Basin Plan amendment, a salt and nutrient management plan (SNMP) for the Central Basin and West Coast Basin (Resolution No. R15-001). The State Water Board subsequently approved this SNMP Basin Plan amendment on July 21, 2015 (Resolution No. 2015-0048), and the Office of Administrative Law (OAL) approved it on April 11, 2016. According to the State Recycled Water Policy, compliance with Resolution No. 68-16 for the purposes of groundwater recharge with recycled water is met if there is a SNMP in effect.

N. This Order is consistent with Resolution No. 68-16, and meets the antidegradation requirements of the Recycled Water Policy; and it is consistent with the SNMP for the Central and West Coast Basins in the Basin Plan. Groundwater recharge with recycled water for later extraction and use in accordance with the Recycled Water Policy, the Basin Plan, and State water quality laws, is to the benefit of the people of the state of California. Nonetheless, groundwater recharge projects using recycled water have the potential to lower water quality in the basin. The Regional Water Board finds that, based on available information and monitoring data, any change in the existing quality of the groundwater basin as a result of the groundwater recharge allowed by this Order will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not cause an exceedance of applicable water quality standards for the basin. As described in the findings herein, the Project Sponsor is implementing the best practicable treatment or control of the recycled water to be spread at the MFSGs and injected for groundwater recharge, including but not limited to, AWTF with UF, RO, and UVAOP treatment systems. Compliance with this Order will protect present and anticipated beneficial uses of the groundwater, ensure attainment of water quality prescribed in applicable policies, and avoid any conditions of pollution or nuisance.

IX. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) AND NOTIFICATION

1. The WRD prepared and certified the following documents in compliance with the CEQA (Public Resources Code Section 21000, et seq.):

   a. "Final Environmental Impact Report (EIR) and Addendum for the Groundwater Reliability Improvement Program (GRIP) Recycled Water Project ", State Clearinghouse No. 2013020142, prepared by AECOM for WRD, June 2015, certified by the WRD Board of Directors on June 18, 2015. The project consists of the construction of an advanced water treatment facility to treat tertiary treated recycled water for groundwater replenishment in the Central Basin.

   b. "Final Supplemental EIR for the development and operations of the GRIP Supplemental Recharge Wells Project, State Clearinghouse No. 2013021042,

prepared by Environmental Science Associates (ESA) for WRD, June 2016, certified by the WRD Board of Directors on June 23, 2016.

2. The project as summarized in the CEQA documents includes three on-site supplemental recharge wells, two on-site nested monitoring wells, and one off-site nested monitoring well. The supplemental recharge wells would operate to recharge and store up to 4.5 MGD of advanced treated recycled water.

3. The EIR and the Supplemental EIR considered and evaluated the impact of the project and the cumulative impacts of the construction of the AWTF and groundwater recharge on groundwater quality in the Central Groundwater Basin. The EIR and the Supplemental EIR implement mitigation and monitoring where necessary to address any impacts.

4. In addition to the CEQA documents described above, WRD submitted the Final EIR for the GRIP Recycled Water Project to the U.S. Department of the Interior, Bureau of Reclamation for review in accordance with the National Environmental Policy Act of 1969 (NEPA). Based on its review of the document, the Bureau of Reclamation issued a Finding of No Significant Impact, FONSI No. 15-SCAO-015-FONSI, dated December 19, 2016.

   a. For the AWTF, the Final EIR identified no significant impacts for the proposed project that could not be mitigated to a less than significant level. WRD's Board of Directors imposed all feasible mitigation measures as incorporated into the proposed project's Mitigation Monitoring and Reporting Program (MMRP) to mitigate any remaining significant environmental impacts. Therefore, no statement of overriding considerations was required for the proposed project.

   b. For the supplemental recharge wells, the Final Supplemental Environmental Impact Report (SEIR) identified no significant impacts for the proposed project that could not be mitigated to a less than significant level. WRD's Board of Directors has imposed all feasible mitigation measures as incorporated into the proposed project's MMRP to mitigate any remaining significant environmental impacts. Therefore, no statement of overriding considerations was required for the proposed project.

5. Pursuant to CWC Section 13320, any aggrieved party may seek review of this Order by filing a petition with the State Water Board in accordance with Title 23 CCR, sections 2050-2068. The State Water Board must receive the petition by 5:00 p.m., 30 days after adoption of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the internet at: http://waterboards.ca.gov/public_notices/petitions/water_quality.

6. The Regional Water Board has notified the Project Sponsor, interested agencies, and persons of its intent to issue this Order for the production and use of recycled water and has provided them with an opportunity to submit written comments. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to these WDRs/WRRs.

THEREFORE, IT IS HEREBY ORDERED that in order to meet the provisions contained in division 7 of the CWC (commencing with section 13000) and regulations and guidelines adopted thereunder, and CCR title 22, division 4, chapter 3, the Project Sponsor shall comply with the requirements in this Order.

X. INFLUENT SPECIFICATIONS

The influent to the AWTF shall be the San Jose Creek WRP tertiary treated effluent as described in this Order and shall at all times be adequately oxidized.

XI. RECYCLED WATER TREATMENT SPECIFICATIONS

Treatment of the recycled water shall be as described in the findings of this Order and as described in DDW's conditional approval letter issued on June 6, 2018 (See Attachment F).

XII. RECYCLED WATER DISCHARGE LIMITATIONS

A. Surface (EFF-001) or Subsurface (EFF-002) Application

Per section II.B of this Order, the blended tertiary treated water, which is a combination of the tertiary treated effluent from San Jose Creek WRPs and the advanced treated recycled water from the GRIP-AWTF is used for surface spreading at the MFSGs. The tertiary treated water from San Jose Creek WRP is already being regulated under the MFSGs Order No. 91-100 and subsequent revisions.

The advanced treated recycled water shall not contain constituents in excess of the following limitations, with compliance measured at Sampling Point EFF-001 or EFF-002 as described in the Monitoring and Reporting Program (MRP), Attachment E. EFF-001 is located on the Product Water Storage Tank discharge line to the diversion structure, downstream of the sodium bisulfite injection point and upstream of the diversion structure. EFF-002 is located on the effluent line from the Product Water Storage Tank and before the advanced treated recycled water is distributed to the injection wells.

Table 8. Discharge Limitations for the Advanced Treated Recycled Water

Parameter	Units	Advanced Treated Recycled Water Discharge Limitations					
		Average Monthly	Average Weekly	Maximum Weekly	Maximum Daily	Instan-taneous Minimum	Instan-taneous Maximum
Turbidity[1]	NTU	--	--	--	0.2[1]	--	0.5[1]
pH	standard units	--	--	--	--	6.5	8.5
Total coliform	MPN or CFU/100 mL	--	--	1.1[2]	--	--	--
Total Dissolved Solids	mg/L	700	--	--	--	--	--
Sulfate	mg/L	250	--	--	--	--	--
Chloride	mg/L	150	--	--	--	--	--
Boron	mg/L	1.0	--	--	--	--	--
Total Nitrogen	mg/L	--	10[3]	--	--	--	--

[1] The advanced treated recycled water that is used for recharge shall have received adequate treatment, per CCR, title 22, sections 60301.320(b) and 60320.108(b), so that the turbidity of the treated effluent does not exceed any of the following: (a) 0.2 Nephelometric turbidity units (NTUs) more than 5 percent of the time (72 minutes) within a 24-hour period; and (b) 0.5 NTU at any time.

[2] Based on Basin Plan groundwater quality objective.

[3] If the average of the results of four consecutive samples collected pursuant to sections 60320.110 (a)(1) and 60320.210(a)(1) exceeds 10 mg/L total nitrogen, suspend the surface and subsurface application, respectively, of the advanced treated recycled water. Surface and subsurface application shall not

Parameter	Units	Advanced Treated Recycled Water Discharge Limitations					
		Average Monthly	Average Weekly	Maximum Weekly	Maximum Daily	Instan-taneous Minimum	Instan-taneous Maximum
Nitrate + Nitrite (as Nitrogen)	mg/L	10	--	--	--	--	--
Nitrate (as Nitrogen)	mg/L	10	--	--	--	--	--
Nitrite (as Nitrogen)	mg/L	1	--	--	--	--	--
Lead	mg/L	0.015	--	--	--	--	--
Copper	mg/L	1.0[4]	--	--	--	--	--
Total Organic Carbon (TOC)[5]	mg/L	0.5	--	--	--	--	--
Pathogenic Microorganism Control							
Enteric virus	log reduction	12[6]					
Giardia cyst	log reduction	10[6]					
Cryptosporidium oocyst	log reduction	10[6]					

B. Other Applicable Discharge Limitations

The advanced treated recycled water (sampled at EFF-001 or EFF-002) shall meet all primary and secondary MCLs and other limitations specified in the Drinking Water Quality and Monitoring Requirements in 22 CCR, chapter 15 ~~and other limitations~~, as follows:

Table 9. Discharge Limitations for Constituents with Primary MCLs [7]

Constituents	Units	Running Annual Average[7]
Inorganic Chemicals (Per Table 64431-A of title 22 CCR)		
Aluminum	mg/L	1
Antimony	mg/L	0.006
Arsenic	mg/L	0.010

resume until corrective actions have been taken and at least two consecutive total nitrogen sampling results are less than 10 mg/L.

4 Based on secondary MCL.

5 This TOC limitation applies to subsurface application per Title 22 CCR § 60320.218. Limitation is based on a 20-week running average of all TOC results and the average of the last four TOC results.

6 Compliance shall be determined in accordance with title 22, section 60320.208 and approved Operation Optimization Plan (OOP).

7 Compliance with primary MCLs is based on a running annual average of the monthly averaged result, except for total nitrogen, nitrate, nitrite, nitrate plus nitrite, perchlorate, asbestos, lead, copper and any other pollutant for which DDW determines should not be based on a running annual average. For contaminant whose compliance with its MCL or action level is not based on a running annual average, sections 60320.112(d)(1) and 60320.212(d)(1) of Title 22 apply. For a contaminant whose compliance with its MCL is based on a running annual average, additional sampling requirements and when to suspend the application of the advanced treated recycled water shall be implemented in accordance with sections 60320.112(d)(2) and 60320.212(d)(2), Title 22.

Constituents	Units	Running Annual Average[7]
Asbestos (for fibers exceeding 10 µm in length)	million fibers per liter (MFL)	7[8]
Barium	mg/L	1.0
Beryllium	mg/L	0.004
Cadmium	mg/L	0.005
Total Chromium	mg/L	0.05
Cyanide	mg/L	0.15
Fluoride	mg/L	2.0
Mercury	mg/L	0.002
Nickel	mg/L	0.1
Perchlorate	mg/L	0.006
Selenium	mg/L	0.05
Thallium	mg/L	0.002
Organic Chemicals (Per Table 64444-A of title 22 CCR) Volatile Organic Chemicals (VOCs)		
Benzene	**mg/L**	0.001
Carbon Tetrachloride	mg/L	0.0005
1,2-Dichlorobenzene	mg/L	0.6
1,4-Dichlorobenzene	mg/L	0.005
1,1-Dichloroethane	mg/L	0.005
1,2-Dichloroethane (1,2-DCA)	mg/L	0.0005
1,1-Dichloroethylene (1,1-DCE)	mg/L	0.006
cis-1,2-Dichloroethylene	mg/L	0.006
trans-1,2-Dichloroethylene	mg/L	0.01
Dichloromethane	mg/L	0.005
1,2-Dichloropropane	mg/L	0.005
1,3-Dichloropropene	mg/L	0.0005
Ethylbenzene	mg/L	0.3
Methyl-tert-butyl-ether (MTBE)	mg/L	0.013
Monochlorobenzene	mg/L	0.07
Styrene	mg/L	0.1
1,1,2,2-Tetrachloroethane	mg/L	0.001
Tetrachloroethylene (PCE)	mg/L	0.005
Toluene	mg/L	0.15
1,2,4-Trichlorobenzene	mg/L	0.005
1,1,1-Trichloroethane	mg/L	0.200
1,1,2-Trichloroethane	mg/L	0.005
Trichloroethylene (TCE)	mg/L	0.005
Trichlorofluoromethane	mg/L	0.15
1,1,2-Trichloro-1,2,2-Trifluoroethane	mg/L	1.2
Vinyl Chloride	mg/L	0.0005
Xylenes (m,p)	mg/L	1.750[9]
Organic Chemicals (Per Table 64444-A of title 22 CCR) Synthetic Organic Chemicals (SOCs)		
Alachlor	mg/L	0.002
Atrazine	mg/L	0.001

[8] If four consecutive quarterly results for asbestos are below the detection limit in Table 64432-A of Title 22 for asbestos, monitoring for asbestos may be reduced to one sample every three years. Quarterly monitoring shall resume if asbestos is detected.

[9] The MCL is for either a single isomer or the sum of the isomers.

Constituents	Units	Running Annual Average[7]
Bentazon	mg/L	0.018
Benzo(a)pyrene	mg/L	0.0002
Carbofuran	mg/L	0.018
Chlordane	mg/L	0.0001
2,4-Dichlorophenoxyacetic acid (2,4-D)	mg/L	0.07
Dalapon	mg/L	0.2
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	0.0002
Di(2-ethylhexyl)adipate	mg/L	0.4
Di(2-ethylhexyl)phthalate (DEHP)	mg/L	0.004
Dinoseb	mg/L	0.007
Diquat	mg/L	0.02
Endothall	mg/L	0.1
Endrin	mg/L	0.002
Ethylene Dibromide (EDB)	mg/L	0.00005
Glyphosate	mg/L	0.7
Heptachlor	mg/L	0.00001
Heptachlor epoxide	mg/L	0.00001
Hexachlorobenzene	mg/L	0.001
Hexachlorocyclopentadiene	mg/L	0.05
Gamma BHC (Lindane)	mg/L	0.0002
Methoxychlor	mg/L	0.03
Molinate	mg/L	0.02
Oxamyl	mg/L	0.05
Pentachlorophenol	mg/L	0.001
Picloram	mg/L	0.5
Polychlorinated Biphenyls (PCBs)	mg/L	0.0005
Simazine	mg/L	0.004
Thiobencarb	mg/L	0.07
Toxaphene	mg/L	0.003
1,2,3-Trichloropropane	mg/L	0.000005
2,3,7,8-TCDD (Dioxin)	mg/L	3×10^{-8}
2,4,5-TP (Silvex)	mg/L	0.05

Table 10. Discharge Limitations for Disinfection Byproducts MCLs (Per Table 64533-A of title 22 CCR)

Constituents	Units	Running Monthly Average
Total Trihalomethanes (TTHMs)* • Bromodichloromethane • Bromoform • Chloroform • Dibromochloromethane	mg/L	0.080
Haloacetic acid (five) (HAA5)** • Monochloroacetic acid • Dichloroacetic acid • Trichloroacetic acid • Monobromoacetic acid • Dibromoacetic acid	mg/L	0.060

Constituents	Units	Running Monthly Average
Bromate	mg/L	0.010
Chlorite	mg/L	1.0

* Total trihalomethanes represent the sum of Bromodichloromethane, Bromoform, Chloroform, and Dibromochloromethane. The monthly average applies to the TTHMs.

** Haloacetic acid (five) (HAA5) represent the sum of Monochloroacetic acid, Dichloroacetic acid, Trichloroacetic acid, Monobromoacetic acid, and Dibromoacetic acid. The monthly average applies to the HAA5.

Table 11. Discharge Limitations for Radionuclides MCLs
(Per Table 64442 of title 22 CCR)

Constituents	Units	Running Monthly Average
(Per Table 64442 of title 22 CCR)		
Combined Radium-226 and Radium-228	pCi/L	5
Gross Alpha particle activity (excluding radon and uranium)	pCi/L	15
Uranium	pCi/L	20
(Per Table 64443 of title 22 CCR)		
Beta/photon emitters[10]	millirem/yr	4
Strontium-90	pCi/L	8
Tritium	pCi/L	20,000

Table 12. Discharge Limitations for Constituents with Secondary MCLs[11]
(Per Table 64449-A of title 22 CCR)

Constituents	Units	Annual Average
Aluminum	mg/L	0.2
Color	Apparent Color Unit~~s~~ (ACU)	15
Copper	mg/L	1.0
Foaming agents (MBAS)	mg/L	0.5
Iron	mg/L	0.3
Manganese	mg/L	0.05
Methyl-tert-butyl ether (MTBE)	mg/L	0.005

[10] If the results of testing for all beta and photon emitters is less than or equal to 50 pCi/L, the facility is in compliance and the value shall be reported as <4 millirem/year. If the test results for all beta and photon emitters are greater than 50 pCi/L, the Permittee must have the samples further analyzed for the *individual* nuclides. If the sum of the fractions of the detected nuclides is <4 millirem/year, the facility is in compliance. The procedures for calculating the sum of fractions is presented in the Compliance Determination, section XIX.A.

[11] Compliance with secondary MCLs is based on sections 60320.112(e) and 60320.212(e).

Constituents	Units	Annual Average
Odor - Threshold	Threshold Odor Number (TON)~~units~~	3
Silver	mg/L	0.1
Thiobencarb	mg/L	0.001
Zinc	mg/L	5.0

XIII. GENERAL REQUIREMENTS

A. Advanced treated recycled water shall not be used for direct human consumption, except for small quantities used for public education purposes, or for the direct processing of food or drink intended for human consumption. However, the Project Sponsor cannot serve treated recycled water for demonstration purposes to more than 25 people daily for at least 60 days out of the year (H&SC, Section 116275(h) and Title 22, Section 64400). In addition, the treated recycled water cannot be bottled and distributed unless it meets the requirements stated the H&SC, Section 111070.5 and the WC, Section 13570.~~Advanced treated recycled water shall not be used for direct human consumption or for the processing of food or drink intended for human consumption.~~

B. As noted in the Final 2018 Engineering Report, the advanced treated recycled water injected into the aquifer shall be retained underground for a minimum of six months prior to being withdrawn at a domestic supply well.

C. Bypass, discharge, or delivery to the use area of inadequately treated recycled water, at any time, is prohibited.

D. The GRIP-AWTF and supplemental recharge wells shall be adequately protected from inundation and damage by storm flows.

E. Advanced treated recycled water use or disposal shall not result in earth movement in geologically unstable areas.

F. The GRIP-AWTF shall not be the source of pollution or nuisance at any time outside the boundary of the facility, including odors that unreasonably affect beneficial uses, odors injurious to health, or odors offensive to the senses of members of a community.

G. The Project Sponsor shall, at all times, properly operate and maintain all treatment facilities and control systems (and related appurtenances) which are installed or used by the Project Sponsor to achieve compliance with the conditions of this Order. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls (including appropriate quality assurance procedures).

H. A copy of these requirements shall be maintained at the Facility so as to be available at all times to operating personnel.

I. Supervisors and operators of this advanced water treatment facility shall possess a certificate of appropriate grade as specified in CCR, title 23, division 3, chapter 26.

J. For any material change or proposed change in character, location, or volume of recycled water, or its uses, the Project Sponsor shall submit, at least 120 days prior to the proposed change, an engineering report or addendum to the existing engineering report to the Regional Water Board and DDW (pursuant to CWC division 7, chapter 7, article 4, section 13522.5 and

CCR, title 22, division 4, chapter 3, article 7, section 60323) for approval. The engineering report shall be prepared by a qualified engineer registered in California.

K. If the Project Sponsor chooses to use one or more wastewater chemicals in lieu of TOC, the Project sponsor shall obtain approval from DDW as required in 22 CCR § 60320.118 and § 60320.218.

~~**L.** The Project Sponsor shall protect the public water supply from contamination by implementation of a cross-connection control program. The program, or any portion thereof, may be implemented directly by the water supplier or by means of a contract with the local health agency, or with another agency approved by the health agency. The water supplier's cross-connection control program shall be for the purpose of addressing the requirements of Sections 7585 through 7605 of Title 17.~~

XIV. DDW SPECIFICATIONS AND REQUIREMENTS

The Project Sponsor shall comply with the requirements set forth in DDW's recommendation letter (Attachment F) to the Regional Water Board dated June 6, 2018, as listed below:

A. The District shall comply with Division 4, Chapter 3, Article 5.1 - Indirect Potable Reuse: Groundwater Replenishment - Surface Application, Sections 60320.100 through 60320.128 of the Title 22, California Code of Regulations, as described in this permit, until the revision of the Rio Hondo and San Gabriel River Spreading Grounds Water Reclamation Requirements/Waste Discharge Requirements Order No. 91-100 and subsequent revisions.

B. The District shall comply with Division 4, Chapter 3, Article 5.2 - Indirect Potable Reuse: Groundwater Replenishment - Subsurface Application, Sections 60320.200 through 60320.228 of the Title 22, California Code of Regulations.

C. The District shall operate the AWTF in accordance with the approved Operation Optimization Plan (OOP) and §60320.222. The District shall ensure that the OOP is representative of the current operations, maintenance, and monitoring and is updated within 30 days after any significant changes to current operations, maintenance, and monitoring. At a minimum, the OOP shall identify and describe the operations (including validation of unit processes per §60320.208(c)), maintenance (including prevention of cross connections, by-pass treatment, and replacement of membranes), analytical methods (regulated and unregulated chemicals), monitoring (including process monitoring and instrumentation calibration), and reporting (including compliance, performance monitoring and methodology for the calculation of log reduction achieved per process). Per §60320.222, the District shall submit a draft OOP prior to operations for DDW's review and approval. The draft OOP may be amended and finalized after the completion of full-scale startup and commissioning testing. The final OOP must be submitted to DDW no later than 90 days after completion of startup and commissioning testing. The District shall submit for approval an updated OOP per §60320.222(c).

D. The District shall adequately staff treatment plant operator(s) for the AWTF, and describe operator staffing hours, shifts, and certifications classes in the OOP. The District shall staff operator(s) with Advanced Treatment Certification when available and in consultation with DDW and Regional Water Board.

E. The District shall conduct full-scale startup and commissioning testing that demonstrates compliance with §60320.201 for the AWTF. The District shall submit an Advanced Oxidation Process (AOP) startup and commissioning test protocol for DDW's review at least 60 days prior to the commencement of the testing (as required by §60320.201(d)). In addition, the District shall submit a report 60 days after completing the initial 12-months of operations and monitoring to demonstrate compliance with §60320.201(f) and (g) and this letter.

F. The AOP startup and commissioning shall validate and confirm the actual setpoints for free chlorine and UV parameters, demonstrating that the AOP will provide no less than 0.5-log (69 percent) reduction of 1,4-dioxane and meets all Notification Levels.

G. The OOP must include the AWTF alarms in accordance with this letter. Commissioning shall validate and confirm the actual alarm setpoints and they shall be specified in the OOP.

H. The District shall verify that the recycled municipal wastewater used for the Project meets the Wastewater Source Control requirements per §60320.206.

I. Per the Engineering Report, the initial maximum Recycled Water Contribution (RWC) can be 1.0.

J. Per §60320.218, the District shall monitor the applied recycled municipal wastewater for TOC at least weekly prior to replenishment. The District shall report 20-week running average and the average of the last four TOC results of the applied recycled municipal wastewater. The District shall report weekly TOC results of the applied recycled municipal wastewater in the monthly report.

K. Per §60320.208, the District shall operate the Project such that the recycled municipal wastewater used as recharge water receives treatment that achieves at least 12-log enteric virus reduction, 10-log Giardia cyst reduction, and 10-log Cryptosporidium oocyst reduction.

L. If the pathogen reduction in §60320.208(a) is not met based on the on-going monitoring required pursuant to subsection (c), within 24 hours of being aware, the District shall immediately investigate the cause and initiate corrective actions. The District shall immediately notify the DDW and Regional Water Board if the Project fails to meet the pathogen reduction criteria longer than 4 consecutive hours, or more than a total of 8 hours during any 7-day period. Failures of shorter duration shall be reported to the Regional Water Board by the District no later than 10 days after the month in which the failure occurred.

M. The Project contains a multi-barrier treatment facility to comply with the Title 22, Article 5.2. The following monitoring and reporting requirements will need to be included in the OOP and reported to DDW and the Regional Water Board monthly.

1. To demonstrate the log reduction credit given to the San Jose Creek Wastewater Treatment Plants (WWTP), the WWTP effluents shall be monitored continuously for turbidity and daily for coliform concentrations. The District shall report monthly to the DDW and Regional Water Board, the daily WWTP effluent coliform analysis[12], the daily WWTP effluent average turbidity and maximum turbidity.
2. The Ultrafiltration membrane (UF) effluent shall be monitored for turbidity continuously. For the effluent, the daily average and maximum turbidity and the percent of time that the effluent turbidity is greater than 0.2 NTU shall be reported. The District shall report if the UF effluent turbidity exceeded 0.5 NTU at any time. The District shall calibrate the turbidity instrumentation in accordance with the OOP.
3. Membrane integrity testing (MIT) shall be performed on each of the UF units, a minimum of once every 24 hours of operation.
    a. The log removal value (LRV) for Cryptosporidium shall be calculated and the value reported after the completion of each MIT.

[12] In accordance with Order R4-2015-0070 or any subsequent renewals or amendments. It should be noted that Title 22, Section 60321 requires daily coliform samples of disinfected tertiary recycled water.

b. The MIT shall have a resolution that is responsive to an integrity breach on the order of 3 µm or less.

c. Calculations of the LRV shall be based on a pressure decay rate (PDR) value with an ending pressure that provides a resolution of 3 µm or less.

d. The MIT shall have a sensitivity to verify a LRV equal to or greater than 4.0.

4. The District must monitor the effluent of each Reverse Osmosis train continuously for conductivity. The District shall calibrate the conductivity instrumentation in accordance with the OOP.

5. The Reverse Osmosis system shall be credited pathogen reduction at this facility in accordance with the amount demonstrated via continuous TOC monitoring. The Reverse Osmosis influent and effluent must be monitored for TOC. The daily average TOC reduction achieved, average, and maximum TOC influent and effluent shall be reported in the monthly report. The District shall calibrate the TOC instrumentation in accordance with the OOP.

6. The District shall monitor the Performance Indicator constituents of emerging concern (CECs) for Reverse Osmosis both prior to the Reverse Osmosis and after Reverse Osmosis prior to the AOP as specified in the OOP.

7. The AOP shall be operated, as has been designed, to meet Title 22, Article 5.2, providing a minimum 0.5-log reduction of 1,4-dioxane and meet all Notification Levels. AOP startup and commissioning will validate and confirm the actual setpoints for free chlorine and UV parameters. The District may use the AOP model predicted log reduction as a substitute to the minimum UV Dose provided that the AOP model is validated during the startup and commissioning and receives approval from DDW.

8. The AOP must be operated with continuous monitoring and built-in automatic reliability features that must trigger automatic diversion of effluent by the following critical alarm setpoints. The District may use the AOP model predicted log reduction as a substitute to setpoint(s) (e-f) provided that the AOP model is validated during the startup and commissioning and receives approval from DDW.

a. Complete UV reactor failure.

b. Instantaneous flowrate exceeds design flowrate.

c. UV transmittance less than 96% for more than 15 minutes, or a new setpoint approved by DDW after the AOP startup and commissioning.

d. pH greater than or equal to 6.5 as measured in the AOP influent for more than 15 minutes, or a new setpoint approved by DDW after the AOP startup and commissioning.

e. Calculated NDMA log reduction of less than 1.67, or a new setpoint approved by DDW after the AOP startup and commissioning.

f. Free Chlorine residual less than 2.0 mg/L as measured in the AOP influent for more than 15 minutes, or a new setpoint approved by DDW after the AOP startup and commissioning.

9. Continuous monitoring of flow, Free chlorine, pH, Power, UV intensity, and UV transmittance must be provided at all times for the AOP. Flow, Free chlorine, pH, and UV transmittance instrumentation must be properly calibrated in accordance with the OOP. The District shall submit a monthly summary to DDW of the calculated 1,4-Dioxane and NDMA log reduction along with flowrate, UVT, pH and any reactor failure(s).

10. At least weekly, the UV transmittance meter must be inspected and checked against a reference bench-top unit to document accuracy.
11. At least quarterly, monitor water quality parameters to update AOP radical scavenging demand as specified in OOP. At a minimum, the District shall sample for Nitrite, Bromide, Chloramines, TOC, and Alkalinity.
12. The monitoring and reliability features, including automatic shutdown capability, shall be demonstrated to DDW during a plant inspection prior to final approval.
13. Based on the calculation of log reduction achieved daily, the District will report a "Yes" or "No" for each day as to whether the necessary log reductions (12-logs virus, 10-logs for Giardia cyst and Cryptosporidium oocyst) have been achieved. If the model is validated during startup and commissioning, the District must include the daily minimum model predicated 1,4-Dioxane and NDMA log reduction. An overall log reduction calculated value must be provided daily unless the AWTF is offline (24-hour period).
14. The District shall monitor the effluent of the AWTF as specified in the OOP monthly for the first year of operations. Per §60320.201(i), the District may request, from DDW and the Regional Water Board, a reduction in this monitoring after 12 consecutive months of monitoring.

N. The District shall ensure that any recycled water that is used for surface spreading operations at least meets the definition of disinfected tertiary recycled water (§60301.230).

O. If the District has been directed by the DDW or Regional Water Board to suspend surface and/or subsurface application, surface and/or subsurface application shall not resume until the District has obtained DDW and Regional Water Board approval.

P. The District shall submit a groundwater tracer test protocol for DDW review 60 days prior to commencement of the testing for subsurface application of recycled water. The District must conduct a tracer test and submit a completed tracer study to DDW. The District shall update the Engineering Report based on results of the tracer study.

Q. The District, if necessary, shall update the local-scale groundwater model based on geological information obtained from Project's construction of monitoring and injection wells, if necessary.

R. The District, if necessary, shall update the Engineering Report and define a boundary representing a zone of controlled drinking water well construction and secondary boundary based on tracer studies results per §60320.200.

S. The District shall notify DDW and the Regional Water Board if a new or replacement potable water well(s) is to be constructed within the secondary boundary (§60320.200(e)), if necessary.

T. The District shall update the Engineering Report for any additional injection wells for the Project in consultation with the Regional Water Board and DDW.

U. The District shall update the Engineering Report and the OOP to demonstrate compliance with any revisions to the Recycled Water Policy.

V. The District shall update the Engineering Report and the OOP to demonstrate compliance with any revisions to the DDW Notification Level list.

W. The District shall transfer all water quality monitoring results analyzed by an Environmental Laboratory Accreditation Program (ELAP) certified laboratory to DDW by Electronic Data Transfer (EDT) after the District has been assigned Primary Station Codes (PS-Codes) for compliance monitoring sites.

X. The District shall submit the required annual and five-year reports per §60320.228 and §60320.128.

XV. DILUENT WATER SPECIFICATION

A. DDW has approved injection and spreading of the advanced treated recycled water to occur without any diluent water, based on the level of treatment provided by the GRIP-AWTF. The diluent water requirement for the tertiary treated water in the blended tertiary treated water is to be addressed through the recycled water contribution requirement in the upcoming amendment to the MFGRP Permit.

XVI. ADDITIONAL PROVISIONS

A. Surface spreading of the blended tertiary treated water and injection of the advanced treated recycled water shall not cause or contribute to an exceedance of water quality objectives in the Central Basin.

B. The Project Sponsor shall submit to the Regional Water Board, under penalty of perjury, self-monitoring reports according to the specifications contained in the MRP, as directed by the Executive Officer and signed by a designated responsible party.

C. This Order does not exempt the Project Sponsor from compliance with any other laws, regulations, or ordinances which may be applicable; it does not legalize the recycling and use facilities; and it leaves unaffected any further constraint on the use of recycled water at certain site(s) that may be contained in other statutes or required by other agencies.

D. This Order does not alleviate the responsibility of the Project Sponsor to obtain other necessary local, state, and federal permits to construct facilities necessary for compliance with this Order; nor does this Order prevent imposition of additional standards, requirements, or conditions by any other regulatory agency.

E. This Order may be modified, revoked and reissued, or terminated for cause, including but not limited to: (1) failure to comply with any condition in this Order, (2) endangerment of human health or environment resulting from the permitted activities in this Order, (3) obtaining this Order by misrepresentation or failure to disclose all relevant facts, or (4) acquisition of new information that could have justified the application of different conditions if known at the time of Order adoption. The filing of a request by the Project Sponsor for modification, revocation and reissuance, or termination of the Order or a notification of planned changes or anticipated noncompliance does not stay any condition of this Order.

F. The Project Sponsor shall furnish, within a reasonable time, any information the Regional Water Board or DDW may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. Upon request, the Project Sponsor shall also furnish the Regional Water Board with copies of records required to be kept under this Order for at least three years.

G. In an enforcement action, it shall not be a defense for the Project Sponsor that it would have been necessary to halt or to reduce the permitted activity in order to maintain compliance with this Order. Upon reduction, loss, or failure of the treatment facility, the Project Sponsor shall, to the extent necessary to maintain compliance with this Order, control production or all discharges, or both, until the facility is restored or an alternative method of treatment is provided. This provision applies, for example, when the primary source of power of the treatment facility fails, is reduced, or is lost.

H. This Order includes the attached Standard Provisions Applicable to Waste Discharge Requirements (Attachment D). If there is any conflict between the provisions stated in this Order and the Standard Provisions, the provisions stated in this Order shall prevail.

I. This Order includes the attached MRP No. CI-10318. If there is any conflict between provisions stated in the MRP and the Standard Provisions, those provisions stated in the MRP prevail.

XVII. REOPENER

A. This Order may be reopened to include the most scientifically relevant and appropriate limitations for this discharge, including a revised Basin Plan limit based on monitoring results, studies, or other Board policy, or the application of an attenuation factor based upon an approved site-specific attenuation study.

B. The WDRs/WRRs may be reopened to modify limitations for constituents to protect beneficial uses, based on new information not available at the time this Order was adopted.

C. If after additional monitoring, reporting, and trend analysis documenting changed aquifer conditions, this Order may be reopened to ensure the groundwater is protected in a manner consistent with state and federal water quality laws and regulations.

D. This Order may be reopened to incorporate any new regulatory requirements for sources of drinking water or injection of recycled water for groundwater recharge to aquifers that are used as a source of drinking water, that are adopted after the effective date of this Order.

E. This Order may be reopened upon a determination by DDW that treatment and disinfection of the AWTF recycled water is not sufficient to protect human health.

F. This Order may be reopened upon a determination by DDW and the Regional Water Board that the requirements for surface spreading at the MFSGs required by this Order becomes duplicative of the requirements that will be placed in the eventual renewal of the MFSGs permit.

XVIII. ENFORCEMENT

A. The requirements of this Order are subject to enforcement under Water Code sections 13261, 13263, 13264, 13265, 13268, 13300, 13301, 13304, 13350, and enforcement provisions in Water Code, Division 7, Chapter 7 (Water Reclamation).

B. The Project Sponsor is subject to the terms and conditions of this Order.

XIX. GROSS BETA/PHOTON EMITTERS COMPLIANCE DETERMINATION

Compliance with the recycled water discharge limitations for Gross Beta/photon emitters contained in Section XII of this Order will be determined as follows:

A. Compliance with Gross Beta/photon Emitters

The monthly average effluent limitation for gross beta/photon is equal to 4 millirem/year. If the results of testing for all beta and photon emitters is less than or equal to 50 picoCuries per liter (pCi/L), the facility is in compliance and the value shall be reported as <4 millirem/year. If the test results for all beta and photon emitters are greater than 50 pCi/L, the Permittee must have the samples further analyzed for the individual nuclides. The calculation for the sum of the fractions is presented below.

The maximum contaminant level (MCL) for gross beta/photon is equal to 4 millirem per year. A millirem is a dose energy to the body. USEPA regulates 179 man-made nuclides, and each of them has a concentration of radiation measured in pCi/L, which produces the 4 millirem dose. These concentrations are listed on the table, Derived Concentrations of (pCi/L) of Beta and Photon Emitters in Drinking Water, and shall be used to determine compliance.

Derived Concentrations (pCi/l) of Beta and Photon Emitters in Drinking Water

Yielding a Dose of 4 mrem/yr to the Total Body or to any Critical Organ as defined in NBS Handbook 69

Nuclide	pCi/l	Nuclide	pCi/l	Nuclide	pCi/l	Nuclide	pCi/l	Nuclide	pCi/l	Nuclide	pCi/l
H-3	20,000	Ni-65	300	Nb-95	300	Sb-124	60	Nd-147	200	Os-191	600
Be-7	6,000	Cu-64	900	Nb-97	3,000	Sb-125	300	Nd-149	900	Os-191m	9,000
C-14	2,000	Zn-65	300	Mo-99	600	Te-125m	600	Pm-147	600	Os-193	200
F-18	2,000	Zn-69	6,000	Tc-96	300	Te-127	900	Pm-149	100	Ir-190	600
Na-22	400	Zn-69m	200	Tc-96m	30,000	Te-127m	200	Sm-151	1,000	Ir-192	100
Na-24	600	Ga-72	100	Tc-97	6,000	Te-129	2,000	Sm-153	200	Ir-194	90
Si-31	3,000	Ge-71	6,000	Tc-97m	1,000	Te-129m	90	Eu-152	200	Pt-191	300
P-32	30	As-73	1,000	Tc-99	900	Te-131m	200	Eu-154	60	Pt-193	3,000
S-35 inorg	500	As-74	100	Tc-99m	20,000	Te-132	90	Eu-155	600	Pt-193m	3,000
Cl-36	700	As-76	60	Ru-97	1,000	I-126	3	Gd-153	600	Pt-197	300
Cl-38	1,000	As-77	200	Ru-103	200	I-129	1	Gd-159	200	Pt-197m	3,000
K-42	900	Se-75	900	Ru-105	200	I-131	3	Tb-160	100	Au-196	600
Ca-45	10	Br-82	100	Ru-106	30	I-132	90	Dy-165	1,000	Au-198	100
Ca-47	80	Rb-86	600	Rh-103m	30,000	I-133	10	Dy-166	100	Au-199	600
Sc-46	100	Rb-87	300	Rh-105	300	I-134	100	Ho-166	90	Hg-197	900
Sc-47	300	Sr-85m	20,000	Pd-103	900	I-135	30	Er-169	300	Hg-197m	600
Sc-48	80	Sr-85	900	Pd-109	300	Cs-131	20,000	Er-171	300	Hg-203	60
V-48	90	Sr-89	20	Ag-105	300	Cs-134	80	Tm-170	100	Tl-200	1,000
Cr-51	6,000	Sr-90	8	Ag-110m	90	Cs-134m	20,000	Tm-171	1,000	Tl-201	900
Mn-52	90	Sr-91	200	Ag-111	100	Cs-135	900	Yb-175	300	Tl-202	300
Mn-54	300	Sr-92	200	Cd-109	600	Cs-136	800	Lu-177	300	Tl-204	300
Mn-56	300	Y-90	60	Cd-115	90	Cs-137	200	Hf-181	200	Pb-203	1,000
Fe-55	2,000	Y-91	90	Cd-115m	90	Ba-131	600	Ta-182	100	Bi-206	100
Fe-59	200	Y-91m	9,000	In-113m	3,000	Ba-140	90	W-181	1,000	Bi-207	200
Co-57	1,000	Y-92	200	In-114m	60	La-140	60	W-185	300	Pa-230	600
Co-58	300	Y-93	90	In-115	300	Ce-141	300	W-187	200	Pa-233	300
Co-58m	9000	Zr-93	2,000	In-115m	1,000	Ce-143	100	Re-186	300	Np-239	300
Co-60	100	Zr-95	200	Sn-113	300	Ce-144	30	Re-187	9,000	Pu-241	300
Ni-59	300	Zr-97	60	Sn-125	60	Pr-142	90	Re-188	200	Bk-249	2,000
Ni-63	50	Nb-93m	1,000	Sb-122	90	Pr-143	100	Os-185	200		

The sum of the fraction method is used because each photon emitter targets a different organ of the body, which results in a different magnitude of risk. The sum of the beta and photon emitters shall not exceed 4 millirem/year (40 CFR 141.66(d)(2).

Each nuclide has a different concentration that produces 4 millirem dose because different radionuclides have different energy levels. Some nuclides need to be in a higher concentration to give the same 4 millirem dose.

The laboratory shall measure the nuclide concentration in the water, and compare this result to the concentration allowed for that particular nuclide (see table below). The comparison results in a fraction. This is shown in calculation below:

$$\text{Fraction of the maximum 4 millirem/year exposure limit} = \frac{pCi/L\ found\ in\ sample\ (from\ laboratory\ results)}{pCi/L\ equivalent\ from\ 4\ millirem\ of\ exposure\ (from\ conversion\ table)}$$

Each fraction must then be converted to a dose equivalent of 4 millirem/year by multiplying the fraction by 4. The results for each emitter must be summed to determine compliance.

A sample calculation is presented in the table below:

Emitter	X	Y	X/Y	4(X/Y)
	Lab Analysis (pCi/L)	Conversion from table (pCi/4millirem)	Calculate Fraction	Calculate Total (millirem)
Cs-134	5,023	20,000	0.25115	1.0
Cs-137	30	200	0.150	0.6
Sr-90	4	8	0.5	2.0

Emitter	X	Y	X/Y	4(X/Y)
	Lab Analysis (pCi/L)	Conversion from table (pCi/4millirem)	Calculate Fraction	Calculate Total (millirem)
I-131	2	3	0.7	2.8
		Sum of the Fractions	1.60115	6.4

The system is in violation of the gross beta/photon effluent limitation because the calculated total millirem = 6.4 millirem, which means that the sum of the annual dose equivalent to the total body, or to any internal organ, exceeds 4 millirem/year.

ATTACHMENT A – DEFINITIONS

Added Tracer
"Added Tracer" means a non-reactive substance, with measurable characteristics distinctly different from the receiving groundwater, intentionally added to the water applied at a GRRP for the purpose of being a tracer such that the tracer can be readily identified in the groundwater downgradient of the GRRP to determine the underground retention time of the applied water.

Advanced Treated Recycled Water
In this permit, it refers to the treated recycled water produced by the AWTF.

Blended Tertiary Treated Water
In this permit, it refers to the mixture of the advanced treated recycled water and the tertiary treated effluent from the San Jose Creek WRPs. This mixture is also contained in the diversion structure.

Coagulated Wastewater
Oxidized wastewater in which colloidal and finely divided suspended matter have been destabilized and agglomerated upstream from a filter by the addition of suitable floc-forming chemicals.

Conventional Treatment
A treatment chain that utilizes a sedimentation unit process between the coagulation and filtration processes and produces an effluent that meets the definition for disinfected tertiary recycled water.

Diluent Water
"Diluent Water" means water, meeting the diluent requirements of chapter 3, division 4 of Title 22 CCR, used for reducing the recycled municipal wastewater contribution over time.

Disinfected Secondary-2.2
Recycled water that has been oxidized and disinfected so that the median concentration of total coliform bacteria in the disinfected effluent does not exceed a most probable number (MPN) of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed, and the number of coliform organisms does not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30 day period.

Disinfected Tertiary Recycled Water
A filtered and subsequently disinfected wastewater that meets the following criteria:

(a) The filtered wastewater which has been disinfected by either:

(1) A chlorine disinfection process following filtration that provides a contact time (CT, the product of total chlorine residual and modal contact time measured at the same point) value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather design flow; or

(2) A disinfection process that, when combined with the filtration process, has been demonstrated to inactivate and/or remove 99.999 percent of the plaque forming units of F-specific bacteriophage MS2, or polio virus in the wastewater. A virus that is at least as resistant to disinfection as polio virus may be used for purposes of the demonstration.

(b) The median concentration of total coliform bacteria measured in the disinfected effluent does not exceed an MPN of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed and the number of total coliform bacteria does

not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30-day period. No sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters.

Filtered Wastewater
An oxidized wastewater that meets the criteria in subsection (1) or (2):

(1) Has been coagulated and passed through natural undisturbed soils or a bed of filter media pursuant to the following:

a. At a rate that does not exceed 5 gallons per minute per square foot of surface area in mono, dual or mixed media gravity, upflow or pressure filtration systems, or does not exceed 2 gallons per minute per square foot of surface area in travelling automatic backwash filters; and

b. So that the turbidity of the filtered wastewater does not exceed any of the following:

i. An average 2 NTU within a 24-hour period;

ii. 5 NTU more than 5 percent of the time within a 24-hour period; and

iii. 10 NTU at any time.

(2) Has been passed through a microfiltration, ultrafiltration, nanofiltration, or reverse osmosis membrane so that the turbidity of the filtered wastewater does not exceed any of the following:

a. 0.2 NTU more than 5 percent of the time within a 24-hour period; and

b. 0.5 NTU at any time.

F-specific bacteriophage MS2
A strain of a specific type of virus that infects coliform bacteria that is traceable to the American Type Culture Collection (ATCC 15597B1) and is grown on lawns of E. Coli (ATCC 15597).

Groundwater Replenishment Reuse Project or GRRP
"Groundwater Replenishment Reuse Project" or "GRRP" means a project involving the planned use of recycled municipal wastewater that is operated for the purpose of replenishing a groundwater basin designated in the Water Quality Control Plan (as defined in Water Code section 13050(j)) for use as a source of municipal and domestic water supply.

Indicator Compound
"Indicator Compound" means an individual chemical in a GRRP's municipal wastewater that represents the physical, chemical, and biodegradable characteristics of a specific family of trace organic chemicals; is present in concentrations that provide information relative to the environmental fate and transport of those chemicals; may be used to monitor the efficiency of trace organic compounds removal by treatment processes; and provides an indication of treatment process failure.

Intrinsic Tracer
"Intrinsic Tracer" means a substance or attribute present in the recharge water at levels different from the receiving groundwater such that the substance in the water applied at the GRRP can be distinctly and sufficiently detected in the groundwater downgradient of the GRRP to determine the underground retention time of the water.

Maximum Contaminant Level or MCL
The maximum permissible concentration of a contaminant established pursuant to section 116275(c)(1) and (d) of the Health and Safety Code or established by the United States Environmental Protection Agency (USEPA).

Minimum Reporting Level (MRL)
The MRL is the smallest measured concentration of a substance that can be reliably measured by using a given analytical method. It is the "less-than" value reported when an analyte either is not detected or is detected at a concentration less than the MRL.

Modal Contact Time
The amount of time elapsed between the time that a tracer, such as salt or dye, is injected into the effluent at the entrance to a chamber and the time that the highest concentration of the tracer is observed in the effluent from the chamber.

Notification Level or NL
The concentration of a contaminant established by the Department pursuant to section 116455 of the Health and Safety Code.

NTU (Nephelometric Turbidity Unit)
A measurement of turbidity as determined by the ratio of the intensity of light scattered by the sample to the intensity of incident light scattered by the sample to the intensity of incident light as measured by method 2130 B. in Standard Methods for the Examination of Water and Wastewater, 20th ed.; Eaton, A.D., Clesceri, L.S., and Greenberg, A.E., Eds; American Public Health Association: Washington, DC, 1995; p.2-8.

Oxidized Wastewater
Wastewater in which the organic matter has been stabilized, is nonputrescible, and contains dissolved oxygen.

Project Sponsor
"Project Sponsor" means an entity subject to a Regional Water Quality Control Board's (Regional Board's) water recycling requirements for a Groundwater Replenishment Reuse Project (GRRP) and is, in whole or part, responsible for applying to the Regional Board for a permit, obtaining a permit, operation of a GRRP, and complying with the terms and conditions of the permit and the requirements of this Chapter.

Recharge Water
"Recharge Water" means recycled municipal wastewater, or the combination of recycled municipal wastewater and credited diluent water, which is utilized by a GRRP for groundwater replenishment.

Recycled Municipal Wastewater
"Recycled Municipal Wastewater" means recycled water that is the effluent from the treatment of wastewater of municipal origin.

Recycled Municipal Wastewater Contribution or RWC
"Recycled Municipal Wastewater Contribution" or "RWC" means the fraction equal to the quantity of recycled municipal wastewater applied at the GRRP divided by the sum of the quantity of recycled municipal wastewater and credited diluent water.

Spreading Area
"Spreading Area" means a natural or constructed impoundment with a depth equal to or less than its widest surface dimension used by a GRRP to replenish a groundwater basin with recharge water

infiltrating and percolating through a zone that, in the absence of a GRRP, would be an unsaturated zone.

Subsurface Application
"Subsurface Application" means the application of recharge water to a groundwater basin(s) by a means other than surface application.

Surface Application
"Surface Application" means the application of recharge water to a spreading area.

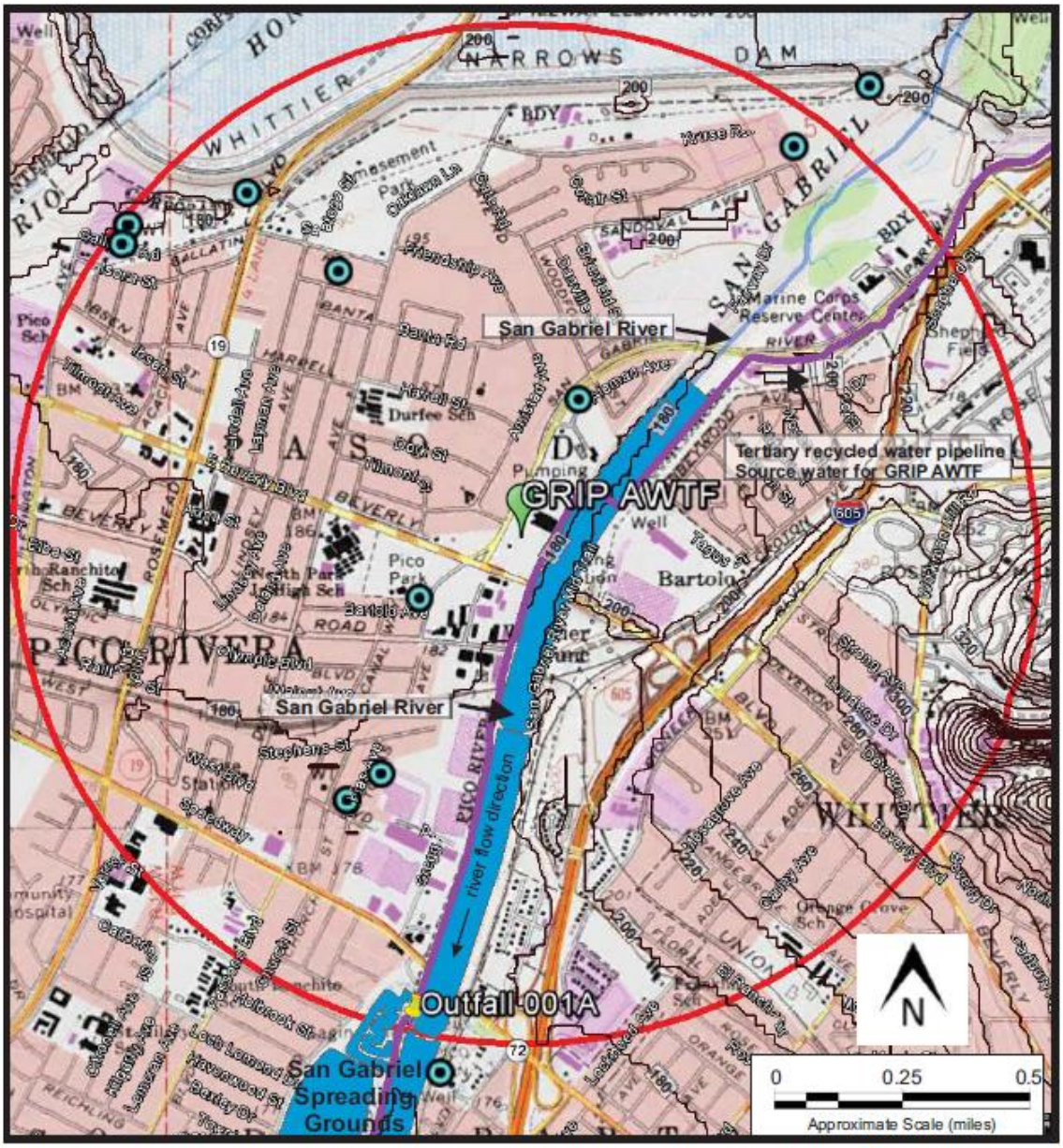
Surrogate Parameter
“Surrogate Parameter” means a measurable physical or chemical property that has been demonstrated to provide a direct correlation with the concentration of an indicator compound, can be used to monitor the efficiency of trace organic compounds removal by a treatment process, and/or provides an indication of a treatment process failure.

Tertiary Treated Effluent
In this permit, it refers to the tertiary treated effluent by the San Jose Creek WRPs (East and/or West facilities) that is conveyed thru the 66-inch conveyance pipeline. This tertiary treated water is the source water (influent) to the GRIP-AWTF.

Total Nitrogen
“Total Nitrogen” means the sum of concentrations of ammonia, nitrite, nitrate, and organic nitrogen-containing compounds, expressed as nitrogen.

Total Organic Carbon or TOC
"Total Organic Carbon” or “TOC” means the concentration of organic carbon present in water.

ATTACHMENT B – MAP OF 1-MILE RADIUS AROUND THE GRIP-AWTF



Map showing location of GRIP Advanced Water Treatment Facility (AWTF) with 1 mile radius, topography, water wells, surface water bodies, and recycled water pipeline.

LAT / LON of GRIP AWTF: 34.009296, -118.069391

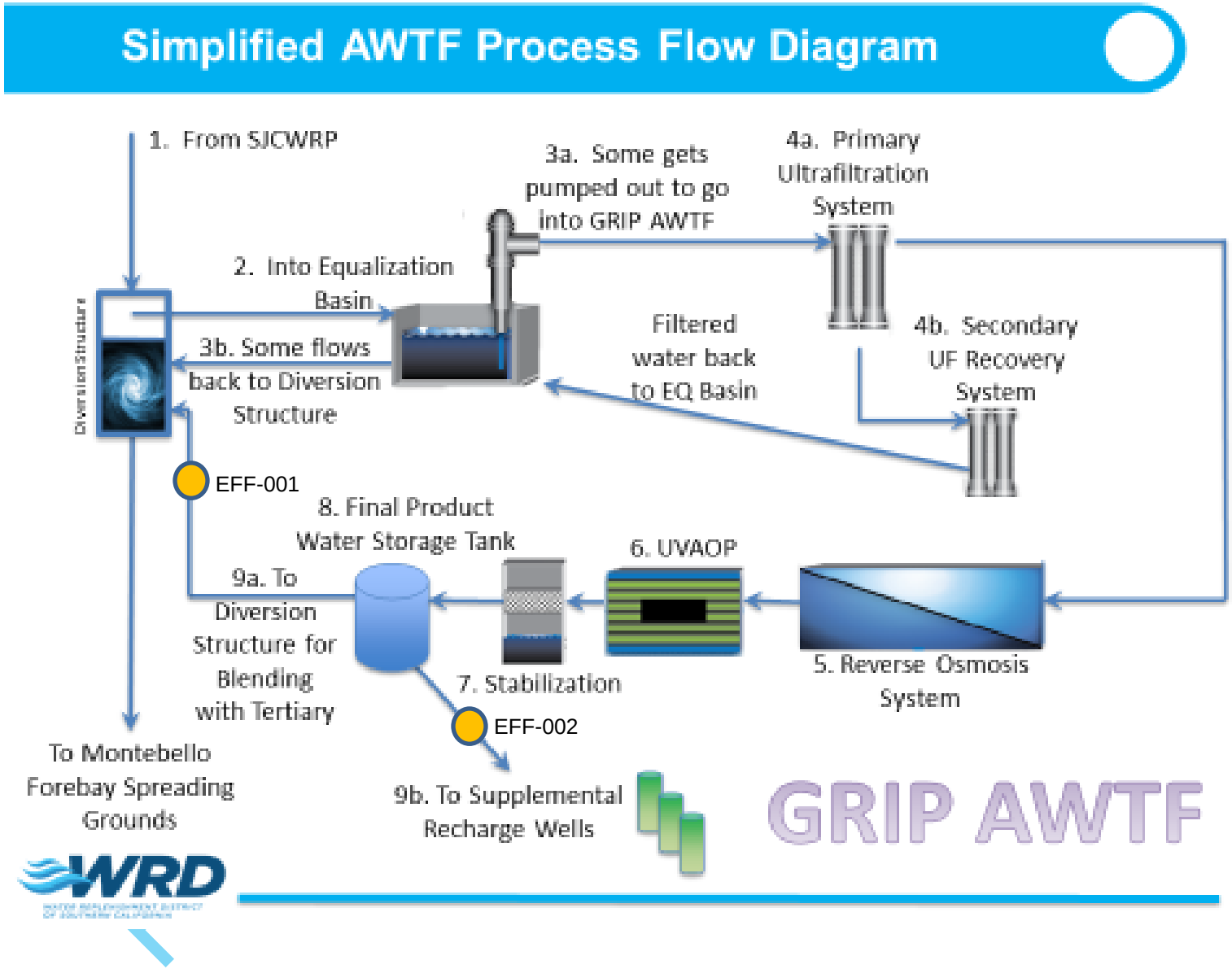
1 mile radius from GRIP AWTF

Drinking Water Well

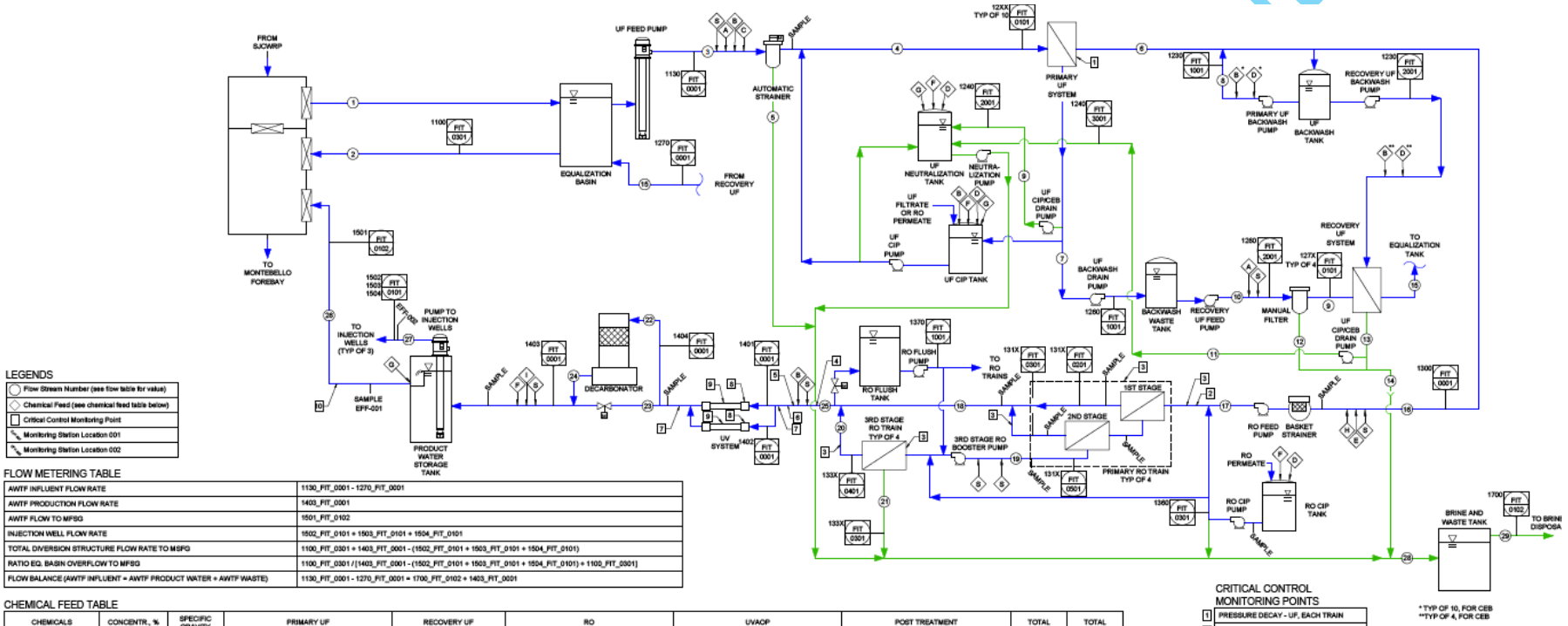
Recycled Water Pipeline

180 Land surface elevation contour, feet mean sea level. 20 foot contour interval

ATTACHMENT C1 – SIMPLIFIED GRIP-AWTF PROCESS FLOW DIAGRAM



ATTACHMENT C2 – GRIP-AWTF FLOW SCHEMATIC



LEGENDS

Flow Stream Number (see flow table for value)
Chemical Feed (see chemical feed table below)
Critical Control Monitoring Point
Monitoring Station Location 001
Monitoring Station Location 002

FLOW METERING TABLE

AWTF INFLUENT FLOW RATE	1130_FIT_0001 - 1270_FIT_0001
AWTF PRODUCTION FLOW RATE	1403_FIT_0001
AWTF FLOW TO MFSG	1501_FIT_0102
INJECTION WELL FLOW RATE	1502_FIT_0101 + 1503_FIT_0101 + 1504_FIT_0101
TOTAL DIVERSION STRUCTURE FLOW RATE TO MSFG	1100_FIT_0301 + 1403_FIT_0001 - (1502_FIT_0101 + 1503_FIT_0101 + 1504_FIT_0101)
RATIO EQ. BASIN OVERFLOW TO MFSG	1100_FIT_0301 / [1403_FIT_0001 - (1502_FIT_0101 + 1503_FIT_0101 + 1504_FIT_0101) + 1100_FIT_0301]
FLOW BALANCE (AWTF INFLUENT = AWTF PRODUCT WATER + AWTF WASTE)	1130_FIT_0001 - 1270_FIT_0001 = 1700_FIT_0102 + 1403_FIT_0001

CRITICAL CONTROL MONITORING POINTS

1	PRESSURE DECAY - UF, EACH TRAIN
2	TOC - RO FEED
3	CONDUCTIVITY - RO, EACH TRAIN
4	TOC, TOTAL NITROGEN - RO PERMEATE
5	UV TRANSMITTANCE
6	pH
7	Free CHLORINE RESIDUAL
8	UV DOSAGE
9	1,4-Dioxane Log Reduction
10	CHLORINE RESIDUAL

* TYP OF 10, FOR CEB
**TYP OF 4, FOR CEB

CHEMICAL FEED TABLE

	CHEMICALS	CONCENTR., %	SPECIFIC GRAVITY	PRIMARY UF			RECOVERY UF		RO			UVAOP			POST TREATMENT			TOTAL	TOTAL
				DOSING RATE, PPM	USAGE, LBS / DAY	USAGE, GPD	USAGE, LBS / DAY	USAGE, GPD	DOSING RATE, PPM	USAGE, LBS / DAY	USAGE GPD	DOSING, PPM	USAGE, LBS / DAY	USAGE, GPD	DOSING, PPM	USAGE, LBS / DAY	USAGE GPD	USAGE, LBS / DAY	USAGE, GPD
A	COAGULANT (FERRIC) IF REQUIRED	40.0%	1.41															0	0
B	SODIUM HYPOCHLORITE	12.5%	1.2	4	4420	441.6	124	12.4				4	3949	394.6				8493	848.6
C	AMMONIA	20.0%	0.9	1	669	89.1												669	89.1
D	CITRIC ACID	50.0%	1.4		5	0.4	5	0.4										10	0.8
E	SULFURIC ACID	93.0%	1.84						98	4420	914.3							4420	914.3
F	SODIUM HYDROXIDE	25.0%	1.3				62	5.7							3	1481	138.6	1543	142.3
G	SODIUM BISULFITE	40.0%	1.3	0.12	44	4.0									4	1234	111.0	1276	115.0
H	SCALE INHIBITOR	100.0%	1.15						4.5	599	62.5							599	62.5
I	CALCIUM HYDROXIDE	35.0%	1.36												47	15842	1461.2	15842	1461.2
	STTP, LB/100gal	100.0%																108	N/A
S	SPARE																		

FLOW TABLE (MGD)

FLOW STREAM	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
STREAM NAME	AWTF INFLUENT	AWTF BYPASS	RAW WATER	PRIMARY UF FEED	STRAINER WASTE	PRIMARY UF FILTRATE	PRIMARY UF WASTE	PRIMARY UF BACKWASH	PRIMARY UF CEB WASTE	RECOVERY UF FEED	RECOVERY UF CEB WASTE	STRAINER WASTE	RECOVERY UF WASTE	COMBINED WASTE	RECOVERY UF FILTRATE	COMBINED FILTRATE	RO FEED	PRIMARY RO PERMEATE	PRIMARY RO CONC.	3RD STAGE RO PERMEATE	3RD STAGE RO CONC.	DECARB INFLUENT	DECARB BYPASS	DECARB EFFLUENT	UVAOP INFLUENT	PRODUCT WATER	PRODUCT WATER TO INJ WELLS	BRINE	BRINE
PHASE 1 DESIGN FLOW	0 TO 120	0 TO 120	16.64	16.63	0.01	16.21	0.859	0.24	0.004	0.859	0.002	0.001	0.050	0.051	0.809	15.97	15.97	13.59	2.38	1.21	1.17	5.57	9.23	5.57	14.80	0 TO 14.80	0 TO 4.5	1.3 TO 2.9	1.2 TO 1.4
PHASE 2 DESIGN FLOW	0 TO 120	0 TO 120	33.28	33.26	0.02	32.41	1.32	0.48	0.008	1.32	0.004	0.002	0.101	0.102	1.22	31.94	31.93	27.18	4.76	2.41	2.35	11.14	18.46	11.14	29.60	0 TO 29.60	0 TO 16	2.6 TO 3.8	2.3 TO 2.9

ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – APPLICABLE TO WASTE DISCHARGE REQUIREMENTS

A. Duty to Comply

The Project Sponsor must comply with all conditions of these waste discharge requirements. A responsible party has been designated in the Order for this project, and is legally bound to maintain the monitoring program and permit. Violations may result in enforcement actions, including Regional Water Board orders or court orders requiring corrective action or imposing civil monetary liability, or in modification or revocation of these waste discharge requirements by the Regional Water Board. (CWC Sections 13261, 13263, 13265, 13268, 13300, 13301, 13304, 13340, 13350). Failure to comply with any waste discharge requirement, monitoring and reporting requirement, or other order or prohibition issued, reissued or amended by the Regional Water Board or State Water Board is a violation of these waste discharge requirements and the Water Code, which can result in the imposition of civil liability. (CWC Section 13350, subdivision (a).)

B. General Prohibition

Neither the treatment nor the discharge of waste shall create a pollution, contamination or nuisance, as defined by Section 13050 of the CWC. In addition, the discharge of waste classified as hazardous, as defined in California Code of Regulations, Title 23, Section 2521, subdivision (a) is also prohibited.

C. Availability

A copy of these waste discharge requirements shall be maintained at the discharge facility and be available at all times to operating personnel. (CWC Section 13263).

D. Change in Ownership

The Project Sponsor must notify the Executive Officer, in writing at least 30 days in advance of any proposed transfer of this Order's responsibility and coverage to a new Project Sponsor containing a specific date for the transfer of this Order's responsibility and coverage between the current Project Sponsor and the new Project Sponsor. This agreement shall include an acknowledgement that the existing Project Sponsor is liable for violation up to the transfer date and that the new Project Sponsor is liable from the transfer date forward. (CWC Sections 13267 and 13263).

E. Change in Discharge

In the event of a material change in the character, location, or volume of a discharge, the Project Sponsor shall file with this Regional Water Board a new Report of Waste Discharge. (CWC Section 13260, subdivision (c)). A material change includes, but is not limited to, the following:

1. Addition of a major industrial waste discharge to a discharge of essentially domestic sewage, or the addition of a new process or product by an industrial facility resulting in a change in the character of the waste.
2. Significant change in disposal method, e.g., change from a land disposal to a direct discharge to water, or change in the method of treatment which would significantly alter the characteristics of the waste.
3. Significant change in the disposal area, e.g., moving the discharge to another drainage area, to a different water body, or to a disposal area significantly removed from the original area potentially causing different water quality or nuisance problems.

4. Increase in flow beyond that specified in the waste discharge requirements.
5. Increase in area or depth to be used for solid waste disposal beyond that specified in the waste discharge requirements. (CCR Title 23 Section 2210).

F. Revision

These waste discharge requirements are subject to review and revision by the Regional Water Board. (CWC Section 13263).

G. Notification

Where a project sponsor becomes aware that it failed to submit any relevant facts in a Report of Waste Discharge or submitted incorrect information in a Report of Waste Discharge or in any report to the Regional Water Board, it shall promptly submit such facts or information. (CWC Sections 13260 and13267).

H. Vested Rights

This Order does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, do not protect a Project Sponsor from his liability under Federal, State or local laws, nor do they create a vested right for the Project sponsor to continue the waste discharge. (CWC Section 13263, subdivision (g)).

I. Severability

Provisions of these waste discharge requirements are severable. If any provision of these requirements is found invalid, the remainder of these requirements shall not be affected. (CWC Section 921).

J. Operation and Maintenance

The Project Sponsor shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Project Sponsor to achieve compliance with conditions of this Order. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this Order. (CWC Section 13263, subdivision (f)).

K. Hazardous Releases Requirement

Except for a discharge which is in compliance with these waste discharge requirements, any person who, without regard to intent or negligence, causes or permits any hazardous substance or sewage to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, shall, as soon as (a) that person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the Office of Emergency Services of the discharge in accordance with the spill reporting provision of the State toxic disaster contingency plan adopted pursuant to Article 3.7 (commencing with Section 8574.7) of Chapter 7 of Division 1 of Title 2 of the Government Code, and immediately notify the State Water Board or the appropriate Regional Water Board of the discharge. This provision does not require reporting of any discharge of less than a reportable quantity as provided for under subdivisions (f) and (g) of Section 13271 of the California Water Code unless the discharge is in violation of a prohibition in the applicable Water Quality Control plan. (CWC Section 13271, subdivision (a)).

L. Oil or Petroleum Releases

Except for a discharge which is in compliance with these waste discharge requirements, any person who without regard to intent or negligence, causes or permits any oil or petroleum product to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any water of the State, shall, as soon as (a) such person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the Office of Emergency Services of the discharge in accordance with the spill reporting provision of the State oil spill contingency plan adopted pursuant to Article 3.5 (commencing with Section 8574.1) of Chapter 7 of Division 1 of Title 2 of the Government Code. This provision does not require reporting of any discharge of less than 42 gallons unless the discharge is also required to be reported pursuant to Section 311 of the Clean Water Act or the discharge is in violation of a prohibition in the applicable Water Quality Control Plan. (CWC Section 13272).

M. Investigations and Inspection

The Project Sponsor shall allow the Regional Water Board, or an authorized representative upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the Project Sponsor's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Order.
2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this Order.
3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order.
4. Sample or monitor at reasonable times, for the purposes of assuring compliance with this Order, or as otherwise authorized by the California Water Code, any substances or parameters at any location. (CWC Section 13267).
5. Except for material determined to be confidential in accordance with applicable law, all reports prepared in accordance with the terms of this Order shall be available for public inspection at the office of the Los Angeles Regional Water Board. Data on waste discharges, water quality, geology, and hydrogeology shall not be considered confidential.

N. Monitoring Program and Devices

The Project Sponsor shall furnish, under penalty of perjury, technical monitoring program reports; such reports shall be submitted in accordance with specifications prepared by the Executive Officer, which specifications are subject to periodic revisions as may be warranted. (CWC Section 13267).

All monitoring instruments and devices used by the discharge to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year, or more frequently, to ensure continued accuracy of the devices. Annually, the Project Sponsor shall submit to the Executive Officer a written statement, signed by a registered professional engineer, certifying that all flow measurement devices have been calibrated and will reliably achieve the accuracy required.

The analysis of any material required pursuant to Division 7 of the Water Code shall be performed by a laboratory that has accreditation or certification pursuant to Article 3 (commencing with Section 100825) of Chapter 4 of Part 1 of Division 101 of the Health and

Safety Code. However, this requirement does not apply to field tests, such as test for color, odor, turbidity, pH, temperature, dissolved oxygen, conductivity, and disinfectant residual chlorine. (California Water Code, Section 13176).

Unless otherwise permitted by the Regional Water Board Executive Officer, all analyses shall be conducted at a laboratory certified for such analyses by the State Water Resources Control Board's Division of Drinking Water. All analyses shall be required to be conducted in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants" (40 CFR Part 136) promulgated by the U.S. Environmental Protection Agency. (CCR Title 23, Section 2230). The Quality Assurance-Quality Control Program must conform to the USEPA Guidelines "Laboratory Documentation Requirements for Data Validation", January 1990, USEPA Region 9) or procedures approved by the Los Angeles Regional Water Quality Control Board.

All quality assurance and quality control (QA/QC) analyses must be run on the same dates when samples were actually analyzed. All QA/QC data shall be reported, along with the sample results to which they apply, including the method, equipment, analytical detection and quantitation limits, the percent recovery, and explanation for any recovery that falls outside the QC limits, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and qualifications of the person(s) performing the analyses. Sample results shall be reported unadjusted for blank results or spike recoveries. In cases where contaminants are detected in QA/QC samples (e.g., field, trip, or lab blanks); the accompanying sample results shall be appropriately flagged.

The Project Sponsor shall make all QA/QC data available for inspection by Regional Board staff and submit the QA/QC documentation with its respective quarterly report. Proper chain of custody procedures must be followed and a copy of that documentation shall be submitted with the quarterly report.

O. Treatment Failure

In an enforcement action, it shall not be a defense for the Project Sponsor that it would have been necessary to halt or to reduce the permitted activity in order to maintain compliance with this Order. Upon reduction, loss, or failure of the treatment facility, the Project Sponsor shall, to the extent necessary to maintain compliance with this Order, control production or all discharges, or both, until the facility is restored or an alternative method of treatment is provided. This provision applies, for example, when the primary source of power of the treatment facility fails, is reduced, or is lost. (CWC Section 13263(f)).

P. Discharge to Navigable Waters

Any person who discharges pollutants or proposes to discharge pollutants to navigable waters of the United States within the jurisdiction of this state or a person who discharges dredged or fill material or proposes to discharge dredged or fill material into navigable waters of the United States within the jurisdiction of this state shall file a report of waste discharge in compliance with the procedures set forth in Water Code section 13260. (California Water Code, Section 13376).

Q. Endangerment to Health and Environment

The Project Sponsor shall report any noncompliance which may endanger health or the environment. Any such information shall be provided verbally to the Executive Officer within 24 hours from the time the Project Sponsor becomes aware of the circumstances. A written submission shall also be provided within five days of the time the Project Sponsor becomes aware of the circumstances. The written submission shall contain a description and times, and if the noncompliance has not been corrected; the anticipated time it is expected to

continue and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Executive Officer, or an authorized representative, may waive the written report on a case-by-case basis if the oral report has been received within 24 hours. The following occurrence(s) must be reported to the Executive Officer within 24 hours:

1. Any bypass from any portion of the treatment facility.
2. Any discharge of treated or untreated wastewater resulting from sewer line breaks, obstruction, surcharge or any other circumstances.
3. Any treatment plant upset which causes the effluent limitations of this order to be exceeded. (CWC Sections 13263 and 13267).

R. Maintenance of Records

The Project Sponsor shall retain records of all monitoring information including all calibration and maintenance records, all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained for a minimum of three years from the date of the sample, measurement, report, or application. This period may be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Water Board Executive Officer.

Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements.
2. The individual(s) who performed the sampling or measurements.
3. The date(s) analyses were performed.
4. The individual(s) who performed the analyses.
5. The analytical techniques or method used.
6. The results of such analyses.

S. Signatory Requirement

1. All application reports or information to be submitted to the Executive Officer shall be signed and certified as follows:
   a. For a corporation – by a principle executive officer or at least the level of vice president.
   b. For a partnership or sole proprietorship – by a general partner or the proprietor, respectively.
   c. For a municipality, state, federal or other public agency – by either a principal executive officer or ranking elected official.
2. A duly authorized representative of a person designated in paragraph (a) of this provision may sign documents if:
   a. The authorization is made in writing by a person described in paragraph (a) of this provision.
   b. The authorization specifies either an individual or position having responsibility for the overall operation of the regulated facility or activity.
   c. The written authorization is submitted to the Executive Officer.

Any person signing a document under this Section shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (CWC sections 13263, 13267, and 13268)."

T. Operator Certification

Supervisors and operators of water recycling treatment plants shall possess a certificate of appropriate grade in accordance with California Code of Regulation, title 23, section 3680. State Water Boards may accept experience in lieu of qualification training (California Code of Regulations, title 23, section 3680). In lieu of a properly certified wastewater treatment plant operator, the State Water Board may approve use of water treatment plant operator of appropriate grade certified by the State Department of Public Health where reclamation is involved. (California Code of Regulations, title, 23, section 3670.2)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP), CI-10318

This Monitoring and Reporting Program is issued by the Regional Water Quality Control Board, Los Angeles Region (Regional Water Board) pursuant to California Water Code (CWC) section 13267(b)(1), which authorizes the Regional Water Board to require the submittal of technical and monitoring reports. It is also issued pursuant to the State Water Board's Recycled Water Policy and 22 CCR § 60320.100 et seq., and § 60320.200 et seq., all of which require monitoring and reporting for recycled water discharges. The reports required by this MRP are necessary to ensure compliance with Waste Discharge Requirements (WDRs) and Water Recycling Requirements (WRRs) Order No. R4-2018-0XXX for the Advanced Water Treatment Facility (AWTF). The Project Sponsor shall implement this MRP on the effective date of this Order. Failure to comply with this MRP could result in the imposition of monetary civil liability pursuant to Division 7 of the California Water Code and other applicable laws.

I. GENERAL MONITORING AND REPORTING REQUIREMENTS

A. The Project Sponsor shall monitor the following according to the manner and frequency specified in this MRP.

1. Influent to the GRIP-AWTF.
2. Feedwater to RO or RO/UVAOP (for Recycled Water Policy CECs and surrogates).
3. Advanced treated recycled water used for injection and surface spreading.
4. Receiving groundwater (in monitoring wells MW-1, MW-2 and MW-3) associated with the GRIP supplemental recharge wells.
5. Receiving groundwater (in six monitoring wells – two compliance wells and four additional wells) associated with surface spreading.
6. Nearest downgradient potable water supply production well to the GRIP supplemental recharge wells (Pico No. 10), WRD will review and evaluate the Title 22 monitoring data collected by Pico Water District for Pico No. 10.

B. Monitoring reports shall include, but are not limited to, the following:

1. Analytical results.
2. Location of each sampling station where representative samples are obtained, including a map, at a scale of 1 inch equals 1,200 feet or less, that clearly identifies the locations of all injection wells, monitoring wells, and production wells.
3. Analytical test methods used and the corresponding minimum reporting levels (MRLs).
4. Name(s) of the laboratory that conducted the analyses.
5. Copy of laboratory certifications by the State Water Resources Control Board, Division of Drinking Water's (DDW) Environmental Laboratory Accreditation Program (ELAP).
6. A summary of quality assurance and control (QA/QC) measures, including documentation of chain of custody.
7. Applicable Maximum Contaminant Levels (MCLs), Notification Levels (NLs), response levels, or DDW conditions or advanced treated recycled water discharge limits.
8. A summary of noncompliance during the monitoring period.

C. The Project Sponsor shall have in place written sampling protocols. For groundwater monitoring, the sampling protocols shall outline the methods and procedures used for measuring water levels; purging wells; collecting samples; decontaminating equipment;

containing, preserving, and shipping samples, and maintaining appropriate documentation. Also, the sampling protocols shall include the procedures for handling, storing, testing, and disposing of purge and decontamination waters generated from the sampling events.

D. The Project Sponsor shall notify this Regional Water Board and DDW by telephone or electronic means within 24 hours of knowledge of any violations of this Order that may endanger human health or the environment. Written confirmation shall be submitted within 5 working days from date of notification. The report shall include, but shall not be limited to the following information, as appropriate:

1. The nature and extent of the violation.
2. The date and time when the violation started, when compliance was achieved, and when injection was suspended and restored, as applicable.
3. The duration of the violation.
4. The cause(s) of the violation.
5. Any corrective and/or remedial actions that have been taken and/or will be taken with a time schedule for implementation to prevent future violations.
6. Any impact of the violation.

E. Samples shall be analyzed using analytical methods described in Title 40 of the Code of Federal Regulations (40 CFR) part 141; or where no methods are specified for a given pollutant, by methods approved by DDW, the Regional Water Board and/or the State Water Board, the Project Sponsor shall select the analytical methods that provide Minimum Reporting Levels (MRLs) lower than the limits prescribed in this Order or as low as possible that will provide reliable data.

F. Analyses for chemical other than those with primary MCLs and SMCLs, ~~For unregulated chemical analyses,~~ the Project Sponsor shall select methods according to the approved OOP based on the following approach:

1. Use the drinking water methods or wastewater methods sufficient to evaluate all water quality objectives and protect all beneficial uses.
2. Use DDW-recommended methods for unregulated chemicals, if available.
3. If there is no DDW-recommended drinking water method for a chemical, and more than a single United States Environmental Protection Agency (USEPA)-approved method is available, use the most sensitive of the USEPA-approved method.
4. If there is no USEPA-approved method for a chemical, and more than one method is available from the scientific literature and commercial laboratory, after consultation with DDW, use the most sensitive method, or:~~.~~
5. If no approved method is available for a specific chemical, the Project Sponsor's laboratory may develop or use its own methods and should provide the analytical methods to DDW for review. Those methods may be used until DDW-recommended or USEPA-approved methods are available.
6. If the only method available for a chemical is for wastewater analysis (e.g. a chemical listed as a priority pollutant only), that chemical will be sampled and analyzed using wastewater methods specified in 40 CFR Part 136. This approach will be used until a DDW-recommended or EPA-approved drinking water method is available.
7. For CECs subject to the Recycled Water Policy, monitoring of advanced treated recycled water and tertiary treated recycled water prior to RO/AOP shall use analytical methods

selected to achieve the Reporting Limits included in the Recycled Water Policy. Any modifications to the published or certified methods shall be reviewed by DDW and subsequently submitted to the Regional Water Board in an updated quality assurance plan.

G. Pursuant to 22 CCR § 60320.204, analyses for contaminants having primary or secondary MCLs shall be performed by laboratories approved to perform such analyses by DDW utilizing DDW-approved drinking water methods. Analyses for constituents other than those having primary or secondary MCLs shall be described in the approved Operation Optimization Plan (OOP).

H. The Project Sponsor shall instruct its laboratories to establish calibration standards so that the MRLs (or its equivalent if there is a different treatment of samples relative to calibration standards) are the lowest calibration standard. At no time shall analytical data derived from extrapolation beyond the lowest point of the calibration curve be used.

I. For regulated constituents, the laboratory conducting analyses shall be certified by ELAP or approved by DDW and the Regional Water Board.

J. Upon request by the Project Sponsor, the Regional Water Board, in consultation with DDW and the State Water Board Quality Assurance Program, may establish MRLs, in any of the following situations:

1. When the pollutant has no established method under 40 CFR part 141.
2. When the method under 40 CFR part 141 for the pollutant has a MRL higher than the limit specified in this Order.
3. When the Project Sponsor agrees to use a test method that is more sensitive than those specified in 40 CFR part 141.

K. Samples shall be analyzed within allowable holding time limits as specified in 40 CFR part 141. All QA/QC analyses shall be run on the same dates that samples are actually analyzed. The Project Sponsor shall retain the QA/QC documentation in its files for three years and make available for inspection and/or submit them when requested by the Regional Water Board or DDW. Proper chain of custody procedures shall be followed, and a copy of this documentation shall be submitted with the quarterly report.

L. Each monitoring report shall contain a separate section titled “Summary of Non-compliance” which discusses the compliance record and the corrective actions taken or planned that may be needed to bring the discharge into full compliance with waste discharge requirements. This section shall clearly list all non-compliance with discharge requirements as well as all excursions of advanced treated recycled water limitations.

M. Compliance with Primary MCLs

Compliance with primary MCLs is based on a running annual average except for total nitrogen, perchlorate, lead, copper, and any other pollutant for which DDW determines should not be based on a running annual average.

1. If the result of the monitoring performed at EFF-001 or EFF-002 exceeds the contaminant’s MCL or action level (for lead or copper), the Project Sponsor shall collect another sample from EFF-001 or EFF-002, within 72 hours of notification of the result and then have it analyzed for the contaminant as confirmation.
    a. For a contaminant whose compliance with its MCL or action level is not based on a running annual average (except for total nitrogen), if the average of the initial and confirmation sample exceeds the contaminant's MCL or action level, or the

confirmation sample is not collected and analyzed pursuant to this subsection, the Project Sponsor shall notify DDW and Regional Water Board within 24 hours and initiate weekly monitoring until four consecutive weekly results are below the contaminant's MCL or action level. If the running four-week average exceeds the contaminant's MCL or action level, the Project Sponsor shall notify DDW and Regional Water Board within 24 hours and, if directed by the DDW or Regional Water Board, suspend application of the advanced treated recycled water.

b. For a contaminant whose compliance with its MCL is based on a running annual average, if the average of the initial and confirmation sample exceeds the contaminant's MCL, or a confirmation sample is not collected and analyzed pursuant to this subsection, the Project Sponsor shall initiate weekly monitoring for the contaminant until the running four-week average no longer exceeds the contaminant's MCL.

   i. If the running four-week average exceeds the contaminant's MCL, the Project Sponsor shall describe the reason(s) for the exceedance and provide a schedule for completion of corrective actions in a report submitted to DDW and Regional Water Board no later than 45 days following the quarter in which the exceedance occurred.

   ii. If the running four-week average exceeds the contaminant's MCL for 16 consecutive weeks, the Project Sponsor shall notify DDW and Regional Water Board within 48 hours of knowledge of the exceedance and, if directed by DDW or Regional Water Board, suspend application of the advanced treated recycled water.

N. Compliance with Secondary MCLs

If the annual average of the monitoring results from EFF-001 or EFF-002 exceeds the contaminant's secondary MCL (or Secondary MCL Upper Limit), the Project Sponsor shall initiate quarterly monitoring of the recycled municipal wastewater for the contaminant. In addition, if the running annual average of quarterly-averaged results from EFF-001 or EFF-002 exceeds a contaminant's secondary MCL or Secondary MCL Upper Limit, the Project Sponsor shall describe the reason(s) for the exceedance and any corrective actions taken. A report shall be submitted to the Regional Water Board no later than 45 days following the quarter in which the exceedance occurred, with a copy concurrently provided to DDW. The annual monitoring may resume if the running annual average of quarterly results does not exceed a contaminant's secondary MCL or Secondary MCL Upper Limit.

O. Compliance with Notification Levels

1. Each quarter, the Project Sponsor shall sample and analyze the advanced treated recycled water at EFF-001 or at EFF-002 until the MFSGs' Order is revised, for DDW-specified chemicals having notification levels (NLs). Refer to Table E-11 and Attachment G for the list of constituents and NLs, respectively.

2. If the result of the monitoring from EFF-001 or EFF-002 exceeds a NL, within 72 hours of notification of the result, the Project Sponsor shall collect another sample and have it analyzed for the contaminant as confirmation. If the average of the initial and confirmation sample from EFF-001 or EFF-002 exceeds the contaminant's NL, or a confirmation sample is not collected and analyzed, the Project Sponsor shall initiate weekly monitoring for the contaminant until the running four-week average no longer exceeds the NL.

i. If the running four-week average exceeds the contaminant's NL, the Project Sponsor shall describe the reason(s) for the exceedance and provide a schedule for completion of corrective actions in a report submitted to DDW and Regional Water Board no later than 45 days following the quarter in which the exceedance occurred.

ii. If the running four-week average exceeds the contaminant's NL for 16 consecutive weeks, the Project Sponsor shall notify DDW and Regional Water Board within 48 hours of knowledge of the exceedance.

P. Compliance with Nitrogen Compounds Control

Compliance with the nitrogen compounds requirements of this section shall be demonstrated in the advanced treated recycled water for both surface spreading and subsurface injection at Monitoring Locations EFF-001 or EFF-002, respectively.

1. Total Nitrogen samples shall be analyzed within 72 hours and the results shall be reported to the Project Sponsor within the same 72 hours if the result of any single sample exceeds 10 mg/L.
2. If the average of the results of two consecutive total nitrogen samples exceeds 10 mg/L, the Project Sponsor shall:
   a. Collect a confirmation sample and notify DDW and the Regional Water Board within 48 hours of being notified by the laboratory.
   b. Investigate the cause for the exceedances and take actions to reduce the total nitrogen concentrations to ensure continued or future exceedances do not occur.
   c. Initiate additional monitoring for nitrogen compounds as described in the approved OOP, including locations in the groundwater basin, to identify elevated concentrations and determine whether such elevated concentrations exceed or may lead to an exceedance of a nitrogen-based MCL.
3. If the average of the results of four consecutive total nitrogen samples taken from EFF-001 or EFF-002 exceeds 10 mg/L, the Project Sponsor shall suspend the surface and/or subsurface application of the advanced treated recycled water. Surface and/or subsurface application shall not resume until corrective actions have been taken and at least two consecutive total nitrogen sampling results are less than 10 mg/L.
4. Following DDW and Regional Water Board approval, the Project Sponsor may initiate reduced monitoring frequencies for total nitrogen, nitrate, and nitrite. The Project Sponsor may apply to the DDW and Regional Water Board for reduced monitoring frequencies for total nitrogen, nitrate, and nitrite if, for the most recent 12 months:
   a. The average of all results did not exceed 5 mg/L total nitrogen.
   b. The average of a result and its confirmation sample (taken within 24 hours of receipt of the initial result) did not exceed 10 mg/L total nitrogen.
   c. If the results of reduced monitoring exceed the total nitrogen concentration of 10 mg/L, the Project Sponsor shall revert to the monitoring frequencies for total nitrogen prior to implementation of the reduced frequencies. Reduced frequency monitoring shall not resume unless the requirements in section I.P.4.a and I.P.4.b are met.

Q. Compliance with Total Organic Carbon

If the advanced treated recycled water limitation for TOC is exceeded based on the 20 week average, the Project Sponsor shall:

1. Immediately suspend the surface and/or subsurface application of the advanced treated recycled water until at least two consecutive results, three days apart, are less than the limit.
2. Notify DDW and the Regional Water Board within seven days of suspending operations.
3. Within 60 days, submit a report to DDW and the Regional Water Board describing the reasons for the exceedance and the corrective actions taken to avoid future exceedances. At a minimum the corrective actions shall include a reduction of the RWC sufficient to comply with the limit, if applicable.

R. If the advanced treated recycled water limitation for TOC is exceeded based on the average of the last four TOC results, the Project Sponsor shall, within 60 days of being notified of the results, submit a report to DDW and the Regional Water Board describing the reasons for the exceedance and the corrective actions taken to avoid future exceedance.

S. For bacterial analyses, sample dilutions shall be performed so the expected range of values is bracketed (for example, with multiple tube fermentation method or membrane filtration method, 2 to 16,000 per 100 ml for total, fecal coliform, and *E. coli*, at a minimum, and 1 to 1000 per 100 ml for *enterococcus*). The detection methods used for each analysis shall be reported with the results of the analyses.

T. Quarterly monitoring for AWTF recycled water and groundwater shall be performed during the months of February, April, August, and October to match the groundwater monitoring months under Order 91-100 to avoid duplication of sampling and monitoring activities. Semiannual monitoring for AWTF recycled water shall be performed during the months of February and August. Semiannual monitoring for groundwater shall be performed during the months of April and October. The monitoring schedule for AWTF recycled water and groundwater is subject to change when Montebello Forebay WDRs Order 91-100 is amended. Should there be instances when monitoring could not be done during these specified months, the Project Sponsor shall conduct the monitoring as soon as it can and state in the monitoring report the reason monitoring could not be conducted during the specified month. Results of quarterly analyses shall be reported in the quarterly monitoring report following the analysis.

U. For CECs subject to the State Water Board Recycled Water Policy as amended January 22, 2013, analytical methods for laboratory analysis of CECs shall be selected to achieve the Reporting Limits presented in Table 1 of Attachment A of the Recycled Water Policy. The analytical methods shall be based on methods published by the USEPA, methods certified by DDW, or peer reviewed and published methods that have been reviewed by DDW, including those published by voluntary consensus standards bodies such as the Standards Methods Committee and the American Society for Testing and Materials International. Any modifications to the published or certified methods shall be reviewed by DDW and subsequently submitted to the Regional Water Board in an updated quality assurance project plan.

II. DDW MONITORING REQUIREMENTS

A. Project Sponsor shall comply with all monitoring requirements specified in Section XIV of the Order, in accordance with the DDW conditional approval letter dated June 6, 2018.

III. MONITORING REQUIREMENTS

A. Monitoring Locations

The Project Sponsor shall establish the following monitoring locations to demonstrate compliance with the recycled water discharge limitations, and other requirements in this Order. Should the need for a change in the sampling station(s) arise in the future, the Project Sponsor shall seek approval of the proposed station by the Executive Officer prior to use.

Table E-1. Monitoring Station Locations

Monitoring Location Name	Monitoring Description Location
INF-001	This sampling point is located before San Jose Creek WRP's tertiary treated effluent enters the UF system of the AWTF. The influent flow rate is taken after the UF feed pump.
EFF-001	This effluent sampling point shall be located downstream of any in-plant return flows and the final disinfection process, prior to discharging to the diversion structure where it blends with the San Jose Creek WRP's tertiary treated effluent.
EFF-002	This effluent sampling point monitors the discharge of the advanced treated recycled water from the AWTF to the Supplemental Recharge Wells and is located in the effluent piping from the Product Water Tank

B. Influent Monitoring

1. Influent monitoring is required to determine compliance with water quality conditions and standards and to assess the AWTF performance.
2. The Project Sponsor shall monitor the influent to the facility at INF-001 described in Table E-1.
3. In addition to the listed parameters in Table E-2 for influent monitoring, the Project Sponsor shall comply with DDW's monitoring requirement as listed in section XIV of the Order.

The following shall constitute the influent monitoring program:

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Total flow[1]	MGD	recorder	continuous[2]

C. Recycled Water Monitoring

1. Recycled water monitoring is required to determine compliance with the permit conditions: (1) identify operational problems and aid in improving facility performance, and (2) provide information on wastewater characteristics and flows for use in interpreting water quality and biological data.
2. The Project Sponsor shall monitor the advanced treated recycled water used for surface spreading ~~and~~ or injection at monitoring locations EFF-001 or EFF-002, respectively. The

[1] This influent flow represents the total flow that will be treated by the AWTF.
[2] For those constituents that are continuously monitored, monthly minimum and maximum, and daily average values shall be reported.

monitoring locations are described in Table E-1. The parameters to be monitored and monitoring frequencies are listed in Tables E-3 to E-12. However, the Project Sponsor may collect only one representative sample from either EFF-001 or EFF-002 to comply with the surface and injection monitoring requirements. This is justified because the advanced treated recycled water used for surface spreading and injection is the same water that came from the Product Water Tank. The only difference is that the advanced treated recycled water used for surface spreading at EFF-001 undergoes dechlorination where sodium bisulfite is added to the advanced treated recycled water.

3. Per the DDW recommendation letter, during the first year of operation the Project Sponsor shall monitor the advanced treated recycled water at monitoring locations EFF-001 or EFF-002 monthly for the constituents specified in Tables E-4 to E-6 and Tables E-8 to E-12. The Project Sponsor may apply for reduced monitoring when there is no exceedance of MCLs or NLs.

4. In addition to the listed parameters in Tables E-3 through E-12 for effluent and any intermediate monitoring, the Project Sponsor shall comply with DDW's monitoring requirements as listed in Section XIV of the Order.

Table E-3. Advanced Treated Recycled Water Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Total blended tertiary treated water	MGD	calculated	daily
Total advanced treated recycled water	MGD	recorder	continuous[3]
Turbidity (after UF before RO)	NTU	recorder	continuous[3]
Total Residual Chlorine	mg/L	recorder	continuous[3,4]
Total coliform	MPN/100 mL	grab	daily[5]
TOC[6]	mg/L	24-hour composite or grab	weekly
pH	pH units	recorder	continuous[3]
Total Dissolved Solids	mg/L	24-hour composite or grab	quarterly
Sulfate	mg/L	24-hour composite or grab	quarterly
Chloride	mg/L	24-hour composite or grab	quarterly
Boron	mg/L	24-hour composite or grab	quarterly

[3] For those constituents that are continuously monitored, the monthly minimum and maximum, and daily average values shall be reported.

[4] Continuous real-time monitoring shall be recorded at a point after the advanced treated recycled water has passed through the final chlorine contact basin or the AOP.

[5] Daily shall mean seven days per week unless otherwise specified.

[6] Monitoring results for advanced treated recycled water shall be reported as a single result and as a 20-week running average of all TOC results and the average of the last four TOC results. The daily average and maximum TOC reading and the percent of time that the TOC is greater than 0.5 mg/L shall be reported.

Parameter	Units	Sample Type	Minimum Sampling Frequency
Total nitrogen[7]	mg/L	24-hour composite or grab	twice/week
Nitrate-N (as nitrogen)[7]	mg/L	24-hour composite or grab	twice/week
Nitrite-N (as nitrogen)[7]	mg/L	24-hour composite or grab	twice/week
Nitrate plus Nitrite (as nitrogen)[7]	mg/L	24-hour composite or grab	twice/week
Copper	mg/L	24-hour composite or grab	monthly / quarterly[8]
Lead	mg/L	24-hour composite or grab	monthly / quarterly[8]

Table E-4. Inorganic Chemicals

Constituent	Units	Sampled Type	Minimum Sampling Frequency[8]
Aluminum	mg/L	24-hour composite or grab	monthly / quarterly
Antimony	mg/L	24-hour composite or grab	monthly / quarterly
Arsenic	mg/L	24-hour composite or grab	monthly / quarterly
Asbestos	MFL	24-hour composite or grab	monthly / quarterly
Barium	mg/L	24-hour composite or grab	monthly / quarterly
Beryllium	mg/L	24-hour composite or grab	monthly / quarterly
Cadmium	mg/L	24-hour composite or grab	monthly / quarterly
Total Chromium	mg/L	24-hour composite or grab	monthly / quarterly
Chromium VI	mg/L	24-hour composite or grab	monthly / quarterly
Cyanide	mg/L	24-hour composite or grab	monthly / quarterly
Fluoride	mg/L	24-hour composite or grab	monthly / quarterly
Mercury	mg/L	24-hour composite or grab	monthly / quarterly
Nickel	mg/L	24-hour composite or grab	monthly / quarterly
Perchlorate	mg/L	24-hour composite or grab	monthly / quarterly
Selenium	mg/L	24-hour composite or grab	monthly / quarterly

[7] Total nitrogen includes nitrate-N, nitrite-N, ammonia-N, and organic-N. The Project Sponsor may request for reduced monitoring frequency after first year of operation.

[8] Per DDW recommendation letter and section 60320.201(i), monitor monthly for the first year of operation and reduce to quarterly with the approval of DDW and the Regional Water Board Executive Officer.

Constituent	Units	Sampled Type	Minimum Sampling Frequency[8]
Thallium	mg/L	24-hour composite or grab	monthly / quarterly

Table E-5. Organic Chemicals (Volatile Organic Chemicals (VOCs))

Constituent	Units	Sampled Type	Minimum Sampling Frequency[8]
Benzene	mg/L	24-hour composite or grab	monthly / quarterly
Carbon Tetrachloride	mg/L	24-hour composite or grab	monthly / quarterly
1,2-Dichlorobenzene	mg/L	24-hour composite or grab	monthly / quarterly
1,4-Dichlorobenzene	mg/L	24-hour composite or grab	monthly / quarterly
1,1-Dichloroethane	mg/L	24-hour composite or grab	monthly / quarterly
1,2-Dichloroethane (1,2-DCA)	mg/L	24-hour composite or grab	monthly / quarterly
1,1-Dichloroethylene (1,1-DCE)	mg/L	24-hour composite or grab	monthly / quarterly
cis-1,2-Dichloroethylene	mg/L	24-hour composite or grab	monthly / quarterly
trans-1,2-Dichloroethylene	mg/L	24-hour composite or grab	monthly / quarterly
Dichloromethane	mg/L	24-hour composite or grab	monthly / quarterly
1,2-Dichloropropane	mg/L	24-hour composite or grab	monthly / quarterly
1,3-Dichloropropene	mg/L	24-hour composite or grab	monthly / quarterly
Ethylbenzene	mg/L	24-hour composite or grab	monthly / quarterly
Methyl-tert-butyl-ether (MTBE)	mg/L	24-hour composite or grab	monthly / quarterly
Monochlorobenzene	mg/L	24-hour composite or grab	monthly / quarterly
Styrene	mg/L	24-hour composite or grab	monthly / quarterly
1,1,2,2-Tetrachloroethane	mg/L	24-hour composite or grab	monthly / quarterly
Tetrachloroethylene (PCE)	mg/L	24-hour composite or grab	monthly / quarterly
Toluene	mg/L	24-hour composite or grab	monthly / quarterly
1,2,4-Trichlorobenzene	mg/L	24-hour composite or grab	monthly / quarterly
1,1,1-Trichloroethane	mg/L	24-hour composite or grab	monthly / quarterly
1,1,2-Trichloroethane	mg/L	24-hour composite or grab	monthly / quarterly

Constituent	Units	Sampled Type	Minimum Sampling Frequency[8]
Trichloroethylene (TCE)	mg/L	24-hour composite or grab	monthly / quarterly
Trichlorofluoromethane	mg/L	24-hour composite or grab	monthly / quarterly
1,1,2-Trichloro-1,2,2-Trifluoroethane	mg/L	24-hour composite or grab	monthly / quarterly
Vinyl Chloride	mg/L	24-hour composite or grab	monthly / quarterly
Xylenes (m,p)	mg/L	24-hour composite or grab	monthly / quarterly

Table E-6. Organic Chemicals (Non-Volatile Synthetic Organic Chemicals (SOCs))

Constituent	Units	Sampled Type	Minimum Sampling Frequency[8]
Alachlor	mg/L	24-hour composite or grab	monthly / quarterly
Atrazine	mg/L	24-hour composite or grab	monthly / quarterly
Bentazon	mg/L	24-hour composite or grab	monthly / quarterly
Benzo(a)pyrene	mg/L	24-hour composite or grab	monthly / quarterly
Carbofuran	mg/L	24-hour composite or grab	monthly / quarterly
Chlordane	mg/L	24-hour composite or grab	monthly / quarterly
2,4-Dichlorophenoxyacetic acid (2,4-D)	mg/L	24-hour composite or grab	monthly / quarterly
Dalapon	mg/L	24-hour composite or grab	monthly / quarterly
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	24-hour composite or grab	monthly / quarterly
Di(2-ethylhexyl)adipate	mg/L	24-hour composite or grab	monthly / quarterly
Di(2-ethylhexyl)phthalate (DEHP)	mg/L	24-hour composite or grab	monthly / quarterly
Dinoseb	mg/L	24-hour composite or grab	monthly / quarterly
Diquat	mg/L	24-hour composite or grab	monthly / quarterly
Endothall	mg/L	24-hour composite or grab	monthly / quarterly
Endrin	mg/L	24-hour composite or grab	monthly / quarterly
Ethylene Dibromide (EDB)	mg/L	24-hour composite or grab	monthly / quarterly
Glyphosate	mg/L	24-hour composite or grab	monthly / quarterly
Heptachlor	mg/L	24-hour composite or grab	monthly / quarterly

Constituent	Units	Sampled Type	Minimum Sampling Frequency[8]
Heptachlor epoxide	mg/L	24-hour composite or grab	monthly / quarterly
Hexachlorobenzene	mg/L	24-hour composite or grab	monthly / quarterly
Hexachlorocyclopentadiene	mg/L	24-hour composite or grab	monthly / quarterly
Gamma BHC (Lindane)	mg/L	24-hour composite or grab	monthly / quarterly
Methoxychlor	mg/L	24-hour composite or grab	monthly / quarterly
Molinate	mg/L	24-hour composite or grab	monthly / quarterly
Oxamyl	mg/L	24-hour composite or grab	monthly / quarterly
Pentachlorophenol	mg/L	24-hour composite or grab	monthly / quarterly
Picloram	mg/L	24-hour composite or grab	monthly / quarterly
Polychlorinated Biphenyls (PCBs)	mg/L	24-hour composite or grab	monthly / quarterly
Simazine	mg/L	24-hour composite or grab	monthly / quarterly
Thiobencarb	mg/L	24-hour composite or grab	monthly / quarterly
Toxaphene	mg/L	24-hour composite or grab	monthly / quarterly
1,2,3-Trichloropropane	mg/L	24-hour composite or grab	monthly / quarterly
2,3,7,8-TCDD (Dioxin)	mg/L	24-hour composite or grab	monthly / quarterly
2,4,5-TP (Silvex)	mg/L	24-hour composite or grab	monthly / quarterly

Table E-~~8.~~7. Disinfection Byproducts

Constituent	Units	Sampled Type	Minimum Sampling Frequency[8]
Total trihalomethanes (TTHM)	mg/L	24-hour composite or grab	monthly / quarterly
Bromodichloromethane	mg/L	24-hour composite or grab	monthly / quarterly
Bromoform	mg/L	24-hour composite or grab	monthly / quarterly
Chloroform	mg/L	24-hour composite or grab	monthly / quarterly
Dibromochloromethane	mg/L	24-hour composite or grab	monthly / quarterly
Haloacetic acids (five) (HAA5)	mg/L	24-hour composite or grab	monthly / quarterly
Monochloroacetic Acid	mg/L	24-hour composite or grab	monthly / quarterly

Constituent	Units	Sampled Type	Minimum Sampling Frequency[8]
Dichloroacetic Acid	mg/L	24-hour composite or grab	monthly / quarterly
Trichloroacetic Acid	mg/L	24-hour composite or grab	monthly / quarterly
Monobromoacetic Acid	mg/L	24-hour composite or grab	monthly / quarterly
Dibromoacetic Acid	mg/L	24-hour composite or grab	monthly / quarterly
Bromate	mg/L	24-hour composite or grab	monthly / quarterly
Chlorite	mg/L	24-hour composite or grab	monthly / quarterly

Table E-~~9.~~8. Radioactivity

Constituent	Units	Sampled Type	Minimum Sampling Frequency[8]
Combined Radium-226 and Radium-228	pCi/L	24-hour composite or grab	monthly / quarterly
Gross Alpha particle activity (excluding radon and uranium)	pCi/L	24-hour composite or grab	monthly / quarterly
Uranium	pCi/L	24-hour composite or grab	monthly / quarterly
Gross Beta/photon emitters[9]	millirem/yr	24-hour composite or grab	monthly / quarterly
Strontium-90	pCi/L	24-hour composite or grab	monthly / quarterly
Tritium	pCi/L	24-hour composite or grab	monthly / quarterly

Table E-~~10.~~9. General Physical and General Minerals

Constituent	Units	Sampled Type	Minimum Sampling Frequency
Calcium	µg/L	24-hour composite or grab	quarterly
Potassium	µg/L	24-hour composite or grab	quarterly
Sodium	µg/L	24-hour composite or grab	quarterly
Total hardness	µg/L	24-hour composite or grab	quarterly

[9] If the results of testing for all beta and photon emitters is less than or equal to 50 pCi/L, the facility is in compliance and the value shall be reported as <4 millirem/year. If the test results for all beta and photon emitters are greater than 50 pCi/L, the Permittee must have the samples further analyzed for the *individual* nuclides. If the sum of the fractions of the detected nuclides is <4 millirem/year, the facility is in compliance. The procedures for calculating the sum of fractions is presented in the Compliance Determination, section XIX.A.

Table E-10. Secondary MCLs

Constituent	Units	Sampled Type	Minimum Sampling Frequency
Color	ACU~~unit~~s	24-hour composite or grab	yearly
Foaming agents (MBAS)	mg/L	24-hour composite or grab	yearly
Iron	mg/L	24-hour composite or grab	yearly
Manganese	mg/L	24-hour composite or grab	yearly
Methyl-tert-butyl ether (MTBE)	mg/L	24-hour composite or grab	yearly
Odor - Threshold	TON~~units~~	24-hour composite or grab	yearly
Silver	mg/L	24-hour composite or grab	yearly
Zinc	mg/L	24-hour composite or grab	yearly

Table E-11. Constituents with Notifications Levels

Constituent	Units	Sample Type	Minimum Sampling Frequency[10]
n-butylbenzene	µg/L	24-hour composite or grab	monthly / quarterly
sec-butylbenzene	µg/L	24-hour composite or grab	monthly / quarterly
tert-butylbenzene	µg/L	24-hour composite or grab	monthly / quarterly
Carbon Disulfide	µg/L	24-hour composite or grab	monthly / quarterly
Chlorate	µg/L	24-hour composite or grab	monthly / quarterly
2-chlorotoluene	µg/L	24-hour composite or grab	monthly / quarterly
4-chlorotoluene	µg/L	24-hour composite or grab	monthly / quarterly
Diazinon	µg/L	24-hour composite or grab	monthly / quarterly
Dichlorofluoromethane (Freon 12)	µg/L	24-hour composite or grab	monthly / quarterly
1,4-dioxane	µg/L	24-hour composite or grab	monthly / quarterly
Ethylene Glycol	µg/L	24-hour composite or grab	monthly / quarterly
Formaldehyde	µg/L	24-hour composite or grab	monthly / quarterly
HMX	µg/L	24-hour composite or grab	monthly / quarterly

[10] These constituents shall be monitored monthly for the first 12 consecutive months. If during that time the NL is not exceeded, the monitoring frequency may be reduced to quarterly upon approval by DDW and the Regional Water Board Executive Officer. (Title 22, Section 60320.220)

Constituent	Units	Sample Type	Minimum Sampling Frequency[10]
Isopropylbenzene	µg/L	24-hour composite or grab	monthly / quarterly
Manganese	µg/L	24-hour composite or grab	monthly / quarterly
Methyl Isobutyl Ketone (MIBK)	µg/L	24-hour composite or grab	monthly / quarterly
Naphthalene	µg/L	24-hour composite or grab	monthly / quarterly
N-Nitrosodiethylamine (NDEA)	µg/L	24-hour composite or grab	monthly / quarterly
N-Nitrosodimethylamine (NDMA)	µg/L	24-hour composite or grab	monthly / quarterly
N-Nitrosodi-n-propylamine (NDPA)	µg/L	24-hour composite or grab	monthly / quarterly
Perfluorooctanoic acid (PFOA)	µg/L	24-hour composite or grab	monthly / quarterly
Perfluorooctanesulfonic acid (PFOS)	µg/L	24-hour composite or grab	monthly / quarterly
Propachlor	µg/L	24-hour composite or grab	monthly / quarterly
N-propylbenzene	µg/L	24-hour composite or grab	monthly / quarterly
RDX	µg/L	24-hour composite or grab	monthly / quarterly
Tertiary Butyl Alcohol (TBA)	µg/L	24-hour composite or grab	monthly / quarterly
1,2,4-Trimethylbenzene	µg/L	24-hour composite or grab	monthly / quarterly
1,3,5-Trimethylbenzene	µg/L	24-hour composite or grab	monthly / quarterly
2,4,6-Trinitrotoluene (TNT)	µg/L	24-hour composite or grab	monthly / quarterly
Vanadium	µg/L	24-hour composite or grab	monthly / quarterly

If a result exceeds a NL, within 72 hours of notification of the result a project sponsor shall collect another sample and have it analyzed for the contaminant as confirmation. If the average of the initial and confirmation sample exceeds the contaminant's NL, or a confirmation sample is not collected and analyzed pursuant to this subsection, the Project Sponsor shall initiate weekly monitoring for the contaminant until the running four-week average no longer exceeds the NL.

a. If the running four-week average exceeds the contaminant's NL, a project sponsor shall describe the reason(s) for the exceedance and provide a schedule for completion of corrective actions in a report submitted to the Regional Water Board no later than 45 days following the quarter in which the exceedance occurred, with a copy concurrently provided to the DDW.

b. If the running four-week average exceeds the contaminant's NL for sixteen consecutive weeks, a project sponsor shall notify the DDW and Regional Water Board within 48 hours of knowledge of the exceedance.

A project sponsor may reduce monitoring for the chemicals in this section to once each year following DDW approval based on the DDW's review of the most recent two years of results of the monitoring performed pursuant to this section.

Table E-12. Remaining Priority Toxic Pollutants

Constituent	Units	Sample Type	Minimum Sampling Frequency
Acenaphthene	µg/L	24-hour composite or grab	quarterly/annually[11]
Acrolein	µg/L	24-hour composite or grab	quarterly/annually[11]
Acrylonitrile	µg/L	24-hour composite or grab	quarterly/annually[11]
Benzidine	µg/L	24-hour composite or grab	quarterly/annually[11]
Chlorobenzene	µg/L	24-hour composite or grab	quarterly
Hexachloroethane	µg/L	24-hour composite or grab	quarterly/annually[11]
Chloroethane	µg/L	24-hour composite or grab	quarterly
Bis(2-chloroethyl) ether	µg/L	24-hour composite or grab	quarterly/annually[11]
2-chloroethyl vinyl ether	µg/L	24-hour composite or grab	quarterly/annually[11]
2-chloronaphthalene	µg/L	24-hour composite or grab	quarterly
2,4,6-trichlorophenol	µg/L	24-hour composite or grab	quarterly
Parachlorometa cresol	µg/L	24-hour composite or grab	quarterly/annually[11]
2-chlorophenol	µg/L	24-hour composite or grab	quarterly/annually[11]
1,3-dichlorobenzene	µg/L	24-hour composite or grab	quarterly
3,3'-dichlorobenzidine	µg/L	24-hour composite or grab	quarterly/annually[11]
2,4-dichlorophenol	µg/L	24-hour composite or grab	quarterly/annually[11]
2,4-dimethylphenol	µg/L	24-hour composite or grab	quarterly/annually[11]
2,4-dinitrotoluene	µg/L	24-hour composite or grab	quarterly/annually[11]
2,6-dinitrotoluene	µg/L	24-hour composite or grab	quarterly/annually[11]
1,2-diphenylhydrazine	µg/L	24-hour composite or grab	quarterly/annually[11]
Fluoranthene	µg/L	24-hour composite or grab	quarterly/annually[11]

[11] Per Title 22, Section 60320.220, ~~The Project Sponsor may request for reduced~~ monitoring frequency may be reduced to annually subject to ~~after~~ the review of the most recent two ~~first~~ years of operational data ~~for~~and approval by DDW and the Regional Water Board Executive Officer.

Constituent	Units	Sample Type	Minimum Sampling Frequency
4-chlorophenyl phenyl ether	µg/L	24-hour composite or grab	quarterly/annually[11]
4-bromophenyl phenyl ether	µg/L	24-hour composite or grab	quarterly/annually[11]
Bis(2-chloroisopropyl) ether	µg/L	24-hour composite or grab	quarterly/annually[11]
Bis(2-chlorethoxy) methane	µg/L	24-hour composite or grab	quarterly/annually[11]
Methyl chloride (dichloromethane)	µg/L	24-hour composite or grab	quarterly
Methyl bromide (bromomethane)	µg/L	24-hour composite or grab	quarterly
Hexachlorobutadiene	µg/L	24-hour composite or grab	quarterly/annually[11]
Isophorone	µg/L	24-hour composite or grab	quarterly/annually[11]
Nitrobenzene	µg/L	24-hour composite or grab	quarterly/annually[11]
2-nitrophenol	µg/L	24-hour composite or grab	quarterly/annually[11]
4-nitrophenol	µg/L	24-hour composite or grab	quarterly/annually[11]
2,4-dinitrophenol	µg/L	24-hour composite or grab	quarterly/annually[11]
4,6-dinitro-o-cresol	µg/L	24-hour composite or grab	quarterly/annually[11]
N-nitrosodiphenylamine	µg/L	24-hour composite or grab	quarterly/annually[11]
Phenol	µg/L	24-hour composite or grab	quarterly
Butyl benzyl phthalate	µg/L	24-hour composite or grab	quarterly/annually[11]
Di-n-butyl phthalate	µg/L	24-hour composite or grab	quarterly/annually[11]
Di-n-octyl phthalate	µg/L	24-hour composite or grab	quarterly/annually[11]
Diethyl phthalate	µg/L	24-hour composite or grab	quarterly/annually[11]
Dimethyl phthalate	µg/L	24-hour composite or grab	quarterly/annually[11]
Benzo(a) anthracene	µg/L	24-hour composite or grab	quarterly/annually[11]
Benzo(b) fluoranthene	µg/L	24-hour composite or grab	quarterly/annually[11]
Benzo(k) fluoranthene	µg/L	24-hour composite or grab	quarterly/annually[11]
Chrysene	µg/L	24-hour composite or grab	quarterly/annually[11]
Acenaphthylene	µg/L	24-hour composite or grab	quarterly/annually[11]
Anthracene	µg/L	24-hour composite or grab	quarterly/annually[11]

Constituent	Units	Sample Type	Minimum Sampling Frequency
Benzo(ghi) perylene	µg/L	24-hour composite or grab	quarterly/annually[11]
Fluorene	µg/L	24-hour composite or grab	quarterly
Phenanthrene	µg/L	24-hour composite or grab	quarterly
Dibenzo(a,h)anthracene	µg/L	24-hour composite or grab	quarterly/annually[11]
Indeno(1,2,3-c,d) pyrene	µg/L	24-hour composite or grab	quarterly/annually[11]
Pyrene	µg/L	24-hour composite or grab	quarterly/annually[11]
Aldrin	µg/L	24-hour composite or grab	quarterly
Dieldrin	µg/L	24-hour composite or grab	quarterly
4,4'-DDT	µg/L	24-hour composite or grab	quarterly
4,4'-DDE	µg/L	24-hour composite or grab	quarterly
4,4'-DDD	µg/L	24-hour composite or grab	quarterly
Alpha-endosulfan	µg/L	24-hour composite or grab	quarterly/annually[11]
Beta-endosulfan	µg/L	24-hour composite or grab	quarterly/annually[11]
Endosulfan sulfate	µg/L	24-hour composite or grab	quarterly/annually[11]
Endrin aldehyde	µg/L	24-hour composite or grab	quarterly/annually[11]
Alpha-BHC	µg/L	24-hour composite or grab	quarterly
Beta-BHC	µg/L	24-hour composite or grab	quarterly
Delta-BHC	µg/L	24-hour composite or grab	quarterly

5. **Constituents of Emerging Concern (CECs) Monitoring**

a. The following CECs monitoring requirements are consistent with the Recycled Water Policy, Resolution 2013-0003, adopted by the State Water Board on January 22, 2013. The CECs monitoring in this Order is also consistent with the recommendations from DDW. Compliance with CECs will be in the advanced treated recycled water at the GRIP AWTF facility prior to subsurface application ~~and~~ or prior to blending with tertiary treated recycled water for surface application.

b. The Project Sponsor shall monitor the two groundwater monitoring wells MW-1612T and 2909Y and the advanced treated recycled water for CECs as listed in Table E-13 and Table E-14, respectively.

c. The analytical methods for laboratory analysis of CECs shall be selected to achieve the reporting limits presented in Tables E-13 and E-14. The analytical methods shall

be based on methods published by the United States Environmental Protection Agency, methods certified by DDW, or peer reviewed and published methods that have been reviewed by DDW, including those published by voluntary consensus standards bodies such as the Standards Methods Committee and the American Society for Testing and Materials International. Any modifications to the published or certified methods shall be reviewed by DDW and subsequently submitted to the Regional Water Board in an updated quality assurance project plan.

d. The Project Sponsor shall develop a quality assurance project plan that includes the appropriate number of field blanks, laboratory blanks, replicate samples, and matrix spikes. Quality assurance and quality control measures shall be used for both collection of samples and laboratory analysis work.

e. The effectiveness of a treatment process to remove CECs shall be evaluated by determining the removal percentages for performance indicator CECs and surrogates. The removal percentages shall be reported in addition to the measured concentrations.

f. The removal percentage shall be calculated based on the following formula:

Removal Percentage = $([X_{in} – X_{out}]/X_{in})*100$

X_{in} = Concentration in recycled water prior to a treatment process

X_{out} = Concentration in recycled water after a treatment process

g. The removal percentages for the surrogates shall be determined based on the daily averages for electrical conductivity and weekly values for TOC and included in the quarterly compliance monitoring reports.

h. The removal percentages for the performance indicator CECs shall be included in the Annual Summary Report.

6. For the purposes of monitoring the CECs in the groundwater, MW-1612T and 2909Y shall be monitored at the frequency stated in the table below. The data gathered by this monitoring will be used to establish a CEC baseline in the groundwater. This monitoring requirement will be superseded once the Montebello Forebay permit is renewed.

Table E-13. CECs ~~T~~to ~~B~~be Monitored at Groundwater Wells

Constituent	Relevance/ Indicator Type	Sample Type	Minimum Sampling Frequency	Reporting Limit (µg/L)	MW-1612T and 2909Y
17β-estradiol	Health	grab	annually[12]	0.001	X
Caffeine	Health & Performance	grab	annually[12]	0.05	X
N-Nitroso dimethylamnine (NDMA)	Health & Performance	grab	quarterly[12]	0.002	X
Triclosan	Health	grab	annually[12]	0.05	X

[12] Baseline monitoring will be conducted for three years to determine the appropriate frequency for standard operation monitoring.

Constituent	Relevance/ Indicator Type	Sample Type	Minimum Sampling Frequency	Reporting Limit (µg/L)	MW-1612T and 2909Y
Gemfibrozil	Performance	grab	semiannually[12]	0.01	X
Iopromide	Performance	grab	semiannually[12]	0.05	X
N,N-Diethyl-metatoluamide (DEET)	Performance	grab	semiannually[12]	0.05	X
Sucralose	Performance	grab	quarterly[12]	0.1	X

7. For groundwater recharge reuse using subsurface application, the removal percentage shall be determined by comparing recycled water quality before treatment by RO/AOPs and after treatment prior to release to the aquifer.

Table E-14. CECs ~~T~~to ~~B~~be Monitored (Surface and Subsurface Application)

Constituent	Relevance/ Indicator Type	Sample Type	Minimum Sampling Frequency	Reporting Limit (µg/L)	Monitoring Locations		
					Prior to RO	Post RO/ Pre AOP	Following treatment prior to release to the aquifer or blending with tertiary treated recycled water
17β-estradiol	Health	grab	quarterly[13]	0.001			X
Triclosan	Health	grab	quarterly[13]	0.05			X
Caffeine	Health & Performance	grab	quarterly[13]	0.05	X		X
NDMA[14]	Health & Performance	grab	monthly[13]	0.002		X	X
~~Gemfibrosil~~Gemfibrozil	Performance	grab	quarterly[13]	0.01	X		X
Iopromide	Performance	grab	quarterly[13]	0.05	X		X
DEET	Performance	grab	quarterly[13]	0.05	X		X

[13] Baseline monitoring will be conducted for three years to determine the appropriate frequency for standard operation monitoring. Sampling frequency may be reduced after one year of sampling upon approval by DDW and Regional Water Board Executive Officer.

[14] DDW may require additional monitoring, if warranted, to capture individual unit process performance. The reduction in monitoring frequency shall be addressed in the approved OOP. (Refer to DDW Specifications and Requirements section XIV.M.6).

Constituent	Relevance/ Indicator Type	Sample Type	Minimum Sampling Frequency	Reporting Limit (µg/L)	Monitoring Locations		
					Prior to RO	Post RO/ Pre AOP	Following treatment prior to release to the aquifer or blending with tertiary treated recycled water
Sucralose[14]	Performance	grab	monthly[13]	0.1	X	X	

Table E-15. Surrogates ~~T~~to ~~b~~Be Monitored (Subsurface Application)

Constituent	Sample Type	Minimum Sampling Frequency	Monitoring Locations	
			Prior to RO Treatment	Post RO/Pre-AOP
Electrical Conductivity	online	continuous[15]	X	X
TOC	24-hour composite/grab	weekly	X	X

8. **Pathogen Reduction Exceedances**

Within 24 hours of becoming aware of an exceedance of the pathogen reduction required in 22 CCR sections 60320.108(a) and 60320.208(a) based on monitoring required in subsection (c), the Project Sponsor shall immediately investigate the cause and initiate corrective actions. The Project Sponsor shall immediately notify DDW and the Regional Water Board if the advanced treated recycled water fails to meet the pathogen reduction criteria longer than 4 consecutive hours, or more than a total of 8 hours during any 7-day period. Failure of shorter duration shall be reported to the Regional Water Board and DDW no later than 10 days after the month in which the failure occurred.

9. **Treatment Conditions**

If a sample of the advanced treated recycled water is greater than 10 ng/L for NDMA, within 72 hours of knowledge of the result, the Project Sponsor shall collect another sample as confirmation. If the average of the initial and confirmation sample is greater than 10 ng/L, or a confirmation sample is not collected and analyzed, the Project Sponsor shall initiate weekly monitoring for NDMA until the running four-week average is less than 10 ng/L. If the running four-week average is greater than 10 ng/L, the Project Sponsor shall describe the reasons for the results and provide a schedule for completion of corrective actions in the next quarterly report submitted to the Regional Water Board, with a copy provided to DDW. If the running four-week average is greater than 10 ng/L for sixteen consecutive weeks, the Project Sponsor shall notify DDW and the Regional Water Board within 48 hours of knowledge of the exceedance and, if directed DDW or the Regional Water Board, suspend injection of the advanced treated recycled water.

[15] For those constituents that are continuously monitored, the monthly minimum, maximum, and daily average values shall be reported.

D. Groundwater Monitoring Associated with Surface Application

1. Monitoring Wells

The Project Sponsor shall monitor the quality of groundwater to assess any impact(s) from the recharge of advanced treated recycled water. Representative samples of groundwater shall be collected from six monitoring wells listed on Table E-16. The parameters to be monitored and the frequency of monitoring are included in Table E-18. Those constituents that are consistently reported as non-detect, may be eligible for reduced monitoring, upon approval by the Executive Officer.

If any of the monitoring results in the two compliance wells 2909Y and 1612T indicate that an MCL has been exceeded or coliforms are present in the monitoring wells as a result of the use of advanced treated recycled water, the Project Sponsor shall notify DDW and the Regional Water Board within 72 hours of receiving the results and make note of any positive finding in the next monitoring report submitted to the Regional Water Board.

Upon an exceedance of 10 ng/L for NDMA in groundwater monitoring samples in the two compliance wells 2909Y and 1612T, the Project Sponsor shall notify DDW and the Regional Water Board within 30 days and begin monthly sampling of groundwater for NDMA from the well with the exceedance. Groundwater sampling may return to the frequency stated in this MRP if the average of three consecutive monthly samples is 10 ng/L or less.

The Project Sponsor shall monitor the following monitoring wells, associated with surface application:

Table E-16. Groundwater Monitoring Wells

Well ID	WDR ID#	Owner	Depth to Top of Perforation (ft)	Depth to Base of Perforation (ft)
Rio Hondo Spreading Grounds				
2909Y[16]	100834	LACDPW	60	115
1590AL	100830	LACDPW	51	91
1582W	100829	LACDPW	70	132
San Gabriel Coastal Spreading Grounds				
1620RR	100833	LACPDW	50	80
1612T[16]	100831	LACDPW	60	80
1613V	100832	LACDPW	35	110

2. Production Wells

The Project Sponsor shall monitor the quality of groundwater to assess any impact(s) from the recharge of advanced treated recycled water. The production wells near the Montebello Forebay spreading grounds are monitored under existing Order 91-100 and amendments, which are subject to the Title 22 monitoring requirements. The Project Sponsor shall review the water quality data submitted by the owners of the production wells to DDW, and include a copy of these results along with a brief narrative summary in the Annual Reports.

[16] Used for compliance monitoring.

E. Groundwater Monitoring Associated with Subsurface Application (Injection Wells)

Pursuant to CCR Title 22, Section 60320.226, prior to operating a GRRP, the Project Sponsor is required to site and construct at least two monitoring wells downgradient of the GRRP such that: (1) at least one monitoring well is located no less than two weeks but no more than six months of travel time from the GRRP, and at least 30 days upgradient of the nearest potable well; and (2) in addition, at least one monitoring well is located between the GRRP and the nearest upgradient drinking water well. Furthermore, the Project Sponsor is required to collect groundwater samples independently from each aquifer initially receiving the water used as a source of drinking water supply that will receive the GRRP's recharge water and is validated as receiving recharge water from the GRRP.

WRD constructed three sets of nested monitoring wells, each with four separate and hydraulically-isolated piezometers completed in the distinct depth intervals to monitor the principal aquifer zones. Injection of the GRIP fully advanced treated water will occur into the two deepest aquifers, the Silverado Aquifer and the Sunnyside Aquifer. Since the two deepest aquifers will initially receive the fully advanced treated water, they will be monitored to evaluate any potential impact(s) of the fully advanced treated water on the receiving groundwater. The upper two piezometers in the merged Gaspur/Gardena/Jefferson Aquifers and the Lynwood Aquifer will not directly receive the fully advanced treated water and therefore will not be able to be validated as receiving GRRP water. Consequently, these will only be used for future monitoring, if needed, or used for ambient monitoring to augment the understanding of the background groundwater quality water and water levels in these aquifers.

The Project Sponsor shall monitor the following monitoring wells, associated with subsurface application:

Table E-17. GRIP Groundwater Monitoring Wells

Well Location	Well Zone	WRD ID No.	Perforated Interval (feet bgs)	Aquifer
GRIP MW-1	1	103009	680-735	Sunnyside
GRIP MW-1	2	103010	530-620	Silverado
GRIP MW-2	1	103013	750-780	Sunnyside
GRIP MW-2	2	103014	590-680	Silverado
GRIP MW-3	1	103017	735-780	Sunnyside
GRIP MW-3	2	103018	485-515	Silverado

F. Groundwater Monitoring and Sampling Frequency (Surface and Subsurface Applications)

1. The Project Sponsor shall monitor the quality of groundwater to assess any impact(s) from the recharge of advanced treated recycled water. Representative samples of groundwater shall be collected from the listed monitoring wells on Tables E-16 and E-17. Table E-18 contains the parameters and sampling frequencies applicable to surface spreading and injection activities.

2. If any of the monitoring results indicate that an MCL has been exceeded or coliforms are present in the monitoring wells at the injection and spreading areas as a result of the use of advanced treated recycled water, the Project Sponsor shall notify DDW and the

Regional Water Board within 72 hours of receiving the results and make note of any positive finding in the next monitoring report submitted to the Regional Water Board.

3. Upon an exceedance of 10 ng/L for NDMA in groundwater monitoring samples as a result of use of advanced treated recycled water, the Project Sponsor shall notify DDW and the Regional Water Board within 30 days and begin monthly sampling of groundwater for NDMA from the well with the exceedance. Groundwater sampling may return to the frequency stated in this MRP if the average of three consecutive monthly samples is 10 ng/L or less.

4. Currently, under existing Order No. 91-100 and amendments, WRD collects bimonthly groundwater samples from six monitoring wells in Table E-16 and analyzes them for most of the constituents pursuant to the requirements of §60320.126(b). Per Regional Water Board and DDW comments, these same six wells will be monitored under the GRIP AWTF WDRs/WRRs (although redundant monitoring will not be required).

Table E-18. Groundwater Monitoring

Parameters	Units	Sample Type	Minimum Sampling Frequency
Water level elevation[17]	feet	---	quarterly
Total Residual Chlorine	mg/L	grab	quarterly
TOC[18]	mg/L	grab	quarterly
Total Coliform	MPN/ 100 mL	grab	quarterly
BOD_5 20°C	mg/L	grab	annually
Oil and grease	mg/L	grab	annually
Nitrate-N	mg/L	grab	quarterly
Nitrite-N	mg/L	grab	quarterly
Total Nitrogen[19]	mg/L	grab	quarterly
Total Dissolved Solids	mg/L	grab	quarterly
Sulfate	mg/L	grab	quarterly
Chloride	mg/L	grab	quarterly
Boron	mg/L	grab	quarterly
Odor	TON~~Units~~	grab	quarterly
Color	ACU	grab	quarterly
Total Suspended Solids (TSS)	mg/L	grab	quarterly
Turbidity	NTU	grab	quarterly
Foaming Agents	mg/L	grab	quarterly
Specific Conductance	µmhos/cm	grab	quarterly
Corrosivity	Langelier Saturation Index (LSI)	grab	quarterly
Silver	µg/L	grab	quarterly
Iron	µg/L	grab	quarterly

[17] Water level elevations shall be measured to the nearest 0.01 feet, and referenced to mean sea level.
[18] TOC monitoring (surface application) of the groundwater monitoring wells listed in Table E-16 is not required.
[19] Total nitrogen includes nitrate-N, nitrite-N, ammonia-N, and organic-N.

Parameters	Units	Sample Type	Minimum Sampling Frequency
Zinc	µg/L	grab	quarterly
Aluminum	µg/L	grab	quarterly
Manganese	µg/L	grab	quarterly
Copper	µg/L	grab	quarterly
MTBE	µg/L	grab	quarterly
Thiobencarb	µg/L	grab	quarterly
Fluoride	µg/L	grab	annually
Remaining Inorganics with Primary MCLs (Table E-4)	µg/L, MFL	grab	quarterly
Remaining Regulated Organics (Tables E-5 and E-6)	µg/L	grab	quarterly
Remaining Constituents/parameters with Secondary MCLs (Table E-107)	µg/L, ACU, TON,	grab	quarterly
Disinfection Byproducts (Table E-78)	µg/L	grab	quarterly
Radioactivity (Table E-89)	pCi/L, millirem/year	grab	quarterly
Remaining General Physical and General Minerals (Table E-910)	µg/L	grab	annually
Remaining Constituents with Notification Levels (Table E-11)	µg/L	grab	quarterly
Remaining Priority Pollutants (Table E-12)	µg/L	grab	quarterly

If any of the monitoring results indicates 80% of a nitrate, nitrite, or nitrate plus nitrite MCL has been exceeded, another sample will be collected for confirmation within 48 hours of receiving the results from the laboratory. If the average of the initial sample and confirmation sample exceeds the MCL, DDW and Regional Water Board will be notified within 24 hours. Subsurface application will be discontinued until corrective actions are taken or a determination is made that GRIP supplemental recharge well activity was not responsible for the contamination.

After two years of groundwater monitoring, Project Sponsor may submit for DDW and Regional Water Board's consideration a request to reduce the groundwater monitoring frequency for specific chemicals, if supported by monitoring data.

IV. REPORTING REQUIREMENTS

The Project Sponsor shall submit the required reports, outlined in this section to the State Water Resources Control Board's (State Water Board) Geotracker database by the specified dates.

A. For the purpose of reporting compliance with numerical limitations, analytical data shall be reported using the following reporting protocols:

1. Sample results greater than or equal to the MRL must be reported "as measured" by the laboratory (i.e., the measured chemical concentration in the sample).
2. Sample results less than the MRL, but greater than or equal to the laboratory's Minimum Detection Limit (MDL), shall be reported as "Detected, but Not Quantified", "DNQ." The laboratory shall write the estimated chemical concentration of the sample next to "DNQ."

3. Sample results less than the laboratory's MDL shall be reported as "Not-Detected", or ND.

B. If the Project Sponsor samples and performs analyses (other than for process/operational control, startup, research, or equipment testing) on any sample more frequently than required in this MRP using approved analytical methods, the results of those analyses shall be included in the report. These results shall be reflected in the calculation of the average used in demonstrating compliance with average effluent, receiving water, etc., limitations.

C. The Regional Water Board or DDW may request supporting documentation, such as daily logs of operations.

D. All reports shall reference the Compliance File No. CI-10318 and shall be uploaded to the State Water Board's GeoTracker database under Global ID WDR100039623. Compliance monitoring reports shall be submitted separately from other technical reports.

E. All submittals shall comply with the Electronic Submittal of Information (ESI) requirements by submitting all reports required under the WDRs/WRRs, including groundwater monitoring data, discharge location data, and searchable Portable Document Format. If any file exceeds 10 megabytes then the report shall be uploaded in multiple parts. Upon request the data shall be provided in excel format.

F. The Project Sponsor shall submit the required annual and 5-year reports as described in 22 CCR sections 60320.128 and 60320.228.

G. Monthly Reports

1. Monthly monitoring reports shall be received by the 15th day of the third month after the month of sampling according to Table E-19.
2. Monthly reports shall contain the following at a minimum:
   a. Daily coliform analytical results for GRIP-AWTF advanced treated recycled water.
   b. Continuous turbidity analytical results for the month for GRIP-AWTF's advanced treated recycled water (located after UF and before RO) including the daily average, daily maximum, and percent of time the turbidity exceeds 0.2 NTU. The Project Sponsor shall also report if the UF effluent turbidity exceeded 0.5 NTU at any time. Summary of the monthly operational parameters for UV dose and free chlorine.
   c. The results of Membrane Integrity Testing (MIT) conducted during the month.
   d. The daily average and maximum conductivity readings for the RO effluent, the percent of time that the conductivity is greater than 350 micro-Siemens, and the minimum removal achieved.
   e. TOC results for the RO influent and effluent including the average and maximum, and the percent of time that the TOC is greater than 0.5 mg/L.
   f. Documentation that the necessary log removals have been achieved.

H. Quarterly Reports

1. Quarterly monitoring reports shall be received by the 15th day of the third month following the end of each quarterly monitoring period according to Table E-20.

   The contents of the Geotracker Quarterly Monitoring Report shall include a one page summary of operational concerns that addresses changes in reporting conditions, including influent, AWTF recycled water, and groundwater monitoring results since the last report.

2. The quarterly reports shall include, at a minimum, the following information:

   a. Summary of monthly operational parameters ~~for calculated~~for calculated 1,4-Dioxane and NDMA log reduction along with flowrate, UVT, pH and any reactor failure(s) .

   b. Verification that the tertiary treated effluent used in the GRIP-AWTF meets the requirements in 22 CCR section 60320.106 and 60320.206: Wastewater Source Control.

   c. Volume of the influent (SJCWRP tertiary treated effluent) and advanced treated recycled water injected or used for spreading. If no advanced treated recycled water was injected or spread during the quarter, the report shall so state.

   d. Date and time of sampling and analyses.

   e. All analytical results of samples collected during the monitoring period of the influent, advanced treated recycled water, blended tertiary treated effluent, and groundwater.

   f. Records of any operational problems, plant upset and equipment breakdowns or malfunctions, and any diversion(s) of off-specification recycled water and the location(s) of final disposal.

   g. Calculations indicating what percent results of the quarter's monitoring did not meet the surrogate and/or operational parameter limits established to assure proper on-going performance of the RO and AOP processes. If the calculated percent exceeds 10 percent, WRD will submit a report to DDW and Regional Water Board, within 45 days of the end of the quarter. The report will describe corrective actions planned or taken to reduce the percent to less than 10. And, if necessary, WRD will consult regulators, and comply with an alternative monitoring plan approved by DDW and Regional Water Board.

   h. Discussion of compliance, noncompliance, or violation of requirements.

   i. All corrective or preventive action(s) taken or planned with schedule of implementation, if any.

   j. Certification that no groundwater for drinking purposes has been pumped from wells within the primary boundary (zone of controlled drinking water well construction).

   k. Summary of operational concerns describing changes in reporting conditions, including influent, AWTF advanced treated recycled water, and groundwater monitoring results, since the last report.

   l. Monitoring results associated with the evaluation of pathogenic microorganism removal as described in this Order.

I. Annual Summary Reports

1. The Annual Summary Report shall be received by April 15 of each year and shall contain a discussion of the previous calendar year's analytical results, as well as graphical and tabular summaries of the monitoring analytical data.

2. Public water systems, owners of small water systems and other active production wells having down-gradient sources potentially affected by the GRIP-AWTF or within 10 years groundwater travel time from the GRIP-AWTF shall be notified by direct mail and/or electronic mail of the availability of the annual report.

3. The Annual Summary Report shall include the following information at a minimum:

a. The amount of advanced treated recycled water produced by the GRIP-AWTF and the amount injected into the supplemental recharge wells each year.

b. Documentation demonstrating the retention time underground and the distance from the nearest extraction well are being met.

c. Tabular and graphical summaries of the monitoring data obtained during the previous calendar year including advanced treated recycled water and groundwater quality data.

d. A summary of compliance status with the applicable monitoring requirements during the previous calendar year.

e. For any non-compliance during the previous calendar year, a description of:

   i. The date, duration, and nature of the violation.

   ii. A summary of any corrective actions and/or suspensions of subsurface application of recycled municipal wastewater resulting from a violation.

   iii. If uncorrected, a schedule for and summary of all remedial actions.

f. Any detections of monitored chemicals or contaminants, and any observed trends in the monitoring wells (and if applicable, in diluent water supplies).

g. Information pertaining to the vertical and horizontal migration of the recharge water plume from the supplemental recharge wells.

h. Title 22 drinking water quality data for the nearest domestic water supply well (Pico No. 10).

i. A description of any changes in the operation of any unit processes or facilities.

j. A description of any anticipated changes, along with an evaluation of the expected impact of the changes on subsequent unit processes.

k. An estimated quantity and quality of the advanced treated recycled water to be utilized for the next calendar year.

l. A summary of the measures taken by the Los Angeles County Sanitation District to comply with wastewater source control program and the effectiveness of the implementation of the measures.

m. A list of the analytical methods used for each test and associated laboratory quality assurance/quality control procedures shall be included. The report shall identify the laboratories used by the Project Sponsor to monitor compliance with this Order, their status of certification, and provide a summary of proficiency test.

n. A list of current operating personnel, their responsibilities, and their corresponding grade of certification.

o. A summary of monitoring reports, and reporting and trend analyses, to describe the changes in water quality and contrast them to background measurements for all constituents exceeding MCLs or where concentration trends increase after the addition of recycled water. Specifically describe studies or investigations made to identify the source, fate, and transport path of constituents which exceed the MCL at the monitoring wells.

p. Results of any tracer studies performed throughout the year, if applicable.

q. The Annual Summary Report shall be prepared by an engineer licensed in California and experienced in the fields of wastewater treatment and public water supply.

J. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-19. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
Continuous	Permit effective date	All	Submit with monthly report
Daily	Permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	Submit with monthly report
Weekly	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	Submit with monthly report
Monthly	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	1st day of calendar month through last day of calendar month	By the 15th day of the third month after the month of sampling
Quarterly	Closest of January 1, April 1, July 1, or October 1 following (or on) permit effective date	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	June 15 September 15 December 15 March 15
Semiannually	Closest of January 1 or July 1 following (or on) permit effective date	January 1 through June 30 July 1 through December 31	Submit with corresponding quarterly report.
Annually	January 1 following (or on) permit effective date	January 1 through December 31	April15

K. The Project Sponsor shall conduct startup and commissioning testing that meets the requirement in 22 CCR § 60320.201: Advanced Treatment Criteria. A test protocol must be submitted to the Regional Water Board and DDW for approval prior to commencement of testing.

L. Advanced Water Treatment Facility (AWTF) Operation Optimization Plan: Prior to startup of the AWTF, the Project Sponsor shall submit an updated Operations Optimization and Plan that meets the requirements set forth in 22 CCR § 60320.122 and 60320.222 to DDW and the Regional Water Board for approval. At a minimum, the Operation Optimization Plan shall identify and describe the operations, maintenance, analytical methods, monitoring (grab and online) necessary to meet the requirements and the reporting of monitoring results. The Operation Optimization Plan shall include the following at a minimum:

1. The required monitoring and reporting for all waste streams at the AWTF.
2. Critical operational parameters to include routine testing procedures for the ultrafiltration (UF), reverse osmosis (RO), and the advanced oxidation process (AOP) systems, optimization of the UV dose for disinfection and reduction of light-sensitive contaminants, and all treatment processes, maintenance and calibration schedules for all monitoring equipment, process alarm set points, and response procedures for all alarms in each treatment process of the AWTF, including criteria for diverting recycled water if water quality requirements are not met, start-up, emergency response and contingency plans.

During the first year of operation of the expanded AWTF, all treatment processes shall be operated in a manner to provide optimal reduction of microbial, regulated and unregulated contaminants. Based on this experience and anytime operational changes are made, the Operation Optimization Plan shall be updated.

3. The Operation Optimization Plan shall include staffing levels with applicable certification levels for Facility operations personnel. Significant changes in the operation of any of the treatment processes shall be reported to DDW and the Regional Water Board. Significant changes in the approved Operation Optimization Plan must be approved by DDW and the Regional Water Board prior to instituting changes. The Project Sponsor shall be responsible for ensuring that the Operation Optimization Plan is at all times representative of the current operations, maintenance, and monitoring of the AWTF.

4. The existing Operation Optimization Plan shall be updated to accurately reflect: the operations of the AWTF, the date the plan was last reviewed, and whether the plan is valid and current.

M. Five-Year Engineering Report: Pursuant to 22 CCR § 60320.128 and § 60320.228, every five years from the date of initial approval of the engineering report required pursuant to 22 CCR § 60323, the Project Sponsor shall update the engineering report to address any project changes and submit the report to the Regional Water Board and DDW. The Five-Year Engineering Report Update shall include the following:

1. A description of any inconsistencies between previous groundwater model predictions, if any, and the observed and/or measured values, as well as a description of how subsequent predictions will be accurately determined. The groundwater flow and transport conditions will be summarized for the advanced treated recycled water injection into the GRIP supplemental recharge wells during the previous five calendar years. This summary will also use the most current data for the evaluation of the transport of recycled water; such evaluations will include, at a minimum, the following information:

   a. The total quantity of advanced treated recycled water injected into each major aquifer.

   b. Estimates of the rate and path of flow of the injected water within each major aquifer.

   c. Projections of the arrival time of the recycled water at the closest extraction well (Pico No. 10), and the percent of the advanced treated recycled water at the wellhead.

   d. Clear presentation on any assumptions and/or calculations used for determining the rates of flow and for projecting arrival times and dilution levels.

   e. A discussion of the underground retention time of recycled water, a numerical model, or other methods used to determine the recycled water contribution to each aquifer.

   f. A revised flow and transport model to match actual flow patterns observed within the aquifer if the flow paths have significantly changed.

   g. Revised estimates, if applicable, on hydrogeologic conditions, including the retention time and the amount of the advanced treated recycled water in the aquifers and at the nearest potable well at the end of that calendar year. The revised estimates will be based upon actual data collected during that year on recharge rates (including advanced treated recycled water, native water, and if applicable, any other diluent water), hydrostatic head values, groundwater extraction rates, basin storage

changes, and any other data needed to revise the estimate of the retention time and the amount of the advanced treated recycled water in the aquifers and at the nearest potable well. Significant differences, and the reasons for such differences, between the estimates presented in the approved Engineering Report and subsequently revised estimates, will be clearly presented. The most recently available data will be utilized to predict the retention time of advanced treated recycled water in the subsurface.

h. Evaluation of the ability of the Project Sponsor to comply with all regulations and provisions over the following five years.

i. The Five-Year Engineering Report shall be prepared by a properly qualified engineer registered and licensed in California and experienced in the field of wastewater treatment.

V. CERTIFICATION STATEMENT

Each report shall contain the following declaration:

"I certify under penalty of law that this document, including all attachments and supplemental information, was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a find and imprisonment.

Executed on the _____day of _____at _____.

_____ (Signature)

_____ (Title)

ATTACHMENT F – DDW RECOMMENDATION LETTER

CALIFORNIA Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

State Water Resources Control Board
Division of Drinking Water

June 6, 2018

Deborah J. Smith, Executive Officer
Regional Water Quality Control Board
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

Dear Ms. Smith,

CONDITIONAL APPROVAL LETTER FOR THE WATER REPLENISHMENT DISTRICT GROUNDWATER RELIABILITY IMPROVEMENT PROJECT (1990003-730)

This letter transmits the State Water Resources Control Board, Division of Drinking Water (DDW) conditional acceptance of the Water Replenishment District's (District) "Groundwater Reliability Improvement Project (Project) Advanced Water Treatment Facility: Final Engineering Report" (Engineering Report) dated May 2018. The District held a public hearing on January 18, 2018 and no comments were received during the public hearing or by the end of the public comment period as described in the Engineering Report. The District should update the Engineering Report in accordance with this letter and in consultation with DDW. In addition, DDW recommends the District to submit the test protocols for the startup and commissioning phase, which will include validation of the AOP model, as soon as possible.

Provided that the District meets all of the conditions of this letter, the DDW finds that the Project's Advanced Water Treatment Facility (AWTF) can provide recycled water for subsurface application that should not degrade the groundwater basin(s) as a source of water supply for domestic purposes. DDW recommends the Los Angeles Regional Water Quality Control Board (Regional Water Board) include the following conditions in the permit as DDW Requirements:

1. The District shall comply with Division 4, Chapter 3, Article 5.1 - Indirect Potable Reuse: Groundwater Replenishment - Surface Application, Sections 60320.100 through 60320.128 of the Title 22, California Code of Regulations, as described in this permit, until the revision of the Rio Hondo and San Gabriel River Spreading Grounds Water Reclamation Requirements/Waste Discharge Requirements Order No. 91-100 and subsequent revisions.

2. The District shall comply with Division 4, Chapter 3, Article 5.2 - Indirect Potable Reuse: Groundwater Replenishment - Subsurface Application, Sections 60320.200 through 60320.228 of the Title 22, California Code of Regulations.

3. The District shall operate the AWTF in accordance with the approved Operation Optimization Plan (OOP) and §60320.222. The District shall ensure that the OOP is representative of the current operations, maintenance, and monitoring and is updated within 30 days after any

significant changes to current operations, maintenance, and monitoring. At a minimum, the OOP shall identify and describe the operations (including validation of unit processes per §60320.208(c)), maintenance (including prevention of cross connections, by-pass treatment, and replacement of membranes), analytical methods (regulated and unregulated chemicals), monitoring (including process monitoring and instrumentation calibration), and reporting (including compliance, performance monitoring and methodology for the calculation of log reduction achieved per process). Per §60320.222, the District shall submit a draft OOP prior to operations for DDW's review and approval. The draft OOP may be amended and finalized after the completion of full-scale startup and commissioning testing. The final OOP must be submitted to DDW no later than 90 days after completion of startup and commissioning testing. The District shall submit for approval an updated OOP per §60320.222(c).

4. The District shall adequately staff treatment plant operator(s) for the AWTF, and describe operator staffing hours, shifts, and certifications classes in the OOP. The District shall staff operator(s) with Advanced Treatment Certification when available and in consultation with DDW and Regional Water Board.

5. The District shall conduct full-scale startup and commissioning testing that demonstrates compliance with §60320.201 for the AWTF. The District shall submit an Advanced Oxidation Process (AOP) startup and commissioning test protocol for DDW's review at least 60 days prior to the commencement of the testing (as required by §60320.201(d)). In addition, the District shall submit a report 60 days after completing the initial 12-months of operations and monitoring to demonstrate compliance with §60320.201(f) and (g) and this letter.

6. The AOP startup and commissioning shall validate and confirm the actual setpoints for free chlorine and UV parameters, demonstrating that the AOP will provide no less than 0.5-log (69 percent) reduction of 1,4-dioxane and meets all Notification Levels.

7. The OOP must include the AWTF alarms in accordance with this letter. Commissioning shall validate and confirm the actual alarm setpoints and they shall be specified in the OOP.

8. The District shall verify that the recycled municipal wastewater used for the Project meets the Wastewater Source Control requirements per §60320.206.

9. Per the Engineering Report, the initial maximum Recycled Water Contribution (RWC) can be 1.0.

10. Per §60320.218, the District shall monitor the applied recycled municipal wastewater for TOC at least weekly prior to replenishment. The District shall report 20-week running average and the average of the last four TOC results of the applied recycled municipal wastewater. The District shall report weekly TOC results of the applied recycled municipal wastewater in the monthly report.

11. Per §60320.208, the District shall operate the Project such that the recycled municipal wastewater used as recharge water receives treatment that achieves at least 12-log enteric virus reduction, 10-log Giardia cyst reduction, and 10-log Cryptosporidium oocyst reduction.

12. If the pathogen reduction in §60320.208(a) is not met based on the on-going monitoring required pursuant to subsection (c), within 24 hours of being aware, the District shall immediately investigate the cause and initiate corrective actions. The District shall immediately

notify the DDW and Regional Water Board if the Project fails to meet the pathogen reduction criteria longer than 4 consecutive hours, or more than a total of 8 hours during any 7-day period. Failures of shorter duration shall be reported to the Regional Water Board by the District no later than 10 days after the month in which the failure occurred.

13. The Project contains a multi-barrier treatment facility to comply with the Title 22, Article 5.2. The following monitoring and reporting requirements will need to be included in the OOP and reported to DDW and the Regional Water Board monthly.

    a. To demonstrate the log reduction credit given to the San Jose Creek Wastewater Treatment Plants (WWTP), the WWTP effluents shall be monitored continuously for turbidity and daily for coliform concentrations. The District shall report monthly to the DDW and Regional Water Board, the daily WWTP effluent coliform analysis[1], the daily WWTP effluent average turbidity and maximum turbidity.
    b. The Ultrafiltration membrane (UF) effluent shall be monitored for turbidity continuously. For the effluent, the daily average and maximum turbidity and the percent of time that the effluent turbidity is greater than 0.2 NTU shall be reported. The District shall report if the UF effluent turbidity exceeded 0.5 NTU at any time. The District shall calibrate the turbidity instrumentation in accordance with the OOP.
    c. Membrane integrity testing (MIT) shall be performed on each of the UF units, a minimum of once every 24 hours of operation.
        i. The log removal value (LRV) for Cryptosporidium shall be calculated and the value reported after the completion of each MIT.
        ii. The MIT shall have a resolution that is responsive to an integrity breach on the order of 3 µm or less.
        iii. Calculations of the LRV shall be based on a pressure decay rate (PDR) value with an ending pressure that provides a resolution of 3 µm or less.
        iv. The MIT shall have a sensitivity to verify a LRV equal to or greater than 4.0.
    d. The District must monitor the effluent of each Reverse Osmosis train continuously for conductivity. The District shall calibrate the conductivity instrumentation in accordance with the OOP.
    e. The Reverse Osmosis system shall be credited pathogen reduction at this facility in accordance with the amount demonstrated via continuous TOC monitoring. The Reverse Osmosis influent and effluent must be monitored for TOC. The daily average TOC reduction achieved, average, and maximum TOC influent and effluent shall be reported in the monthly report. The District shall calibrate the TOC instrumentation in accordance with the OOP.
    f. The District shall monitor the Performance Indicator constituents of emerging concern (CECs) for Reverse Osmosis both prior to the Reverse Osmosis and after Reverse Osmosis prior to the AOP as specified in the OOP.
    g. The AOP shall be operated, as has been designed, to meet Title 22, Article 5.2, providing a minimum 0.5-log reduction of 1,4-dioxane and meet all Notification Levels. AOP startup and commissioning will validate and confirm the actual setpoints for free chlorine and UV parameters. The District may use the AOP model predicted log reduction as a substitute to the minimum UV Dose provided that the AOP model is validated during the startup and commissioning and receives approval from DDW.
    h. The AOP must be operated with continuous monitoring and built-in automatic reliability features that must trigger automatic diversion of effluent by the following critical alarm

[1] In accordance with Order R4-2015-0070 or any subsequent renewals or amendments. It should be noted that Title 22, Section 60321 requires daily coliform samples of disinfected tertiary recycled water.

setpoints. The District may use the AOP model predicted log reduction as a substitute to setpoint(s) (v-vi) provided that the AOP model is validated during the startup and commissioning and receives approval from DDW.

i. Complete UV reactor failure.
ii. Instantaneous flowrate exceeds design flowrate.
iii. UV transmittance less than 96% for more than 15 minutes, or a new setpoint approved by DDW after the AOP startup and commissioning.
iv. pH greater than or equal to 6.5 as measured in the AOP influent for more than 15 minutes, or a new setpoint approved by DDW after the AOP startup and commissioning.
v. Calculated NDMA log reduction of less than 1.67, or a new setpoint approved by DDW after the AOP startup and commissioning.
vi. Free Chlorine residual less than 2.0 mg/L as measured in the AOP influent for more than 15 minutes, or a new setpoint approved by DDW after the AOP startup and commissioning.

i. Continuous monitoring of flow, Free chlorine, pH, Power, UV intensity, and UV transmittance must be provided at all times for the AOP. Flow, Free chlorine, pH, and UV transmittance instrumentation must be properly calibrated in accordance with the OOP. The District shall submit a monthly summary to DDW of the calculated 1,4-Dioxane and NDMA log reduction along with flowrate, UVT, pH and any reactor failure(s).
j. At least weekly, the UV transmittance meter must be inspected and checked against a reference bench-top unit to document accuracy.
k. Monitor water quality parameters to update AOP radical scavenging demand as specified in OOP. At a minimum, the District shall sample for Nitrite, Bromide, Chloramines, TOC, and Alkalinity.
l. The monitoring and reliability features, including automatic shutdown capability, shall be demonstrated to DDW during a plant inspection prior to final approval.
m. Based on the calculation of log reduction achieved daily, the District will report a "Yes" or "No" for each day as to whether the necessary log reductions (12-logs virus, 10-logs for Giardia cyst and Cryptosporidium oocyst) have been achieved. If the model is validated during startup and commissioning, the District must include the daily minimum model predicated 1,4-Dioxane and NDMA log reduction. An overall log reduction calculated value must be provided daily unless the AWTF is offline (24-hour period).
n. The District shall monitor the effluent of the AWTF as specified in the OOP monthly for the first year of operations. Per §60320.201(i), the District may request, from DDW and the Regional Water Board, a reduction in this monitoring after 12 consecutive months of monitoring.

14. The District shall ensure that any recycled water that is used for surface spreading operations at least meets the definition of disinfected tertiary recycled water (§60301.230).

15. If the District has been directed by the DDW or Regional Water Board to suspend surface and/or subsurface application, surface and/or subsurface application shall not resume until the District has obtained DDW and Regional Water Board approval.

16. The District shall submit a groundwater tracer test protocol for DDW review 60 days prior to commencement of the testing for subsurface application of recycled water. The District must conduct a tracer test and submit a completed tracer study to DDW. The District shall update the Engineering Report based on results of the tracer study.

17. The District, if necessary, shall update the local-scale groundwater model based on geological information obtained from Project's construction of monitoring and injection wells, if necessary.

18. The District, if necessary, shall update the Engineering Report and define a boundary representing a zone of controlled drinking water well construction and secondary boundary based on tracer studies results per §60320.200.

19. The District shall notify DDW and the Regional Water Board if a new or replacement potable water well(s) is to be constructed within the secondary boundary (§60320.200(e)), if necessary.

20. The District shall update the Engineering Report for any additional injection wells for the Project in consultation with the Regional Water Board and DDW.

21. The District shall update the Engineering Report and the OOP to demonstrate compliance with any revisions to the Recycled Water Policy.

22. The District shall update the Engineering Report and the OOP to demonstrate compliance with any revisions to the DDW Notification Level list.

23. The District shall transfer all water quality monitoring results analyzed by an Environmental Laboratory Accreditation Program (ELAP) certified laboratory to DDW by Electronic Data Transfer (EDT) after the District has been assigned Primary Station Codes (PS-Codes) for compliance monitoring sites.

24. The District shall submit the required annual and five-year reports per §60320.228 and §60320.128

If you have any questions regarding this letter, please contact Faraz Asad at (714) 558-4708 or via email at faraz.asad@waterboards.ca.gov or me via email at Randy.Barnard@waterboards.ca.gov.

Sincerely,

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Recycled Water Unit
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Cc: Faraz Asad, DDW (via email)
Brian Bernados, DDW (via email)
Jeff O'Keefe, DDW (via email)
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ATTACHMENT G – CHEMICALS WITH NOTIFICATION LEVEL

Constituents	Units	Notification Level (NLs)
Boron	mg/L	1
n-Butylbenzene	mg/L	0.26
sec-Butylbenzene	mg/L	0.26
tert-Butylbenzene	mg/L	0.26
Carbon disulfide	mg/L	0.16
Chlorate	mg/L	0.8
2-Chlorotoluene	mg/L	0.14
4-Chlorotoluene	mg/L	0.14
Diazinon	mg/L	0.0012
Dichlorodifluoromethane (Freon 12)	mg/L	1
1,4-Dioxane	mg/L	0.001
Ethylene glycol	mg/L	14
Formaldehyde	mg/L	0.1
HMX	mg/L	0.35
Isopropylbenzene	mg/L	0.77
Manganese	mg/L	0.5
Methyl isobutyl ketone (MIBK)	mg/L	0.12
Naphthalene	mg/L	0.017
n-Nitrosodiethyamine (NDEA)	mg/L	0.00001
n-Nitrosodimethylamine (NDMA)	mg/L	0.00001
n-Nitrosodi-n-propylamine (NDPA)	mg/L	0.00001
Perfluorooctanoic acid (PFOA)	mg/L	0.000014
Perfluorooctanesulfonic acid (PFOS)	mg/L	0.000013
Propachlor**	mg/L	0.09
n-Propylbenzene	mg/L	0.26
RDX	mg/L	0.0003
Tertiary butyl alcohol (TBA)	mg/L	0.012
1,2,4-Trimethylbenzene	mg/L	0.33
1,3,5-Trimethylbenzene	mg/L	0.33
2,4,6-Trinitrotoluene (TNT)	mg/L	0.001
Vanadium	mg/L	0.05
****Notes include toxicological endpoint, references, history, and other information.**		