



**WEST VALLEY WATER DISTRICT  
855 W. Base Line Road Rialto, CA**

**ENGINEERING, OPERATIONS AND PLANNING COMMITTEE MEETING  
AGENDA**

**WEDNESDAY, JUNE 19, 2019 - 6:00 PM**

**NOTICE IS HEREBY GIVEN** that West Valley Water District has called a meeting of the Engineering and Planning Committee to meet in the Administrative Conference Room, 855 W. Base Line Road, Rialto, CA 92376.

**I. CONVENE MEETING**

**II. PUBLIC PARTICIPATION**

*The public may address the Board on matters within its jurisdiction. Speakers are requested to keep their comments to no more than three (3) minutes. However, the Board of Directors is prohibited by State Law to take action on items not included on the printed agenda.*

**III. DISCUSSION ITEMS**

- a. Update from Engineering, Operations and Planning Committee
- b. Authorization to Approve Change Order No. 4 for the Highland Avenue 30-inch Transmission Main Project. Consider Notice of Completion Recordation for the Highland Avenue 30-inch Transmission Main Project..
- c. 2019 Public Health Goal Update.
- d. Authorization to Approve Change Order for Reservoir 3-A-1 Roof Replacement and Asbestos Abatement and Disposal.

**IV. ADJOURN**

**DECLARATION OF POSTING:**

**I declare under penalty of perjury, that I am employed by the West Valley Water District and posted the foregoing Engineering, Operations and Planning Committee Agenda at the District Offices on June 14, 2019.**

  
\_\_\_\_\_  
Crystal L. Escalera, Board Secretary



**BOARD OF DIRECTORS  
ENGINEERING AND PLANNING COMMITTEE  
STAFF REPORT**

**DATE:** June 19, 2019  
**TO:** Engineering and Planning Committee  
**FROM:** Clarence Mansell Jr., General Manager  
**SUBJECT:** AUTHORIZATION TO APPROVE CHANGE ORDER NO. 4 FOR THE HIGHLAND AVENUE 30-INCH TRANSMISSION MAIN PROJECT. CONSIDER NOTICE OF COMPLETION RECORDATION FOR THE HIGHLAND AVENUE 30-INCH TRANSMISSION MAIN PROJECT.

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**BACKGROUND:**

On June 27, 2018, the District entered into a contract with Merlin Johnson Construction, Inc. for the construction of the Highland Avenue 30-inch Transmission Main Capital Improvement Project. While installing the new 30-inch transmission main at Highland Avenue, the California Department of Transportation (Caltrans) increased the limits of, and pavement requirements needed to complete the project.

In order to comply with the Caltrans' requirements, additional paving above the original contract amount was required. Merlin Johnson Construction, Inc. has submitted Change Order No. 4 to cover the cost for this additional work.

The District's Project Manager on the project, Rosa M. Gutierrez, P.E., has confirmed the substantial completion of the Highland Avenue 30-inch Transmission Main Project, between Pepper Avenue and Oakdale Avenue.

**FISCAL IMPACT:**

This project was a budgeted item in the Fiscal Year 2018/19 Capital Improvement Budget under the Highland Avenue 30-inch Transmission Main – Pepper Avenue to Oakdale Avenue - Construction. This change order will increase the contract amount by \$113,050.00 for a total of \$1,677,531.30. A copy of Change Order No. 4 and final is attached as **Exhibit A**. Additional funds will be needed. The District's budget for Lord Ranch 4-3 Pump Station has funds available to transfer. A summary of the requested budget transfer is as follows:

CIP FY 2018-2019 Project Name	Current Budget	Construction Cost	Transfer From/To	Remaining Budget
W15004 Lord Ranch 4-3 Pump Station	\$1,241,961.70	\$0.00	(\$113,050.00)	\$1,128,911.70
W15007 Highland Avenue 30-inch Transmission Main – Pepper Avenue to Oakdale Avenue - Construction	\$0.00	\$113,050.00	\$113,050.00	\$0.00

**STAFF RECOMMENDATION:**

It is recommended that the Engineering, Operations, and Planning Committee authorize staff to file the Notice of Completion for the project and approve Change Order No. 4 for the Highland Avenue 30-inch Transmission Main Capital Improvement Project in the amount of \$113,050.00 and have this item considered by the full Board of Directors at a future meeting and authorize the General Manager to execute the necessary documents.

Respectfully Submitted,




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Clarence Mansell Jr, General Manager

RMG:ce

**ATTACHMENT(S):**

1. Exhibit A - Merlin Johnson Construction, Inc. Change Order No. 4

# EXHIBIT A

**SECTION 2.11  
of  
PROCEDURAL DOCUMENTS**

**CHANGE ORDER**

**OWNER:** West Valley Water District

**CONTRACTOR:** Merlin Johnson Construction, Inc.  
P.O. Box 777  
Mentone, CA 92359

**PROJECT:** Zone 4 – 30” Transmission Line in Highland Avenue

Change Order No. 4 Agreement Date: June 27, 2018

Date: 06/13/2019 Sheet 1 of 3

The following changes are hereby made to the Contract Documents:

**I. EXTRA WORK**

	<b><u>ADD</u></b>	<b><u>DEDUCT</u></b>
1. Adjust Quantity of Bid Item No. 14, Replace Traffic Loops, Signage, Striping, etc.	\$21,724.65	
2. Deduct Bid Item No. 14, Replace Traffic Loops, Signage, Striping, etc.		(\$19,700.00)
3. Adjust Quantity of Bid Item No. 17, Furnish and Install AC Base Pavement Full Lane Width, per Caltrans Trench Detail	\$159,632.40	
4. Deduct Bid Item No. 17, Furnish and Install AC Base Pavement Full Lane Width, per Caltrans Trench Detail		(\$66,813.00)
5. Adjust Quantity of Bid Item No. 20, Furnish and Install AC Base Pavement Full Lane Width, per City of Rialto Trench Detail	\$38,809.95	
6. Deduct Bid Item No. 20, Furnish and Install AC Base Pavement Full Lane Width, per		

City of Rialto Trench Detail (\$20,604.00)

**Total, for Item I \$220,167.00 - \$107,117.00**

**TOTAL FOR CHANGE ORDER NO. 4 \$ 113,050.00**

**II. CONTRACT TIME**

Increased 0 calendar days

**III. JUSTIFICATION:**

Adjustment of bid quantity for striping and pavement based on actual conditions in the field and Caltrans increase in limits of, and pavement requirements needed to complete the project.

**CHANGE TO CONTRACT PRICE:**

Original Contract Price	\$ <u>1,283,452.00</u>
Current Contract Price Adjusted by Previous Change Order(s)	\$ <u>281,029.30</u>
Contract Price Due to This Change Order will be Increased	\$ <u>113,050.00</u>
New Contract Price, including This Change Order	\$ <u>1,677,531.30</u>

**CHANGE TO CONTRACT TIME:**

Contract Time will be increased	<u>0</u> Working Days
Date of Completion of All Work	<u>August 9, 2019</u> (Date)

**REQUIRED APPROVALS:**

To be effective, this Change Order must be approved by the Owner, or as may otherwise be required by the Supplemental General Conditions.

\_\_\_\_\_  
Requested By (Contractor)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Recommended By (Project Manager)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Recommended By (Engineering Manager)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Accepted By (Owner)

\_\_\_\_\_  
Date



**BOARD OF DIRECTORS  
ENGINEERING AND PLANNING COMMITTEE  
STAFF REPORT**

**DATE:** June 19, 2019  
**TO:** Engineering and Planning Committee  
**FROM:** Clarence Mansell Jr., General Manager  
**SUBJECT:** 2019 PUBLIC HEALTH GOAL UPDATE

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**BACKGROUND:**

Effective July 1, 1998, Section 116470(b) of the California Health and Safety Code has required all public water systems with more than 10,000 service connections to prepare a Public Health Goal (PHG) Report by July 1st, every three years. The PHG report contains information concerning the health risks, treatment technologies and treatment costs associated with drinking water contaminants that have exceeded a PHG. PHGs represent the level of a contaminant in drinking water below which there is no known or expected significant risk to health. PHGs are not enforceable and are not required to be met by public water systems.

The initial Public Health Goal Report was completed in 1998.

**DISCUSSION:**

The 2019 PHG Report has been prepared to address the requirements set forth in California Health and Safety Code Section 116470(b). Attached as **Exhibit B** is the 2019 PHG Report. It is based on water quality analyses performed during calendar years 2016, 2017, and 2018. The 2019 PHG Report is designated to be as informative as possible, without unnecessary duplication of information contained in the Consumer Confidence Report, which is to be distributed to customers by July 1st annually.

There are no regulations that set the requirements or methodology for preparing PHG reports. However, the Association of California Water Agencies (ACWA) has prepared suggested guidelines for water systems to use in preparing PHG reports. The ACWA guidelines were used in the preparation for the 2019 PHG Report and determination of cost estimates for best available treatment technology. A public notice will be posted in a newspaper in June 2019 and a public hearing will be held in July 2019 at a regular Board meeting to accept and respond to public comments on the report.

**FISCAL IMPACT:**

No fiscal impact.



**STAFF RECOMMENDATION:**

For information only.

Respectfully Submitted,



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Clarence Mansell Jr, General Manager

CM:jc

**ATTACHMENT(S):**

1. Exhibit A - California Health and Safety Code 116470 (b) & (c)
2. Exhibit B - 2019 PHG Report

# EXHIBIT A

## California Health and Safety Code 116470 (b) & (c)

116470(b) On or before July 1, 1998, and every three years thereafter, public water systems serving more than 10,000 service connections that detect one or more contaminants in drinking water that exceed the applicable public health goal, shall prepare a brief written report in plain language that does all of the following:

- (1) Identifies each contaminant detected in drinking water that exceeds the applicable public health goal.
- (2) Discloses the numerical public health risk, determined by the office, associated with the maximum contaminant level for each contaminant identified in paragraph (1) and the numerical public health risk determined by the office associated with the public health goal for that contaminant.
- (3) Identifies the category of risk to public health, including, but not limited to, carcinogenic, mutagenic, teratogenic, and acute toxicity, associated with exposure to the contaminant in drinking water, and includes a brief plainly worded description of these terms.
- (4) Describes the best available technology, if any is then available on a commercial basis, to remove the contaminant or reduce the concentration of the contaminant. The public water system may, solely at its own discretion, briefly describe actions that have been taken on its own, or by other entities, to prevent the introduction of the contaminant into drinking water supplies.

116470(c) Public water systems required to prepare a report pursuant to subdivision (b) shall hold a public hearing for the purpose of accepting and responding to public comment on the report. Public water systems may hold the public hearing as part of any regularly scheduled meeting.

# EXHIBIT B



# 2019 Public Health Goals Report

Report Prepared by  
West Valley Water District

## Introduction

### Background

Starting on July 1, 1998, every public water system serving more than 10,000 service connections is required to prepare a brief written report if one or more contaminants are detected in drinking water that exceed the applicable public health goal (PHG). The PHG Report is required every three years following the initial reporting year in 1998 pursuant to California Health and Safety Code, Section 116470(b) (HSC §116470). PHGs are non-enforceable goals established by the California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (OEHHA). For contaminants that do not have an adopted PHG, HSC §116470 requires the public water system to use the maximum contaminant level goal (MCLG) adopted by the United States Environmental Protection Agency (USEPA).

The purpose of the PHG Report, as stated in HSC §116470, is to:

1. Identify each contaminant detected that exceeds the established PHG.
2. Disclose the numerical public health risks associated with contaminant levels associated with the maximum contaminant level (MCL) and PHG. Numerical public health risks are determined by OEHHA.
3. Identify the category of risk to public health associated with exposure to the contaminant in drinking water.
4. Describe the best available technology, if commercially available, that could remove or reduce contaminants that exceeded the PHGs.
5. Provide an estimated total cost and cost per customer for implementing the best available technology to reduce the contaminant concentration at a level equal to or below the PHG.
6. Describe the action that will be taken by the water system to reduce the contaminant concentration, if any, and the reasoning for that decision.

West Valley Water District (WVWD) has prepared the 2019 PHG Report to comply with the requirements of HSC §116470. Only contaminants that have a primary drinking water standard (PDWS) MCL, were detected at levels above the detection limit for purposes of reporting (DLR), and exceeded a PHG, or MCLG if no PHG is available, are reported. Contaminants that meet these reporting requirements are included in this report.

### What are PHGs?

California drinking water standards are established by the USEPA and State Water Resources Control Board's Division of Drinking Water (DDW). MCLs are the highest level of contaminants allowed in drinking water. PDWS MCLs are set as close to PHGs or MCLGs as is economically and technologically feasible, and are set for contaminants that affect health. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

In comparison, PHGs are set by OEHHA and are based solely on health-risk considerations. None of the practical risk-management factors that are considered by the USEPA and DDW in setting MCLs are considered in setting the PHGs. Risk-management factors used in setting MCLs include analytical detection capabilities, available treatment technology, benefits, and costs. PHGs are not enforceable and are not required to be met by any public water system. MCLGs are the federal equivalent to PHGs.

## Water Quality Data Considered

For the 2019 PHG Report, WVWD has considered and evaluated all water quality data from 2016 to 2018. Summaries of this data can be viewed in the 2016, 2017, and 2018 Consumer Confidence Reports, which were made available to all WVWD customers. Consumer Confidence Reports can be viewed at WVWD's website through the following link <https://www.westvalleywaterquality.org/>.

## Guidelines Followed

The Association of California Water Agencies (ACWA) formed a workgroup, which prepared guidelines for water utilities to use in preparing PHG reports. ACWA's 2019 PHG Report Guidance for Water Systems document was used in preparation of this report. No guidance was available from state regulatory agencies.

## Best Available Treatment Technology and Cost Estimates

Both the USEPA and DDW adopt Best Available Technologies (BATs), which are the best-known methods of reducing contaminant levels to the MCL. Costs can be estimated for such technologies. However, since many PHGs and all MCLGs are set much lower than the MCL, it is not always possible or feasible to determine what treatment is needed to further reduce a constituent down to or near the PHG or MCLG, many of which are set at zero. Estimating the costs to reduce a constituent to zero is difficult, if not impossible, because it is not possible to verify by analytical means that the level has been lowered to zero. This is because the DLRs for contaminants can be greater than the PHG or MCLG, meaning that detecting levels of contaminants at concentrations equal to the PHG, MCLG, or to a level of zero is not practical. In some cases, installing treatment to try and further reduce very low levels of one constituent may have adverse effects on other aspects of water quality.

Please note, all cost estimates provided in this report are highly speculative and theoretical, and actual costs can be far greater. Estimated costs include annualized capital and operations and maintenance costs. AWWA's Cost Estimates for Treatment Technologies were used to determine the estimated costs. All costs were estimated based on average water productions from 2016 to 2018 for each of the sources that exceeded a PHG or MCLG.

## Constituents Detected that Exceed a PHG or MCLG

The following is a discussion of contaminants that were detected in one or more of our drinking water sources at levels above the PHG or MCLG.

### Microbiological Contaminants

#### E. coli

The source of E. coli in water sources can originate from human and animal fecal waste. E. coli is a microbiological contaminant. From 2016 to 2018, WVWD collected between 192 and 240 routine E. coli samples each month. The maximum number of E. coli-positive-routine samples during the three-year period occurred in February of 2016, resulting in two positive samples. All confirmation and repeat samples were negative for E. coli and total coliform. No other positive E. coli samples were collected between 2016 and 2018.

The MCL established for E. coli states that the MCL is exceeded if the following occur:

1. An E. coli-positive-repeat sample is collected following a routine sample for total coliform; or
2. A total-coliform-positive sample following an E.coli-positive-routine sample is collected.

WVWD is in full compliance with the MCL for E. coli, but at times has exceeded the MCLG. The MCLG for E. coli is zero.

#### *Category of Health Risk*

Not applicable.

#### *Numerical Health Risk*

Not applicable.

#### *BATs and Estimated Cost*

WVWD currently implements all BATs for microbiological contaminants identified by DDW. These technologies include:

- Protection of wells from coliform contamination by appropriate placement and construction;
- Maintenance of a disinfectant residual throughout the distribution system;
- Proper maintenance of the distribution system; and



- Filtration and/or disinfection of approved surface water, in compliance with California Code of Regulations, Title 22, Section 64650, or disinfection of groundwater.

WVWD conducts sampling of all sources of water and adds chlorine to the water to ensure protection against microbiological contamination. The chlorine residual levels are carefully controlled to provide the best health protection without causing the water to have undesirable taste and odor, or increasing disinfection byproduct levels.

Other equally important measures that we have implemented include an effective cross-connection control program, an effective monitoring and surveillance program, and maintaining positive pressure within the distribution system. WVWD has already taken all steps described by DDW as BAT for E. coli in California Code of Regulations, Title 22, Section 64447. Since all BATs are implemented, estimating costs for implementing BATs is not necessary.

## Total Coliform

Total coliform are naturally present in the environment and can originate from numerous sources. From 2016 to 2018, WVWD collected between 192 and 240 routine total coliform bacteria samples each month. The maximum number of total-coliform-positive samples during the three-year period occurred in February of 2016 and August of 2018, resulting in 3% and 2% total-coliform-positive samples, respectively. All confirmation and repeat samples were negative for total coliform. There were no total-coliform-positive samples collected in 2017.

The MCL established for total coliform bacteria requires that no more than 5% of monthly samples collected during a month result in a positive sample, and the MCLG is set at 0%. WVWD is in full compliance with the MCL for total coliform, but at times has exceeded the MCLG. The reason for the total coliform drinking water standard is to minimize the possibility of pathogens in water, which can cause waterborne diseases. Since total coliform is an indicator of the potential presence of pathogens, it is not possible to set a specific numerical health risk.

### *Category of Health Risk*

Not applicable.

### *Numerical Health Risk*

Not applicable.

### *BATs and Estimated Cost*

Total coliform bacteria are an indicator organism that are present in nature and generally not considered harmful. The purpose of total coliform monitoring is to alert water systems that a potential problem could exist requiring further investigation. It is not unusual to have an occasional positive sample. Ensuring a system never gets a positive sample is difficult, if not impossible.

WVWD currently implements all BATs for microbiological contaminants identified by DDW. These technologies include:

- Protection of wells from coliform contamination by appropriate placement and construction;
- Maintenance of a disinfectant residual throughout the distribution system;
- Proper maintenance of the distribution system; and
- Filtration and/or disinfection of approved surface water, in compliance with California Code of Regulations, Title 22, Section 64650, or disinfection of groundwater.

WVWD conducts sampling of all sources of water and adds chlorine to the water to ensure protection against microbiological contamination. The chlorine residual levels are carefully controlled to provide the best health protection without causing the water to have undesirable taste and odor, or increasing disinfection byproduct levels.

Other equally important measures that we have implemented include an effective cross-connection control program, an effective monitoring and surveillance program, and maintaining positive pressure within the distribution system. WVWD has already taken all steps described by DDW as BAT for coliform bacteria in California Code of Regulations, Title 22, Section 64447. Since all BATs are implemented, estimated costs for implementing BATs are not necessary.

## Inorganic Contaminants

### Arsenic

The source of arsenic in water supplies is mainly from erosion of natural deposits, runoff from orchards, and glass and electronic production wastes. The PHG for arsenic is 0.004 µg/L and the MCL is 10 µg/L. Arsenic has been detected at levels above the PHG in 4 out of 18 of WVWD's groundwater wells between 2016 and 2018. Detected levels of arsenic were below the MCL at all times. WVWD is in full compliance with arsenic drinking water standards. The maximum arsenic concentrations for the wells were as follows:

- Well 4A – 7 µg/L
- Well 5A – 3 µg/L
- Well 8A – 5 µg/L
- Well 23A – 2 µg/L

#### *Category of Health Risk*

The category of health risk associated with arsenic and the reason that a drinking water standard was adopted for it is that some people who drink water containing arsenic in excess of the MCL over many years may have an increased risk of getting cancer (22 CCR, Appendix 64465-D).

### *Numerical Health Risk*

The numerical health risk for arsenic at the PHG of 0.004 µg/L is one excess cancer case per million people over a lifetime of exposure. The numerical health risk for arsenic at the MCL of 10 µg/L is 2.5 excess cancer cases per 1,000 people over a lifetime of exposure.

### *BATs and Estimated Cost*

Based on the California Code of Regulations, Title 22, Article 12 and ACWA's 2019 PHG Report Guidance for Water Systems—BATs for lowering arsenic below the PHG are:

- Ion exchange;
- Blending;
- Coagulation/flocculation; and
- Reverse osmosis.

Since arsenic concentrations are already below the MCL, implementing BAT is not required. The estimated cost to install and operate the BATs for reducing arsenic concentrations below the PHG range from an annual cost of \$136,393.17 to \$2,438,443.71. The annual cost per service connection, or per customer, would range from \$6.39 to \$114.18.

## Volatile Organic Compound Contaminants

### Tetrachloroethylene (PCE)

The source of Tetrachloroethylene (PCE) in water supplies is mainly from discharge from factories, dry cleaners, and auto shops. The PHG for PCE is 0.06 µg/L and the MCL is 5 µg/L. PCE has been detected at levels above the PHG in 1 out of 18 of WVWD's groundwater wells between 2016 and 2018. Detected levels of PCE were below the MCL at all times. WVWD is in full compliance with PCE drinking water standards. PCE was detected in Well 17 at a maximum concentration of 2 µg/L.

### *Category of Health Risk*

The category of health risk associated with PCE and the reason that a drinking water standard was adopted for it is that some people who drink water containing PCE in excess of the MCL over many years may have an increased risk of getting cancer (22 CCR, Appendix 64465-E).

### *Numerical Health Risk*

The numerical health risk for PCE at the PHG of 0.06 µg/L is one excess cancer case per million people over a lifetime of exposure. The numerical health risk for PCE at the MCL of 5 µg/L is eight excess cancer cases per one hundred thousand people over a lifetime of exposure.

### *BATs and Estimated Cost*

Based on the California Code of Regulations, Title 22, Article 12 and ACWA's 2019 PHG Report Guidance for Water Systems—BATs for lowering PCE below the PHG are:

- Granular activated carbon; and
- Packed tower aeration.

Since PCE concentrations are already below the MCL, implementing BAT is not required. The estimated cost to install and operate the BATs for reducing PCE concentrations below the PHG range from an annual cost of \$48,980.85 to \$79,382.76. The annual cost per service connection, or per customer, would range from \$2.29 to \$3.72.

## Radiological Contaminants

### Gross Alpha Particle Activity

The source of gross alpha particle activity in water supplies is mainly from the erosion of natural deposits. A PHG for gross alpha particles has not been established. The MCLG for gross alpha particles is 0 pCi/L and the MCL is 15 pCi/L. Gross alpha particles have been detected at levels above the MCLG between 2016 and 2018 in two wells that are part of the Baseline Feeder System, which WVWD operates. Detected levels of gross alpha particles were below the MCL at all times. WVWD is in full compliance with gross alpha particle drinking water standards. The maximum gross alpha particle concentrations for the wells were as follows:

- 9<sup>th</sup> Street North Well – 6 pCi/L
- 9<sup>th</sup> Street South Well – 6 pCi/L

### *Category of Health Risk*

The category of health risk associated with gross alpha particles and the reason that a drinking water standard was adopted for it is that some people who drink water containing gross alpha particles in excess of the MCL over many years may have an increased risk of getting cancer (22 CCR, Appendix 64465-C).

### *Numerical Health Risk*

The numerical health risk for gross alpha particles at the MCLG of 0 pCi/L is zero. The numerical health risk for gross alpha particles at the MCL of 15 pCi/L is one excess cancer case per one thousand people over a lifetime of exposure.

### *BAT and Estimated Cost*

Based on the California Code of Regulations, Title 22, Article 12 and ACWA's 2019 PHG Report Guidance for Water Systems—BAT for lowering gross alpha particle activity below the PHG is reverse osmosis. Since gross alpha particle activity concentrations are already below the MCL, implementing BAT is not required. The estimated cost to install and operate the BAT for reducing gross alpha particle activity concentrations below the PHG range from an annual cost of \$1,591,657.01 to \$13,566,099.86. The annual cost per service connection, or per customer, would range from \$74.53 to \$635.21.

## Uranium

The source of uranium in water supplies is mainly from the erosion of natural deposits. The PHG for uranium is 0.43 pCi/L and the MCL is 20 pCi/L. Uranium has been detected at levels above the PHG between 2016 and 2018 in three wells that are part of the Baseline Feeder System, which WVWD operates. Detected levels of uranium were below the MCL at all times. WVWD is in full compliance with uranium drinking water standards. The uranium concentrations for the wells were as follows:

- 9<sup>th</sup> Street North Well – 5.1 pCi/L
- 9<sup>th</sup> Street South Well – 3.5 pCi/L
- City of Rialto Well 4A – 1.6 pCi/L

### *Category of Health Risk*

The category of health risk associated with uranium and the reason that a drinking water standard was adopted for it is that some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer (22 CCR, Appendix 64465-C).

### *Numerical Health Risk*

The numerical health risk for uranium at the PHG of 0.43 pCi/L is one excess cancer case per million people over a lifetime of exposure. The numerical health risk for uranium at the MCL of 20 pCi/L is five excess cancer case per one hundred thousand people over a lifetime of exposure.

### *BAT and Estimated Cost*

Based on the California Code of Regulations, Title 22, Article 12 and ACWA's 2019 PHG Report Guidance for Water Systems—BAT for lowering uranium below the PHG is reverse osmosis. Other BATs exist, however, since the same wells have gross alpha particle activity above the PHG, and only reverse osmosis is listed as a BAT for gross alpha particles, no other BATs were considered. Uranium concentrations are already below the MCL, so implementing BAT is not required. The estimated cost to install and operate the BAT for reducing uranium concentrations below the PHG range from an annual cost of \$1,591,657.01 to \$13,566,099.86. The annual cost per service connection, or per customer, would range from \$74.53 to \$635.21.

## Recommendations for Further Action

WVWD meets all DDW and USEPA drinking water standards to protect public health. Reducing the levels of the contaminants identified in this report, which are already below the MCLs, would require additional treatment processes that are costly. Since contaminant concentrations are already low, the effectiveness of treatment processes to provide any significant reduction to lower values is uncertain. The health protection benefits of these further hypothetical reductions are not at all clear and may not be quantifiable. Therefore, no action is proposed.

# ATTACHMENT A

## ATTACHMENT

Reference: Updated 2012 ACWA Cost of Treatment Table

## COST ESTIMATES FOR TREATMENT TECHNOLOGIES

(INCLUDES ANNUALIZED CAPITAL AND O&amp;M COSTS)

No.	Treatment Technology	Source of Information	Estimated 2012 Unit Cost Indexed to 2018* (\$/1,000 gallons treated)
1	Granular Activated Carbon	Reference: Malcolm Pirnie estimate for California Urban Water Agencies, large surface water treatment plants treating water from the State Water Project to meet Stage 2 D/DBP and bromate regulation, 1998	0.63 - 1.19
2	Granular Activated Carbon	Reference: Carollo Engineers, estimate for VOC treatment (PCE), 95% removal of PCE, Oct. 1994, 1900 gpm design capacity	0.29
3	Granular Activated Carbon	Reference: Carollo Engineers, est. for a large No. Calif. surf. water treatment plant ( 90 mgd capacity) treating water from the State Water Project, to reduce THM precursors, ENR construction cost index = 6262 (San Francisco area) - 1992	1.38
4	Granular Activated Carbon	Reference: CH2M Hill study on San Gabriel Basin, for 135 mgd central treatment facility for VOC and SOC removal by GAC, 1990	0.54 - 0.78
5	Granular Activated Carbon	Reference: Southern California Water Co. - actual data for "rented" GAC to remove VOCs (1,1-DCE), 1.5 mgd capacity facility, 1998	2.47
6	Granular Activated Carbon	Reference: Southern California Water Co. - actual data for permanent GAC to remove VOCs (TCE), 2.16 mgd plant capacity, 1998	1.60
7	Reverse Osmosis	Reference: Malcolm Pirnie estimate for California Urban Water Agencies, large surface water treatment plants treating water from the State Water Project to meet Stage 2 D/DBP and bromate regulation, 1998	1.85 - 3.55
8	Reverse Osmosis	Reference: Boyle Engineering, RO cost to reduce 1000 ppm TDS in brackish groundwater in So. Calif., 1.0 mgd plant operated at 40% of design flow, high brine line cost, May 1991	4.38
9	Reverse Osmosis	Reference: Boyle Engineering, RO cost to reduce 1000 ppm TDS in brackish groundwater in So. Calif., 1.0 mgd plant operated at 100% of design flow, high brine line cost, May 1991	2.70
10	Reverse Osmosis	Reference: Boyle Engineering, RO cost to reduce 1000 ppm TDS in brackish groundwater in So. Calif., 10.0 mgd plant operated at 40% of design flow, high brine line cost, May 1991	2.92



**COST ESTIMATES FOR TREATMENT TECHNOLOGIES**  
(INCLUDES ANNUALIZED CAPITAL AND O&M COSTS)

<b>No.</b>	<b>Treatment Technology</b>	<b>Source of Information</b>	<b>Estimated 2012 Unit Cost Indexed to 2018* (\$/1,000 gallons treated)</b>
11	Reverse Osmosis	Reference: Boyle Engineering, RO cost to reduce 1000 ppm TDS in brackish groundwater in So. Calif., 10.0 mgd plant operated at 100% of design flow, high brine line cost, May 1991	2.26
12	Reverse Osmosis	Reference: Arsenic Removal Study, City of Scottsdale, AZ - CH2M Hill, for a 1.0 mgd plant operated at 40% of design capacity, Oct. 1991	7.33
13	Reverse Osmosis	Reference: Arsenic Removal Study, City of Scottsdale, AZ - CH2M Hill, for a 1.0 mgd plant operated at 100% of design capacity, Oct. 1991	4.33
14	Reverse Osmosis	Reference: Arsenic Removal Study, City of Scottsdale, AZ - CH2M Hill, for a 10.0 mgd plant operated at 40% of design capacity, Oct. 1991	3.24
15	Reverse Osmosis	Reference: Arsenic Removal Study, City of Scottsdale, AZ - CH2M Hill, for a 10.0 mgd plant operated at 100% of design capacity, Oct. 1991	2.01
16	Reverse Osmosis	Reference: CH2M Hill study on San Gabriel Basin, for 135 mgd central treatment facility with RO to remove nitrate, 1990	2.02 - 3.55
17	Packed Tower Aeration	Reference: Analysis of Costs for Radon Removal... (AWWARF publication), Kennedy/Jenks, for a 1.4 mgd facility operating at 40% of design capacity, Oct. 1991	1.16
18	Packed Tower Aeration	Reference: Analysis of Costs for Radon Removal... (AWWARF publication), Kennedy/Jenks, for a 14.0 mgd facility operating at 40% of design capacity, Oct. 1991	0.62
19	Packed Tower Aeration	Reference: Carollo Engineers, estimate for VOC treatment (PCE) by packed tower aeration, without off-gas treatment, O&M costs based on operation during 329 days/year at 10% downtime, 16 hr/day air stripping operation, 1900 gpm design capacity, Oct. 1994	0.31
20	Packed Tower Aeration	Reference: Carollo Engineers, for PCE treatment by Ecolo-Flo Enviro-Tower air stripping, without off-gas treatment, O&M costs based on operation during 329 days/year at 10% downtime, 16 hr/day air stripping operation, 1900 gpm design capacity, Oct. 1994	0.32
21	Packed Tower Aeration	Reference: CH2M Hill study on San Gabriel Basin, for 135 mgd central treatment facility - packed tower aeration for VOC and radon removal, 1990	0.50 - 0.82

**COST ESTIMATES FOR TREATMENT TECHNOLOGIES**  
(INCLUDES ANNUALIZED CAPITAL AND O&M COSTS)

No.	Treatment Technology	Source of Information	Estimated 2012 Unit Cost Indexed to 2018* (\$/1,000 gallons treated)
22	Advanced Oxidation Processes	Reference: Carollo Engineers, estimate for VOC treatment (PCE) by UV Light, Ozone, Hydrogen Peroxide, O&M costs based on operation during 329 days/year at 10% downtime, 24 hr/day AOP operation, 1900 gpm capacity, Oct. 1994	0.61
23	Ozonation	Reference: Malcolm Pirnie estimate for CUWA, large surface water treatment plants using ozone to treat water from the State Water Project to meet Stage 2 D/DBP and bromate regulation, <i>Cryptosporidium</i> inactivation requirements, 1998	0.14 - 0.29
24	Ion Exchange	Reference: CH2M Hill study on San Gabriel Basin, for 135 mgd central treatment facility - ion exchange to remove nitrate, 1990	0.67 - 0.88

\*Costs were adjusted from date of original estimates to present, where appropriate, using the Engineering News Record (ENR) annual average building costs of 2018 and 2012. The adjustment factor was derived from the ratio of 2018 Index/2012 Index, or 1.188. For the indexed 2015 costs, please refer to the ACWA PHG Guidance published in March 2016.

# ATTACHMENT B



# 2018 CONSUMER CONFIDENCE REPORT



**SAFE. HIGH QUALITY. RELIABLE.**

**DR. MICHAEL TAYLOR**  
President, District 2

**KYLE CROWTHER**  
Vice President, District 1

**DR. CLIFFORD O. YOUNG SR.**  
Director, District 3

**DON OLINGER**  
Director, District 4

**GREG YOUNG**  
Director, District 5

# A MESSAGE FROM WVWD



Dear Customers,

It is our pleasure to provide you with the 2018 Consumer Confidence Report which highlights all of our water sources and water quality results.

As our District continues to experience record growth, we are best preparing for the customers we have today but also for the customers we will be serving decades from now. As you will read in the Report, the District continues to utilize water sources from various basins including Chino, Bunker Hill, Lytle Creek, North Riverside, and Rialto-Colton. We continued utilizing Surface Water, as well as the State Water Project which both are treated at our Oliver P. Roemer Water Filtration Facility.

In 2018, we completed construction and began operating the Hydro Electric Generation Plant at the Oliver P. Roemer Water Filtration Facility. The new plant will generate an annual revenue of \$339,000 which will offset electricity costs utilizing turbines and generators.

It is our pleasure to continue providing our customers with safe, high quality, and reliable water.

Sincerely,

**Clarence Mansell** - *General Manager, West Valley Water District*

## BOARD OF DIRECTORS

**DR. MICHAEL TAYLOR**  
President, District 2

**KYLE CROWTHER**  
Vice President, District 1

**DR. CLIFFORD O. YOUNG SR.**  
Director, District 3

**DON OLINGER**  
Director, District 4

**GREG YOUNG**  
Director, District 5

# TABLE OF CONTENTS

## WATER SYSTEM INFORMATION

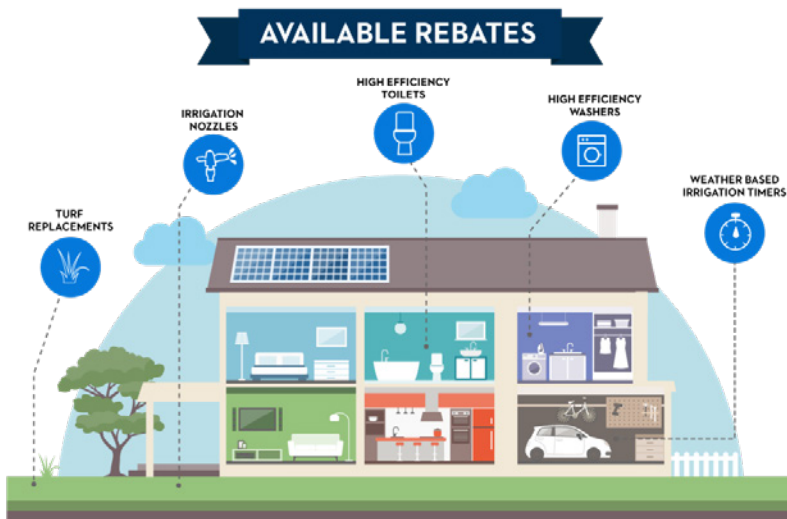
Contact Information..... **3**  
 Sources of Water ..... **4**  
 Source Water Assessment ..... **5**  
 Definitions..... **6**

## WATER QUALITY RESULTS

Distribution System..... **7**  
 Baseline Feeder and Groundwater Wells ..... **8**  
 Treatment Plants..... **10**

## EDUCATIONAL INFORMATION

Containments Expected in Drinking Water ..... **13**  
 Contaminant Information ..... **14**

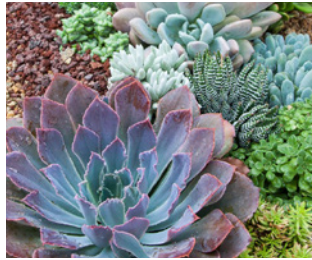


\*Schedule a Water Efficiency Survey by contacting our Customer Service Department and utilize our rebate program. (909) 875-1804

### Rebates Available:

- \$50** High Efficiency Toilet
- \$100** High Efficiency Washing Machine
- \$100** Weather Based Irrigation Controllers
- \$1/sq. ft.** Turf Replacement
- \$4** High Efficiency Nozzle

# WATER SYSTEM INFORMATION



At West Valley Water District (WVWD), our mission is to provide our customers with safe, high quality, and reliable water services at a reasonable rate and in a sustainable manner.

WVWD is a Special District governed by a five-member Board of Directors providing retail water to approximately 83,902 customers. WVWD serves drinking water to portions of Rialto, Colton, Fontana, Bloomington, Jurupa Valley, and an unincorporated area of San Bernardino County.

The goal of our Annual Consumer Confidence Report (CCR) is to inform our customers about the quality of our drinking water, our sources of water, any monitored contaminants found in drinking water, and whether our system meets state and federal drinking water standards. Our water quality data is submitted to the State Water Resources Control Board, Division of Drinking Water (DDW), in order to monitor our compliance for all regulatory standards and assure high quality drinking water is consistently delivered directly to our customers.

## CONTACT INFORMATION

If you have any questions regarding the contents on this report or regarding water quality, please contact Anthony Budicin, Water Quality Supervisor, at (909) 875-1804 ext. 371.

## PUBLIC PARTICIPATION

Public involvement is central to ensuring that we are meeting the highest water supply, water quality, and customer service standards. We welcome your input; please visit our website for ways you can be involved with West Valley Water District.

[www.wvwd.org](http://www.wvwd.org)

## NON-ENGLISH SPEAKING INFORMATION

Este informe contiene información muy importante sobre su agua para beber. Favor de comunicarse West Valley Water District a 855 W. Base Line Rd., Rialto, CA 92376 para asistirlo en español.



# SOURCES OF WATER

West Valley Water District obtains water from both local and imported sources to serve its customers and routinely tests for contaminants from these sources in accordance with Federal and State Regulations.

## LOCAL WATER

### GROUNDWATER

45% of WVWD's water supply is from its own groundwater wells, located in five local basins:

- Chino Basin
- Bunker Hill Basin
- Lytle Creek Basin
- North Riverside Basin
- Rialto-Colton Basin



18% of WVWD's water supply consists of additional groundwater purchased from San Bernardino Valley Municipal Water District through the Base Line Feeder Project. This water also comes from local wells in the Bunker Hill Basin.

### SURFACE WATER

18% of WVWD's water supply is surface water from Lytle Creek in the San Bernardino Mountains. This water is treated through WVWD's Oliver P. Roemer Water Filtration Facility.

## IMPORTED WATER

### STATE WATER PROJECT

19% of WVWD's water supply is surface water purchased from the State Water Project through San Bernardino Valley Municipal Water District. This water is also treated through WVWD's Oliver P. Roemer Water Filtration Facility.



# SOURCES OF WATER

## SOURCE WATER ASSESSMENT

In 2002, WVWD, in partnership with the San Bernardino Valley Water Conservation District, conducted source water assessments of all our drinking water wells. Source water assessments were also completed for both sources of surface water, Lytle Creek and State Water Project, in 2018 and 2017, respectively. No contaminants have been detected above the Maximum Contaminant Levels (MCL) set by the State Water Resources Control Board, however, sources are considered most vulnerable to the following:

- **Fecal Coliform and E. Coli Bacteria** - Heavy recreational activities in both Lytle Creek and Lake Silverwood during warm summer months increase the vulnerability.
- **Methyl Tertiary Butyl Ether (MTBE)** - Sources located near gasoline service stations and underground gas storage tanks are vulnerable. A MTBE plume is leaching from the Colton Gasoline Storage Terminal.
- **Volatile Organic Chemicals (VOCs) and Synthetic Organic Chemicals (SOCs)** - All WVWD groundwater wells were determined to be vulnerable to both VOCs and SOC.
- **Perchlorate** - Detected at low levels in six groundwater wells (Wells 11, 16, 17, 18A, 41, 42). Five of these wells are primary water sources and have treatment systems installed. It is believed that the likely sources for perchlorate originate from former manufactures of rocket fuel/fireworks and fertilizer. Wells 11, 16, 17,

18A and 42 now have ion exchange systems installed for perchlorate removal.

- **Nitrate** - Some groundwater wells are vulnerable. Nitrate contamination is the result of leaching septic systems and past citrus farming.
- **Cryptosporidium** - microbial pathogen found in surface water throughout the U.S.



To view completed source water assessments, you may visit our District office located at: 855 W. Base Line Rd., Rialto, CA, 92376 or call (909) 875-1804.



# DEFINITIONS

**Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

**Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.

**Public Health Goal (PHG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

**Maximum Residual Disinfectant Level (MRDL):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**Primary Drinking Water Standard (PDWS):** MCLs and MRDLs for contaminants that affect health, along with their monitoring and reporting requirements, and water treatment requirements.

**Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.

**Picocuries per Liter (pCi/L):** Measurement commonly used to measure radionuclides in water.

**Nephelometric Turbidity Unit (NTU):** A measure of clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**Milligrams per Liter (mg/L):** Or parts per million (ppm) corresponds to 1 penny out of \$10,000.

**Micrograms per Liter (µg/L):** Or parts per billion (ppb) corresponds to 1 penny out of \$10,000,000.

**Nanograms per Liter (ng/L):** Or parts per trillion (ppt) corresponds to 1 penny of \$10,000,000,000.

**Microsiemens per centimeter (µS/cm):** A measure of conductivity.

**Threshold Odor Number (TON):** A measure of odor.

**Regulatory Action Level (AL):** Concentration of a contaminant which, when exceeded, triggers treatment or other requirements that a water system must follow.

**Running Annual Average (RAA):** The yearly average which is calculated every 3 months using the previous 12 months' data.

**Local Running Annual Average (LRAA):** The RAA at one sample location.

**Disinfection By-Product:** Compounds which are formed from mixing of organic or mineral precursors in the water with ozone, chlorine, or chloramine. Total Trihalomethanes and Haloacetic Acids are disinfection by-products.

**Secondary Drinking Water Standard (Secondary Standard):** MCLs for contaminants that do not affect health, but are used to monitor the aesthetics of the water.

**Notification Level (NL):** Health-based advisory levels established by the State Board for chemicals in drinking water that lack MCLs.

**90th Percentile:** The value in a data set in which 90 percent of the set is less than or equal to this value. The Lead and Copper Rule uses the 90th percentile to comply with the Action Level.

# WATER QUALITY RESULTS

## DISTRIBUTION SYSTEM

Parameter	Sample Date	Units	MCL	PHG (MCLG)	Result Type	Results	Violation Yes/No	Likely Source of Contamination
<b>PRIMARY STANDARDS - Mandatory Health-Related Standards</b>								
<b>Microbiological</b>								
Total Coliform Bacteria	2018	%	5	(0)	Maximum Monthly Positive Samples	2	No	Naturally present in the environment.
<b>Disinfection Byproducts, Disinfectant Residuals, and Disinfection Byproduct Precursors</b>								
Haloacetic Acids	2018	µg/L	LRAA = 60	N/A	Range Highest LRAA	ND-19 13	No	Byproduct of drinking water disinfection.
Total Trihalomethanes	2018	µg/L	LRAA = 80	N/A	Range Highest LRAA	ND-75 43	No	Byproduct of drinking water disinfection.
Chlorine	2018	mg/L	MRDL = 4.0 (as Cl <sub>2</sub> )	MRDLG = 4.0 (as Cl <sub>2</sub> )	Range Highest RAA	0.26-2.20 1.32	No	Drinking water disinfectant added for treatment.
<b>Lead and Copper</b>								
Lead	2018	µg/L	AL=15	0.2	# of Sites Sampled # of Sites Over AL 90th Percentile (µg/L) # of Schools Sampled	30 0 ND 14	No	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits.
Copper	2018	mg/L	AL=1.3	0.3	# of Sites Sampled # of Sites Over AL 90th Percentile (mg/L)	30 0 0.12	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
<b>SECONDARY STANDARDS - Aesthetic Standards<sup>1</sup></b>								
Color	2018	Units	15	N/A	Range Average	ND-5 ND	No	Naturally-occurring organic materials.
Specific Conductance	2018	µS/cm	1600	N/A	Range Average	340-540 421	No	Substances that form ions when in water; seawater influence.
Odor Threshold	2018	TON	3	N/A	Range Average	1-2 1	No	Naturally-occurring organic materials.
Turbidity	2018	NTU	5	N/A	Range Average	ND-8.3 <sup>2</sup> ND	No	Soil runoff.
<b>OTHER PARAMETERS</b>								
pH	2018	pH units	No Standard	N/A	Range Average	7.3-8.1 7.8	No	Characteristic of water.
Total Alkalinity (as CaCO <sub>3</sub> )	2018	mg/L	No Standard	N/A	Range Average	86-200 151	No	Naturally occurring.
Calcium	2018	mg/L	No Standard	N/A	Range Average	23-85 53	No	Erosion of salt deposits in soil and rock.
<b>UNREGULATED CONTAMINANT MONITORING<sup>3</sup></b>								
<b>Fourth Unregulated Contaminant Monitoring Rule (UCMR4)</b>								
Haloacetic Acids	2018	µg/L	60	N/A	Range Average	ND-33 9	No	Byproduct of drinking water disinfection.
HAA6Br <sup>4</sup>	2018	µg/L	N/A	N/A	Range Average	ND-30 12	No	Unregulated contaminant monitoring helps U.S. EPA and the State Water Resources Control Board to determine where certain contaminants occur and whether the contaminants need to be regulated.

# WATER QUALITY RESULTS

HAA9 <sup>5</sup>	2018	µg/L	N/A	N/A	Range Average	ND-53 18	No	Unregulated contaminant monitoring helps U.S. EPA and the State Water Resources Control Board to determine where certain contaminants occur and whether the contaminants need to be regulated.
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## Footnotes:

<sup>1</sup> Compliance with secondary standards are based on an annual average. Values above the MCL are acceptable, as long as the average is below the MCL.

<sup>2</sup> Average of initial sample and confirmation sample were below MCL.

<sup>3</sup> Unregulated contaminant monitoring helps U.S. EPA and the State Water Resources Control Board to determine where certain contaminants occur and whether the contaminants need to be regulated.

<sup>4</sup> HAA6Br: Bromochloroacetic acid, bromodichloroacetic acid, dibromoacetic acid, dibromochloroacetic acid, monobromoacetic acid, and tribromoacetic acid.

<sup>5</sup> HAA9: Bromochloroacetic acid, bromodichloroacetic acid, chlorodibromoacetic acid, dibromoacetic acid, dichloroacetic acid, monobromoacetic acid, monochloroacetic acid, tribromoacetic acid, and trichloroacetic acid.

AL - Regulatory Action Level; LRAA - Locational Running Annual Average; MCL - Maximum Contaminant Level; MCLG - Maximum Contaminant Level Goal; MRDL - Maximum Residual Disinfectant Level; MRDLG - Maximum Residual Disinfectant Level Goal; ND - Non-Detected; NL - Notification Level; NR - No Range; N/A - Not Applicable; NTU - Nephelometric Turbidity Units; PHG - Public Health Goal; RAA - Running Annual Average; TON - Threshold Odor Number

## BASELINE FEEDER AND GROUNDWATER WELLS

Parameter	Sample Date <sup>1</sup>	Units	MCL	PHG (MCLG)	Result Type	Results		Violation Yes/No	Likely Source of Contamination
						Baseline Feeder	Wells		
<b>PRIMARY STANDARDS - Mandatory Health-Related Standards</b>									
<b>Radiological</b>									
Gross Alpha Particle Activity	2015 2016 2018	pCi/L	15	(0)	Range Average	5.5-5.6 5.6	ND-13.0 4.9	No	Erosion of natural deposits.
Uranium	2015 2018	pCi/L	20	0.43	Range Average	3.5-5.1 4.3	ND-8.2 2.7	No	Erosion of natural deposits.
<b>Inorganic Chemicals</b>									
Aluminum	2016 2017 2018	mg/L	1	0.6	Range Average	NR ND	ND-0.072 ND	No	Erosion of natural deposits; residue from some surface water treatment processes.
Arsenic	2017 2018	µg/L	10	0.004	Range Average	ND-3.2 ND	ND-6.7 ND	No	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes.
Fluoride	2016 2017 2018	mg/L	2	1	Range Average	0.26-0.77 0.46	0.18-0.41 0.27	No	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories.
Nitrate as Nitrogen	2018	mg/L	10	10	Range Average	2.4-7.5 3.9	1.0-5.7 3.3	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits.
<b>Volatile Organic Chemicals</b>									
Toluene	2016 2017 2018	µg/L	150	150	Range Average	NR ND	ND-1.7 ND	No	Discharge from petroleum and chemical factories; underground gas tank leaks.
Trichloroethylene (TCE)	2016 2017 2018	µg/L	5	1.7	Range Average	ND-0.8 ND	NR ND	No	Discharge from metal degreasing sites and other factories.

# WATER QUALITY RESULTS

## Disinfection Byproducts, Disinfectant Residuals, and Disinfection Byproduct Precursors

Chlorine	2018	mg/L	MRDL = 4.0 (as Cl <sub>2</sub> )	MRDLG = 4.0 (as Cl <sub>2</sub> )	Range Average	0.73-1.73 1.31	N/A N/A	No	Drinking water disinfectant added for treatment.
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## SECONDARY STANDARDS - Aesthetic Standards<sup>2</sup>

Aluminum	2016 2017 2018	µg/L	200	N/A	Range Average	NR ND	ND-72 ND	No	Erosion of natural deposits; residue from some surface water treatment processes.
Foaming Agents (MBAS)	2016 2017 2018	µg/L	500	N/A	Range Average	ND-90 ND	ND-430 ND	No	Municipal and industrial waste discharges.
Chloride	2016 2017 2018	mg/L	500	N/A	Range Average	10-20 13	4-25 9	No	Runoff/leaching from natural deposits; seawater influence.
Color	2018	Units	15	N/A	Range Average	NR ND	0-15 ND	No	Naturally-occurring organic materials.
Specific Conductance	2016 2017 2018	µS/cm	1600	N/A	Range Average	490-530 510	330-580 417	No	Substances that form ions when in water; seawater influence.
Iron	2017 2018	µg/L	300	N/A	Range Average	NR ND	ND-120 ND	No	Leaching from natural deposits; industrial wastes.
Manganese	2017 2018	µg/L	50	N/A	Range Average	NR ND	ND-20 ND	No	Leaching from natural deposits.
Odor Threshold	2018	TON	3	N/A	Range Average	NR 1	1-2 1	No	Naturally-occurring organic materials.
Sulfate	2016 2017 2018	mg/L	500	N/A	Range Average	45-51 49	11-54 28	No	Runoff/leaching from natural deposits; industrial wastes.
Total Dissolved Solids	2016 2017 2018	mg/L	1000	N/A	Range Average	260-360 312	170-330 231	No	Runoff/leaching from natural deposits.
Turbidity	2018	NTU	5	N/A	Range Average	ND-0.3 ND	ND-6.3 0.4	No	Soil runoff.

## OTHER PARAMETERS

pH	2016 2017 2018	pH units	No Standard	N/A	Range Average	7.7-8.2 7.9	7.6-8.2 7.8	No	Characteristic of water.
Total Alkalinity (as CaCO <sub>3</sub> )	2016 2017 2018	mg/L	No Standard	N/A	Range Average	180-210 197	140-190 161	No	Naturally occurring.
Calcium	2016 2017 2018	mg/L	No Standard	N/A	Range Average	66-73 71	46-79 57	No	Erosion of salt deposits in soil and rock.
Hardness	2016 2017 2018	mg/L	No Standard	N/A	Range Average	210-230 223	140-250 177	No	Hardness is the sum of polyvalent cations present in the water, generally magnesium and calcium. The cations are usually naturally occurring.
Sodium	2016 2017 2018	mg/L	No Standard	N/A	Range Average	8-16 13	10-23 16	No	Sodium refers to the salt present in the water and is generally naturally occurring.

# WATER QUALITY RESULTS

## UNREGULATED CONTAMINANT MONITORING<sup>3</sup>

### Third Unregulated Contaminant Monitoring Rule (UCMR3)

Hexavalent Chromium	2018	µg/L	N/A <sup>4</sup>	0.02	Range Average	NR 1.2	ND-3.0 1.0	No	Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities; erosion of natural deposits.
Vanadium	2016 2017 2018	µg/L	NL=50	N/A	Range Average	3.8-4.4 4.1	ND-6.0 4.3	No	Unregulated contaminant monitoring helps U.S. EPA and the State Water Resources Control Board to determine where certain contaminants occur and whether the contaminants need to be regulated.

### Fourth Unregulated Contaminant Monitoring Rule (UCMR4)

Manganese	2018	µg/L	50	N/A	Range Average	1.6-6.9 4.3	ND-1.8 1.0	No	Leaching from natural deposits.
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#### Footnotes:

<sup>1</sup> The State allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old. For sample points that were monitored during the current reporting year, the current reporting year data was used. If a sampling point did not have monitoring data for the reporting year, the most current data was used. Contaminant results are based on the most current data for each sampling point.

<sup>2</sup> Compliance with secondary standards are based on an annual average. Values above the MCL are acceptable, as long as the average is below the MCL.

<sup>3</sup> Unregulated contaminant monitoring helps U.S. EPA and the State Water Resources Control Board to determine where certain contaminants occur and whether the contaminants need to be regulated.

<sup>4</sup> There is currently no MCL for hexavalent chromium. The previous MCL of 10 µg/L was withdrawn on September 11, 2017.

AL - Regulatory Action Level; LRAA - Locational Running Annual Average; MCL - Maximum Contaminant Level; MCLG - Maximum Contaminant Level Goal; MRDL - Maximum Residual Disinfectant Level; MRDLG - Maximum Residual Disinfectant Level Goal; ND - Non-Detected; NL - Notification Level; NR - No Range; N/A - Not Applicable; NTU - Nephelometric Turbidity Units; PHG - Public Health Goal; RAA - Running Annual Average; TON - Threshold Odor Number

## TREATMENT PLANTS

Parameter	Sample Date <sup>1</sup>	Units	MCL	PHG (MCLG)	Result Type	Results				Violation Yes/No	Likely Source of Contamination
						Fluidized Bed Reactors (FBR)	Oliver P. Roemer Filtration Facility	Ion Exchange Arsenic Treatment	Ion Exchange Perchlorate Treatment		
<b>PRIMARY STANDARDS - Mandatory Health-Related Standards</b>											
<b>Radiological</b>											
Gross Alpha Particle Activity	2015 2016	pCi/L	15	(0)	Range Avg.	5.7-10.0 7.9	ND-13.0 3.3	NR 8.1	5.4-6.5 6.0	No	Erosion of natural deposits.
Uranium	2012 2015 2016	pCi/L	20	0.43	Range Avg.	2.1-3.9 3.0	ND-12.0 6.4	NR 1.8	3.4-4.7 3.9	No	Erosion of natural deposits.
<b>Inorganic Chemicals</b>											
Aluminum	2018	mg/L	1	0.6	Range Avg.	NR ND	ND-0.06 ND	NR ND	ND-0.10 ND	No	Erosion of natural deposits; residue from some surface water treatment processes.
Arsenic	2018	µg/L	10	0.004	Range Avg.	NR ND	ND-2.7 ND	ND-2.9 ND	NR ND	No	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes.

# WATER QUALITY RESULTS

Fluoride	2017 2018	mg/L	2	1	Range Avg.	0.25-0.33 0.30	ND-0.45 0.26	NR 0.25	0.18-0.27 0.23	No	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories.
Nitrate as Nitrogen	2018	mg/L	10	10	Range Avg.	NR ND	ND-0.6 ND	5.1-6.7 5.9	ND-9.6 5.2	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits.
<b>Volatile Organic Chemicals</b>											
Methyl-tert-butyl ether (MTBE)	2017 2018	µg/L	13	13	Range Avg.	NR ND	NR ND	NR 4.4	NR ND	No	Leaking underground storage tanks; discharge from petroleum and chemical factories.
Tetrachloroethylene (PCE)	2017 2018	µg/L	5	0.06	Range Avg.	NR ND	NR ND	NR ND	ND-2.00 0.65	No	Discharge from factories, dry cleaners, and auto shops (metal degreaser).
<b>Disinfection Byproducts (DBP) and Disinfection Byproduct Precursors</b>											
Total Trihalomethanes	2017 2018	µg/L	80	N/A	Range Avg.	NR ND	4-34 18	ND ND	ND ND	No	Byproduct of drinking water disinfection.
Haloacetic Acids	2018	µg/L	60	N/A	Range Avg.	NR ND	ND-9 4	N/A N/A	N/A N/A	No	Byproduct of drinking water disinfection.
Control of DBP Precursors Total Organic Carbon	2018	mg/L	TT	N/A	Range Avg.	ND-4.5 0.9	0.3-2.5 1.0	N/A N/A	N/A N/A	No	Various natural and manmade sources.
<b>SECONDARY STANDARDS - Aesthetic Standards<sup>2</sup></b>											
Aluminum	2017 2018	µg/L	200	N/A	Range Avg.	NR ND	ND-63 ND	NR ND	ND-96 ND	No	Erosion of natural deposits; residue from some surface water treatment processes.
Chloride	2017 2018	mg/L	500	N/A	Range Avg.	4.3-9.2 6.2	3.7-80.0 32.9	NR 15.0	6.3-130.0 47.6	No	Runoff/leaching from natural deposits; seawater influence.
Color	2018	Units	15	N/A	Range Avg.	NR ND	ND-10 5	NR ND	NR ND	No	Naturally-occurring organic materials.
Specific Conductance	2017 2018	µS/cm	1600	NA	Range Avg.	320-350 337	360-420 390	NR 440	390-560 450	No	Substances that form ions when in water; seawater influence.
Iron	2017 2018	µg/L	300	N/A	Range Avg.	ND-320 <sup>3</sup> ND	NR ND	ND-220 ND	NR ND	No	Leaching from natural deposits; industrial wastes.
Manganese	2018	µg/L	50	N/A	Range Avg.	NR ND	ND-28 ND	NR ND	NR ND	No	Leaching from natural deposits.
Odor - Threshold	2018	TON	3	N/A	Range Avg.	1-2 1	NR 1	NR 1	1-2 1	No	Naturally-occurring organic materials.
Sulfate	2017 2018	mg/L	500	N/A	Range Avg.	12-19 14	26-35 31	NR 29	1-23 15	No	Runoff/leaching from natural deposits; industrial wastes.
Total Dissolved Solids	2017 2018	mg/L	1000	N/A	Range Avg.	180-250 207	210-250 230	NR 240	210-310 247	No	Runoff/leaching from natural deposits.
Turbidity	2018	NTU	5	N/A	Range Avg.	ND-1.8 ND	0.5-0.7 0.6	ND-1.1 0.1	ND-0.3 0.1	No	Erosion of natural substances that cause suspended particles.
<b>OTHER PARAMETERS</b>											
pH	2017 2018	pH units	No Standard	N/A	Range Avg.	7.3-8.0 7.8	6.3-8.8 7.1	7.0-8.9 7.9	7.6-7.9 7.8	No	Characteristic of water.
Total Alkalinity (as CaCO <sub>3</sub> )	2017 2018	mg/L	No Standard	N/A	Range Avg.	130-170 155	62-170 120	NR 150	84-160 131	No	Naturally occurring.

# WATER QUALITY RESULTS

Calcium	2017 2018	mg/L	No Standard	N/A	Range Avg.	41-48 45	19-53 36	NR 62	57-74 63	No	Erosion of salt deposits in soil and rock.
Hardness	2017 2018	mg/L	No Standard	N/A	Range Avg.	37-200 162	87-170 129	NR 180	170-220 187	No	Hardness is the sum of polyvalent cations present in the water, generally magnesium and calcium. The cations are usually naturally occurring.
Sodium	2017 2018	mg/L	No Standard	N/A	Range Avg.	10-14 12	9-44 27	NR 17	12-17 15	No	Sodium refers to the salt present in the water and is generally naturally occurring.

## DETECTION OF UNREGULATED CONTAMINANTS<sup>4</sup>

### Third Unregulated Contaminant Monitoring Rule (UCMR3)

Hexavalent Chromium	2017 2018	µg/L	N/A <sup>5</sup>	0.02	Range Avg.	ND-1.9 1.6	ND-0.2 0.1	NR 1.3	ND-2.9 1.8	No	Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities; erosion of natural deposits.
Vanadium	2016 2017 2018	µg/L	NL=50	N/A	Range Avg.	ND-5.3 ND	ND-3.8 ND	NR 4.8	ND-5.7 4.3	No	Unregulated contaminant monitoring helps U.S. EPA and the State Water Resources Control Board to determine where certain contaminants occur and whether the contaminants need to be regulated.

### Fourth Unregulated Contaminant Monitoring Rule (UCMR4)

Bromide <sup>6</sup>	2018	µg/L	N/A	N/A	Range Avg.	N/A N/A	ND-260 103	N/A N/A	N/A N/A	No	Unregulated contaminant monitoring helps U.S. EPA and the State Water Resources Control Board to determine where certain contaminants occur and whether the contaminants need to be regulated.
Total Organic Carbon <sup>6</sup>	2018	µg/L	N/A	N/A	Range Avg.	N/A N/A	ND-3600 1475	N/A N/A	N/A N/A	No	Unregulated contaminant monitoring helps U.S. EPA and the State Water Resources Control Board to determine where certain contaminants occur and whether the contaminants need to be regulated.

#### Footnotes:

<sup>1</sup> The State allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old. For sample points that were monitored during the current reporting year, the current reporting year data was used. If a sampling point did not have monitoring data for the reporting year, the most current data was used. Contaminant results are based on the most current data for each sampling point.

<sup>2</sup> Compliance with secondary standards are based on annual average. Values above the MCL are acceptable, as long as the average is below the MCL.

<sup>3</sup> Annual average below MCL; meets state requirements.

<sup>4</sup> Unregulated contaminant monitoring helps U.S. EPA and the State Water Resources Control Board to determine where certain contaminants occur and whether the contaminants need to be regulated.

<sup>5</sup> There is currently no MCL for hexavalent chromium. The previous MCL of 10 µg/L was withdrawn on September 11, 2017.

<sup>6</sup> Reported results reflect raw influent prior to treatment.

AL - Regulatory Action Level; LRAA - Locational Running Annual Average; MCL - Maximum Contaminant Level; MCLG - Maximum Contaminant Level Goal; MRDL - Maximum Residual Disinfectant Level; MRDLG - Maximum Residual Disinfectant Level Goal; ND - Non-Detected; NL - Notification Level; NR - No Range; N/A - Not Applicable; NTU - Nephelometric Turbidity Units; PHG - Public Health Goal; RAA - Running Annual Average; TON - Threshold Odor Number



## EDUCATIONAL INFORMATION

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

### CONTAMINANTS AND THEIR PRESENCE IN DRINKING WATER

Contaminants that may be present in source water include:

- **Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.**
- **Inorganic contaminants, such as salts and metals, that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.**
- **Pesticides and herbicides that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.**
- **Organic chemical contaminants, including synthetic and volatile organic chemicals, that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.**
- **Radioactive contaminants that can be naturally-occurring or be the result of oil and gas production and mining activities.**

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (U.S. EPA) and the State Water Resources Control Board (State Board) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. State Board regulations also establish limits for contaminants in bottled water that provide the same protection for public health.



### CONTAMINANTS EXPECTED IN DRINKING WATER

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline (1-800-426-4791).

## EDUCATIONAL INFORMATION



### PEOPLE MOST VULNERABLE TO CONTAMINANTS

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. U.S. EPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

### CONTAMINANT INFORMATION

Nitrate in drinking water at levels above 10 mg/L is a health risk for infants of less than six months of age. Such nitrate levels in drinking water can interfere with the capacity of the infant's blood to carry oxygen, resulting in a serious illness; symptoms include shortness of breath and blueness of the skin. Nitrate levels above 10 mg/L may also affect the ability of the blood to carry oxygen in other individuals, such as pregnant women and those with certain specific enzyme deficiencies. If you are caring for an infant, or you are pregnant, you should

ask advice from your health care provider. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity.

While your drinking water meets the federal and state standard for arsenic, it does contain low levels of arsenic. The arsenic standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. The U.S. Environmental Protection Agency continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects, such as skin damage and circulatory problems.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. WVWD is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you do so, you may wish to collect the flushed water and reuse it for another beneficial purpose, such as watering plants. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/lead>.



West Valley Water District  
 855 W. Base Line Road  
 Rialto, CA 92376

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**BOARD OF DIRECTORS  
ENGINEERING AND PLANNING COMMITTEE  
STAFF REPORT**

**DATE:** June 19, 2019  
**TO:** Engineering and Planning Committee  
**FROM:** Clarence Mansell Jr., General Manager  
**SUBJECT:** AUTHORIZATION TO APPROVE CHANGE ORDER FOR RESERVOIR 3-A-1 ROOF REPLACEMENT AND ASBESTOS ABATEMENT AND DISPOSAL

---

**BACKGROUND:**

On October 18, 2018, the West Valley Water District (“District”) entered into a contract with Rite-Way Roof Corporation for the Reservoir 3-A-1 Roof Replacement and Asbestos Abatement and Disposal Project. During removal of the existing roofing materials, rebar corrosion and concrete spalling at the precast concrete roof t-beams were discovered. The damaged roof members need to be repaired prior to the new roofing being placed.

**DISCUSSION:**

District staff solicited design proposals for repair. Two (2) engineering firms – Kelsey Structural Engineering Service (“KSE”) and Knapp & Associates, Inc. (“KAI”) – submitted proposals. AKD Consulting (“AKD”) performed the initial evaluation of the roof did not submit a proposal. The design proposals were similar proposing installation of Fiber Reinforced Polymer (FRP) strengthening system and approximately two hundred fifty-three (253) metal patches. The roof system that was original bided uses hot tar, which would melt the resin in FRP. A different type of roofing system is selected because it would not damage the FRP repairs. The design proposal costs were as follows:

Knapp & Associates, Inc.	Kelsey Structural Engineering
\$4,900	\$7,000

Rite-Way Roof Corporation has submitted Change Order to cover the cost for the additional work as specified by KAI in the amount of **\$180,321.00**. A copy of Change Order is attached as **Exhibit B**.

**FISCAL IMPACT:**

This item is included in the Fiscal Year 2018/19 Capital Budget and will be funded from project number W19011 titled “Annual R/R – Reservoir Rehabilitation” with a budget of \$196,604.00.

The District has complied with the District's purchasing policy regarding this item. On September 18, 2018, a Request for Bids (RFB) was issued and publicly advertised on PlanetBids for Reservoir 3-A-1 Roof Replacement and Asbestos Abatement and Disposal Project. The change order request is to repair unforeseen structural damage and to adjust the type of roof compatible with the type of repair the structural engineer has recommended.

**STAFF RECOMMENDATION:**

Staff recommends that the Engineering, Operations and Planning Committee approve Change Order for Reservoir 3-A-1 Asbestos Abatement and Roof Replacement Project in the amount of \$180,321.00 and submit this item for consideration by the full Board of Directors at a future meeting.

Respectfully Submitted,



---

Clarence Mansell Jr, General Manager

CM:jc

**ATTACHMENT(S):**

1. Exhibit A - Design Proposals from KAI and KSE
2. Exhibit B - Rite-Way Roof Corporation Change Order
3. Exhibit C - Photos of Reservoir 3-A-1 Roof

**KNAPP & ASSOCIATES, INC.**

408 So. Stoddard Ave, San Bernardino, CA 92401

Phone: (909) 889-0115 Fax: (909) 889-0455 Email: knappae@aol.com

April 22, 2019

Joe Schaack  
West Valley Water District  
855 W. Baseline  
Rialto, CA 92377

Re: WWWD Reservoir Roof Rehabilitation

**PROPOSAL**

We are proposing to provide structural engineering calculations and drawings for roof rehabilitation design. Our fee for this service will be in the amount of \$4,900, and if acceptable, please sign and return this letter of proposal with your authorization to proceed.

Respectfully,

Leonard C. Knapp

Accepted by:

Signature \_\_\_\_\_ Print \_\_\_\_\_ Date \_\_\_\_\_

## West Valley Water District

855 Baseline Rd., Rialto, CA 92376

### Double Tee Rooftop Seismic Strengthening

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#### Proposal:

### Fiber Reinforced Polymer (FRP) Strengthening System

Date: April 24, 2019	Proposal No.: 550241
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#### Submitted By:

Gaetano Bologna, Business Development Manager

Direct: 951-318-7840

Email: gbologna@structuraltec.com

**structural**

A Structural Group Company

Proposal #550241  
West Valley Water District – Double Tee

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April 24<sup>th</sup>, 2019

**PROJECT:** West Valley Water District – Seismic Strengthening

**RE:** Fiber Reinforced Polymer (FRP) Strengthening System & Rooftop Coating

Structural Group, Inc. (STRUCTURAL) is pleased to provide this budgetary estimate for the FRP Strengthening System at the topside of the double tee precast panels acting as a roof for the aforementioned project.

STRUCTURAL has over 40 years of experience providing FRP solutions to concrete infrastructure and is uniquely qualified to perform the FRP scope of work presented.

#### PROJECT SCOPE

The FRP strengthening is required at the double tee joints as defined and referenced below (based on the calculations and details provided by Knapp & Associates on March, 12<sup>th</sup>, 2019). Once installed, the FRP material is to be covered with a rooftop coating to be provided by others.

- S1: Structural Calculations
- S2: Sketch of rooftop dimensions and deficiencies.

#### GENERAL SCOPE OF WORK

STRUCTURAL proposes to provide all necessary labor, material, equipment, and supervision (except as noted below) to perform the following general scope of work:

1. Provide shop drawings and details – no P.E. stamp is required for the FRP submittal unless otherwise specified.
2. Mobilize and set-up (1 mobilization included to fully complete the identified FRP and coating scopes, additional pricing is provided in the “Pricing” section for each additional mobilization that may be required).
3. Prepare substrate surfaces to receive FRP by abrasive methods.
4. Apply primer and putty to the prepared substrate surfaces.
5. Saturate the FRP fabric with epoxy utilizing mechanical saturating equipment.
6. Install FRP System to double tee joints as designed and detailed.
7. Broadcast sand to top layer of FRP to permit bonding of rooftop coating application
8. Feather all seams and edges.
9. Clean-up, take-down and demobilize.

NOTE: All FRP materials to be manufactured and provided by Structural Technologies.



Proposal #550241

**West Valley Water District – Double Tee**

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**WORKING CONDITIONS**

Our budgetary estimate is based upon the following working conditions.

- Safety Trained Employees.
- Daytime work hours for 40 hour work week (7:00a.m. – 5:00p.m.).
- Five (5) day week MTWThF.
- Open shop labor, prevailing wages not required, not subjected to any PLA's or union requirements.

**SAFETY 24/7 – KNOW IT, LIVE IT**

Safety 24/7 is a STRUCTURAL employee's personal commitment to his or her own safety, as well as to the safety of friends, family, and co-workers. Safety is a core principle – there is nothing more important in what we do, **24/7**. This commitment creates a culture of safety on our jobsites, in our manufacturing facilities, offices, and in our private lives.

**STRUCTURAL's Dedication to Safety**

The safety of tenants, work crews and property before, during, and after construction is our top priority and it extends to our subcontractors, customers, tenants, the general public and the structure itself.

**EXCLUSIONS and Support by Others**

The following items and associated costs are excluded from our budgetary estimate. If you would like to make changes to this list, please let us know and we can discuss revisions and potential project impacts.

- a) Delays associated with:
  - i. *Your operations (alarms, evacuations, logistics).*
  - ii. *Other contractors.*
- b) Additional work beyond scope described above.
- c) Electricity: access to 110 volt, 20 amp power sources.
- d) Concrete repairs
- e) Steel joint repairs as necessary
- f) Access to potable water.
- g) Roof coating
- h) Dumpsters within close proximity to work area for disposal of debris and regular trash.
- i) Removal and abatement of hazardous materials (lead paint, asbestos, etc.) prior to STRUCTURAL mobilization, if applicable.
- j) Laydown area at work areas.
- k) All dust control and containment.
- l) Removal of all obstructions such as MEP equipment, conduits, attachments, facades, coatings, partition walls, etc. to access wall elements requiring FRP. The bare structural concrete of the elements shall be fully exposed and accessible for the FRP installation.

Proposal #550241

**West Valley Water District – Double Tee**

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- m) Any shoring and bracing, if required.
- n) All required testing, structural observations and inspections (special inspections or otherwise).

**ESTIMATED SCHEDULE**

We propose to perform the above noted scope of work in approximately 3-4 full work weeks.

**PRICING**

STRUCTURAL proposes to perform the above noted scope of services for the following:

**FRP Strengthening System (LS): ... 97,565.00**

Additional Notes:

1. Pricing above includes a single mobilization. Each additional mobilization that may be required to be paid at \$1,500.00 per each.
2. Contractual Terms: to be mutually agreed upon.

**SUGGESTED NEXT STEPS**

If this budgetary estimate meets your requirements, please return your contract for review and execution. Otherwise, please let us know if there are any questions related to the requirements and services in this budgetary estimate. We look forward to working with you on this project.

Respectfully,



Gaetano Bologna  
Business Development Manager



## Structural Engineering Service Proposal

March 5, 2019

Joe Shaack  
Production Supervisor  
West Valley Water District  
855 W Baseline Rd.  
Rialto, CA 92376

RE: WVWD Reservoir 3A-1 Roof Repair

Dear Mr. Shaack,

Thank you for the opportunity to provide a proposal for the above referenced project.

### PROJECT BACKGROUND

It is our understanding that West Valley Water District (WVWD) is requesting a proposal for structural engineering services for roof repairs at Reservoir 3A-1. The reservoir is a 2.0 MG rectangular concrete tank that was originally constructed in 1972 and is currently undergoing a reroofing project. During removal of the existing roofing materials, rebar corrosion and concrete spalling at the precast concrete roof t-beams were discovered. The purpose of this project is to repair the damaged roof members prior to the new roofing being placed.

Kelsey Structural (KS) is proposing to WVWD to provide the structural recommendations and design for the roof repair. This proposal is presented as a representation of our current understanding of the project scope of work and objectives and is based on information provided by WVWD. This proposal was prepared specifically for WVWD and may not be provided to others without Kelsey Structural's express permission.

### SCOPE OF WORK

Our proposed Scope of Work includes the following:

#### 1. Structural Roof Repair Design

KS shall perform the following tasks for the structural roof repair design:

- a. Record Review: Perform review of existing record drawings and photos to determine existing roof structure design intent, detailing, and any other relevant information required for repair detailing. WVWD to provide precast roof t-beam shop drawings, if available.



## Structural Engineering Service Proposal

- b. Tech Memo: Provide a one to two-page written Tech Memo identifying existing roof damage with structural repair recommendations. Anticipated repairs include fiber strengthening at the damaged roof members.
- c. Structural Details: Provide one 11x17 structural drawing with proposed structural roof repair details and required fiber strengthening and design criteria for use by fiber contractor. Details will indicate minimum requirements for fiber contractor to perform repair work.

Items not explicitly defined in the Scope of Work are not provided at this time. The final Scope of Work may vary from what is presented herein and may be revised with consent by both KS and WVWD.

### DELIVERABLES

The Scope of Work shall include the following deliverables:

1. Tech Memo: Includes a one to two-page written Tech Memo with findings and repair recommendations.
2. Structural Detail: Includes one 11x17 structural detail sheet with fiber repair details and design criteria.

Drafting will be performed in AutoCAD and all submittal materials will be provided in PDF format.

All work shall conform to the 2016 California Building Code (CBC) and its referenced code documents.

### EXCLUSIONS

The Scope of Work as defined herein does not include the following items:

1. Concrete repair details, joint repair details, or any other details beyond proposed fiber repair details shall not be provided.
2. Gravity or lateral analysis of the existing structure shall not be provided.
3. Structural calculations, specifications and full structural drawings shall not be provided.
4. Cost Estimates shall not be provided.
5. Construction Support services shall not be provided as part of this Scope of Work. A separate proposal for Construction Support services may be provided.



## Structural Engineering Service Proposal

### PROPOSED FEE

Our proposed fee for the Scope of Work as defined herein is **\$7,000.00** (fixed-fee).

### ADDITIONAL SERVICES

Additional services are those which arise as a result of unforeseen circumstances during the design of a project and which, therefore, cannot be included in the basic services agreement, or those services, which are not part of the original Scope of Work. Addenda to this proposal may be provided for these services, as required.

Thank you for the opportunity to provide our proposal and for considering us for this project. If you have any questions or need further information, please do not hesitate to call or email.

Sincerely,

\_\_\_\_\_  
Guy Kelsey, SE 6099  
Principal Engineer

Proposal accepted by Client or  
authorized representative of Client:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name (please print)

c: Matt Stone, SE

# EXHIBIT B

**WEST VALLEY WATER DISTRICT**

**CHANGE ORDER**

**Order No.** \_\_\_\_\_

**Date** \_\_\_\_\_

**Agreement Date** \_\_\_\_\_

**Sheet** \_\_\_\_\_ **of** \_\_\_\_\_

Owner: \_\_\_\_\_ West Valley Water District \_\_\_\_\_

Project: \_\_\_\_\_ West Valley Water District Reservoir 3-A-1 Roof Replacement and Asbestos Disposal \_\_\_\_\_

Contractor: \_\_\_\_\_ Rite-Way Roof Corporation \_\_\_\_\_

The following changes are hereby made to the Contract Documents:

#1 Installation of "Fiber Reinforced Polymer (FRS) Strengthening system." (Attachment 1 - Proposal) \*PLEASE NOTE THE EXCLUSIONS as provided by Structural Preservation Systems, LLC

#2 Install of approximately (253) 10" x 16" 24 gauge metal patches.

#3 Installation of Johns Mansville TPO 60-mil single-ply roof system instead of Johns Mansville BUR asphalt-applied roof system. (Attachment 2 - Assembly Letter)

**JUSTIFICATION:**

**As requested by West Valley Water District due to pre-existing deck conditions.**

**CHANGE TO CONTRACT PRICE**

Original Contract Price	\$ <u>185,727.00</u>
Current Contract Price Adjusted by Previous Change Order(s)	\$ <u>185,727.00</u>
Contract Price due to this Change Order shall be (increased)(decreased)	\$ <u>180,321.00</u>
New Contract Price including this Change Order	\$ <u>366,048.00</u>

**CHANGE TO CONTRACT TIME**

Contract Time will be	<u>TBD</u>
(increased) (decreased)	(Calendar Days)
Date for Completion of all Work	<u>TBD</u>
	(Date)

**APPROVED**

**Owner**

**WEST VALLEY WATER DISTRICT**

By \_\_\_\_\_  
Clarence C. Mansell, Jr

**Contractor**

Jeff Hughes  
\_\_\_\_\_

By \_\_\_\_\_  
Authorized Signature



## West Valley Water District

855 Baseline Rd., Rialto, CA 92376

### Double Tee Rooftop Seismic Strengthening

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#### Proposal:

### Fiber Reinforced Polymer (FRP) Strengthening System

Date: May 13, 2019	Proposal No.: 550241
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#### Submitted By:

Gaetano Bologna, Business Development Manager

Direct: 951-318-7840

Email: gbologna@structuraltec.com

**struc'tural**

A Structural Group Company

May 13<sup>th</sup>, 2019**PROJECT: West Valley Water District – Seismic Strengthening****RE: Fiber Reinforced Polymer (FRP) Strengthening System & Rooftop Coating**

Structural Group, Inc. (STRUCTURAL) is pleased to provide this budgetary estimate for the FRP Strengthening System at the topside of the double tee precast panels acting as a roof for the aforementioned project.

STRUCTURAL has over 40 years of experience providing FRP solutions to concrete infrastructure and is uniquely qualified to perform the FRP scope of work presented.

**PROJECT SCOPE**

The FRP strengthening is required at the double tee joints as defined and referenced below (based on the calculations and details provided by Knapp & Associates on March, 12<sup>th</sup>, 2019). Once installed, the FRP material is to be covered with a rooftop coating to be provided by others.

- S1: Structural Calculations
- S2: Sketch of rooftop dimensions and deficiencies.

**GENERAL SCOPE OF WORK**

STRUCTURAL proposes to provide all necessary labor, material, equipment, and supervision (except as noted below) to perform the following general scope of work:

1. Provide shop drawings and details – no P.E. stamp is required for the FRP submittal unless otherwise specified.
2. Mobilize and set-up (1 mobilization included to fully complete the identified FRP and coating scopes, additional pricing is provided in the “Pricing” section for each additional mobilization that may be required).
3. Prepare substrate surfaces to receive FRP by abrasive methods.
4. Apply repair mortar at displaced joints to an even transition.
5. Apply primer and putty to the prepared substrate surfaces.
6. Saturate the FRP fabric with epoxy utilizing mechanical saturating equipment.
7. Install FRP System to double tee joints as designed and detailed.
8. Broadcast sand to top layer of FRP to permit bonding of rooftop coating application
9. Feather all seams and edges.
10. Clean-up, take-down and demobilize.

NOTE: All FRP materials to be manufactured and provided by Structural Technologies.

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  - ii. *Other contractors.*
- b) Additional work beyond scope described above.
- c) Electricity: access to 110 volt, 20 amp power sources.
- d) Concrete repairs
- e) Steel joint repairs as necessary
- f) Access to potable water.
- g) Roof coating
- h) Dumpsters within close proximity to work area for disposal of debris and regular trash.
- i) Removal and abatement of hazardous materials (lead paint, asbestos, etc.) prior to STRUCTURAL mobilization, if applicable.
- j) Laydown area at work areas.
- k) All dust control and containment.
- l) Removal of all obstructions such as MEP equipment, conduits, attachments, facades, coatings, partition walls, etc. to access wall elements requiring FRP. The bare structural concrete of the elements shall be fully exposed and accessible for the FRP installation.

**West Valley Water District – Double Tee**

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- m) Any shoring and bracing, if required.
- n) All required testing, structural observations and inspections (special inspections or otherwise).

**ESTIMATED SCHEDULE**

We propose to perform the above noted scope of work in approximately 4-5 full work weeks.

**PRICING**

STRUCTURAL proposes to perform the above noted scope of services for the following:

**FRP Strengthening System (LS): ..... \$122,750.00**

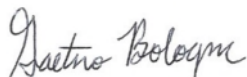
Additional Notes:

- 1. Pricing above includes a single mobilization. Each additional mobilization that may be required to be paid at \$1,500.00 per each.
- 2. Contractual Terms: to be mutually agreed upon.

**SUGGESTED NEXT STEPS**

If this budgetary estimate meets your requirements, please return your contract for review and execution. Otherwise, please let us know if there are any questions related to the requirements and services in this budgetary estimate. We look forward to working with you on this project.

Respectfully,



Gaetano Bologna  
**Business Development Manager**



# ASSEMBLY LETTER

## Roofing Systems

3.d.b

717 17th St. Denver, CO 80202 (800) 922-5922

May 1, 2019

Rite-Way Roof Corporation  
15425 Arrow Blvd  
Fontana, CA 92335

**Johns Manville**  
**Debbie Walczyk, EIT**  
**District Technical**  
**Specialist**  
Roofing Systems Group  
10100 W Ute Ave  
Littleton, CO 80127  
800-922-5922 Option 3  
Debbie.Walczyk@jm.com

**RE: ST6RA – West Valley Water District**

To Whom It May Concern:

The above named contractor is currently a Johns Manville Approved Roofing Contractor in good standing, certified as a Peak Level Contractor. As such, the contractor is eligible to receive Peak Advantage Guarantees for Johns Manville TPO roofing systems. These guarantees will be issued to the contractor in accordance with all procedures and requirements of the Johns Manville Peak Advantage Guarantee Program.

**Roofing Assembly** as proposed to Johns Manville

<i>Deck Type:</i>	Structural Concrete	
<i>Cover Board:</i>	Invinsa Roof Board , 1/4"	Field bead spacing: 12" o.c.; Perimeter bead spacing: 6" o.c.; Corner bead spacing: 4" o.c. (4'x4' maximum board size) using JM Two-Part Urethane Insulation Adhesive (UIA) 3/4" bead
<i>Membrane:</i>	JM TPO 60 mil	Adhered using JM Membrane Bonding Adhesive (TPO & EPDM)
<i>Flashings:</i>	JM TPO 60 mil	Adhered using JM Membrane Bonding Adhesive (TPO & EPDM)

**Perimeter and Corner Dimensions**

Perimeter and corner dimensions for buildings less than 60 ft. in height:

Equal to the smaller of:

- 0.1 times the building lesser plan dimension (overall length or width)
- 0.4 times the eave height

but will never measure less than 0.04 times the building lesser plan dimension and never less than 3 ft.

Perimeter and corner dimensions for buildings greater than 60 ft. in height:

Equal to 0.1 times the building lesser plan dimension (overall length or width), but never less than 3 ft.

Corners are "L" shaped with legs twice the width of the perimeter.

Buildings with continuous parapets 36" or greater may treat corners as perimeters.

Ensure any whole or partial insulation board that falls within the calculated perimeter or corner has the increased securement applied over the entire board. This must also be true for any roof cover/base sheet width when the roll is parallel to the building edge.

All Johns Manville materials installed as listed above are compatible and made in the USA. The system(s) shall be eligible for a 20 year No Dollar Limit (NDL) Johns Manville Peak Advantage Roofing System Guarantee when installed by a certified Johns Manville contractor and inspected and approved by a Johns Manville Technical Representative. All materials supplied or marketed by Johns Manville will be covered under the terms and conditions of this agreement.

Thank you for your interest in our roofing products and services. Please contact Johns Manville if any information is incomplete or incorrect so that appropriate modifications can be made. If you have any questions, please do not hesitate to contact our technical department at 1-800-922-5922 Option 3.

Regards,



*Debbie Walczyk, EIT*  
*District Technical Specialist*  
Johns Manville Roofing Systems

# EXHIBIT C

Photos of Reservoir 3-A-1 Roof

