

Docket	:	<u>A.23-01-001</u>
Exhibit Number	:	<u>Cal Adv - #</u>
Commissioner	:	<u>Genevieve Shiroma</u>
Administrative Law Judge	:	<u>Gerald F. Kelly</u>
Public Advocates Office	:	<u>Zaved Sarkar</u>
Witness(es)	:	_____



PUBLIC ADVOCATES OFFICE
CALIFORNIA PUBLIC UTILITIES COMMISSION

REPORT ON
PIPELINE REPLACEMENT,
DEPRECIATION RESERVE &
EXPENSE, RATE BASE & EARLY
RETIREMENTS AND SATIVA
PIPELINE PROJECTS
[Public]

San Francisco, California
[August 14, 2023]

Contents

MEMORANDUM..... III

CHAPTER 1 PIPELINE REPLACEMENT4

I. INTRODUCTION4

II. SUMMARY OF RECOMMENDATIONS4

III. ANALYSIS.....4

 A. Suburban’s Water Transmission System Performance.....6

 B. HDR’s Main Renewal Plan.....8

 C. Suburban’s Historical Pipeline Replacement.....11

 D. Paving Moratoriums from City of Whittier14

 E. Pipeline Rehabilitation.....16

 F. Adders to the Overall Cost Estimate.....19

IV. CONCLUSION.....19

CHAPTER 2 DEPRECIATION RESERVE & EXPENSE22

I. INTRODUCTION22

II. SUMMARY OF RECOMMENDATIONS22

III. ANALYSIS.....22

IV. CONCLUSION.....22

CHAPTER 3 RATE BASE AND EARLY RETIREMENTS24

I. INTRODUCTION24

II. SUMMARY OF RECOMMENDATIONS24

III. ANALYSIS.....25

 A. Rate Base25

 B. Working Cash27

 C. Early Retirements.....29

 D. Construction Work in Progress.....33

IV. CONCLUSION.....35

CHAPTER 4 SATIVA PIPELINE PROJECTS36

I. INTRODUCTION36

II. SUMMARY OF RECOMMENDATIONS36

III. ANALYSIS.....37

IV. CONCLUSION.....	38
ATTACHMENT 1-1: A2301001 CAL PA DR ZS1-001 (PIPELINE REPLACEMENT PROGRAM).....	39
ATTACHMENT 1-2: A2301001 CAL PA DR ZS1-004 (PIPELINE REPLACEMENT PROGRAM 2).....	44
ATTACHMENT 1-3: SUBURBAN'S MAIN BREAK RATE (2012 THROUGH 2022)	52
ATTACHMENT 3-1: A2301001 CAL PA DR ZS1-005 (PLANT RETIREMENTS): 2017 - 2021 PLANT RETIREMENTS CALCULATIONS	54
ATTACHMENT 4-1: FULL PERMIT, ENGINEERING REPORT LOS ANGELES COUNTY PUBLIC WORKS – SATIVA WATER SYSTEM, SYSTEM NO. 1910147 (DATED DECEMBER 23, 2020).....	60
ATTACHMENT 4-2: ENGINEERING REPORT, PERMIT AMENDMENT NO. 1910147PA-001, SUBURBAN WATER SYSTEMS - SATIVA, SYSTEM NO. 1910147 (DATED APRIL 24,2023).....	108
ATTACHMENT 4-3: PERMIT AMENDMENT LETTER FROM DDW TO SUBURBAN (DATED APRIL 24, 2023)	127

MEMORANDUM

The Public Advocates Office at the California Public Utilities Commission (Cal Advocates) examined requests and data presented by Suburban Water Systems (Suburban) in Application (A.) 23-01-001 (Application) to provide the California Public Utilities Commission (Commission) with recommendations that represent the interests of ratepayers for safe and reliable service at the lowest cost. Zaved Sarkar prepared this report under the general supervision of Program Manager Richard Rauschmeier, Program & Project Supervisor Hani Moussa, and Project Lead Suliman Ibrahim. Shanna Foley is Cal Advocates legal counsel.

Although every effort was made to comprehensively review, analyze, and provide the Commission with recommendations on each ratemaking and policy aspect of the requests presented in the Application, the absence from Cal Advocates' testimony of any particular issue does not constitute its endorsement or acceptance of the underlying request, or the methodology or policy position supporting the request.

1 **CHAPTER 1 PIPELINE REPLACEMENT**

2 **I. INTRODUCTION**

3 This Chapter discusses Suburban’s proposed pipeline replacement schedule and
4 Cal Advocates’ recommendation.

5 **II. SUMMARY OF RECOMMENDATIONS**

6 The Commission should approve a pipeline replacement rate of 0.99% over 3
7 years with a budget of \$4,851,000 for 2023, \$4,445,000 for 2024, and \$4,823,000 for
8 2025. Suburban’s requested replacement rate of 3.51% over 3 years is unnecessarily
9 aggressive and will result in a higher cost to ratepayers without substantial benefits.
10 Suburban should continue at its recorded replacement rate and develop a plan
11 demonstrating benefits to ratepayers if it seeks to increase its replacement rate. The
12 recommended pipeline replacement budget is shown in Table 1-1 below.

13 **Table 1-1: Summary of Recommendations**

	Suburban’s Budget (\$1,000s)	Cal Advocates Budget (\$1,000s)	Suburban’s Replacement Rate	Cal Advocates Replacement Rate	Suburban’s Replacement Miles	Cal Advocates Replacement Miles
2023	\$19,013	\$4,851	1.00%	0.33%	8.6	2.84
2024	\$17,425	\$4,445	1.00%	0.33%	8.648	2.84
2025	\$28,550	\$4,823	1.51%	0.33%	13.002	2.84
Total	\$64,988	\$14,119	3.51%	0.99%	30.25	8.52

14
15 **III. ANALYSIS**

16 For Test Years 2024 and 2025, Suburban requests a pipeline replacement budget
17 of approximately \$17.4 million and \$28.5 million, respectively. Suburban bases its
18 budget request on an annual replacement rate of approximately 1.00% and 1.51%,
19 respectively. Suburban also assumes it will spend \$19 million to replace 1.00% of its

1 pipelines in 2023.¹ Table 1-2 presents a breakdown of Suburban’s proposed pipeline
 2 replacements.

3 **Table 1-2 Suburban's Proposed Pipeline Replacement**

	2023	2024	2025	Total
Main Pipeline Replacement Miles	8.6	8.648	13.002	30.25
Replacement Miles as a % of Overall system	1.00%	1.00%	1.51%	3.51%
Main Pipeline Replacement Budget	\$19,013,000	\$17,425,000	\$28,550,000	\$64,988,000
Main Pipeline Replacement Budget as a % of Overall Capital Budget	53%	33%	32%	36%

4
 5 Further, Suburban requests \$5.7 million for fire flow related pipeline projects² and
 6 an additional annual budget of \$450,000 in 2023, \$639,000 in 2024, and \$828,000 in
 7 2025 for its miscellaneous pipeline replacement budgets.³ A majority of these requests
 8 directly impact Suburban’s newly acquired Sativa system and will have a direct rate
 9 impact on those customers, which are predominantly low income.⁴ The fire flow related
 10 pipeline projects are discussed in Chapter 4 of this report.

11 Suburban hired engineering consultant HDR to develop its “*Final Suburban Water*
 12 *Systems Water Main Renewal*” asset management technical memorandum (“Main
 13 Renewal Plan”).⁵ HDR analyzed Suburban’s water main infrastructure and developed a

¹ Suburban Water System 2023 GRC, Lopez Direct (Final Application A-23-01-001).pdf: Pages 49, 142-143 & 253-255.

² Suburban Water System 2023 GRC, Lopez Direct (Final Application A-23-01-001).pdf: Pages 252-253.

³ Suburban Water System 2023 GRC, Lopez Direct (Final Application A-23-01-001).pdf: Pages 73-75, 167-169 & 280-282.

⁴ CPUC Approves Purchase of Sativa Los Angeles County Water District by Suburban Water Systems <https://www.cpuc.ca.gov/news-and-updates/all-news/cpuc-approves-purchase-of-sativa-los-angeles-county-water-district-by-suburban-water-systems>

⁵ Suburban 2023 Workpapers VOLUME III-E AM Plans & Master Plans CONFIDENTIAL (Final

1 recommended pipeline replacement schedule. Suburban based its requests on HDR’s
2 analysis. Cal Advocates discusses its findings regarding HDR’s Main Renewal Plan in
3 section B below.

4 **A. Suburban’s Water Transmission System Performance**

5 Suburban’s water system includes 860.4 miles of pipeline within two districts.
6 Suburban’s application includes water loss audit results for its two districts for 2019 and
7 2020.⁶ Cal Advocates acquired additional water loss audit reports for 2017, 2018 and
8 2021.⁷ As part of the water loss audits, the American Water Works Association
9 (AWWA) audit software calculates an Infrastructure Leakage Index (ILI). The ILI is the
10 ratio of “real losses” to “unavoidable water losses.” “Real losses” is the value of system
11 leakage and storage tank overflows.⁸ “Unavoidable water losses” is the value
12 representing the “absolute minimal level that could be attained if all efforts were exerted
13 to contain losses, regardless of cost.”⁹ The ILI is a highly effective performance indicator
14 for comparing (benchmarking) the performance or utilities in operational management of
15 real losses.¹⁰ In essence, the score indicates how well a water distribution system
16 performs and determines if further investments should be made to improve system
17 performance.

Application)

⁶ A2301001 Cal PA DR ZS1-001 (Pipeline Replacement Program), Response No 4. (Attachment 1-1)

⁷ Reports collected from https://wuedata.water.ca.gov/awwa_plans.

⁸ AWWA “Water Loss Control Terms Defined”, page 1.
(<https://www.awwa.org/Portals/0/AWWA/ETS/Resources/WLCwater-loss-control-terms-defined-awwa-updated.pdf?ver=2014-12-30-084848-790>)

⁹ AWWA “The State of Water Loss Control in Drinking Water Utilities”, page 7.
(<https://www.awwa.org/Portals/0/AWWA/ETS/Resources/WLCWhitePaper.pdf?ver=2017-09-11-153507-487>)

¹⁰ A2301001 Cal PA DR ZS1-001 (Pipeline Replacement Program), Response (4 of 4) - AWWA- 2020 Whittier_La Mirada, Tab: Definitions.

As shown below in Table 1-3, the 5-year average ILI score for Suburban’s San Jose Hills District is 0.736.¹¹ According to the AWWA Free Water Audit Software, a score of less than 1.0 indicates one of two possibilities: (1) Either the data used to perform the audit was flawed, or (2) the water system is operating in “a class with the top worldwide performers in leakage control.”¹² Suburban’s system is relatively young with more than 40% of its system never having experienced a break, which is consistent with the low ILI scores for both districts. The ILI score for the San Jose Hills District is comparable to the ILI score for the Whittier / La Mirada District. Both systems have relatively low leakage rates indicating that the ILI is more likely valid and not an error.

Table 1-3: ILI Scores from 2017 through 2021

Districts	ILI Scores					5 year Avg
	2017	2018	2019	2020	2021	
San Jose Hills	1.27	0.75	0.34	1.01	0.31	0.736
Whittier/La Mirada	1.45	1.02	1.44	2.52	1.29	1.544

Suburban’s most recent 2021 ILI scores for both districts, of 0.31 and 1.29 respectively, show that Suburban is already operating at exceptional levels as compared to the ILI score of 1.0, which is a world class ranking. Further, both current ILIs are lower than Suburban’s ILI from prior years. The average reduction in infrastructure leakage score shows that Suburban’s system is improving at the current investment levels. Given the already low ILI scores, it is unlikely increasing replacement rates¹³ with additional spending will materially improve the actual water system’s performance.

¹¹ A2301001 Cal PA DR ZS1-001 (Pipeline Replacement Program), Response No 4 & Reports collected from https://wuedata.water.ca.gov/awwa_plans.

¹² AWWA Free Water Audit Software version 5.0 “Loss Control Planning.”

¹³ The proposed replacement rates from Suburban in this application is significantly higher than what they have historically replaced in the previous GRCs. Please see Section C: Suburban’s Historical Pipeline Replacement of this chapter for more details.

1 **B. HDR’s Main Renewal Plan**

2 Suburban engaged HDR, a third-party engineering consultant, to update the
3 pipeline condition assessment it had prepared for Suburban’s prior GRC application.
4 HDR’s Main renewal plan has a goal break rate of 10 breaks per 100 miles of pipeline
5 per year, which is unnecessarily aggressive and significantly lower than The Partnership
6 for Safe Water’s Distribution System Optimization Program recommended goal of 15
7 breaks/100 miles/year.¹⁴ HDR’s Main Renewal Plan also groups pipelines into projects,
8 which leads to unnecessary replacement of used and useful pipeline. HDR’s Main
9 Renewal Plan focuses on establishing a replacement rate that meets the aggressive goal of
10 less than 10 breaks per 100 miles per year and does not demonstrate increased ratepayer
11 benefits because of its proposed replacement rates.

12 To develop Suburban’s proposed pipeline replacement schedule, HDR reviewed
13 Suburban’s existing main pipeline data. Suburban maintains this data in a Geographic
14 Information System (GIS) database. HDR grouped Suburban’s pipe assets into
15 “projects.” HDR states that grouping pipe lengths into “projects” provides more insight
16 into the quality of material used, installation quality, backfill quality, and construction
17 management quality. HDR also states that replacing infrastructure in small units is not
18 cost effective. The median length of Suburban’s main pipelines is 43 feet, and the
19 average asset length is 123 feet.¹⁵ Using HDR’s project groupings, the median project
20 length is 464 feet, and the average length is 1,191 feet.

21 Grouping a bigger pipe segment into construction “projects” unreasonably inflates
22 the number of estimated pipeline breaks. Grouping pipelines that have not experienced

¹⁴ The partnership was founded by six organizations dedicated to safe drinking water: the U.S. EPA, the American Water Works Association (AWWA), the Water Research Foundation (WRF), the National Association of Water Companies (NAWC), the Association of State Drinking Water Administrators (ASDWA), and the Association of Metropolitan Water Agencies (AMWA). **The Partnership program provides tools to assess the performance of distribution systems and develop plans to improve performance beyond even proposed regulatory levels.**

<https://www.awwa.org/Resources-Tools/Programs/Partnership-for-Safe-Water> (accessed on 04/17/2023)

¹⁵ SWS 2023 GRC - VOLUME III-E AM Plans & Master Plans CONFIDENTIAL (Final Application).pdf at pp. 1-2.

1 any breaks or very few breaks with pipelines that have experienced several breaks causes
2 the entire grouped project to have an excessive break count even though much of the
3 pipeline is still functioning correctly.

4 Another problem with creating “project” areas is that some parts of a project may
5 be under a city or county enforced moratorium that prohibits Suburban from replacing the
6 pipe. HDR counts the breaks in the parts of the project that are under a moratorium,
7 which keeps the project risk score up even after replacement. This is because the sections
8 that are under moratorium are not replaced in the proposed window Suburban indicates
9 and will continue to have their associated breaks counted towards the project’s overall
10 score. Currently, the City of Whittier and the County of Los Angeles have a moratorium
11 on removing pavement or street cutting or trenching. The City of Whittier moratorium
12 prohibits activity, excluding emergencies, for up to five years after pavement project
13 completion. City and County Moratoriums are also further discussed in section D below.

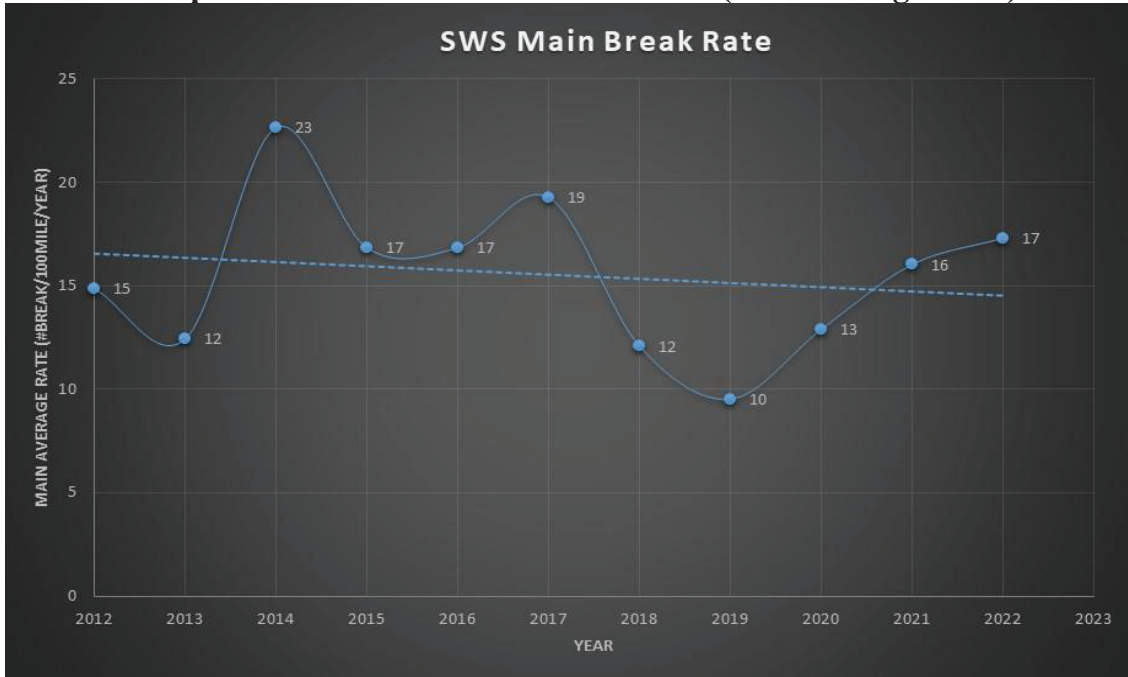
14 To develop project break performance data, HDR used Suburban break data
15 between January 1, 1998, and December 29, 2017. HDR used the recorded break data to
16 develop relationships between the recentness of experienced breaks and the age of the
17 pipe project to predict a pipe project’s break rate. HDR also projected the break rates for
18 pipe projects that have yet to experience a break by predicting when the pipe project
19 would experience its first break.

20 Upon Cal Advocates’ inquiry, Suburban provided the break rate summary for the
21 last 11 years which indicates a generally decreasing trend in break rates, as shown in
22 Graph 1.¹⁶ Moreover, the Partnership for Safe Water states that, for systems with more
23 than 15 breaks/100 miles/year, a five-year declining break rate indicates that a system is
24 making progress towards optimization.¹⁷

¹⁶ A2301001 DR ZS1-004 Response #3.a - Break Rate Summary 2012-2022. Graph modified to show the declining trendline. (Attachment 1-3)

¹⁷ Partnership for Safe Water Annual Data Summary Report, dated April 2017, p. 38.
(<https://www.awwa.org/Portals/0/AWWA/Partnerships/PSW/PSW2017AnnualReportFinal.pdf?ver=2017-04-03-083309-947> , accessed on 04/17/2023).

1 **Graph 1: Suburban's Main Break Rate (2012 through 2022)**



2
3 Suburban's break rates are lower than the national average. Suburban's average
4 break rate per year from 2012-2022 is 16 breaks/100 mile/year.¹⁸ According to a Utah
5 State University publication that studied national pipe break rates, the average pipe break
6 rate (regardless of cause) for water utilities is between 21 to 27 breaks per 100 miles of
7 pipeline per year.¹⁹ Suburban's below average break rate further demonstrates the overall
8 system's health.

9 Suburban proposes setting a goal of 10 breaks/100 miles/year for its water
10 transmission system. The AWWA Partnership for Safe Water Distribution System
11 Optimization Program sets the goal for a fully optimized system to be 15 breaks/100
12 miles/year. Suburban's target for a fully optimized system exceeds the AWWA goal by
13 33%. Suburban's goal break rate is unreasonable and will lead to premature pipeline

¹⁸ A2301001 DR ZS1-004 Response #3.a - Break Rate Summary 2012-2022, Tab: Summary 2012-2022. (Attachment 1-3)

¹⁹ Water Main Break Rates In the USA and Canada: A Comprehensive Study.pdf, page 8 (https://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1173&context=mae_facpub), accessed on 04/17/2023)

1 replacement at a higher cost to ratepayers. The replacement scenarios laid out by HDR
2 will lead to customer rates being approximately \$7 million per year more than necessary.

3 **C. Suburban’s Historical Pipeline Replacement**

4 Historically, Suburban has replaced fewer pipelines than forecasted or authorized.
5 Suburban has requested high pipeline replacement budgets under the premise of
6 “urgency,” but then used authorized funds for other capital investment projects.

7 In its 2017 GRC, Suburban proposed accelerating its pipeline replacement from a
8 historical replacement rate of 0.1% to 1% annually.²⁰ CPUC adopted to a replacement
9 rate of 0.46% for 2018 and 2019 with authorized budgets of \$3,986,000 and \$8,627,000
10 respectively.²¹

11 Graph 2 shows Suburban’s requested replacement budgets, adopted budgets, and
12 recorded budgets for 2011 through 2022.^{22, 23 24} Graph 3 shows the requested, adopted,
13 and recorded miles of system replaced for 2011 through 2022.

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²⁰ SWS 2017 GRC (A.17-01-001) Lopez prepared testimony Volume I pages 3 and 4.

²¹ D.19-05-029 at p. 11 and Appendix A at pp. 28 and 30.

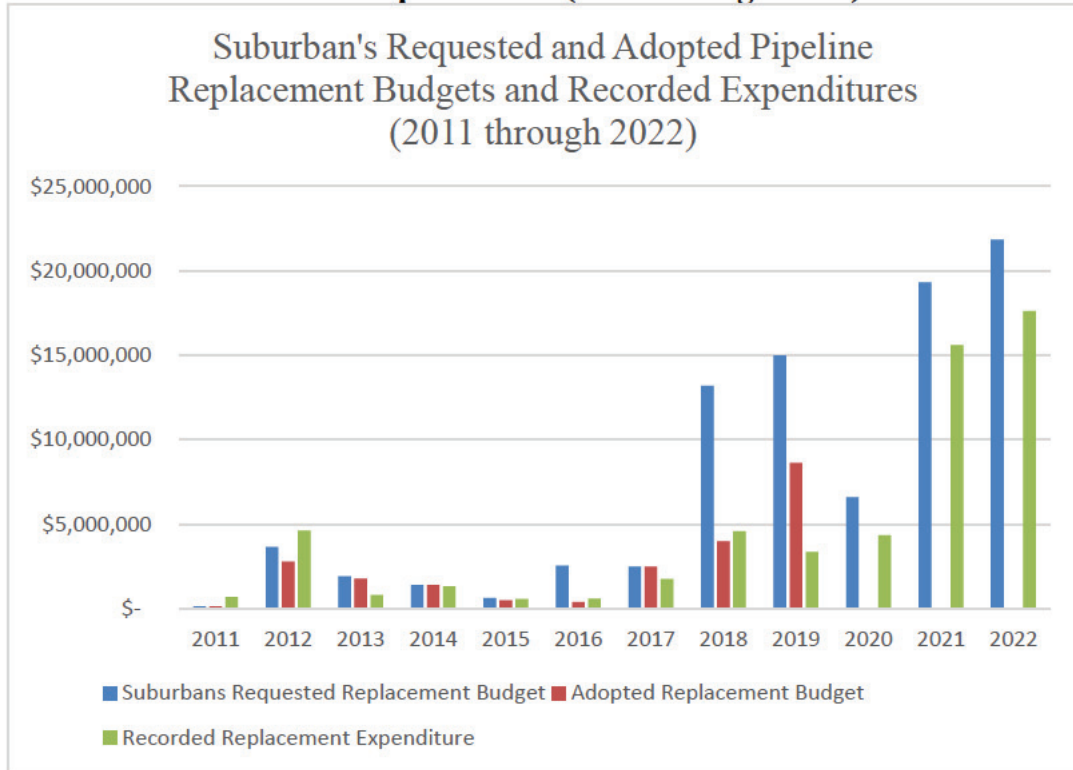
²² Requested budgets from Suburban’s GRC applications (A.11-02-002, A.14-02-004, and A.17-01-001).

²³ Adopted budgets in GRC decisions (D.12-04-009, D.14-12-038, and D.19-05-029).

²⁴ Recorded data provided in email response from Suburban in “Response to SI Email 1-23-2020.xlsx” and “Data Request SN 2020-01-13 Response (2014-2019 Pipeline Replacement - \$ & Length).xlsx.”

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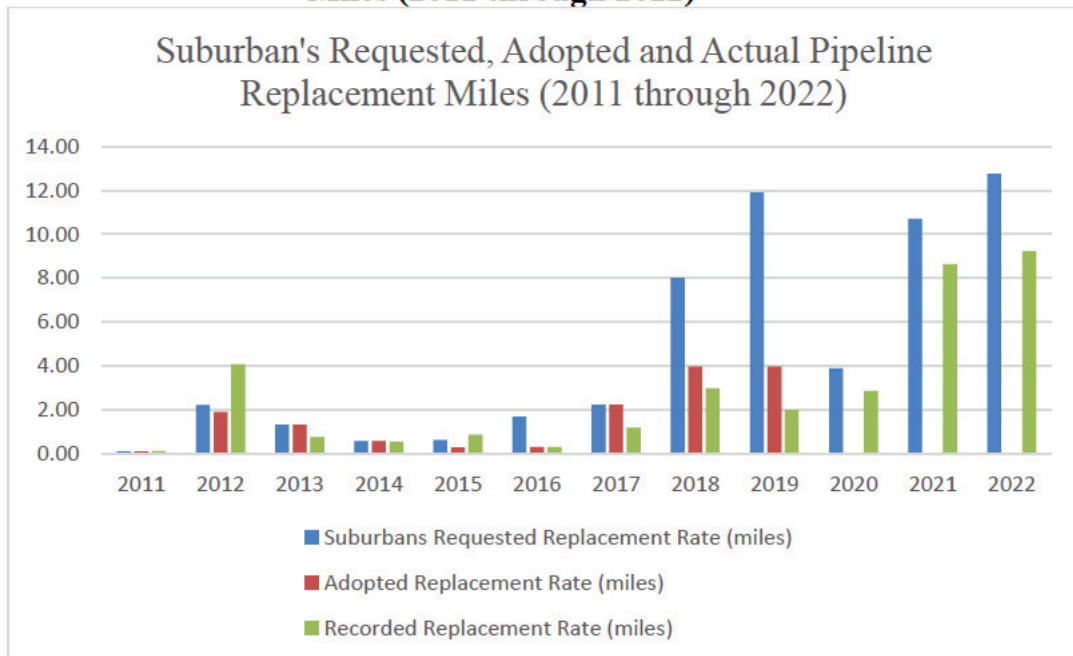
Graph 2: Suburban's Requested and Adopted Pipeline Replacement Budgets and Recorded Expenditures (2011 through 2022)



3

4
5

Graph 3: Suburban's Requested, Adopted and Actual Pipeline Replacement Miles (2011 through 2022)



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7

1 In 2020 GRC, Suburban forecasted \$6.6 million in 2020, \$19.3 million in 2021,
2 and \$21.8 million in 2022 to replace 0.45%, 1.25% and 1.5% of pipelines in its systems
3 in those respective years. The Commission adopted a lump sum capital expenditure
4 budget as part of a settlement agreement between Cal Advocates and Suburban.²⁵ At the
5 time of the current GRC filing (2023 GRC), Suburban has replaced 45,506 linear feet
6 (8.64 miles) in 2021 and is on pace to replace 48,725 linear feet (9.22 miles) of the total
7 system (860.4 miles) in 2022. This translates to a replacement rate of 1.01% for 2021 and
8 1.07% for 2022, which is approximately one-quarter less than what Suburban had
9 forecasted. Further, Suburban did not complete the list of projects it claimed it finished.

10 Suburban stated in a data response that “The total settlement budgets in 2021 and
11 2022 included main replacement projects that equaled an average replacement rate of
12 1%.”²⁶ This statement is misleading because there is no such agreement between Cal
13 Advocates and Suburban pertaining to replacement rates.²⁷ The 1% replacement rate is
14 Suburban’s internal calculation. Moreover, the settlement left the prioritization of capital
15 expenditures up to Suburban’s discretion as noted in the settlement agreement: “. . .
16 within this overall capital budget, Suburban will have the flexibility to prioritize the
17 capital projects in order to best serve its customers..”²⁸ Suburban’s own discretion of
18 prioritizing pipeline projects in this particular proceeding over other capital plant projects
19 to use up all of the adopted settled amount, should not be credited to their actual ability to
20 consistently finish adopted pipeline replacement rates.

21 Furthermore, Suburban spent just over \$54 million in the last 11 years (2012-2022)
22 to replace 32.3 miles or 170,897 linear feet of pipelines in their system, as shown in

²⁵ D2110024 Approving and Adopting Settlement Agreement Resolving Remainder of Disputed Issues, page 20.

²⁶ A2301001 Cal PA DR ZS1-001 (Pipeline Replacement Program), Response No 2.a.

²⁷ D2110024 Revised Settlement Agreement Between Suburban Water Systems and The Public Advocates Office

²⁸ D2110024 Revised Settlement Agreement Between Suburban Water Systems and The Public Advocates Office, page 21.

1 Table 1-4.²⁹ This translates to approximately 2.93 miles per year or a 0.33% replacement
 2 rate.³⁰ The Commission should take this finding into consideration when determining the
 3 appropriate replacement rate for Suburban's water systems.

4 **Table 1-4: Annual recorded expenditure for pipeline replaced by pipe size for**
 5 **the past 11 years (2012-2022)**

Pipeline Replacement	Replacement Length (LF)							Expenditure \$	
	4"	6"	8"	10"	12"	16"	Total		
2012 Pipeline Replacement	48	2776	6704	23	8056	1432	19,039	\$4,626,998	
2013 Pipeline Replacement	0	709	3050	0	242	0	4,001	\$812,993	
2014 Pipeline Replacement	0	0	80	0	215	1,350	1,645	\$1,324,148	
2015 Pipeline Replacement	160	245	2,870	0	1,160	0	4,435	\$577,480	
2016 Pipeline Replacement	0	0	1,550	0	0	0	1,550	\$597,314	
2017 Pipeline Replacement	1,970	330	3,885	0	0	0	6,185	\$1,755,981	
2018 Pipeline Replacement	580	310	9,906	0	4,820	0	15,616	\$6,354,652	
2019 Pipeline Replacement	570	1,100	8,575	0	115	135	10,495	\$3,362,372	
2020 Pipeline Replacement	1,640	765	9,110	0	2,180	0	13,695	\$3,488,888	
2021 Pipeline Replacement	6,295	2,455	33,645	0	1,836	1,230	45,461	\$13,946,787	
2022 Pipeline Replacement	11,215	5,205	69,541	0	10,111	1,365	48,775	\$17,620,053	
	TOTAL							170,897	\$54,467,666

6
 7 **D. Paving Moratoriums from City of Whittier**

8 The Commission should not approve funds for pipeline replacement projects that
 9 cannot be completed in areas that are under paving moratoriums.

10 The City of Whittier informed Cal Advocates that utilities are notified of planned
 11 moratoriums while projects are in the design phase.³¹ The status of all projects are also
 12 publicly available on the City's GIS website. Suburban is requesting approval of the Mar
 13 Vista Street and Las Pasadas Road Pipeline Replacement projects; CP-448, shown in
 14 Figure 1. Publicly available information on the City of Whittier Capital Improvement
 15 Projects GIS website shows that this project area has recently finished a \$7 million
 16 improvement project. Figure 2 shows that a good portion of the project area is under a

²⁹ Data compiled from DR ZS1-001 #2b Response - Summary of Pipeline Replacement 2021-2022 and DR ZS1-004 Response #3. b & 3.c - Pipeline Replacement 2012-2021 D_LF_\$.

³⁰ Cal Advocates calculated 170,897 linear feet or 32.3 miles/ 11 years = 2.93 miles/year from 2012-2022. 2.93 miles of pipeline replacement is 0.33% replacement rate when compared to Suburban's total 860.4 miles of pipeline.

³¹ Email response from Helen Gonzalez, Engineering Technician at the City of Whittier Department of Public Works to Zaved Sarkar of Cal Advocates 4/18/2023.

1 paving moratorium. The City of Whittier has confirmed that there is usually a 3–5-year
2 moratorium in effect after a project is completed meaning the moratorium will be in
3 effect until at least end of 2025. Suburban is proposing to replace the pipeline in 2023
4 which falls directly under the moratorium timeline.

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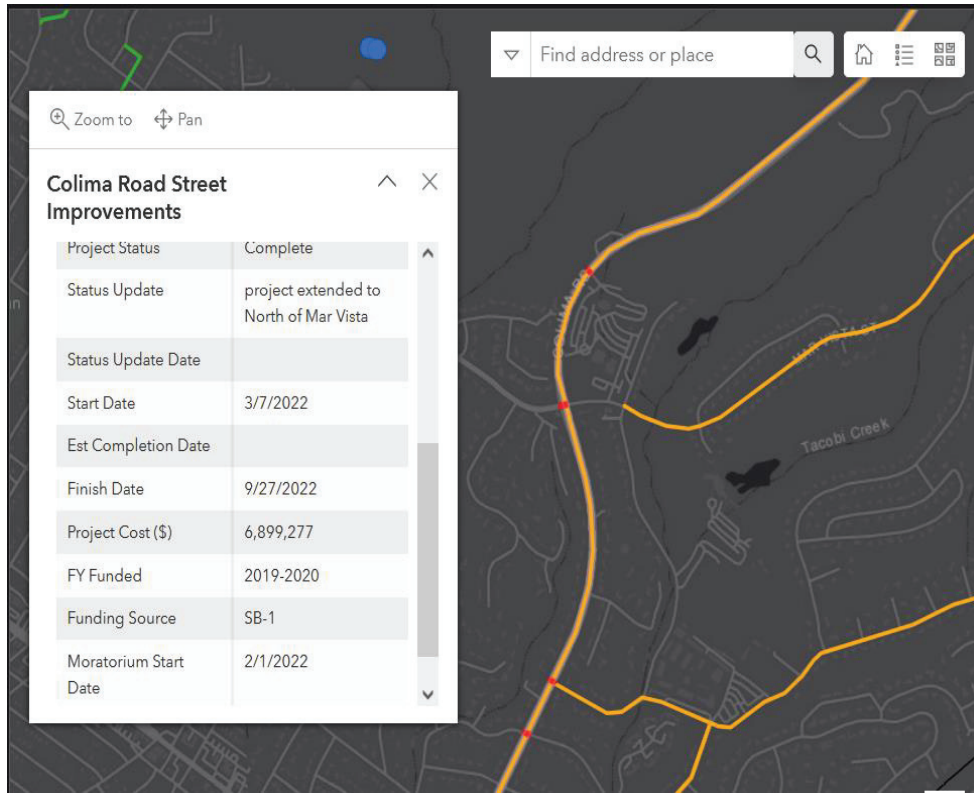
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1 **Figure 2 Colima Road Street Improvements Project Moratorium Area**



2
3 Suburban demonstrates a lack of basic planning by requesting ratepayer funds for
4 pipeline replacements that cannot possibly be done as proposed because of municipally
5 enforced paving moratoriums. In fact, Suburban’s complete lack of awareness regarding
6 the most basic feasibility criteria for its proposed projects (especially when such
7 information is readily available publicly) brings into serious question the diligence by
8 which other aspects of its proposed capital budgets has been developed.

9 **E. Pipeline Rehabilitation**

10 With a demonstrated lack of adequate planning pertaining to its pipeline
11 replacement projects, Suburban should compare and report to the Commission on the
12 cost-effectiveness of rehabilitative approaches as an alternative to proposed pipeline
13 replacements prior to receiving additional ratepayer funds.

1 Suburban has stated that it does not pursue pipe rehabilitation methods.³²
2 Suburban states that methods such as Cure In Place Pipe (CIPP), spray on liners, or slip-
3 lining are impractical. Suburban claims that rehabilitation methods are recommended for
4 sewer applications and can be used for large transmission mains or distribution lines
5 without services but are not recommended in neighborhood distribution pipeline projects.
6 Suburban did not provide any additional support for this claim.

7 The AWWA classifies CIPP and spray on liners as non-structural (Class I), semi-
8 structural (Class II and III), and fully structural (Class IV), depending on structural
9 capabilities.³³ Fully structural liners act as a pipe within a pipe and are capable of
10 withstanding pressurization independently. Semi-structural pipes have some structural
11 capabilities but also rely on the partial integrity of the host pipe.³⁴ All Class II, III, and
12 IV types of liners are capable of withstanding pressurization.

13 One case study published by the United States Environmental Protection Agency
14 (“EPA”) found several benefits to utilizing Spray-on Lining in water main rehabilitation.
15 A 2012 Somerville New Jersey case study found that a project had an equivalent linear
16 foot unit cost of \$235³⁵ in 2023 dollars compared to Suburban’s average linear foot cost

³² A2301001 Cal PA DR ZS1-004 (Pipeline Replacement Program 2), Response No 1. (Attachment 1-2)

³³ AWWA Structural Classifications of Pressure Pipe Linings.
(<https://www.awwa.org/Portals/0/AWWA/ETS/Resources/StructuralClassificationsofPressurePipeLinings.pdf?ver=2019-11-14-153455-907>) Last accessed on 6/13/2023.

³⁴ AWWA Structural Classifications of Pressure Pipe Linings, Page 10-13.
(<https://www.awwa.org/Portals/0/AWWA/ETS/Resources/StructuralClassificationsofPressurePipeLinings.pdf?ver=2019-11-14-153455-907>) Last accessed on 6/13/2023.

³⁵ EPA Performance Evaluation of Innovative Water Main Rehabilitation Spray-on Lining Product in Somerville, New Jersey page 7.
(<https://nepis.epa.gov/Exe/ZyNET.exe/P100DQM5.TXT?ZyActionD=ZyDocument&Client=EPA&Index=2011+Thru+2015&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&ToEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&Xm1Query=&File=D%3A%5Czyfiles%5CIndex%20Data%5C11thru15%5CTxt%5C00000003%5CP100DQM5.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=h pfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL>) Last accessed on 4/17/2023. The 2012-unit cost is escalated to 2023 dollars at an average rate of 3%.

1 of \$404.³⁶ The case study also found a reduction of estimated CO₂ emissions from
2 53,500 lbs., if traditional trenching and replacement were used, to 40,000 lbs., which
3 includes 13,000 lbs. due to the crew performing the lining having to travel 1,200 miles.³⁷
4 The additional cost of CO₂ emissions should be considered when performing the cost
5 benefit analysis to determine the optimal approach. D.17-08-022 adopted interim
6 Greenhouse Gas Adder values to approximate the cost of additional CO₂ production.³⁸

7 The Water Research Foundation also published Web Report 4465 on the
8 Environmental Impact of Asbestos Cement Pipe Renewal Technologies. The report
9 includes a case study of a CIPP liner that the Las Vegas Valley Water District used to
10 rehabilitate 3,100 feet of AC pipe. The AC pipe has similar characteristics to Suburban's
11 AC pipes and was installed in October 1963.³⁹ The pipe operates at a pressure of
12 approximately 75 pounds per square inch (psi), which is similar to Suburban's average
13 operating pressure of 67.4 psi in San Jose Hills⁴⁰ and 70 psi in Whittier/La Mirada.⁴¹ The
14 case study showed successful application of the CIPP with no service interruption to
15 customers by installing a temporary bypass line. The case study also showed no evidence
16 of any additional asbestos release due to the CIPP application.

17 Suburban should develop a more comprehensive approach to its pipeline
18 replacement program. Suburban should consider all possible rehabilitative approaches to

³⁶ The linear foot cost is found by dividing Suburban's requested replacement budgets by the total linear feet to be replaced.

³⁷ EPA Performance Evaluation of Innovative Water Main Rehabilitation Spray-on Lining Product in Somerville, New Jersey at p. 7.

³⁸ Decision 17-08-022 p. 13 Table 2.

³⁹ Water Research Foundation Web Report #4465 Environmental Impact of Asbestos Cement Pipe Renewal Technologies at p. 39. ([Environmental Impact of Asbestos Cement Pipe Renewal Technologies | The Water Research Foundation \(waterrf.org\)](https://www.waterrf.org/)) Last accessed on 4/17/2023.

⁴⁰ 2021 San Jose Hills Water Loss Audit Report collected from https://wuedata.water.ca.gov/awwa_plans.

⁴¹ 2021 Whittier La Mirada Water Loss Audit Report collected from https://wuedata.water.ca.gov/awwa_plans.

1 its system and show the cost-effectiveness of each approach, including the value of CO₂
 2 emissions. Suburban’s request to increase the replacement rate to 1.01% and 1.51% is
 3 unjustified and Suburban has not shown this accelerated replacement rate to be cost-
 4 effective.

5 **F. Adders to the Overall Cost Estimate**

6 The Commission should reduce the mobilization, de-mobilization, contingency
 7 and engineering service & inspection (“ESI”) cost factors Suburban applies to its routine
 8 pipeline replacement projects to 0%.

9 Pipeline replacement is a routine project with which Suburban has extensive
 10 experience. A 3% mobilization rate, 2% de-mobilization rate, 10% contingency rate and
 11 12% ESI rate on projects that Suburban has extensive experience in, is unnecessary.
 12 These adders on Suburban’s proposed pipeline replacement projects increase the rates of
 13 customers approximately \$2 million per year. Please refer to Brian Yu’s Testimony for
 14 more detailed information.

15 **IV. CONCLUSION**

16 **Table 1-5: Suburban’s Main Pipeline Replacement Versus Cal Advocates**

	Suburban’s Budget (\$1,000s)	Cal Advocates Budget (\$1,000s)	Suburban’s Replacement Rate	Cal Advocates Replacement Rate	Suburban’s Replacement Miles	Cal Advocates Replacement Miles
2023	\$19,013	\$4,851	1.00%	0.33%	8.6	2.84
2024	\$17,425	\$4,445	1.00%	0.33%	8.648	2.84
2025	\$28,550	\$4,823	1.51%	0.33%	13.002	2.84
Total	\$64,988	\$14,119	3.51%	0.99%	30.25	8.52

17 In sum, the Commission should approve a pipeline replacement rate of 0.33% per
 18 year with a budget of 4,851,000 for 2023, \$4,445,000 for 2024, and \$4,823,000 for 2025.
 19 Suburban’s proposed replacement rate is unnecessarily aggressive as evidenced by its
 20 low leak rates and break counts. An annual replacement rate of 0.33% will continue to
 21

1 reduce leak rates and takes into consideration the other salient facts outlined in this
2 testimony:

- 3 • The Commission should not approve funds for projects that cannot be
4 completed in areas that are under city paving moratoriums.
- 5 • Suburban should analyze and report upon the cost-effectiveness of
6 rehabilitative approaches before receiving additional funds for pipeline
7 replacement.
- 8 • Suburban should consider the additional cost of CO₂ emissions when
9 performing the cost benefit analysis to determine the cost-effectiveness of
10 rehabilitative approaches.
- 11 • The Commission should reduce the mobilization and de-mobilization rate
12 Suburban applies to its routine pipeline replacement projects from 3% &
13 2% to 0%.
- 14 • The Commission should reduce the contingency rate Suburban applies to its
15 routine pipeline replacement projects from 10% to 0%.
- 16 • The Commission should reduce the engineering service & inspection rate
17 Suburban applies to its routine pipeline replacement projects from 12% to
18 0%.

19 Suburban claims that its “proposed capital budget optimally balances investment,
20 conservation and affordability.”⁴² However, Suburban does not provide substantial data
21 that the pipeline replacement schedule it proposes is reasonable. Suburban does not show
22 that the cost of such an accelerated pipeline replacement rate is necessary or cost-
23 effective. Suburban also fails to consider alternative pipeline maintenance solutions such
24 as pipeline rehabilitation which is more cost effective and environmentally friendly.
25 Suburban’s current replacement rate is sufficient as evidenced by its low ILI scores and
26 minimal water loss. Suburban’s decreasing ILI score shows improvement in system
27 efficiency at the current replacement level.

28 Suburban has also shown a trend of inflating its pipeline replacement budget
29 requests and diverting funds to other capital projects. If Suburban wants to accelerate its
30 replacement rate, Suburban must demonstrate that an accelerated pipeline replacement

⁴² A2301001 Lopez Direct (Final Application) page 47 lines 4-5.

1 rate benefits ratepayers and is cost-effective compared to other possible approaches like
2 pipe rehabilitation. Suburban should continue its replacement rate of 0.33%, which has
3 proven sufficient to maintain and improve system performance, without further
4 burdening the ratepayers.

1 **CHAPTER 2 DEPRECIATION RESERVE & EXPENSE**

2 **I. INTRODUCTION**

3 This chapter presents Cal Advocates’ analyses and recommendations for average
4 depreciation. Table 2-1 compares Cal Advocates and Suburban’s proposed average
5 depreciation. Differences in depreciation are due to differences in plant additions and
6 adjustment for early retirements, as discussed in other chapters.

7 **II. SUMMARY OF RECOMMENDATIONS**

8 The Commission should approve an average depreciation reserve of \$151,841,820
9 for base year 2023, \$164,484,458 for test year 2024, and \$177,701,899 for test year 2025,
10 as shown in Table 2-1 (Columns B, D and F).

11 **III. ANALYSIS**

12 Suburban prepared depreciation estimates in accordance with Standard Practice U-
13 4-W. Suburban calculated a composite depreciation rate of 3.711%.⁴³ This calculation
14 is consistent with Suburban’s historical composite depreciation rate and is within the 2 to
15 4% normal composite depreciation rate described in Standard Practice U-4-W.

16 Any differences between Suburban’s depreciation estimates and Cal Advocates’
17 depreciation estimates are due to the differences in recommended plant projects described
18 in Chapter 3 of this report.

19 **IV. CONCLUSION**

20 The Commission should approve an average depreciation reserve of \$151,841,820
21 for base year 2023, \$164,484,458 for test year 2024, and \$177,701,899 for test year 2025,
22 as shown in Table 2-1 (Columns B, D and F).

⁴³ Suburban Water System 2023 GRC, Aldinger Direct (Final Application A-23-01-001).pdf: Pages 13-14

1
2

Table 2-1: Total Company Depreciation Reserve.

Description	2023		2024		2025	
	(A)	(B)	(C)	(D)	(E)	(F)
	Suburban	Cal Adv	Suburban	Cal Adv	Suburban	Cal Adv
Depreciation Reserve, Beginning of Year Balance	\$ 144,524,657	\$ 145,772,663	\$ 155,539,195	\$ 157,910,976	\$ 167,562,911	\$ 171,057,939
<u>Add:</u>						
Depreciation Accrual	\$ 15,489,332	\$ 15,357,016	\$ 17,341,567	\$ 16,353,156	\$ 19,464,093	\$ 17,038,287
Salvage	\$ 62,847	\$ 62,847	\$ 62,847	\$ 62,847	\$ 62,847	\$ 62,847
<u>Less:</u>						
Retirements	\$ 1,871,533	\$ 1,014,350	\$ 2,821,548	\$ 709,890	\$ 3,164,512	\$ 943,513
Cost of Removal	\$ 2,666,108	\$ 2,267,200	\$ 2,559,150	\$ 2,559,150	\$ 2,869,700	\$ 2,869,700
Depreciation Reserve, End of Year Balance	\$ 155,539,195	\$ 157,910,976	\$ 167,562,911	\$ 171,057,939	\$ 181,055,639	\$ 184,345,860
Average Depreciation Reserve for Rate Base	\$ 150,031,926	\$ 151,841,820	\$ 161,551,053	\$ 164,484,458	\$ 174,309,275	\$ 177,701,899

1 **CHAPTER 3 RATE BASE AND EARLY RETIREMENTS**

2 **I. INTRODUCTION**

3 This chapter presents Cal Advocates’ analyses and recommendations for rate base.
4 Table 3-1 compares Suburban’s proposed rate base and Cal Advocates’ recommended
5 rate base. Differences in rate base are due to differences in average depreciation reserve,
6 working cash, and early retirements as discussed in this chapter.

7 **II. SUMMARY OF RECOMMENDATIONS**

8 The Commission should approve total rate base estimates of \$258,425,001 for test
9 year 2024, and \$264,462,094 for test year 2025, as shown in Table 3-1 (columns D and
10 F) because they are reasonable, prudent, and cost-effective.

11 The Commission should authorize a negative working cash amount of
12 (\$1,611,436) for the Year 2024, and a negative working cash amount of (\$1,522,132) for
13 the Year 2025. This working cash estimate is based on using the final payment due date
14 to calculate property tax expense lag from the working cash calculation.

15 The Commission should require Suburban to use the December 10th and April
16 10th due dates as the payment dates in the lead-lag study for the first and second
17 installments of property taxes, respectively. Using a final payment due date more
18 accurately reflects the lag time between when the property tax expense is incurred and
19 when payment is due.

20 The Commission should increase Suburban's depreciation reserve, combined for
21 all the districts, by \$1,114,545 to account for the cost of extraordinary early retirements.
22 This lowers the overall rate base.

23

1 **III. ANALYSIS**

2 **A. Rate Base**

3 Suburban requests a total rate base of \$310,728,365 for Test Year 2024, and
 4 \$371,344,104 for Test Year 2025. Cal Advocates recommends \$258,425,001 for test
 5 year 2024 and \$264,462,094 for test year 2025. Table 3-1 compares Suburban’s
 6 proposals and the Cal Advocates’ estimates.

7 **Table 3-1 Total Company Rate Base.⁴⁴**

Description	2024		2025	
	(A)	(B)	(C)	(D)
	Suburban	Cal Adv	Suburban	Cal Adv
Utility Plant in Service, Average for Year	\$494,944,306	\$455,162,463	\$554,153,862	\$471,985,506
Construction Work In Progress, Average for Year	\$4,869,211	\$455,946	\$14,902,507	\$1,293,705
Materials and Supplies, Average for Year	\$677,065	\$673,572	\$685,190	\$683,810
Working Cash	-\$350,185	-\$1,611,436	\$874,891	-\$1,522,132
TOTAL ADDITIONS TO RATE BASE	\$500,140,397	\$454,680,545	\$570,616,450	\$472,440,889
<u>LESS DEDUCTIONS FROM RATE BASE:</u>				
Reserve for Depreciation	\$161,551,053	\$164,484,458	\$174,309,275	\$177,701,899
Advances for Construction	\$7,080,731	\$7,080,731	\$6,840,991	\$6,840,991

⁴⁴ SWS 2023 GRC Workpapers Vol I CONFIDENTIAL (Final Application), Tab: MODEL, Table 8-1

Description	2024		2025	
	(A)	(B)	(C)	(D)
	Suburban	Cal Adv	Suburban	Cal Adv
Contributions in Aid of Construction (C.I.A.C.)	\$19,891,045	\$19,891,045	\$18,631,805	\$18,631,805
Unamortized Investment Tax Credits	\$35,286	\$35,286	\$24,569	\$24,569
Accumulated Deferred Taxes, Taxable Advances For Construction	-\$51,662	-\$51,662	-\$47,382	-\$47,382
Accumulated Deferred Taxes, Taxable C.I.A.C.	-\$3,177,171	-\$3,177,171	-\$3,061,869	-\$3,061,869
Unamortized Deferred Revenue, Taxable C.I.A.C.	\$330,397	\$330,397	\$362,104	\$362,104
Accumulated Deferred Taxes, Taxable C.I.A.C. Gross-Up	-\$889,776	\$889,776	-\$853,421	-\$853,421
Depreciation Timing Differences	\$13,149,652	\$12,830,514	\$13,360,712	\$12,589,431
Accumulated Deferred Income Taxes - Interest During Construction (IDC)	-\$2,974,381	-\$2,340,337	-\$3,741,950	-\$2,442,283
Amortization of Interest During Construction	\$827,979	\$800,534	\$962,304	\$896,185

	2024		2025	
Description	(A)	(B)	(C)	(D)
	Suburban	Cal Adv	Suburban	Cal Adv
TCJA - Cumulative Unprotected IDC and Other (per AL 337-W)	\$101,724	\$101,724	\$116,256	\$116,256
TCJA - Protected Excess Deferred Items (per AL 337-W)	-\$1,476,722	-\$1,476,722	-\$1,655,979	-\$1,655,979
TOTAL DEDUCTIONS FROM RATE BASE	\$194,398,155	\$197,619,021	\$205,247,414	\$209,102,305
Add Parent Company's Allocated Rate Base	\$4,986,123	\$1,363,477	\$5,975,069	\$1,253,510
TOTAL RATE BASE	\$310,728,365	\$258,425,001	\$371,344,104	\$264,462,094

1 The differences between Suburban and Cal Advocates’ rate base amounts are a
2 result of adjustment to working cash amount, adjustment to depreciation reserve for rate
3 base and early retirements. Cal Advocates’ adjustments to working cash amount and
4 early retirements are discussed below.

5 **B. Working Cash**

6 The Commission should authorize a negative working cash amount of
7 (\$1,611,436) for the Year 2024, and a negative working cash amount of (\$1,522,132) for
8 the Year 2025. This working cash estimate corrects the payment date for property tax.
9 Suburban requests a negative working cash allowance of (\$590,911) for the Year 2023,
10 (\$350,185) for the Year 2024, and a positive \$874,891 for the Year 2025.

11 **a. Property Tax Lag Days**

12 The Commission should require Suburban to use the final payment due date to
13 calculate Property Tax lag days because it more accurately reflects the actual lag time

1 between when expenses are incurred, and payment is due. Suburban pays its property
 2 taxes early, so using the actual payment date to calculate its Property Tax lag day
 3 decreases Property Tax lag days. Using the final payment due date will increase the
 4 Property Tax lag days from 28.2 days to 39.6 days and reflect better cash management.

5 Suburban uses the check date (date check for payment was issued) to determine
 6 property taxes lag days in its lead-lag study. For the service period from January 1, 2021
 7 to June 30, 2021, Suburban uses a check date of April 8, 2021 for both Los Angeles and
 8 Orange County.⁴⁵ For the period from July 1, 2020 to December 31, 2020, Suburban
 9 uses a check date of November 19, 2020 for Los Angeles County.⁴⁶

10 Figure 3-1 below is a snapshot from Suburban’s workpapers that illustrates the
 11 dates used. The first two columns represent the service date. The third column is the
 12 check number, and the fourth column is the check date.

13 **Figure 3-1 Snapshot from Suburban’s lead-lag study workpapers.**

22. PROPERTY TAXES (SEMI-ANNUAL)				
LOS ANGELES COUNTY TAX COLLECTOR	01/01/21	06/30/21	838162355	04/08/21
ORANGE COUNTY TAX COLLECTOR	01/01/21	06/30/21	838162106	04/08/21
LOS ANGELES COUNTY TAX COLLECTOR	07/01/20	12/31/20	838156628	11/19/20

14
 15 Orange County and Los Angeles County both collect taxes in two installments.
 16 The Orange County Treasurer-Tax Collector’s website “Payment of Secured Property
 17 Taxes” page states that the first installment of property tax is delinquent after December
 18 10th and that the second installment is delinquent after April 10th.⁴⁷ Similarly, the Los
 19 Angeles County Office of the Assessor’s website “Important Dates for Apartment &
 20 Business Owners” page list the same delinquent dates for the installments.⁴⁸ In short,
 21 Suburban is paying its property taxes early, as well as inappropriately using the date

⁴⁵ SWS 2023 GRC – Workpapers Vol I CONFIDENTIAL (Final Application), Lead-Lag tab, cell H-85 and H-86.

⁴⁶ SWS 2023 GRC – Workpapers Vol I CONFIDENTIAL (Final Application), Lead-Lag tab, cell H-87.

⁴⁷ <http://www.ttc.ocgov.com/proptax/securetaxpay>

⁴⁸ <https://assessor.lacounty.gov/important-dates/>

1 when the check was issued as opposed to when the check is cashed, which is the more
2 accurate reflection of cash requirements. When the correct date is applied to calculate its
3 Property Tax lag days, it results in a decrease in lag days.

4 There is no penalty for paying the first installment of property tax on December
5 10th or for paying the second installment on April 10th. Both Orange County and Los
6 Angeles County offer no-cost electronic check payments that can be made up to 11:59
7 pm of the last payment date and still be considered on time.^{49 50}

8 There is no benefit to paying property taxes two weeks early (April 08, 2021,
9 instead of April 10, 2021) or twenty-one days early (November 19, 2020 instead of
10 December 10, 2020) compared to paying on the due date. Given that there is no
11 requirement to pay early and that doing so increases the cost to ratepayers, the
12 Commission should require Suburban to use the December 10th and April 10th due dates
13 as the payment dates in the lead-lag study for the first and second installments of property
14 taxes, respectively. Manipulating dates to reflect a different working cash is a disservice
15 to the ratepayers.

16 Changing the dates to April 10, 2021, and December 10, 2020, increases the
17 number of property tax lag days from 28.2 days to 39.6 days. Increasing the property tax
18 lag days to 39.6 days lowers the working cash by \$78,577 in 2024, and \$88,566 in 2025.

19 **C. Early Retirements**

20 Early retirement of assets can lead to an imbalance between the depreciation
21 reserve and plant in service. The imbalance is in theory equaled out by assets that remain
22 in service longer than their expected serviced life. However, unlike assets that remain in
23 service longer than their useful lives, there is a cost for retiring an asset before it is fully
24 depreciated.

25

⁴⁹ <http://www.ttc.ocgov.com/proptax/securetaxpay>

⁵⁰ <https://ttc.lacounty.gov/pay-your-property-taxes>

1 **a) Background Information**

2 Depreciation expense included in a utility’s annual authorized budget (i.e. revenue
3 requirement) recovers the original cost of utility plant, less the estimated net salvage,
4 over the useful life of the asset.⁵¹ The same amount of recorded depreciation expense is
5 also recorded in the depreciation reserve, which is subtracted from rate base so that
6 shareholders do not continue to earn profit on the portion of their initial investment that
7 has been repaid by ratepayers.

8 When an asset is retired from service, the original cost of the asset is removed
9 from the plant account (a credit) and the same amount is removed (a debit) from the
10 depreciation reserve.⁵² This is the standard ratemaking practice for retirements and results
11 in no change in rate base because it assumes the asset has been fully depreciated. For
12 example, a theoretical asset might have a value of \$100 and a life expectancy of 10 years
13 (i.e., depreciation rate of 10%). After 10 years of service the depreciation reserve
14 associated with the asset would be \$100 and when it is retired \$100 is removed from
15 plant in service and \$100 is removed from the depreciation reserve.

16 When an asset is retired early, this standard ratemaking practice creates an
17 imbalance. Only a portion of the asset’s cost has accumulated in the depreciation reserve,
18 but the full original cost is deducted when the asset is retired. Because the depreciation
19 reserve is deducted from rate base, removing the full cost from the reserve when only a
20 portion has accumulated results in a net negative amount or a positive addition to rate
21 base.

22 For example, if the same theoretical asset costing \$100 is retired after five years of
23 service, \$100 would be removed from plant in service and \$100 would be removed from
24 the depreciation reserve, but only \$50 of depreciation expense would have accumulated
25 in the depreciation reserve (i.e., \$10 annual depreciation expense for five years).
26 Effectively the depreciation reserve was reduced by \$100 when only \$50 was added. As a

⁵¹ CPUC Standard Practice U-4-W page 6.

⁵² CPUC Standard Practice U-4-W page 7.

1 result, there is a \$50 net increase in rate base that lasts in perpetuity when the
2 depreciation reserve (containing a net negative balance of \$50) is subtracted from rate
3 base.

4 The Commission’s standard practice for determination of straight-line remaining
5 life depreciation accruals (SP U-4-W) recognizes this issue in what it deems
6 “Extraordinary Obsolescence.”⁵³ SP U-4-W defines extraordinary obsolescence and
7 states that “unexpected early retirement of a major unit of property may require some
8 form of an adjustment.” An adjustment for assets that have been retired extraordinarily
9 early is warranted.

10 **b) Analysis**

11 Cal Advocates examined Suburban’s retirements from 2017 through 2021. A
12 significant number of Suburban’s projects were retired with 50% or more of their useful
13 life remaining.⁵⁴ To adjust for the imbalance created by these extraordinary early
14 retirements, the net book value of the asset needs to be added back into depreciation
15 reserve. The adjustment to the depreciation reserve is the difference between the
16 accumulated depreciation and the undepreciated cost of the asset, which is equal to the
17 net book value. Attachment 3-1 to this testimony shows the necessary calculations to
18 adjust for extraordinary early retirements of Suburban’s assets.⁵⁵

19 In Suburban’s two districts (San Jose Hills and Whittier/La Mirada), as well as
20 General Office, 163 assets were retired with 50% or more of their useful life remaining.⁵⁶
21 The total net book value associated with these assets is \$1,114,545; accordingly, that

⁵³ CPUC Standard Practice U-4-W page 42.

⁵⁴ A2301001 Cal PA DR ZS1-005 (Plant Retirements), Response #1 (2017-2021 Plant Retirements).xls. Useful life based on depreciation rates found in Aldinger Direct (Final Application A-23-01-001).pdf: Pages 57-61 and Table 7-2 in Suburban’s RO Model.

⁵⁵ The retirement data was provided by Suburban in response to Cal Advocates DR ZS1-005.

⁵⁶ A2301001 Cal PA DR ZS1-005 (Plant Retirements), Response #1 (2017-2021 Plant Retirements).xls. Useful life based on depreciation rates found in Aldinger Direct (Final Application A-23-01-001).pdf: Pages 57-61 and Table 7-2 in Suburban’s RO Model.

1 same amount needs to be added to the total depreciation reserve to account for the
2 extraordinary early retirements.

3 Table 3-2 below summarizes the same depreciation reserve adjustments needed to
4 adjust for extraordinary early retirements for each district.

5 **Table 3-2 Number of Assets Retired Early Between 2017-2021 in All Districts,**
6 **and Corresponding Net Book Value to be Added into Depreciation Reserve⁵⁷**
7

Year	Number of Assets Retired Early	Total Value to be Added into Depreciation Reserve
2017	30	\$ 333,710.23
2018	20	\$ 8,216.69
2019	32	\$ 65,579.47
2020	30	\$ 56,069.95
2021	51	\$ 650,968.56
Total	163	\$ 1,114,544.90

8
9 The Commission acts as a substitute for competition. In a competitive
10 environment, a business would not be able to benefit from early retirement of assets.
11 When an asset fails to last as long as expected, a cost is incurred, and a loss must be
12 reported.⁵⁸ Assets not serving their expected lifetime are a normal risk of business.
13 Utilities are compensated for business risk through their Commission-approved rate of
14 return. Allowing Suburban to transfer the entire cost of an early retirement on to
15 ratepayers who must then provide shareholder profits in perpetuity on that cost despite
16 receiving no ongoing benefit from a retired asset is wholly inconsistent with what would
17 be allowed by market forces in a competitive environment.

18 Under standard ratemaking, early retirement of assets leads to an imbalance
19 between accounts. For most assets that live slightly less or slightly longer than estimated,
20 the cost and benefits to ratepayers are trivial and theoretically offset each other. However,

⁵⁷ A2301001 Cal PA DR ZS1-005 (Plant Retirements), Response #1 (2017-2021 Plant Retirements).xls. Useful life based on depreciation rates found in Aldinger Direct (Final Application A-23-01-001).pdf: Pages 57-61 and Table 7-2 in Suburban’s RO Model.

⁵⁸ Effect of Depreciation on Balance Sheets, by James Collins (Published on 26 Sept, 2017) (Accesses on 5/30/2023) <https://bizfluent.com/info-7757071-effect-depreciation-balance-sheets.html>

1 the Commission has recognized that extraordinary retirements may require an adjustment
2 to prevent ratepayers from being burdened with the extraordinary cost of assets that fail
3 to achieve their estimated life expectancy. The Commission should adjust the
4 depreciation reserve consistent with the calculations presented in this chapter to prevent
5 Suburban from not only transferring the full cost of early retirements on to ratepayers but
6 from having ratepayers also pay shareholder profits on that cost.

7 **D. Construction Work in Progress**

8 The Commission should authorize CWIP balance of \$755,613 for Year 2023,
9 \$455,946 for Year 2024, and \$1,293,705 for Year 2025. Suburban requests a CWIP of
10 \$5,255,458 for Year 2023, \$4,869,211 for Year 2024, and \$14,902,507 for Year 2025.

11 The Commission’s 1982 staff policy memorandum (CPUC CWIP Memo) outlines
12 the Commission’s position on including CWIP in the rate base.⁵⁹ The memo found that
13 water utility capital projects require an average of four months to complete. Based on
14 this memo, Cal Advocates does not expect projects to remain in CWIP for longer than
15 one year.

16 Cal Advocates reviewed Suburban’s list of projects included in CWIP⁶⁰ and
17 removed projects that were over one year old from the beginning 2023, 2024 and 2025
18 CWIP balance. Cal Advocates also removed projects from CWIP balance that are
19 recommended for removal.

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⁵⁹ State of California Memorandum “Policy for Including CWIP in Rate base for Water Utilities” (May 11, 1982).

⁶⁰ A2301001 Cal PA DR ZS1-006 (CWIP), Response #2 – CWIP.xlsx

1
2

Table 3-3 List of projects removed from CWIP Balance⁶¹

C.W.I.P. Balance Beginning of Year			Project Description
2023	2024	2025	
	\$ 937,813		Plant 128 Reservoir Replacement
\$ 41,389	\$ 41,389		Plant 506 Generator
\$ 32,275	\$ 32,275		Plant 235 Generator
\$ 20,871	\$ 20,871		Plant 165 Generator
\$ 64,293	\$ 64,293		Plant 118 Electrical Upgrades
\$ 1,188	\$ 1,188		Plant 118 Generator
\$ 4,729	\$ 4,729		Plant 119 Generator
\$ 6,565	\$ 6,565		Plant 504 Generator
\$ 1,852	\$ 1,852		Plant 121 W-1 & B-4 Generator
	\$ 4,213,683		Well Drilling on City of La Mirada Yard
\$ 270,736	\$ 270,736	\$ 270,736	Plant 410 W-1 Treatment Plant Installation
\$ 5,124	\$ 5,124	\$ 5,124	Plant 201 PFAS/PFOA Treatment Plant
\$ 1,377,350	\$ 1,377,350	\$ 1,377,350	Plant 201 PFAS/PFOA Treatment Plant
\$ 97,726	\$ 97,726	\$ 97,726	Slope Stability - Plant 217
\$ 1,924,098	\$ 7,075,594	\$ 1,750,936	Total amount to be removed from RO

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Please refer to The Public Advocates Office’s Report on Plant Projects for the Whittier La Mirada System and on the San Jose Hills Planned Projects and Water Quality which provide an in-depth analysis of the individual projects removed from the CWIP balance.

The Commission should authorize CWIP balance of \$755,613 for Year 2023, \$455,946 for Year 2024, and \$1,293,705 for Year 2025. The recommended CWIP estimates are based on the CPUC CWIP Memo that outlined the policy for including CWIP in rate base for water utilities. The Commission should use Cal Advocates’ CWIP estimates because they conform to the Commission’s guidance for being reasonable, prudent, and cost-effective.

⁶¹ A2301001 Cal PA DR ZS1-006 (CWIP), Response #2 – CWIP.xlsx

1 **IV. CONCLUSION**

2 The Commission should approve total rate base estimates of \$258,425,001 for
3 test year 2024, and \$264,462,094 for test year 2025, as shown in Table 3-1 (columns D
4 and F) because they are reasonable, prudent, and cost-effective.

5 The Commission should authorize a negative working cash amount of
6 (\$1,611,436) for the Year 2024, and a negative working cash amount of (\$1,522,132) for
7 the Year 2025. This working cash estimate is based on using the final payment due date
8 to calculate property tax expense lag from the working cash calculation.

9 The Commission should require Suburban to use the December 10th and April
10 10th due dates as the payment dates in the lead-lag study for the first and second
11 installments of property taxes, respectively. Using a final payment due date more
12 accurately reflects the lag time between when the property tax expense is incurred and
13 when payment is due.

14 The Commission should increase Suburban's depreciation reserve, combined for
15 all the districts, by \$1,114,545 to account for the cost of extraordinary early retirements,
16 which will lower ratebase by the same amount.

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1 **CHAPTER 4 SATIVA PIPELINE PROJECTS**

2 **I. INTRODUCTION**

3 This Chapter discusses Suburban’s proposed fire flow related pipeline
4 infrastructure improvement projects in Sativa system and Cal Advocates’
5 recommendation.

6 **II. SUMMARY OF RECOMMENDATIONS**

7 The Commission should approve \$366,899 for the Paulsen Avenue Pipeline
8 project in 2023, after removing contingency and ESI cost factors from the estimate.

9 The Commission should reject \$3,559,000 in 2024 and \$2,151,000 in 2025 for
10 Suburban’s proposed fire flow related pipeline projects in the Sativa water system.
11 Suburban failed to provide adequate support to justify the need for these projects.

12 **Table 4-1: Summary of Recommendations⁶²**

Year	Project Name	Suburban’s Budget	Cal Advocates Budget
2023	Paulsen Pipeline	\$431,004	\$366,899
2024	(1) Stockwell Pipeline (Backyard + Fire Flow) (Aranbe to Willowbrook)	\$757,000	\$0
2024	(2) Vesta Pipeline (Backyard + Fire Flow)	\$757,000	\$0
2024	(3) E. Willowbrook Pipeline (Backyard + Fire Flow)	\$769,000	\$0
2024	(5) Wilmington Pipeline (Fire Flow)	\$193,000	\$0
2024	(10) W. Willowbrook Pipeline (Alley)	\$526,000	\$0
2024	(11) E. Willowbrook Pipeline (Alley)	\$557,000	\$0
2025	(4) Jack & Bore (Fire Flow)	\$556,000	\$0
2025	(6) Wayside Pipeline (Fire Flow)	\$356,000	\$0
2025	(7) Vesta Pipeline (Fire Flow)	\$446,000	\$0
2025	(8) Lucien Pipeline (Fire Flow)	\$293,000	\$0
2025	(9) Stockwell Pipeline Fire Flow	\$500,000	\$0
TOTAL		\$6,141,004	\$366,899

13 ⁶² Lopez Direct (Final Application), Pages 140-142, 252-253 and 523. Cal Advocates Budget for Paulsen
14 Pipeline is calculated after removing contingency and engineering service & inspection factors.

1 **III. ANALYSIS**

2 For Test Years 2024 and 2025, Suburban requests a pipeline replacement budget
3 to address alleged fire-flow concerns of approximately \$3.6 million and \$2.4 million,
4 respectively. Suburban states that these “capital improvement projects are necessary to
5 bring Sativa into compliance with the permit from the State Water Resource Control
6 Board (SWRCB) Division of Drinking Water (DDW).”⁶³

7 In 2022, Suburban became the owner of the Sativa system. Although the previous
8 operator (LA County Department of Public Works) made numerous improvements,
9 Suburban identified “outstanding compliance issues” that need to be addressed.⁶⁴
10 Suburban further states that Sativa’s current supply fails to meet fire flow requirements,
11 the Maximum Day Demand (MDD) and Peak Hour Demand (PHD).

12 However, according to the December 2020 permit report from LA County
13 Department of Public Works, the Sativa system can meet both its MDD and PHD
14 requirements as mandated by Section 64554, Title 22 of the CCR, California Waterworks
15 Standards.⁶⁵ The MDD and PHD is further supported by the addition of the City of
16 Compton Interconnection in the updated permit in April 2023.⁶⁶

17 Suburban’s assertion that the Sativa system cannot meet its fire flow requirements
18 is misleading. LA County Department of Public Works already constructed two separate
19 8-inch pipelines (Paulsen Avenue Waterline and Lucien Waterline⁶⁷) that bring enough
20 pressure to the system to address fire flow issues.

⁶³ Lopez Direct (Final Application), Page 252.

⁶⁴ SWS 2023 GRC Workpapers: VOLUME III-D Sativa Project Proposed, page 2.

⁶⁵ Full Permit, Engineering Report Los Angeles County Public Works – Sativa Water System, System No. 1910147, page 13 (Dated December 23, 2020).

⁶⁶ Engineering Report, Permit Amendment No. 1910147PA-001, Suburban Water Systems - Sativa, System No. 1910147, page 5-7, and Permit Amendment Letter from DDW to Suburban, to change the status of the City of Compton Interconnection from Emergency to Active (Dated April 24, 2023)

⁶⁷ Full Permit, Engineering Report Los Angeles County Public Works – Sativa Water System, System No. 1910147, page 19-20. (Dated December 23, 2020)

1 Furthermore, Suburban is in compliance with General Order 103-A's (GO-103-
2 A's) fire flow requirements because it took over an existing system, Sativa. GO103-A
3 states "The utility shall not be responsible for modifying or replacing at its expense any
4 existing facilities, which are otherwise adequate, in order to provide increased fire flow
5 or duration due to changes in the standards after the initial construction."⁶⁸

6 Suburban's misleading assertion that it is out of compliance with its operational
7 permit from DDW, is false. In fact, DDW's permit does not have any fire flow
8 requirements and does not identify any fire flow deficiencies. The Commission should
9 not approve these projects as they are unnecessary and will negatively harm Sativa
10 customers with unnecessary rate increases. Sativa customers are currently on a fixed rate
11 that is planned to change starting January 1, 2024.

12 **IV. CONCLUSION**

13 The Commission should approve \$366,899 for the Paulsen Avenue Pipeline
14 project in 2023, after removing contingency and ESI cost factors from the estimate.

15 The Commission should reject \$3,559,000 in 2024 and \$2,151,000 in 2025 for
16 proposed fire flow related pipeline projects in the Sativa water system. Suburban failed to
17 provide adequate support to justify the need for these projects.

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⁶⁸ General Order (GO) 103-A, Section VI, 3. Replacement of Mains: A. Changes to Fire Code.

Attachment 1-1: A2301001 Cal PA DR ZS1-001 (Pipeline Replacement Program)



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January 23, 2023

To: Jeffrey Roberts
Project Coordinator

Zaved Sarkar
Utilities Engineer

Shanna Foley
Attorney for Public Advocates Office

Re.: Responses to A.23-01-001, Public Advocates Office DR ZS1-001 (Pipeline Replacement Program)

Dear Mr. Roberts et al.,

Attached is the information you requested in writing for Suburban's Total Company General Rate Case.

Sincerely,

/s/Carmelitha Bordelon

Carmelitha Bordelon
Director of Regulatory Affairs

**Responses to A.23-01-001, Public Advocates Office
DR ZS1-001 (Pipeline Replacement Program)**

1. As part of its Application, Suburban included the technical memorandum “*Final Suburban Water Systems Water Main Renewal Technical Memorandum (November 19, 2019)*” from engineering firm HDR, as part of the testimony of Jorge Lopez included in “*VOLUME III-E AM Plans & Master Plans CONFIDENTIAL (Final Application)*”. Please provide in Excel spreadsheet format, a list of the pipe groupings used in HDR’s analysis and provide the associated project risk score, pipe material, pipe diameter, average pipe age (weighted by length), pipe diameter and length of each.

Response:

Please see the excel file entitled “ZS1-001 #1 Response – HDR CoFLof Analysis 20190104 (CONFIDENTIAL).xlsx”. Tab, ProjectList includes a list based on the risk score. This tab also includes a pivot table that includes other information requested.

Due to the file size and the confidentiality of the document, the file is provided by SWS’ outside counsel, Lori Dolqueist.

2. In direct testimony of Jorge Lopez, Suburban stated “1% of its system mains in 2021 and 2022 as authorized in the previous rate case” were replaced. (Lopez Direct (Final Application), page 33, lines 3-4.)
 - a. Please provide reference to where in the previous GRCs adopted settlement agreement and Final Decision it is mentioned that Suburban is authorized a “1% replacement rate”.

Response:

Page 21 in Appendix A, in “DECISION APPROVING AND ADOPTING SETTLEMENT AGREEMENT, RESOLVING REMAINDER OF DISPUTED ISSUES AND AUTHORIZING SUBURBAN WATER SYSTEMS’ GENERAL RATE INCREASES FOR 2021, 2022, AND 2023” beginning with “RESOLUTION,” it states, “For the purpose of settlement, the Parties agree to the total budgets shown below for capital projects. The Parties agree that this amount is justified based on the projects Suburban proposed in its Application”

	Suburban Position	Cal Advocates Position	Difference	Settlement
2020 Total Authorized CAPEX	\$25,445,439	\$15,764,785	\$9,680,654	\$25,445,439
2021 Total Authorized CAPEX	\$41,485,279	\$15,967,634	\$25,517,645	\$30,000,257
2022 Total Authorized CAPEX	\$52,613,777	\$13,926,299	\$38,687,478	\$35,076,159

The total settlement budgets in 2021 and 2022 included main replacement projects that equaled an average replacement rate of 1% (emphasis added).

- b. Please provide in Excel spreadsheet format, the list of pipeline segments that Suburban was able to replace which matches the stated 45,606 linear feet (8.64 miles) in 2021 and 48,725 linear feet (9.22 miles) in 2022 in Jorge Lopez’s direct testimony.

Response:

Please see the excel file entitled “ZS1-001 #2b Response – Summary of Pipeline Replacement 2021-2022.xlsx”. Please note that the quantities in the file have been updated with more current data.

3. Please provide the year(s) that Suburban’s average main pipeline age reaches 75 and 100 years at replacement rates of 0.33%, 0.46%, 0.5%, and 1%.

Response:

Pipeline replacement is prioritized by the overall risk, a combination of various criteria. The age of pipelines is not the only criterion that is used to make a replacement decision. The pipelines are not replaced based solely on age and therefore the average age of the system was not analyzed. However, it can be presumed that if the replacement rate remains low, the risk of failure will increase over time. Due to the reasons stated above, Suburban is unable to provide the years that an average main pipeline age reaches 75 and 100 years at replacement rates of 0.33%, 0.46%, 0.5%, and 1%.

4. Please provide the excel spreadsheets used to perform the American Water Works Association water loss audits in MDR attachments “2023 GRC - MDR - Attachment No. 3 (E.3) (Final Application)”.

Response:

Please see attached files:

DR ZS1-001 #4 Response (1 of 4) - AWWA- 2019 San Jose Hills.xlsx

DR ZS1-001 #4 Response (2 of 4) - AWWA- 2019 Whittier_La Mirada.xlsx

DR ZS1-001 #4 Response (3 of 4) - AWWA- 2020 San Jose Hills.xlsx

DR ZS1-001 #4 Response (4 of 4) - AWWA- 2020 Whittier_La Mirada.xlsx

5. Please provide the excel spreadsheet used to calculate the average age of the distribution system in MDR attachment “2023 GRC - MDR - Attachment No. 5 (D.10) (Final Application)”.

Response:

Please see attached file titled “DR ZS1-001 #5 Response (Avg. Age of Dist. System).xlsx”

Attachment 1-2: A2301001 Cal PA DR ZS1-004 (Pipeline Replacement Program 2)



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March 31, 2023

To: Suliman Ibrahim
Project Coordinator

Zaved Sarkar
Utilities Engineer

Shanna Foley
Attorney for Public Advocates Office

Re.: Response to A.23-01-001, Public Advocates Office DR ZS1-004 (Pipeline
Replacement Program 2)

Dear Mr. Ibrahim et al.,

Attached is the information you requested in writing for Suburban's Total Company
General Rate Case.

Sincerely,

/s/Carmelitha Bordelon

Carmelitha Bordelon
Director of Regulatory Affairs

Response to A.23-01-001, Public Advocates Office
DR ZS1-004 (Pipeline Replacement Program 2)

1. Please clarify whether Suburban or HDR's analysis considers alternative rehabilitative approaches to pipeline renewal. HDR and Suburban list pipeline replacement or do nothing as the two alternatives. Were the costs and benefits of other approaches such as cure in place pipe, spray in liners, splining, etc. considered? Provide supporting documents to support your answer. If a cost benefit analysis was conducted, please provide the results in Microsoft Excel format.

Response:

Suburban discusses rehabilitation alternatives, Pipe bursting, slip lining and Cure In Place Pipe (CIPP) in Workpaper Volume III-C. A cost-benefit analysis was not performed to rehabilitate distribution pipelines because it is not recommended due to increased inconvenience to customers, health and environmental concerns and lack of contractor experience.

Suburban contacted Engineering Consulting firms and Contractors for their recommendations for rehabilitating distribution pipelines. Rehabilitation methods are recommended for sewer applications and can be used for large transmission mains or distribution lines without services but are not recommended in neighborhood distribution pipeline projects.

2. Please consolidate all the pipeline replacement projects from "VOLUME III-C Pipeline Replacement Projects Proposed (CONFIDENTIAL)" for both San Jose Hills and Whittier/La Mirada district project justifications and provide the following information for each pipeline project (PID), in Excel spreadsheet format:
 - a. District.
 - b. Water System.
 - c. Project name/identifier number as provided in the "VOLUME III-C Pipeline Replacement Projects Proposed (CONFIDENTIAL)" for each District.
 - d. Information on each segment of existing pipeline requesting to be replaced:
 - i. Age.
 - ii. Length.
 - iii. Size.
 - iv. Material.
 - v. Replacement unit cost.
 - vi. Likelihood of failure score.
 - vii. Consequence of failure score.
 - viii. Project risk score (PRS)
 - ix. Project Cost
 - e. Information on each leak that occurred in each segment of pipeline being proposed to be replaced in Item 1 above.

- i. The date of the leak.
- ii. The age and size of the pipe.
- iii. Type of leak (pinhole, rupture, long crack, etc.).
- iv. Cause of break (deteriorating condition, operating condition, damage from outside source, etc.)
- v. Repair method.

Response a – e.v.:

See the following excel files for the information requested:

- 1. DR ZS1-004 Response 2 W-1.xlsx
- 2. DR ZS1-004 Response 2 W-2.xlsx
- 3. DR ZS1-004 Response 2 W-3.xlsx
- 4. DR ZS1-004 Response 2 W-4.xlsx
- 5. DR ZS1-004 Response 2 W-5.xlsx
- 6. DR ZS1-004 Response 2 W-6.xlsx
- 7. DR ZS1-004 Response 2 W-7.xlsx
- 8. DR ZS1-004 Response 2 W-8.xlsx
- 9. DR ZS1-004 Response 2 W-9.xlsx
- 10. DR ZS1-004 Response 2 W-10.xlsx
- 11. DR ZS1-004 Response 2 W-11.xlsx
- 12. DR ZS1-004 Response 2 W-12.xlsx
- 13. DR ZS1-004 Response 2 W-13.xlsx
- 14. DR ZS1-004 Response 2 W-14.xlsx
- 15. DR ZS1-004 Response 2 W-15.xlsx
- 16. DR ZS1-004 Response 2 W-16.xlsx
- 17. DR ZS1-004 Response 2 W-17.xlsx
- 18. DR ZS1-004 Response 2 W-18.xlsx
- 19. DR ZS1-004 Response 2 W-19.xlsx
- 20. DR ZS1-004 Response 2 W-20.xlsx
- 21. DR ZS1-004 Response 2 W-21.xlsx
- 22. DR ZS1-004 Response 2 W-22.xlsx

- f. Reports and findings of previous non-destructive testing if available.

Response:

Suburban has not conducted non-destructive testing for the segments of the proposed pipelines.

- 3. Please provide the following information for each district in Excel spreadsheet format:

- a. Annual leak/break rate per 100 miles of pipeline for the past 10 years (2012-2022).

Response:

See excel file “DR ZS1-004 Response #3.a – Break Rate Summary 2012-2022.xlsx”

- b. Annual recorded length of pipeline replaced in feet by pipe size for the past 10 years (2012-2022), this is an expansion of SWS's response to Minimum Data Request Item Section II.E.11.
Response:
See excel file "DR ZS1-004 Response #3.b & 3.c - Pipeline Replacement 2012-2021 D_LF_\$.xlsx"
 - c. Annual recorded expenditure for pipeline replaced by pipe size for the past 10 years (2012-2022).
Response:
See response to question 3.b.
 - d. Annual recorded breaks for the past 10 years (2012-2018).
Response:
See response to question 3.a.
 - e. Age distribution of pipelines for each type of pipe material, include length of existing pipelines in feet, in 10-year increments.
Response:
See excel file "DR ZS1-004 Response #3.e & 3.f - Pipeline Data.xlsx."
 - f. Length of existing pipelines by size in feet.
Response:
See response to question 3.e.
4. On page 153 of the "Volume III-E Am Plans & Master Plans Confidential (Final Application)" Suburban includes table G-2 "Summary of Condition Based Decision Making". This table includes a Cscore for each sample location.
- a. Please provide in Microsoft excel format the hardness index and the Percent of the original class 150 design thickness remaining used to calculate the Cscore for each sample location.
Response:
See excel file "DR ZS1-004 Response #4a & 4b - Table Summary of Condition Based Decision Making.xlsx"

- b. In the same Excel file, please provide the original installation date, the pipe material, and the sampling date, in separate columns for each sampling point. See example below.

Sample location	Hardness Index	Percent of the original class 150 design thickness remaining	Installation date	Pipe Material	Sampling Date

Response:

See response to question 4.a.

5. On page 218 of the “Volume III-E Am Plans & Master Plans Confidential (Final Application)” Suburban includes table 3-2 “Relationship between Hardness and Break Severity”. For each sample in the table please provide in Microsoft Excel format, the average hardness, the original installation date, the pipe material, and the sampling date in separate columns. See example below.

Sample location	Average Hardness	Installation date	Pipe Material	Sampling Date

Response:

See excel file “DR ZS1-004 Response #5 - Relationship between Hardness and Break Severity.xlsx”

6. Suburban proposed several fire flow related capital improvement pipeline projects that are necessary to bring Sativa into compliance with the permit from the State Water Resources Control Board (SWRCB) Division Drinking Water (DDW).
- a. Please provide a full copy of the compliance order that states these specific projects are needed to be completed to bring Sativa system into compliance with the permit from DDW.

Response:

As previously noted on the DR BYU-02 response to question 2.e, DDW’s Full Permit, Engineering Report for Los Angeles County Public Works – Sativa Water System, System No. 1910147, section 2.4.4 Pipeline Improvements, page 20 addresses that “the distribution system contains undersized pipes and not able to meet the 1,250 gpm fire flow requirements for single-family houses.”

DDW does not specify which pipelines are to be replaced. Suburban’s plan to replace pipelines is intended to efficiently replace undersized pipes to improve flushing velocity and fire flow capacity, minimize dead ends, and remove inaccessible pipes from backyards.

DDW's Engineering report is included in workpaper Volume II-D Sativa.

- b. Please provide the supply-demand analysis of the Sativa system that shows the system is deficient to meet fire flow requirements, the Max Day Demand (MDD) and Peak Hour Demand (PHD).

Response:

DDW's Full Permit, Engineering Report for Los Angeles County Public Works – Sativa Water System, System No. 1910147, section 2.4.4 Pipeline Improvements, page 20 addresses that “the distribution system contains undersized pipes and not able to meet the 1,250 gpm fire flow requirements for single-family houses.”

DDW's Full Permit, Engineering Report for Los Angeles County Public Works – Sativa Water System, System No. 1910147, section 2.1.5 Adequacy of Supply, page 13 indicates, the combined production from Wells 5 and 3 is adequate, to meet the MDD, Well 3 is in poor condition:

The engineering report also notes that “In the event, Liberty Utilities decides to terminate the agreement and cease supplying the Sativa Water System through the interconnection, the combined capacity of Well 5 and 3 is not adequate to meet the PHD.

Suburban must operate independently from temporary emergency connections with Liberty and the City of Compton, which are beyond Suburban's control and meet MDD and PHD.

- 7. During the 03/07/2023-03/08/2023 SWS 2023 GRC Field Tours - SWS staff indicated the plan to convert all fixed rate Sativa customers to metered customers in anticipation of rate changes starting January 1, 2024.

- a. Please provide the number of customers currently active in the Sativa system.

Response:

Sativa has 1,643 services and serves 6,800 customers

- b. Please provide details into the metering process for these Sativa customers and an anticipated timeline for it to finish.

Response:

In 2023 Suburban began surveying the services and houelines to determine the complexity of installing meters. Many lots have small concrete valve cans not big enough for a meter, and meter boxes must be installed for access. The installation may also require replacing concrete sidewalks. Sometimes, the service lines are galvanized iron that is in poor condition and requires replacement. In March 2023, Suburban began installing meters and has installed nearly 50. Suburban anticipates installing all meters by the end of 2023.

- c. Please provide details into any and all active community approaches SWS is taking to encourage Sativa customers to get metered and understand the rate impacts ahead of January 1, 2024. Include as part of this response any and all notices or communications sent to Sativa customers regarding the metering process.

Response:

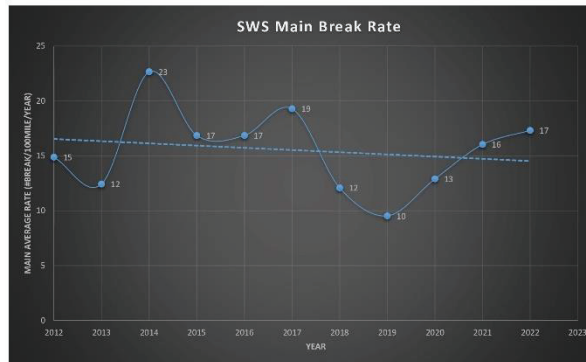
Clear and effective communication with Sativa customers is Suburban's highest priority. Suburban is using a comprehensive approach to provide outreach to Sativa customers. On January 26, 2023, Suburban hosted a Town Hall for its Sativa service area customers. The water meter installation project was among the topics discussed. Please see file entitled "DR ZS1-004 Response #7.c – Welcome Letter (English & Spanish).pdf."

Suburban has prepared a "Pardon the Interruption" flyer [please see file entitled "DR ZS1-004 Response #7.c.pdf"] to be hand delivered to customers scheduled for meter installation. The flyer describes the meter installation process and schedule provides contact information for the project manager and Spanish language translation, promotes the CAP (LIRA) program, and describes AMR/AMI functionality and instructions for customer opt-out.

Suburban plans to send customers an acclimation bill demonstration document each month (not a bill) for six months to educate them on the structure of metered rate billing. Most importantly, the demonstration will be customized to the consumption read from their meter. The demonstration is intended to provide ample opportunity for customers to adjust water use behavior and repair leaks to manage the affordability of their monthly water bill. The document also includes website QR code links to information on conservation, Suburban's CAP (LIRA) program, and the LIHWAP assistance program.

Attachment 1-3: Suburban's Main Break Rate (2012 through 2022)

Year	Main Break	Main Break Rate (break/100mile/year)
2012	128	15
2013	107	12
2014	195	23
2015	145	17
2016	145	17
2017	166	19
2018	104	12
2019	82	10
2020	111	13
2021	133	16
2022	149	17
Average	134	16



Attachment 3-1: A2301001 Cal PA DR ZS1-005 (Plant Retirements): 2017 - 2021 Plant Retirements Calculations

Suburban Water Systems
Retirement Report
Jan - Dec 2017

a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
District	Group Asset	Group Asset Description	Asset	Main Asset Description	PUC/Asset C	Capitalized on	Retirement Post	Retirement Amount	Original Cost*	Full/Partial Retirement	Useful life	Actual Life	Early Retirement	Actual Amount Depreciated	Adjustment for Early Retirement
Main Office	9007000001	SWS COMPUTER HARDWARE	70000430	HP L9650DN Printer/Scanner Stack	3722	7/31/2013	2/28/2017	-7266.67	7266.67		Full 5 years	3.57777778	YES	2984.149377	4292.52
Whittier/La Mirada	9001000011	SWS GENERAL PLANT STRUCT	10000357	Security Camera	371	3/31/2008	12/31/2017	-15106.81	15106.81		Full 10 years	0.76	YES	4189.277743	10997.53
San Jose Hills	9001000016	SWS LEASEHOLD IMPROV SJ	10000720	Installation cost Motorola d/Monitor/Proj	3711	5/31/2014	12/31/2017	-3802.74	3802.74		Full 10 years	3.58333333	YES	2722.004933	1170.74
San Jose Hills	9002000018	SWS METERS SJ	20005642	3/4 inch Meter	346	4/30/2002	3/31/2017	-1836.19	12448.75	Partial 15 Years	14.91666667	YES	13771.08623	-1322.31	
San Jose Hills	9002000018	SWS METERS SJ	20005663	3 inch Meter	346	12/31/2002	7/31/2017	-3031.00	3031.00	Full 15 Years	14.58333333	YES	3278.0265	-247.03	
San Jose Hills	9002000018	SWS METERS SJ	20005747	8 inch Meter	346	7/31/2003	12/31/2017	-1698.00	1598.00	Full 15 Years	14.41666667	YES	1708.48372	-116.48	
Whittier/La Mirada	9005000000	SWS OFFICE EQUIPMENT LM	50000121	Ergonomic Eq Monitor Arms & keyboa	3721	5/31/2014	12/31/2017	-1022.77	1363.69	Partial 5 years	3.58333333	YES	757.859442	605.83	
Whittier/La Mirada	9005000000	SWS OFFICE EQUIPMENT LM	50000128	8'x6' Motorized Projection Screen	3721	5/31/2014	12/31/2017	-3967.39	3967.39	Full 5 years	3.58333333	YES	2204.834012	1762.56	
Main Office	9005000001	SWS OFFICE EQUIPMENT MN	50000108	Ergonomic Keyboard Trays	3721	10/31/2013	12/31/2017	-1034.95	20873.80	Partial 5 years	4.16666667	YES	167.19.86518	5163.93	
Main Office	9005000001	SWS OFFICE EQUIPMENT MN	50000109	M2 Monitor Arm Black w/black trim	3721	10/31/2013	12/31/2017	-278.76	6411.90	Partial 5 years	4.16666667	YES	443.423213	2266.48	
San Jose Hills	9005000002	SWS OFFICE EQUIPMENT SJ	50000117	71 x 91 High motorized monitor paged	3721	5/31/2014	12/31/2017	-3878.77	3878.77	Full 5 years	3.58333333	YES	2185.584407	1728.19	
Main Office	9006000001	SWS OFFICE FURNITURE MN	60000257	Blue Ergonomic Office Chairs	372	10/31/2013	2/28/2017	-4331.79	4331.79	Full 5 years	3.32777778	YES	1729.306683	2602.39	
Whittier/La Mirada	9002000005	SWS PUMP EQUIPMENT LM	20000239	Pump for Well # 7	324	12/31/2005	12/31/2017	-172413.45	172413.46	Full 20 years	12	YES	101979.1133	7034.35	
San Jose Hills	9002000006	SWS PUMP EQUIPMENT SJ	20000744	Gravels 3 Stage Pump/Plant 121 W1	324	12/31/2009	12/31/2017	-51926.19	51926.19	Full 20 years	8	YES	20475.03524	31450.65	
Whittier/La Mirada	9002000011	SWS RESERVOIRS LM	20000625	RESERVOIRS CATHODIC PROTEC	342	1/1/1984	5/31/2017	-14506.13	14506.13	Full 50 years	33.41666667	YES	12753.6607	1752.45	
San Jose Hills	9002000012	SWS RESERVOIRS SJ	20000935	NEW ROOF R1	342	1/1/1994	12/31/2017	-220230.49	220230.49	Full 50 years	24	YES	139462.3408	81168.15	
San Jose Hills	9002000012	SWS RESERVOIRS SJ	20000936	ADDITIONAL CAPITAL PLT 129 R1	342	4/30/1995	12/31/2017	-1272.90	1272.90	Full 50 years	22.66666667	YES	739.186644	513.79	
San Jose Hills	9002000012	SWS RESERVOIRS SJ	20001040	Curb & Gutter	342	12/31/2006	12/31/2017	-59170.18	59170.18	Full 50 years	11	YES	17124.44179	42045.74	
San Jose Hills	9002000012	SWS RESERVOIRS SJ	20001042	Stairs	342	12/31/2006	12/31/2017	-5880.00	5880.00	Full 50 years	11	YES	1701.7308	4178.27	
San Jose Hills	9002000012	SWS RESERVOIRS SJ	20001043	4 inch PVC Reservoir Roof Drain	342	12/31/2006	12/31/2017	-45189.63	45189.63	Full 50 years	11	YES	13078.33062	32111.30	
San Jose Hills	9002000012	SWS RESERVOIRS SJ	20006069	Safety Ropes and Safety Harness Pt 1342	342	6/30/2013	12/31/2017	-7630.08	7630.08	Full 50 years	4.5	YES	903.3833216	6725.72	
Whittier/La Mirada	9002000015	SWS SERVICE SJ	20010255	2" aerotec w/backflow preventer Pt 22 345	345	11/30/2016	12/31/2017	-9255.82	9255.82	Full 30 years	1.08333333	YES	748.6049873	8509.02	
San Jose Hills	9002000016	SWS SERVICE SJ	20004429	2 inch PLASTIC 1989	345	1/1/1989	12/31/2017	-14550.58	n/a	Partial 30 years	29	YES	-	-	
Whittier/La Mirada	9002000013	SWS T&D MAINS LM	20001036	6 inch STEEL 1970	343	1/1/1970	8/31/2017	-328.99	n/a	Partial 49 years	47.66666667	YES	-	-	
Whittier/La Mirada	9002000013	SWS T&D MAINS LM	20002246	12 inch PVC C-900	343	1/1/1982	2/28/2017	-147766.02	n/a	Full 49 years	25.18333333	YES	-	-	
Whittier/La Mirada	9002000013	SWS T&D MAINS LM	20008566	12" Butterfly Valves (8) Pt 409	343	12/31/2013	12/31/2017	-8472.41	8472.41	Partial 49 years	4	YES	859.00305	7582.81	
Whittier/La Mirada	9002000013	SWS T&D MAINS LM	20011288	2" Blow Off	343	12/31/2017	12/31/2017	-4850.07	4850.07	Partial 49 years	0	YES	0	4850.07	
Whittier/La Mirada	9002000028	SWS TOOLS LM	20009189	NEMA 200 De-Chlorinator WLM001	378	12/31/2014	12/31/2017	-896.50	896.50	Full 5 years	3	YES	491.280965	405.21	
Whittier/La Mirada	9002000028	SWS TOOLS LM	20010409	Service Pulping Equipment	378	12/31/2016	12/31/2017	-2990.10	2990.10	Full 5 years	1	YES	645.201587	2443.90	
San Jose Hills	40000073	SWS Vehicle SJ	40000073	2011 Ranger 4x2LC740369X	3731	2/28/2013	4/30/2017	-13602.61	13602.61	Full 8 years	4.16666667	YES	6872.161927	6730.46	

*Note: Original cost is not available for asset capitalized before 2012 Accounting system conversion

Total 333710.23

Suburban Water Systems
 Retirement Report
 Jan - Dec 2018

District	Group Asset	Group Asset Description	Asset	Min Asset Description	PUC/Class	Capitalized on	Retirement/Post	Retirement Amount	Original Cost*	Full/Partial Retirement	Useful Life	Actual Life Used	Early Retirement	Actual Amount Depreciated	Adjustment for Early Retirement
Sar Jose Hills	9002000025	SWS COMMUNICATION EQUIPMENT S	20082123	Emercon Monitoring Systems Pt 347	376	8/1/2012	12/31/2018	-1,093.51	1,093.51	Full	10 years	5.23333333	YES	203,609,269	1,209.79
Whitehall/Mirada	9002000017	SWS METERS LV	20057763	3/4 inch Meter	346	10/1/2003	5/31/2018	-93.60	n/a	Partial	15 years	14.86333333	YES		
Whitehall/Mirada	9002000017	SWS METERS LV	20057763	3/4 inch Meter	346	10/1/2003	6/30/2018	-343.79	n/a	Partial	15 years	14.66966667	YES		
Whitehall/Mirada	9002000017	SWS METERS LV	20057763	3/4 inch Meter	346	10/1/2003	7/31/2018	-405.71	n/a	Partial	15 years	14.73	YES		
Whitehall/Mirada	9002000017	SWS METERS LV	20057763	3/4 inch Meter	346	10/1/2003	8/31/2018	-456.82	n/a	Partial	15 years	14.83333333	YES		
Whitehall/Mirada	9002000017	SWS METERS LV	20057763	3/4 inch Meter	346	10/1/2003	9/30/2018	-512.21	n/a	Partial	15 years	14.93966667	YES		
Whitehall/Mirada	9002000017	SWS METERS LV	20057763	3/4 inch Meter	346	10/1/2003	10/31/2018	-568.9	n/a	Partial	15 years	15.03	YES		
Sar Jose Hills	9002000018	SWS METERS SJ	2005772	2 inch Meter	346	12/1/2004	12/31/2018	-604.88	604.88	Full	15 years	14.93966667	YES	595,143,483	0.74
Sar Jose Hills	9002000018	SWS METERS SJ	20057702	2" Flush Line/Meter #1 143 183	346	8/21/2013	12/31/2018	-1,085.34	1,085.34	Full	15 years	5.33333333	YES	198,625,241	1,996.72
Sar Jose Hills	9002000006	SWS PUMP EQUIPMENT S	2002726	305 HP Variable Frequency Drive	324	3/1/2009	12/31/2018	-11,614.85	n/a	Full	20 years	9.75	YES		
Sar Jose Hills	9002000006	SWS PUMP EQUIPMENT S	2002444	VFD Cooling fan & cooling fan control board P13 324	324	12/1/2016	12/31/2018	-1,962.24	1,962.24	Full	20 years	2	YES		
Sar Jose Hills	9002000006	SWS PUMP STRUCTURE IMPROV SJ	3000152	305 HP Breaker	313	3/1/2009	12/31/2018	-5,301.05	n/a	Full	20 years	9.75	YES		
Sar Jose Hills	9002000006	SWS PUMP STRUCTURE IMPROV SJ	3000153	41 HP Generator SW3 212 77an	313	3/1/2009	12/31/2018	-2,710.14	n/a	Full	20 years	9.75	YES		
Whitehall/Mirada	9002000013	SWS T&D MAINS LM	2000594	6 inch STEEL 1965	313	1/1/1978	12/31/2018	-93.85	n/a	Partial	40 years	41	YES		
Whitehall/Mirada	9002000013	SWS T&D MAINS LM	20001973	20 inch STEEL 1969	313	1/1/1978	9/20/2018	-104.44	n/a	Partial	40 years	40.74722222	YES		
Whitehall/Mirada	9002000013	SWS T&D MAINS LM	20001972	20 inch STEEL 1969	313	1/1/1978	12/31/2018	-1,185.46	n/a	Full	40 years	41	YES		
Sar Jose Hills	9002000014	SWS T&D MAINS SJ	2000569	6 inch STEEL 1972	313	1/1/1972	12/31/2018	-90.32	n/a	Partial	40 years	47	YES		
Sar Jose Hills	9002000014	SWS T&D MAINS SJ	20007134	8 inch STEEL 1968	313	1/1/1985	11/30/2018	-303.08	n/a	Partial	40 years	33.91388889	YES		
Sar Jose Hills	9002000014	SWS T&D MAINS SJ	20005108	30 inch Valve 8 & 6 1/2" Flange 1965	313	3/1/2007	11/30/2018	-2,374.85	n/a	Full	40 years	11.66666667	YES		
Sar Jose Hills	9002000010	SWS WATER TREATMENT EQUIPMENT SJ	2008226	CL2 Analyzer - Pt 147	332	8/1/2013	12/31/2018	-4,101.22	4,101.22	Full	20 years	5.33333333	YES	874,736,016	3,226.51

*Note: Original cost is not available for asset capitalized before 2012 Accounting system conversion

8,216.69

Substation Water Systems
 Worksheet: Pump
 Jan - Dec 2018

Asset	Group Asset	Group Asset Description	Asset	Item Asset Description	PUC/Asset Class	Cost/Asset Class	Cost/Asset Class	Original Cost	Retirement	Cost Center	Life Span	Actual Life Used	Early Retirement	Actual Amount Depreciated	Adjustment for Early Retirement
Waterside LA 3020000002	SWRS COMMUNICATION EQUIPMENT LM	20000347	Electronic Monitoring System P200	376	6/30/2013	12/31/2019	1,586.12	1,586.12	Full	60000004	10 years	6.26 YRS		419,841,447.5	1,586.04
Waterside LA 3020000003	SWRS COMMUNICATION EQUIPMENT LM	20000474	LevelProbeAsset CP 3420CF	378	5/3/2014	12/31/2019	2,143.84	2,143.84	Full	60000004	10 years	5.90333333 YRS		1,731,598.49	2,143.76
Waterside LA 3020000003	SWRS COMMUNICATION EQUIPMENT LM	20000338	Fluid System Logdata P200	378	10/3/2014	12/31/2019	264.22	264.22	Full	60000004	10 years	6 YRS		45,454,473	218.73
Waterside LA 3020000003	SWRS COMPUTER HARDWARE SM	70000208	Client Equipment Cards for SW RouterP24242017	3722	12/3/2015	8/31/2019	962.03	962.03	Full	60000028	5 years	3.69999999 YRS		231,803,289.5	301.57
Waterside LA 3020000003	SWRS COMPUTER HARDWARE SM	70000229	Client Equipment Cards for SW RouterP24242017	3722	12/3/2015	8/31/2019	962.03	962.03	Full	60000028	5 years	3.69999999 YRS		231,803,289.5	301.57
Waterside LA 3020000003	SWRS COMPUTER HARDWARE SM	70000229	Client Equipment Cards for SW RouterP24242017	3722	12/3/2015	8/31/2019	962.03	962.03	Full	60000028	5 years	3.69999999 YRS		231,803,289.5	301.57
Waterside LA 3020000001	SWRS GENERAL PLANT STRUCTURE IMPROV LM	10000245	Valve Metal Door	371	5/3/2005	12/31/2019	2,284.04	2,284.04	Full	60000004	40 years	14.26 YRS		888,254,397.5	1,393.72
Waterside LA 3020000001	SWRS GENERAL PLANT STRUCTURE IMPROV LM	10000254	Valve Metal Door	371	3/31/2005	12/31/2019	2,168.89	2,168.89	Full	60000004	40 years	13.73 YRS		832,461,024	1,364.60
Waterside LA 3020000001	SWRS GENERAL PLANT STRUCTURE IMPROV LM	10000770	Rebar/Lvs & Part Building R 200	371	3/3/2014	12/31/2019	3,841.73	3,841.73	Full	60000004	40 years	5.76 YRS		1,945,471,488	8,296.26
Waterside LA 3020000001	SWRS GENERAL PLANT STRUCTURE IMPROV LM	10000103	12" Orange Cable NGS 815 PJ 200	371	3/3/2011	12/31/2019	4,717.59	4,717.59	Full	60000004	40 years	5.75 YRS		433,451,221.7	2,224.86
Waterside LA 3020000001	SWRS GENERAL PLANT STRUCTURE IMPROV LM	10000323	8 FT High Chain Link Safety Fence P2 11	371	4/29/2017	12/31/2019	2,628.80	2,628.80	Full	60000004	40 years	2 YRS		143,183,056	2,483.21
San Jose Hills 3020000001	SWRS GENERAL PLANT STRUCTURE IMPROV LM	10000339	Structure Interlocking P121 BA	371	9/23/2018	12/31/2019	4,459.09	4,459.09	Full	60000000	40 years	0.69999999 YRS		154,222,705.9	8,203.67
San Jose Hills 3020000001	SWRS METERS SJ	20012038	7" ANSI 40 Alloy Steel CF 1600 SJ 176 addition	348	11/30/2018	12/31/2019	797.08	797.08	Full	60000000	10 years	1.00333333 YRS		60,387,919.1	797.72
Waterside LA 3020000001	SWRS PUMP EQUIPMENT LM	20000017	Flow Recorder/Engine/Order	328	9/30/2003	12/31/2019	-13,054.17	-13,054.17	n/a	60000004	20 years	18.25 YRS			
Waterside LA 3020000001	SWRS PUMP EQUIPMENT LM	20000013	Flow Control Pump P1 200 B2	328	6/31/2004	12/31/2019	8,405.80	n/a	Full	60000004	20 years	18.33333333 YRS			
Waterside LA 3020000001	SWRS PUMP EQUIPMENT LM	20000046	New Aurora Pump B-1	328	3/3/2006	12/31/2019	4,228.94	n/a	Full	60000004	20 years	13.75 YRS			
Waterside LA 3020000001	SWRS PUMP EQUIPMENT LM	20000107	Flow Recorder/Engine/Order	328	10/31/2008	12/31/2019	3,428.20	n/a	Full	60000004	20 years	11 YRS			
Waterside LA 3020000001	SWRS PUMP EQUIPMENT LM	20000103	70 HP Motor Bearing P1 200 B1	328	10/31/2014	12/31/2019	2,148.83	2,148.83	Full	60000004	20 years	5.16666667 YRS		303,210,717	1,846.28
Waterside LA 3020000001	SWRS PUMP EQUIPMENT LM	20000138	Regulator Motor P 200B1	328	6/30/2015	12/31/2019	1,038.04	1,038.04	Full	60000004	20 years	4.26 YRS		52,269,222	915.79
Waterside LA 3020000001	SWRS PUMP EQUIPMENT LM	20000739	Electrical Sub-Panel Light Control P209	328	9/30/2015	12/31/2019	4,382.57	4,382.57	Full	60000004	20 years	4.25 YRS		532,020,511	4,005.57
Waterside LA 3020000001	SWRS PUMP STRUCTURE IMPROV LM	10000303	5' Trench P200 P12 P12 200	321	3/7/2008	12/31/2019	3,841.51	n/a	Full	60000004	20 years	25.88888889 YRS			
Waterside LA 3020000001	SWRS PUMP STRUCTURE IMPROV LM	10000007	Concrete Panel wall and Pipe	327	8/29/2002	12/31/2019	49,375.79	n/a	Full	60000004	20 years	17.26 YRS			
San Jose Hills 3020000001	SWRS RECYCLED WATER METER SJ	20000448	2 Inch P200 1/2 PIG SHORT C/P	3481	3/31/2011	4/30/2019	286.15	n/a	Partial	60000000	15 years	8.68333333 YRS			
San Jose Hills 3020000001	SWRS RECYCLED WATER METER SJ	20000743	4" Polyurethane	3481	12/31/2012	5/31/2019	2,263.70	2,263.70	Partial	60000000	15 years	6.26 YRS		112,111,175	1,519.03
San Jose Hills 3020000001	SWRS RECYCLED WATER METER SJ	20000808	2" Flanged Mul Jet FR-30 DCF SJ 114 addition	3481	11/2/2011	7/31/2019	3,981.95	8,716.29	Partial	60000000	15 years	5.5 YRS		3,922,454.91	5,073.44
San Jose Hills 3020000001	SWRS RECYCLED WATER METER SJ	20000666	2" Flanged Mul Jet FR-30 DCF SJ 114 addition	3481	11/2/2014	8/31/2019	1,742.29	8,716.29	Partial	60000000	15 years	3.30333333 YRS		3,782,807,511	4,907.33
San Jose Hills 3020000001	SWRS RECYCLED WATER METER SJ	20000608	2" Flanged Mul Jet FR-30 DCF SJ 114 addition	3481	11/2/2011	8/30/2019	4,371.17	8,716.29	Partial	60000000	15 years	3.69999999 YRS		3,815,926,221	4,907.23
San Jose Hills 3020000001	SWRS RECYCLED WATER METER SJ	20000668	2" Flanged Mul Jet FR-30 DCF SJ 114 addition	3481	11/2/2014	10/31/2019	1,386.78	8,716.29	Partial	60000000	15 years	3.75 YRS		3,815,926,221	4,907.23
San Jose Hills 3020000001	SWRS RECYCLED WATER METER SJ	20000668	2" Flanged Mul Jet FR-30 DCF SJ 114 addition	3481	11/2/2014	10/31/2019	1,386.78	8,716.29	Partial	60000000	15 years	3.75 YRS		3,815,926,221	4,907.23
San Jose Hills 3020000001	SWRS RECYCLED WATER METER SJ	20000720	4" Orange Resistant FR-30 DCF SJ 114 addition	3481	3/31/2014	10/31/2019	2,373.20	2,373.20	Full	60000000	15 years	6.5 YRS		947,168,834.7	1,438.12
Waterside LA 3020000001	SWRS VALVE METER LM	20000178	6 Inch TE-40 FOG PULS C/P REDWANT	345	11/15/1987	12/31/2019	2,062.21	n/a	Full	60000004	18 years	22.56666667 YRS			
Waterside LA 3020000001	SWRS VALVE TREATMENT EQUIPMENT LM	20000336	Permanent Signal Chemical Pump P1 400	332	12/31/2015	12/31/2019	8,759.89	8,759.89	Full	60000004	20 years	4 YRS		106,651,308.2	8,820.88

*None Original cost is not available for asset costed before 2012 Accounting system conversion

Suburban Water Systems
Financial Report
Jan - Dec 2020

A	B	C	D	E	F	G	H	I		J	K	L	M	N	O	P	Q	R	S	
								Retirement	Depr'd Cost*											
Drinks	000000000	SW COMMUNICATION EQUIPMENT LM	2000476	Private Watering System P208	376	6302015	Private Watering System P208	12010000	-2,561.00	1,584.11	Full	10 years	7.28 YRS							
Whitehall-Windsor	900000003	SW COMMUNICATION EQUIPMENT LM	2000478	Upgrade Chg up Meter to DSJ/P Meter P208 R1	376	9302015	Upgrade Chg up Meter to DSJ/P Meter P208 R1	12010000	-2,569.96	2,308.96	Full	10 years	7.28 YRS							
Whitehall-Windsor	900000003	SW COMMUNICATION EQUIPMENT LM	2000478	Private Watering System P208	376	12010000	Private Watering System P208	12010000	-2,569.96	2,308.96	Full	10 years	7.28 YRS							
Whitehall-Windsor	900000001	SW GENERAL PLANT STRUCTURE IMPROV LM	1000548	AC Pumps (4000 Sq Ft)	371	6302000	SW COP #775-L4-2006	12010000	-3,208.02		Partial	40 years	11.90 YRS							
Whitehall-Windsor	900000001	SW GENERAL PLANT STRUCTURE IMPROV LM	1000552	Build 17' Round Canals approx 2000 P208	371	10110000	Build 17' Round Canals approx 2000 P208	12010000	-6,519.00	6,499.00	Full	40 years	4.17 YRS							
Whitehall-Windsor	900000001	SW GENERAL PLANT STRUCTURE IMPROV LM	1001109	PLANT 200 OVAL GRATES P208	371	12010000	PLANT 200 OVAL GRATES P208	12010000	-3,272.80	4,364.39	Full	40 years	1.90 YRS							
Whitehall-Windsor	900000006	SW PUMP EQUIPMENT LM	2000776	Ream 400 H.P. Motor P1 201 W 7'	324	9710210	SW PUMP EQUIP-4742	12010000	-29,763.28	29,763.28	Full	20 years	9.92 YRS							
San Juan Hills	900000006	SW PUMP EQUIPMENT LM	2000780	City Back Reamer P18 Meter P208B4	324	9710210	City Back Reamer P18 Meter P208B4	63000000	-1,779.00	3,779.00	Full	20 years	6.08 YRS							
San Juan Hills	900000002	SW RECYCLED WATER METER SJ	2000891	2" Reamed Mstr.Jm 18 50 DCH 714 SJ addition	340	7010214	2" Reamed Mstr.Jm 18 50 DCH 714 SJ addition	12010000	-762.00	762.00	Full	15 years	5.87 YRS							
San Juan Hills	900000002	SW RECYCLED WATER METER SJ	2000818	2" Reamed Mstr.Jm 18 50 DCH 714 SJ addition	340	1010218	2" Reamed Mstr.Jm 18 50 DCH 714 SJ addition	63000000	-762.00	762.00	Full	15 years	5.87 YRS							
San Juan Hills	900000002	SW RECYCLED WATER METER SJ	2000896	2" Reamed Mstr.Jm 18 50 DCH 815 SJ addition	340	9710215	2" Reamed Mstr.Jm 18 50 DCH 815 SJ addition	12010000	-762.00	762.00	Full	15 years	6.92 YRS							
Whitehall-Windsor	900000011	SW RESERVOIR S.J	2000441	Reservoir 120 Reservoir covers P212 R1	340	12010010	Reservoir 120 Reservoir covers P212 R1	12010000	-4,843.70	4,843.70	Full	30 years	7.90 YRS							
San Juan Hills	900000012	SW RESERVOIR S.J	2000870	Canalide Protection System P1 807R1	340	4700014	Canalide Protection System P1 807R1	12010000	-17,601.24	17,601.24	Full	30 years	6.87 YRS							
San Juan Hills	900000016	SW SERVICE S.J	2000441	2 inch SERVICE 1893	340	1010890	SW SERVICE S.J-SJ4510304	63000000	-7,168.68		Full	30 years	28.42 YRS							
San Juan Hills	900000016	SW SERVICE S.J	2000442	2 inch SERVICE 1902	340	1010902	SW SERVICE S.J-SJ4510317	10010000	-14,947.8		Full	30 years	28.83 YRS							
San Juan Hills	900000016	SW SERVICE S.J	2000446	2 inch SERVICE 1901 with MTR CLUST	340	1010901	SW SERVICE S.J-SJ4510301	12010000	-2,640.24		Full	30 years	29.90 YRS							
San Juan Hills	900000016	SW SERVICE S.J	2000447	2 inch SERVICE 1902	340	1010902	SW SERVICE S.J-SJ4510302	12010000	-2,640.24		Full	30 years	29.90 YRS							
San Juan Hills	900000016	SW SERVICE S.J	2000449	2 inch SERVICE 1901 with MTR CLUST	340	1010901	SW SERVICE S.J-SJ4510307	12010000	-7,916.08		Full	30 years	29.90 YRS							
San Juan Hills	900000016	SW SERVICE S.J	2000400	2 inch SERVICE 1893	340	1010890	SW SERVICE S.J-SJ4510304	12010000	-10,053.37		Full	30 years	29.90 YRS							
San Juan Hills	900000016	SW SERVICE S.J	2000422	2 SERVICE 1894	340	1010890	SW SERVICE S.J-SJ4510301	12010000	-10,053.98		Full	30 years	29.90 YRS							
San Juan Hills	900000016	SW SERVICE S.J	2000428	2 inch SERVICE 1901	340	1010890	SW SERVICE S.J-SJ4510300	12010000	-1,962.00		Full	30 years	27.00 YRS							
San Juan Hills	900000016	SW SERVICE S.J	2000400	2 inch SERVICE 1893	340	6301890	SW SERVICE S.J-SJ450109991002	12010000	-988.00		Full	30 years	26.00 YRS							
San Juan Hills	900000016	SW SERVICE S.J	2000400	2 inch SERVICE 1893	340	6301890	SW SERVICE S.J-SJ450109991002	12010000	-1,962.04		Full	30 years	25.90 YRS							
San Juan Hills	900000016	SW SERVICE S.J	2000400	2 SERVICE	340	1010890	SW SERVICE S.J-SJ4501091991002	12010000	-62,281.00		Full	30 years	24.80 YRS							
Whitehall-Windsor	900000013	SW TAD MAINS LM	2000244	4 inch STEEL 18E1	343	1011881	SW MAINS LM-SJ4510348	12010000	-1,338.22		Full	40 years	40.30 YRS							
Whitehall-Windsor	900000013	SW TAD MAINS LM	2000195	4 inch CAST IRON ASTIC	343	1011881	SW MAINS LM-SJ4510400	11000000	-401.00		Full	40 years	32.91 YRS							
Whitehall-Windsor	900000014	SW TAD MAINS SJ	2000215	4 inch STEEL 18E5	343	1011885	SW MAINS SJ-SJ4510102	12010000	-261.48		Full	40 years	30.00 YRS							
San Juan Hills	900000014	SW TAD MAINS SJ	2000212	4 inch STEEL 18E5	343	1011880	SW MAINS SJ-SJ4510101	12010000	-261.33		Full	40 years	30.00 YRS							
San Juan Hills	400000017	SW SERVICE S.J	4000010	2005 Ford F-350 Super Duty	1771	6302017	2005 Ford F-350 Super Duty	11000000	-7,413.77		Full	5 years	1.42 YRS							
San Juan Hills	900000010	SW WATER TREATMENT EQUIPMENT SJ	2000900	Chlorine Injector (W5)	322	7010200	SW W TRT SJ-SJ2320100741001	12010000	-499.00	499.00	Full	20 years	16.42 YRS							

36,088.95

**Attachment 4-1: Full Permit, Engineering
Report Los Angeles County Public Works –
Sativa Water System, System No. 1910147
(Dated December 23, 2020)**

Engineering Report

*For Consideration of Full Permit Revision for the
Los Angeles County Public Works
Sativa Water System*

*Serving Portions of the City of Compton and
Willowbrook, an Unincorporated Area of Los Angeles County*

December 23, 2020

Prepared By:

Ofelia Oracion

*Ofelia Oracion
Sanitary Engineer, Angeles District*

Approved By:

*Shu-Fang Orr, P.E.,
District Engineer, Angeles District*

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Table of Contents

1. INTRODUCTION	1
1.1. Purpose of Report	1
1.2. Background Information	1
1.3. Brief Description of System	3
1.4. Enforcement History	4
1.5. Service Area	5
1.6. Consumer and Production Data	5
1.7. Sources of Information	5
2. INVESTIGATION AND FINDING.....	6
2.1. Sources of Supply	6
2.2. Treatment	14
2.3. Storage Facility.....	17
2.4. Distribution System.....	18
2.5. Water Quality Monitoring	21
2.6. Operation and Maintenance	32
3. APPRAISAL OF SANITARY HAZARDS AND PUBLIC HEALTH SAFEGUARDS..	36
4. CONCLUSIONS AND RECOMMENDATIONS.....	38
APPENDICES	42

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1. INTRODUCTION

1.1. Purpose of Report

The Division of Drinking Water (hereinafter, Division) of the State Water Resources Control Board (hereinafter, State Water Board) has initiated the investigation for issuing a new domestic water supply permit to the Los Angeles County (hereinafter, LA County) Public Works (hereinafter, PW) - Sativa Water System, System No. 1910147. The LA County PW - Sativa Water System was formerly the Sativa Los Angeles County Water District (hereinafter, SLACWD). On February 13, 2019, the Local Agency Formation Commission for the County of Los Angeles (hereinafter, LAFCO) approved dissolution of the SLACWD and appointed the LA County as the successor agency for the water district. LAFCO recorded the dissolution on March 19, 2019 and the LA County has since become the legal owner of the SLACWD ([Appendix A](#)). LA County PW now manages and operates the water system. A complete evaluation of the technical, managerial, and financial (TMF) capacities of the LA County PW – Sativa Water System was performed by the Division based on information provided by LA County PW and available data on file with the Division. Attached to this report is the completed TMF Assessment Review Form ([Appendix B](#)).

On August 24, 2020, LA County PW submitted to the Division a permit amendment application to change the gas chlorination systems at Wells 3 and 5 of the Sativa Water System to the 12.5 percent sodium hypochlorite chlorination systems ([Appendix C](#)). This proposal is incorporated into this full permit investigation for the change of ownership. All changes made to the water system facilities since the last issuance of full permit in August 2012, including the improvements made by the LA County PW, are reviewed during this permit investigation.

This report will document the change of ownership of the water system from SLACWD to LA County PW, the engineering review and evaluation of the water supply system facilities as they currently exist, outline the existing deficiencies and the needed improvements, including the water system's compliance status with the directives of Compliance Order No. 04_22_18R_002 issued by the Division to SLACWD on June 1, 2018, the reviews of the specifications and facilities layouts of the new sodium hypochlorite chlorination systems at Wells 3 and 5 and to make recommendations regarding the issuance of a domestic water supply permit to the LA County PW – Sativa Water System.

1.2. Background Information

The LA County PW - Sativa Water System is being operated under the revised full domestic water supply permit (Water Supply Permit No. 04-22-12P-009) issued to SLACWD on August 30, 2012 and the permit amendment issued to the LA County PW – Sativa Water System for the 8-inch one-way metered connection with the Liberty Utilities – Compton/Willowbrook Water System (hereinafter, Liberty Utilities) on July 11, 2019.

From November 1, 2018 to March 19, 2019, the LA County served as the Administrator appointed by the State Water Board for the SLACWD water system. On March 19, 2019, LAFCO appointed the LA County as the successor agency for SLACWD – now the LA County PW - Sativa Water System.

The dissolution of SLACWD was initiated after a brown water incident occurred in April 2018. Many complaints were received by SLACWD not only because of issues related to the water quality but also issues on how the water system was managed. These issues were brought to the LA County Department of Public Health (DPH), then the State Water Board and LAFCO's attentions, and eventually to the media. Staff from the three agencies conducted investigations.

On June 1, 2018, the Division issued Compliance Order No. 04_22_18R_002 to SLACWD for the failure to provide its customers with a reliable and adequate supply of pure, wholesome, healthful, and potable water, and the failure to comply with the source capacity, minimum flushing velocity, and minimum pressure requirements of the California Waterworks Standards. Directive 3 of the compliance order directed SLACWD to prepare a Corrective Action Plan (CAP) identifying improvements to the water system to address source capacity deficiencies, the general physical water quality issues in the distribution system, fire flow deficiencies, and the infrastructure deficiencies hampering effective maintenance of the system, such as flushing activities. The SLACWD failed to provide an adequate CAP to address the deficiencies.

On July 11, 2018, LAFCO voted unanimously to begin the process of dissolving the SLACWD. LAFCO adopted Resolution No. 2018-00RMD that approved the proposed Commission-Initiated Resolution of Application for Dissolution of the SLACWD.

On October 31, 2018, the State Water Board issued Administrator Order No. 04_22_18R_003 to SLACWD pursuant to Assembly Bill 1577. In addition to the issues documented in Compliance Order No. 04_22_18R_002, this Order documented the serious technical and managerial capacity problems. The Order appointed LA County as the State Administrator for SLACWD and terminated SLACWD's Board of Directors. On November 1, 2018, the LA County PW representative assumed full administrative, managerial, and financial control of SLACWD.

On February 13, 2019, LAFCO approved Resolution No. 2019-02RMD, ordering dissolution of SLACWD. On March 19, 2019, LAFCO appointed the LA County as the successor agency for SLACWD. The LA County PW becomes the legal owner of the SLACWD and named the water system the Sativa Water System.

Since March 2019, the LA County PW has made many capital improvements to the water system's facilities. The following are the improvements that have been completed or undergoing:

1. On July 11, 2019, Permit Amendment No. 1910147PA-001 was issued by the Division to the LA County PW for the Sativa Water System. To address the source capacity deficiency, an 8-inch one-way metered connection with Liberty

Utilities-Compton/Willowbrook water system was added as an active source. The connection can supply up to 1,500 gallons per minute (gpm) of water.

2. In September 2019, the Paulsen Avenue Pipeline Improvement was completed. An 8-inch pipeline was constructed along Paulsen Avenue from Hatchway to 139th Street. The new pipeline delivers water from the Liberty Utilities Interconnection to the southern part of the Sativa Water System's service area.
3. In June 2020, the LA County PW completed the installation of a new Supervisory Control and Data Acquisition System (SCADA).
4. In July 2020, the LA County PW completed major rehabilitation works on Well 5. The well had been removed from service in August 2019. This well is currently the main source of supply for the Sativa Water System.
5. In July 2020, the Lucien Waterline Project was completed. An 8-inch pipeline was constructed along Lucien Street from South Oleander Avenue to South Largo Avenue. The new pipeline delivers water to the east side of the Sativa Water System's service area and addresses the fire flow deficiencies in that area.
6. In August 2020, the LA County PW submitted a permit amendment application to the Division to replace the existing gas chlorination systems for Wells 3 and 5 with the 12.5 percent sodium hypochlorite chlorination systems. This project will be incorporated into this permit investigation.

Other urgent infrastructure improvement projects identified by LA County PW, but still awaiting funding, are the following:

1. Pipeline Interconnects. This project will eliminate some critical dead-ends in the distribution system.
2. Manganese Wellhead Treatment. The project will equip Well 5 with manganese treatment. The well withdraws water from aquifers with elevated manganese levels. Manganese concentration in the water produced by the well, even after the rehabilitation works, is still near the secondary MCL and causing water quality complaints.

1.3. Brief Description of Sativa Water System

The Sativa Water System is located approximately 11 miles south of the downtown Los Angeles. The system's service area lies within the boundary of the Central Water Basin and encompasses about 0.25 square mile area. It serves a portion of the City of Compton and portion of Willowbrook, an unincorporated area of the Los Angeles County.

The water system has two active groundwater wells (Wells 3 and 5), one active one-way connection with Liberty Utilities and one emergency connection with the City of Compton. The system has one inactive well (Well 2). The system also has four hydro-pneumatic tanks. The 10,000-gallon capacity hydro-pneumatic tank at the Well 2 site has been disconnected from the distribution system. The Well 3 site has two 10,000-gallon capacity hydro-pneumatic tanks, operating simultaneously. The Well 5 site has one 10,000-gallon capacity hydro-pneumatic tank. Water produced by the wells is pumped to the hydro-pneumatic tanks first before being distributed to the system. Wells 3 and 5 are each equipped with a gas chlorination system. The water served by the Liberty Utilities contains free chlorine most of the time.

The distribution system has only one pressure-zone, with eight miles of transmission and distribution pipelines consisting of asbestos-cement, steel, ductile iron, cast iron and polyvinylchloride pipes. The distribution system has no booster station and no storage tank. All service connections are not metered.

The LA County PW has proposed to remove the gas chlorination systems at Well 3 and Well 5 sites and replaced them with the sodium hypochlorite chlorination systems. The evaluation of the proposed sodium hypochlorite chlorination systems for both wells will be documented in this report.

1.4. Enforcement History

Since November 1, 2018, when the operation and management of the water system was turned over to LA County, there has been no enforcement actions issued against the water system.

On June 1, 2018, the Division issued Compliance Order No. 04-22-18R-002 to SLACWD for the failure to provide its customers with a reliable and adequate supply of pure, wholesome, healthful, and potable water. Specifically, the water system violated the California Waterworks Standards for the failure to comply with the source capacity, minimum flushing velocity, and minimum pressure requirements.

On July 23, 2018, the Division issued a warning letter to SLACWD, after discovering the SLACWD had posted on its website a file entitled "Sativa Los Angeles County Water District System Improvements, June 2018", a Notice Inviting Bids for the "Paulsen Avenue Water Main Phase 2- Project No. 106-WTR", and a meeting agenda showing the interconnection and another Paulsen Avenue Water Main Project (Phase 1). SLACWD was warned that they must comply with Directives 3, 4 and 5 of the Compliance Order and not to proceed with projects without first demonstrating to the Division that the projects would help solve the problems listed in Directive 3 and comply with the California Waterworks Standards. As documented in the Administrative Order issued to SLACWD on October 31, 2019, the plans and specifications for both Paulsen Avenue Water Main projects and the Corrective Action Plan submitted by SLACWD were incomplete, contained various errors, and inadequate to demonstrate compliance with the California Waterworks Standards.

The LA County PW has been in communications with the Division and identified corrective actions to bring the Sativa Water System back to compliance. The LA County PW's current and future improvement projects for the Sativa Water System are discussed in this report.

1.5. Service Area

The Sativa Water System's service area is bounded by Wayside Street and 131st Street on the north, Oris Street and 139th Street on the south, Mona Boulevard on the east and Paulsen Street and Wilmington Avenue on the west. The boundaries of the service area have not changed since the original formation in 1938. The service area is a residential community composed of single-family houses. The terrain is basically flat. The service area map is appended in [Appendix D](#). The schematic of the water supply system is appended in [Appendix E](#).

1.6. Consumer and Production Data

The Sativa Water System serves a permanent residential population of 6,837 through 1,643 active service connections. Except for one commercial connection, all service connections are classified as residential connections and none of the connections is metered. There are about 57 fire hydrants and four blow-off assemblies strategically located in the distribution system. Table 1 summarizes the population served and service connections records for the last 10 years.

Table 1: Historical Water Production Profile (2010-2019)

Year	Served Population		Water Production (MG)			MDD		Maximum Month	
	Resident	Service Conn.	Produced	Purchased	Total	MG	Date (M/D)	Flow (MG)	Month
2010	6813	1488	214.08	0	214.08	1.5	NR	20.83	July
2011	6813	1631	209.00	0	209.00	1.3	NR	20.06	July
2012	6813	1631	207.22	0	207.22	0.52	10/23	19.41	October
2013	6813	1631	189.52	0	189.52	0.94	7/5	17.98	July
2014	6837	1637	165.58	0	165.58	NR	NR	16.81	July
2015	6837	1640	152.21	0	152.51	0.88	6/13	15.02	March
2016	6837	1643	153.99	0	153.99	0.98	6/20	18.13	June
2017	6837	1643	156.52	0	156.52	0.65	10/24	14.91	July
2018	6837	1643	167.10	0	167.10	0.65	9/15	17.23	July
2019	6837	1643	93.77	55.72 ¹	147.49	0.65	7/12	14.90	August

Source: 2012 – 2019 Electronic Annual Report to the Drinking Water Program (EAR); MG – Million Gallons

MDD – Maximum Day Demand; M/D – Month/Day; NR – No Record

¹ Through Liberty Utilities Interconnection

1.7. Sources of Information

All information gathered for this report was obtained from the Division's files, discussions with and documents provided by the LA County PW staff, the review of the

water system’s files and records, and during the on-site field inspection conducted by Ofelia Oracion, Sanitary Engineer with the Angeles District on December 3, 2019. The investigation, analysis and preparation of this report were undertaken by Ms. Oracion under the supervision of Shu-Fang Orr, P.E., Angeles District Engineer.

2. INVESTIGATION AND FINDING

2.1. SOURCES OF SUPPLY

Sources of supply for the Sativa Water System’s domestic water distribution system include groundwater from two active wells, Wells 3 and 5, an active interconnection with the Liberty Utilities – Compton/Willowbrook water system, and one emergency interconnection with the City of Compton.

The LA County WP utilizes Well 5 as the primary source and the Liberty Utilities Interconnection as the secondary source. Well 5 is running continuously to maintain 52 to 65 psi pressures in the distribution system. The Liberty Utilities Interconnection will be activated when the pressure in the distribution system falls below 52 psi. Well 3 serves as the backup source, in case Well 5 is out of service for regular maintenance or is in need of repairs. The City of Compton Interconnection will be used only during emergencies. Table 2 summarizes the Sativa Water System’s water supply sources.

Table 2: Water Supply Sources

Source	Status	Primary Station (PS) Code	Treatment	Capacity (gpm ¹)	Comments
Well 3	Active	1910147-002	Gas chlorination for disinfection; The gas chlorination system will be replaced with a sodium hypochlorite chlorination system. ²	424 ³	The well is 76 years old and has no annular seal. It has history of sand pumping. PCE is detected in the water. 1,4-dioxane is above the notification level of 1 µg/L, but lower than the response level of 35 µg/L.
Well 5 ⁴	Active	1910147-005	Gas chlorination for disinfection; The gas chlorination system will be replaced with a sodium hypochlorite chlorination system. ²	650 ⁵	Newly rehabilitated. Water produced from the well contains PCE, 1,4-dioxane, and elevated level of manganese.
Total Capacity of Active Wells				1,074	

Source	Status	Primary Station (PS) Code	Treatment	Capacity (gpm ¹)	Comments
Interconnection with the Liberty Utilities – one way	Active	1910147-010	Groundwater sources by hypochlorination or surface water purchased from the Metropolitan Water District of Southern California, which is treated by conventional filtration, chloramination and fluoridation. Fluoridation is also provided to one of the Liberty Utilities wells. Liberty Utilities will rely on chlorinated well water majority of the time, but plan to switch to 100 percent MWDSC water if groundwater sources are not adequate to meet system demand.	1,500	This inter-connection facility was permitted in July 2019.
Total Active Interconnection Capacity				1,500	
Interconnection with the City of Compton – one way	Emergency	1910147-009	Groundwater sources by hypochlorination; purchased surface water from the Metropolitan Water District of Southern California, which is treated by conventional filtration, chloramination and fluoridation. However, the City of Compton rarely utilizes the MWDSC interconnection.	900	Good condition
Total Emergency Interconnection Capacity				900	

¹ Gallon per minute

² Discussed in this report

³ Maximum pump operating capacity based on the result of efficiency test conducted by Edison Company on September 10, 2020. The LA County PW has set this rate as Wells 3's maximum flow rate.

⁴ The main source for the Sativa Water System.

⁵ The maximum production rate set by LA County PW for Well 5. The maximum pumping rate tested on the pump by Edison Company on September 10, 2020 was 699 gpm with overall plant efficiency of 64.5 percent

2.1.1. Active Groundwater Wells

The Sativa Water System's groundwater sources extract water from the Central Groundwater Basin. The aquifers consist of Gage Aquifer (200 to 300 feet below ground surface (bgs)), Hollydale Aquifer (450 to 500 feet bgs), Lynwood Aquifer (590 to 670 bgs), Silverado Aquifer (680 to 780 feet bgs), and Sunnyside Aquifer (820 to 1,000

feet bgs). The Water Replenishment District of Southern California (WRD) is responsible for management, monitoring, replenishment, and protection of groundwater in the Central Groundwater Basin. Based on WRD’s water quality monitoring data, there are trichloroethylene (TCE) and tetrachloroethylene (PCE) plumes in the basin. Table 3 lists the water system’s active groundwater sources and the construction information.

Table 3: Active Groundwater Source Construction Information

Source Name	Depth (feet)	Perforation Depths (feet)	Casing Diameter (inches)	Annular Seal
Well 3	316	236 to 247; 264 to 281	14	None
Well 5	510 ¹	200 to 240; 380 to 500 ²	Original -16 With 12 inches Stainless Steel Liner to 510 feet now	The annular seal between the original casing and the borehole extended to 180 feet bgs. The annular space between the original 16-inch casing and the new 12-inch liner was filled with glass beads from 180 to 510 feet bgs and with bentonite cement from the ground surface to 180 feet bgs.

¹ Depth of the well after rehabilitation. It was 910 feet when drilled in 1993.

² This well has four perforations originally: the first perforation from the top was from 200 to 240 bgs, the second perforation was from 380 to 510 bgs, the third perforation was from 550 to 670 feet bgs, and the fourth perforation was from 750 to 890 feet bgs. The third and the fourth perforations were abandoned after the 2020 well rehabilitation.

The Southern California Edison Company conducted the pump efficiency tests for Wells 3 and 5 on September 10, 2020. The results of the tests indicate the efficiencies of these pumps are acceptable. The results of the tests are appended in [Appendix F](#).

Well 3: PS Code 1910147-002

Well 3 is housed in a concrete block building located on a 50 by 100 feet lot. The lot is securely fenced with wrought iron fence and with barb wire on the top of the fence and locked gate. The building is lighted and ventilated. The well site is properly maintained and equipped with a burglar monitoring system.

The well is 76 years old. It was drilled in 1944 and has history of sand pumping. In 2016, the well was removed from service because of excessive sands in the well water. According to the former SLACWD staff, soil materials around the deeper portion of the well had collapsed and entered the casings. To address the issue, the pumping equipment was replaced with a lower horsepower pump and the length of the suction pipe was shorten. No sand pumping issue has been reported since. The LA County PW operates this well once a week, on Mondays, for one hour to make sure the well is operable when needed. The well serves as a backup source. Due to other higher priority projects, the LA County PW has no plan to rehabilitate Well 3 at this time.

Well 3 has a 14-inch diameter 10-gage steel casing, with the highest perforation at 236 feet bgs. As observed during well drilling, there are three impervious clay layers above the first perforation. The thicknesses of impervious layers are 21 feet, 15 feet and 152 feet at depths from 36 to 57 feet bgs, 60 to 75 feet bgs and 84 to 236 feet bgs, respectively. The casing is perforated from 236 to 247 feet bgs and from 264 to 281 feet bgs. The well has no annular seal. A copy of the well log is on file with the Division

The well is equipped with a 50 Hp Vertical Turbine (VT) pump and motor. The pump is oil lubricated, electrically powered, and may be set to control automatically by a pressure switch. The well is set to be run manually at this time. The operator can switch it back to automatic control mode when needed. The well is capable of pumping up to 424 gpm.

An air-relief vacuum breaker valve, flow meter, check valve and sampling tap are provided on the well's discharge line. The vent opening of the air-release vacuum breaker valve is screened. The sampling tap with a vacuum breaker is located between the wellhead and the check valve. The pump is adequately surface sealed at the base. The concrete flooring is raised up to the motor base. The flooring is gradually sloping away from the motor base. The well is equipped with a pump-to-waste line with a screen at the discharge pipe opening and an airgap. Water from Well 3 is chlorinated and pumped into a hydro-pneumatic tank. The well has no back-up power. The Well Data Sheet for Well 3 is appended in [Appendix G](#).

In January 2001, a source water assessment was conducted for Well 3 by the Division staff using TurboSWAP. According to the source water assessment report, the PCA within Well 3's protection zones include water supply wells. Well 3 is approximately 1,950 feet west from Well 5 and approximately 2,600 feet northeast from the inactive well, Well 2. Well 3's PBE was considered moderate. The well is over 75 feet from the nearest sewer.

Well 5: PS Code 1910147-005

Well 5 is the newest well and the primary source for the Sativa Water System. The well was drilled in 1993 to a depth of 910 feet. Two impervious clay layers were observed during the drilling of this well. The impervious layers are located at depths from 60 to 80 feet bgs and from 120 to 200 feet bgs. The well has a 30-inch diameter conductor casing from ground surface to 50 feet bgs, and 16-inch diameter mild steel casings and screens. Prior to the recent well rehabilitation, the well had louvered screens from 200 to 240 feet and 380 to 510 feet bgs and wire-wrapped screen from 550 to 670 feet and 750 to 890 feet bgs. A copy of the well log is on file with the Division.

The well was initially producing about 3,000 gpm. However, the well's capacity has reduced substantially through the years. By 2019, the well's production rate decreased to about 500 gpm. The well is also producing water with elevated levels of manganese, exceeding the secondary MCL of 0.05 mg/L frequently. Compliance with manganese

MCL is based on the running annual average (RAA). The manganese RAAs had been at or near the MCL, but not exceeding the MCL.

In August 2019, LA County PW removed Well 5 from service for rehabilitation. The rehabilitation was completed in June 2020. During the period of rehabilitation, the Liberty Utilities Interconnection was utilized as the main source for the water system.

In September 2019, the LA County PW hired Pacific Surveys to conduct the video survey for Well 5. The video survey result shows that the screen casings from 200 to 510 feet bgs are slightly plugged up; and from 550 to 845 feet bgs, the screen casings are completely plugged up. The well casing is filled with hard soil materials at 845 feet bgs. The video camera was not able to reach the bottom of the well.

In November 2019, the Spinner Log and Mass Balance Analyses were performed to determine the quantities and qualities of water produce by the aquifers. The Spinner Log Analysis indicates higher production and higher velocity are observed from aquifers between 200 and 450 feet bgs. The Mass Balance Analysis indicates that manganese concentrations in the water from aquifers between 250 and 520 feet bgs are lower than the water from aquifers between 520 and 845 feet bgs. Manganese concentrations between 250 and 520 feet bgs and between 520 and 845 feet bgs ranged from 0.047 to 0.078 mg/L and from 0.36 to 0.38 mg/L, respectively.

In January 2020, the General Pump, Inc. started the construction to rehabilitate the well. The construction was completed in March 2020. The following modifications were made to the well:

- Abandoned approximately 390 feet of casings and screens in the lower section of the well from 520 feet to 910 feet bgs. The well was backfilled with pea gravel from 530 to 845 feet bgs, and the pea gravel was capped with bentonite pellets from 520 to 530 bgs.
- Provided the well with 12-inch stainless steel liner casings from ground surface to 510 feet bgs. The liner is composed of blank and screen casings. The wire-wrapped screen casings are located from 200 to 240 feet bgs and from 380 to 500 feet bgs. The bottom of the liner at 510 feet bgs is capped with stainless steel bull nose.

The annular space between the original 16-inch casing and the new 12-inch liner was filled with glass beads from 180 to 510 feet bgs and with bentonite cement from the ground surface to 180 feet bgs. The space at the bottom of the well from 510 to 520 feet bgs was also filled with glass beads.

The Video Survey Reports, Spinner Log and Mass Balance Analyses, and As Built Well Liner Diagram are appended in [Appendix H](#).

The LA County PW also installed a SCADA system and equipped the modified Well 5 with the following:

- Installed the new 100 horsepower variable frequency drive (VFD) pump and motor. The pumping equipment is water lubricated and electrically powered, and remotely controlled by the new SCADA system.
- Installed the new column, tubes, shaft, and suction pipe.
- Installed a water level transducer to monitor the static and pumping water levels via the new SCADA system.
- Replaced the dilapidated section of the discharge piping from the wellhead to the hydro-pneumatic tank with a new pipe.

The LA County PW currently operates Well 5 continuously for 24 hours a day, 7 days a week. The well is set to produce at the maximum flow rate of 650 gpm. Water from Well 5 is chlorinated and pumped through a 10,000-gallon hydropneumatic tank into the distribution system. The well has a manual switch that can accommodate a portable power generator. The Well 5 site is equipped with an 800 Hp diesel engine for the backup power.

An air-release vacuum breaker valve, flow meter, check valve and sampling tap are provided on the well's discharge line. The vent opening of the air-release vacuum breaker valve is screened. The sampling tap is located between the wellhead and check valve and equipped with a vacuum breaker. An adequate surface seal is provided at the base. The well has a pump-to-waste line and the end of the line is screened and provided with an airgap. The Well Data Sheet for the rehabilitated Well 5 along with the specifications for the new pumping unit and water level transducer are appended in [Appendix I](#).

Well 5 is housed in a concrete block building located on a 50 by 100 feet lot. The lot is securely fenced with wrought iron fence and locked gate. The building is lighted and ventilated. The well site is properly maintained and equipped with a burglar monitoring system.

In January 2001, a source water assessment for Well 5 was conducted by the Division. According to the source water assessment report, the PCAs within Well 5's protection zones include water supply wells. Well 5 is approximately 1,350 feet south from Well 3 and approximately 800 feet northeast from inactive Well 2. Well 3, an active well, is located within 3,947 feet radius, Zone B5, from Well 5. Well 5's PBE was considered moderate. The well is approximately 75 feet from the nearest sewer. With the reduction in the production rate, the sizes of the well protection zones will be smaller than those calculated during the January 2001 assessment.

2.1.2. Inactive Groundwater Source

Well 2: PS Code 1910147-001 (Inactive)

Well 2 has been inactive since July 2017 and **cannot be utilized as a water supply source**. The well was removed from service in December 2015 due to the detection of *E. Coli*. The well is over 78 years old. It has elevated level of bacteriological growth and protozoa. The casing is corroded and has multiple holes in it. The portion of casing from 226 to 228 feet bgs appears to be collapsed. In addition, water from the well also contains elevated level of manganese and 1,4-dioxane exceeding the MCL of 0.05 mg/L and NL of 0.001 mg/L, respectively. In July 2017, the well was physically disconnected from the distribution system. The electrical power source was disconnected and the gate valve along the discharge line to the hydropneumatic tank was removed. A blind flange was installed on the discharge line.

The LA County PW must plan to destroy the well to prevent the well from becoming a conduit of groundwater contamination.

2.1.3. Active Interconnection

Liberty Utilities Interconnection (PS Code 1910147-010)

The Liberty Utilities Interconnection is situated at the southwestern side of the Sativa Water System in the corner of N. Paulsen Avenue and W. 137th Street. The one-way 8-inch metered interconnection is capable of delivering up to 1,500 gpm of water from Liberty Utilities at minimum pressure of around 52 psi. It is connected to Liberty Utilities' 12-inch water mains along W. 137th Street.

The interconnection consists of an 8-inch octave ultrasonic water meter and an 8-inch one-way pressure reducing/pressure sustaining Cla-Val valve. The Cla-Val has a check valve built-in feature to prevent backflow. It is housed inside a polymer concrete vault with torsion assist polymer concrete cover and padlock. The vault is installed below ground surface and located within the street right of way. Liberty Utilities maintains the interconnection. Liberty Utilities will conduct periodic testing of water meter to ensure water meter is measuring and recording within 5 percent error. The interconnection drawing and layout is attached with this report ([Appendix J](#)).

This interconnection serves as a temporary active water supply source for the Sativa Water System. Liberty Utilities will provide a reliable and uninterrupted source of water to the Sativa Water System, contingent upon meeting the conditions set forth in the Agreement. According to the Agreement, Liberty Utilities' obligation to supply water to the Sativa Water System is subject to the following conditions: (1) the availability of such water to Liberty Utilities; (2) the ability of both water systems' distribution facilities to deliver such water through the interconnection; and (3) Liberty Utilities' determination, at its sole discretion, that the supply of such water will not have an adverse economic

impact on, or result in the impairment of, or jeopardize Liberty Utilities' water system, its customers, or its commitments to third parties.

2.1.4. Emergency Interconnection

The Sativa Water System has a 6-inch one-way metered emergency connection with the City of Compton, with rated capacity of 900 gpm. This emergency connection is manually operated.

2.1.5. Adequacy of Supply

Section 64554, Title 22 of the CCR, California Waterworks Standards mandates a public water system to have the capacity to meet the system's maximum day demand (MDD) at all times. After well rehabilitation, Well 5 production has increased. The Sativa Water System has an instantaneous combined yield of approximately 1,074 gpm (1.55 MGD) from Wells 5 and 3, and 1,500 gpm (2.16 MGD) from Liberty Utilities interconnection. The highest daily usage recorded during the period from 2010 to 2019 was 1.5 MGD (in 2010, 1,041.66 gpm). Although on the paper, the combined production from Wells 5 and 3 is adequate to meet the MDD, Well 3 is in poor condition.

Section 64554 (a) (1) of the *California Waterworks Standards* states that "For systems with 1,000 or more service connections, the system shall be able to meet four hours of peak hourly demand (PHD) with source capacity, storage capacity, and/or emergency source connections". Using the peaking factor of 1.5, times the average hourly consumption during the maximum demand day (0.06 MG per hour), the estimated PHD is 0.09 MG. The amount of water needed to meet four hours of PHD is 0.36 MG. The combined capacities of the current active sources (Well 5, Well 3 and Liberty Utilities interconnection) can produce up to 0.62 MG in four hours. The capacities of the Sativa Water System's active sources are sufficient to meet the four hours of PHD.

It should be noted that the interconnection with Liberty Utilities is only a temporary active water supply source for the Sativa Water System. One of the conditions in the agreement with Liberty Utilities specifies that Liberty Utilities, at its sole discretion, can terminate the agreement if it determines that supplying water to the Sativa Water System will have an adverse economic impact on, or result in the impairment of, or jeopardize Liberty Utilities' water system, its customers, or its commitments to third parties. Liberty Utilities has recently requested to renegotiate the water rate with the LA County PW. In addition, the 12-inch pipeline along the Paulsen Avenue where the Sativa Water System connected to is part of the Liberty Utilities Water Main Improvement Project. Liberty Utilities agrees to let the Sativa Water System use this pipeline on a temporary basis. Liberty Utilities has indicated from the beginning that they will need to take this pipeline back when they have completed their system-wide improvement project.

In the event Liberty Utilities decides to terminate the agreement and cease supplying the Sativa Water System through the interconnection, the combined

capacity of Wells 5 and 3 is not adequate to meet the PHD. The Sativa Water System has no storage facility to provide reserve for emergency conditions. The emergency interconnection with the City of Compton can provide up to 0.22 MG in four hours. Without the Liberty Utilities Interconnection, the Sativa Water System has to rely upon this emergency interconnection to comply with the requirements of Section 64554 (a) (1), Title 22, CCR.

2.1.6. Recycled Water

There are no recycled water use sites within the Sativa Water System's service area

2.2. TREATMENT FACILITY

2.2.1. Chlorination Systems at Wells 3 and 5

For precautionary purposes, water produced by the groundwater wells is disinfected before entering the distribution system. The LA County PW has proposed to change the chlorination facilities at Wells 3 and 5 from gas chlorination systems to the sodium hypochlorite chlorination systems.

The Proposed Sodium Hypochlorite Chlorination Systems

Wells 3 and 5 will be equipped with identical sodium hypochlorination system. The LA County PW has proposed to utilize 12.5 percent sodium hypochlorite solution. These units will replace the existing gas chlorination systems for Wells 3 and 5.

The liquid chlorine will be fed by a Stenner SVP Series Digital Peristaltic Metering Pump with a capacity of 17 gallons per day (0.71 gallons per hour) at maximum working pressure of 100 psi (6.9 bar). The pump tubes and valves are made of Santoprene materials. Santoprene is a registered trademark of Exxon Mobil Chemical Company and is NSF/ANSI Standard 61 certified. The specifications of Stenner SVP Series Digital Peristaltic Metering Pump and NSF/ANSI Standard 61 certification for Santoprene are provided in [Appendix K](#).

The chemical injection pumps are operated by a time relay that receives a signal from the well pump. When the well turns on, the injection pump relay switch closes to supply electrical power to the injection pump to start the flow of sodium hypochlorite solution. The injection point is at the wellhead discharge line prior to entering the hydro-pneumatic tank. When the well is turned off, the relay switch opens and disconnects the power supply, thus turning off the injection pump.

The sodium hypochlorite solution will be stored in a 50-gallon LMI Chemical Solution Tank with a spill containment scale. The tank is made of medium-density linear polyethylene with UV inhibitors and is an NSF/ANSI Standard 61 compliant product. The spill containment scale provides containment of chemical spill up to 66 gallons and weighs the amount of chemical leftover in the chemical solution tank. A digital display

equipment is connected to the scale and shows the weight of chemical solution in the tank. The data is then transmitted to the SCADA. A stock of 50-gallon chemical solution will be available on hand in each site. The specifications and NSF/ANSI Standard 61 certification for of LMI Chemical Solution Tank is appended in [Appendix L](#).

Each site will be equipped with a HACH 17 chlorine analyzer. The analyzer measures free chlorine residual from the hydro-pneumatic tank effluent and transmits the information to the SCADA.

The chlorination system facilities will be installed inside the well house. The building is equipped with a burglar monitoring system. The well sites are properly secured with fences and locked gates.

The configuration of Disinfection Facility Layout, including the Chlorination Data Sheets for the proposed 12.5 sodium hypochlorite chlorination systems at Wells 3 and 5 are appended in [Appendix M](#).

Operation of the Hypochlorination Systems

- Well 3

The hypochlorite injection rate at Well 3 will be manually adjusted. The goal is to have a minimum of 1.5 mg/L free chlorine residual at the hydro-pneumatic tank effluent, the entry point to the distribution system. The chlorine residual concentration at the hydro-pneumatic tank effluent will be measured continuously via the on-line chlorine analyzer. The analyzer is connected to the SCADA system. When chlorine residual is out of the targeted range, the operator will adjust the hypochlorite injection rate to meet the target.

- Well 5

The hypochlorite injection rate at Well 5 is automatically adjusted via the PLC for the well's VFD. The controls for the well's VFD are all local with Failsafe SCADA Off Commands for both the well and the chlorine injection pump. Similar with Well 3, the goal is to have a minimum of 1.5 mg/L free chlorine residual at the hydro-pneumatic tank effluent. The chlorine residual concentration at the hydro-pneumatic tank effluent will be measured continuously via the on-line chlorine analyzer. The data from the analyzer is then transmitted to the SCADA system. The chlorine residual is adjusted through the VFD speed loop. The speed of the motor is used to control the injection rate of the chlorine residual pump. The chlorine dosing is adjusted through the VFD speed analog loop settings. All analog data, system pressures, chlorine weight, chlorine residual, motor speed, and flow are reported back into the SCADA system and recorded.

Metering Pumps Capacity Evaluation

In addition to be able to meet the water system’s minimum residual goal at the entry point to the distribution system, the metering pump should be sized to have the capacity to provide a minimum chlorine residual of 1.0 mg/L in the distribution system during an emergency, such as a significant rise in bacteriological count. The dosing capacity of at least 2 mg/L is recommended. As shown in the calculations below, the chlorine metering pumps for Wells 3 and 5 are adequately sized.

- Well 3 – 424 gpm (well’s maximum production rate)

$$\text{Maximum Chlorine Dose} = (125,000 \text{ ppm} \times 17 \text{ gal/day}) \div (424 \text{ gpm} \times 1,440 \text{ min/day}) = 3.48 \text{ mg/L}$$

- Well 5 – 650 gpm (well’s average production flow rate)

$$\text{Maximum Chlorine Dose} = (125,000 \text{ ppm} \times 17 \text{ gal/day}) \div (650 \text{ gpm} \times 1,440 \text{ min/day}) = 2.27 \text{ mg/L}$$

- Well 5 – 699 gpm (pump maximum operating capacity)

$$\text{Maximum Chlorine Dose} = (125,000 \text{ ppm} \times 17 \text{ gal/day}) \div (699 \text{ gpm} \times 1,440 \text{ min/day}) = 2.11 \text{ mg/L}$$

Direct Additives

As shown in Table 4, the sodium hypochlorite solution will be utilized by the water system is an NSF/ANSI Stand 60 compliant product. The NSF/ANSI Standard 60 certification information for the sodium hypochlorite solution is provided in [Appendix N](#).

Table 4: Chemical Additives

Chemical	Manufacturer	Purpose	NSF/ANSI Standard 60 Certified?
12.5 % Sodium Hypochlorite Solution	Hasa, Inc.	Disinfection	Yes

2.2.2. Treated Water from Liberty Utilities Interconnection

This Interconnection receives system water from the Liberty Utilities – Compton/Willowbrook System. The Liberty Utilities-Compton/Willowbrook System has two active wells, Well 12C and Well 19C and two active connections (CB-9 and CB-50) with the Metropolitan Water District of Southern California (MWDSC). Well 12C can receive either chlorination or chloramination treatment. Well 19C can also receive either chlorination or chloramination treatment. In addition, Well 19C is equipped with the blended phosphate and fluoride addition facilities for manganese sequestration and

fluoridation treatment, respectively. Water from CB-9 and CB-50 is fluoridated and chloraminated.

The main source of supply for the interconnection will be coming from Liberty Utilities' Well 12C, located approximately 0.5 mile east from the interconnection. Well 12C was constructed in 2015 and became operational in July 2019. It was subsequently rehabilitated in July 2020 due to odor issue. The well was originally designed to produce 2,500 gpm. After rehabilitation, the production rate has reduced to a maximum of 1,000 gpm. The second closest source is CB-50, which is located approximately 0.8 mile north of Well 12C. CB-50 is capable of delivering up to 4,500 gpm of water.

Liberty Utilities - Compton/Willowbrook system is a groundwater only system most of the time. Chlorination treatment will be provided for both Well 12C and Well 19C under normal operation conditions. However, when the available groundwater source(s) is/ are not adequate to meet the water demand, Liberty Utilities has indicated to the Division recently that it would convert the system to a surface water only system, with chloraminated MWDSC water as the sole source. Currently, the Sativa Water System is able to meet the water demand with running Well 5 alone. However, since Well 5 alone is not sufficient to meet the maximum day demand, the use of Liberty Utilities Interconnection is highly anticipated.

The LA County PW must notify the public served by the Sativa Water System, including the dialyses centers, if any, the possibility of receiving chloraminated water. In addition, the LA County PW must have a notification plan in place to inform the public as soon as possible after learning from Liberty Utilities of the pending conversion to chloraminated water or the presence of chloramines in the water. The LA County PW must answer questions that the general public and dialyses centers may have. The LA County PW must ensure that they are informed in a timely manner by Liberty Utilities of the switching of disinfectant residual from chlorine to chloramines. The LA County PW must provide the Division with a copy of the notification. The LA County PW must also develop a plan to address the potential water quality issues during the transition period and during the time the system is served with chloraminated water.

2.2.3. Emergency Interconnection

Water from the City of Compton Interconnection receives chlorination treatment.

2.3. STORAGE FACILITY

The Sativa Water System does not have other storage facilities other than the three active 10,000 gallons-capacity hydropneumatic tanks installed at the well sites. Well 3 site has two hydropneumatic tanks operated simultaneously. Well 5 site has one hydropneumatic tank. The hydropneumatic tank at Well 2 site is offline. It has been disconnected from the distribution system when Well 2 was changed to inactive status.

The three hydropneumatic tanks are identical. The tanks are baffled. The maximum allowable working pressure is 75 psi. The outside diameter of the tank is 88 inches with 3/8-inch shell thickness. The Tank Data Sheet is appended in [Appendix O](#).

Insulators are provided between concrete tank supports and tank surfaces to prevent corrosion due to stray currents. All tanks are equipped with 32-inch diameter steel manhole hatches for cleaning and maintenance. The pressure relief valves release excess air from the tanks. Sight tubes are provided for the tanks. A Mercoid switch at each site maintains the tank pressure between 52 and 65 psi.

The hydropneumatic tanks are 68 years old. They were constructed in 1952. Because the tanks are old, a thorough structural and coating inspection should be done by a specialist in steel tank structure and coating at least once every five years. The tanks were last inspected and cleaned in May 2011. The tanks at the Well 3 site were last coated in July 2011. **The tanks are due for professional inspection.**

Hydropneumatic tanks do not provide much of the storage capacity and cannot be counted on for firefighting. The *Recommended Standard for Water Works* (Ten States Standards, 2012) states “*Hydropneumatic (pressure) tanks, when provided as the only water storage are acceptable only in very small water systems. Systems serving more than 150 living units should have ground or elevated storage... Hydropneumatic tank storage is not to be permitted for fire protection purposes.*” The Sativa Water System is currently serving 1,631 service connections.

The hydropneumatic tanks are pressure maintenance facilities. **Facilities without backup storage may lose system pressure in the event of power outage.** The Well 5 site has a portable generator. In the event of power outage, only Well 5 may continue to operate. Well 3 is not equipped with back-up power.

2.4. DISTRIBUTION SYSTEM

2.4.1. Pressure Zones

The Sativa Water System has a one pressure zone distribution system. According to the LA County PW, pressures in the distribution system range from 52 to 65 psi.

2.4.2. Booster Pump Station

The Sativa Water System does not have any booster pump station. The water system utilizes three operational hydropneumatic tanks to maintain pressure in the distribution system.

2.4.3. Transmission and Distribution Mains

The wells are connected to the distribution system through the hydropneumatic tanks. The water system does not have any transmission mains. There are no gravity lines in

the distribution system. The distribution system consists of approximately 8.5 miles of asbestos cement, cast iron, steel, polyvinylchloride (PVC) and ductile iron (DI) pipes with sizes range from 4-inch to 8-inch diameters. Table 5 summarizes the pipeline Inventory.

Table 5: Distribution System Pipeline Inventory

Material	Amount (%)	Size	Class/Gauge	Comments
Asbestos Cement	75	4 - 6"	Class 150	Good
Steel	3.6	4 - 6"	12 Gauge	Good
Cast Iron	10	4 - 6 "	Unknown	Good
PVC	7	4 - 6"	Class 900	Good
PVC	2.5	8"	PC 165	New
Ductile Iron	1.5	8"	Class 350	New
CML & CMC Steel	0.4	8"	Schedule 20	New

Note: The 12-inch pipeline owned by Liberty Utilities is not included in the table.

Liberty Utilities 12-Inch Pipeline along N. Paulsen Avenue (Utilized by the Sativa Water System per the Interconnection Agreement)

In July 2019, Liberty Utilities constructed 620 linear feet of 12-inch water main line along N. Paulsen Avenue. It connects to the 12-inch water main line along W. 137th Street and, subsequently, to the 8-inch Liberty Utilities Interconnection. As part of the Agreement, Liberty Utilities allows the Sativa Water System to use this pipeline solely to transmit water from the interconnection to the Sativa Water System’s distribution system. Except for fire hydrants, no service connections are connected to the 12-inch pipeline. The configuration of the 12-inch pipeline is shown in [Appendix P](#). It is unclear for how long Liberty Utilities will allow the Sativa Water System to use this pipeline. Ductile iron (DI) Class 350 pipes were used in the construction. The DI Class 350 pipe has a pressure rating of more than 200 psi.

The Sativa Water System connects to the 12-inch pipeline through a 12-inch tee at the corner of W. 137th Street and three 12-inch by 8-inch tees located at the corners of Hatchway Street, Piru Street and Stockwell Street. The sizes of the pipeline along Hatchway Street, Piru Street, and Stockwell Street are 6-inch, 6-inch, and 4-inch, respectively. Along Paulsen Avenue from Hatchway Street to Stockwell Street, the Sativa Water System has an existing 4-inch pipeline.

Paulsen Avenue Waterline

In July 2019, the LA County PW constructed 650 linear feet of 8-inch pipeline along Paulsen Avenue from Hatchway Street to 139th Street. It connects to the 12-inch tee at the corner of W. 137th Street and to the 8-inch tee at the corner of Hatchway Street. The existing distribution pipelines along Bliss Street, Oris Street, 138th Street and 139th Street connect to this pipeline. Bliss Street, Oris Street, 138th Street and 139th Street have 4-inch pipes. The LA County PW utilized DI Class 350 pipes with pressure rating of 200 psi. The configuration of the 8-inch pipeline is shown in [Appendix Q](#).

Lucien Waterline

In July 2020, the LA County PW constructed 1,181 linear feet of 8-inch pipeline along Lucien Street from South Oleander Avenue to South Largo Avenue. The new pipeline aims to bring enough pressures to the east side of the service area and address the fire flow deficiencies in the surrounding area. In crossing the railroads along South Willowbrook Avenue, 170 linear feet of Cement Mortar Lined and Cement Mortar Coated (CML & CMC) welded steel pipe was used and installed inside a 16-inch steel casing. The rest of the 1,011 linear feet pipeline is made up of C900 PVC pipe, PC 165, DR 25. The configuration of the 8-inch pipeline is shown in [Appendix R](#).

Water Main Separation Requirements

The new pipelines were constructed in accordance with the California Waterworks Standards. LA County PW maintained a minimum 10 feet horizontal separation and one foot vertically above non-potable pipelines. When crossing non-potable pipelines, the new water mains were constructed with eight-foot no joint from either side of the crossings.

Water Lines Hydrostatic Testing and Disinfection

The new pipelines were tested under hydrostatic pressure in accordance with American Water Works Association (AWWA) Standard C600 Section 5.2 using potable water. The test pressure was 150 psi measured at the low point of the pipeline for a duration of two hours. All detectable leaks were fixed, and pipeline re-tested until the pipe was found satisfactory and met the allowable leakage rate.

After pressure testing, the entire pipelines, including all valves, fittings, hydrants, and other accessories were disinfected in accordance with AWWA C651. The chlorination method was to give an initial chlorine dose of 40 to 50 mg/L and a residual of not less than 5 mg/L after 24 hours. Bacteriological samples were collected after disinfection and samples were analyzed by a certified laboratory. The pipelines were placed in service after results of analysis indicated no presence of bacteriological contamination.

2.4.4. Pipeline Improvements/Fire Flow Requirements

The distribution system contains undersized pipes and not able to meet the 1,250 gpm fire flow requirements for single family houses. In March 2019, the LA County PW contracted Civiltec Engineering Inc. (Civiltec) to run scenarios for four different potential interconnections at each side of the Sativa Water System service area. Civiltec modeled the available fire flow at each hydrant under MDD conditions for each of the individual scenarios. For areas that did not meet the fire flow requirement of 1,250 gpm, pipe improvements were iterated until the fire flow requirement was met at each fire hydrant throughout the system. [Appendix S](#) shows the interconnect scenario at west side of the service area (Liberty Utilities – Compton/Willowbrook side). The highlighted

pipes are recommended to be upgraded to 8-inch pipe, approximately 11,500 linear feet, to meet the fire flow at each hydrant. **However, the modeled scenario is not the same as the current interconnection set-up for the Liberty Utilities Interconnection.**

The LA County PW had made some pipeline improvements in the Sativa Water System's distribution system and reported significant improvements in system pressure. **The LA County PW must continue to evaluate if the current sources, storage and pipeline capacities are adequate to meet the fire flow requirements and the minimum system pressure requirement of 20 psi at the same time; if not, more improvements should be planned.**

2.4.5. Dead Ends

The distribution system has ten dead-ends. Six out of the ten dead ends are equipped with hydrants and the other four are equipped with blow-off valves. The operator flushes the dead-end blow-off valves and hydrants once a month. The LA County PW plans to eliminate these dead ends in the future.

2.4.6. Service Connections

The Sativa Water System service connections are categorized as residential connections, except for one commercial connection. The commercial connection is a mini-grocery store. There are no industrial, institutional, and agricultural connections in the service area. According to 2019 ARDWP, 1,550 service connections are made of copper, 87 are made of galvanized steel and the rest are made of PVC. There is no lead service line or fittings. **The service connections are not metered and some of the shutoff valves are located within the property lines of the customers.**

The Division encourages all public water systems to take steps now to conserve the water. All public water systems should keep records of water system production and delivery activities through metering at the source and customer connections. All public water supply systems that do not have customer meters and effective metered rates are encouraged to take the steps needed to obtain the necessary funds to install meters and adopt metered rates. The LA County PW has included the metering of all service connections in their future improvements for the Sativa Water System.

2.5. WATER QUALITY ASSESSMENT

2.5.1. Raw Water (Active Sources)

Wells 3 and 5 pump water from the confined aquifers in the Central Basin.

2.5.1.1. Bacteriological

Wells 3 and 5 are sampled monthly for bacteriological analysis. The Clinical Laboratory of San Bernardino, Inc. analyzes the samples using Colisure Quanti-Tray 200 Method (MPN method). The analytical results are submitted to the Division by the 10th day of the month following the month the wells are sampled. The Division has reviewed the monitoring data available on file. Table 6 summarizes the bacteriological quality of the groundwater wells.

**Table 6. Bacteriological Quality Source Monitoring Summary
 (August 2012 – November 2020)**

Year	Record of Total Coliform-Positive	<i>E. Coli</i> Positive
2012 - 2014	None	None
2015	Well 3 ¹ : September 15, October 21 & 23	None
2016	Well 3 ¹ : September 20 & 22	None
2017	None	None
2018	Well 3 ¹ : October 9	None
2019	Well 5 ² : January 15	None
2020	None ³	None

- ¹ The well is 75 years old and no annular seal. It has history of sand pumping.
- ² The well is 27 years old. The well was removed from service in August 2019 for rehabilitation and was placed back in service in July 2020.
- ³ Data is from January through November 2020.

The total coliform-positive samples recorded in 2015, 2016, and 2018 from Well 3 and in 2019 from Well 5 were not as a result of triggered source monitoring under the federal Groundwater Rule. The wells are sampled monthly for total coliform and *E. Coli* analyses. The water system pumped the well with total coliform-positive result to waste and re-sampled the well. So far, the results of the repeat samples were total coliform-negatives.

2.5.1.2. Title 22 Constituents / Vulnerability Assessment

The Division has developed a monitoring matrix for routine monitoring of Title 22 constituents based on the outcomes of vulnerability assessment. The monitoring matrix is valid for three years. The vulnerability assessment and monitoring frequency guidelines for Sativa Water System’s wells for the first period of the fourth compliance cycle (January 1, 2020 through December 31, 2022) was sent to the LA County PW on December 31, 2019. A copy of the monitoring matrix is enclosed in [Appendix T](#). All Title 22 monitoring results must be submitted electronically via electronic data transfer (EDT) process to the Division. Detailed summary of water quality monitoring data for Wells 3 and 5 from the Division’s Water Quality Database between January 1, 1994 and November 30, 2020 is enclosed in [Appendix U](#). Table 7 summarizes the monitoring schedules.

Table 7: Summary of Monitoring Schedules

Constituents	Well 3 (1910147-002)			Well 5 (1910147-005)		
	Monitoring Frequency	Date of Monitoring		Monitoring Frequency	Date of Monitoring	
		Last	Next by		Last	Next by
General Mineral	Once every 3 years	10/2019	10/2022	Once every 3 years	7/2020	7/2023
Secondary Standards ¹	Once every 3 years	10/2019	10/2022	Once every 3 years	7/2020	7/2023
Manganese	Once every 3 years	10/2020	10/2023	Quarterly	11/2020	1 st quarter 2021
Inorganic ²	Once every 3 years	10/2019	10/2022	Once every 3 years	7/2020	7/2023
Asbestos	Waived ³	10/2016	TBD ³	Waived ³	6/2020	TBD ³
Nitrate (as N) ⁴	Annually	7/2020	7/2021	Annually	7/2020	7/2021
Nitrite ⁴	Once every 3 years	10/2019	10/2022	Once every 3 years	7/2020	7/2023
Perchlorate ⁵	Annually	7/2020	7/2021	Annually	7/2020	7/2021
Radionuclides ⁶	6 years for GA & U. 9 years for Rad-226 &-228	1/2015	1/2021 (GA & U). 1/2024 (Rad-226 &-228)	6 years for GA & U 9 years for Rad-226 &-228	6/2020	6/2026 (GA & U). 6/2029 (Rad-226 &-228)
VOC ⁷	Annually	7/2020	7/2021	Annually	7/2020	7/2021
PCE & TCE	Quarterly	10/2020	1 st quarter 2021	Quarterly	10/2020	1 st quarter 2021
SOC ⁸	2 quarters in one year every 3 years for DEHP ⁹ ; Others are waived.	DEHP ⁹ - 7/2018 & 10/2018. Others - 7/2011	DEHP ⁹ - 7/2021 & 10/2021. Others - waived	2 quarters in one year every 3 years for DEHP. Others are waived.	DEHP ⁹ - 4/2018, 7/2018 & 6/2020. Others - 6/2020	DEHP ⁹ - 4/2021 & 7/2021. Others - waived
1,2,3-TCP	2 quarters in one year every 3 years	2/2019 4/2019 7/2019	2022	2 quarters in one year every 3 years	1/2019 4/2019 7/2019 6/2020	2022

¹ Except manganese for Well 5
² Except asbestos, nitrate, nitrite, and perchlorate.
³ Monitoring is waived during the first period (2020-2022) of the fourth compliance cycle (2020-2028).
⁴ Increase to quarterly monitoring if $\geq \frac{1}{2}$ MCL.
⁵ Increase to quarterly monitoring if \geq DLR.
⁶ GA – Gross Alpha; U – Uranium; Rad-226 – Radium 226; Rad-228 – Radium 228
⁷ Except tetrachloroethylene (PCE) and trichloroethylene (TCE).
⁸ Except 1,2,3-Trichloropropane (1,2,3-TCP)
⁹ DEHP - Di-(2-ethylhexyl) phthalate

General Mineral and Secondary Standards

Wells 3 and 5 produce hard water with total hardness levels ranged from 230 mg/L to 291 mg/L and 210 mg/L to 261 mg/L, respectively. Manganese concentration in the water produced by Well 5 fluctuated from non-detect to 0.130 mg/l. The secondary MCL for manganese is 0.05 mg/L. The first Well 5 sample with manganese concentration exceeding the MCL was collected in August 2000. The revised California

Secondary Drinking Water Standards became effective on September 27, 2006. The revised regulations specify that the compliance with the manganese MCL is based on the running annual average (RAA). Prior to the revision, the compliance determination procedures were not specified in the regulations. Although the RAA for manganese in Well 5 had exceeded the MCL for in several quarters from 2000 through 2005, the RAAs have been right at or below the MCL after the adoption of the revised Secondary Drinking Standards in 2006. The RAAs from 2006 through the third quarter of 2018 were below the MCL. The RAA for the fourth quarter of 2018 was 0.0506 mg/L. In 2019, the first and second quarters RAAs were below the MCL.

In August 2019, Well 5 was removed from service for rehabilitation. The well was placed back in service in July 2020. Manganese concentration from the sample collected in July 2020 was 0.039 mg/L. A sample collected in October 2020 from the well had manganese concentration of 0.34 mg/L, exceeding the MCL. The LA County PW collected another sample on November 30, 2020, and the result was 0.0023 mg/L.

The results of Spinner Log and Mass Balance Analyses and Testing conducted in November 2019 reveal that the water from the aquifers tapped by the rehabilitated Well 5 contains elevated levels of manganese, and the chance of manganese concentration of Well 5 water exceeding the MCL remains high. The LA County PW has indicated the intention to work with WRD to provide manganese treatment for Well 5.

Inorganic Chemicals

Arsenic, barium, and fluoride have been detected in Wells 3 and 5, but the concentrations are below their respective MCLs. Aluminum and total chromium have also been detected in Well 3, but the concentrations are below their respective MCLs.

Wells 3 and 5 are not considered vulnerable to asbestos contamination, based on available data published by USGS. All asbestos samples collected from the wells have the results of non-detects. Wells 3 and 5 were last sampled for asbestos in October 2016 and June 2020, respectively.

The initial monitoring requirements for perchlorate had been completed for both wells. Analytical results of the initial and subsequent monitoring were all non-detects. The wells were last sampled for perchlorate in July 2020, with results of non-detects. Therefore, perchlorate monitoring frequency is annually for the wells.

Nitrate/Nitrite

Nitrate has been detected in the water produced by Well 3, but the concentrations have remained below half of the Nitrate MCL of 10 mg/L, as nitrogen. The last nitrate sample collected from Well 3 was on July 13, 2020, with the result of 0.45 mg/L, as N. Nitrate has not been detected in Well 5. The last nitrate sample collected from Well 5 was on July 13, 2020, after well rehabilitation. The result was non-detect. Therefore, nitrate monitoring frequency is annually for both wells. Nitrite has not been detected in both

wells. Therefore, nitrite monitoring frequency for Wells 3 and 5 is once every three years.

Radionuclides

The Initial monitoring for radionuclides had been completed for both wells. Gross alpha and uranium were detected in the wells, but the concentrations were below their respective MCLs. Radium-226 (Rad-226) and radium-228 (Rad-228) have not been detected. Monitoring frequency for a radionuclide with concentration less than the DLR is every nine years. Monitoring frequencies for a radionuclide with concentration above the DLR but equal to or below half the MCL is every six years and concentration above half the MCL to MCL is every three years. The gross alpha and uranium concentrations for Well 3 and 5 are above the DLR, but below half their respective MCLs. Therefore, the LA County PW must monitor both wells for gross alpha and uranium once every six years and once every nine years for Rad-226 and Rad-228. After completion of the well rehabilitation, the LA County PW sampled Well 5 for radionuclides on June 23, 2020. Gross alpha and uranium concentrations in the well were still lower than half their respective MCLs. Rad-226 and Rad-228 concentrations in the well remained non-detects.

Volatile Organic Chemicals (VOC)

Except for tetrachloroethylene (PCE), no other regulated VOCs has been detected in Wells 3 and 5. The wells are sampled for PCE quarterly. Thus far, the sampling results for both wells remained below the MCL. Well 3 was last sampled for VOCs on July 23, 2020, with results of non-detects except for PCE. PCE concentration in the July 2020 sample was 0.00083 mg/L. The well was last sampled for PCE and TCE on October 2, 2020 with concentrations of 0.0008 mg/L and non-detect, respectively. The LA County PW also sampled Well 5 for VOCs on July 23, 2020, after rehabilitation. Analytical results indicate all VOCs, including PCE, were non-detects. The well was last sampled for PCE and TCE on October 2, 2020. The results were again non-detects. Because the wells are located in the Central Basin with known PCE and TCE plume, LA County PW must continue to sample the wells quarterly for these constituents.

Synthetic Organic Chemical

According to 2020 – 2022 Vulnerability Assessment and Monitoring Frequency Guidelines, the wells are not considered vulnerable to contamination by SOCs other than di (2-ethylhexyl) phthalate (DEHP) and 1,2,3-TCP. The Division has waived the monitoring requirements for all other SOCs for the 2020-2022 compliance monitoring period. The monitoring frequency for DEHP is two quarterly samples in one year within the current compliance monitoring period. The wells were last sampled for DEHP in 2018. The results were all non-detects. No DEHP samples have been collected from both wells for the current monitoring period (January 1, 2020 – December 31, 2022).

In December 2017, the MCL for 1,2,3-TCP was established. The initial 1,2,3-TCP monitoring for 1,2,3-TCP were completed for both wells in 2018. The results were all non-detects. Subsequent monitoring collected from Wells 3 and 5 were also non-detects. Therefore, 1,2,3-TCP monitoring frequency is two quarterly samples in one year within the current compliance monitoring period for both wells.

Unregulated Chemicals

Monitoring requirements for unregulated chemicals have been completed for the wells. The monitoring consisted of two consecutive samples five to seven months apart in a single year were successfully completed in October 2011 for boron, hexavalent chromium, vanadium, and dichlorodifluoromethane (freon 12).

In November 2010, the notification level (NL) for 1,4-dioxane was established at 0.001 mg/L. The wells have 1,4-dioxane concentrations above the NL. Quarterly samples are collected from the wells. The LA County PW continues to notify annually the governing body of the 1,4-dioxane NL exceedance.

2.5.2. Distribution System Water Quality Monitoring

2.5.2.1. Bacteriological

Total Coliform Rule (TCR)

The Division has on file an approved Bacteriological Sample Siting Plan (BSSP) dated June 2016. Pursuant to Section 64423, Table 44423-A, Title 22 of the CCR, the Sativa Water System is required to collect a minimum of two routine total coliform samples per week from the distribution system. The revised BSSP has identified four routine sampling sites, along with their respective downstream and upstream repeat sample locations. The sites are sampled every Tuesdays. Table 8 lists the locations of the routine and repeat sample sites.

Table 8: Routine and Repeat Sample Sites

Routine	Repeat Sample Sites	
	Upstream	Downstream
Site 1 - 730 139 th Street	719 139 th Street	738 139 th Street
Site 2 - 2016 Lucien Street	2036 Lucien Street	2012 Lucien Street
Site 3 - 13122 Largo Street	13126 Largo Avenue	13103 Largo Avenue
Site 4 - 2315 Bliss Street	2311 Bliss Street	2325 Bliss Street

Per Section 64426.1 of the CCR, a public water system collecting less than 40 samples per month is in violation of total coliform MCL when more than one sample collected during any month is total coliform-positive; or any repeat samples is fecal coliform-positive or *E. Coli*-positive; or any repeat sample following a fecal coliform-positive or *E. Coli*-positive routine sample is total coliform-positive. The Sativa Water System has been in compliance with the Total Coliform MCL since 2012. In 2017, a total of four

total coliform-positive and *E. Coli*-negative samples were recorded. These samples were collected in the months of February, July, August, and September. All repeat samples were total coliform-negatives and *E. Coli*-negatives. The rest of the samples collected from 2012 through November 2020 were absent of coliform bacteria.

Groundwater Rule (GWR) Amendment to Coliform Sample Siting Plan

The monitoring requirements under GWR has been incorporated into the revised approved BSSP dated June 2016. The Sativa Water System is required to conduct triggered source water monitoring within 24 hours upon being notified by their laboratory that a sample collected for the TCR is total coliform positive. All wells that are in operation during the time the total coliform positive TCR sample was collected will need to be sampled. The Sativa Water System did collect samples from Wells 3 and 5, when a routine sample tested total coliform-positives in February, July, August, and September 2017. The results were total coliform-negatives.

The water system’s GWR Amendment needs to be updated to reflect the Liberty Utilities Interconnection as an additional source.

Federal Revised TCR

On April 1, 2016, the Federal Revised TCR (federal rTCR) became effective. The revisions include the new Coliform Treatment Technique requirement replacing the Total Coliform MCL, and a new *E. Coli* MCL regulatory limit. *E. Coli* MCL is exceeded when (1) *E. Coli*-positive repeat sample following TC-positive routine sample; (2) TC-positive repeat sample following an *E. Coli* positive routine sample; (3) failure to collect all required repeat samples following a *E. Coli*-positive routine sample; (4) failure to test for *E. Coli* when any repeat sample is TC-positive. The State Water Board is implementing the federal rTCR. The Sativa Water System has neither exceeded the total coliform MCL nor *E. Coli* MCL.

2.5.2.2. Lead and Copper Tap Sampling

The Sativa Water System is on reduced triennial monitoring for lead and copper. Data from the first and second rounds of standard 6-month monitoring in 1993 through the last annual monitoring round in 2009 have 90th percentile ranks below the action levels (ALs) for lead and copper. The first triennial monitoring was conducted in 2012. Table 9 summarizes the triennial monitoring from 2012 through 2018.

Table 9: Distribution System Lead and Copper Monitoring (2012, 2015 and 2018)

Category	Date Conducted	Number of Samples Required	Number of Samples Collected	90 th Percentile Lead (mg/L)	90 th Percentile Copper (mg/L)
1 st Triennial	June 2012	20	24	<0.005	0.160
2 nd Triennial	August 2015	20	23	<0.005	0.260
3 rd Triennial	September 2018	20	23	<0.005	0.410

Lead Action Level = 0.015 mg/L; Copper Action Level = 1.30 mg/L

The 90th percentile lead and copper levels did not exceed the ALs in 2012, 2015 and 2018. The next round of sampling event is due in 2021. The sampling event should take place during the warm months of June, July, August, or September.

If the Sativa Water System must utilize the Liberty Utilities Interconnection while Liberty Utilities relies 100 percent on treated MWDSC water, it will be a major change in water quality. Special water quality parameters sampling and lead and copper tap sampling must be conducted to ensure the switch does not cause adverse impact on lead and copper leaching in the area receiving chloraminated water from the interconnection.

2.5.2.3. Disinfectant Residuals and Disinfection By-Products (DBP)

Chlorine Residuals

Pursuant to Section 64534.4, Title 22 of the CCR, the Sativa Water System is required to measure the residual disinfectant levels at the same points in the distribution system and at the same time as total coliform are sampled. Table 10 summarizes the running annual average (RAA) chlorine residual levels from the January 2012 through November 2020. The RAAs are below the MRDL.

Table 10: Chlorine Residual Compliance (January 2012 – November 2020)

Year	Number of Samples Collected	Monthly Averages, Range (mg/L)	Quarterly RAAs, Range (mg/L)	Compliant w/ MRDL?
2012	208	1.22 – 1.34	1.25 – 1.27	Yes
2013	208	1.18 – 1.44	1.29 – 1.38	Yes
2014	212	1.12 – 1.27	1.20 – 1.33	Yes
2015	208	0.91 – 1.14	1.05 – 1.11	Yes
2016	204	0.97 – 1.19	1.09 – 1.12	Yes
2017	223	0.97 – 1.11	1.03 – 1.08	Yes
2018	208	0.83 – 1.45	1.05 – 1.07	Yes
2019	212	0.78 – 1.98	1.07 – 1.21	Yes
2020 ¹	188	0.93 – 1.37	1.22 – 1.27	Yes

¹ Samples collected from January through November 2020.

Stage 1 DBPR Disinfection Byproducts Monitoring

The water system has completed the Stage 1 Disinfectant and Disinfection Byproduct Rule (DBPR) monitoring in 2013 and moved onto compliance monitoring for Stage 2 DBPR beginning 2014. Under Stage 1 DBPR, and as a groundwater system serving fewer than 10,000 persons, the Sativa Water System is required to collect one pair of total trihalomethanes (TTHMs) and haloacetic acids (HAA5) samples once per year per treatment plant during the month of warmest water temperature and at a location representing maximum residence time. The Stage 1 MCLs for TTHMs and HAA5 are 80 µg/L and 60 µg/L, respectively and the compliance is based on system-wide

average. The water system collected TTHM and HAA5 samples from two approved sites. Neither MCL was exceeded during Stage 1 DBPR monitoring period.

Stage 2 DBPR Requirements

The Sativa Water System is classified as a Schedule 4 system under Stage 2 DBPR. The water system conducted the Initial Distribution System Evaluation (IDSE) standard monitoring in 2008. TTHM and HAA5 samples were collected from two monitoring locations at a frequency of every 90 days. The IDSE monitoring requirement was completed on April 1, 2010. On June 22, 2010, SLACWD submitted the IDSE report to the Division. The report was subsequently revised on July 13, 15 and 21, 2010. The revised IDSE report along with the proposed Stage 2 Compliance Monitoring Plan (CMP) dated July 21, 2010 was submitted and approved by the Division on July 22, 2010. The water system has chosen the two sites utilized during the Stage 1 DBPR monitoring as the Stage 2 DBPR Compliance Monitoring Sites. In accordance with the approved IDSE report and Stage 2 CMP, the Sativa Water System is required to collect one pair of TTHMs and HAA5 once per year from the two approved sites beginning on July 7, 2014 and every year thereafter. Table 11 summarizes the results of monitoring.

Table 11: Stage 2 DBPR Compliance (2014 – 2020)

Sample Sites	PS Codes	Frequency	Monitoring Results, µg/L		Meets Standard?
			TTHM	HAA5	
Site1–2423 East Bliss Street	1910147-800	Yearly	ND - 15.6	ND - 6.0	Yes
Site2–2045 East 131 st Street	1910147-801	Yearly	1.4 - 15.4	ND - 5.3	Yes

2.5.2.4. General Physical Parameters

Pursuant to Section 64449.5 (b) (2), *Distribution System Physical Water Quality*, Title 22 of the CCR, community water systems with greater than 1,000 service connections must collect one sample for every four bacteriological samples required per month. Because four routine total coliform samples per week are collected from the Sativa Water System’s distribution system, one sample per week for physical water quality analyses (color, odor, turbidity) must be collected. Starting 2012, one general physical quality sample per week rotating among the four routine sample sites, were consistently collected until April 2018.

In April 2018, a “brown water incident” occurred after flushing activities were conducted by the SLACWD’s operators. Residents complained about receiving dirty water from their taps. On April 19, 2018, the Division conducted a field inspection and interviewed some residents. Majority of the residents indicated that brown and yellowish water had been an issue since January 2018. The Division collected samples from the four bacteriological sampling sites and a few houses to check chlorine residuals. The chlorine residuals were adequate, with results ranging from 0.72 mg/L to 0.91 mg/L.

On April 23, 2018, another round of sampling was conducted by the Division, along with representatives from the LA County Department of Public Health (DPH). Samples were

collected strategically from various houses and analyzed for manganese, iron, color, turbidity, chlorine residuals and total coliforms. Table 12 summarizes the results.

Table 12: Bacteriological, Free Chlorine, Iron and Manganese, and General Physical Sampling Event of April 23, 2018

Constituents	Sample Results, Ranges	
	Division	LA County DPH
Total Coliforms	Absent	Absent
Free Chlorine Residual, mg/L	0.23 – 0.88	Not analyzed
Iron, µg/L	13.1 - 100	11 – 59
Manganese, µg/L	27.1 - 185 ^{1,2}	28 – 75 ¹
Color, Unit	5 - 20 ³	Not analyzed
Turbidity, NTU	0.37 – 2.21	Not analyzed

¹ Above the MCL of 50 µg/L for manganese.

² Four out of the eight sites are above the MCL.

³ Above the MCL of 15 Units for color. Two out of the eight sites are above the MCL.

The Division, therefore, instructed SLACWD to sample the four bacteriological sample sites for general physical water quality parameters weekly beginning in May 2018 and cease the flushing activity until appropriate flushing procedures have been developed. The LA County PW, the new owner of the water system, continued to collect four general physical samples weekly. In July 2019, the LA County PW resumed with the flushing activities using the NO-DES methodology. Also, dead-end flushing has been regularly performed. Table 13 summarizes the monitoring results from May 2018 through November 2020.

Table 13: General Physical Compliance from May 2018 through November 2020

Year	Month	Total Samples	Color		Odor Range, Unit	Turbidity Range, NTU	
			Range, Unit	No. ≥3.0 Units			No. ≥MCL
2018	May	20	5.0 – 10.0	20	0	1 - 2	0.4 – 1.2
	June	16	5.0 – 10.0	16	0	1 - 2	<0.1 – 0.6
	July	20	<3.0 – 20.0 ¹	19	1	1 - 2	0.2 – 0.6
	August	16	<3.0 – 10.0	9	0	1 - 2	<0.1 – 0.6
	September	16	<3.0 – 7.5	4	0	1	<0.1 – 0.3
	October	20	<3.0 – 5.0	3	0	1	<0.1 – 0.4
	November	16	<3.0 – 10.0	10	0	1 - 2	<0.1 – 0.5
	December	16	<3.0 – 15.0	3	1	1	<0.1 – 3.0
2019	January	20	<3.0	0	0	1	<0.1 – 0.3
	February	16	<3.0 – 15.0	7	1	1 - 2	<0.1 – 1.9
	March	16	<3.0 – 10.0	8	0	1 - 2	<0.1 – 0.8
	April	20	<3.0 – 20.0 ¹	8	1	1 - 2	<0.1 – 1.7
	May	16	<3.0 – 25.0 ¹	4	1	1	<0.1 – 1.6
	June	16	<3.0 - 10	4	0	1 - 2	<0.1 – 1.1
	July	20	<3.0 – 10.0	6	0	1	<0.1 – 1.2
	August	16	<3.0 – 30.0 ¹	7	1	1	<0.1 – 5.2 ²
	September	16	<3.0 – 5.0	1	0	1 - 2	<0.1 – 0.3
	October	20	<3.0 – 5.0	3	0	1 - 2	<0.1 – 0.3
	November	16	<3.0 – 5.0	2	0	1 - 2	<0.1 – 0.4
	December	20	<3.0	0	0	1 - 2	<0.1 – 0.4

Year	Month	Total Samples	Color		Odor Range, Unit	Turbidity Range, NTU	
			Range, Unit	No. ≥3.0 Units			No. ≥MCL
2020	January	16	<3.0 – 5.0	1	0	1 - 2	<0.1 – 4.3
	February	16	<3.0	0	0	1 - 2	<0.1 – 0.4
	March	20	<3.0	0	0	1	<0.1 – 0.4
	April	16	<3.0	0	0	1	<0.1 – 0.6
	May	16	<3.0 – 5.0	1	0	1 - 2	<0.1 – 0.3
	June	20	<3.0	0	0	1	<0.1 – 0.5
	July	16	<3.0	0	0	1	<0.1 – 0.3
	August	16	<3.0 - 25 ¹	8	1	1	<0.1 – 3.2
	September	20	<3.0 - 10	11	0	1	<0.1 – 1.0
	October	16	<3.0 – 7.5	9	0	1 - 2	0.1 – 0.7
	November	16	<3.0 – 7.5	10	0	1 - 2	<0.1 – 1.3

¹ Above color MCL of 15 Units.

² Above turbidity MCL of 5 NTU.

The above table shows discoloration of water was system-wide between May and July 2018. Beginning in August 2018, discoloration of water gradually decreased. In July 2019, the NO-DES flushing method was utilized by the LA County PW to flush the distribution system. The general physical quality of water had improved until August 2020.

In August 2020, the number of samples with elevated levels for color increased. Color was detected in 8 out of 16 samples, with levels ranged from 5 to 25 units. One of the samples exceeded the secondary MCL for color. During this month, the newly rehabilitated Well 5 and the newly constructed 8-inch pipeline along Lucien Street were placed in service. The sample with elevated color exceeding the secondary MCL was from Sample Site 13122 Largo Avenue, which is located downstream of the new 8-inch pipeline. In addition, all samples collected from Sample Site 2016 Lucien Street were detected for color. This site is a block away from Well 5. The increase of the flow and the changes in flow direction may have disturbed the legacy deposits in the pipeline. In November 2020, color was detected in 9 out of 16 samples, but none has exceeded the secondary MCL. The highest color concentration was 10 units. The LA County PW plans to conduct other rounds of NO-DES flushing by December 2020 and March 2021. In addition, the LA County PW has planned to replace the old and undersized pipes. Due to the cost, however, this project may take longer for the LA County PW to implement.

2.5.2.5. Asbestos Monitoring

About 80 percent of the water system's distribution pipelines are asbestos cement pipes. The LA County PW is required to collect one sample at a tap served by asbestos cement pipe, under conditions where asbestos contamination is most likely to occur (i.e. low aggressive index), during the first compliance period of the nine-year compliance cycle from the distribution system and analyze the sample for asbestos. In the 2011 – 2019 compliance cycle, asbestos sample was collected in June 2011. The result was

non-detect. The next round of asbestos monitoring must be completed by December 31, 2022.

2.5.3. Consumer Confidence Report

Section 64480(a), Chapter 15, Title 22 of the CCR requires that water suppliers to distribute an annual report on the water quality of the water served to each of their customers by July 1st of every year. The Consumer Confidence Report has been distributed via mail to the water system’s consumers by July 1st every year. The reports for 2018 and 2019 are also posted in the LA County PW – Sativa website. The reports have been submitted and uploaded to the Division via the Electronic Annual Reporting System since 2013.

2.6. OPERATION AND MAINTENANCE

2.6.1. Personnel and Operator Certification

Pursuant to Section 64413.3 of the Operator Certification Regulations, the Division classified the water system as a D2 system ([Appendix V](#)). The Chief Operator must possess a D2 or higher certification and the Shift Operator must possess a D1 or higher certification. For the disinfection facilities for which no *Giardia* or Virus reduction is required, the LA County PW is required to utilize either certified distribution operators or certified treatment operators that have been trained to operate these facilities. The LA County PW has sufficient number of certified operators with proper certifications.

2.6.2. SCADA

The LA County PW has installed a SCADA system for the Sativa Water System. It controls or monitors the operation of wells and associated chlorination facilities ([Appendix W](#)).

2.6.3. Facility Inspection and Maintenance Program

All well sites, including the office site, are properly secured with fences and locked gates to prevent unauthorized access. All sites are equipped with the burglar monitoring systems.

The operators check the well sites daily. The routine check includes the visual inspection of (1) well sites for any signs of vandalism; (2) wells for wellhead, sampling tap, flowmeters, pumping equipment and lubrication conditions; (3) chlorination facilities for chemical pump and injection point conditions, and chlorine supply tanks for solution levels, any signs of leaks or spills, and (4) hydropneumatic tanks conditions, among others. The well sites are provided with log sheets for the well, disinfection facility, and hydropneumatics tank. The operator that performs the inspection fills out the respective log sheets with the findings including the water meter reading, electric meter reading, chlorination feed rate reading, chlorine tank solution level and chlorine usage, on-line

analyzer reading, lubricator condition, unusual test results and any mechanical problems, among others.

The operator performs daily chlorine residual test with a Hack pocket colorimeter using the DPD method at downstream of the chlorine injection points to check if proper chlorine dose rate is applied.

Hydropneumatic Tanks

The water system has a hydropneumatic tank inspection and maintenance program. On a daily basis, the operators check and record (1) leaks around water piping, the tank, and fittings; (2) leaking air from the tank; (3) air-to-water ratio (water level in the tank) by visually checking the sight tube; (4) presence of sediments in the tank by visually checking the sight tube; and (5) control systems and alarms to ensure that they are operating properly and protected from moisture and corrosion.

On a weekly basis, the sanitary and structural condition of the basic tank components will be checked in more detail that includes (1) pressure fluctuation during a cycle (actual cut-in and cut-out pressures); (2) number of pump cycles per hour; (3) condition of paint on the exterior of the tanks and signs of corrosion; and (4) condition of tank supports to insure that the tanks are adequately secured to the floor.

The hydropneumatic tanks will be disinfected and sampled for bacteriological quality in accordance with AWWA procedures and standards, when placed back to service after repairs and routine maintenance.

2.6.4. Cross-Connection Control Program

SLACWD adopted a cross-connection control ordinance on January 1, 1987. The ordinance was approved by the Division on May 17, 1988. The ordinance explains in detail the purpose and type of protection required for different types of hazards, prevention device installation, and the testing and maintenance. The LA County PW has designated a certified cross-connection specialist for the Sativa Water System. The specialist obtained his certification from the University of Southern California (USC) in August 2019.

In October 2012, the Cross Connection and Water Pollution Control Program staff from the Los Angeles County Department of Public Health (LACDPH), Bureau of Environmental Protection conducted a cross-connection survey. The results of the survey indicated that 20 homes have active irrigation sprinklers systems with no backflow protection and 21 homes have pressure type vacuum breakers (PVB). The 20 homes were notified to correct and abate the backflow hazard. The 21 homes with PVBs were given the options to either convert their PVBs to a non-testable atmospheric type vacuum breaker or have their PVBs tested on annual basis. According to the former SLACWD, all the 41 homes have installed the non-testable devices.

The airgaps at the end of the pump-to-waste lines for Wells 3 and 5 are maintained properly.

2.6.5. Customer Complaint Program

The LA County PW took over the water system after the brown water incident in 2018. The staff are fully aware of the water system customers' concerns over the water quality issues. The staff have worked hard to respond to the customers' concerns in a timely manner. Complaints are received at the administration office and the customer's information such as name, address, and telephone number, etc. are recorded. Work orders are generated for those requiring the follow-up investigation.

Majority of complaints received in 2018 and 2019 are related to taste and color. All complaints received were investigated and handled accordingly. The LA County PW also conducted several community outreaches to keep the customers well informed of the status of projects designed to address deficiencies listed in the Division's compliance order and to gain the trust of the customers.

2.6.6. Emergency Response Program

The Division has on file the water system's Emergency Response Terrorism/Security Vulnerability Assessment Plan dated June 28, 2012. **The LA County PW needs to update the plan to reflect the changes in the management, operation, and facilities.**

2.6.7. Emergency Chlorination Plan

The Division has on file the water system's Emergency Chlorination Plan dated November 16, 2011. The LA County PW needs to update the plan to reflect the change in chlorination facilities.

2.6.8. Water Quality Emergency Notification Plan

The Water Quality Emergency Notification Plan (WQENP) for the Sativa Water System is up-to-date and on file with the Division.

2.6.9. Valve Maintenance Program

The water system has a valve maintenance program that was established in 2015. There are currently approximately 194 valves ranging from 4-inch to 8-inch in size in the distribution system. The pressure zone is divided into quadrants. The locations of the valves including valve number, address and quadrant location, size, type, number of turns and date of inspection are recorded, and their locations are indexed. In the event of an emergency, the operator can isolate portions of the distribution system.

The LA County PW has continued the program and been replacing the dilapidated and malfunctioning valves. Any valve that does not completely close or open is replaced. Each time a valve is replaced, the operator records the valve information including the valve number, location, manufacturer, type, size, valve depth, valve box type, direction of operation, date operated/exercised, number of turns to close or open the valve, position in the distribution system (open or closed), the date the valve was installed and the employee who did the installation.

The LA County PW's goal is to exercise all valves each year. In 2018, only 12 valves were exercised due to the brown water issue. In 2019, all valves were exercised.

2.6.10. Flushing Program

Due to the brown water incident in 2018, the LA County PW has evaluated the appropriate flushing method applicable for the Sativa Water System. In July 2019, after securing the supply from the Liberty Utilities Interconnection, flushing activities were resumed. The LA County PW utilized an unconventional flushing method, the Neutral Output Discharge Elimination System (NO-DES) flushing technology and conducted the required water quality monitoring during flushing. The LA County PW's NO-DES Flushing Operation and Monitoring Plan for the Sativa Water System is provided in [Appendix X](#).

NO-DES flushing activities are done on weeknights from 10 o'clock in the evening to 5 o'clock in the morning of the following day to minimize the impact to customers. The LA County WP personnel oversee the NO-DES flushing operation and the operators are on standby to conduct localized flushing if a brown water spike occurs. Prior to conduct of flushing activities, customers are properly notified. If brown water occurs, customers are advised to flush their faucets and garden hose and call the Sativa Water System operators for assistance. If necessary, bottled water are provided. So far, there has been no brown water complaints during the NO-DES flushing. The LA County PW plans to conduct the NO-DES flushing at least once a year. The next round is scheduled for December 2020. Aside from NO-DES flushing, flushing of dead-ends is performed at least once a month.

Since the implementation of the NO-DES flushing system and regular flushing of dead-ends, the number of customer complaints for discoloration has reduced. In 2019, there were 13 locations with brown water complaints. Staff checked the locations and found the discolorations were due to customers' old and deteriorated internal plumbing systems. Staff checked water quality at water system side pipeline and found the water was clear.

2.6.11. Main Disinfection Program

The LA County PW performs the main disinfection in accordance with AWWA Standards using the AWWA C651. Chlorine residuals and bacteriological tests are

conducted after water main installation and repairs. The water main is placed into service after acceptable water quality is obtained.

2.6.12. Electronic Annual Report

The LA County PW has submitted electronically the Annual Reports to the Drinking Water Program for 2018 and 2019 on a timely manner.

2.6.13. California Environmental Water Quality Act

The LA County is the lead agency and the Division is the responsible agency pursuant to California Environmental Quality Act (CEQA) for the change of disinfection systems at Wells 3 and 5. The LA County PW has determined that the project is categorically exempt from the CEQA. The project was adopted and approved by the LA County Board of Supervisors. A Notice of Exemption (NOE) has been filed with the Los Angeles County Clerk's Office on October 15, 2020 for this project and posted until November 16, 2020. No objection or notice of legal action against the project was received.

The Division has reviewed the CEQA Exemption Worksheets submitted by LA County PW ([Appendix Y](#)) on November 2, 2020. The Division concurred that this project does not require further environmental review. Pursuant to Title 14, Section 15302 and Title 22, Section 60101 (b), CCR, the change of disinfection facilities from gas chlorination systems at Wells 3 and 5 to 12.5 sodium hypochlorite chlorination systems falls under CEQA Class 2, Replacement or Reconstruction, exemption. The Division will file a NOE through the Governor's Office of Planning and Research State Clearinghouse upon issuance of this permit amendment. The California Division of Fish and Game filing fees do not apply to exempted projects.

3. APPRAISAL OF SANITARY HAZARDS AND PUBLIC HEALTH SAFEGUARDS

The LA County PW is the designated successor by LA LAFCO of the water system previously owned and operated by SLACWD. Since taking over the operation of the water systems, the LA County PW has made many improvements to the water system. However, it will take time and more resources to fully address all the issues listed in Compliance Order No. 04-22-18R-002, such as the source capacity and minimum pressure requirements.

The Liberty Utilities Interconnection is a temporary active source for the Sativa Water System. Without the Liberty Utilities Interconnection, Wells 3 and 5 cannot meet the PHD. In addition, the Sativa Water System has to rely upon the emergency interconnection to comply with the requirements of Section 64554 (a) (1), Title 22, CCR.

The 620 linear feet of 12-inch water main line along N. Paulsen Avenue connecting to the 12-inch water main line along W. 137th Street and, subsequently, to the 8-inch Liberty Utilities Interconnection is owned and constructed by Liberty Utilities as part of

the Watermain Improvement Project for their Compton/Willowbrook water system. As part of the Agreement with the Sativa Water system, Liberty Utilities allows the Sativa Water System to temporarily use this pipeline solely to transmit water from the interconnection to the Sativa Water System's distribution system while they are constructing the rest of the Watermain Improvement Project pipelines. It is unclear for how long Liberty Utilities will allow the Sativa Water System to use this 12-inch pipeline. Therefore, the LA County WP should secure a permanent reliable source for the Sativa Water System.

The Sativa Water System has no storage facility other than the three hydropneumatics tanks. The hydropneumatic tanks do not provide much of the storage capacity and cannot be counted on for firefighting. The LA County PW should consider construct a storage facility in the future.

The Sativa Water System's distribution system contains old and undersized pipes. Due to the lack of proper flushing in the past, there are legacy sediment buildup in the pipeline. When triggered, these sediments may release and cause discoloration in the water distributed to customers. LA County PW must continue the pipeline replacement project. The LA County PW also need to continue to evaluate if the current source, storage and pipeline capacities are adequate to meet the fire flow requirement and the minimum system pressure requirement (20 psi) at the same time; if not, more improvement should be planned.

Since Liberty Utilities has indicated the intention to switch to 100 percent imported surface water from MWDSC, which contains chloramines, when groundwater alone cannot meet the system demand. The LA County PW must notify the public served by the Sativa Water System, including the dialyses centers, if any, the possibility of receiving chloraminated water as soon as possible. The LA County PW should also have a notification plan in place to inform the public as soon as possible after learning from Liberty Utilities of the pending conversion to chloraminated water or the presence of chloramines in the water. The LA County PW must answer questions that the general public and dialyses centers may have.

If the Sativa Water System must utilize the Liberty Utilities Interconnection while Liberty Utilities relies 100 percent on treated MWDSC water, it will be a major change in water quality. Special water quality parameters sampling and lead and copper tap sampling must be conducted to ensure the switch does not cause adverse impact on lead and copper leaching in the area receiving chloraminated water from the interconnection. LA County PW must also develop a transition plan to address the potential water quality issues during the transition period, including the potential lost of disinfectant residuals due to the mixing of chloraminated surface water and chlorinated well water in the system, which may cause bacteriological quality problem. Also, the Sativa Water System will be required to meet the minimum residual requirements of the Surface Water Treatment Rule during the time it receives treated surface water. The Sativa Water System's GWR Amendment needs to be updated to reflect the Liberty Utilities Interconnection as an additional source.

The LA County PW has adequate number of operators with the proper grade level to meet the operator certification requirements. The Sativa Water System is in compliance with the direct additives regulations and has adequate valve exercise and flushing programs.

4. CONCLUSIONS AND RECOMMENDATIONS

Issuance of a domestic water supply permit by the Division to the Los Angeles County Public Works (hereinafter, LA County PW) as owner of the Sativa Water System is recommended subject to the following conditions:

General

1. The LA County PW shall comply with all the requirements set forth in the California Safe Drinking Water Act, California Health and Safety Code and any regulations, standards, or orders adopted thereunder.
2. The only sources approved for domestic water supply for the Sativa Water System are listed in Table 1 and Table 2:

Table 1. Groundwater Sources

Source	Primary Station (PS) Code	Status	Capacity (gpm)
Well 3	1910147-002	Active	424
Well 5	1910147-005	Active	650

Table 2. Interconnection

Source	PS Code	Location	Status	Capacity (gpm)
Liberty Utilities – Compton/Willowbrook	1910147-010	137 th Street & Paulsen Avenue 8" One Way Connection	Active	1,500
City of Compton	1910147-009	Oris Street & Willowbrook Avenue 6" One Way Connection	Emergency	900

3. The only approved treatment facilities for Sativa Water System are those listed in Table 3:

Table 3. Treatment Facilities

Treatment Plant	Treatment Processes
Wells 3 and 5 Chlorination Facilities	Chlorination for precautionary purposes with 12.5 percent sodium hypochlorite solution.

4. No additions, changes, or modifications to the sources of water supply or water treatment facilities outlined in Conditions 3 and 4 shall be made without prior receipt of an amended domestic water supply permit from the Division.

Inactive Source

5. Well 2 has been inactive for more than one year. The well is no longer viable to use for domestic purposes due to contamination with *E. coli* bacteria. LA County PW shall plan to destroy the well. The destruction permit and report shall be submitted to the Division.

Water Quality

6. All water supplied by the Sativa Water System for domestic purposes shall meet all Maximum Contaminant levels (MCLs) established by the Division. If the water quality does not comply with the California Drinking Water Standards, additional treatment shall be provided to meet standards. The plans and specifications for the proposed treatment facilities shall be submitted to the Division for review and approval prior to construction.
7. The LA County PW shall monitor all groundwater sources listed in Table 1 in accordance with Title 22, Chapter 15, CCR and the Division's most recent Vulnerability Assessment and Monitoring Frequency Guidelines.
8. Except for bacteriological analyses and constituents without chemical storet numbers, all water quality monitoring results obtained at a certified laboratory shall be submitted to the Division by Electronic Data Transfer using the appropriate Primary Station (PS) Codes. Analytical results of all sample analyses completed in a calendar month shall be reported to the Division no later than the tenth day of the following month.
9. The LA County PW shall notify the governing body of the local agency in which users of the drinking water reside (i.e. city council and county board of supervisors) when a notification level is exceeded in drinking water that is provided to consumers.

Operator Certifications

10. The distribution system and treatment facilities shall be operated by personnel who have been certified in accordance with Chapter 13, Title 22, CCR, *Operator Certification Regulations*. The chief and shift operator(s) for the Sativa Water System's distribution facilities shall have, at minimum, D2 and D1 certifications, respectively. The minimum certification requirements for all disinfection facilities for which no *Giardia* or Virus reduction is required shall either be certified distribution operators or certified treatment operators that have been trained to operate these facilities.

Cross-connection Control Program

11. The LA County PW shall comply with Title 17, CCR, to prevent the Sativa Water System and its facilities from being contaminated by possible cross-connections. The LA County PW shall maintain a program for the protection of the domestic water system against backflow from premises having dual or unsafe water systems in accordance with Title 17. All backflow prevention assemblies shall be tested annually.

Direct Additives

12. The LA County PW shall only use additives that have been tested and certified as meeting the specifications of NSF International/American National Standard Institute (NSF/ANSI) Standard 60. This requirement shall be met under testing conducted by a product certification organization accredited for this purpose by ANSI.

Indirect Additives

13. The LA County PW shall only use chemicals, materials, lubricants, or products that have been tested and certified as meeting the specifications of NSF/ANSI Standard 61 in the production, treatment or distribution of drinking water that will result in its contact with the drinking water, including process media, protection materials (i.e. coating, linings, liners), joining and sealing materials, pipe and related products, and mechanical devices used in treatment/transmission/distribution system, unless conditions listed in Section 64593, Title 22, CCR are met. This requirement shall be met under testing conducted by a product certification organization accredited for this purpose by ANSI.

Active Wells

14. Well 3 does not have an annular seal. LA County PW shall keep the well site clean and secured at all times to prevent contamination from outside sources and elements. In addition, LA County PW shall monitor the well for coliform bacteria monthly.

Chloramines

15. The LA County PW shall inform the public served by Sativa Water System the possibility of receiving chloraminated water. The LA County WP shall reach out to kidney dialysis facilities, if any, and home patients to ensure their treatment units can remove chloramines. The LA County PW shall answer questions that the general public and dialyses centers may have.
16. Since Liberty Utilities has indicated the intention to switch to 100 percent imported surface water from MWDSC, which contains chloramines, when groundwater alone

cannot meet the system demand. The LA County PW shall develop and implement a transition plan to address the potential water quality issues, in case water imported from Liberty Utilities containing chloramines. If the Sativa Water System needs to rely on chloraminated water for an extended period, the LA County PW shall develop a nitrification monitoring and control plan. Special water quality parameters sampling and lead and copper tap sampling shall be conducted to ensure the switch does not cause adverse impact on lead and copper leaching in the area receiving chloraminated water from the interconnection.

17. The Sativa Water System shall comply with the minimum residual requirements of the Surface Water Treatment Rule during the time the water system receives treated surface water.

Chlorination Facilities

18. Within **90 days** of receiving this permit, the LA County PW shall submit to the Division the revised Emergency Chlorination Plan for review and approval. The revised plan shall reflect the current chlorination facilities at Wells 3 and 5.
19. The LA County PW shall maintain the following daily operation records of the chlorination facilities at Wells 3 and 5:
 - current dosage rate, in mg/L, and chlorine consumption in lbs./day,
 - amount of water treated in each well in gallons per day or MG/day
 - chlorine residuals test results
 - unusual conditions, mechanical problems, emergencies, or unusual test results

Hydropneumatic Tanks

20. The hydropneumatic tanks shall be disinfected and sampled for bacteriological quality in accordance with AWWA procedures and standards, when placed back to service after repairs and routine maintenance.

Minimum Pressure Requirement

21. The LA County PW shall continue to evaluate if the current source, storage and pipeline capacities are adequate to meet the fire flow requirement and the minimum system pressure requirement (20 psi) at the same time; if not, more improvement should be planned.

Water System Operation and Maintenance Plan

22. The LA County PW shall ensure that all water produced from each source is reliably measured to determine total production. The flow meters at each site shall be calibrated annually.

23. The LA County PW shall notify the Division by telephone immediately upon discovery of any condition judged to create a significant potential or existing health hazard to users. Such conditions include, but are not limited to actual or threatened sabotage, vandalism and/or water outages, which result from inadequate source, storage and/or pumping capacity or any other unplanned loss of system pressure.

Emergency Response Plan

24. The LA County PW shall update Sativa Water System's Emergency Response Plan. The updated plan shall be submitted to the Division within 120 days of receiving this permit.

Annual Reports

25. The LA County PW shall submit Annual Reports on the status and condition of the Sativa Water System, as directed by the Division

APPENDICES

- A. SATIVA WATER SYSTEM CONSOLIDATION DOCUMENTS OF MARCH 19, 2019**
- B. COMPLETED STAFF TMF ASSESSMENT REVIEW FORM**
- C. PERMIT AMENDMENT APPLICATION FOR THE 12.5 PERCENT SODIUM HYPOCHLORITE CHLORINATION SYSTEMS FOR WELLS 3 AND 5**
- D. SATIVA WATER SYSTEM SERVICE AREA MAP**
- E. SCHEMATIC OF THE WATER SUPPLY SYSTEM**
- F. PUMP EFFICIENCY TESTS CONDUCTED ON SEPTEMBER 10, 2020 BY SOUTHERN CALIFORNIA EDISON COMPANY FOR WELLS 3 AND 5**
- G. WELL 3 DATA SHEET**
- H. WELL 5 VIDEO SURVEY REPORTS, SPINNER LOG AND MASS BALANCE ANALYSES, AND AS- BUILT WELL LINER DIAGRAM**
- I. MODIFIED WELL 5 DATA SHEET, AND SPECIFICATIONS OF THE NEW PUMPING EQUIPMENT AND WATER LEVEL TRANSDUCER**
- J. LIBERTY UTILITIES INTERCONNECTION LOCATION AND LAYOUT**
- K. SPECIFICATIONS OF STENNER SVP SERIES DIGITAL PERISTATIC CHEMICAL METERING PUMP AND NSF/ANSI STANDARD 61 CERTIFICATION FOR SANTOPRENE MATERIALS**
- L. SPECIFICATIONS AND NSF/ANSI STANDARD 61 CERTIFICATION FOR LMI CHEMICAL SOLUTION TANK**
- M. CONFIGURATIONS OF DISINFECTION FACILITIES AT WELLS 3 AND 5, AND CHLORINE DISINFECTION DATA SHEETS**
- N. HASA, INC. NSF/ANSI STANDARD 60 CERTIFICATION FOR 12.5 PERCENT SODIUM HYPOCHLORITE SOLUTION**
- O. TANK DATA SHEET**

- P. LIBERTY UTILITIES' 12-INCH TRANSMISSION MAINS ALONG NORTH PAULSEN AVENUE
- Q. SATIVA WATER SYSTEM'S 8-INCH WATER MAINS ALONG NORTH PAULSEN AVENUE
- R. SATIVA WATER SYSTEM'S 8-INCH WATER MAINS ALONG LUCIEN STREET
- S. WEST SIDE INTERCONNECT SCENARIO (LIBERTY UTILITIES)
- T. GROUNDWATER WELLS MONITORING MATRIX: 2020-2022 VULNERABILITY ASSESSMENT AND MONITORING FREQUENCY GUIDELINES FOR WELLS 3 AND 5
- U. SUMMARY OF MONITORING DATA FROM THE DIVISION'S WATER QUALITY DATABASE FROM JANUARY 1, 1994 TO AUGUST 30, 2020 FOR WELLS 3 AND 5
- V. SATIVA WATER SYSTEM'S DISTRIBUTION SYSTEM CLASSIFICATION SHEET
- W. SATIVA WATER SYSTEM'S SUPERVISORY CONTROL AND DATA ACQUISITION SYSTEM NARRATIVE SHEET
- X. NO-DES FLUSHING OPERATION AND MONITORING PLAN FOR SATIVA WATER SYSTEM
- Y. CALIFORNIA ENVIRONMENTAL QUALITY ACT DOCUMENTATION

**Attachment 4-2: Engineering Report, Permit
Amendment No. 1910147PA-001, Suburban
Water Systems - Sativa, System No. 1910147
(Dated April 24,2023)**

**State Water Resources Control Board
Division of Drinking Water
Southern California Drinking Water Field Operations Branch**

PERMIT AMENDMENT NO. 1910147PA-001

Suburban Water Systems - Sativa

Los Angeles County

System No. 1910147

April 2023

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Engineering Report

*For Consideration of the Permit Amendment Application from
Suburban Water Systems for Sativa Water System*

*Serving Portions of the City of Compton and Willowbrook, an
Unincorporated Area of Los Angeles County*

April 24, 2023

Prepared By:

Ofelia Oracion

*Ofelia Oracion
Sanitary Engineer, Angeles District*

Approved By:

Digitally signed by
Bill Liang
Date: 2023.04.24
10:16:58 -07'00'

*Bill Liang, P.E.,
District Engineer, Angeles District*

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Table of Contents

1. INTRODUCTION	1
1.1. Purpose of Report	1
1.2. Background Information	1
1.3. Brief Description of Sativa Water System	2
2. INVESTIGATION AND FINDINGS	5
2.1. Source Water for the Interconnection	5
2.2. City of Compton Interconnection (PS CODE 1910147_009_009)	6
2.3. Transmission/Distribution Pipelines	7
2.4. California Environmental Quality Act	7
3. APPRAISAL OF SANITARY HAZARDS AND SAFEGUARDS.....	7
4. CONCLUSIONS AND RECOMMENDATIONS.....	8
APPENDICES	

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1. INTRODUCTION

1.1. Purpose of Report

The Suburban Water Systems (hereafter, Suburban WS) has submitted to the Division of Drinking Water (hereafter, Division) of the State Water Resources Control Board (hereafter, State Water Board) a permit amendment application dated January 25, 2023 ([Appendix A](#)) to change the status of an existing emergency interconnection with the City of Compton from standby to active for the Sativa water system, System No. 1910147. The connection will provide up to 900 gallons per minute (gpm) of water from the City of Compton Water Department (hereafter, City of Compton) water system, System No. 1910026.

The purpose of this report is to document the engineering review and to make recommendations regarding the issuance of a permit amendment to the Suburban WS – Sativa water system to operate the interconnection with the City of Compton as an active source. All pertinent information gathered for this report was obtained from the Division's files and documents submitted via emails by Suburban WS on February 6, 2023, and March 1, 2023. The investigation and preparation of this report were undertaken by Ofelia Oracion, Sanitary Engineer with Angeles District, under the supervision of Bill Liang, P.E., Angeles District Engineer.

1.2. Background Information

On August 13, 2021, Suburban WS filed an application seeking authorization from the California Public Utilities Commission (hereafter, CPUC) to purchase Sativa water system from Los Angeles County (hereafter, LA County). On August 7, 2022, CPUC approved the application. The decision authorizing the purchase of Sativa water system by Suburban WS was issued on April 15, 2022. Prior to closing of the acquisition, Suburban WS must receive the permit from the State Water Board to operate the Sativa water system. On November 7, 2022, the Division issued the revised full domestic water supply permit (Water Supply Permit No. 04-22-22P-007) to Suburban WS to operate Sativa water system. On December 22, 2022, Suburban WS completed the purchase of the Sativa water system from the LA County and became the legal owner of the water system.

The Sativa water system currently relies on 100 percent of supply from the interconnection with Liberty Utilities - Compton/Willowbrook (hereafter, Liberty Utilities), System No. 1910021. It receives chlorinated water from Liberty Utilities' Well 12C. On January 13, 2023, Suburban WS received a notification from Liberty Utilities of the possibility of switching from its local chlorinated groundwater to using imported surface water from the Metropolitan Water District of Southern California (hereafter, MWDSC) due to the broken motor in Well 19C. Because MWDSC water contains chloramines, customers of Sativa water system must be notified of the change from free chlorine to chloramines.

Permit Conditions 16, 17, and 18 of Water Supply Permit No. 04-22-22P-007 required Suburban WS to (1) inform the public served by Sativa water system, including the dialyses centers, if any, the possibility of receiving chloraminated water; (2) conduct special water quality parameters sampling and lead and copper tap sampling to ensure the switch does not cause adverse impact on lead and copper leaching in the area receiving chloraminated water from interconnection; and (3) comply with the minimum residual requirements of the Surface Water Treatment Rule during the time the water system receives treated surface water.

Suburban WS prepared the public notification and got ready to distribute when advised by Liberty Utilities. Suburban WS also advised the City of Compton of the possibility of using the emergency interconnection. Water from the City of Compton contains free chlorine. However, because Liberty Utilities was able to replace the broken motor on Well 19C and placed the well back in service before water in their storage facilities were depleted, the MWDSC connection was not used. As a result, Suburban WS did not issue public notification to Sativa customers. While awaiting the confirmation from Liberty Utilities of the use of MWDSC water, Suburban WS opened the City of Compton emergency interconnection and planned to continue using the interconnection for five consecutive days if the switching occurred.

To make the interconnection with the City of Compton available for Sativa water system if a similar event were to occur in the future and to provide more operational flexibility, Suburban WS decided to change the status of the interconnection from standby to active and use it on a regular basis. Water from the City of Compton is chlorinated. Suburban WS submitted to the City of Compton an application to become a regular customer. The City accepted the application and agreed to deliver water through the interconnection to Sativa water system on a regular basis. An agreement between the two water systems has been prepared and is currently awaiting approval from the City of Compton Council. The major provisions of the agreement include: (1) the 6-inch connection will be billed as a regular commercial customer of the City and (2) Suburban WS will pay a \$25,000.00 connection fee. The change of status of the emergency interconnection with the City of Compton into an active connection is the subject of this permit investigation. A copy of the approved agreement will be provided to the Division in the future.

1.3. Brief Description of Sativa Water System

The Sativa water system currently serves an estimated population of 6,837 people through 1,643 service connections. The system's service area encompasses about 0.25 square-mile area. It serves a portion of the City of Compton and a portion of Willowbrook, an unincorporated area of Los Angeles County. It is bounded by Wayside Street and 138th Street on the north, Oris Street and 139th Street on the south, Mona Boulevard on the east and Paulsen Street and Wilmington Avenue on the west. The boundaries of the service area have not changed since the original formation in 1938. The service area is a residential community composed of single-family houses. The terrain is basically flat. The service area map along with the schematic of the water supply system is appended ([Appendix B](#)).

The sources of supply for the water system include groundwater from two active wells, Wells 3 and 5, an active interconnection with the Liberty Utilities – Compton/Willowbrook water system, and one emergency interconnection with the City of Compton, the subject of this permit investigation.

The water system primarily obtains its supply from the Liberty Utilities Interconnection. Well 5 was removed from service in October 2020 due to the increasing concentrations of manganese produced by the well. A manganese treatment facility is proposed to be installed at Well 5. The design of the treatment facility is in progress. Well 3 serves as the backup source. The City of Compton Interconnection will be activated after issuance of this permit. Well 3 has two 10,000-gallon capacity hydro-pneumatic tanks, operating alternately. Well 5 has one 10,000-gallon capacity hydro-pneumatic tank.

The distribution system has one pressure-zone, with approximately eight miles of distribution pipelines made of steel, polyethylene (PVC), and ductile iron pipes. The distribution system does not have any storage tank or booster station. All service connections are not metered. According to the Annual Report (AR), the water system recorded a total water production of 180.13 MG by the end of 2021. Table 1 summarizes the capacity and type of treatment provided for each source in Sativa.

Table 1: Water Supply Sources

Source	Status	Primary Station (PS) Code	Treatment	Capacity (gpm ¹)	Comments
Well 3	Active	CA1910147_002_002	Sodium hypochlorite chlorination system for disinfection.	424 ²	The well is 78 years old and has no annular seal. It has a history of sand pumping. Tetrachloroethylene (PCE) is detected in the water. 1,4-dioxane is above the notification level of 1 µg/L, but lower than the response level of 35 µg/L.
Well 5 ³	Active	CA1910147_005_005	Sodium hypochlorite chlorination system for disinfection.	650 ⁴	Newly rehabilitated. Water produced from the well contains PCE, 1,4-dioxane, and elevated level of manganese. The well is currently offline.
Total Capacity of Active Wells				1,074	

Source	Status	Primary Station (PS) Code	Treatment	Capacity (gpm ¹)	Comments
Inter-connection with the Liberty Utilities – one way ⁵	Active	CA1910147_010_010	Groundwater sources by hypochlorination or surface water purchased from the Metropolitan Water District of Southern California, which is treated by conventional filtration, chloramination and fluoridation. Fluoridation is also provided to one of the Liberty Utilities wells. Liberty Utilities will rely on chlorinated well water majority of the time, but plan to switch to 100 percent MWDSC water if groundwater sources are not adequate to meet system demand.	1,500	This inter-connection facility was permitted in July 2019.
Inter-connection with the City of Compton – one way	Active ⁶	CA1910147_009_009	Groundwater sources by hypochlorination; purchased surface water from the Metropolitan Water District of Southern California, which is treated by conventional filtration, chloramination and fluoridation. However, the City of Compton rarely utilizes the MWDSC interconnection.	900	Good condition
Total Active Interconnection Capacity				2,400	

¹ Gallon per minute

² The maximum production rate set based on the result of pump efficiency test conducted by Edison Company on September 10, 2020.

³ Currently offline.

⁴ The maximum pump operating capacity based on the result of efficiency test conducted by Edison Company on September 10, 2020.

⁵ The primary source for Sativa water system.

⁶ Will be an active source after the issuance of this permit amendment.

2. INVESTIGATION AND FINDINGS

2.1. Source Water for the City of Compton Interconnection

The City of Compton water system, System No. 1910026, is operating under the authority of domestic water supply permit issued by the Division on March 2, 1999, and four permit amendments issued on March 27, 2007, August 10, 2007, September 29, 2008, and January 17, 2017. Its current domestic water supply sources come from six active groundwater wells (Wells 11, 13, 15, 17, 18, and 19) with a total combined capacity of about 8,150 gpm, three active connections with the MWDSC with a total combined capacity of 16,900 gpm, and seven emergency connections with neighboring water utilities, including four connections with the City of Lynwood, and one connection each with the City of Long Beach, Park Water Company, and California Water Service Company – Dominguez, with total capacity of about 6,400 gpm. The water system has four storage tanks with a combined capacity of 12 MG. The groundwater wells are equipped with chlorination facilities.

The City of Compton primarily uses groundwater wells to supply its service area. The last time one of the three MWDSC connections was used was in August 2013. Based on the Source Capacity Evaluation from the sanitary survey conducted in February 2020, the groundwater wells are capable of meeting the maximum day demand and peak hour demand in the service area. Water from the wells is treated with 12.5 percent sodium hypochlorite solution and pumped into the distribution system directly before entering the storage tanks. The storage tanks are filled during the time period when the system demand is low.

The sources of supply for the interconnection will be coming from Wells 17, 18 and 19. Well 18 is the closest to interconnection. It is located approximately 0.7 mile east from the interconnection and has a production capacity of about 2,400 gpm. Wells 17 and 19 are located approximately 0.88 mile south and 0.95 mile east, respectively, from the interconnection. The wells are capable of producing about 870 gpm and 2,100 gpm, respectively.

MWDSC water is fluoridated and chloraminated. If it becomes necessary to utilize the connection(s) with MWDSC to address unforeseeable demand during emergencies, or when the well(s) has/have to be removed from service for maintenance or repair work for extended period of time, the City of Compton may provide chloraminated water to the interconnection.

Suburban WS must notify the public served by Sativa water system, including the dialyses centers, if any, the possibility of receiving chloraminated water and have a notification plan in place to inform the public as soon as possible after learning from the City of Compton of the pending conversion to chloraminated water or the presence of chloramines in the water. Suburban WS must answer questions that the general public and dialyses centers may have. Suburban WS must ensure that they are informed in a timely manner by City of Compton of the switching of disinfectant residual from chlorine

to chloramine. Suburban WS must also develop a plan to address the potential water quality issues during the transition period and during the time the system is served with chloraminated water.

2.2. City of Compton Interconnection (PS CODE 1910147_009_009)

The City of Compton Interconnection (hereafter, Compton Interconnection) is situated along Oris Street approximately 160 feet west of Willowbrook Avenue. The one-way 6-inch metered interconnection is capable of delivering water to Sativa's service area at a maximum flow of 900 gpm and minimum pressure of about 60 psi.

The interconnection consists of a 6-inch water meter and two 6-inch shutoff valves, one on the City of Compton's side and one on Sativa's side. It is housed inside a polymer concrete vault with torsion assist polymer concrete cover and padlock. The vault is below ground surface located within the street right of way. The interconnection is manually operated. The interconnection drawing and layout is attached with this report ([Appendix C](#)).

The interconnection will serve as an active water supply source for Sativa. The City of Compton will provide a reliable and uninterrupted source of water to Sativa, contingent upon meeting the conditions set forth in the Agreement. According to the Agreement, the City of Compton (1) agrees to provide potable water to the Suburban WS on the same terms and conditions as any other commercial customer served by their system; and (2) is not obligated to provide water to Suburban WS, if in their judgment, such service would jeopardize the health, safety and welfare of their residents, or cause damage to their water system. The Sativa water system shall comply with the minimum residual requirements of the Surface Water Treatment Rule during the time the water system receives treated surface water.

Suburban WS will maintain the interconnection. Such maintenance will include periodic testing of water meter to ensure water meter is measuring and recording within 5 percent (plus or minus) accuracy.

During the start-up of the interconnection, the Suburban WS should flush out the stagnant water in the interconnection and ensure adequate chlorine residuals before discharging the water into the distribution system. The Suburban WS should also collect chlorine residual samples at the adjacent areas shortly after introducing the water to closely monitor any changes in water quality.

To reflect the changes in the sources of supply, the Suburban WS has made minor revisions to their previously approved Bacteriological Sample Siting Plan (BSSP). The Groundwater Rule (GWR) Monitoring Plan was also revised and incorporated into the revised BSSP. The revised BSSP was submitted to the Division on March 1, 2023 ([Appendix D](#)).

The revised BSSP listed the Compton Interconnection among Sativa's active sources, along with Wells 3 and 5 and Liberty Interconnection. The four previously approved routine sampling sites, namely: (1) 730 139th Street, (2) 2016 Lucien Street, (3) 13122 Largo Street, and (4) 2315 Bliss Street and their respective repeat sample sites will be maintained. Suburban WS will sample the four routine sample sites on a weekly basis.

The monitoring requirements under GWR are incorporated into the revised BSSP. The sources influencing the four routine sample sites include Wells 3 and 5, Liberty Interconnection, and Compton Interconnection. Suburban WS will inform the City of Compton and Liberty Utilities within 24 hours after receipt of notification of positive samples for total coliforms and/or *E. Coli*. from their contracted laboratory, the Clinical Laboratory of San Bernardino, Inc.

It is not clear at this time the impact of the new sources to the existing Stage 2 Disinfection Byproduct Rule (DBPR) monitoring. The Suburban WS shall monitor closely of the trihalomethanes (TTHM) and haloacetic acids (HAA5) data collected from Sativa distribution system after the Compton Interconnection is placed into service to determine if the existing monitoring sites need to be modified to comply with the sampling location requirements of the Stage 2 DBPR.

2.3. Transmission/Distribution Pipelines

There is no dedicated transmission pipeline to bring water from the City of Compton to the Sativa water system. The interconnection is located within Sativa's distribution system. Water from the interconnection will be distributed to the Sativa service area via Sativa's existing 6-inch water main line along Oris Street.

2.4. California Environmental Quality Act

The change of status of Compton Interconnection from emergency to active source does not require CEQA preparation.

3. APPRAISAL OF SANITARY HAZARDS AND SAFEGUARDS

The Compton Interconnection was constructed in 2007. Water from the interconnection is supplied by an existing public water system with a domestic water supply permit. Although the City of Compton water system has been a chlorinated groundwater only system for almost ten years, the City may need to utilize the imported MWDSC water during emergencies or if one or more of the active wells has/have to be removed from service for repair or maintenance for an extended period of time. The imported MWDSC water is chloraminated water. Suburban WS must notify the public served by Sativa of the possibility of receiving chloraminated water and have a notification plan to inform the public as soon as learning from the City of Compton of the pending conversion to chloraminated water or the presence of chloramines in the water. Suburban WS must also develop a plan to address the potential water quality issues during the transition period and during the time the system is served with chloraminated water.

During the start-up of the interconnection, the Suburban WS should flush out the stagnant water in the interconnection and ensure adequate chlorine residuals before discharging the water into the distribution system. The Suburban WS shall also collect chlorine residual samples at the adjacent areas shortly after introducing the water to closely monitor any changes in water quality. To reflect the changes in sources of supply, the Suburban WS has made minor revisions to their previously approved Bacteriological Sample Siting Plan (BSSP). The Groundwater Rule (GWR) Monitoring Plan was also revised and incorporated into the revised BSSP.

It is not clear at this time the impact of the new sources to the existing Stage 2 Disinfection Byproduct Rule (DBPR) monitoring. The Suburban WS should monitor closely of the trihalomethanes (TTHM) and haloacetic acids (HAA5) data collected from Sativa distribution system after the Compton Interconnection is placed into service to determine if the existing monitoring sites need to be modified to comply with the sampling location requirements of the Stage 2 DBPR.

4. CONCLUSIONS AND RECOMMENDATIONS

Issuance of an amended domestic water supply permit by the Division to the Suburban WS for the Sativa water system (hereinafter, Sativa) to change the status of City of Compton Interconnection (hereafter, Compton Interconnection) from emergency to active connection is recommended subject to the following conditions:

General

1. This document amends and adds to the domestic water supply permit (Permit No. 04-22-22P-007) issued to Suburban WS - Sativa by the Division on November 4, 2022. If any condition of this amendment conflicts with the full permit, the conditions of this amendment shall be followed.
2. The Suburban WS shall comply with all the requirements set forth in the California Safe Drinking Water Act, California Health and Safety Code and any regulations, standards, or orders adopted thereunder.
3. The only sources approved for domestic water supply for the Sativa water system are listed in Table 1 and Table 2:

Table 1. Groundwater Sources

Source	Primary Station (PS) Code	Status	Capacity (gpm)
Well 3	1910147_002_002	Active	424
Well 5	1910147_005_005	Active	650

Table 2. Interconnection

Source	PS Code	Location	Status	Capacity (gpm)
Liberty Utilities – Compton/Willowbrook	1910147_010_010	137 th Street & Paulsen Avenue 8" One Way Connection	Active	1,500
City of Compton	1910147_009_009	Oris Street & Willowbrook Avenue 6" One Way Connection	Active	900

4. The only approved treatment facilities for Sativa are those listed in Table 3:

Table 3. Treatment Facilities

Treatment Plant	Treatment Processes
Wells 3 and 5 Chlorination Facilities	Chlorination for precautionary purposes with 12.5 percent sodium hypochlorite solution.

5. No additions, changes, or modifications to the sources of water supply or water treatment facilities outlined in Conditions 3 and 4 shall be made without prior receipt of an amended domestic water supply permit from the Division.

Water Quality

6. All water supplied by the Sativa water system for domestic purposes shall meet all Maximum Contaminant levels (MCLs) established by the Division. If the water quality does not comply with the California Drinking Water Standards, additional treatment shall be provided to meet standards. The plans and specifications for the proposed treatment facilities shall be submitted to the Division for review and approval prior to construction.
7. The Suburban WS shall monitor all groundwater sources listed in Table 1 in accordance with Title 22, Chapter 15, CCR and the Division’s most recent Vulnerability Assessment and Monitoring Frequency Guidelines.
8. Except for bacteriological analyses and constituents without chemical storet numbers, all water quality monitoring results obtained at a certified laboratory shall be submitted to the Division by Electronic Data Transfer using the appropriate Primary Station (PS) Codes. Analytical results of all sample analyses completed in a calendar month shall be reported to the Division no later than the tenth day of the following month.
9. The Suburban WS shall notify the governing body of the local agency in which users of the drinking water reside (i.e., city council and county board of supervisors) when a notification level is exceeded in drinking water that is provided to consumers.

Operator Certifications

10. The distribution system and treatment facilities shall be operated by personnel who have been certified in accordance with Chapter 13, Title 22, CCR, *Operator Certification Regulations*. The chief and shift operator(s) for the Sativa water system's distribution facilities shall have, at minimum, D2 and D1 certifications, respectively. The minimum certification requirements for all disinfection facilities for which no *Giardia* or *Virus* reduction is required shall either be certified distribution operators or certified treatment operators that have been trained to operate these facilities.

Cross-connection Control Program

11. The Suburban WS shall comply with Title 17, CCR, to prevent the Sativa water system and its facilities from being contaminated by possible cross-connections. The Suburban WS shall maintain a program for the protection of the domestic water system against backflow from premises having dual or unsafe water systems in accordance with Title 17. All backflow prevention assemblies shall be tested annually.

Direct Additives

12. The Suburban WS shall only use additives that have been tested and certified as meeting the specifications of NSF International/American National Standard Institute (NSF/ANSI) Standard 60. This requirement shall be met under testing conducted by a product certification organization accredited for this purpose by ANSI.

Indirect Additives

13. The Suburban WS shall only use chemicals, materials, lubricants, or products that have been tested and certified as meeting the specifications of NSF/ANSI Standard 61 in the production, treatment or distribution of drinking water that will result in its contact with the drinking water, including process media, protection materials (i.e. coating, linings, liners), joining and sealing materials, pipe and related products, and mechanical devices used in treatment/transmission/ distribution system, unless conditions listed in Section 64593, Title 22, CCR are met. This requirement shall be met under testing conducted by a product certification organization accredited for this purpose by ANSI.

Chloramines

14. The Suburban WS shall inform the public served by Sativa water system of the possibility of receiving chloraminated water. The Suburban WS shall reach out to kidney dialysis facilities, if any, and home patients to ensure their treatment units can remove chloramines. The Suburban WS shall answer questions that the general

public and dialyses centers may have. If chloraminated water is used, the notification shall be repeated yearly in Sativa's consumer confidence report to the consumers.

15. Liberty Utilities and City of Compton may switch to imported surface water from MWDSC, which contains chloramines, when their respective groundwater sources cannot meet their systems demands. The Suburban WS shall develop and implement a transition plan to address the potential water quality issues, in case water imported from Liberty Utilities and City of Compton contains chloramines. If the Sativa water system needs to rely on chloraminated water for an extended period, the Suburban WS shall develop a nitrification monitoring and control plan. Special water quality parameters sampling and lead and copper tap sampling shall be conducted to ensure the switch does not cause adverse impact on lead and copper leaching in the area receiving chloraminated water from the interconnection.
16. The Sativa water system shall comply with the minimum residual requirements of the Surface Water Treatment Rule (SWTR) during the time the water system receives treated surface water.
17. If chloraminated water is provided by either the Liberty Utilities or the City of Compton interconnections, the Sativa water system shall begin submitting the monthly SWTR reports to the Division by the tenth day of the following month.

Minimum Pressure Requirement

18. The Suburban WS shall continue to evaluate if the current source, storage and pipeline capacities are adequate to meet the fire flow requirement and the minimum system pressure requirement (20 psi) at the same time; if not, more improvement should be planned.

Compton Interconnection

19. During the start-up of the interconnection, the Suburban WS should flush out the stagnant water in the interconnection and ensure adequate chlorine residuals before discharging the water into the distribution system. The Suburban WS shall also collect chlorine residual samples at the adjacent areas shortly after introducing the water to closely monitor any changes in water quality.
20. It is not clear at this time the impact of the new sources to the existing Stage 2 Disinfection Byproduct Rule (DBPR) monitoring. The Suburban WS should monitor closely of the trihalomethanes (TTHM) and haloacetic acids (HAA5) data collected from Sativa distribution system after the Compton Interconnection is placed into service to determine if the existing monitoring sites need to be modified to comply with the sampling location requirements of the Stage 2 DBPR.

Consumer Confidence Report

21. Suburban WS shall prepare Sativa water system's Consumer Confidence Report on an annual basis, which must be distributed to customers and a copy provided to the Division by July 1 of each year.

Annual Reports

22. The Suburban WS shall submit an electronic Annual Report to the Division each year, documenting Sativa water system information for the prior year. The report shall be in the format specified by the Division.

APPENDICES

- A. Permit Amendment Application
- B. Service Area Map and Schematic of Sativa Water Supply System
- C. City of Compton Interconnection Schematics
- D. Bacteriological Sample Siting Plan dated March 2023

**Attachment 4-3: Permit Amendment Letter
from DDW to Suburban (Dated April 24,
2023)**



State Water Resources Control Board
Division of Drinking Water

April 24, 2023

Mr. Gregory Galindo
Vice President Field Operations
Suburban Water Systems
2015 E. Hatchway Street
Compton, CA 90222

SYSTEM NO. 1910147: SUBURBAN WATER SYSTEMS - SATIVA, PERMIT AMENDMENT NO. 1910147PA-001 TO CHANGE THE STATUS OF THE CITY OF COMPTON INTERCONNECTION FROM EMERGENCY TO ACTIVE

Dear Mr. Galindo,

I am pleased to forward the domestic water supply permit amendment and accompanying Engineering Report for the Suburban Water Systems – Sativa to change the status of the City of Compton Interconnection from an emergency connection to an active connection. Please acknowledge receipt of this permit amendment and your willingness to comply with the permit conditions in writing within 15 days. If you have any questions regarding this letter, please contact Ms. Ofelia Oracion at (818) 551-2020 or me at (818) 551-2024.

Sincerely,

Bill Liang
Digitally signed
by Bill Liang
Date: 2023.04.24
12:28:01 -07'00'

Bill Liang, P.E.
District Engineer
Division of Drinking Water - Angeles District
State Water Resources Control Board

Enclosures:

- (1) Permit Amendment 1910147PA-001
- (2) Engineering Report

E. JOAQUIN ESQUIVEL, CHAIR | EILEEN SOBECK, EXECUTIVE DIRECTOR

500 North Central Avenue, Suite 500, Glendale, CA 91203 | www.waterboards.ca.gov

Mr. Gregory Galindo

- 2 -

April 24, 2023

cc: Ms. Sandy Nimat
Suburban Water Systems

Mr. Paul DiMaggio
Suburban Water Systems

Hani Moussa
California Public Utilities Commission

Daphine Goldberg
California Public Utilities Commission

Zaved Sarkar
California Public Utilities Commission

Byung Kook Yu
California Public Utilities Commission

Suliman Ibrahim
California Public Utilities Commission