

DRAFT

RUBIDOUX COMMUNITY SERVICES DISTRICT
TOTAL DISSOLVED SOLIDS MANAGEMENT PLAN



April 2025

Introduction

Rubidoux Community Services District (“Rubidoux”) is a community services district formed in December 1952 predominantly serving the easterly portion of the City of Jurupa Valley (incorporated July 1, 2011) in western Riverside County, California, with approximately 120 acres in San Bernardino County. Rubidoux is located approximately 50 miles east of Los Angeles, and is bounded by San Bernadino County on the north, the Jurupa Mountains and Pedley Hills on the northwest, unincorporated areas of Jurupa on the west, the Santa Ana River on the south, and the City of Riverside on the east. Rubidoux’s current boundaries encompass an area of approximately 8 square miles of service territory. Ground surface elevations within Rubidoux’s service area range from approximately 760 feet to 1,250 feet above sea level.

Rubidoux currently provides the following services: water supply, wastewater collection and disposal, trash collection, fire protection, weed abatement and street lighting. Within its service territory includes a population of approximately 40,000, with 6,687 water customers and 6,216 wastewater customers. Rubidoux’s service area consists mainly of single-family residential customers, but also includes an industrial/manufacturing sector (located mostly in the northerly portion of the service area), along with commercial/institutional and landscape connections.

Potable water delivered by Rubidoux to its customers is 100% from local groundwater, which is currently pumped from six (6) active wells. In addition, there is an interagency intertie with Jurupa Community Services District (“JCSD”) where potable water can be moved between the two districts. This intertie located on Jewel Street has predominantly been used to move Rubidoux water to JCSD as - 1) Rubidoux has continuously had surplus raw groundwater production and treatment capacity, and 2) JCSD’s current distribution system is unable to move Chino Desalter water in sufficient quantities to improve Rubidoux’s total dissolved solids (“TDS”) concentration. Rubidoux’s wastewater collection system consists of approximately 68 miles of gravity sewers ranging in size from 6 inches to 27 inches in diameter, and six sewage lift stations. Wastewater is collected and transmitted to the City of Riverside’s Regional Water Quality Control Plant for treatment and discharge to the Santa Ana River.

Active Rubidoux wells pump water from the Riverside South Groundwater Basin and all the pumped raw groundwater requires some level of treatment to meet current State Water Board Division of Drinking Water permit requirements for delivery of potable water within Rubidoux’s jurisdiction. Below is a table showing treatment processes included for each Rubidoux Well:

Well	Max Flow (gpm)	Avg Flow (gpm)	Contaminants	Treatment Processes	Treatment Location
1A	1500	1500	PFAS Managanese	Ion exchange oxidation & filtration	Thompson
2	800	400	Nitrate & Perchlorate PFAS & 1,2,3 TCP	Blending with effluent from Thompson Plant GAC	Avalon
8	1500	1260	PFAS	Ion Exchange	Thompson
18	1500	1300	PFAS Managanese	PFSA oxidation & filtration	Thompson
4	1200	1200	Nitrate PFAS	Ion Exchange GAC	Smith
6	2200	2200	Nitrate PFAS	Ion Exchange GAC	Smith

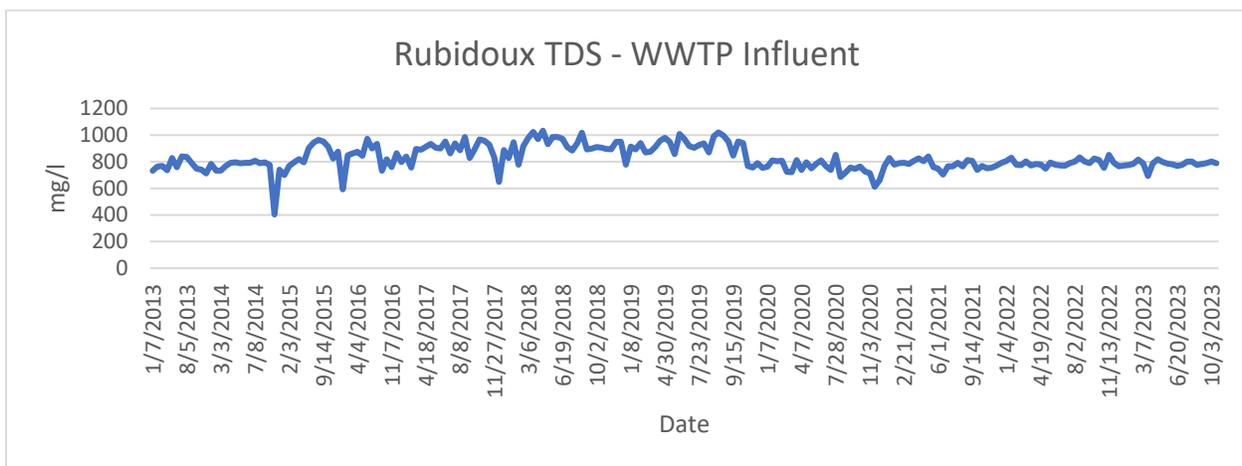
With its active wells and treatment processes at 60% run time Rubidoux can produce approximately 8,300 acre-feet/year (“AFY”) of potable water. Current potable demand is approximately 4,500 AFY. Rubidoux’s estimated ultimate potable water demand is 10,800 AFY (per 2022 Rubidoux Water Master Plan).

From a water supply standpoint, Rubidoux is positioned well. There is sufficient groundwater production and treatment capacity to meet current potable water demands with redundancy. If potable water demands increase over time, Rubidoux will need to evaluate various supply options ranging from addition of new production wells with treatment, purchase of available groundwater with low TDS concentrations from other local agencies, or buying imported supply from Metropolitan Water District.

Beyond the above listed contaminants being treated from the produced raw groundwater, the raw groundwater has an ambient TDS concentration which is relatively high. Below is a table showing TDS concentration data from Rubidoux’s Consumer Confidence Reports for years 2019 – 2022:

Year	Range (mg/l)		Average (mg/l)
2019	460	530	498
2020	470	510	478
2021	480	550	496
2022	470	510	492
Average			491

After use of the delivered potable water, Rubidoux customer wastewater discharge has a 12-month rolling average TDS concentration of approximately 787 milligrams/liter (“mg/l”) through October 2023. The graphic below shows a 10-year TDS concentration history (2013-2023) of Rubidoux’s wastewater delivered to Riverside’s treatment plant.



Over the above captioned timeframe, Riverside’s treatment plant has met its effluent limits for TDS under the current NPDES permit (2013).

Wastewater Treatment Relationship Between Riverside and District

The City of Riverside (“Riverside”) owns a 46 million gallons/day (“MGD”) wastewater treatment plant. Through contracts, Riverside provides primary, secondary, and tertiary wastewater treatment and disposal services to Rubidoux, JCSD, and Edgemont Community Services District (“Edgemont”). Rubidoux owns 3.055 MGD of capacity rights in Riverside’s wastewater treatment plant. Currently Rubidoux delivers approximately 1.7 MGD of wastewater to Riverside’s plant or 620 MG annually.

Riverside and the agencies who contract with it for wastewater treatment and disposal are part of the Regional Advisory Committee (“RAC”). The RAC is comprised of Riverside, JCSD, Edgemont, Rubidoux, and Western Municipal Water District (“Western”). The RAC is the forum where the involved contracting agencies meet and vote on a variety of issues related to the operation of Riverside’s wastewater treatment plant. Issues include: treatment and surcharge rates, capital contributions for plant upgrades, regulatory compliance issues (including TDS management), and long-term planning. Western does not send wastewater to Riverside for treatment but is involved in the RAC as it assisted Riverside, Rubidoux, and JCSD (all agencies within Western’s General District area) in the late 1970’s in the planning for and acquisition of state and federal funding to expand Riverside’s standalone wastewater treatment plant into a regional treatment facility for multiple agencies. This effort was memorialized in part by two agreements, one dated in 1976, the second in 1978. The agreement entitled “Agreement For Regional Primary and Secondary Treatment” dated May 4, 1978 (“1978 Agreement”) established, among other things, water quality requirements for regional plant and responsibilities of each of the dischargers. Only Riverside, JCSD, and Rubidoux have voting rights in RAC and Western serves as the tie-breaking vote. Edgemont does not have a vote.

Pursuant to Section 10 of the 1978 Agreement, attached Exhibit B, executed between Riverside, Rubidoux, Western, and JCSD, language is included which states – “Notwithstanding any other provisions of this Agreement, Riverside, Jurupa and Rubidoux shall each have the responsibility

of delivering to the regional primary and secondary treatment facilities a quality of water which independently complies with all lawful requirements of any regulatory authority of competent jurisdiction. This responsibility shall include measures, if necessary, to improve the respective water supply of any party if the poor quality of its supply causes or threatens violations of any regulatory authority requirements.”

Riverside operates its wastewater treatment plant pursuant to NPDES Permit No. CA0105350 (“Permit”) issued by the California Regional Water Quality Control Board, Santa Ana Region. The Permit establishes requirements Riverside must meet for discharge of recycled water to the Santa Ana River. One of the requirements is a maximum TDS concentration of 650 mg/l in recycled water discharged to the Santa Ana River (Page 14 of the Permit – Section IV. A. 1c.), attached Exhibit A. According to information provided by Riverside at the November 2023 Technical Advisory Committee meeting of the RAC, the Riverside’s regional plants rolling 12-month average TDS concentration is 590 mg/l, which is 9.2% below the 650 mg/l limit.

Although in the aggregate the TDS concentration of the recycled water effluent discharged by Riverside to the Santa Ana River has been and continues to be below 650 mg/l, Riverside as the Permit holder has raised concerns about Rubidoux’s TDS concentration in the wastewater it delivers to the plant for treatment.

The Permit Riverside operates under in Section IV. A. 1c. provides requirements for TDS compliance. In this section the Regional Board for TDS management purposes established a 650 mg/l TDS limit for effluent discharges based on an expectation of a use increment of 250 mg/l TDS additive to the source water TDS concentration. This section of the Permit further clarifies “the 12-month flow weighted running average total dissolved solids concentration shall not exceed the 12-month flow weighted running average total dissolved solids concentration in the water supply by more than 250 mg/l, unless the Discharger demonstrates to the satisfaction of the Regional Board’s Executive Officer that TDS discharge in excess of the 250 mg/l mineral increment are due solely to chemical additions in the treatment process needed to meet waste

discharge requirements, and the Discharger has taken all reasonable steps to optimize chemical additions so as to minimize the TDS increase.”

The Permit in Section IV. A. 1c. further provides if the excess TDS is due to the quality of water supply utilized in the Discharger’s service area, the Discharger is to “take all reasonable steps.....to ensure that the best quality supplies are obtained and utilized.” The intent of the TDS Management Plan is to demonstrate how Rubidoux has and can take reasonable steps to lower TDS concentration in the wastewater delivered to Riverside.

Past TDS Management Efforts by Rubidoux

Below are actions taken by Rubidoux to lower the TDS concentration in wastewater delivered to Riverside:

Aramark Uniform Services Discharge Removed

Aramark Uniform Services (“Aramark”) is an industrial laundry service business located within Rubidoux’s service area. The sewer discharged from Aramark is high in TDS concentration ranging from 1,700 to 2,000 mg/l, with a flow of approximately 230,000 gpd. This flow rate accounted for roughly 10% of Rubidoux’s total sewer discharged to Riverside. Due to its volume of flow and high TDS concentration, Aramark is considered an Industrial Discharger and was allowed to discharge into Rubidoux’s collection system through issuance of an Industrial Discharge Permit issued by Rubidoux. However, with Riverside lowering its maximum local TDS concentration limit to 1,210 mg/l, Rubidoux in 2017 began working with Aramark on a Compliance Plan to meet the lowered TDS concentration limit included in its Industrial Discharge Permit. The original Compliance Plan was to be met by January 15, 2019. Due to a variety of reasons, the compliance schedule was extended to November 1, 2019.

Aramark elected to meet the lowered TDS concentration limit by removing its industrial strength discharge from Rubidoux’s collection system. Near the Aramark facility is the Inland Empire Brine Line (“Brine Line”) owned by the Santa Ana Watershed Authority (“SAWPA”). The Brine Line is a gravity pipeline that delivers non-reclaimable and salty wastewater from the Santa Ana River watershed upstream of Orange County, CA to a treatment plant in Orange County owned and operated by Orange County Sanitation District. Aramark negotiated for approximately one year with Dairy Farmers of America (“DFA”) to purchase DFA’s Brine Line capacity it no longer used. Aramark purchased the DFA Brine Line capacity for approximately \$3 million. To facilitate use of the Brine Line capacity, Rubidoux at its sole cost extended a sewer pipe and converted an existing sewer pipeline to convey the TDS laden industrial sewer flow from Aramark to the Brine Line. Rubidoux also built a pipeline to convey domestic sewer flow (bathrooms and breakroom

facilities) from Aramark to Rubidoux's sewer collection system. The design, bidding and construction of these pipelines cost Rubidoux approximately \$425,000. In addition, Rubidoux refunded Aramark approximately \$1.9 million in sewer capacity fees representing sewer capacity Aramark it had previously paid to Rubidoux with its industrial wastewater now diverted to the Brine Line. In all Rubidoux expended \$2.35 million to remove this high TDS discharger from Rubidoux's sewer collection system. This was completed in November 2019.

Completion of TDS Study

On April 18, 2019, Rubidoux's Board of Directors authorized an expenditure of \$34,000 to hire Krieger and Stewart to prepare a TDS Study. This study included sampling of distinct areas within Rubidoux to verify concentration of TDS based on area development type. Along with findings, the report included but was not limited to the following recommendations – 1) Completing the removal of Aramark's industrial waste from Rubidoux's sewer collection system, 2) Potential addition of unused non-potable water into the sewer system which will increase hydraulic loading (more flow) with no increase in TDS from a customer use increment, 3) Investigating water softener use restrictions, 4) Investigating the cost of adding TDS removal treatment on the District's potable water supply, 5) Investigating alternative low TDS water supplies to purchase to blend down the ambient TDS concentration of Rubidoux produced groundwater. A copy of the final report was provided to Riverside. The report was completed in October 2019 and is attached as Exhibit C.

Plan of Service Language for Agua Mansa Commerce Center

Rubidoux coordinated with Riverside on additional language in the Plan of Service for the Agua Mansa Commerce Center ("Project") placing a requirement on the Developer of the Project to not discharge sewer in excess of 650 mg/l TDS. This language placed a responsibility for the Developer to install small treatment facilities to remove salt from all potable water to each building. Salts removed from the source water during the reverse osmosis treatment process would be captured in a brine storage tank and truck hauled by the users and discharged to the Brine Line. Due to low potable demand of each building (large box logistics warehousing), the

implementation of this language was considered feasible. Riverside removed its objection to the annexation of the Project into Rubidoux. Subsequent to the Project's annexation into Rubidoux, Rubidoux and Riverside staff met and Riverside agreed to allow the Project to be built without installation of the treatment facilities as proposed in the Plan of Service due to the Project's negligible contribution to the overall TDS concentration issue. This was addressed in a letter from Rubidoux to Riverside dated December 28, 2020, attached as Exhibit D, and agreed upon by Riverside in January 2021.

Alternative Water Supply

Rubidoux's Board of Directors on March 19, 2020 approved a Memorandum of Understanding ("MOU") between Rubidoux and JCSD. This MOU outlines a cooperative effort between Rubidoux and JCSD to increase water supply in the two service areas. Both agencies discharge sewer to Riverside and have a common interest in increasing the volume of high quality, low TDS potable water. Currently the two agencies share a physical interagency connection to move water in both directions (Jewel Street Intertie). Goals outlined in the MOU include financially participating in ways to increase water supply. Possible options to be investigated included:

1. Build a reverse osmosis treatment facility to remove salt and discharge brine to the Brine Line.
2. Move low TDS water from Western to JCSD, and JCSD wheels the water to Rubidoux. Water "wheeling" refers to the practice of conveying water from one agency to another agency through a third (intermediary) agency.
3. Evaluate connections to Metropolitan Water District of Southern California's ("MWD") Lower Feeder or Etiwanda Feeder to import low TDS water into Rubidoux.
4. Connection to Riverside's water distribution system when the Mission Blvd. or Market Street Bridge(s) are rebuilt. Under this option Rubidoux would purchase Mills Treatment

Plant water (low TDS State Water Project) from Western and deliver it to Riverside, and Riverside would deliver like volume of water to Rubidoux. Actual molecules of water would be a composite of Riverside water supplies.

5. Purchase of Chino Desalter Water and deliver through JCSD's distribution system to Rubidoux through the Jewel Street Intertie (differs from item "2" above as this desalter water would be from JCSD's allocation of supply from the Chino Desalter, rather than Western's allocation).
6. Purchase groundwater with low TDS from other local area agencies who are currently not utilizing all of their available water rights.

Update of District Water and Sewer Masterplans

Rubidoux hired Webb and Associates to update its 2015 District Water and Sewer Master Plans. Rubidoux adopted updated Water and Wastewater Master Plans in October 2022. With the updates, costs were included for water supply/water quality improvements. The water supply/water quality improvement costs include costs for the addition of reverse osmosis treatment to remove TDS and contaminants. The updated Master Plans serve as nexus reports for potential increases in system capacity charges to support necessary water supply/water quality improvements. A five-year (5) rate plan was adopted by Rubidoux's Board of Directors on December 15, 2022. The rate plan was based on a comprehensive cost of services study which included a five-year budget outlook and incorporated the purchase of 1,000 AFY of imported low TDS concentration water to use as diluent water with Rubidoux's groundwater.

Summary of Current and Past TDS Management Efforts

The removal of Aramark's high TDS wastewater flow to the Brine Line in November 2019 lowered average TDS concentration from around approximately 1,100 mg/l to 790 mg/l, a 320 mg/l decrease (approximate 30% drop). Rubidoux helped to facilitate this action with a monetary

contribution of \$2.35 million. This action puts Rubidoux within 140 mg/l of the 650 mg/l TDS limit in its wastewater discharge. To put into terms of pounds of TDS, using an average day discharge of 1.7 MGD wastewater to Riverside, Rubidoux is approximately 2,000 lbs/day TDS over the limit.

The updated Rubidoux Water Master Plan has estimated \$12 million in capital costs to construct a reverse osmosis treatment plant (“RO”) to treat groundwater. Additional costs would be needed for purchasing Brine Line discharge rights (treatment and disposal, and pipeline), lateral construction from the RO treatment facility to the Brine Line, and a finished water pipeline to connect the desalted water to Rubidoux’s distribution system. The RO plant is anticipated to have a design capacity of 3,100 gpm sufficient to remove enough TDS to bring the TDS levels in the wastewater discharge below 650 mg/l at Rubidoux’s currently forecasted water demand. The \$12 million cost was included as part of the overall capital costs used to determine the Rubidoux’s current water connection fee which is currently set at \$6,800 per EDU (1 EDU = ¾” meter capacity). The water connection fee is updated periodically to match funding requirements proposed in the water master plan as it is updated.

As part of its current plans for future mitigation, Rubidoux conducted thorough analyses of alternative water supplies and the following was determined:

1. Purchase Mills Water Treatment Plant water from Western Municipal Water District. This option has Rubidoux purchasing up to 2,000 AFY of low TDS State Water Project water (~330 mg/l TDS) and wheeling it through Riverside’s distribution system to Rubidoux. The point of entry would be at the west side of either the Market Street or Mission Blvd. bridge. Preliminary capital costs are in the \$8 to \$10 million range due to the necessity of building a significant length of pipeline to get from Riverside’s transmission mains to Rubidoux’s connection point. The option also relies on Riverside agreeing the TDS benefit to Rubidoux would come as a credit. Since the actual molecules of low TDS water purchased would not reach Rubidoux, Riverside would receive the TDS benefit from the

purchased water paid for by Rubidoux in lower TDS concentration in Riverside's customer wastewater. The cost of the water would include MWD's Tier 1 Treated plus Western's administrative charges and Riverside's wheeling charges.

2. Purchase of water from Western via JCSD. This option would have Western delivering low TDS water to JCSD from the Mills Water Treatment Plant and/or Arlington and Chino Desalters. This water would have a TDS concentration of around 330 mg/l. JCSD would commingle this water with local groundwater it produces and wheel it to Rubidoux through their distribution system to the Jewel Street Intertie. However, with its existing distribution system, JCSD cannot deliver water to Rubidoux during higher demand periods. Thus, under current conditions JCSD would have limited delivery periods, and the water quality benefit would be degraded as the purchased low TDS water would be blended with local JCSD groundwater which has a higher ambient TDS concentration.

JCSD is constructing in phases a project called the Granite Hill Pipeline. This pipeline is intended to lower pumping costs, increase system reliability/redundancy, and enable JCSD to move more Chino Desalter water (low TDS water) into the easterly portion of its service area. Once all phases of the Granite Hill Pipeline are completed, Rubidoux could build approximately a half mile of pipeline to connect the Granite Hill Pipeline to the Jewel Street Intertie. The timing for the completion of all phases of the Granite Hill Pipeline is 8 to 10 years. Once this option is viable the cost of water will be Western's "wholesale water rate", plus JCSD's wheeling charge. Other cost considerations would include amortization of the capital costs to build a pipeline from the end of the Granite Hill Pipeline to the Jewel Street Intertie.

3. Purchase of MWD Water Wheeled through West Valley Water District ("West Valley"). West Valley shares a service area boundary with Rubidoux along Wilson Street near Fleetwood Drive. Both agencies have existing potable water pipelines in Wilson Street, separated by approximately 100 feet. West Valley water is low TDS (330 mg/l) and at a slightly higher pressure.

It is estimated Rubidoux would need 2,000 AFY of low TDS (330 mg/l) water to create a rolling 12-month TDS average of 650 mg/l in its wastewater deliveries to Riverside at build-out condition. Under current customer demands, Rubidoux would only need approximately 900 AFY.

In 2020 Rubidoux staff-initiated discussions with West Valley staff to explore the possibility of constructing an intertie at the intersection of Wilson and Fleetwood to move water from West Valley to Rubidoux. It was determined the physical intertie would be relatively inexpensive (\$500,000 to \$800,000) but the required institutional agreements to memorialize the imported water supply complicated the matter.

West Valley is a retail agency of San Bernardino Valley Municipal Water District (“Valley District”), and Rubidoux is a retail agency of Western. Western is a member agency of MWD. Both MWD and Valley District are “contract agencies” to the State of California Department of Water Resources (“State”) for access to State Water Project water. Within the contracts with the State, contracting agencies have a non-compete clause disallowing contract agencies to sell water in each other’s service areas. Thus, since Valley District and MWD are both state water contract agencies, to move low TDS imported water (State Water Project Water) it was necessary to negotiate a five-party agreement to enable up to 2,000 AFY of imported water to be delivered to Rubidoux through West Valley’s system. All parties approved the five-party agreement with MWD (“Five-Party Agreement”) being the last to approve it in spring 2023. The agreement terms include:

- a. Up to 2,000 AFY of MWD water delivered to Rubidoux;
- b. Deliveries to Rubidoux will be allocated against Western’s MWD supply allocations;
- c. The term of the agreement will run concurrent with existing State contracts;

- d. Rubidoux pays Western for water delivered, including all associated costs of the water which Western pays on behalf of the District;
- e. Western pays MWD; and
- f. Rubidoux will pay West Valley wheeling charges.

The agreement was fully executed in June 2024.

Rubidoux had their engineering consultant Krieger and Stewart complete the construction plans and specifications for the physical intertie to be located at the intersection of Wilson and Fleetwood. Project is “shovel ready” and has been reviewed by MWD and West Valley.

Last, Rubidoux entered into an Operational Agreement with West Valley that was fully executed in October 2024. This Operational Agreement provides day-to-day terms and conditions for the wheeling of water through West Valley. Terms also include meter access, wheeling costs, and scheduling of delivery requirements.

This option for alternative water supply is preferred over others analyzed due to:

- a. Capital costs: Has lowest capital costs to implement, less than \$1,000,000.
- b. Supply costs: Similar costs for supply to others since supply is through MWD. Cost will be MWD full service treated plus Western administrative costs and a West Valley wheeling charge. The West Valley wheeling charge is expected to be indexed as a percentage of the MWD treatment surcharge cost.
- c. Readiness: Plans are done and ready to bid, and institutional agreements in place.
- d. Operational costs: Little operational costs except administrative costs to read meter and pay invoices.
- e. Low maintenance and replacement costs: Expected costs for meter calibration and pressure reducing valve maintenance.

- f. Ability to implement project as required: The construction of the physical intertie and purchase of water can be based on various triggers as agreed upon by involved agencies. For example, the construction of the intertie could be conditioned to a future project being annexed to Rubidoux, and water purchases made as Riverside's aggregate TDS concentration in recycle water discharges to the Santa Ana River is in danger of exceeding 650 mg/l.
- g. With the intertie in place, there will be flexibility to move either low TDS water acquired from MWD through the Five-Party Agreement, or low TDS groundwater from other local agencies with surplus water rights.

Since 2019 Rubidoux has made significant progress in actual reduction in its wastewater TDS concentration by moving Aramark TDS laden flow to the Brine Line. It has updated its master plan to address improvements in water quality resulting in the inclusion of \$12 million for future RO treatment being incorporated into the overall capital budget used to determine the current water connection fee Rubidoux collects for each new EDU. Last, multiple alternative low TDS water supplies have been reviewed and a preferred option selected with agreements and plans in place to implement.

Proposed TDS Management Plan

The issue, TDS management, arises out of concerns voiced by the City of Riverside that at some point in the future, it may not be able to maintain its current compliance with Riverside's NPDES Permit requirement of recycled water discharge to the Santa Ana River having a TDS concentration at or below 650 mg/l. Currently the TDS concentration of the recycled water discharged to the Santa Ana River is 590 mg/l and is reflective of the aggregate of wastewater flows received by all contracting agencies, including Rubidoux. Per data provided by Riverside in November 2023, total plant flow is 26.7 MGD, with Rubidoux contributing 1.7 MGD, or 6.37% of the flow. The total plant TDS discharge is 131,380 lbs/day based on a total flow of 26.7 MGD with a rolling 12-month TDS concentration of 590 mg/l. Rubidoux with 1.7 MGD of flow at 787 mg/l TDS, contributes 11,158 lbs/day of TDS, or 8.49% of the plant total. If Rubidoux contributed the same flow of 1.7 MGD with a TDS concentration of 650 mg/l, Rubidoux's TDS contribution would be 9,216 lbs/day. Under current conditions if Rubidoux was to lower its TDS contribution to 650 mg/l (9,216 lbs/day), the overall plant TDS concentration would be lowered to 581 mg/l, a 9 mg/l improvement from the current discharge average of 590 mg/l (1.5%).

Riverside as the Permit holder has raised concerns about Rubidoux's TDS concentration in the wastewater it delivers to the plant for treatment. Riverside has taken a position where each agency delivering wastewater flow must, on an individual basis, deliver wastewater with a TDS concentration at or below 650 mg/l.

Rubidoux has made further efforts at its sole expense to reduce its wastewater TDS concentration from 787 mg/l to be at or below 650 mg/l by investigating various alternatives to purchase imported low TDS water to blend with its local groundwater supply. The result is a preferred TDS management option of building a physical intertie with West Valley to move either imported MWD water or low TDS groundwater acquired from local agencies. To move this option forward, Rubidoux worked to secure an approved Five-Party Agreement (Exhibit E – Agreement No. A0-5314: Agreement to Provide Water to Rubidoux Community Services District) to enable access to

the MWD supply and has finalized the plans and specifications to build the physical intertie to West Valley’s distribution system. Last, Rubidoux executed an Operational Agreement with West Valley to establish day-to-day operational details – meter access, scheduling of deliveries, and payment terms. Ongoing efforts will continue to develop agreements with other local agencies to acquire low TDS groundwater as an option to MWD supply purchases.

Rubidoux proposes the following TDS Management Plan to reduce its TDS concentration in the wastewater it sends to Riverside’s treatment plant –

1. Include a condition in the Plan of Service and Environmental Impact Report for the Rio Vista Project requiring that a physical potable water supply intertie with West Valley Water District capable of moving up to 2,000 AFY of low TDS concentration water be built.
2. In the event that 750 equivalent dwelling units (“EDU”), defined as ¾ inch water meter connection, are connected for sewer service within Rubidoux’s current or expanded service area prior to the Rio Vista Project building the physical intertie with West Valley Water District, Rubidoux will cause to build the physical intertie itself within 12 months of connection of the 750th EDU. The count on the future 750 EDUs will start on the date the last Party executes this Agreement. See Exhibit F for the analysis and impact of 750 additional EDUs to Rubidoux’s sewage flow to Riverside.
3. Purchase low TDS potable water through the intertie with West Valley Water District to blend with Rubidoux’s groundwater supply in sufficient volumes to enable Rubidoux’s TDS concentration in sewage delivered to the Riverside WWTP to be 650 mg/L or less in the event the TDS concentration in tertiary treated water discharged from the Riverside WWTP reaches the following Triggering TDS Concentrations:

Period	TDS mg
12 Month Average	620

5 Year Average	626
10 Year Average	627
15 Year Average	624
20 Year Average	618

4. These Triggering TDS Concentrations have been determined based on the current NPDES permit TDS compliance calculation and anticipated compliance calculation of a forthcoming NPDES permit. The Triggering TDS Concentrations may be adjusted to reflect future controlling NPDES permits that may use a compliance calculation different from the current and anticipated compliance calculation utilized herein.

5. In the event of any changes in TDS conditions in sewage delivered to the Riverside WWTP, Rubidoux may request that Riverside reevaluate and/or amend the Triggering TDS Concentrations, which may include discontinuing the purchase of water through the intertie. Any reevaluation and/or amendment of the Triggering TDS Concentrations requested by Rubidoux, including the discontinuation of water purchases, shall be at the sole discretion of Riverside.

6. If Rubidoux successfully implements groundwater treatment solutions, such as a Reverse Osmosis plant, that eliminates the need for imported water and enables independent compliance with the NPDES permit, it may discontinue purchasing water through the intertie.

EXHIBIT A

California Regional Water Quality Control Board

Santa Ana Region

Order No. R8-2013-0016

NPDES No. CA0105350

Section IV. A. 1c. (Page 14)

c. Total Dissolved Solids:

- 1) The 12-month flow weighted running average total dissolved solids constituent concentration shall not exceed 650 mg/l, unless the discharger demonstrates to the satisfaction of the Regional Board's Executive Officer that:
 - i. Discharges in excess of the TDS limits are due to the quality of water supply sources utilized in the Discharger's service area, and that all reasonable steps, as agreed upon by Executive Officer, have been taken to ensure that the best quality supplies are obtained and utilized in the Dischargers service area; and/or
 - ii. Discharges in excess of the TDS limits are due to chemical additions in the treatment process needed to meet waste discharge requirements, and the Discharger has taken all reasonable steps to optimize chemical additions so as to minimize the increases; and
 - iii. The Discharger implements a plan, with the approval of the Executive Officer, to offset TDS discharges in excess of the 650 mg/L limit.
- 2) The 12-month flow weighted running average total dissolved solids concentration shall not exceed the 12-month flow weighted running average total dissolved solids concentration in the water supply by more than 250 mg/l, unless the Discharger demonstrates to the satisfaction of the Regional Board's Executive Officer that TDS discharge in excess of 250 mg/l mineral increment are due solely to chemical additions in the treatment process needed to meet waste discharge requirements, and the discharger has taken all reasonable steps to optimize chemical additions so as to minimize the TDS increases.

d. Total Inorganic Nitrogen (TIN):

The 12-month flow weighted running average TIN concentration shall not exceed 10 mg/l. unless the Discharger implements a plan, with the approval of the Executive Officer, to offset TIN discharges in excess of the TIN limits.

EXHIBIT B

Agreement for Regional Primary and Secondary Wastewater Treatment

May 4, 1978

Section 10.2 (Pages 17-18)

9.2 Changes in Quantity Standards. The Regional Advisory Committee may, from time to time, amend or order changes in the Quantity Standards set forth in Exhibit "B," to the extent necessary and sufficient to protect the regional system, and to comply with the requirements of any governmental agency having jurisdiction over discharges from the regional system; provided, however, that no such amendments or changes may increase or decrease the respective capacity rights of the parties, unless the parties shall agree otherwise.

10. QUALITY STANDARDS FOR WASTEWATER DELIVERED TO REGIONAL PRIMARY AND SECONDARY WASTEWATER TREATMENT FACILITIES.

*Primary + Secondary is RCSD
Advanced or tertiary is City*

10.1 General Quality Standards. The quality of wastewater delivered by Riverside, Jurupa and Rubidoux into the regional primary and secondary wastewater treatment facilities shall meet requirements with respect to quality, characteristics, and prohibited substances contained in Exhibit "B."

10.2 Changes in Quality Standards. The Regional Advisory Committee may, from time to time, amend or order changes in the Quality Standards set forth in Exhibit "B," so long as they are necessary and sufficient to protect the regional agency having jurisdiction over discharges from

the regional system, or the regional advanced wastewater treatment plant.

Notwithstanding any other provision of this Agreement, Riverside, Jurupa and Rubidoux shall each have the responsibility of delivering to the regional primary and secondary treatment facilities a quality of wastewater which independently complies with all lawful requirements of any regulatory authority of competent jurisdiction. This responsibility shall include measures, if necessary, to improve the respective water supply of any party if the poor quality of its supply causes or threatens violations of any regulatory authority requirement.

11. ORDINANCES ESTABLISHING RULES AND REGULATIONS FOR DISCHARGE OF SEWAGE AND INDUSTRIAL WASTES.

11.1 Enactment of Sewer Use Ordinances. Each party to this Agreement agrees to enact, maintain and enforce a sewer use ordinance which shall prohibit discharge into the regional system of substances which may be hazardous to or may impair the structures, equipment, functions or processes thereof, or which would prevent compliance with all lawful requirements affecting the discharge of effluent therefrom. Such ordinances shall also require control of the quantity, rate of flow, and concentration of compatible pollutants, of incompatible pollutants, and of toxic substances; and for the issuance of permits to industrial users within

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EXHIBIT C

Rubidoux Community Services District

Total Dissolved Solids Study

October 2019

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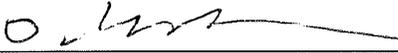
RUBIDOUX COMMUNITY SERVICES DISTRICT
3590 RUBIDOUX BLVD., JURUPA VALLEY, CA 92509
(951) 684-7580

**RUBIDOUX COMMUNITY SERVICES DISTRICT
TOTAL DISSOLVED SOLIDS STUDY**

OCTOBER 2019

Prepared by

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SECTION I
INTRODUCTION



SECTION I INTRODUCTION

The Rubidoux Community Services District (RCSD) is a community services district (CSD), predominantly serving the easterly portion of the City of Jurupa Valley (incorporated July 1, 2011) in Riverside County, California, with approximately 120 acres in San Bernardino County. RCSD is located approximately 50 miles east of Los Angeles, and is bounded by San Bernardino County on the north, the Jurupa Mountains and Pedley Hills on the northwest, unincorporated areas of Jurupa on the west, the Santa Ana River on the south, and the City of Riverside (City) on the east. RCSD's current boundaries, which are shown on **Figure A-1** in **Appendix A**, encompass an area of approximately 7.7 square miles. Ground surface elevations within RCSD's service area range from approximately 760 feet to 1,250 feet above sea level.

Climate in RCSD's service area is characterized by hot, dry summers and short, mild winters, with temperatures commonly exceeding 100 degrees Fahrenheit (°F) during summer months, and decreasing to an average temperature of approximately 49°F during the winter. The area normally receives an average annual precipitation of approximately 10 inches, most of which occurs during December through March.

RCSD owns and operates a sewer collection system within its service area. Wastewater is collected and transmitted to the City's Regional Water Quality Control Plant (RWQCP) for treatment and discharge to the Santa Ana River.

RCSD's sewer collection system serves approximately 32,900 residents and consists of approximately 68 miles of gravity sewers ranging in size from 6 inches to 27 inches in diameter, and six sewage lift stations.

RCSD's service area consists mainly of single family residential customers, but also includes an industrial/manufacturing sector (located mostly in the northerly portion of the service area), along with commercial/industrial/institutional and landscape connections.

Potable water delivered by RCSD to its customers comes from groundwater, which is currently pumped from four active drinking water wells (Wells 2, 6, 8, and 18). All of RCSD's wells are located within the RCSD boundaries and draw from the Riverside South Groundwater Basin. According to its 2018



Consumer Confidence Report, the average total dissolved solids (TDS) of potable water delivered to RCSD's customers is 520 milligrams per liter (mg/L).

This TDS Study (Study) was prepared to provide a foundation for development of a comprehensive TDS Management Plan that will identify practical methods for managing, and reducing, where possible, discharges of TDS into the RCSD sewer collection system.

Specifically, the Study sets forth a sampling program that identifies representative sampling locations, adequate sampling and monitoring frequencies and durations, and appropriate sampling procedures; and provides the results of said program with discussion, conclusions, and recommendations.

SECTION II
SYSTEM DESCRIPTION



SECTION II SYSTEM DESCRIPTION

A. RCSD SERVICE AREA

RCSD's current service area boundaries, which are shown on **Figure A-1** in **Appendix A**, encompass an area of approximately 7.7 square miles.

B. RCSD SEWER COLLECTION SYSTEM

RCSD's sewer collection system serves approximately 32,900 residents and consists of approximately 68 miles of gravity sewers ranging in size from 6 inches to 27 inches in diameter, and six sewage lift stations (Fleetwood, Belltown, Exmoor, Jurupa Hills, Juan Diaz, and Regional). The system serves approximately 5,593 residential service connections and approximately 245 commercial/industrial connections. Sewage is collected and conveyed to the City's RWQCP via the 8.0 million gallons per day (MGD) capacity Regional Lift Station which conveys wastewater to the City via parallel 14" and 18" diameter force mains. Due to the location of the Regional Lift Station, a supplemental lift station, the 0.6 MGD capacity Juan Diaz Lift Station, collects wastewater from the Jurupa Hills area and pumps it into the 14" and 18" diameter force mains. RCSD contributes approximately 7% of the total wastewater influent flow to the City's RWQCP.

C. CITY REQUIREMENTS

Discharges from the City's RWQCP to the Santa Ana River are regulated by the National Pollutant Discharge Elimination System Permit No. CA0105350, Order No. R8-2013-0016 (NPDES Permit), issued by the California Regional Water Quality Control Board, Santa Ana Region (Regional Board). The NPDES Permit includes two limitations on discharges of TDS; one fixed and one incremental based on an increase over the TDS of the background water supply. The more stringent of the two limits applies. The fixed limit is 650 mg/L, and the incremental limit is 250 mg/L above the average TDS concentration in the water supply (incremental limit). Both limits are implemented as 12 month running averages. In 2016, the City's background domestic water supply TDS concentration was determined to be 366 mg/L, resulting in a maximum incremental TDS limit of 616 mg/L (366 mg/L + 250 mg/L = 616 mg/L).



D. LOCAL PRETREATMENT LIMIT

At its City Council meeting on March 20, 2018, the City revised the maximum local wastewater concentration limit (local limit) for TDS in industrial wastewater discharges within the City from 2,500 mg/L to 1,210 mg/L.

Because wastewater discharges to RCSD's POTW are treated at the City's RWQCP, RCSD has historically adopted the same local limits as the City to meet the requirements of the City's NPDES Permit. Therefore, at its Board of Directors meeting on June 7, 2018, RCSD revised its maximum local wastewater concentration limit for TDS from 2,500 mg/L to 1,210 mg/L to correspond with that of the City, effective as of June 7, 2018.

SECTION III
SAMPLING PROGRAM



SECTION III SAMPLING PROGRAM

A. SAMPLING LOCATIONS

This sampling program identifies representative sampling locations to effectively characterize domestic and industrial wastewater sources to determine the allowable TDS loading at the Regional Lift Station.

Sampling locations throughout RCSD's service area have been selected to generally characterize the TDS sources and to identify any areas of concern requiring further attention. Locations were selected based on the existing residential, commercial, and industrial areas within the RCSD service area, in an effort to fully characterize the TDS distribution within the sewer collection system.

1. Sewer Collection System

The sewer collection system sampling locations are identified by address and manhole number or lift station name in **Table III-1** at the end of this section. In addition to TDS, samples collected from these manholes were analyzed for Total Hardness, Calcium, Magnesium, Sodium, and Specific Conductance (an estimate of TDS that can be measured electronically in the field with a hand-held device or continuously using a fixed electronic sensor). Analyses for Total Hardness, Calcium, Magnesium, and Sodium were included to help identify potential sources of TDS discharges (e.g., water softeners).

2. Potable Water Distribution System

Although the average TDS of potable water delivered to RCSD's customers is 520 mg/L (according to the *2018 Consumer Confidence Report*), the TDS can vary between pressure zones within the RCSD service area due to differences in water quality provided by the various RCSD groundwater wells. To establish baseline TDS values in the potable water contributing to the TDS in the local sewage flows for comparison to the sewer collection system samples, samples were collected from selected distribution system sample taps located in the vicinity of the sewer sampling locations (see **Table III-1**). In



addition to TDS, these samples were analyzed for Total Hardness, Calcium, Magnesium, Sodium, and Specific Conductance.

To establish baseline TDS values in the potable water supply for major pressure zones within RCSD's service area (except the small Ridgeline/Skyloft Pressure Zone), samples were also collected at four of RCSD's domestic water storage reservoirs (Tom Watson, Atkinson, Perrone, and Hunter #2) at the Anita B. Smith Wellhead Treatment Facility, and analyzed for TDS and Specific Conductance.

3. Significant Industrial Users

Routine wastewater monitoring at Aramark Uniform Supply and Sierra Aluminum includes monitoring for TDS.

B. SAMPLE SCHEDULING

Sampling was scheduled to accommodate RCSD staff working hours and schedules as well as to minimize overall costs, while still obtaining sufficient representative data to obtain meaningful conclusions.

Sewer Collection System manholes specified in **Table III-1** were divided into three groups and sampled on three successive days, Wednesday, Thursday, and Friday. Sampling was repeated approximately two weeks later to account for short-term variability in sewage TDS.

Potable water system sampling locations specified in **Table III-1** were sampled once on three successive days: Tuesday, Wednesday and Thursday.

Samples were not collected on weekends because a review of continuous Specific Conductance monitoring records from the Juan Diaz and Regional Lift Stations did not indicate any significant difference between weekday and weekend results.



C. SAMPLE COLLECTION, TRANSPORTATION, AND ANALYSIS

All samples collected from sewer collection system manholes were 24-hour composite samples. Each sample was collected by E.S. Babcock & Sons Laboratory (ESB) staff and transported to the laboratory in laboratory-provided sample containers cooled to $\leq 4^{\circ}\text{C}$. ESB is a state-certified analytical laboratory. Samples were analyzed in accordance with standard protocols.

All samples collected from potable water distribution system sampling locations were grab samples collected by RCSD personnel and transported to the ESB laboratory in laboratory-provided sample containers cooled to $\leq 4^{\circ}\text{C}$.



**TABLE III-1
SEWER COLLECTION SYSTEM SAMPLING LOCATIONS**

Sampling Group	Sample Point	Sewer System Sampling					Water System Sampling		
		Manhole/L.S. Location	Sewer Atlas Page No.	Development/Area	Manhole No./ L.S. Name	Sample Type	Site No.	Site Location	Sample Type
Residential Areas									
1	1	6307 Cross River	M2	Jurupa Hills	0052-006	24-Hour Composite	21	7480 Cascade	Grab
	2	5971 Ave. Juan Bautista	L3	Jurupa Hills	0100-026	24-Hour Composite	2	5956 Ave. Juan Bautista	Grab
	3	5622 Via Escalante	J2	Hunter	0108-146	24-Hour Composite	12	5580 Via Escalante	Grab
	4	6464 Asa	I3	Van Daele	0254-086	24-Hour Composite	4	6536 Asa	Grab
	5	6541 Raven	G3	Van Daele	1050-024	24-Hour Composite	17	6728 Raven	Grab
2	6	3347 LaRue	G5	Paramount	1302-004	24-Hour Composite	18	3176 Ruthann	Grab
	7	5679 Newton	F6	North Rubidoux	1252-074	24-Hour Composite	19	5617 Bella	Grab
	8	5774 De La Vista	I5	Central Rubidoux	0650-004	24-Hour Composite	3	5779 De La Vista	Grab
	9	4016 Twining	I6	Central Rubidoux	1450-004	24-Hour Composite	15	4051 Twining	Grab
	10	4305 Exmoor	K6	Loring	0202-004	24-Hour Composite	7	4440 Palamina	Grab
Commercial Areas									
3	11	1690 Rubidoux Blvd.	D7	Crestmore	2300-022	24-Hour Composite	---	Tom Watson Reservoir ⁽¹⁾	Grab
	12	Via Cerro, just past Market	F8	Butler Industrial Park	2150-008	24-Hour Composite	30	2245 Via Cerro	Grab
	13	2993 Rubidoux Blvd.	G6	Riverside Business Park	1252-096	24-Hour Composite	19	5617 Bella	Grab
	14	3865 Rubidoux Blvd.	I5	Mission Business District	0000-298	24-Hour Composite	26	3969 Leigh	Grab
Lift Stations									
---		Jurupa Hills Country Club	L3	---	Juan Diaz L.S.	Continuous EC	---	---	---
---		Rio Road	L4	---	Regional L.S.	Continuous EC	---	---	---

(1) Total water supply for Sample Site 11 is provided by West Valley Water District.

SECTION IV
SAMPLING RESULTS



**SECTION IV
SAMPLING RESULTS**

A. SEWER COLLECTION SYSTEM SAMPLING RESULTS

Results of the sewer collection system sampling are set forth in **Table IV-1** at the end of this section.

B. POTABLE WATER DISTRIBUTION SYSTEM SAMPLING RESULTS

Results of the water system sampling are set forth in **Table IV-2** at the end of this section. The average of the potable water system TDS samples, including the reservoir sampling, was 521.7 mg/L.

Samples were also collected at each of RCSD's domestic water storage reservoirs, with results as follows:

Reservoirs Sampled May 23, 2019				
Reservoir	Pressure Zone	TDS (mg/L)	EC (uS/cm)	TDS/ EC Ratio
Watson	Atkinson North of CA-60	560	810	0.691
Atkinson	Atkinson South of CA-60	500	800	0.625
Perrone	Hunter North of Ave. de Palma	500	810	0.617
Hunter #2	Hunter South of Ave. de Palma	510	800	0.638

Samples were also collected at the Anita B Smith Water Treatment Facility and at Wells 2 and 8, with results as follows (including results for Well 18 collected in 2018—Well 18 has not yet been sampled in 2019):

Anita B. Smith Wellhead Treatment Facility Sampled May 22, 2019			
Location	TDS (mg/L)	EC (uS/cm)	TDS/ EC Ratio
Well 6	470	770	0.610
Blended Effluent	510	790	0.646



The average TDS of the source samples was 495 mg/L. For the Anita B. Smith results, the blended effluent is the water that is discharged into the system; water from Well 6 is subjected to ion exchange treatment for nitrate removal prior to discharge. Therefore, the Well 6 results were not included in the data analysis.

C. INDUSTRIAL USER SAMPLING RESULTS

Routine sampling is conducted at the effluent sampling points of two industrial users in RCSD's service area: Aramark Uniform Services (Aramark, an industrial laundry located at 1135 Hall Ave. in the Agua Mansa Corridor) and Sierra Aluminum (an aluminum forming company located at 2345 Fleetwood Dr. in the Butler Industrial Park). Aramark and RCSD both sample Aramark's effluent on a weekly basis. Results of Aramark sampling for May through July 2019 are shown in **Table B-1** in **Appendix B**. Sierra Aluminum samples its effluent twice annually and RCSD samples it roughly every other week. Results of Sierra Aluminum sampling for May through July 2019 are shown in **Table B-2** in **Appendix B**.

For the sampling period, Aramark's flow-weighted average TDS was 1,591 mg/L, and its average discharge flow was 311,619 gallons per day (gpd). For the sampling period, Aramark discharged an average of approximately 4,137 pounds/day of TDS to the RCSD collection system. Aramark is located in an area where potable water is supplied by West Valley Water District (WVWD). According to WVWD's 2018 Consumer Confidence Report, the TDS of the potable water service supplying Aramark was approximately 231 mg/L. Aramark added a TDS increment of approximately 1,360 mg/L of TDS to the water; equivalent to approximately 3,536 pounds/day of TDS.

For the sampling period, Sierra Aluminum's flow-weighted average TDS was 1,042 mg/L, and its average discharge flow was 22,538 gpd. For the sampling period, Sierra Aluminum discharged an average of approximately 196 pounds/day of TDS to the RCSD collection system. For the sampling period, the TDS of the potable water service supplying Sierra Aluminum (collected at the tap) was 582 mg/L, which is 61 mg/L higher than the average potable water TDS measured during the sampling period. Sierra Aluminum added a TDS increment of approximately 460 mg/L of TDS to the water; equivalent to approximately 86 pounds/day of TDS.



D. LIFT STATION AND OUTFALL SAMPLING RESULTS

TDS sampling results for the Regional and Juan Diaz Lift Stations from January through July 2019 are shown in **Appendix C**. For the sampling period, average outfall flow at the Regional Lift Station was 1.892 MGD, and flow-weighted average TDS was 1,132 mg/L, equivalent to approximately 17,872 pounds/day of TDS. Average outfall flow at the Juan Diaz Lift Station was 0.134 MGD, and flow-weighted average TDS was 709 mg/L equivalent to approximately 793 pounds/day of TDS.

The City monitors flow, TDS, and conductivity of the wastewater from RCSD's 14" and 18" diameter force mains (RCSD outfall) as they enter the RWQCP's headworks. Sampling results for the RCSD outfall from January through July 2019 are shown in **Table C-3** in **Appendix C**. For the sampling period, average outfall flow was 2.0 MGD, and flow-weighted average TDS was 903 mg/L, equivalent to approximately 15,071 pounds/day of TDS.



**TABLE IV-1
SEWER SYSTEM SAMPLING RESULTS
ROUND 1**

Sample Point	Manhole No.	Location	Sewer Atlas Page No.	Development/Area	Development Type	Sample Date	Hardness (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	SC (umhos/cm)	TDS (mg/L)
1	0052-006	6307 Cross River	M2	Jurupa Hills	Residential	06/26/19	270	85	14	92	1,200	710
2	0100-026	5971 Ave. Juan Bautista	L3	Jurupa Hills	Residential	06/26/19	210	67	11	98	1,300	750
3	0108-146	5622 Via Escalante	J2	Hunter	Residential	06/27/19	280	87	15	110	1,300	800
4	0254-086	6464 Asa	I3	Van Daele	Residential	06/26/19	270	85	14	83	1,200	730
5	1050-024	6541 Raven	G3	Van Daele	Residential	06/27/19	300	94	16	110	1,700	850
6	1302-004	3347 LaRue	G5	Paramount	Residential	06/27/19	320	100	17	100	1,400	800
7	1252-074	5679 Newton	F6	North Rubidoux	Residential	06/27/19	320	100	17	68	1,300	710
8	0650-004	5774 De La Vista	I5	Central Rubidoux	Residential	06/28/19	280	90	14	78	1,100	650
9	1450-004	4016 Twining	I6	Central Rubidoux	Residential	06/28/19	320	100	17	100	1,500	800
10	0202-004	4305 Exmoor	K6	Loring	Residential	06/28/19	360	110	18	110	1,600	770
11	2300-022	1690 Rubidoux Blvd.	D7	Crestmore	Industrial	07/03/19	230	72	11	25	540	350
12	2150-008	Via Cerro, just past Market	F8	Butler Industrial Park	Industrial	06/28/19	590	180	32	110	1,700	1,200
13	1252-096	2993 Rubidoux Blvd.	G6	Riverside Business Park	Industrial	06/28/19	450	140	24	73	1,500	780
14	0000-298	3865 Rubidoux Blvd.	I5	Mission Business District	Commercial	06/28/19	340	110	17	120	1,600	800

**TABLE IV-1
SEWER SYSTEM SAMPLING RESULTS
ROUND 2**

Sample Point	Manhole No.	Location	Sewer Atlas Page No.	Development/Area	Development Type	Sample Date	Hardness (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	SC (umhos/cm)	TDS (mg/L)
1	0052-006	6307 Cross River	M2	Jurupa Hills	Residential	07/10/19	280	88	14	84	1,300	660
2	0100-026	5971 Ave. Juan Bautista	L3	Jurupa Hills	Residential	07/10/19	380	120	20	190	2,200	1,200
3	0108-146	5622 Via Escalante	J2	Hunter	Residential	07/10/19	380	120	21	190	1,900	1,100
4	0254-086	6464 Asa	I3	Van Daele	Residential	07/10/19	280	86	15	78	1,100	730
5	1050-024	6541 Raven	G3	Van Daele	Residential	07/10/19	370	120	0	91	1,500	830
6	1302-004	3347 LaRue	G5	Paramount	Residential	07/11/19	340	110	18	72	1,300	750
7	1252-074	5679 Newton	F6	North Rubidoux	Residential	07/11/19	320	97	18	66	1,200	670
8	0650-004	5774 De La Vista	I5	Central Rubidoux	Residential	07/12/19	260	81	14	100	1,600	910
9	1450-004	4016 Twining	I6	Central Rubidoux	Residential	07/11/19	330	100	17	98	1,600	830
10	0202-004	4305 Exmoor	K6	Loring	Residential	07/11/19	270	86	14	120	1,400	780
11	2300-022	1690 Rubidoux Blvd.	D7	Crestmore	Industrial	07/12/19	200	64	10	19	500	350
12	2150-008	Via Cerro, just past Market	F8	Butler Industrial Park	Industrial	07/12/19	480	150	27	120	1,600	1,300
13	1252-096	2994 Rubidoux Blvd.	G6	Riverside Business Park	Industrial	07/12/19	410	130	22	86	1,600	1,100
14	0000-298	3865 Rubidoux Blvd.	I5	Mission Business District	Commercial	07/12/19	300	94	16	110	1,500	830



TABLE IV-2 WATER SYSTEM SAMPLING RESULTS												
Sample Point	Location	Sewer Atlas Page No.	Development/Area	Reservoir	Development Type	Sample Date	Hardness (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	SC (umhos/cm)	TDS (mg/L)
1	7480 Cascade	L2	Jurupa Hills	Atkinson	Residential	06/25/19	280	89	13	61	800	510
2	5956 Ave. Juan Bautista	L3	Jurupa Hills	Atkinson	Residential	06/25/19	280	90	13	58	790	510
3	5580 Via Escalante	J2	Hunter	Hunter	Residential	06/25/19	280	89	13	57	810	520
4	6536 Asa	I3	Van Daele	Atkinson	Residential	06/25/19	280	89	13	60	810	510
5	6728 Raven	G3	Van Daele	Perrone	Residential	06/25/19	270	89	13	59	800	510
6	3176 Ruthann	G5	Paramount	Atkinson	Residential	06/26/19	310	97	15	50	820	520
7	5617 Bella	F6	North Rubidoux	Watson	Residential	06/26/19	330	110	17	39	800	550
8	5779 De La Vista	I5	Central Rubidoux	Atkinson	Residential	06/26/19	280	89	13	62	800	500
9	4051 Twining	I6	Central Rubidoux	Atkinson	Residential	06/26/19	280	88	13	62	800	500
10	4440 Palamina	K6	Loring	Atkinson	Residential	06/26/19	280	91	13	60	800	500
11	Tom Watson Reservoir	D7	Crestmore	Watson	Industrial	06/27/19	330	100	17	39	840	540
12	2245 Via Cerro	F8	Butler Industrial Park	Watson	Industrial	06/27/19	330	100	17	39	850	580
13	5617 Bella	F6	Riverside Business Park	Watson	Industrial	06/27/19	320	100	16	43	840	550
14	3969 Leigh	I5	Mission Business District	Atkinson	Commercial	06/27/19	280	88	14	62	810	520
R1	Atkinson Reservoir	G5/G6	---	---	---	05/23/19	---	---	---	---	800	500
R2	Watson Reservoir	D7	---	---	---	05/23/19	---	---	---	---	810	560
R3	Perrone Reservoir	H3	---	---	---	05/23/19	---	---	---	---	810	500
R4	Hunter Reservoir	J2	---	---	---	05/23/19	---	---	---	---	800	510

TABLE IV-3 WATER SUPPLY SAMPLING RESULTS									
Source Identification	Sewer Atlas Page No.	Reservoir	Sample Date	Hardness (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	SC (umhos/cm)	TDS (mg/L)
Well 2	H6	Atkinson	08/07/19	280	94	12	47	770	500
Well 8A	I7	Atkinson	08/07/19	250	80	13	67	810	480
Well 18	H7	Atkinson	08/16/18	240	75	12	73	800	490
Nitrate Plant - Well 6	E9	Watson	05/22/19	---	---	---	---	770	470
Nitrate Plant - Blended Water	E9	Watson	05/22/19	---	---	---	---	790	510

SECTION V
DISCUSSION



SECTION V DISCUSSION

A. POTABLE WATER SYSTEM TDS

The average of the potable water system TDS samples, including the reservoirs, was 521.7 mg/L. The average of the water source TDS samples (wells and Anita B. Smith facility) was 495 mg/L.

The average of the two TDS samples collected from the Watson Reservoir was 550 mg/L, 50 mg/L higher than samples collected from the Atkinson and Perrone Reservoirs, and 40 mg/L higher than the sample collected from the Hunter #2 Reservoir. Samples from sample points served by the Watson Reservoir (Sample points 7, 12, and 13) were, on average, approximately 39 mg/L higher than the average; and were the only sites with TDS levels that exceeded the 521.7 mg/L average by more than 5 mg/L.

The Butler Industrial Park had unusually high TDS in its potable water supply; higher than the sample collected from the Watson Reservoir (560 mg/L). Sampling of the blended effluent at the Anita B. Smith Plant (located adjacent to the Butler Industrial Park) on May 22 indicated a TDS of 510 mg/L; but the potable water sampled at 2245 Via Cerro on June 27 had a TDS of 580 mg/L, and the potable water supply sampled at Sierra Aluminum had an average TDS of 582 mg/L (over the period May through July 2019).

The average TDS of the water source samples was 495 mg/L, considerably lower than the TDS of the water in the Watson Reservoir.

The source of the high TDS in the potable water in the Watson Reservoir and connections in the northerly Atkinson Zone should be investigated further.

B. RESIDENTIAL SEWER SYSTEM TDS

The average residential TDS for all wastewater samples was 801.5 mg/L. The average residential TDS increment added to potable water TDS for all wastewater samples was 288.5 mg/L.



C. RESIDENTIAL AREAS WITH POTENTIAL FOR DOMESTIC STATIONARY WATER SOFTENERS

The residential sample stations where wastewater and potable sample results indicated a TDS increment greater than the average of 288.5 mg/L were Stations 2, 3, 5, (both rounds of sampling), 8, and 9. These sample stations are located in the Jurupa Hills, Hunter Zone, Van Daele Development, and Central Rubidoux areas. There is increased potential for domestic stationary water softeners in these areas.

RCSD's Ordinance No. 105 limits the use of stationary water softeners by all users of the RCSD wastewater collection system (See **Appendix D**). The use of residential domestic stationary water softeners is allowed, but is conditioned by a number of special requirements.

D. INDUSTRIAL AREAS

Butler Industrial Park had the largest added TDS increment (620 mg/L for first round of sampling, 720 mg/L for second round of sampling). The area includes Sierra Aluminum and other businesses that have cooling towers, which increase TDS through evaporation.

The samples from Sample Station 11 (in an industrial area) had much lower TDS values than other RCSD wastewater samples. This station is in an area where potable water is supplied by WVWD. According to its 2018 Consumer Confidence Report, the average TDS, Hardness, and Sodium for water produced by WVWD wells was 231 mg/L, 177 mg/L, and 16 mg/L, respectively; all significantly lower than the values for the same constituents in the water produced by RCSD's wells.

E. RESULTS AT REGIONAL LIFT STATION VERSUS RESULTS AT RCSD OUTFALL

The data set forth in **Appendix C** indicate a substantial variance in the TDS of samples collected by RCSD at the Regional Lift Station and by the City at the RCSD outfall. According to RCSD staff, RCSD's composite sampling performed at the Regional Lift Station's wet well have also resulted in BOD and TSS values at significant variance from those provided by the City based on sampling at the RCSD outfall. RCSD has obtained split samples from the City, and the split



samples correlate well with the City's results. RCSD has recently ceased collecting samples at the Regional Lift Station.

F. ANTICIPATED EFFECT OF REMOVAL OF ARAMARK'S DISCHARGE

The average TDS of Aramark's wastewater discharge constitutes upwards of 27% of the total TDS delivered by RCSD to the RWQCP in pounds/day. Due to its inability to comply with RCSD's Industrial Wastewater Pretreatment Local Limit for TDS, Aramark has been required to terminate its discharge to RCSD's sewer collection system by November 1, 2019 (contingent upon timely approval of the final discharge permit by Orange County Sanitation District).

The anticipated effect of the removal of Aramark's wastewater discharge from RCSD's collection system on outfall TDS was estimated two different ways, as follows:

1. Based on the sampling data and methodology set forth in **Table B-3** of **Appendix B** for May through July 2019 (samples collected on the same date only), the theoretical effect of removing Aramark's discharge from the collection system on TDS at the RCSD outfall is a reduction of approximately 117 mg/L (about 13%) from 906 mg/L to 789 mg/L.
2. Based on the overall mass discharge of TDS in pounds/day for the entire sampling period, the TDS at the Outfall of 15,071 pounds/day would be reduced by 4,137 pounds/day to 10,934 pounds/day, and the flow would be reduced from 2.0 MGD by 0.31 MGD to 1.69 MGD. This would yield an outfall TDS concentration of 775 mg/L.

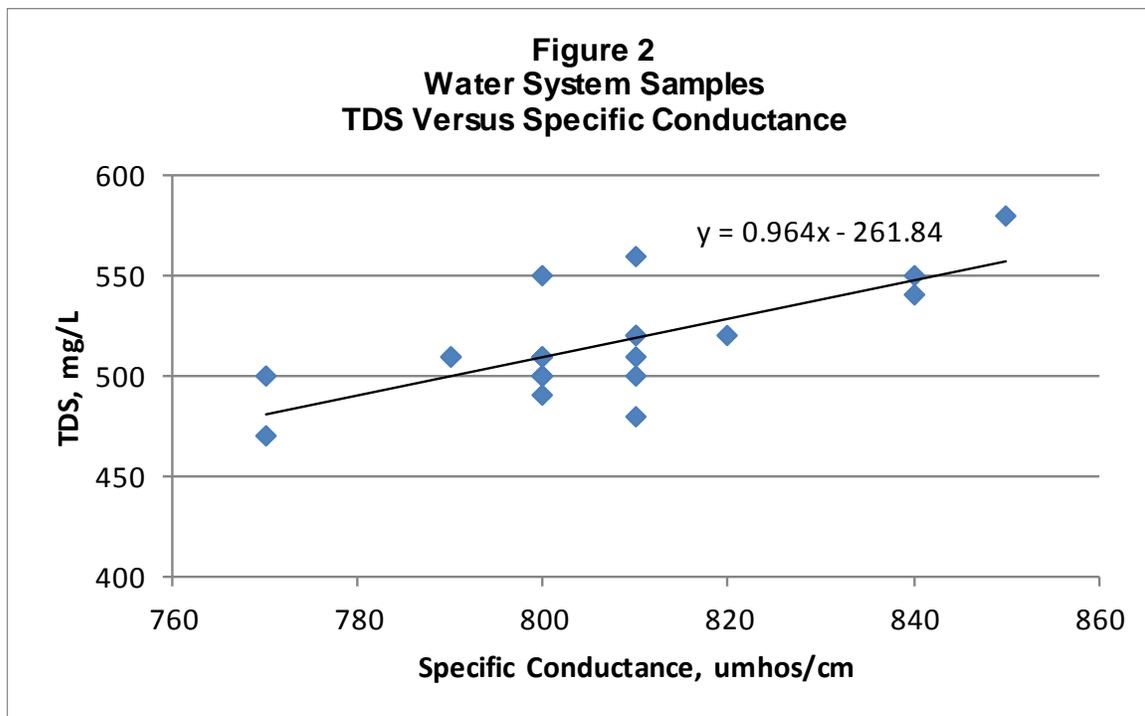
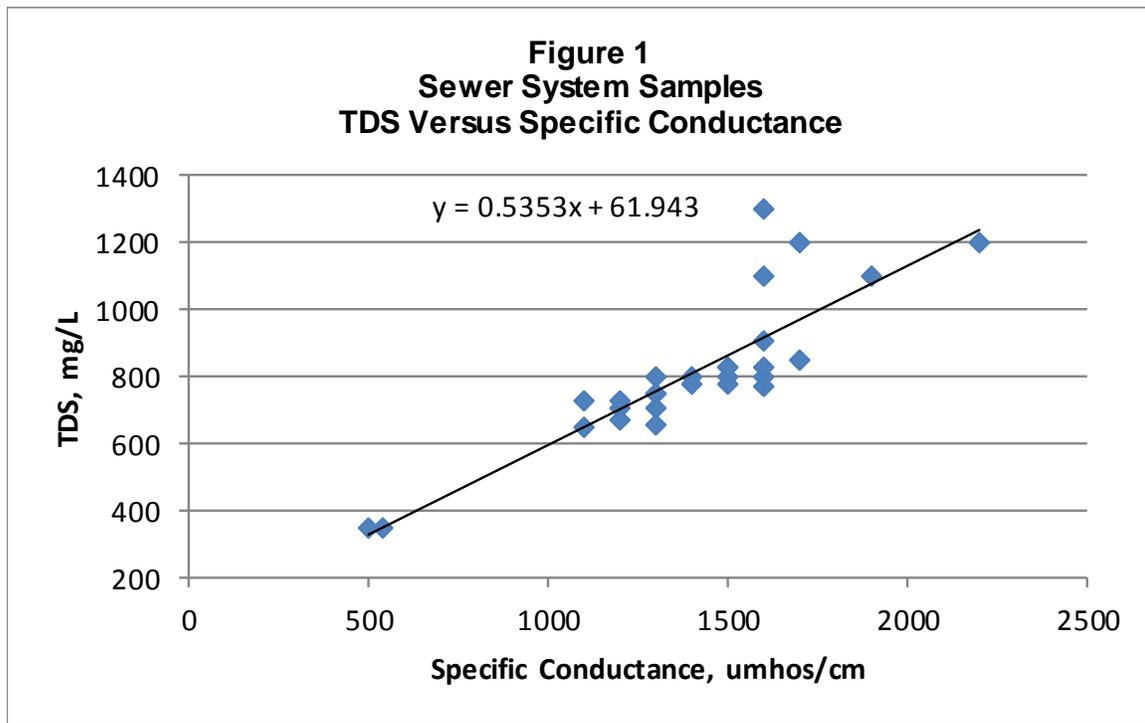
The above results represent substantial reductions, but would not be sufficient to reduce RCSD's discharge to the City's RWQCP to levels that match the City's NPDES discharge limits. The calculated discharge TDS concentrations with Aramark removed from the system would still exceed the City's 650 mg/L TDS NPDES discharge limit by 125 to 139 mg/L, and the City's incremental NPDES TDS discharge limit by approximately 159 to 173 mg/L.

Note: Due to questions that have arisen regarding the TDS values in samples collected to date at the Regional Lift Station, the effect of removing Aramark's discharge from the collection system on TDS at the Regional Lift Station is not considered herein.



G. CORRELATION OF TDS AND SPECIFIC CONDUCTANCE

Plots of TDS versus Specific Conductance for potable water samples and sewage samples are presented in **Figures 1 and 2** at the end of this section, along with linear trend lines and their equations. These plots can be used in the field to estimate TDS from Specific Conductance readings.



SECTION VI
CONCLUSIONS AND
RECOMMENDATIONS



SECTION VI CONCLUSIONS AND RECOMMENDATIONS

A. CONCLUSIONS

- The TDS of potable water in the Watson Reservoir is significantly higher than the water in the other RCSD reservoirs, and is higher than the TDS in supply water samples from RCSD wells and the Anita B. Smith Water Treatment Facility would justify.
- There is significant potential for the existence of domestic stationary water softeners in certain residential areas of RCSD, particularly the Jurupa Hills, Hunter Zone, Van Daele Development, and Central Rubidoux areas.
- The average TDS concentration in RCSD's potable water system is approximately 520 mg/L, which increases RCSD's TDS discharge to the City's RWQCP.
- The contribution of Aramark's wastewater discharge to the TDS of RCSD's wastewater outflow is significant, but removal of Aramark's discharge to the RCSD collection system is not likely to be sufficient to bring RCSD's TDS discharge into full compliance with the City's NPDES TDS discharge requirements.

B. RECOMMENDATIONS

The following recommendations may form the basis of a TDS mitigation strategy, which should be developed as a separate document.

- Perform additional monitoring in trunk sewers, the Regional Lift Station, and the RCSD outfall after Aramark's discharge has been removed from the collection system.
- Investigate the source of high TDS water in the Watson Reservoir.
- Investigate current implementation of the provisions of RCSD Ordinance No. 105 regarding stationary water softeners (see **Appendix D**), and additional methods such as educational programs, to control water softener installation and use.



- Work with Aramark to facilitate discontinuation of their wastewater discharge to the RCSD sewer collection system according to schedule.
- Review industrial user cooling tower discharges and operational settings in upcoming pretreatment program inspections.
- RCSD has a permanent emergency intertie with Jurupa Community Services District (JCSD), which has water with relatively low TDS concentrations. Investigate purchasing additional water from JCSD for blending with RCSD's existing water sources.
- Investigate establishing a permanent intertie with WWWD, which has water with relatively low TDS concentrations, for purchasing water from WWWD for blending with RCSD's existing water sources.
- JCSD obtains a portion of its domestic supply from the Chino Desalter Authority (CDA). Investigate the possibility of purchasing CDA water; perhaps via the JCSD intertie.
- Investigate alternative technologies and operational strategies for reducing source water TDS concentrations.
- Investigate reducing wastewater TDS by discharging approximately 0.58 MGD of nonpotable water from Well 14 (46th Street) into RCSD's trunk sewer, at a TDS of roughly 495 mg/L. Assuming TDS at the Outfall of 10,934 pounds/day (after the Aramark discharge has been removed from the collection system), adding this nonpotable discharge would increase the TDS at the Outfall to about 13,330 pounds/day, and the flow from 1.69 MGD to 2.27 MGD. This would reduce the outfall TDS concentration by about 71 mg/L to about 704 mg/L. Note that this tactic would become less workable over time, as the unused sewer capacity necessary to implement this tactic will be gradually reduced to accommodate increasing sewer discharges from new development.

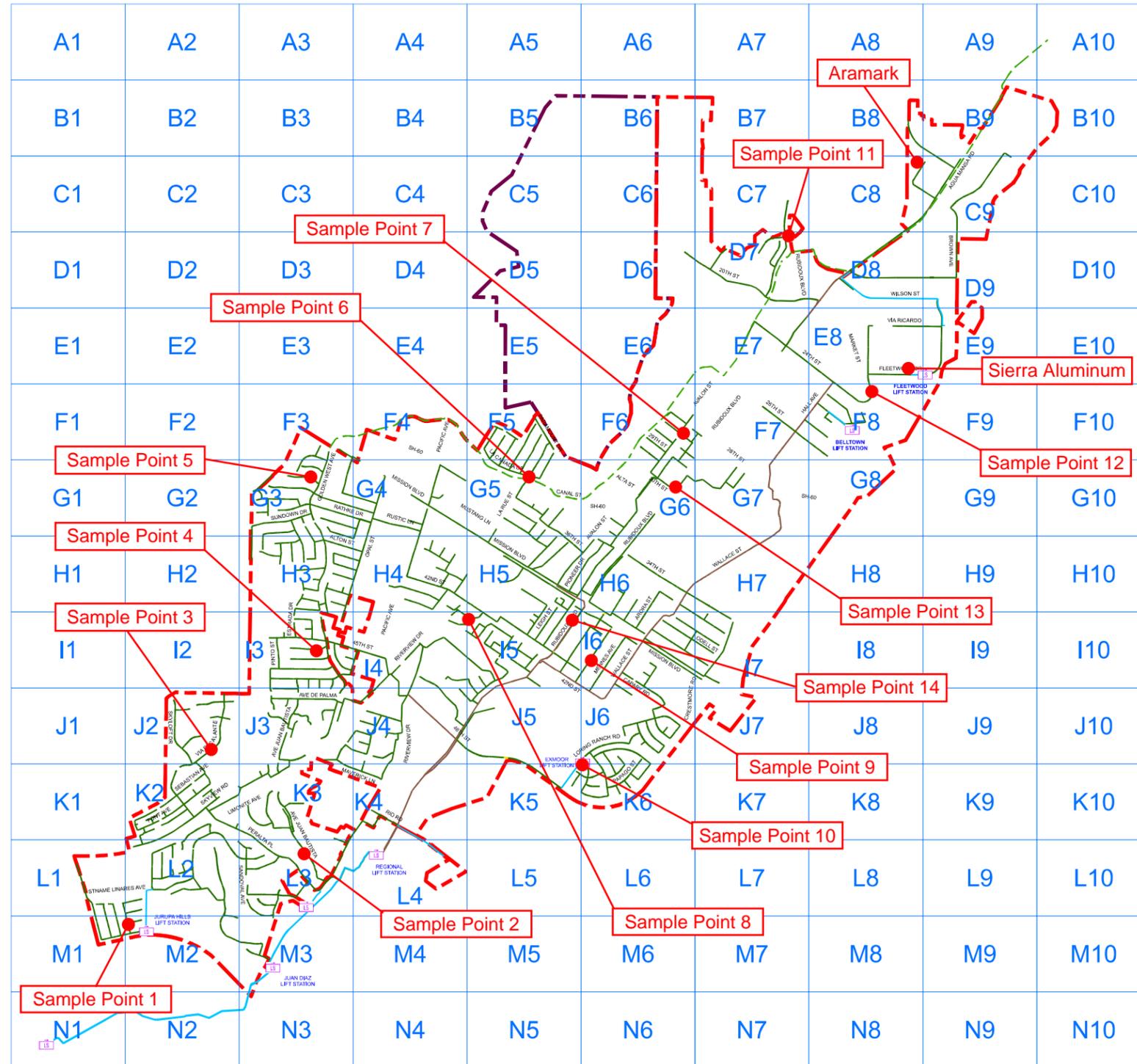
APPENDIX A

MAP OF SEWER SAMPLING LOCATIONS

DRAFT

RUBIDOUX COMMUNITY SERVICES DISTRICT

Grid Index



Legend

-  Lift Station
-  Collector
-  Force Mains
-  Inverted Siphon
-  S.A.R.I. Pipeline
-  Trunk
-  District Boundary (Current)
-  District Boundary (Future)
-  Grid Boundary



REVISIONS	
SHEETS	DATE
SEWER ATLAS BOOK CREATED	06-2009
COVER SHEET, GRID INDEX SHEET, B9, C9, E9, F3, G4, G6, H4, H5, H6, I5, I6, J3, K2, K4-A, L3, L4, M3	10-2012
COVER SHEET, GRID INDEX SHEET, B8, B9, C7, C9, D6, D7, D9, E6, E7, E9, F5, F6, G5, G6, H7, I3, I5, I7, J3, J5, K3, K4	9-2015

September 2015

FIGURE A-1
Map of Sewer Sampling Locations

APPENDIX B
INDUSTRIAL USER SAMPLING RESULTS

**TABLE B-1
ARAMARK SAMPLING RESULTS**

Sample Date	TDS (mg/L)	Wastewater Discharge Flow (gal/day)
5/1/2019	1,300 *	314,855
5/8/2019	1,600 *	312,231
5/15/2019	1,400 *	309,347
5/21/2019	1,400 *	308,531
5/29/2019	1,700 *	323,191
6/4/2019	1,100	325,482
6/12/2019	1,300 *	315,441
6/20/2019	1,800 *	294,090
6/27/2019	1,800 *	311,612
7/10/2019	2,000 *	325,983
7/16/2019	1,600 *	279,731
7/23/2019	1,900 *	297,283
7/30/2019	1,800 *	333,270
Avg	1,591 **	311,619

* Exceeds the local daily maximum wastewater concentration limit of 1,210 mg/L.

** Flow-Weighted Average

TABLE B-2 SIERRA ALUMINUM SAMPLING RESULTS					
Sample Date	TDS		Wastewater Discharge Flow (gal/day)	Specific Conductance	
	Wastewater (mg/L)	Tap Water (mg/L)		Wastewater (µmhos/cm)	Tap Water (µmhos/cm)
5/7/2019	1,208	--	24,000	--	--
5/8/2019	1,200	530	24,000	1,600	810
5/21/2019	1,100	500	16,140	1,400	800
6/6/2019	1,300 *	600	24,000	1,500	820
6/20/2019	1,300 *	680	21,690	1,500	840
7/10/2019	1,300 *	610	21,370	1,500	790
7/12/2019	1,204	--	24,810	1,760	--
7/25/2019	1,000	570	24,290	1,300	760
Avg	1,042 **	582	22,538	1,509	803

* Exceeds the local daily maximum wastewater concentration limit of 1,210 mg/L.

** Flow-Weighted Average



**TABLE B-3
ESTIMATION OF RCSD DISCHARGE TDS WITHOUT ARAMARK CONTRIBUTION**

Aramark		RCSD Outfall		Regional Lift Station		
Sample Date	TDS (mg/L)	Wastewater Discharge Flow (gal/day)	TDS (mg/L)	Wastewater Discharge Flow (MGD)	TDS (mg/L)	Wastewater Discharge Flow (MGD)
5/1/2019	1,300	0.31	970	2.00	890	1.96
5/8/2019	1,600	0.31	890	1.96	960	1.81
5/15/2019	1,400	0.31	1,000	1.96	900	1.86
5/21/2019	1,400	0.31	860	1.96	870	1.83
5/29/2019	1,700	0.32	820	1.97	950	1.87
6/4/2019	1,100	0.33	810	1.97	980	1.82
6/12/2019	1,300	0.32	990	1.97	1,000	2.08
7/10/2019	2,000	0.33	980	1.97	1,200	1.84
7/16/2019	1,600	0.28	850	1.96	2,800	1.84
7/30/2019	1,800	0.33	890	2.03	3,700	1.89
Total	---	3.15	---	19.75	---	18.80
(Flow Wtd) Avg	1,522	0.31	906	1.98	1,422	1.88
TDS without Aramark Discharge			789		1,402	
Difference			117		20	

Note: Only samples collected on the same date were counted. Samples for Aramark were not counted if samples for both the outfall and Regional Interceptor were not collected on the same date.



APPENDIX C

LIFT STATION AND OUTFALL SAMPLING RESULTS

**TABLE C-1
REGIONAL WATER QUALITY CONTROL PLANT (RWQCP)
SAMPLING RESULTS**

Sample Date	Wastewater Flow to Riverside (MGD)	TDS (mg/L)	Specific Conductance (µmhos/cm)
1/1/2019	1.61	770	--
1/2/2019	1.93	780	--
1/8/2019	2.04	980	--
1/9/2019	2.06	950	--
1/15/2019	2.15	830	--
1/16/2019	2.21	810	--
1/22/2019	1.99	950	--
1/23/2019	2.02	890	--
1/29/2019	2.01	930	--
1/30/2019	2.10	980	--
2/5/2019	2.18	800	--
2/6/2019	2.07	810	--
2/12/2019	2.10	860	--
2/13/2019	2.08	850	--
2/19/2019	2.12	850	--
2/20/2019	2.01	900	--
2/26/2019	2.13	890	--
2/27/2019	2.02	910	--
3/5/2019	2.01	900	--
3/6/2019	2.11	830	--
3/12/2019	2.06	870	--
3/13/2019	2.13	900	--
3/19/2019	2.00	880	--
3/20/2019	1.99	930	--
3/26/2019	2.01	930	--
3/27/2019	1.99	910	--
4/2/2019	2.02	930	--
4/3/2019	2.01	930	--
4/9/2019	1.96	940	--
4/10/2019	1.96	990	--
4/16/2019	1.97	920	--
4/17/2019	1.98	920	--
4/23/2019	2.01	870	--
4/24/2019	2.02	900	--
4/30/2019	1.97	900	--
5/1/2019	2.00	970	--
5/7/2019	1.95	900	--
5/8/2019	1.96	890	--
5/14/2019	1.96	850	--
5/15/2019	1.96	1,000	--
5/21/2019	1.96	860	--
5/22/2019	1.95	950	--

**TABLE C-1
REGIONAL WATER QUALITY CONTROL PLANT (RWQCP)
SAMPLING RESULTS**

Sample Date	Wastewater Flow to Riverside (MGD)	TDS (mg/L)	Specific Conductance (µmhos/cm)
5/28/2019	1.92	780	--
5/29/2019	1.97	820	--
6/4/2019	1.97	810	1,500
6/5/2019	1.97	930	1,500
6/11/2019	1.93	930	--
6/12/2019	1.97	990	--
6/18/2019	1.91	890	--
6/19/2019	1.98	930	--
6/25/2019	1.95	910	--
6/26/2019	1.96	990	--
7/2/2019	1.90	920	--
7/3/2019	1.93	940	--
7/9/2019	1.96	1,000	--
7/10/2019	1.97	980	--
7/16/2019	1.96	850	--
7/17/2019	2.01	990	--
7/23/2019	1.95	900	--
7/24/2019	1.95	950	--
7/30/2019	2.03	890	--
7/31/2019	2.01	960	--
Avg	2.00	903 *	--

* Flow-Weighted Average

**TABLE C-2
REGIONAL LIFT STATION
SAMPLING RESULTS**

Sample Date	Regional LS Flow (MGD)	TDS (mg/L)	Specific Conductance (µmhos/cm)
1/16/2019	2.131	4,900	--
1/17/2019	2.198	2,200	--
1/18/2019	1.953	860	--
1/22/2019	1.842	920	--
1/23/2019	1.927	910	--
1/24/2019	1.918	900	--
1/25/2019	1.812	980	--
1/28/2019	1.887	870	--
1/29/2019	1.941	930	--
1/30/2019	2.014	950	--
1/31/2019	1.930	920	--
2/1/2019	1.888	900	--
2/4/2019	1.848	800	--
2/5/2019	2.071	850	--
2/6/2019	1.903	890	--
2/7/2019	2.005	840	--
2/8/2019	1.817	870	--
2/13/2019	1.923	890	--
2/14/2019	3.047	760	--
2/15/2019	1.903	890	--
2/19/2019	1.992	900	--
2/20/2019	1.928	920	--
2/21/2019	1.880	910	--
2/22/2019	1.893	960	--
2/25/2019	1.976	870	--
2/26/2019	2.033	970	--
2/27/2019	1.959	1,100	--
2/28/2019	1.941	1,000	--
3/1/2019	1.873	950	--
3/4/2019	1.912	910	--
3/5/2019	1.894	930	--
3/6/2019	1.990	930	--
3/7/2019	2.038	880	--
3/8/2019	1.839	900	--
3/11/2019	1.702	790	--
3/12/2019	1.945	1,000	--
3/13/2019	2.009	1,000	--
3/14/2019	1.904	1,000	--
3/15/2019	1.966	860	--
3/18/2019	1.850	910	--
3/19/2019	1.858	980	--
3/20/2019	1.874	940	--

**TABLE C-2
REGIONAL LIFT STATION
SAMPLING RESULTS**

Sample Date	Regional LS Flow (MGD)	TDS (mg/L)	Specific Conductance (µmhos/cm)
3/21/2019	1.937	940	--
3/22/2019	1.822	890	--
3/26/2019	1.868	960	--
3/27/2019	1.894	980	--
3/28/2019	1.864	1,100	--
3/29/2019	1.875	1,100	--
4/2/2019	1.887	1,100	--
4/3/2019	1.900	1,100	--
4/4/2019	1.847	1,000	--
4/5/2019	1.879	1,000	--
4/8/2019	1.866	920	--
4/9/2019	1.839	1,000	--
4/10/2019	1.898	1,100	--
4/11/2019	1.883	910	--
4/12/2019	1.745	980	--
4/15/2019	1.777	980	--
4/16/2019	1.901	1,000	--
4/17/2019	1.869	940	--
4/18/2019	1.857	930	--
4/19/2019	1.816	790	--
4/23/2019	--	--	--
4/24/2019	1.956	920	--
4/25/2019	1.995	840	--
4/26/2019	1.773	840	--
4/29/2019	1.835	750	--
4/30/2019	1.959	850	--
5/1/2019	1.959	890	--
5/2/2019	1.920	910	--
5/3/2019	2.078	950	--
5/6/2019	1.548	910	--
5/7/2019	1.882	940	--
5/8/2019	1.808	960	--
5/9/2019	1.857	960	--
5/10/2019	1.892	930	--
5/13/2019	1.882	910	--
5/14/2019	1.906	860	--
5/15/2019	1.864	900	--
5/16/2019	1.817	940	--
5/17/2019	1.829	1,000	--
5/20/2019	1.755	790	--
5/21/2019	1.833	870	--
5/22/2019	1.906	1,000	--

**TABLE C-2
REGIONAL LIFT STATION
SAMPLING RESULTS**

Sample Date	Regional LS Flow (MGD)	TDS (mg/L)	Specific Conductance (µmhos/cm)
5/23/2019	1.945	970	--
5/24/2019	1.855	880	--
5/28/2019	1.829	780	--
5/29/2019	1.874	950	--
5/30/2019	1.866	1,100	--
5/31/2019	1.826	910	--
6/3/2019	1.808	780	--
6/4/2019	1.818	980	1,700
6/5/2019	1.872	1,000	1,700
6/6/2019	1.877	1,200	--
6/7/2019	1.808	990	--
6/10/2019	1.794	1,000	--
6/11/2019	1.877	1,100	--
6/12/2019	2.077	1,000	--
6/14/2019	1.757	970	--
6/17/2019	1.779	880	--
6/18/2019	1.790	1,000	--
6/19/2019	1.970	2,800	--
6/20/2019	1.795	960	--
6/21/2019	1.806	1,100	--
6/24/2019	1.853	910	1,600
6/25/2019	1.835	1,000	--
6/26/2019	1.859	1,100	--
6/27/2019	1.870	930	--
6/28/2019	1.759	940	--
7/1/2019	1.600	870	--
7/2/2019	1.865	890	--
7/3/2019	1.797	1,000	--
7/8/2019	1.798	970	--
7/9/2019	1.908	1,000	--
7/10/2019	1.843	1,200	--
7/11/2019	1.886	920	--
7/12/2019	1.936	1,200	--
7/15/2019	1.834	4,400	--
7/16/2019	1.839	2,800	--
7/17/2019	1.981	3,600	--
7/24/2019	1.910	5,200	--
7/30/2019	1.887	3,700	--
Avg	1.892	1,132 *	

* Flow-Weighted Average

**TABLE C-3
JUAN DIAZ LIFT STATION
SAMPLING RESULTS**

Sample Date	Juan Diaz LS Flow (MGD)	TDS (mg/L)	Specific Conductance (µmhos/cm)
1/16/2019	--	--	--
1/17/2019	--	--	--
1/18/2019	--	--	--
1/22/2019	--	--	--
1/23/2019	--	--	--
1/24/2019	--	--	--
1/25/2019	--	--	--
1/28/2019	--	--	--
1/29/2019	--	--	--
1/30/2019	--	--	--
1/31/2019	--	--	--
2/1/2019	--	--	--
2/4/2019	--	--	--
2/5/2019	--	--	--
2/6/2019	0.131	680	--
2/7/2019	0.126	680	--
2/8/2019	0.125	670	--
2/13/2019	0.169	670	--
2/14/2019	0.128	660	--
2/15/2019	0.141	590	--
2/19/2019	0.127	670	--
2/20/2019	0.123	690	--
2/21/2019	--	--	--
2/22/2019	0.136	690	--
2/25/2019	0.128	630	--
2/26/2019	--	--	--
2/27/2019	--	--	--
2/28/2019	--	--	--
3/1/2019	0.119	690	--
3/4/2019	0.134	760	--
3/5/2019	0.132	740	--
3/6/2019	0.131	680	--
3/7/2019	0.130	670	--
3/8/2019	0.130	670	--
3/11/2019	0.127	730	--
3/12/2019	0.126	780	--
3/13/2019	0.122	740	--
3/14/2019	0.136	690	--
3/15/2019	0.119	700	--
3/18/2019	0.127	810	--
3/19/2019	0.126	730	--
3/20/2019	0.127	680	--

**TABLE C-3
JUAN DIAZ LIFT STATION
SAMPLING RESULTS**

Sample Date	Juan Diaz LS Flow (MGD)	TDS (mg/L)	Specific Conductance (µmhos/cm)
3/21/2019	0.126	730	--
3/22/2019	0.127	700	--
3/26/2019	0.127	700	--
3/27/2019	0.125	670	--
3/28/2019	0.118	720	--
3/29/2019	0.119	680	--
4/2/2019	0.126	700	--
4/3/2019	0.124	690	--
4/4/2019	0.120	640	--
4/5/2019	0.120	720	--
4/8/2019	0.124	690	--
4/9/2019	0.130	790	--
4/10/2019	0.127	750	--
4/11/2019	0.124	710	--
4/12/2019	0.114	640	--
4/15/2019	0.129	710	--
4/16/2019	0.120	690	--
4/17/2019	0.125	670	--
4/18/2019	0.123	650	--
4/19/2019	0.119	650	--
4/23/2019	0.123	730	--
4/24/2019	0.124	700	--
4/25/2019	0.125	680	--
4/26/2019	0.119	700	--
4/29/2019	0.120	740	--
4/30/2019	0.127	720	--
5/1/2019	0.121	710	--
5/2/2019	0.122	710	--
5/3/2019	0.117	720	--
5/6/2019	0.126	740	--
5/7/2019	0.127	730	--
5/8/2019	0.128	770	--
5/9/2019	0.121	680	--
5/10/2019	0.115	680	--
5/13/2019	0.124	700	--
5/14/2019	0.121	710	--
5/15/2019	0.124	680	--
5/16/2019	0.123	670	--
5/17/2019	0.119	840	--
5/20/2019	0.124	670	--
5/21/2019	0.120	650	--
5/22/2019	0.126	710	--

**TABLE C-3
JUAN DIAZ LIFT STATION
SAMPLING RESULTS**

Sample Date	Juan Diaz LS Flow (MGD)	TDS (mg/L)	Specific Conductance (µmhos/cm)
5/23/2019	0.121	710	--
5/24/2019	0.116	750	--
5/28/2019	0.114	740	--
5/29/2019	0.123	710	--
5/30/2019	0.119	760	--
5/31/2019	0.121	810	--
6/3/2019	0.126	620	--
6/4/2019	0.124	590	1,300
6/5/2019	1.220	710	1,500
6/6/2019	0.121	710	--
6/7/2019	0.111	730	--
6/10/2019	0.126	760	--
6/11/2019	0.102	750	--
6/12/2019	0.115	760	--
6/14/2019	0.121	770	--
6/17/2019	0.124	740	--
6/18/2019	0.123	750	--
6/19/2019	0.121	730	--
6/20/2019	0.120	710	--
6/21/2019	0.096	710	--
6/24/2019	0.122	710	1,400
6/25/2019	0.120	740	--
6/26/2019	0.125	710	--
6/27/2019	0.119	660	--
6/28/2019	0.119	700	--
7/1/2019	0.123	720	--
7/2/2019	0.125	720	--
7/3/2019	0.119	760	--
7/8/2019	0.118	760	--
7/9/2019	0.123	730	--
7/10/2019	0.115	730	--
7/11/2019	0.121	690	--
7/12/2019	0.121	700	--
7/15/2019	--	--	--
7/16/2019	--	--	--
7/17/2019	--	--	--
7/24/2019	0.128	850	--
7/30/2019	0.124	690	--
Avg	0.134	709 *	

* Flow-Weighted Average

APPENDIX D

**RCSD ORDINANCE NO. 105
WATER SOFTENING RESTRICTIONS**



**APPENDIX D
RCSD ORDINANCE NO. 105
WATER SOFTENING RESTRICTIONS**

- (A) No user shall install, replace, enlarge, or use any apparatus for softening all or any part of the water supply to an premises when such apparatus is an ion-exchange softener or demineralizer of the type that is regenerated on the site of the use with the regeneration wastes being discharged to the ground, storm drain or the District's collection system or POTW unless the apparatus is in compliance with the following conditions:
 - (1) The apparatus is a self-generating water softener;
 - (3) The brine solutions generated during the backwash cycles of the water softener shall be segregated from the fresh water rinses for disposal to a legal brine disposal site;
 - (4) The industrial user shall maintain the electrical conductivity controlled discharge valve in proper operating conditions at all times. The industrial user shall notify the Manager immediately in the event of a valve failure and immediately cease the discharge of all wastewater associated with the backwashing of the regenerating water softener.

- (B) Pursuant to California Health and Safety Code Sections 116775-116795 and amendments thereto, no residential water softening or conditioning appliance shall be installed except in either of the following circumstances:
 - (1) The regeneration of the appliance is performed at a nonresidential facility separate from the location of the residence where such appliance is used; or
 - (2) The regeneration of the appliance discharges to the waste disposal system of the residence where such appliance is used and the following conditions are satisfied:
 - (a) The appliance activates regeneration by demand control;
 - (b) An appliance installed on or after January 1, 2000 shall be certified by a third party rating organization using industry standards to have a salt efficiency rating of no less than 3350 grains of hardness removed per pound of salt used in generation. An appliance installed on or after January 1, 2002 shall be certified by a third party rating organization using industry standards to have a salt efficiency rating of no less than 4000 grains of hardness removed per pound of salt used in generation.
 - (c) The installation of the appliance is accompanied by the simultaneous installation of the following softened or conditioned water conservation devices on all fixtures using softened or conditioned water, unless such devices are already in place or are prohibited by local and state plumbing and building standards or unless such devices will adversely restrict the normal operation of such fixtures:
 - (i) Faucet flow restrictors
 - (ii) Shower head restrictors



- (iii) Toilet reservoir dams
 - (iv) A piping system installed so that untreated (unsoftened or unconditioned) supply water is carried to hose bibs and sill cocks which serve water to the outside of the house, except that bypass valves may be installed on homes with slab foundations constructed prior to the date of installation; or condominiums constructed prior to the date of installation; or otherwise where a piping system is physically inhibited.
- (C) The certification required under subsection B of this Section shall be provided by the new user of the appliance and shall be completed by a contractor having a valid Class C-55 water conditioning contractor's license or Class C-36 plumbing contractor's license and filed with the City's Building Division. The certification form shall contain all of the following information:
 - (1) Name and address of homeowner;
 - (2) Manufacturer of the water softening or conditioning appliance, model number of the appliance, pounds of salt used per regeneration, and salt efficiency rating at the time of certification.
 - (3) Manufacturer of the water-saving devices installed, model number, and number installed; and
 - (4) Name, address, and the specialty contractor's license number of the C-55 and C-36 licensee making the certification.
- (D) Any person installing or operating a water conditioning apparatus of any kind shall make such apparatus accessible to the Manager for inspection at reasonable times.
- (E) Notwithstanding subdivision 2 of subsection B of this Section, the District may limit the availability, or prohibit the installation, of residential water softening or conditioning appliances that discharge to the POTW if Manager makes all of the following findings:
 - (1) The POTW is not in compliance with the discharge or water reclamation requirements in its NPDES permit;
 - (2) Limiting the availability, or prohibiting the installation, of the appliances is the only available means of achieving compliance with waste discharge requirements issued by the Regional Board; and
 - (3) All nonresidential sources are limited to the volumes and concentrations of saline discharges to the POTW to the extent technologically and economically feasible.
- (F) Notwithstanding subdivision 2 of subsection B of this Section, the District may limit the availability, or prohibit the installation, of residential water softening or conditioning appliances that discharge to the POTW if Manager makes all of the following findings:
 - (1) The POTW is not in compliance with the discharge or water reclamation requirements, or a master reclamation permit, issued by the California Regional Water Quality Control



Board pursuant to Article 4 (commencing with Section 13520) of Chapter 7, Division 7 of the Water Code;

- (2) Limiting the availability, or prohibiting the installation, of the appliances is the only available means of achieving compliance with the water reclamation requirements or the master reclamation permit issued by the Regional Board; and
 - (3) All nonresidential sources are limited to the volumes and concentrations of saline discharges to the POTW to the extent technologically and economically feasible.
- (G) Subsections E and F of this Section are prospective in nature and do not require the removal of residential water softening or conditioning appliances that are installed before the effective date of the subsections E and F.

This Section shall not apply to an apparatus of the type which is regenerated off-site by a water conditioning company.

A person installing or operating a legal water conditioning apparatus of any kind shall make such apparatus accessible to the Manager for inspection at all times. The person shall submit reports relative to the operation of such apparatus to the Manager as the Manager may require.

EXHIBIT D

**Letter from Jeff Sims (General Manager-RCSD) to Ed Filadelfia (Deputy Director Public Works,
Wastewater Systems-City of Riverside)**

December 28, 2020

Re: Agua Mansa Commerce Center – RCSD TDS Planning

Rubidoux Community Services District

Board of Directors

John Skerbelis
Hank Trueba Jr.
Armando Muniz
Bernard Murphy
F. Forest Trowbridge

General Manager

Jeffrey D. Sims



Water Resource Management Refuse Collection Street Lights Fire / Emergency Services Weed Abatement

December 28, 2020

Ed Filadelfia
City of Riverside
Public Works Department
5950 Acorn Street
Riverside, CA 92504

Subject: **Agua Mansa Commerce Center**
 Rubidoux Community Services District TDS Planning

Dear Mr. Filadelfia,

The Agua Mansa Commerce Center ("Project") is a proposed industrial park on approximately 300 acres located within Rubidoux Community Services District's ("District") service area. The Developer of the Project processed an annexation of the Project area through LAFCO to move the Project area into the District. The LAFCO process involved the District preparing a Plan of Service document describing how the District would provide water and sewer services. This Plan of Service dated October 30, 2019 (revised July 14, 2020), attached, was reviewed by various agencies including the City of Riverside ("Riverside").

The District owns 3.05 MGD of sewer treatment capacity rights in Riverside's treatment plant through a series of agreements dating back to 1978. Through these capacity rights, the District operates a sewer collection system to collect sewage from customers within its service area and delivers approximately 1.7 MGD of sewage to Riverside for treatment and disposal services. The District pays Riverside variable rates for flows delivered (flow, TSS and BOD surcharges) based on rates established by the Regional Advisory Committee. Subject to current litigation are certain capital expenditures for Riverside's upgrade and expansion of its treatment plant. Decision on that litigation is anticipated in spring 2021, leading hopefully to a satisfactory settlement agreement resolving disputed costs, and establishing agreed upon future relationship expectations.

Riverside owns and operates the wastewater treatment plant ("Plant") and is subject to a NPDES Permit issued by the State Water Resources Control Board. Amongst other permit compliance requirements, discharge of recycled water

from the Plant to the Santa Ana River is limited to a rolling 12-month average for TDS of 650 mg/l. Riverside continues to achieve this compliance requirement.

Entities such as the District who discharge to Riverside's Plant are expected to deliver sewage with 650 mg/l TDS, or less. Currently the District is unable to meet this limit due to naturally existing TDS in the groundwater that is pumped, treated, and delivered as potable water. The District is solely dependent on groundwater. Pumped groundwater by the District's six wells has a concentration of approximately 540 mg/l TDS. With a use increment by District customers, sewage delivered to Riverside has an approximate concentration of 750 mg/l TDS. To state the obvious, this is above the limit prompting Riverside indicating its concern at the LAFCO proceedings considering annexation of the Project to the District. Riverside objected to the addition of new areas into the District absent the District providing a TDS Mitigation Plan to address TDS in its sewage above the 650 mg/l limit.

District staff communicated with Riverside staff regarding the Plan of Service for the Project specifically on the TDS matter. The Plan of Service for the Project was modified to include a condition requiring the Developer to install reverse osmosis treatment in each building to treat enough of the incoming potable water from the District to remove sufficient TDS so the sewage discharged from each building would be at or below 650 mg/l TDS. With addition of this into the Plan of Service, Riverside dropped its objection and LAFCO approved the Project's annexation into the District.

The District understands Riverside wanting the District to provide a TDS Mitigation Plan outlining an implementable series of actions to reduce overall TDS contribution within District sewage to be at or below 650 mg/l. District and Riverside staff concur this is a fundamental water supply problem and as part of the District's growth towards ultimate build-out the solution will by necessity, be funded in part through growth. Growth provides new capital and customer base to implement TDS Mitigation solutions.

Although the TDS problem has not be fully resolved, below are efforts the District has taken and planning:

Completed Efforts

1. Removal of Aramark Uniform Services Industrial Discharge to District's Collection System

The District successfully coordinated removal of approximately 0.25 MGD of high TDS sewage from its sewer collection system. This was done by assisting Aramark with securing IEBL discharge rights from Dairy Farmers of America, acquiring a discharge permit from SAWPA, District funding of a new pipeline to move high TDS sewage flow to the IEBL, and refunding Aramark sewer capacity fees paid to the District to defray costs Aramark incurred to purchase IEBL discharge rights from DFA. The District's participation of over \$3 million resulted in permanently lowering TDS concentration approximately 200 mg/l.

2. Initiated Seeking Consulting Services for Analyzing Addition of District Owned RO Treatment

Late fall 2019, District received a proposal from Hazen & Sawyer Consulting Engineers for preliminary engineering to:

- a. Develop an understanding of current and ultimate volumes of low TDS water needed to blend with existing RCSD potable deliveries to enable sewage to be discharged at or below 650 mg/l TDS.
- b. Siting of an RO Treatment Plant
- c. Raw water piping to deliver water to the RO Treatment Plant from District wells and treatment plants
- d. Piping to deliver brine to the IEBL
- e. Planning, design, permitting, and construction estimates
- f. Operational expenses

- g. Analysis of what other contaminants would be removed to understand impacts on other existing District Treatment Facilities

The District stalled on proceeding with this effort due to State Water Resource Control Board Division of Drinking Water's ("DDW") lowering of PFAS contaminant Notification and Response Limits. With the lower limits, all District wells are just over the Response Limit for PFOA. Although not yet an MCL, DDW issued the District an Order mandating quarterly sampling for PFAS contaminants and reporting the average of the four quarter samples in the fourth quarter of 2021. To have the District's annual average of quarterly samples below the Response Limit, the District initiated efforts to add ion exchange treatment for Wells 1A, 8, and 18, and GAC treatment for Wells 4 and 6. Well 2 already had GAC treatment for 1,2,3-TCP making it easy to simply change out the media with media that successfully removes both PFAS and 1,2,3-TCP. Although RO Treatment would have been the preferred treatment as it would remove multiple contaminants, including TDS, there was insufficient time to implement and achieve a below Response Limit for PFOA by 4th Quarter 2021. The District will spend approximately \$4.5 million by August 2021 on addressing PFAS that otherwise could have gone towards RO Treatment or securing low TDS imported water for blending. As a note, Riverside will receive some ancillary benefit with addition of PFAS treatment by the District as there should be little to no PFAS in District sewage deliveries.

3. Inquiry of Purchasing Low TDS Water from West Valley Water District ("WVWD")

The District and WVWD have potable water pipelines within a few feet of each other near Wilson and Fleetwood in Jurupa Valley, CA. District staff discussed with WVWD Management about putting in an interagency intertie to move low TDS WVWD water into the District. Those discussions lead to Doug Headrick, GM at San Bernardino Valley MWD (since retired). He indicated that due to SBVMWD being a State Water Project ("SWP") Contractor and WVWD being within SBVMWD, WVWD cannot sell SWP water within another SWP Contractor's area. The District is part of Western Municipal Water District who is a member agency of Metropolitan Water District, another SWP Contractor. Apparently, there are anti-competition rules disallowing SWP water transfers between SWP Contractors. This put an end to this alternative.

4. Develop Understanding of Volume of Low TDS Water (<400 mg/l) Needed

The District requested Krieger and Stewart Consulting Engineers to calculate approximate volumes of low TDS water (<400 mg/l) necessary to enable the District to meet a 650 mg/l TDS in sewage delivered to Riverside at current and ultimate build-out demands. These calculations reflect:

<u>Condition</u>	<u>Volume</u>
Current	1,000 AFY
Buildout	1,600 to 1,800 AFY

5. Cooperative Memorandum of Understanding Between RCSD, JCSD and Western Municipal Water District

RCSD and JCSD Board of Directors approved a Memorandum of Understanding ("MOU") outlining principles of cooperation on projects including development of water supplies. The MOU was signed March 24, 2020. Western Municipal Water District by subsequent amendment was added as a party to the MOU. Through this MOU it is anticipated imported water supply efforts will be investigated and implemented.

Efforts Underway

6. Updates to District's 2015 Water and Sewer Master Plans

The District has received proposals from four consulting firms to update the District's 2015 Water and Sewer Master Plans. Selection of a consultant and approval by the District's Board of Directors is scheduled for January 2021. As part of the update, TDS Mitigation will be included. The Water Supply component of the Water Master Plan will consider the following alternatives:

- a. RCSD owned RO Treatment
- b. Purchase of low TDS water for blending down TDS concentration. Options:
 1. Water delivered by Riverside at west end of proposed pipeline in Mission Bridge replacement
 2. Water delivered via JCSD to the JCSD/RCSD intertie at Jewel Street
 3. Water from JCSD through a northern connection JCSD would make through partnership with Cucamonga Valley Water District. This water would travel through a proposed Granite Street Pipeline on the north side of the 60 freeway and connect into the JCSD/RCSD Jewel Street intertie
 4. Water delivered by Riverside at proposed pipeline in Van Buren Bridge wheeled to RCSD via JCSD's system to the JCSD/RCSD Jewel Street intertie.

With this analysis implementation costs, schedules, and operational costs will be included for each option. There will be a life cycle cost comparison, and pros and cons. It is anticipated the master plan updates will take upwards of 9 months to prepare and approve. Once approved and a TDS Mitigation option is selected, the District will select a consultant to generate a comprehensive Cost-of-Service Study. This Study will provide the nexus analysis supporting allocation of costs between water and sewer enterprises, establish associated capacity fees, and rate projections. With required public hearings associated with setting fees and rates, an additional year likely will pass after completion of the master plan updates to get Board approved rates and fees in place to support the selected TDS Mitigation/Water Supply Option.

7. **2015 UWMP Update** **AWIA Requirements – ERP & Vulnerability Assessment** **Operational Strategy**

The District will be awarding these three efforts to the consultant selected for the water and sewer master plan updates. Of significant importance is the Operational Strategy effort. With addition of the treatment systems for PFAS removal, the District wants a strategy to avoid water quality problems within the media. The Operational Strategy will provide guidance for District Operators on run times and frequency. Further refinement will include electrical rates and chemical consumption.

8. **Other Strategies**

Other strategies have been discussed –

- a. Surcharge approach: In theory an agency exceeding the TDS Limit with its discharge is reducing the overall surplus created by agencies discharging below the TDS Limit. A surcharge strategy would charge the agencies exceeding the TDS Limit, with generated surcharge revenue shared amongst the agencies creating the surplus capacity. Although this strategy from a strict equity standpoint may have merits, it would make it financially more difficult for the exceeding agencies to implement TDS Mitigation options to reduce actual TDS load. This strategy may be appropriate to encourage compliance if no effort is being made, or if the recycled water discharge of the Plant in whole is at risk of not being compliant with the NPDES TDS Limit.
- b. Salt credit approach: Under a concept of “the sum of the parts equals the whole”, in theory if RW discharged to the Santa Ana River from the Plant remains below 650 mg/l TDS, where the actual TDS comes from becomes an accounting function. For agencies with discharge below 650 mg/l there could be salt credits accounted for in pounds and potentially sold or traded. To illustrate, JCSD sewage discharge to Riverside has a loading with less than 650 mg/l TDS and a certain quantity of TDS pounds could be calculated. RCSD exceeds TDS by a certain quantity of pounds with its sewage discharge to Riverside. JCSD needs quantities of potable water to supplement their supply. RCSD has excess potable water supply. If there was an agreed value on pounds of salt, i.e., “salt credits”, potentially volumes of water could be traded for salt credits between JCSD and RCSD. This strategy would be temporary until permanent TDS Mitigation is in place and would need approval by Riverside and potentially the SWRCB.
- c. Partial Hold on Use of District Owned Treatment Capacity: The District owns 3.05 MGD of treatment capacity and currently uses approximately 1.7 MGD. Based on current District flow plus Project flow, total flow would be approximately 1.7134 MGD and with current TDS concentration, the District would contribute approximately 1,400 lbs/day TDS above the 650 mg/l limit. The excess TDS equates to approximately 0.26 MGD of capacity if contributed at 650 mg/l. A possible way to encourage TDS compliance is the District could agree to put a hold on use of 0.26 MGD, thereby reducing capacity available to use to 2.79 MGD (3.05 MGD – 0.26 MGD). The District would continue to pay fixed and capital contributions based on owned 3.05 MGD. This strategy does not address overages in TDS due to concentration but would present a way to cap overall pounds.

Strategies 8a through 8c are presented for completeness only. The District prefers to work with Riverside on implementing strategies that reduces TDS concentration. This will benefit the potable water customer while reducing TDS pounds discharged to the Santa Ana River as ultimate build out flows are experienced. It is anticipated options where low TDS import water from Western is delivered to the District it will involve Riverside for wheeling.

The TDS Mitigation options analyzed with the District Master Plan Updates will have different implementation schedules. Likely it will take 5 + years to implement reverse osmosis. Imported water solutions could potentially be sooner depending on which option is implemented. The District will share with Riverside the draft Master Plan Updates for input and review.

The Developer of the Project is starting design on final water and sewer plans and now coming to grips with the implications of the condition in the Plan of Service requiring addition of reverse osmosis treatment for each of the buildings. The Project proposes very large buildings with logistics use resulting in very low water demand and sewage discharge projections. The Project’s overall sewage discharge is estimated to be 0.0134 MGD (13,400 gpd). Using the District’s average TDS concentration of 750 mg/l, the estimated excess TDS contribution by the Project (only) is 85

lbs/day. The Developer has asked the District to evaluate if the Plan of Service condition requiring addition of reverse osmosis treatment on potable water connections for each building in the Project be reconsidered.

Given this condition was included in the Plan of Service to address Riverside's concerns about the Project's annexation to the District, the District is submitting this letter to request Riverside's consideration to remove the condition. If Riverside agrees to allow the Project to proceed without addition of reverse osmosis treatment for each building, then it is suggested Riverside prepare a letter memorializing this so it can be retained in files for the Project at LAFCO, Riverside, District, and Developer.

Progress on actual TDS Mitigation has been made over the past couple of years by the District and full compliance will realistically take additional time and money. TDS Mitigation is a high priority for the District and will be addressed in the Master Plan Updates as discussed herein. The Master Plan Updates will provide the foundational nexus for a comprehensive Cost-of-Service Plan to implement fees and rates to support TDS Mitigation expenses. New development, such as the Project, generates revenues helping fund viable TDS Mitigation compliance by the District.

Thank you for your consideration of this request. If you have any questions or need additional information, please do not hesitate to contact me at 951.512.1253 or jsims@rcsd.org.



JEFFREY D. SIMS, P. E.
General Manager

Attch:

1. Agua Mansa Plan of Service

**Rubidoux Community Services District
Plan of Services
for
Agua Mansa Commerce Center**

**(Annexation for APNS 175-170-027, -028, -036, -040, -042, -043, -046,
175-180-001, 175-200-001 through -005, and -007 through -009)**

October 30, 2019

July 14, 2020 (revised)*

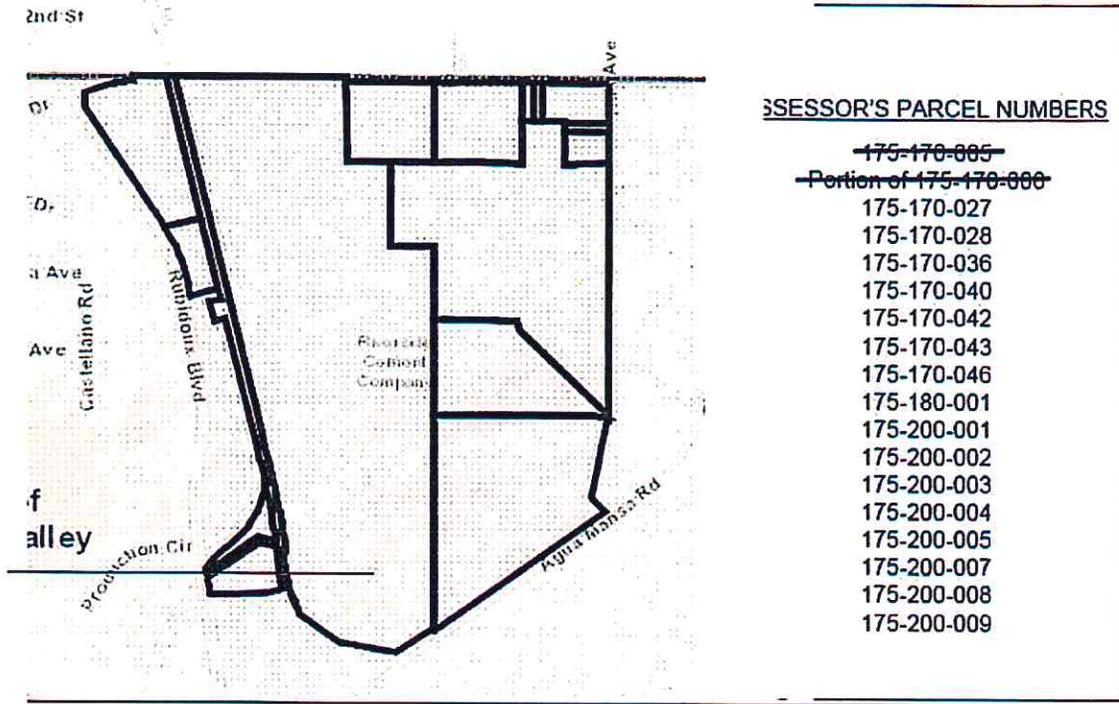
***revised to remove reference to APN 175-170-005 and portion of APN 175-170-006 which are not part of the ownership of Crestmore Redevelopment, LLC**

Introduction

Crestmore Redevelopment, LLC (Applicant) is proposing to build an industrial park on the 303± acre site¹. The annexation is proposed for sixteen (16) existing assessors parcels, as follows: APNs 175-170-027, -028, -036, -040, -042, -043, and -046; 175-180-001, and 175-200-001 through -005, and -007 through -009, located on the southeast corner of the intersection of Rubidoux Boulevard and El Rivino Road in the City of Jurupa Valley. The general location of the Project is in the Fontana and South San Bernardino Quadrangle Map, Section 3 of Township 2 South, Range 5 West. The Project Site is approximately 1.4 miles north of Interstate 60 (I-60) and 2.5 miles south of Interstate 10 (I-10). The Project will ultimately be served from the District's existing Atkinson Pressure Zone. See **Figure 1**.

All sixteen parcels are to be annexed into the Rubidoux Community Services District (RCSD or "the District") for Water, Sewer, Fire, Solid Waste, and Street Lighting services. The total annexation area is approximately 290.2 acres. The subject property adjoins the service area of Rubidoux Community Services District (RCSD), and is within the District's Sphere of Influence.

ANNEXATION MAP – FIGURE 1



¹ Although the Agua Mansa Commerce Center Specific Plan is approximately 303 acres, the proposed annexation is for 290.2 acres. The remaining 12.8 acres were annexed separately by CalPortland.

This Plan of Services utilizes information from the District's 2015 Water System Master Plan Update (Master Plan), which addresses water demands and master planned facilities for the Project. This Master Plan is currently being updated. Land use information was obtained from the Riverside County General Plan and the City of Jurupa Valley Planning Department General Plan. The 303± acre site for the proposed industrial development is currently developed with the Riverside Cement Plant, a quarry for the mining of limestone for the manufacture of cement and cement products, and various support buildings. The tentative schedule for the Project has a start date for construction of approximately 2020 with the first occupancy anticipated in 2021.

Fire

RCSD contracts with CalFire and Riverside County Office of Emergency Services to provide fire protection services within RCSD's service area. RCSD will provide fire protection services to the subject property. The closest County fire station is located at 5721 Mission Boulevard, Jurupa Valley, CA 92509, which is approximately 3 miles southwest of the subject property. The Department provides full service municipal and wildland fire protection, pre-hospital emergency medical response by paramedics and emergency medical technicians, technical rescue services, and response to hazardous materials discharges. The applicant/property owner of the subject property shall pay a one-time Fire Mitigation fee (\$0.41 per square foot) to RCSD.

Solid Waste Disposal

The District contracts Solid Waste Collection Services to Burrtec Waste Industries, Inc. solid waste collection service is currently provided by RCSD to properties that are within the RCSD service area. The Burrtec Waste Industries, Inc. yard is located at 1850 Agua Mansa Road, Riverside, CA, which is approximately one mile south of the proposed site. Therefore, RCSD will provide solid waste collection services to the subject property following development of the site.

Street Lighting Service

RCSD provides Street Lighting services to its customers. As part of the annexation into the District's services, the street lights along the frontage of the subject property will be included.

Sewer System Improvements

There is an existing 12-inch sewer line in Rubidoux Boulevard to the southwest of the Site and an existing 8-inch sewer line in Brown Avenue to the east side of the Site. Existing on-site wastewater is conveyed to septic fields on-site with no flow reaching these existing public lines. The Project will install new on-site sewer distribution infrastructure and two new sewer connections to the existing sewer lines in Rubidoux Boulevard and Brown Avenue.. Buildings 1 and 2 will have a minimum of two points of connection in order to accommodate multiple tenants if necessary. Buildings 3, 4, 5, and 6 will have one point of connection.

All wastewater collected by the RCSD is conveyed through regional wastewater conveyance facilities to the City of Riverside Regional Water Quality Control Plant (WQCP). The WQCP is located on Acorn Street in the City of Riverside. The current capacity of the WQCP is 40 million gallons per day (gpd). The RCSD currently flows approximately 2 million gallons of wastewater to the WQCP daily.

The total preliminary estimate for the projected sewage generation for the Project is 8,752 gpd based on the Utility Report dated January 21, 2019 prepared by Langan Engineering. Future quantities of wastewater conveyed by RCSD to the WQCP have been reviewed for the next 25 years and has been noted that the WQCP will have capacity for the anticipated wastewater flows from the proposed Project. Further determination and assessment by RCSD during final sewer engineering design will be conducted to identify the exact sewer discharge flow.

Total Dissolved Solids

The Rubidoux Community Services District (“RCSD”) owns sewer discharge rights through Contracts with the City of Riverside (“City”) for wastewater treatment and disposal at the City’s wastewater treatment plant. RCSD and the City continually monitor the wastewater influent and effluent to ensure compliance with the City’s Wastewater Plants regulatory permits (“Wastewater Permits”), including the levels of Total Dissolved Solids (“TDS”) in the wastewater effluent. TDS includes inorganic and organic salts dissolved in the water and wastewater. TDS occurs naturally with potable water delivered to customers and is often elevated in wastewater from customer and industry use of the potable water. The Wastewater Permits include limits on TDS levels allowed in the wastewater effluent. A key challenge is that wastewater treatment plants, like the City’s, are not designed to remove TDS unless they have advanced treatment systems, such as Reverse Osmosis. Therefore, to maintain the TDS wastewater effluent Permit limit, often source reduction efforts are required. The City current Wastewater Permit has a maximum TDS limit for discharge of recycled water to the Santa Ana River of 650 mg/l based on a rolling 12-month average.

TDS is naturally occurring in the groundwater within the region, including the RCSD service area. RCSD has been historically, and currently continues to be 100% reliant on groundwater for its source of potable water delivered to its customers. Groundwater pumped within RCSD’s area has a natural ambient TDS of approximately 520 mg/l. This naturally occurring TDS contributes to the concentration of TDS in the wastewater received from within the RCSD service area (“RCSD Wastewater”) and to TDS levels in the wastewater effluent discharged from the City’s wastewater treatment plant. The RCSD is preparing a plan to evaluate TDS levels in the RCSD wastewater and recommend action(s) to reduce TDS levels in the RCSD Wastewater (“TDS Reduction Plan”). TDS levels in wastewater may be controlled through reducing TDS in potable water prior to use by the customer, reduction in customer contribution of TDS (“Customer Use Increment”) and treatment of wastewater. TDS reduction treatment is typically accomplished through filtration or chemical treatment processes: Industries that discharge high TDS wastewater (i.e. Industrial laundries, fabrication plants, etc.) are required to treat their industrial wastewater to decrease TDS levels (and other contaminants), prior to discharge into the public sewer system. RCSD has an existing industrial pre-treatment program that focuses on these industrial discharges. The industrial pre-treatment program complies with the City’s requirements for industrial dischargers. The RCSD TDS Reduction Plan will comprehensively review options to reduce TDS to Permit limits in wastewater delivered to the City. Options anticipated to be included in the TDS Reduction plan are: reduction of TDS in potable water deliveries, and more control on Customer Use Increment.

The Project will be required to comply with the following requirements that will reduce TDS levels:

1. Any industrial user that generates a high-strength wastewater must apply for a permit and comply with the RCSD Industrial Pre-Treatment program, including all currently adopted limits for the discharge of pollutants as adopted by the RCSD and as applicable to the specific industrial user.
2. a. Comply with the RCSD TDS Reduction Plan; or if the TDS Reduction Plan has not been adopted prior to the issuance of the first building permit; then
 - b. Coordinate with RCSD to develop a plan that will insure wastewater delivered into RCSD's sewer collection system for treatment at the City's Treatment Plant will not have a TDS concentration exceeding 650 mg/l. The TDS control methods will be accomplished using standards mutually agreed to with RCSD and may include TDS removal treatment for potable water delivered to the Project in whole, or for each individual building within the Project. TDS removal is not required for irrigation systems or fire protection systems.

Water System Improvements

The subject property will be served from an existing 24" water main within RCSD's Atkinson Pressure Zone.

The estimated fire flow is 4,000 gpm with a minimum residual pressure of 20 psi at the Project site. The Fire Department will stipulate the required fire flow for the Project.

The Applicant will install a 24-inch fire water and 2-inch potable water mains from Rubidoux Blvd heading east to the site point of connections (meter and detector check) approximately 850 linear feet each. The estimated average day domestic potable water demand for the annexation, for the proposed buildings, is 6.18 gpm.

Non-Potable water

The District does not currently have recycled water in the project area.

Water Supply and Facilities

The District was formed on November 24, 1952. The District's service area is situated in the eastern portion of the City of Jurupa Valley in Riverside County, California, approximately 50 miles east of Los Angeles. The service boundary area is currently 8.5 square miles. The District is bounded by San Bernardino County on the north and west, the Santa Ana River on the south, and the City of Riverside to the east.

Rubidoux Community Services District has over 6,800 metered connections, including 6,400 residential and 400 commercial/industrial uses. One hundred percent (100%) of RCSD's water supply is obtained from groundwater and other outside water sources are not required. RCSD has approximately 50 miles of pipeline with 11 active production wells (6 potable water and 5 non-potable water with 4 storage reservoirs and 2 booster stations.

Presently, the subject property is outside the District's boundary but within the District's sphere

of influence. As stated above, the District is not currently providing service to any of the proposed parcels or any existing buildings at the site. The existing buildings are using “well water” for non-potable uses and potable water is delivered to the site. There are no connections to any potable or recycled water at the site.

The District’s Water Master Plan recommends that the Atkinson or 1066 RCSD Pressure Zone ultimately serve the Project. Water supply for the 1066 Atkinson pressure zone is from seven RCSD groundwater wells. The seven wells supply water to two storage tanks with a combined capacity of 5 million gallons. The existing Atkinson or 1066 is adequate to provide pressure and water supply for fire flow and domestic service to the Project.

Expected Pressures

Atkinson Pressure Zone

Major backbone facilities in this pressure zone are in place to support the Project. The District’s flow tested hydrant on Avalon St near Rubidoux Blvd, in October 2016, was used to predict system pressures within the Atkinson Pressure Zone for the Project. The District’s flow tested hydrant results indicate that the static pressure was 74 psi. During maximum day plus a fire flow of 4,000 gpm the predicted pressures at the site is estimated to be 20 psi.

Required Potable Water Facility Improvements

The following are the required backbone potable water facilities that must be installed and shall be in accordance with the District’s Master Plan.

- Install a 2-inch potable water main from Rubidoux Blvd heading east to the site point of connection (domestic meter). The 2-inch potable water line shall be terminated at the most westerly property line of the project where the meter is located.
- The applicant shall install all water distribution lines in accordance with District policies and design standards.
- Design and construction of all facilities shall be in accordance with drawings prepared by the Applicant and approved and signed by the District.
- All pipes shall be ductile iron pipe with push-on joints. The minimum pressure class of the pipe shall be Class 150. All pipe and laterals shall be encased in polyethylene bags in accordance with District standards. In addition, the applicant shall install fire hydrants or 4-inch blow-offs at the end of all lines for line flushing.
- The applicant shall install standard 6-inch fire hydrants in accordance with District standards. The Fire Marshall shall approve all 79 fire hydrant locations.
- The applicant shall install minimum 2” copper services from the water main to and including angle meter stop and coupling fitting in accordance with District’s stand

drawings and specifications. All service laterals shall be located horizontally within the public right-of-way and minimum 10 feet clear of all sewer laterals.

Figure 2 – Existing and Proposed Sewer Facilities

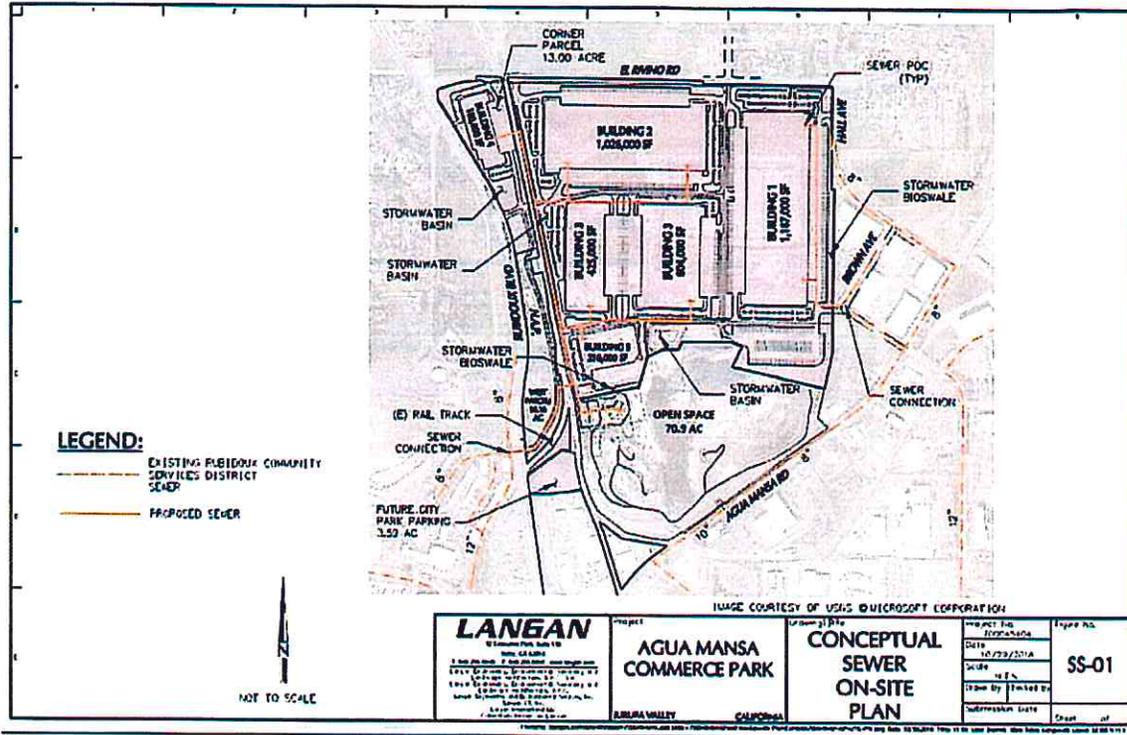
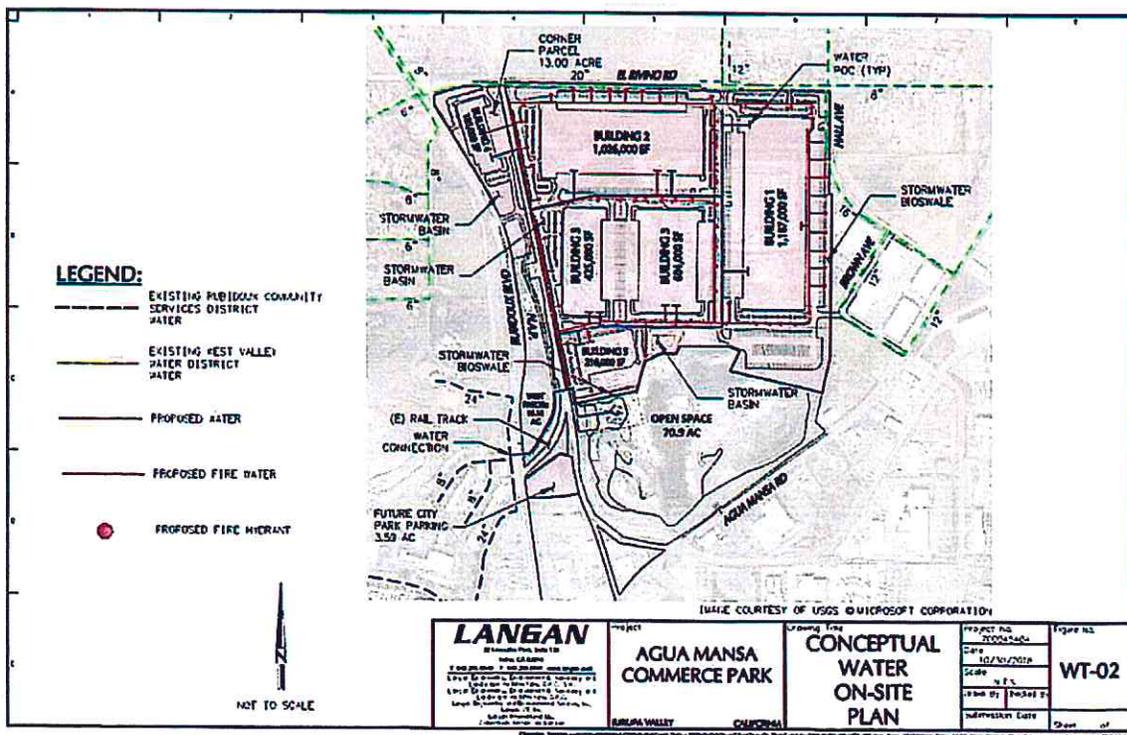


Figure 3 – Existing and Proposed Water Facilities



Recycled Water Facility Improvements

RCSD currently does not have recycled water facilities.

Water Supply

Table 1

Groundwater Production (YEARS 1977 – 2010)

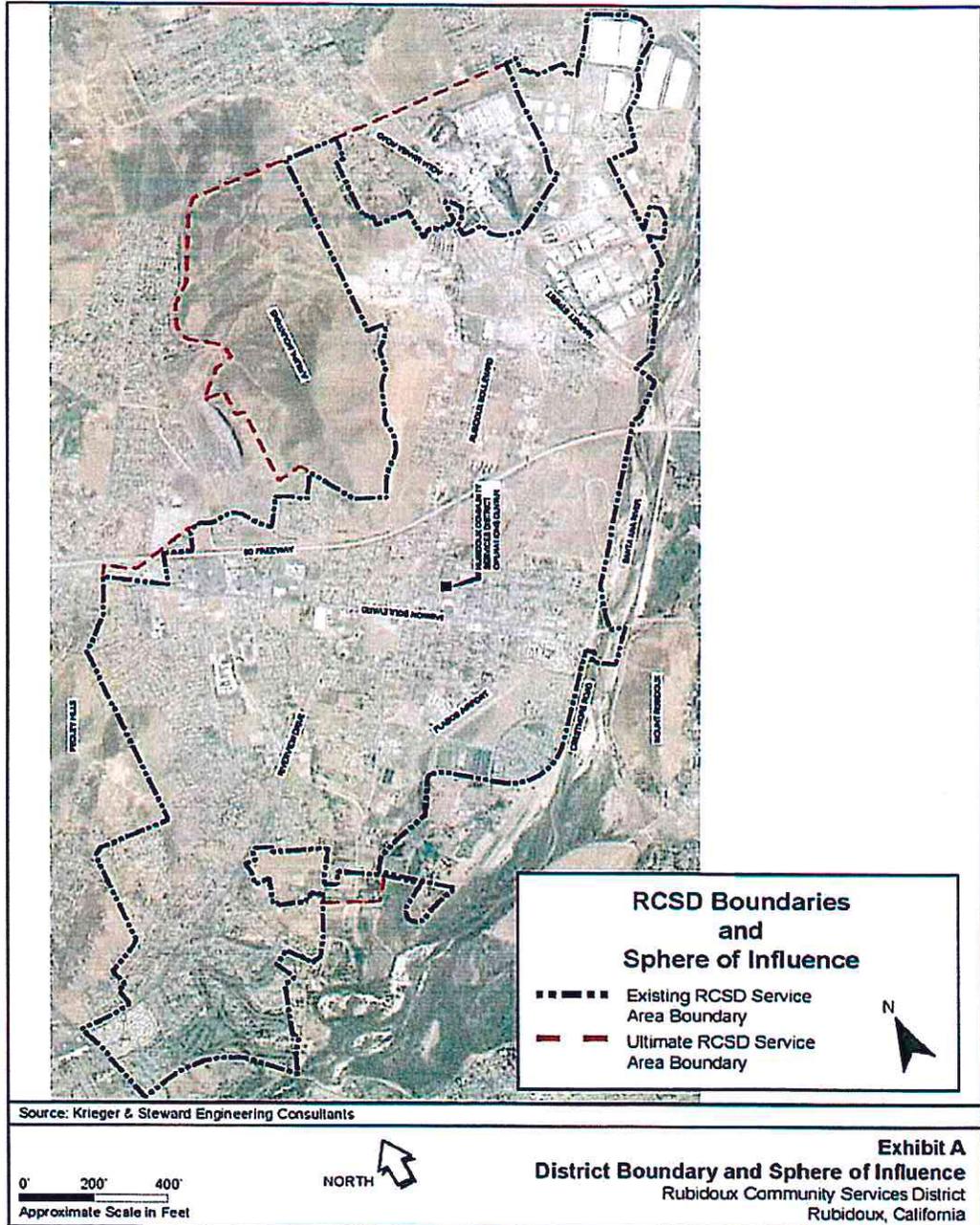
TABLE 6-2 GROUNDWATER SUPPLY RELIABILITY – HISTORIC CONDITIONS (AF/yr)					
Riverside Basin	Normal Water Year (2010)	Single Dry Water Year (1977)	Multiple Dry Water Years		
			2013	2014	2015
Potable Water Wells	14,000	14,000	14,000	14,000	14,000
Non-Potable Water Wells	3,000	3,000	3,000	3,000	3,000
Total Supply	17,000	17,000	17,000	17,000	17,000
Percent of Normal	---	100%	100%	100%	100%

TABLE 6-3 GROUNDWATER SUPPLY RELIABILITY – CURRENT CONDITIONS (AF/yr)				
Riverside Basin	Average/Normal Water Year Supply	Multiple Dry Water Years		
		2016	2017	2018
Potable Water Wells	14,000	14,000	14,000	14,000
Non-Potable Water Wells	3,000	3,000	3,000	3,000
Total	17,000	17,000	17,000	17,000
Percent of Normal	100%	100%	100%	100%

TABLE 6-4 BASIS OF WATER YEAR DATA	
Water Year Type	Base Year(s)
Normal Water Year	2010
Single-Dry Water Year	1977
Multiple-Dry Water Years	2013-2015

Exhibit A

RCSD Boundaries and Sphere of Influence



Riverside-Arlington Subbasin

The sole source of potable water supply for the District and for all water users in the Rubidoux Community is groundwater extracted from the southern portion of the Riverside-Arlington Subbasin (also referred to herein as the Riverside Basin) of the Upper Santa Ana Valley Groundwater Basin. The Basin encompasses the District's entire service area.

The District currently does not purchase or otherwise obtain water from a wholesale water supplier, and recycled water is not currently available to the District. The District expects that groundwater extracted from the Basin by six potable and six non-potable (irrigation only) groundwater wells will continue to be its primary (and possibly only) source of water through the year 2040, and possibly beyond.

The District extracts groundwater from the Riverside-Arlington Subbasin (also referred to herein as the Riverside Basin) as its source of water supply. *California's Groundwater Bulletin 118* (2003), prepared by DWR, contains supplemental information that is updated as it becomes available, and data for the Riverside-Arlington Subbasin was last updated in 2004. The Riverside Basin encompasses a surface area of 58,600 acres (92 square miles) within portions of Riverside and San Bernardino Counties. The Riverside Basin underlies part of the Santa Ana River Valley in northwestern Riverside County and southwestern San Bernardino County and is bounded by impermeable rocks of Box Springs Mountains on the southeast, Arlington Mountain on the south, La Sierra Heights and Mount Rubidoux on the northwest, and the Jurupa Mountains on the north.

The Upper Santa Ana Valley Groundwater Basin is adjudicated, as set forth in Judgment No. 78426 (also referred to herein as the Basin Judgment). According to Section IX(b) of the Basin Judgment, entered April 17, 1969, "over any five-year period, there may be extracted from such Basin Area, without replenishment obligation, an amount equal to five times such annual average for the Basin Area; provided, however, that if extractions in any year exceed such average by more than 20 percent, Western [Western Municipal Water District] shall provide replenishment in the following year equal to the excess extractions over such 20 percent peaking allowance."

The Basin Judgment required the annual determination of extractions from the Riverside Basin and further required that Western replenish said basin if the annual extractions exceed the quantities allowed by the judgment. Replenishment has never been required previously, but if replenishment is ever required, the costs for such replenishment would potentially be allocable to the groundwater extractors, including RCSD.

In August 2015, DWR released a draft list of 21 groundwater basins and subbasins significantly overdrafted by "excessive" pumping in response to a series of executive orders issued by Governor Brown since January 2014. The Riverside-Arlington Subbasin was not included in this list. DWR published the final list in January 2016, with no changes to the designation of the Riverside-Arlington Subbasin.

Water Demand Analysis

Table 2

TABLE 3-1 BASE DAILY PER CAPITA WATER USE (BASELINE)				
Year	Estimated Service Area Population ⁽¹⁾	Gross Water Use		
		AF/yr ⁽²⁾	gpd	gpcd
	A	B	C (B x 43560 x 7.48/365)	D (C ÷ A)
1999	24,856	5,466	4,879,398	196
2000	25,367	5,631	5,026,690	198
2001	25,850	5,922	5,286,461	205
2002	26,340	6,733	6,010,426	228
2003	26,824	6,113	5,456,963	203
2004	27,305	6,595	5,887,235	216
2005	27,780	6,304	5,627,405	203
2006	28,251	6,841	6,106,835	216
2007	28,717	6,894	6,154,147	214
2008	29,179	6,511	5,812,250	199
<i>Baseline (Average of Gross Water Use for 1999-2008)</i>				208

Rubidoux Community Service District Fees

<u>WATER METER SIZE</u>	<u>EDU's</u>	<u>FLOW RATE</u>	<u>MAX FIRE FLOW</u>
**5/8"	0.67		
3/4"	1.00	15 gpm	30 gpm
1"	1.67	25 gpm	50 gpm
1 1/2"	3.33	50 gpm	100 gpm
2"	5.33	80 gpm	
3"	10.00	150 gpm	
4"	16.67	250 gpm	
6"	33.33	500 gpm	
8"	53.33	800 gpm	
10"	80.00	1,200 gpm	

<u>WATER METER SIZE</u>	<u>WATER CAPACITY FEES</u>
**5/8"	\$4,556
3/4"	\$6,800
1"	\$11,356
1 1/2"	\$22,644
2"	\$36,244
3"	\$68,000
4"	\$113,356
6"	\$226,644
8"	\$362,644
10"	\$544,000

FIRE MITIGATION
Residential = \$815.00/Unit
Commercial (CID) = \$0.41/sqft

SEWER CAPACITY FEES
EDU (300 gallons per day)
(Based on water meter size) = \$5,200

<u>WATER METER SIZE</u>	<u>WATER METER FEES</u>
3/4"	\$275
1"	\$325
1 1/2"	\$420
2"	\$625
3"	\$Actual
4"	\$Actual
6"	\$Actual
8"	\$Actual
10"	\$Actual

** 5/8" meter size for calculating per unit cost of multi-unit structures

File: S:\Engineering\Will Serve Letters\Billing Units (Eff. 7-21-16)

By:



Jeffrey D. Sims, General Manager
Rubidoux Community Services District

Date: 7.14.20

DRAFT

EXHIBIT E

Agreement No. A0-5314

Agreement to Provide Water to Rubidoux Community Services District

AGREEMENT NO. A0-5314
AGREEMENT TO PROVIDE WATER TO
RUBIDOUX COMMUNITY SERVICES DISTRICT

This Agreement to Provide Water to Rubidoux Community Services District (Agreement) is entered by The Metropolitan Water District of Southern California (Metropolitan), San Bernardino Valley Municipal Water District (San Bernardino Valley), West Valley Water District (West Valley), Rubidoux Community Services District (Rubidoux), and Western Municipal Water District (Western), collectively the “Parties.”

RECITALS

A. Metropolitan is a State Water Project contractor and a metropolitan water district organized under the Metropolitan Water District Act, codified at section 109-1, et seq. of West’s Appendix to the California Water Code, and is engaged in developing, storing, and distributing water in the counties of Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura. Metropolitan has an existing agreement with San Gabriel Valley Municipal Water District (SGVMWD) that allows for the delivery of water through SGVMWD’s San Gabriel Valley Devil Canyon – Azusa Pipeline using SGVMWD’s unused capacity.

B. San Bernardino Valley is a public agency incorporated under the Municipal Water District Act of 1911 (California Water Code Section 71000 et seq., as amended) that is engaged in wholesale delivery of water in portions of the counties of San Bernardino and Riverside. San Bernardino Valley is a State Water Project contractor that primarily imports water into its service area through the State Water Project (SWP). San Bernardino Valley has 50-percent capacity rights on SGVMWD’s San Gabriel Valley Devil Canyon – Azusa Pipeline right up to Riverside Avenue in the City of Rialto. San Bernardino Valley has an existing connection on the San Gabriel Valley Devil Canyon – Azusa Pipeline that can also be used to deliver imported supplies from Metropolitan to a portion of Western’s service area.

C. Western is a municipal water district incorporated under the Municipal Water District Act of 1911 (California Water Code Section 71000 et seq., as amended) that is engaged in retail and wholesale delivery of water to customers in western Riverside County. Western purchases imported water from Metropolitan and helps provide water to over 1,000,000

people in its service area.

D. West Valley is a County Water District, a public agency of the State of California, providing retail water to approximately 95,000 customers. West Valley's service area overlaps five political jurisdictions: The Cities of Rialto, Fontana, Colton, and Jurupa Valley; and unincorporated areas of San Bernardino County, including the community of Bloomington. West Valley's service area overlaps the service areas of two SWP contractors, Metropolitan and San Bernardino Valley.

E. Rubidoux is a California community services district providing retail potable water, non-potable water, sewer collection and treatment, solid waste collection, fire protection services, street lighting, and weed abatement services to approximately 40,000 customers in its service area located in the City of Jurupa Valley. Rubidoux is within the service area of Western but currently has no connection to imported water supplies and is reliant solely on local groundwater sources.

F. The Parties desire to enter into this Agreement in order to provide water to Rubidoux for use within Western's service area (which is also within Metropolitan's service area).

AGREEMENT

NOW, THEREFORE, in consideration of the foregoing recitals and the representations which are incorporated herein by this reference, warranties, covenants, and agreements contained in this Agreement and for other good and valuable consideration, the Parties hereby agree to the following terms and conditions of this Agreement.

1. Requests for Water. Rubidoux will coordinate with San Bernardino Valley, West Valley, and Western on determining the monthly amount of imported water Rubidoux needs from Metropolitan. After coordinating, Western will request delivery of the water from Metropolitan in accordance with Sections 2 through 4 below, inclusive. The requested water must be used within Metropolitan's service area.

2. Metropolitan Deliveries. To the extent there is sufficient unused capacity in the San Gabriel Valley Devil Canyon-Azusa Pipeline, Metropolitan will request San Bernardino Valley to deliver Metropolitan supplies equal to Rubidoux's requested amount to San Bernardino Valley's connection (Lytle Creek, Station, 1747+00) on the San Gabriel Valley Devil Canyon –

Azusa Pipeline. The maximum amount of water that Rubidoux can receive from Metropolitan under this Agreement during a calendar year is 2,000 acre-feet.

3. San Bernardino Valley Deliveries. San Bernardino Valley will deliver the water that it receives pursuant to Section 2 to West Valley.

4. West Valley Deliveries. West Valley will treat the water and deliver the water to Rubidoux through an interconnection, per terms identified in a separate operating agreement between West Valley and Rubidoux, for use within Western's service area by Rubidoux ("Operating Agreement").

5. Interconnection and Meter. The interconnection between West Valley and Rubidoux will be constructed at no cost to Metropolitan and will be metered in accordance with Metropolitan standards for new service connections, as set forth in Metropolitan's Administrative Code, commencing with Section 4400, Classification and Rates, Section 4500, Water Service Regulations and any other applicable provisions of the Code, as amended from time to time ("Metropolitan's Administrative Code"). More specifically, the Parties shall comply with Metropolitan's meter calibration and standards, which are outlined in the Final Plans, dated December 4, 2023, the Final Specifications, dated December 18, 2023, and the Operational Agreement between West Valley and Rubidoux. As set forth in Metropolitan's Administrative Code, Metropolitan reserves the right to request verification of meter billing records, meter calibration records, meter discrepancy reports, and request necessary repairs/replacements in the event of meter or billing discrepancies. The Parties shall calibrate all meters used for billing purposes a minimum of every six months. The Parties shall be responsible for investigating meter discrepancies that fall within their respective ownership to identify and correct the root cause of such discrepancies.

6. Bi-directional flows. The Parties acknowledge that the interconnection may provide for bi-directional flows, and further acknowledge that this Agreement does not address that issue. Any future proposals for bi-directional flows from Rubidoux to West Valley through the meter will require further agreement amongst the Parties, and is not allowed without prior written approval from Metropolitan.

7. Coordination. The Parties agree to coordinate to develop procedures for the ongoing operation of this Agreement.

8. Monthly Amounts. Rubidoux will provide Metropolitan, San Bernardino Valley,

Western, and West Valley with a monthly meter read report of the amounts delivered by 3:00 p.m. on the fifth business day after the end of the month to account for the supplies.

Reconciliation of water deliveries will be allowed in subsequent monthly accounting.

9. Billing and Payment. Western will pay Metropolitan's rate for full service untreated water in effect at the time of the delivery of the water to San Bernardino Valley's connection for use by Rubidoux within Western's service area. The delivery is subject to the capacity charge, readiness-to-serve charge, and all volumetric water rates then in effect, in the same manner as deliveries made to Western through Metropolitan's distribution system and connections. Metropolitan will bill Western, and Western will pay Metropolitan, in accordance with the billing and payment provisions of Metropolitan's Administrative Code, as amended over time. Rubidoux will reimburse Western for all payments Western makes to Metropolitan under this Agreement. San Bernardino Valley and West Valley shall have no responsibility for the cost of water delivered to San Bernardino Valley's connection for use within Western's service area by Rubidoux. Metropolitan is not responsible for paying any costs under this Agreement.

10. Water Use Restrictions. During a time when the Department of Water Resources is administering SWP allocations pursuant to Article 18a of the Water Supply Contracts, or during a time when Metropolitan's Board of Directors has declared that a regional shortage is in effect, the same guidelines, procedures, and limitations that Metropolitan applies to its Member Agencies, including, but not limited to, water supply allocation surcharges, volumetric limits, outdoor watering restrictions, or other response actions to preserve supplies in times of shortages, will apply to deliveries made pursuant to this Agreement.

11. Department of Water Resources. Metropolitan will be responsible for any Department of Water Resources charges for the State Water Project supplies delivered to San Bernardino Valley's connection under this Agreement.

12. Term. Upon execution, this Agreement is effective as of 6/11/2024 and terminates on November 4, 2035.

13. Cancellation. Notwithstanding Section 8, any Party may terminate this Agreement by providing at least 30 days written notice to all the other Parties provided that the notifying party is not in default under this Agreement.

14. Liability and Indemnification. Liability and indemnification shall be governed by

section 4502 of Metropolitan's Administrative Code. San Bernardino Valley, West Valley, and Rubidoux each agree to the provisions of section 4502 of Metropolitan's Administrative Code, which provisions are incorporated here by this reference, and agree to its enforceability by or against each of them under this Agreement in the same manner and to the same extent as that section applies to Western.

15. No Third-Party Rights. This Agreement is made solely for the benefit of the Parties and their respective permitted successors and assigns (if any). Except for such a permitted successor or assign, no other person or entity may have or acquire any right by virtue of this Agreement.

16. Ambiguities. Each Party and its counsel have participated fully in the drafting, review and revision of this Agreement. No rule of construction to the effect that ambiguities are to be resolved against the drafting Party shall be applied in the interpretation of this Agreement or any amendments or modifications thereof.

17. Entire Agreement. This Agreement constitutes the final, complete, and exclusive statement of the terms of the Agreement among the Parties pertaining to the subject matter and supersedes all prior and contemporaneous understandings or agreements of the Parties. No Party has been induced to enter into this Agreement by, nor is any Party relying on, any representation or warranty outside those expressly set forth in this Agreement.

18. Signature. The Parties agree that this Agreement will be executed using DocuSign by electronic signature, which shall be considered an original signature for all purposes and shall have the same force and effect as an original signature. All Parties will receive an executed copy of this Agreement via DocuSign after all Parties have signed.

19. Relationship of Parties. Nothing contained in this Agreement shall be construed as creating a joint venture, partnership or any other similar arrangement among any of the Parties. No Party to this Agreement shall be deemed to be a representative, an agent or an employee of any other Party. Unless otherwise expressly specified in this Agreement, no Party shall have any authority or right to assume or create any obligation of any kind or nature, express or implied, on behalf of, or in the name of any other Party, nor bind any other Party in any respect, without the specific prior written authorization of another Party. The obligations of the Parties shall be several and not joint.

20. Amendments. No change, amendment or modification of this Agreement shall be

valid or binding upon the Parties unless such change, amendment or modification is in writing and duly executed by all Parties.

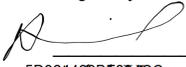
21. Time of the Essence. Time is of the essence in the execution and performance of this Agreement.

[signatures on following page]

DRAFT

**THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA**

DocuSigned by:



5D3244288F834CC
Adel Hagekhalil
General Manager

6/11/2024

Dated

APPROVED AS TO FORM:

DocuSigned by:



FBF67E2A2235400...
Marcia L. Scully
General Counsel

5/16/2024

Dated

**SAN BERNARDINO VALLEY MUNICIPAL
WATER DISTRICT**

DocuSigned by:



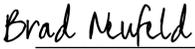
12000489120C4D...
Heather Dyer
Chief Executive Officer / General Manager

4/30/2024

Dated

APPROVED AS TO FORM:

DocuSigned by:



4E7171E22A8458...
Brad Neufeld
General Counsel

4/18/2024

Dated

WEST VALLEY WATER DISTRICT

DocuSigned by:



14A27949528D4C7...
John Thiel
General Manager

5/14/2024

Dated

APPROVED AS TO FORM:

DocuSigned by:



679509D7A334ZD...
Jeff Ferre
General Counsel

5/1/2024

Dated

DRAFT

WESTERN MUNICIPAL WATER DISTRICT

DocuSigned by:

Craig Miller

Craig Miller

General Manager

4/15/2024

Dated

APPROVED AS TO FORM:

DocuSigned by:

Jeff Ballinger

Jeff Ballinger

Legal Counsel

4/11/2024

Dated

RUBIDOUX COMMUNITY SERVICES DISTRICT

DocuSigned by:

Brian Laddusaw

Brian Laddusaw

General Manager

5/16/2024

Dated

APPROVED AS TO FORM:

DocuSigned by:

John Harper

John Harper

Legal Counsel

5/14/2024

Dated

EXHIBIT F

Analysis and Impact of 750 Additional EDUs to:

- 1. Rubidoux's Sewage Flow**
- 2. Riverside's Water Quality Control Plant**

Analysis and Impact of 750 Additional EDUs to Rubidoux's Sewage Flow

Assumptions:

1. Current Rubidoux sewer flow to Riverside = 1.72 (MGD)^[a]
2. Current Rubidoux TDS concentration in sewage sent to Riverside = 787 mg/L^[b]
3. Current number of RCSD sewer customer connections = 6,800^[c]
4. The current unit generation per connection is 252.9 gpd/connection (1.72 MGD / 6,800)
5. Current Riverside WQCP flow = 26.7 MGD^[a]
6. Current Riverside WQCP TDS concentration = 590 mg/L^[d]
7. Current pounds of TDS from Riverside WQCP = 131,380 lbs/day (26.7 x 590 x 8.34)
8. Current RCSD contribution of TDS at TDS concentration of 787 mg/L and flow of 1.72 MGD = 11,289 lbs/day (8.6% of Riverside WWTP total)

[a] - Based on November 2023 Flow Report

[b] - 12 mo. avg. (ending Nov '23) based on WQCP influent data provided by Riverside staff

[c] - Combined Residential and Non-residential

[d] - Provided at the November 14, 2023 TAC meeting

Based on those assumptions the following is determined:

Incremental Impact of 750 EDU Additions:

1. Added flow from 750 additional connections = **0.189 MGD**
(252.9 gpd/connection x 750 additional connections)
2. Added RCSD contribution of TDS at TDS concentration of 787 mg/l = 1,241 lbs/day
(.189 x 787 x 8.34)

System Wide Impact of 750 EDU Additions:

1. Estimated total flow with the 750 future connections = 1.90 MGD (1.72 MGD + 0.189 MGD)
2. Estimated total pounds of RCSD sewage flow of 1.9 MGD and TDS at 787 mg/L = 12,471 lbs/day (1.9 X 8.34 X 787)
3. RCSD pounds of TDS at flow of 1.9 MGD and TDS at the 650 mg/L limit = 10,300 lbs/day (1.9 x 8.34 x 650)
4. Total excess RCSD TDS contribution at flow of 1.90 MGD = 2,171 lbs/day (12,471 - 10,300)

Summary:

The additional 750 units from Rubidoux adds 0.189 MGD of flow and 1,241 lbs/day of TDS at a concentration of 787 mg/l.

Note: The following page analyzes the aggregated WQCP impact based on Rubidoux's incremental add of 750 EDUs across two different scenarios:

Scenario 1: Incremental add of 750 EDUs (Rubidoux growth only)

Scenario 2: Addition of 750 EDUs and 5% growth for JCSD, ECSD, and Riverside

Analysis and Impact of Additional Sewage Flow to Riverside's WQCP

Agency	RCSD	JCSD	ECSD	Riverside	Total
Discharge (MG) ^[a]	51.61	88.67	18.01	641.06	799.35
Discharge (MGD)	1.72	2.96	0.60	21.37	26.65
% of total	6%	11%	2%	80%	100%
TDS (mg/l)	787.00 [b]	544.00 [c]	640.30 [c]	579.09 [d]	590.00 [e]
TDS (lbs/month)	338,746.36	402,292.24	96,175.24	3,096,067.77	3,933,281.61
TDS (lbs/day)	11,291.55	13,409.74	3,205.84	103,202.26	131,109.39

[a] - Based on November 2023 Flow Report

[b] - 12 month avg. based on WQCP influent data provided by Riverside staff

[c] - Provided directly by JCSD/ECSD

[d] - Calculated based on known TDS concentration for JCSD, RCSD, ECSD and WQCP

[e] - Provided at the November 14, 2023 TAC meeting

Scenario 1: With added 750 EDUs (RCSD Growth Only)

Discharge (MGD)	1.90	2.96	0.60	21.37	26.82
TDS (mg/L)	787.00	544.00	640.30	579.09	
TDS (lbs/day)	12,470.80	13,409.74	3,205.84	103,202.26	132,288.64

Overall TDS Concentration 591.32

Summary: Based on the incremental add of 750 EDUs in Rubidoux, the WQCP TDS concentration would increase from 590 mg/l to 591.32 mg/l, an add of 1.32 mg/l or 0.23%.

Scenario 2: With added 750 EDUs plus 5% growth for JCSD, ECSD, and Riverside^[f]

Discharge (MGD)	1.90	3.10	0.63	22.44	28.07
TDS (mg/L)	787.00	544.00	640.30	578.80	
TDS (lbs/day)	12,470.80	14,080.23	3,366.13	108,308.19	138,225.35

Overall TDS Concentration 590.43

[f] - There are a number of different developments ongoing in Rubidoux at various stages of their project. Based on what Rubidoux staff currently knows about the progress of these developments, Rubidoux staff estimates it will not realize 750 new EDUs for 3-5 years. Additionally, Rubidoux staff is aware of significant development in the western section of Jurupa Valley, which is served by JCSD and for which sewage is collected and conveyed to Riverside for treatment. Further, its reasonable to assume within a 3-5 year time period, ECSD and Riverside will likely see growth themselves. For purposes of this analysis, growth for the other WQCP partners is estimated at 5%.

Summary: Based on the incremental add of 750 EDUs in Rubidoux, and 5% growth for the other WQCP partners at their current concentrations, the WQCP TDS concentration would increase from 590 mg/l to 590.43 mg/l, an add of 0.43 mg/l or 0.08%.