



San Gabriel Basin Water Quality Authority

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San Gabriel Basin Groundwater Quality Management and Remediation Plan “§406 Plan”

March 18, 2020

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VOLUME I

LIST OF TERMS AND ACRONYMS

§406	San Gabriel Basin Groundwater Quality Management and Remediation Plan
ACT	The California Safe Drinking Water Act (Health & Safety Code §§ 116275 <i>et seq.</i>)
ARARs	Applicable or Relevant and Appropriate Requirements
ARMWC	Adams Ranch Mutual Water Company
Basin	Main San Gabriel Basin
Basin Plan	LARWQCB Los Angeles Basin Plan
BATT	Best Available Treatment Technology
BPOU	Baldwin Park Operable Unit
CD	Consent Decree
CDWC	California Domestic Water Company
CEM	City of El Monte
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CrVI	Chromium VI
CMP	City of Monterey Park
CPUC	California Public Utilities Commission
DAC	Disadvantaged Community
DDW	State Water Resources Control Board - Division of Drinking Water (prior 2014 known as California Department of Public Health)
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
EC	Emergent Chemicals
EMOU	El Monte Operable Unit
ESD	Explanation of Significant Differences
ESPSD	East Side Performing Settling Defendants
General Permit	LARWQCB Issued General NPDES Permit No.

CAG914001

GSWC	Golden State Water Company
IROD	Interim Record of Decision
IRWMP	Integrated Regional Water Management Plan
LACFCD	Los Angeles County Flood Control District
LARWQCB	Los Angeles Regional Water Quality Control Board
LPVCWD	La Puente Valley County Water District
MCL	Maximum Contaminant Level
MHI	Statewide Median Household Income
MSGBW	Main San Gabriel Basin Watermaster
NCP	National Oil and Hazardous Substances Pollution Contingency Plan (aka: National Contingency Plan)
NDMA	N-Nitrosodimethylamine
NL	Notification Level
Northrop	Northrop Grumman Systems Corporation
NPDES	National Pollutant Discharge Elimination System
OAL	Office of Administrative Law
NPL	National Priorities List
OEHHA	Office of Environmental Health Hazard Assessment
OU	Operable Unit
Process Memo 97-005	State Water Resources Control Board – Division of Drinking Water Process Memo 97-005
PRPs	Potentially Responsible Parties
PVOU	Puente Valley Operable Unit
PVOUSC	Puente Valley Operable Unit Steering Committee
QSA	Quantification Settlement Agreement
Restoration Fund	San Gabriel Basin Restoration Fund
RI/FS	Remedial Investigation Feasibility Study
ROD	Record of Decision
SA1	Baldwin Park Operable Unit Subarea 1
SEMOU	South El Monte Operable Unit

SGVMWD	San Gabriel Valley Municipal Water District
SGVWC	San Gabriel Valley Water Company
SEMOU Barrier	South El Monte Shallow Extraction Barrier
SWP	State Water Project
SWRCB	State Water Resources Control Board
SWS	Suburban Water Systems
TCP	1,2,3-Trichloropropane
TDS	Total Dissolved Solids
TVMWD	Three Valleys Municipal Water District
Title XVI	San Gabriel Basin Demonstration Project
USBR	United States Bureau of Reclamation
USEPA	The United States Environmental Protection Agency
USGVMWD	Upper San Gabriel Valley Municipal Water District
UTC	United Technologies Corporation
UWMP	Urban Water Management Plan
VCWD	Valley County Water District
VOC	Volatile Organic Compound
WSGRF	Whitmore Street Groundwater Remediation Facility
WQA	Water Quality Authority
WQA Act	San Gabriel Basin Water Quality Authority's Enabling Act SB1679 (Statutes of 1992, Chapter 776), as amended
WSPSD	West Side Performing Settling Defendants

Summary:

As in previous years, the San Gabriel Basin Water Quality Authority (“WQA”) is revising its San Gabriel Basin Groundwater Quality Management and Remediation Plan (“§406 Plan”). The §406 Plan, which is required by this agency’s enabling act (“WQA Act”), Statutes 1992, Chapter 776 (West’s California Water Code Appendix, §134-101 et seq.), as amended by Chapter 370 of the Statutes of 2019, promotes improvement of groundwater quality in the San Gabriel Basin (“Basin”) by setting forth: (1) a general process under which this plan shall be developed and implemented; (2) remedial goals; and (3) a restatement of existing regulatory authority governing cleanup within the Basin in addition to requirements of the United States Environmental Protection Agency (“USEPA”). Additionally, elements of the §406 Plan fit into a framework of overarching remedial principals and sets forth specific projects proposed to be facilitated by the WQA or by others within the Basin.

Date:

This §406 Plan is effective March 18, 2020.

Address:

Supporting materials are available for viewing at WQA offices, located at 1720 W. Cameron Avenue, Suite 100, West Covina, CA 91790. WQA offices are open from 8:00 a.m. to 5:00 p.m., Monday through Friday, excluding recognized holidays. It is recommended that an appointment be made to review these materials by calling (626) 338-5555.

General Information:

For general information, WQA may be contacted at (626) 338-5555 between the hours of 8:00 a.m. to 5:00 p.m., Monday through Friday, excluding recognized holidays. Various materials may also be viewed at www.wqa.com.

I. Legal Authority

This §406 Plan is developed and adopted under the authority of the WQA Act. §406 of the WQA Act requires the WQA to “develop and adopt a basinwide groundwater quality management and remediation plan” that is consistent with the USEPA’s National Contingency Plan (“NCP”) and applicable Records of Decision (“ROD”), and all requirements of the Los Angeles Regional Water Quality Control Board (“LARWQCB”). According to the WQA Act, the §406 Plan must include:

- 1) Characterization of Basin contamination;
- 2) A comprehensive cleanup plan;
- 3) Strategies for financing the design, construction, operation and maintenance of groundwater cleanup facilities;
- 4) Provision for a public information and involvement program; and
- 5) Coordination of activities with federal, state, and local entities.

Furthermore, §406 requires WQA to, on an annual basis, incorporate a status report on activities undertaken by the WQA pursuant to the §406 Plan. The status report must also include:

- 1) An overview of groundwater contamination in the San Gabriel Basin;
- 2) Goals for the basin groundwater;
- 3) Coordination with other agencies;
- 4) Public outreach and information;
- 5) Funding from potentially responsible parties and other sources;
- 6) Status of non-operable unit specific plans;
- 7) For each operable unit:
 - a. Treatment and remediation plans;
 - b. Description of contamination plan;
 - c. Costs incurred ;
 - d. Beneficial uses of recovered water; and

- e. Projected activities for the next reporting period.
- 8) A description of the manner in which projects are prioritized and selected for funding and the manner in which contractors are selected, including identification of projects in disadvantaged communities and those which further human right to water; and
- 9) Criteria used to quantitatively evaluate projects for effectiveness.

In support of the §406 Plan, the WQA shall adopt an annual fiscal year budget (July 1 through June 30) which shall include all projects (actual or planned) that WQA is facilitating through its participation during that time period. The budget shall identify various funding sources and combinations thereof to ensure that full funding for each project (capital and/or O&M) can be achieved.

II. Policy Statement for Year 2020

The WQA general policy statement is the foundation of the §406 Plan. Therefore, the first steps in revising the §406 Plan are to review the past year's activities and to identify successes as well as challenges and obstacles that may have delayed or hindered cleanup progress. Using that information as a basis, WQA can apply current conditions and determine WQA's direction for the coming year.

WQA continues to engage and participate with regulatory agencies USEPA, State Water Resources Control Board – Division of Drinking Water (“DDW”), Los Angeles County Flood Control District (“LACFCD”), LARWQCB and the Department of Toxic Substances Control (“DTSC”) to facilitate solutions in many areas of the Basin. For example, a long-standing impediment to groundwater cleanup was removed recently as WQA was successful in its efforts to secure a general temporary discharge permit to facilitate the construction and testing of new extraction wells and treatment facilities in the Basin. The approval of the permit was the culmination of years of cooperative discussions with these agencies and served as a demonstration of an effective policy that should continue.

Additionally the LARWQCB approved a new MS4 permit that provides greater flexibility for city permittees to meet their obligations. The new permit could also benefit

water purveyors with treatment facilities that require temporary discharges and WQA will continue to facilitate long-term solutions in this area.

POLICY STATEMENT 2020

The WQA was created and authorized by the State Legislature to address the critical need for coordinated and accelerated groundwater cleanup programs in the Basin.

The WQA is committed: 1) to protecting public health and safety; 2) to prioritizing, facilitating, and coordinating groundwater cleanup/supply programs with local water providers, DDW, LARWQCB, LACFCD, DTSC and USEPA; and 3) to minimizing local financial and economic impacts, including impacts on local groundwater consumers.

The WQA recognizes that groundwater contamination issues in the Basin are complex and that the USEPA Superfund response alone may not adequately address the environmental, regulatory and financial issues that affect the one million residents and the many thousands of businesses who rely primarily on the Basin for potable water.

In addition, the WQA recognizes the critical nature of developing strategies that ensure the Basin's long-term reliability while reducing our reliance on imported water and enhancing the Basin's potential to meet regional strategic groundwater storage demands.

In order to effectively coordinate the local water supply needs with cleanup, containment, reliability and storage goals, the WQA will promote and participate in technical, financial and regional partnerships, including partnerships with responsible parties, wherever possible. Where partnerships with responsible parties cannot be voluntarily formed, WQA will seek ways to move forward and implement the necessary groundwater cleanup projects and will consider all options to require financial participation from those responsible for the contamination.

Recent court cases and severe drought have contributed to a significant reduction of replenishment water available from MWD. Due to the fragility of the Delta water system, the WQA should continue to promote the Basin as a strategic regional groundwater storage solution for supply reliability and the vital role it could play if all imported supplies were suspended to the region by either a natural disaster or institutional decisions. When viewed from this perspective, the Basin's viability as part

of the region-wide strategic water supply plan rests on the ability to move cleanup forward and assure its completion.

The WQA will continue to pro-actively address the growing problems of emerging chemicals (“EC”), such as 1,4-Dioxane, 1,2,3-Trichloropropane (“TCP”) and Chromium VI (“CrVI”) and the impact they have on the overall cleanup goals of the WQA.

In 2015, the Office of Environmental Health Hazard Assessment (“OEHHA”) lowered the Public Health Goal for perchlorate to 1 ppb, and in 2017 DDW began the process of re-evaluating the current 6 ppb MCL for perchlorate by studying the feasibility of lowering the laboratory reporting limit for perchlorate to 1 ppb. Should DDW ultimately decide to lower the MCL as well additional perchlorate treatment will be required in the Basin. While the USEPA has announced that they will establish a federal MCL their process is not expected to be completed prior to DDW’s process. USEPA would most likely target an MCL close to the 1 ppb that was suggested by their draft risk assessment released in 2002.

On July 1, 2014 an MCL of 10 ppb for CrVI became effective as the only CrVI drinking water standard in the country. In 2015, SB385 was passed by the legislature to establish compliance timeframes and assist water purveyors to come into compliance with the new regulation. However, in May 2017 the Superior Court of Sacramento County invalidated the MCL noting that the “state failed to properly consider the economic feasibility of complying with the MCL.” As a result, DDW has embarked on creating a new CrVI regulation that is expected to take between 18 and 24 months to complete.

On December 14, 2017 an MCL of 5 ppt for 1,2,3-TCP became effective. A Notification Level of 5 ppt existed previously and several wells in the Basin already have treatment in place for this contaminant.

WQA will continue to coordinate activities while reviewing the potential impact of these regulatory standards on current and planned treatment projects throughout the Basin.

The WQA will continue to address orphan sites such as the shallow 1,4-Dioxane plume in the SEMOU. WQA operates and maintains the Whitmore Street Groundwater Remediation Facility to contain the 1,4-Dioxane contamination that threatens to further degrade downgradient water supply wells and increase the cost of cleanup to residents.

The WQA will continue to coordinate with regulatory agencies to implement long-term funding solutions.

While cleanup costs have grown, so have requests and competition for federal and state funding (primarily due to nationwide perchlorate problems). At the same time, local groundwater providers continue to face growing ambiguity and sometimes conflicting federal and state requirements. WQA will continue to assist water entities access state and federal funding.

The Policy Statement will become effective with the adoption of this document and will remain in effect until institutional, environmental or other changes necessitate a revision of the Policy Statement.

III. Background Information

A. OVERVIEW OF THE GROUNDWATER CONTAMINATION

The San Gabriel Valley's groundwater Basin has the dubious distinction of being one of the most contaminated in the nation. The Basin's groundwater is contaminated from the ground disposal—dating back to World War II— of volatile organic compounds used primarily as solvents in industrial and commercial activities.

The seriousness of the groundwater contamination problem became evident when high concentrations of volatile organic compounds ("VOCs") were discovered in Azusa in 1979 near a major industrial complex. Over the next four years, further investigation revealed widespread VOC contamination significantly impacting the Basin. This discovery led USEPA to place four portions of the Basin on the National Priorities List ("NPL") under authority of Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA"), also known as the Superfund program. These areas are referred to as Operable Units ("OUs") under CERCLA. Currently, there are six active OUs: Baldwin Park, El Monte, South El Monte, Puente Valley, Area 3 and Whittier Narrows.

Unfortunately, in 1997, newly detected contaminants, perchlorate and N-Nitrosodimethylamine ("NDMA") liquid/solid rocket fuel, complicated and delayed progress of cleanup activities. Most notably affected was the Baldwin Park Operable

Unit (“BPOU”) which has the largest geographical area in the San Gabriel Valley. This led USEPA, state and local agencies to conduct further investigation of the sources and treatment technologies available for remediating groundwater for potable use.

In prior years, several VOC treatment/supply projects were expanded at significant costs to treat perchlorate and other emerging compounds. More recently, many of these multiple treatment train projects were further burdened with increased levels of VOCs. As a result, additional VOC treatment, also known as a secondary barrier, was needed to meet DDW permitting requirements under their Technical Memorandum 97-005. While the additional treatment is necessary, each step has incrementally increased the costs of capital construction and operations and maintenance resulting in an overall project cost 4 to 5 times the original VOC treatment/supply project.

Beginning in the mid-2000’s Basin cleanup became impacted in terms of delayed construction and increased costs by the growing concern for the surface water quality in southern California. As environment groups filed subsequent lawsuits against the LACFCD, the County in turn withdrew treatment facility access to many of its flood control channels by the water purveyors. The channels are used temporarily during start-up and testing procedures of treatment facilities.

While some significant projects remain, the overall cleanup focus in the Basin is shifting from one of capital construction to one of treatment and remediation. However, even in the Treatment & Remediation phase projects may still require capital improvements dictated by new technology and new regulations. With cleanup projects spanning multiple decades it makes sense in a lot of situations to install newer technology when cost estimates can demonstrate a significant cost-savings over the life of the project. A similar capital expense may be necessary when new regulations, such as the establishment of a new MCL for an existing contaminant or the discovery and regulation of a new contaminant, make it necessary to add treatment equipment to the existing facilities.

B. OVERVIEW OF WQA AUTHORITY

The WQA was formed by special act of the California Legislature (Senate Bill 1679, Russell). The WQA Act gives WQA authority, *inter alia*, to plan for and to coordinate among several agencies with authority affecting cleanup of the Basin. §406 of the WQA Act requires WQA to develop and adopt a basinwide groundwater quality management and remediation plan. §406 further requires the plan to provide for: (1) a characterization of the Basin's contamination; (2) the development and implementation of a comprehensive Basin cleanup plan; (3) the financing of the design, construction, operation, and maintenance of groundwater cleanup facilities; (4) provisions for a public information and participation program; (5) the coordination with federal, state and local entities, including WQA member agencies; and (6) the maintaining of consistency with the NCP, any applicable USEPA RODs, all LARWQCB requirements, and all applicable cleanup agreements with federal, state and local agencies. The §406 Plan has to be developed with an eye toward the statutory requirement that "the basinwide plan shall consider the benefits to be achieved by the plan or any proposed project in relation to its economic impact on persons or entities within the boundaries of the authority."

C. HISTORY OF WQA PLANNING

As required by §406, WQA first adopted the §406 Plan in June of 1993. This plan identified a mission and eight goals and served as the guiding principles over the next six years of early action projects to remove and contain contamination (well ahead of the Superfund-mandated process) and to characterize the extent and movement of contamination.

Once the data, necessary to design and construct projects on a regional basis, was available, including information on the extent and movement of groundwater contamination, the WQA officially adopted the first amended §406 Plan on March 6, 2000. Since that time, the WQA, using the §406 Plan as its implementation guide, facilitated the design and/or construction of several treatment facilities described within the §406 Plan. A listing of WQA's major activities and milestones can be found in Table 1.

As in previous years, the WQA will continue to assist USEPA with its response efforts by engaging the authority of other agencies. Section 102(b) of the WQA Act declares legislative intent directing the WQA to coordinate among state and federal government agencies to plan and implement groundwater cleanup. The Remedial Standards (Section V.B) established by the §406 Plan (as required by Section 406 of the WQA Act) incorporate rules, regulations and standards previously adopted by other agencies of the State of California. The Remedial Standards harmonize and coordinate the requirements of the Main San Gabriel Basin Watermaster ("MSGBW"), the SWRCB, the LARWQCB, and the DDW. One purpose of the Remedial Standards is to help integrate groundwater cleanup objectives with water supply objectives, according to the legislative intent directive set forth in Section 102(a) of the WQA Act.

The USEPA has recognized some of these Remedial Standards as applicable or relevant and appropriate requirements ("ARARs"). Federal Superfund Law requires parties responsible for pollution to comply with ARARs in the process of carrying out federal cleanup orders. ARARs include any State standard that is (1) more stringent than any Federal requirement, (2) validly promulgated, (3) either "applicable" or "relevant and appropriate" and has been identified by the State to the USEPA. Due in part to the efforts of the WQA, the USEPA's Unilateral Administrative Order (No. 2003-17) for remedial design and remedial action in the SEMOU of the San Gabriel Valley Superfund Sites, issued on August 28, 2003, (1) encourages the parties identified as responsible for the pollution to integrate their cleanup obligations with water supply projects that exist or are under development and (2) directs compliance with ARARs, such as meeting water quality standards for potable water service established by DDW and/or for discharge of the product water established by the LARWQCB.

IV. Goals of the WQA §406 Plan

Originally, WQA's goals were developed as a result of discussions with federal, state and local agencies, various stakeholders, and comments heard at public workshops and hearings. Each year, the goals are re-evaluated to determine applicability and whether any additional goals should be added. While these goals have

remained unchanged, WQA has expanded the descriptions under the four goals to further validate WQA's focus. The four goals are:

- Accelerate Removal of Contaminant Mass in the Basin;
- Prevent Migration of Contamination into Critical Groundwater Supplies;
- Integrate Cleanup with Water Supply; and
- Minimize Economic Impact to the Public.

In the following sections, each of the four goals are described in more detail.

A. ACCELERATE REMOVAL OF CONTAMINANT MASS IN THE BASIN

In recent years, it has become increasingly apparent that cleanup actions, implemented earlier than CERCLA provides, are needed to address the immediate threats to the local water supplies. The goal of accelerating the removal of contaminant mass is fulfilled primarily by engaging the regulatory processes of other agencies of the State, and, wherever possible, prompting the implementation of activities ahead of the time required under the applicable regulatory process.

In the past, the WQA identified and focused its accelerated removal activities on projects that could immediately be implemented to remove contaminant mass. In more recent years, the focus has changed due to the ever-growing list of impacted water supply wells. This widespread impact has necessitated the early implementation of several treatment facilities by water purveyors, individually and jointly with the WQA and/or other agencies well ahead of the mandate from regulatory agencies.

With the rapid migration of contamination towards critical water supplies, the WQA now primarily focuses on projects that will accelerate and advance cleanup activities while providing a clean water supply or protecting a nearby water source.

More of these types of early actions are necessary to either (1) remove contaminant mass to immediately prevent further degradation of downgradient aquifers, (2) contain the spread of contamination to protect critical water supplies, (3) restore critical water supplies, or (4) combine the aforementioned.

Although early actions are implemented before a regulatory mandate, there has and will continue to be extensive coordination with USEPA, DTSC, DDW and the LARWQCB to link the early action to the eventual mandate. By working closely with USEPA, the WQA and other local stakeholders can affect USEPA's decision-making and identify certain high priority cleanup projects that are consistent with USEPA's objectives. Although USEPA cannot formally endorse and mandate cleanup until a rigorous process is completed, WQA can facilitate and assist in the implementation of the required action well before the mandate. Several crisis situations exist within the Basin that demand this type of immediate action as described in Appendix A. Waiting on mandated actions have already had severe impacts in many parts of the Basin.

B. PREVENT MIGRATION OF CONTAMINATION INTO CRITICAL GROUNDWATER SUPPLIES

In many parts of the Basin, the contamination continues to spread towards, and threaten groundwater supply wells. Given that so many supply wells have already been shut down, the current situation continues to represent a significant threat to the Basin's water supply. Therefore, priority must be given to implementing cleanup projects that will prevent the loss of water supplies. In order to meet this goal, contaminant migration controls must be implemented quickly so that constituents will be prevented from entering clean supplies. Further, this action must also prevent constituents from entering supplies with existing treatment not built or suited to treat the threatening contaminant(s). The goal to contain the contamination is supported with actions that specifically address threats to groundwater pumping centers. Loss of major production centers will continue to impair the water supply unless these types of threats are immediately addressed in a cleanup plan. In furtherance of this goal WQA has allocated funding to assist purveyors in discrete well destruction activities to ensure that non-producing wells do not act as a conduit for contaminant migration

The MSGBW has existing rules and regulations which govern the location and production of water wells for water quality purposes. The WQA under this §406 Plan will work with the MSGBW and its existing rules and regulations to help contain and control the migration of contaminants within the Basin.

C. INTEGRATE CLEANUP WITH WATER SUPPLY

With so much of the state and local water supply impaired, it is essential that water treated from the cleanup projects be put to its highest and best use. Putting the treated water back into the supply system will serve to enhance the overall water supply situation in the Basin and help many water purveyors mitigate the threat to their water supply. The desired objectives can be achieved by maximizing the use of existing facilities that have either been shut down or have been impaired. When new facilities are needed, these should be integrated into the supply of the appropriate water purveyor.

If cleanup facilities are built without the consideration of the local supply, then many water purveyors will be forced to build redundant treatment facilities on impaired wells or import increasingly scarce surface supplies from other areas. Currently, water purveyors only use treated surface water sources when they are readily available or when groundwater sources become impaired or unavailable; otherwise the predominant source of supply is from the local groundwater.

Although cleanup projects that put treated water to beneficial use will provide localized benefits, there are, of course, broad benefits that impact the regional water supply situation in California. The necessity to develop new sources and to fully utilize existing sources is very evident in court decisions within the State and the Colorado River Watershed. For example, the 2003 Quantification Settlement Agreement (“QSA”) between the United States Department of the Interior and Southern California Colorado River users restricts the State’s withdrawal of Colorado River water to its original allotment of 4.4 million acre-ft per year in non-surplus years. In addition, the dependability of the State Water Project (“SWP”) is decreasing as a result of a lack of storage facilities. Furthermore, in 2007, United States District Court Judge Oliver Wanger ordered that the California Department of Water Resources and the United

States Bureau of Reclamation (“USBR”) must reduce pumping from the Sacramento Delta in order enhance the Delta Smelt population. This decision and his subsequent decisions have the effect of significantly reducing SWP availability. Now more than ever, it is critical to protect and develop the groundwater resources so that both groundwater and surface waters of the State can be managed more effectively. Critical to this statewide need is the full utilization and restoration of the Basin groundwater.

The Los Angeles County Superior Court has Constitutional authority, through its continuing jurisdiction under the Judgment in the case of *Upper San Gabriel Valley Municipal Water District v. City of Alhambra*, LACSC 924128, to promote the beneficial use of water and to prevent the waste of water in the Basin. Through the Court’s continuing jurisdiction under the Judgment, the MSGBW has adopted rules and regulations governing the location and production of water wells for water quality purposes. The LARWQCB has Constitutional, statutory and regulatory authority to regulate discharges to waters of the State, to promote the beneficial use of water, and to prevent the waste of water. DDW has statutory and regulatory authority to set and enforce standards for public drinking water systems, including acceptable water treatment processes. The WQA intends to engage the existing rules, regulations and standards of these agencies of the State to coordinate and promote the reasonable and beneficial use of water produced and treated under mandate from the USEPA. The WQA recognizes that a number of voluntary or consensual arrangements ultimately will be required to implement the objective to integrate water cleanup operations and water supply operations in the Basin. In addition to engaging existing regulatory authority held by other agencies, WQA intends to encourage the needed voluntary or consensual arrangements through the exercise of authority under the WQA Act, including its authority to seek recovery of WQA’s costs to respond to and cleanup groundwater contamination in the Basin.

D. MINIMIZE ECONOMIC IMPACT TO THE PUBLIC

The issue of who pays for the cleanup is often the biggest obstacle in initiating the necessary cleanup programs. Although PRPs may be held completely liable for the costs of a response action under the CERCLA mandate, actions normally do not occur

until a lengthy process is completed. Equally detrimental to the water supply crisis is the fact that there is no assurance that the immediate water supply concerns will be addressed under CERCLA. Therefore, many water purveyors may still need to construct and bear the expense of operating their own treatment facilities or look for alternative supplies at their own expense even after the PRPs fulfill their obligation under CERCLA.

Adding to the economic complexity of the situation is the fact that USEPA conducts its own detailed financial evaluation of PRPs and may settle for a reduced amount. And even then, many businesses cannot fully absorb the financial liability without detrimentally impacting their businesses. In the meantime, the spread of contamination continues to impact more water supply sources and, by extension, the basic reliability of plentiful water to support the economic basis and vitality of the Basin. To address this goal, WQA has pursued and continues to aggressively pursue sources of funding from responsible parties and the federal/state government. Despite these efforts, organizations like WQA and some of the local water purveyors have had to pool their own resources to immediately initiate many of the required response actions. This has required a financial commitment on behalf of the local public (at least initially). Early actions financed outside of the CERCLA process have been necessary to assure that many of the critical projects are implemented quickly. In addition, cleanup projects such as those prescribed by WQA are designed from a local perspective to address groundwater cleanup in conjunction with the water supply. However, costs borne by the public for this effort would have to be absorbed or recovered through litigation.

To accommodate potentially conflicting goals between accelerating cleanup and minimizing impact to water rate payers, WQA has identified high priority response actions that can be implemented ahead of USEPA's mandate using available financial resources, including federal reimbursement funding, and in some cases, financial participation from PRPs. If a required project lacks sufficient funding, a commitment by the affected water purveyors and/or WQA through its assessment, along with other potential local sources, will be required. Where WQA is required to use its own assessment to quickly assist in the development of a project, WQA will always consider cost recovery actions to minimize costs borne by the public. To that end, WQA has filed

two cost recovery actions and may be considering other cost recovery actions against those responsible entities that chose not to participate in the sponsored early remedial actions.

V. §406 Plan

A. DEFINITIONS

1. This §406 Plan incorporates by reference the definitions of “facility,” “hazardous substance,” “national contingency plan,” and “person”. The terms “remedial action,” or “remedy,” or “cleanup,” or “remediation,” are used interchangeably herein. Additionally, such terms are intended to be encompassed by the definitions of “remove,” “removal,” “remedy,” “remedial action,” “respond,” or “response,” as appropriate and as those terms are defined in Title 42 (CERCLA) of the United States Code, § 9601, as amended.

2. This §406 Plan incorporates by reference Title 42 of the United States Code, §9607 (a), as amended, the class of persons who are PRPs for the cleanup of hazardous substances.

B. REMEDIAL STANDARDS

The WQA has identified certain appropriate rules, regulations and standards for the management of Basin remedial actions from among the rules, regulations and standards promulgated by the MSGBW, LARWQCB and DDW. The rules, regulations and standards specified below are incorporated by reference in this §406 Plan and adopted as the Remedial Standards of the WQA.

These Remedial Standards, and the underlying existing rules, regulations and standards of the MSGBW, LARWQCB and DDW are additional requirements of the State which are ARARs to remedial actions ordered by the USEPA in the Basin. (See Appendix C-2).

The WQA will engage the existing procedures of the MSGBW, LARWQCB and DDW to implement the following Remedial Standards so that all remedial actions affecting Basin groundwater shall be conducted accordingly.

1. MSGBW SECTION 28

In furtherance of two objectives of this §406 Plan to prevent migration of contamination into critical groundwater supplies and to integrate cleanup activities with water supply operations, production of Basin water for remedial action purposes shall be carried out in conformance with Section 28 of the Rules and Regulations adopted by the MSGBW under authority of the Amended Judgment in *Upper San Gabriel Valley Municipal Water District vs. City of Alhambra*, Los Angeles County Superior Court Case No. 924128. (See Appendix D-1). Under this Remedial Standard water wells used for remedial action purposes shall be located, with the approval of the MSGBW, both to prevent migration of contaminated groundwater and to best integrate the water produced for remedial action with water supply operations in the Basin. If necessary, WQA will engage the existing implementation and enforcement procedures of the MSGBW to carry out this Remedial Standard. Section 28 of the MSGBW Rules and Regulations is attached as Appendix D-1 and incorporated herein.

2. LARWQCB DISCHARGE REQUIREMENTS

In furtherance of an objective of this §406 Plan to integrate cleanup activities with water supply operations, disposal of Basin water produced for remedial action purposes shall be carried out in conformance with discharge requirements issued by the LARWQCB and, if necessary, approved by the SWRCB. (See Appendix D-2). Under this Remedial Standard, Basin water produced and treated for remedial action purposes shall not be wasted and such water shall be put to the greatest reasonable and beneficial use of which it is capable. Conversely, the waste and unreasonable use or unreasonable method of use of such waters shall be prohibited. Additionally, under this Remedial Standard, Basin water produced and treated for remedial action purposes shall not be discharged to the environment except in conformance with discharge requirements issued by the LARWQCB.

The SWRCB and the LARWQCB are both subject to the requirements of the California State Constitution and California Water Code § 100 *et seq.* to promote the greatest reasonable and beneficial uses of the waters of the State and to prevent the waste and unreasonable use and unreasonable method of use of those waters.

SWRCB's express statutory authority to prevent the waste and unreasonable use of water is set forth in Water Code § 275 which provides as follows:

“The department and board shall take all appropriate proceedings or actions before executive, legislative, or judicial agencies to prevent waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion of water in this state”

The LARWQCB exists, pursuant to Water Code §§ 13200-13201, as a branch of the SWRCB. The LARWQCB exercises its authority to regulate discharges to promote the beneficial use of water and prevent waste through the issuance of waste discharge requirements. Waste discharge requirements are predicated upon the water quality control plan (“Basin Plan”) that each regional board is required to promulgate according to Water Code § 13241. Water Code § 13263(a) requires each regional board to issue discharge permits in conformity with its adopted Basin Plan.

Discharge requirements issued by the LARWQCB must be conditioned, taking into consideration the beneficial use of water, pursuant to Water Code § 13263(a), as follows:

“The regional board, after any necessary hearing, shall prescribe requirements as to the nature of any proposed discharge, existing discharge, or material change in an existing discharge, except discharges into a community sewer system, with relation to the conditions existing in the disposal area or receiving waters upon, or into which, the discharge is made or proposed. The requirements shall implement any relevant water quality control plans that have been adopted, and shall take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste

discharges, the need to prevent nuisance, and the provisions of Section 13241.”

Thus, in enacting Water Code §§ 13241 and 13263, the State has expressly stated its intent that the regional boards exercise their authority to regulate discharges to promote the beneficial use of water and prevent waste through the issuance of waste discharge requirements. Pursuant to the express terms of these statutes, this authority includes the prohibition on any discharge that is wasteful and does not promote the beneficial use of water.

The State has been approved to issue National Pollutant Discharge Elimination System (“NPDES”) Program permits under the Federal Clean Water Act. Under that authority, the LARWQCB issued General NPDES Permit No. CAG914001 (the “General Permit”), adopted by Order No. R4-2018-0087 on June 14, 2018. The General Permit establishes Waste Discharge Requirements for discharges of Treated Groundwater from Investigation and/or Cleanup of Volatile Organic Compounds Contaminated-Sites to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties. The General Permit prohibits, for example, the daily discharge of an effluent containing more than 6 ppb perchlorate (See General Permit, Attachment F, Table 6 (Effluent Limitations)).

The standards contained in the General Permit are ARARs. They were properly promulgated because they were adopted pursuant to the authority granted to the State under 40 CFR parts 122 and 123 and Section 402 of the Clean Water Act and other State authorities, including Water Code § 13263. The General Permit is generally applicable – it serves as a general NPDES permit and covers discharges to all surface waters in the Los Angeles Region (See General Permit, ¶23.). It is enforceable both administratively and through the Superior Court (See Water Code §§ 13300 et seq.). Finally, the General Permit standards are legally applicable or relevant and appropriate as state standards stricter than current federal standards. Thus, the standards set forth in the General Permit are ARARs.

If necessary, WQA will engage the implementation and enforcement procedures of SWRCB and LARWQCB to carry out this Remedial Standard. The applicable rules,

regulations and standards of SWRCB and LARWQCB are attached as Appendix D-2 and incorporated herein.

3. DDW TREATMENT STANDARDS

In furtherance of an objective of this §406 Plan to integrate cleanup activities with water supply operations, water treatment for remedial action purposes shall be carried out in conformance with treatment standards for public drinking water systems adopted by the DDW. (See Appendix D-3). Under this Remedial Standard, Basin water produced and treated for remedial action purposes shall not be wasted and such water shall be put to the greatest reasonable and beneficial use of which it is capable. Conversely, the waste and unreasonable use or unreasonable method of use of such waters shall be prohibited. Under authority of §106 of the California Water Code, domestic use is the highest beneficial use of water. Unless discharge or other use of the Basin water produced and treated for remedial action purposes is approved by the LARWQCB, all such water shall be made available for domestic use through public drinking water systems or recycled water systems. Under this Remedial Standard, Basin water produced for remedial action, with the approval of the DDW, shall be integrated into water supply operations in the Basin.

The California Safe Drinking Water Act (Health & Safety Code §§ 116275 *et seq.*) (the “Act”), contains public water supply permitting provisions which authorize DDW to set permit conditions for water delivered by public water systems. In Section 116270(e) of the Act, the Legislature declared its intent to “ensure that the water delivered by public water systems of this state shall at all times be pure, wholesome, and potable.” In addition, in Section 116270(g) of the Act, the Legislature declared its intent “to establish a drinking water regulatory program within the DDW in order to provide for the orderly and efficient delivery of safe drinking water within the state and to give the establishment of drinking water standards and public health goals greater emphasis and visibility within the state department.”

In 1997, the then Chief of the Division of Drinking Water and Environmental Management of the California Department of Public Health drafted a “Guidance for Direct Use of Extremely Impaired Sources” memorandum known as Policy Memo 97-005. This memorandum provides guidance to DDW staff on the evaluation of extremely

impaired sources of water for use as a supply of drinking water. In 2015, DDW staff produced a draft update version of the memo entitling it “Addressing the Direct Domestic Use of Extremely Impaired Sources Process Memo 97-005 Initially Established November 5, 2015” (“Process Memo 97-005”).

Pursuant to Process Memo 97-005, the following findings are required of DDW for approval to use an extremely impaired source¹:

- (1) Drinking water MCLs, action levels for lead and copper, and Notification Levels² (formerly Action Levels) will not be exceeded if the permit is complied with; and
- (2) The potential for human health risk is minimized by treatment, and the risk from treatment failure is minimized through good engineering practices that may involve redundancies in treatment, and efficiencies in maintenance, inspections, monitoring, and alarms.

As set forth in Appendix C-2, the permit conditions in Process Memo 97-005 will be considered state ARARs if (1) they are more stringent than federal standards (2) they are properly promulgated standards, requirements, criteria or limitations, and (3) they are legally applicable or relevant and appropriate. The Process Memo 97-005 permit requirements are more stringent than federal standards. The requirements were

¹ An extremely impaired source, according to Process Memo 97-005, is one that meets two or more of the following criteria: 1) exceeds 10 times an MCL or action level (AL) based on chronic health effects, 2) exceeds 3 times an MCL or AL based on acute health effects, 3) contains one or more contaminants meeting criteria (1) or (2) above and the source has not been adequately characterized by responsible parties, 4) is a surface water that requires more than 4 log *Giardia*/5 log virus reduction, 5) is a surface water source that contains more than 5% treated waste water, unless associated with approved drinking water-related surface water augmentation project, 6) is extremely threatened with contamination due to proximity to known contaminating activities, 7) contains a mixture of contaminants of health concern or 8) is designed to intercept known contaminants of health concern.

² As a result of an amendment in 2005 to Health & Safety Code § 116455, Action Levels have now been replaced by Notification Levels. As defined in Section 116455, a “Notification Levels” are “nonregulatory, health-based advisory levels established by the department for contaminants in drinking water for which maximum contaminant levels have not been established. Notification levels are established as precautionary measures for contaminants that may be considered candidates for establishment of maximum contaminant levels, but have not yet undergone or completed the regulatory standard setting process prescribed for the development of maximum contaminant levels and are not drinking water standards.”

“properly promulgated” because they are based on laws adopted by the California Legislature and administrative standards developed by the DDW. Finally, they are of general applicability to anyone who introduces water from extremely impaired sources into the drinking water system. Thus, the permit conditions in Process Memo 97-005 are ARARs.

If necessary, WQA will engage the implementation and enforcement procedures of the DDW to carry out this Remedial Standard. A copy of Process Memo 97-005 and the applicable rules, regulations and standards of DDW are attached as Appendix D-3 and incorporated herein.

C. OVERARCHING REMEDIAL PRINCIPLES

These principles represent the general guidelines that will steer the implementation of the strategies and tactics contained in this §406 Plan.

1. Consensual participation in remedial activities shall be maximized.
2. Consistency with USEPA actions and MSGBW Section 28 shall be maintained.
3. Control of decisions by the local public (i.e., producers and the water consumers/rate payers they represent) affecting groundwater quality and water supplies shall be maintained.
4. Expedite remedial activities, as appropriate, by providing incentives, such as (a) avoiding litigation costs and risks (e.g. adverse judgment, exposure to other PRPs/agencies, etc.), (b) providing funds from federal, state, the WQA or other sources, and (c) utilizing existing water producing/treatment equipment, where appropriate.
5. The overall economic impact to water consumers shall be minimized for all response actions by requiring financial participation from any party responsible for the contamination. Within the discretion of the WQA, a cost recovery action, including, but not limited to, a request for joint and several liability, will be initiated against any responsible party not participating at a financial level acceptable to WQA.
6. WQA shall facilitate the acceleration of the removal of contaminant mass in the Basin by working with the USEPA, DTSC, LARWQCB, DDW, water purveyors and PRPs to (a) identify high priority cleanup projects that are consistent with USEPA

objectives, and (b) begin implementation of the required remedy as soon as possible. Cleanup projects that prevent or otherwise restrict the lateral or vertical migration of contamination shall be given higher ranking over those cleanup projects that do not prevent such migration.

7. Treated water shall be used for its highest and best use.

D. OPERABLE UNIT SPECIFIC PLANS

After more than 20 years of studies and investigations, USEPA's CERCLA activities have progressed to a point where the configuration of the required remedies, in conjunction with local needs, can be determined in most areas. In general, these remedies include multiple groundwater extraction and treatment facilities designed to remove and contain the spread of contamination. Appendix A summarizes WQA's specific plans for the individual OUs including key components and OU specific issues. Table 2 identifies the annual estimated costs of each project within the Basin OU boundaries through FY21/22.

E. EVALUATING PROJECT EFFECTIVENESS

During the initial stages of a potential treatment project extensive studies are conducted to ensure the project is located in the appropriate area to achieve:

- an effective contaminant capture and containment zone
- the halting of contamination migration into adjacent clean water supplies
- meeting the water supply objectives of the affected water purveyor

WQA plays a key role during this evaluation process to ensure that each project provides the greatest protection to the water supply of the residents of the Basin while minimizing any economic impact. WQA has developed the following criteria to evaluate projects for effectiveness:

- How much contaminant mass is removed from the Basin?
- How much of the treated water is used for beneficial purposes?
- How many downgradient wells are being protected?
- Does the project integrate cleanup with water supply?

WQA also considers that overall impact of the combined cleanup projects. Figure 12 demonstrates the number of treatment plants coming online has grown steadily since WQA's inception in 1993. The total pounds of contaminants removed and acre-feet of water treated are shown in Figure 13.

VI. Project Funding

The WQA has and continues to be committed to accelerating cleanup, integrating cleanup with water supply, preventing migration, and minimizing the financial impact to the public through its annual assessment. In order to meet these goals, adequate funds, primarily from PRPs, state and/or federal programs, are necessary for implementation. And as can be discerned in the project section of this Plan, much of the Basin's needs are now focused on long-term remediation costs which make up most of the \$499 million funding gap in Table 3. While the WQA recognizes that PRPs must fulfill their CERCLA liabilities, it is often a very slow process - a process that jeopardizes the time and cost of implementing projects. In addition, even though USEPA has urged PRPs to consider affected water supplies, the CERCLA process does not allow USEPA to require it. It is for these reasons that WQA is determined to aggressively seek funds from PRPs before, during and after project implementation, either voluntarily, through mandated CERCLA actions or through litigation measures. If funds cannot be generated from PRPs to begin an identified early action project, WQA will work with individual purveyors, MSGBW and/or other local agencies to develop funding for the project using federal and/or state funds, WQA member agency funds, including individual purveyors, and only if necessary, its own assessment. This section prioritizes

each potential source of funding in the order of which it will be sought for a particular early response action.

A. POTENTIALLY RESPONSIBLE PARTIES

As stated previously, WQA will seek voluntary funds from those responsible for the contamination. If the process of acquiring those funds is unilaterally stalemating or delaying the project, the WQA will move forward without this source of funds to ensure necessary cleanup/water supply projects are implemented.

The WQA is committed to securing PRP funding for any given project by providing incentives for PRPs to participate financially. In the absence of sufficient PRP funds, WQA and others may be required to combine its resources to fund a project. In this event, WQA may choose to initiate cost recovery actions. This was the case in the BPOU, in which WQA brought two separate legal actions against PRPs in the year 2000 to recover costs incurred from the La Puente Valley County Water District (“LPVCWD”) Treatment Plant and the Big Dalton Well Treatment Facility.

In 2002, WQA along with three affected purveyors (“water entities”) jointly settled with 13 of the more than 60 PRPs in the SEMOU. Thereafter, the WQA and water entities initiated litigation against the remaining PRPs in order to maximize the recoverable dollars in an operable unit with very high estimated costs and very little potential funding from PRPs. As part of the overall financial and technical process, the USEPA and the DTSC were engaged due to their respective roles in the SEMOU. A portion of the PRP settlements cover ROD costs and are provided to the water entities via a cooperative agreement between WQA and the USEPA. The settlements also include some direct funding for non-ROD costs. Nevertheless, these early settlements did not fully cover the project costs. In recognition of the funding shortfall, the USEPA obtained \$2.65 million in gap funding from their Superfund program to help offset a portion of the water entity ROD costs. In total, \$35.3 million in settlements have been negotiated and obtained from the PRPs. DTSC is expected to take on the longer term regulatory responsibility once it is declared a fund-lead operable unit by the USEPA and the State of California.

B. FEDERAL GOVERNMENT

The WQA, with the support and assistance of other local agencies, has sought and continues to seek all funding that may be available for projects in the Basin. As a result of those efforts, two federal programs have been authorized by Congress specifically for the Basin. Both of these reimbursement programs are administered through the USBR directly to the WQA. In February of 2002, WQA adopted a set of procedures called the Federal Funding Program Administration (Appendix F) to guide the allocation process for both programs.

Both sources of federal funding will be used to the maximum extent possible to accelerate cleanup and to provide incentives for PRPs to address affected water suppliers while implementing cleanup actions in the Basin under CERCLA.

C. RESTORATION FUND (DREIER)

In December of 2000, through the leadership of former Congressman David Dreier, Congress authorized the San Gabriel Basin Restoration Fund ("Restoration Fund"). The original authorization of the Restoration Fund provided \$85 million for groundwater cleanup of which \$10 million was for use by the Central Basin Municipal Water District ("CBMWD") to cleanup the Central Basin and \$75 million was for use by the WQA to cleanup the Basin. In March 2009, Dreier successfully led an effort to increase the total authorization to \$142.6 million. That increased the respective Restoration Fund authorizations to \$125 million for WQA and \$17.2 million for CBMWD. To date, the CBMWD has received \$10 million and WQA has received \$70,567,509¹. The WQA Board has already allocated the \$70,567,509 for cleanup projects throughout the Basin based on criteria found in its Federal Funding Program Administration guidelines.

This program requires a 35% non-federal match deposited into the Restoration Fund to reimburse the WQA up to a maximum of 65% from federal sources. Non-federal funds are classified as funds that are not from the Department of the Interior, but

¹ The first year appropriation was \$25 million but \$2 million was retained by the Army Corp for costs related to an independent study and \$10 thousand was retained for administrative costs which resulted in a reduced FY 2001 appropriation of \$22.99 million.

rather PRP funds, state funds, local municipality funds, purveyor funds, WQA assessment funds or non-profit funds. Funds from this program may be used for design, construction and operation & maintenance for up to 10 years following construction. The Restoration Fund is administered via the USBR in conjunction with the WQA for use within the Basin.

Congress acknowledged that millions of dollars had already been spent to protect the Basin by remediating the groundwater and preventing further contamination. Due to the emergency nature of the contamination and the threat it posed to the local groundwater supply, Congress allowed the use of those past expenditures as a credit towards the 35% non-federal matching requirement under this program. The USBR is responsible for approving all qualifying prior expenditures. However, the WQA, at its discretion, will use this credit to meet the 35% matching requirement and eliminate the need to deposit additional funds into the Restoration Fund.

As of 2008, WQA had accumulated past cleanup cost information totaling more than \$47 million. This amount was sufficient to meet the 35% non-federal matching requirement for the original \$75 million authorization. Based on more recent information, it is clear that additional funding will be required to continue the progress of ensuring that remedial activities will be combined with local water supply needs.

D. TITLE XVI

In 1992, Congress authorized the San Gabriel Basin Demonstration Project to implement conjunctive use projects in the Basin. By implementing cleanup projects that provide a reliable source of water and reduce the need for outside sources of water, many of the Basin's cleanup projects are eligible for this program.

This program requires a 75% match from non-federal sources to reimburse the project up to a maximum of 25% from federal sources. Funds from this program may be used for design and construction only. The Title XVI fund is administered via the USBR directly to the WQA for use within the Basin.

In 2004, Congresswoman Grace Napolitano authored H.R. 1284 which was passed and signed into law. The legislation raised the cap on the Title XVI program by \$6.5 million. The total authorization for the Title XVI program is now \$44.5 million.

Based on the Basin's enormous need for funds, the WQA will (1) continue to work to secure full appropriation of the remaining funds in the Title XVI authorization, and (2) work with Congress to seek legislation authorizing the transfer of any unobligated funds in the Title XVI program to the Restoration Fund.

E. STATE GOVERNMENT

California voters have passed several Propositions over the past two decades that contain funding for various water-type projects. WQA has aggressively sought and been successful in securing funding from these Propositions for Basin projects. The list includes: Proposition 13 – the Safe Drinking Water, Clean Water, Watershed Protection, Flood Protection Bond Act of 2000; Proposition 50 – the Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002; and Proposition 84 – the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006.

In 2014, voters passed Proposition 1 – the Safe, Clean, and Reliable Drinking Water Supply Act of 2014. The Proposition requires a 50% match and includes language that would allow funding to be used for both Capital and Treatment & Remediation components of cleanup projects. The groundwater section also contains language that is favorable to the WQA's efforts by giving preference to NPL- listed sites such as the San Gabriel Basin.

In 2018, voters passed Proposition 68 – the Parks, Environment and Water Bond. This bond requires a 50% match and contains language to effectively clarify and authorize the use of \$80M in Prop 1 funding for Treatment and Remediation activities. Similar to previous years, WQA will closely monitor the implementation process and provide input as appropriate. Additionally, WQA will assist water purveyors with application preparation and support to maximize the funding opportunities.

Furthermore, the WQA will seek to place similar language in any future water bond ballot measures. Working with other water entities in the Basin, the WQA will continue to lead efforts to formulate a comprehensive approach to water infrastructure in the Basin. The WQA will look to any future proposed bond packages for much needed funding for cleanup projects in the Basin.

The WQA will work to educate State agencies on the merits of financial participation in the near-term and the very real impacts which could result from inadequate State financial assistance. The WQA will emphasize that stemming the flow and mitigating the spread of contamination will be more cost effective and have less of an impact on both the State and local ratepayers.

One example of a beneficial impact is WQA's Whitmore Street Groundwater Remediation Facility ("WSGRF"). In 2007, the SWRCB awarded WQA a \$1.42 million grant from their Cleanup and Abatement Account ("CAA") to the orphan project. The grant included construction costs and up to five years of operation. The treatment facility was completed in 2007 and is currently operational. In 2012, WQA secured an additional \$950,646 in CAA funding through September 2018. WQA has continued funding the project temporarily until an alternative funding source can be obtained. The project is located within the SEMOU and removes significant concentrations of 1,4-dioxane and VOCs (see Appendix A). WQA will actively continue to identify projects that could qualify for similar funding streams from the SWRCB.

The WQA is also actively involved in hosting, representing and financially supporting the Upper San Gabriel River and Rio Hondo River ("USGRHR") sub-regional area of the Greater Los Angeles County ("GLAC") Region IRWMP. The state IRWMP program is overseen by the California Department of Water Resources ("DWR") in accordance with the IRWMP Act of 2002. As the Vice-Chair of the USGRHR steering committee, the WQA provides and solicits input and opportunities for local stakeholders to network and develop multi-benefit projects. This in turn increases the likelihood of funding from IRWMP bond funds. For example, what may have been a single-purpose project to increase water supply, could become a project that enhances nearby open space, cleans-up water supply and/or provides more water storage.

In addition, WQA is also a member of the GLAC IRWMP Leadership Committee which acts as a Regional Water Management Group under the IRWMP program. This committee includes two members from each of the five sub-regions in the GLAC Region plus representatives from several resource management areas. The duties of this committee includes the development, administration and updating of the IRWMP. The

committee also selects priority projects for funding applications that represent and benefit the needs of the entire GLAC Region.

F. WATER QUALITY AUTHORITY

The WQA may impose an annual assessment for capital and operational costs not to exceed \$10 per acre-foot. In the past, it has been WQA's policy to utilize assessment dollars to provide incentives for PRPs to move forward on a given project. With the availability of significant federal funds, these funds will only be utilized if sufficient federal and/or state dollars are or will not be available in addition to PRP funds. If PRPs do not voluntarily provide funds to a project, then the WQA will, on a project-by-project basis, consider the use of assessment funds to underwrite the project costs with or without other local dollars. However, the WQA is committed to recovering its costs from non-participating PRPs at a later date, so that the cost to the local consumer will ultimately be minimized.

The WQA Act provides that WQA may issue bonds for a term not to exceed 20 years for any purpose authorized by it. Additionally, the WQA Act authorizes the State Treasurer to continue to collect assessments to payoff bond obligations in the event that WQA sunsets prior to the bonds' maturity dates. WQA has begun exploring this option in addition to the other funding mechanisms available as a means to augment treatment and remediation costs over the next several decades.

G. WATER PURVEYORS/CITIES/MEMBER AGENCIES/OTHER LOCAL WATER AGENCIES

As of January 2001, all potential projects requesting WQA participation must go through WQA's Procedure No. 38, "WQA Project Participation". As part of that procedure, the WQA requires the impacted water purveyor to fund or secure funds other than WQA's assessment representing a minimum of 25% of capital costs. In the event projects cannot be otherwise fully funded using any or all of the above funding sources, WQA will work with an affected city, member water agency and/or other local water agencies to develop potential funding sources. The WQA will pursue the recovery of these funds on behalf of the participating agency, if necessary.

VII. Project Prioritization

WQA utilizes a number of tools to prioritize projects for funding. To be eligible for funding consideration, proposed projects must meet all of the following conditions:

- *Project must be located within the jurisdictional boundaries of the WQA*
- *Applicant(s) must demonstrate, through WQA's Procedure No. 38 process, (described in the following section) that the project in the area of the proposed groundwater remediation project removes contamination, and protects and/or prevents groundwater contamination from spreading into clean areas*
- *Applicant(s) must demonstrate that the project water will be put to beneficial use, with priority given to those projects which include an affected water purveyor and provides potable water, if applicable*
- *Project must conform and further the objectives of the WQA §406 Plan or the intent thereof*
- *Project must be consistent with the legislative intent of the statute(s) authorizing or appropriating the public funds used for project funding reimbursement*
- *Project cannot have been used in calculating the 35% credit provision in the Restoration Funds*
- *Project cannot have begun operating prior to July 1, 1999 (this provision may be waived by the WQA Board)*
- *Start of project construction for a new project must be anticipated within 18 months of executed agreement between WQA and applicant(s)*
- *Applicant(s) must provide a plan that commits 100% of the required funds in WQA's account in advance of each payment owed on the project and prior to each reimbursement request.*

Criteria to which a proposed project shall be measured, but not required, are as follows:

- Project conforms and furthers the objectives of WQA's §406 Plan or the intent thereof
- Ranking on priority list if multiple requests are competing for available funds
- Project is "necessary" and "consistent" with the NCP

- Requesting party to pay no less than 25% of capital costs
- Funding for operation and maintenance secured from funds other than WQA assessment
- Implementation of construction anticipated within one year of executed agreement

Projects are scored according to the questions and corresponding scores listed in Table 2 – Project Scoring. Once scored, the projects are then ranked according to the criteria in Table 3 – Project Ranking. The higher scores represent a higher ranked priority position within each category for available funding.

A. PROCEDURE NO. 38

San Gabriel Basin WQA Policy and Procedures Manual - Administrative Procedure 38 - WQA evaluates projects submitted to determine whether the projects are “necessary” and “consistent” with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). For cost recovery purposes, remediation projects are considered “necessary” if there is evidence of a release of hazardous substances, the project is designed to mitigate the impact of such releases and the project is needed to meet regulatory requirements for remediation and/or water supply. The determination of necessity shall be based on data of sufficient quality and quantity to satisfy the WQA. Remediation projects are considered “consistent” with the NCP if the remediation project is in substantial compliance with the applicable requirements of the NCP and results in a CERCLA-quality clean-up. Specific potentially applicable NCP requirements are addressed below.

B. HUMAN RIGHT TO WATER

In recognition of AB685 (Chapter 524, Statutes of 2015), which declares that it is the “established policy of the state of California that every human being has the right to safe clean, affordable, and accessible water adequate for human consumption”, the WQA, consistent with its mission and goals, will identify projects to further this policy. There are no public water systems in the San Gabriel Valley operating in violation of their operating permits.

C. DISADVANTAGED COMMUNITIES

Disadvantaged communities (DACs) are defined by the state as a community with an annual median household income (MHI) less than 80% of the Statewide annual MHI. Figure 11 contains a map of the San Gabriel Basin overlaid with census block groups matching that definition. Together the block groups represent approximately 410,000 residents living in DACs. WQA will identify projects located in DACs and provide recommendations for the appropriate state funding.

VIII. Contractor Selection

Competitive bids are typically used for contractor selection for capital projects when funding sources include WQA assessments, local water funds, or funding from the state or federal government. Projects with federal and state dollars follow their respective contracting guidelines regarding competitive bids. Sole source awards may occur, consistent with either federal and state guidelines, or the criteria established by the individual water purveyor.

IX. Public Information

The WQA has succeeded over a number of years in building public support for cleaning up contaminated groundwater in the Basin. The public information program will continue to build on that effort to foster understanding of the WQA's mission, projects and accomplishments and plans, and to encourage public participation in the cleanup process. The WQA will undertake efforts to ensure that all stakeholders, including the general public, understand projects that involve the WQA and have ample opportunity to contribute ideas and opinions.

The program will employ a variety of methods to reach everyone from specialized audiences, such as the local water community and legislators in Sacramento and Washington, to the general public in the Basin and beyond. The WQA will constantly update its web site and social media outlets including Facebook (facebook.com/SGBWQA), Twitter (@SGBWQA) and YouTube (youtube.com/SGBWQA) to provide instant access to public information, including news

releases, publications, agendas, minutes of meetings, and reports on projects. In addition to WQA-specific issues, the WQA web site links to local, state and federal water agencies and organizations, giving the public immediate access to information on many local water issues, including groundwater contamination and cleanup activities. It also gives access to the names of officials who can be contacted for further information.

The WQA will work to keep the local offices of federal and state legislators informed of any developments and the progress of water cleanup issues in the Basin. These efforts will include office visits, tours of treatment facilities and an invitation to participate in the WQA legislative committee. The WQA has continued to host the Legislative Water Forum Luncheon in which local legislators are invited to provide updates on state legislation as it pertains to the Basin water community. Speakers in the series to date have included United States Senator Dianne Feinstein, former Senator Barbara Boxer, former Congressman David Dreier, former Congresswoman and U.S. Secretary of Labor Hilda Solis (now Los Angeles County Supervisor, District 1), Congresswoman Lucille Roybal-Allard, former Attorney General and State Treasurer Bill Lockyer, former Secretary of State Bruce McPherson and former Board of Equalization Member Judy Chu (now Congresswoman).

In 2006, the WQA developed a DVD presentation that features Senator Dianne Feinstein and former Congressman David Dreier. The DVD is being used in Sacramento and Washington, D.C to educate legislators, bureaucrats and other stakeholders to the strategic importance of the Basin. Senator Feinstein and Congressman Dreier implore the state and the state legislators to become full participants in the cleanup of the Basin.

In 2007, KCET's *Life & Times* program produced a segment on the Basin. The segment focused on the status of the cleanup, the impact of the contamination on the City of Monterey Park's water supply, the potential impact on ratepayers, and the need for more state involvement. A DVD of the segment is also used to educate local stakeholders on the cleanup of the Basin.

In 2012, WQA published its first annual report. The full color annual publication also serves as an executive summary of the §406 Plan.

The public information program uses a variety of written publications to carry its message. These may include annual reports, brochures, bulletins for specific projects and periodic news inserts in the *Los Angeles Times*, *San Gabriel Valley Tribune*, *Pasadena Star News* and the *Whittier Daily News*. The inserts are distributed throughout the Basin, through home and business delivery and general sales. The WQA will continue to provide the public with the latest information on its projects and programs

The WQA will continue to work closely with the news media and other organizations to reach the public. It will distribute press releases, contact and meet with reporters and editors to inform them of activities respond to press inquiries and take other steps to encourage media interest. The WQA will continue to work with major news outlets, such as the Los Angeles News Group, *Los Angeles Times*, and foreign language publications, such as *La Opinion* and the *Chinese Daily News*. It also will continue to provide information to other local newspapers, city and chambers of commerce newsletters and publications directed at water and environmental interests, the business press and the electronic media.

The WQA Board, through a variety of means, including public meetings and workshops, also interacts with the public to provide information and to solicit input. In addition, the WQA will continue to work with other agencies on information projects and participate with other water agencies on public outreach efforts.

All projects involving WQA will follow an established process, including all applicable federal, state and local regulations. Because the Basin is a Superfund site, the process will always include meeting requirements under the NCP, including its public participation component, in order to ensure maximum cost recovery potential. In addition, whenever needed or requested, WQA will work closely with water purveyors to help them meet the extensive public outreach requirements set forth in the DDW Technical Memorandum 97-005. However, absent regulatory requirements, the WQA continues to be committed to informing the public of all of its activities.

X. Coordination with Other Agencies

The WQA was created to fulfill a need to coordinate response actions to the contamination in the Basin. The WQA continues to call for the involved federal, state, and local agencies to unite with all stakeholders to work more effectively and efficiently. Stakeholders include but are not limited to the USEPA, the USBR, the DTSC, the SWRCB, the LARWQCB, the DDW, the WQA and each of its member water districts, the MSGBW, cities affected by the Basin groundwater contamination, San Gabriel Valley Water Association, water purveyors in the Basin, and PRPs.

Response actions alone cannot fulfill the long-term need of creating a sustainable and reliable source of water supply in the Basin. The State of California requires water districts to develop and adopt an Urban Water Management Plan (“UWMP”). WQA, in coordination with its three member water districts, the Upper San Gabriel Valley Municipal Water District (“Upper District”), the Three Valleys Municipal Water District (“TVMWD”), and the San Gabriel Valley Municipal Water District (“SGVMWD”), shall incorporate water reliability projects identified in each of their UWMPs into the §406 Plan. Their respective sponsorship and administration of these projects is a vital part of enhancing the long-term reliability of the Basin’s water supply. These projects, listed in Appendix G, directly benefit the Basin and help augment WQA’s groundwater cleanup activities.

XI. Litigation Plan

The WQA Act authorizes the WQA to bring legal action, including against responsible parties to recover from them the response costs incurred in connection with removal and remedial actions in the Basin.

Among other claims the WQA can assert for cost recovery, the WQA may bring suit under CERCLA, which provides that any person or entity who owns or operates a facility from which there has been an actual or threatened release of a hazardous substance which has caused the WQA to incur response costs, is liable for the costs of response. Liability similarly is imposed on persons and entities, among others, who

previously owned or operated a facility at the time such hazardous substance(s) were released.

CERCLA further allows the WQA to seek to hold all PRPs jointly and severally liable for these response costs, recover prejudgment interest, and obtain a declaration from the court that the responsible parties are liable for future response costs. In addition, the WQA may seek to recover its attorneys' fees incurred in bringing legal action. A more detailed discussion of the WQA's legal options is included in Appendix C- 3.

XII. Future Activities

Over the next year WQA will continue to play an integral role in protecting the groundwater supplies of the Basin by actively participating in all operable unit remedies to ensure that the necessary facilities are constructed and treatment and remediation continues to occur in a manner that provides the greatest benefit to the residents of the Basin.

BPOU - Additional modifications necessary to operate the BPOU remedy project in the most cost effective way possible will continue. Once all modifications are complete the BPOU projects combine to provide up to 25,900 gpm of potable supply. WQA will continue to participate in decisions that affect project treatment and remediation activities as a member of the project committee.

SEMOU – The WQA received a Proposition 1 planning grant from the SWRCB to conduct additional site investigation activities upgradient of the WSGRF. The activities include several hydropunch locations along with cone penetration testing to further delineate plume boundaries while providing invaluable aquifer lithology. It is anticipated that the additional site investigation work will lead to an implementation grant that will ensure the optimization of the WSGRF. In addition, WQA will be applying for additional Prop 1 funds to assist the LARWQCB with contaminant source investigation activities at various locations within the SEMOU.

EMOU - WQA will continue to participate in the remedial activities including but not limited to remedial design, project oversight and federal reimbursement activities associated with the EMOU. In 2012, the westside workparty finished construction of the shallow zone remedy and will continue operation as required by the USEPA. In late 2015, the eastside workparty's shallow zone remedy became operational. In 2019, the city of El Monte received its 97-005 amended water supply permit for the operation of eastside deep zone remedy. In addition, WQA will encourage that the end use of the treated water be put for beneficial use whenever possible.

PVOU - WQA will continue to participate in the remedial activities, including but not limited to, remedial design and project oversight associated with the PVOU remedy. In early 2019, the PVOU IZ Remedy will began construction of the centralized treatment facility. Construction activities will continue throughout the next reporting period. In addition, it is anticipated that the shallow zone north remedy will ramp up its remedial design activities. WQA will continue to assist the workparties in developing an enhanced alternative end use discharge plan that will have a regional benefit to the San Gabriel Valley water supply.

Area 3 - It is anticipated that the City of Alhambra will continue to operate its Phase I and Phase II treatment facilities, and the the City of South Pasadena will continue to operate its 1,2,3-TCP treatment facility at their Wilson wellsite. In addition, WQA will assist USEPA and LARWQCB whenever possible to further characterize contamination within the Area 3 boundaries.

WNOU – WQA will continue to assist the DTSC in its oversight of the WNOU remedy to guarantee the continued operation and to ensure that the remedy is performing as required by the WNOU IROD.

Non-Operable Unit Projects – All non-operable unit projects mentioned above are anticipated to remain in service and continue to mitigate contaminate migration.

Volume II

APPENDIX A

Appendix A - Operable Unit Area plans

1. BALDWIN PARK OPERABLE UNIT

Of the six areas of contamination in the Basin, the BPOU is considered the most significant because of the geographic size and degree of contamination. For this reason USEPA prioritized this area for investigation back in the late 1980's. Located in eastern Los Angeles County and covering 10 square miles, the BPOU includes portions of the cities of Azusa, Industry, Irwindale, Baldwin Park, West Covina and the unincorporated areas in Los Angeles County. The area of groundwater contamination is more than 8 miles long and 1 mile wide, reflecting multiple, commingled groundwater contaminant plumes. By 1994, there was a general consensus on the technical approach including a financial arrangement whereby sales from the water produced by the treatment plant would be used to offset the costs of the project. However, just as designs were being prepared, the discovery of new contaminants prompted a complete reevaluation of cleanup plans.

In 1997, perchlorate, a contaminant derived from solid rocket fuel, was discovered in many of the active production wells within the OU. This discovery had widespread impacts, primarily because traditional treatment methods were ineffective in removing perchlorate from the groundwater. The new discovery not only disrupted the design of the CERCLA remedy, but also shut down many of the existing treatment plants that had been operating for water supply purposes. In one case, a water purveyor's (LPVCWD) complete water supply was shut down due to excessive concentrations of perchlorate that could not be removed by treatment facilities currently in place. This forced the water purveyor to buy alternative groundwater supply from neighboring water purveyors and supplemental imported water costing five times the cost of groundwater before the discovery of perchlorate.

Based on the discovery of perchlorate, USEPA chose to update its ROD and issue a plan update (Appendix E). This update was similar to the original ROD except that the containment requirement in the southern portion of the OU unit was shifted

further downgradient to address the new contaminants and the larger VOC plume resulting from several years of movement since the original ROD was issued. USEPA's plan required that about 22,000 gpm of contaminated groundwater be extracted and treated. The update did not, however, specify how the water was to be used.

In 1998, although USEPA had recently accepted a "good faith offer" from a portion of the BPOU PRPs to conduct the required cleanup, the specifics of the offer suggested that the PRPs intended to construct cleanup facilities without addressing the local water supply needs. The promise of the good faith offer was to extract water from the specified locations, treat the water at centralized facilities using emerging (unapproved) treatment technology and then discharge the water into nearby surface water channels. This approach was met with strong resistance that could have resulted in further delays and continuance of the existing water supply crisis. In addition, USEPA's approach focused on overall containment of the plume and did not include projects that were outside of USEPA's primary objectives that would have beneficial effects on both cleanup and water supply.

In response to this situation, WQA prescribed a cleanup plan developed by the MSGBW (Figure 2) that integrates cleanup and water supply objectives. The first phase of this plan focused on the southern portion of the plume where the priority is highest to contain the plume, protect critical water supplies and restore critical water supplies.

In 1999, due to the critical need for immediate action, WQA, MSGBW and Upper District joined resources and began implementation of the plan by constructing the first facility to treat both perchlorate and NDMA for drinking water at the LPVCWD well site. Following the success of the LPVCWD project, WQA prescribed additional early actions that build on the LPVCWD project development model.

In 2002, eight of the 20 BPOU PRPs entered into a comprehensive project agreement with WQA, MSGBW and local purveyors to fund the prescribed remedy described in this section.

To achieve rapid implementation in the BPOU, only treatment processes that are approved as Best Available Treatment Technologies ("BATT") by DDW shall be used to meet drinking water requirements. This requirement is necessary to assure that lengthy approval processes normally associated with emerging technologies are eliminated.

Use of BATTs will be necessary to accelerate removal of contaminant mass from the Basin and to restore impacted potable water supplies. However, wherever practical, other technologies may be considered if significant and exceptional benefits are shown to outweigh the need for urgency.

In addition, as new technologies become available, the WQA prescribes that cost effective studies and pilot programs are pursued in order to maximize the potential savings in cleanup costs over the life of the projects. For example, multiple projects are using an ion exchange technology that may be outdated and costly. New resin technology has been introduced that could provide alternatives to the existing technology, and studies have been undertaken to assess the benefits of switching over if the lifetime benefits appear to be substantial.

In the cases where existing technology remains in place, careful optimization will be performed regularly on the equipment in order to achieve the best effective operation and the lowest operating cost possible.

➤ *Southern Remedy*

In conjunction with the LPVCWD treatment project constructed in 2000, a new treatment facility located at the San Gabriel Valley Water Company ("SGVWC") Plant B6 treatment facility near the southern extension of the plume was prescribed for immediate implementation. The project also included the construction of four new extraction wells (B25A, B25B, B26A and B26B) and transmission pipelines connecting the extraction wells to the Plant B6 treatment facility.

The project finished construction in 2004 and received its 97-005 amended water supply permit from the DDW in June 2005. The water extracted from this facility is needed by SGVWC to replace production capacity lost when contamination forced the closure of the then operating water treatment facilities that lacked the ability to remove the newly discovered contaminants, perchlorate and NDMA. The project has the ancillary benefit of protecting downgradient water supply wells by halting the southeastern migration of contaminant mass.

In 2009, efficiency studies have led to changing out the existing ion exchange treatment technologies at LPVCWD's treatment facility and SGVWC's Plant B6

treatment facility from a regenerable resin technology to a more efficient single-pass resin technology. As a result of changing from a regenerable resin ion exchange technology to a single-pass technology SGVWC lost the ancillary benefit of some nominal nitrate treatment. Therefore, DDW required SGVWC to construct additional nitrate treatment at its Plant B6 to ensure continued operation of the treatment facility. The new nitrate treatment utilizes a regenerable ion exchange treatment system but will be designed specifically for nitrate removal.

In 2020, SGVWC plans to replace its existing UV treatment equipment with new more efficient 3rd generation UV treatment technology.

The next component of the remedy prescribed for the southern area is a new treatment facility that is located at the SGVWC Plant B5. The project finished construction and began testing in 2007. In April 2008, the Plant B5 treatment facility received its amended water supply permit from DDW. The Plant B5 treatment facility treats water from an existing well (B5B), from a new extraction well drilled on site (B5E) and from an existing City of Industry well located in the San Fidel Well Field. The Plant B5 facility is necessary to meet water supply demand and to serve as a final containment point to prevent the further degradation of clean aquifers resulting from the migrating BPOU contamination plume.

This plan prescribes immediate implementation and long term operation of the southern remedies for the BPOU including all of the necessary facilities to achieve full containment of the BPOU plume at the downgradient edge. In June 2008, the last component of the BPOU remedy became operational. These facilities will accelerate removal of contaminant mass in the Basin, prevent migration of contamination into critical groundwater water supplies, and through the integration of cleanup with water supply objectives, mitigate the existing water supply crisis in the area.

As of September 30, 2019, the southern remedy projects have treated approximately 317,562.71 acre-feet of contaminated groundwater and have removed approximately 42,324.90 lbs. of VOCs, perchlorate, NDMA and 1,4-Dioxane.

➤ Northern Remedy

In 2005 construction was completed on a new treatment facility at the VCWD Arrow/Lante wellfield. The new treatment facility known as the Subarea 1 (“SA1”) treatment facility will consist of all necessary treatment technology and two new extraction wells (SA1-1 and SA1-2) that were constructed east of the treatment facility which will deliver raw water to the facility via new transmission pipelines. The plan also includes a treated water pipeline to deliver all of the treated water to SWS. In 2007, VCWD discovered TCP in its SA1 extraction wells and was forced to construct additional Liquid Phase Granular Activated Carbon (“LPGAC”) treatment at SA1 to combat the new found contamination.

Similarly to LPVCWD and SGVWC in 2008, VCWD initiated the process to replace the ion-exchange regenerable treatment system with single pass ion-exchange treatment equipment. Design and construction of the single pass ion-exchange system was completed in 2009.

In 2014, VCWD approved the nitrate management plan which will provide ancillary nitrate blend capabilities to ensure compliance with drinking water standards.

In 2015, VCWD will begin construction of a new extraction well that will replace existing offsite extraction wells SA1-1 and SA1-2. The new extraction well along with existing SA1-3 will provide enough capacity to achieve the revised extraction rate of 6,000 gpm.

As of September 30, 2019, the northern remedy project has treated approximately 77,414.27 acre-feet of contaminated groundwater and has removed approximately 42,820.10 lbs. of VOCs, perchlorate, NDMA and 1,4-Dioxane.

➤ *Other Remedies*

California Domestic Water Company’s (“CDWC”) Well No. 14 was affected by contamination emanating from the BPOU, including perchlorate and NDMA. CDWC expanded their existing VOC and NDMA treatment systems by including a perchlorate treatment system. The project is also designed to protect CDWC’s downgradient wells. Construction was completed in June of 2002.

Recently DDW informed CDWC that blending for VOCs would no longer be allowed and treatment for VOC removal will be mandatory. In addition, DDW stated that

Well No. 10 will not be allowed to operate as a blending source for perchlorate if upstream perchlorate levels are shown to be increasing. Therefore, CDWC intends to construct dedicated VOC and perchlorate treatment systems for its Well No. 10.

As of September 30, 2019, the CDWC project has treated approximately 373,162.93 acre-feet of contaminated groundwater and has removed approximately 18,837.70 lbs. of VOCs, perchlorate and NDMA.

After losing their Plant 139 and Plant 140 wellfields to the BPOU contamination, SWS constructed new production wells at their Plant 121, Plant 142 and Plant 151 properties. The interim project also included the construction of pipelines that will allow for better operational flexibility and provide additional supply to their affected service area.

In addition to operating the SA1 treatment facility as part of the BPOU remedy, VCWD also has two additional treatment facilities that they own and operate for their immediate water supply. In 1990, VCWD constructed the Maine East and West treatment facility and in 2004 the Nixon East and West treatment facility.

As of September 30, 2019, the VCWD's Maine and Nixon treatment facilities have treated approximately 113,761.39 acre-ft of contaminated groundwater and have removed approximately 2,163.80 lbs. of contamination.

Finally, WQA endorses the construction of the Covina Irrigation Company's ("CICs") Baldwin Pumping Plant. In 2014, WQA assisted CIC in receiving a DDW grant for the construction of the treatment facility. In 2020, it is anticipated that CIC will finish construction and begin start-up testing.

2. SOUTH EL MONTE OPERABLE UNIT

The SEMOU covers approximately 8 square miles. It encompasses all of the city of South El Monte and portions of El Monte and Rosemead. The SEMOU is generally bounded by Interstate 10 to the north, Highway 60 to the south, Interstate 605 to the east, and San Gabriel Blvd to the west. Contamination in the SEMOU is predominantly VOCs 1,4-dioxane, and perchlorate. In general, VOC concentrations are highest in shallow groundwater near industrial facility source areas where releases have occurred. VOCs have also migrated downward into the intermediate aquifer zone. The VOCs

have migrated westward toward drinking water production wells as well as southward toward the WNOU. Some drinking water production wells have been impacted by groundwater contaminants and either shut down or equipped with wellhead treatment to reduce contaminant levels to drinking water standards.

The threat to the northwest has already impacted several critical water supply wells, primarily those owned by the City of Monterey Park (“CMP”), SGVWC and Golden State Water Company (“GSWC”). These water purveyors have had to implement treatment facilities in order to resolve their water supply crises. The other predominant threat is from contamination in the shallow aquifers that provide a continuous source of contamination that has traveled as far south as the Whittier Narrows Dam. Continued migration of the contamination past the Whittier Narrows Dam threatens many production wells and the sensitive recharge areas within the Central Basin. Immediate action is clearly needed to address these imminent threats.

To address the VOC groundwater contamination in the SEMOU, USEPA released its Interim ROD (“IROD”) (Appendix E) in September 2000. The IROD specifies extraction from the intermediate zone at or near CMP’s existing well No. 5, CMP’s existing well No. 12, SGVWC’s existing Plant No. 8 wellfield, and GSWC’s existing San Gabriel (SG1 & SG2) wellfield. USEPA’s plan also includes a new extraction well (CMP No. 15) northeast of CMP No. 12. USEPA’s goal is to contain the flow of contaminants and prevent exposure to downgradient pumping centers operated by CMP, SGVWC, and other purveyors. Although USEPA recommends the use of existing water supply facilities, the PRPs are not mandated to use these facilities in their response, nor are they obligated to integrate water supply with the required remedy.

In 2005 USEPA issued an ESD (Appendix E) for the SEMOU to include treatment of perchlorate in the intermediate zone and reserved the right to include treatment for 1,4-Dioxane and other ECs at a later date.

With the exception of perchlorate treatment, WQA’s prescribed actions for the SEMOU have, for the most part, been put into place and are consistent with USEPA’s proposed plan. They address specific concerns that (1) action needed to take place immediately to halt further migration into critical water supplies, (2) complications in the negotiations with the PRPs would delay USEPA’s implementation schedule, and (3)

PRPs may choose to fulfill their CERCLA responsibility to USEPA without addressing the need to restore water supplies. Specifically, the prescribed actions referenced below have and will address both the immediate threat and water supply crisis prevalent in the northwest portion of the OU and the long-term threat to Central Basin to the south.

To date, USEPA has lodged nine Consent Decrees (“CDs”) embodying settlements with 72 PRPs for costs associated with implementation of the SEMOU remedy. The funds recovered by USEPA will be used to reimburse affected water purveyors for future treatment and remediation costs associated with the continued operation of remedy wells and treatment facilities as described in the SEMOU remedy through a cooperative agreement between USEPA and WQA.

➤ *Intermediate Zone Remedy*

To address the threat presented in the northwest portion of the OU, WQA’s prescribed action (Figure 3) includes the existing VOC and perchlorate blending treatment facility at CMP No. 5 along with the existing VOC treatment facilities at CMP No. 12, SGVWC Plant 8 and GSWC SG1 & SG2. Additionally, the plan specifies that water from CMP remediation Well No. 15 be treated at the existing treatment facility at CMP No. 12.

This plan promotes the beneficial use of the treated water by the appropriate water purveyors. To that end, WQA entered into funding contracts in the year 2000 with CMP, GSWC and SGVWC to construct VOC treatment projects ahead of enforcement action by USEPA.

SGVWC’s Plant No. 8 VOC treatment facility was completed in October 2000 and is currently operating. Rising levels of VOCs in the wells at Plant 8 caused the DDW to require SGVWC to install a secondary barrier treatment system. Construction of a LPGAC secondary barrier treatment system to polish the air stripper effluent was completed in 2005. As part of the amended water supply permit issued to SGVWC by DDW to operate the Plant No. 8 VOC treatment facility, a sentinel well, SEMW09 had to be installed upgradient and within two years travel time of the Plant No. 8 wells. The primary purpose of the sentinel well is to provide an “early warning” of emerging

contaminants that might affect the operation of the Plant No. 8 VOC treatment facility. A 2005 sample of SEMW09 detected 1,4-Dioxane below 1 ppb however, all subsequent sampling events for 1,4-Dioxane have been non-detect.

SGVWC's recent analyses of onsite production well 8D revealed and continued to confirm the presence of perchlorate and 1,4-Dioxane at concentrations just below the DDW MCL and Notification Level ("NL"), respectively. Because the current Plant No. 8 VOC treatment facility is not capable of removing perchlorate or 1,4-Dioxane, SGVWC has designed and plans to construct a 5,000 gpm, single pass ion exchange treatment facility for the removal of perchlorate when levels reach 50% of the MCL. In addition, SGVWC constructed an advanced oxidation ultraviolet ("UV") light treatment facility for the removal of 1,4-Dioxane. The addition of the UV light treatment facility will ensure continued operation of the Plant No. 8 VOC treatment facility and continued remediation of the SEMOU groundwater. The UV system is undergoing testing for a 97-005 amended water supply permit.

Both CMP's and GSWC's VOC treatment facilities for Well No. 12 and SG1 & SG2, respectively, were completed. However, the wells for both plants were subsequently found to be contaminated with perchlorate and immediately shut down. In 2004, CMP completed construction of a perchlorate treatment plant for Well No. 12. In addition to the VOC treatment, GSWC operated an interim perchlorate treatment facility for Well SG1 only SG2 was removed from service. However, based on two years of non-detects for perchlorate contamination, GSWC and CMP have deactivated their perchlorate treatment systems.

In 2012, GSWC returned Well SG2 to service and restore plant capacity. CMP has constructed additional piping to bypass their perchlorate treatment equipment while maintaining it in a state of readiness if future perchlorate treatment is needed. Both projects are endorsed as they are designed to restore lost water supply and protect existing downgradient production wells.

In 2018, CMP finished construction of its centralized UV treatment facility at its Delta site. The centralized treatment facility will end the need for redundant VOC wellhead treatment and address 1,4 dioxane issues. Additionally, this new facility will

streamline CMP's production and distribution while providing an overall decrease in CMP's treatment and remediation costs.

As of September 30, 2019, the intermediate zone remedy projects have treated approximately 175,545.07 acre-feet of contaminated groundwater and have removed approximately 23,890 lbs. of VOCs and perchlorate.

➤ Other Intermediate Zone Remedies

In addition to the extraction and containment projects identified in the SEMOU IROD, purveyors in the SEMOU had to construct treatment facilities at several of their wells to ensure a safe and reliable water supply in the event that the IROD projects are temporarily removed from service. Although these projects are not identified as SEMOU remedy projects by USEPA they do contribute to the remedy by removing mass contamination within the groundwater thus improving the regional groundwater basin as a whole.

In 2004, CMP constructed a VOC treatment facility at its Delta Plant to treat VOC contamination that was recently discovered in CMP Well Nos. 1, 3, 10 and Fern.

In 2005, SGVWC has constructed a VOC treatment facility at its Plant G4 located within the SEMOU.

In 2016, GSWC finished construction of its Garvey Well No. 3 VOC treatment facility.

These actions, as prescribed by this plan, will accelerate removal of contaminant mass and help to prevent migration of contamination into critical water supplies. In addition, integrating the cleanup action with the surrounding water supply will mitigate the current water supply crisis caused by the presence of the contamination.

As of September 30, 2019, other intermediate zone projects have treated approximately 36,854.34 acre-feet of contaminated groundwater and have removed approximately 1,826.50 lbs. of VOCs.

➤ Shallow Zone Extraction

Part of WQA's prescribed response to address the threat to Central Basin was the South El Monte Shallow Extraction Barrier ("South El Monte Barrier"). The South El

Monte Barrier was constructed under a voluntary partnership including WQA, several of the local businesses and the City of South El Monte. The objective of the response action was to halt the flow of contaminants near the primary source areas within the SEMOU.

The project consisted of two extraction wells, treatment facilities and discharge pipes which allow the treated water to infiltrate back into the aquifer downgradient of the extraction. The project was originally constructed to remove VOCs and later modified with ozone/peroxide treatment to remove 1,4-Dioxane. Given that there are no water supply wells directly affected in the immediate areas and that water from the shallow aquifer is not normally used for potable use by the purveyors, low priority was given to mandating beneficial use of the water.

In 2004, the WQA discontinued operation of the South El Monte Barrier after it was determined that USEPA's fund-led Whittier Narrows project (see the Whittier Narrows Operable Unit ("WNOU") portion of this plan) would halt the contaminant migration farther downgradient. While this situation was not the preferred alternative, the WQA determined that no water supplies would be affected by discontinuing the project. Additionally, funds made available by discontinuing the South El Monte Barrier were redirected to contain an alternate source of contaminants that was threatening water supplies.

In 2005, the WQA initiated design on a shallow groundwater barrier to be constructed in and around the area of the former J.A. Bozung facility. The WSGRF project will remove a hot spot plume of VOCs and 1,4-Dioxane that threatens downgradient water supplies. The WSGRF started full-time operation in December of 2008 with treatment and remediation estimated to continue through 2020.

In June of 2019, WQA completed field work of its Proposition 1 Expanded Site Investigation Planning Project upgradient of the WSGRF. The project consisted of seven Hydropunch and CPT locations along with some compound specific isotopic analysis of selected contaminants. It is anticipated that the results of the project will lead to a robust enhancement of the WSGRF.

As of September 30, 2019, the treatment facility has treated approximately 325.60 acre-feet of contaminated groundwater and has removed approximately 187.10 lbs. of VOCs and 1,4-Dioxane.

3. EL MONTE OPERABLE UNIT

The El Monte Operable Unit (“EMOU”) covers approximately 10 square miles in the south central portion of the San Gabriel Basin in eastern Los Angeles County. The OU is generally bounded by Interstate 10 to the south, Rosemead Blvd to the west, and Santa Anita Ave and the Rio Hondo to the east. The El Monte OU includes portions of the cities of El Monte, Rosemead and Temple City. This OU is generally characterized by shallow groundwater VOC contamination that is mostly contained in the upper 100 feet of the aquifer. VOCs have also spread downward into the deep zone. VOCs in the deep zone have migrated downgradient towards some drinking water production wells which necessitated that some wells be shut down or equipped with wellhead treatment to reduce contaminant levels.

The City of El Monte (“CEM”), in particular, lost several wells and experienced a shortage of supply. New sources of supply, either from new cleanup facilities or reactivation of existing supplies are greatly needed to enhance and secure the local water supply situation. WQA has provided assistance by leasing the CEM four surplus LPGAC vessels from past WQA projects.

To provide long-term protection of these supplies, immediate actions were needed to cut off and contain the movement of contaminants in the shallow aquifer. Elimination of the high concentrations of contaminants near the sources is necessary to provide for rapid reduction of mass from the aquifer and establish long-term protection of downgradient water supplies. To address this emergency need in 1997 WQA prescribed the immediate implementation of two shallow extraction barriers to stop the flow of contamination on the western and eastern portion of the OU. Anticipating that this type of removal would be required, WQA and many of the PRPs for the EMOU executed agreements to fund the construction of these projects. As part of this early

response, WQA sponsored three components (extraction and treatment at the Clayton Manufacturing facility and individual extractions with centralized treatment for Hermetic Seal, and Crown City Plating facilities) which operated for several years. Immediate implementation of the shallow extraction barriers ahead of USEPA's mandate will complement these other early responses and help to accelerate the removal of mass from the Basin and prevent the further migration of contamination into critical groundwater supplies.

In June 1999, USEPA released its IROD (Appendix E) which requires containment of the shallow contaminant plume on the western and eastern sides of the OU and containment of the deep contaminant plume on the northwestern and southeastern edges of the OU. In 2002, USEPA released an ESD (Appendix E) that requires the containment of emerging chemicals in addition to VOCs. In 2004, due to unrest within the EMOU PRP group, USEPA entered into a CD effectively dividing the PRPs into two distinct work parties, the West Side Performing Settling Defendants ("WSPSD") and the East Side Performing Settling Defendants ("ESPSD").

As a result of the elevated levels of Nitrates and Total Dissolved Solids ("TDS") in both west and east shallow zone extraction projects, local water purveyors cannot integrate the treated water into the local supply. Thus, WQA prescribes that, to the extent possible, the water extracted from the shallow extraction projects be put to beneficial use for one of the following alternatives: (1) potable source through blending, (2) industrial reuse, (3) re-injection to the groundwater basin, or (4) used as a reclaimed water source. If no beneficial end use is available and all alternatives have been exhausted the treated water may be discharged to a nearby channel if permitted by LARWQCB and MSGBW's rules and regulations.

For the shallow zone remediation, the WSPSD is discharging its treated water to the adjacent Eaton Wash under an NPDES permit issued by the LARWQCB and the ESPSD will be re-injecting all shallow zone treated water upgradient of the extraction wells under an LARWQCB permit.

Together, all of these facilities will serve to contain the migration of the contamination in the intermediate (potable) aquifers and prevent the further spread of contamination into critical groundwater supplies. Requiring the beneficial use of shallow

zone treated water will enhance the local water supply and help to mitigate the current water shortage caused by impairment of water supply wells.

In 2016, USEPA required both work parties to work together and develop a comprehensive workplan to address regional CrVI contamination within the EMOU. WQA is supportive of this joint effort and will provide any and all assistance necessary to fully characterize CrVI contamination within the EMOU.

➤ West Side Remedy

The WSPSD is responsible for containment of the western shallow zone contaminant plume (Figure 4) and the containment of the northwestern deep zone plume (Figure 5). Containment of the western shallow plume will be accomplished via six extraction wells and a centralized treatment facility. The treatment facility will be designed to treat not only VOCs but all emergent chemicals (“ECs”) to below drinking water standards. Construction of the western shallow zone treatment facility, extraction wells and pipeline was completed in January 2012.

In 2018, due to the decline in the water table in the area the WSPSD’s plan to enhance the shallow zone remedy by installing 8 new extraction wells.

As of September 30, 2019 the WSPSD shallow zone treatment system has treated approximately 418.83 acre-feet of contaminated groundwater and has removed approximately 39.30 lbs. of VOCs, perchlorate, nitrate and hexavalent chromium.

The existing GSWC Encinita Plant treatment facilities, owned and operated by GSWC and partially funded by the WSPSD, along with a VOC treatment facility, previously owned and operated by Adams Ranch Mutual Water Company (“ARMWC”), will help address the deep zone contaminant plume in the northwestern sector. Both deep zone projects received federal reimbursement from WQA.

In 2016, ARMWC was acquired by the California American Water Company which has ceased operation of the VOC treatment facility. That leaves GSWC’s Encinita Plant as the singular operating deep zone remedy project on the west side of the EMOU.

As of September 30, 2019, the west side deep zone remedy project has treated approximately 31,314.09 acre-feet of contaminated groundwater and has removed 750.40 lbs. of VOCs.

➤ East Side Remedy

The ESPSD is responsible for containment of the eastern shallow zone contaminant plume (Figure 4) and the containment of the southeastern deep zone contaminant plume (Figure 5). Containment of the eastern shallow plume will be accomplished via five extraction wells, a centralized treatment facility and three re-injection wells. The treatment facility will be designed to treat not only VOCs but all ECs. The east side shallow zone remedy became operational in March 2015.

As of September 30, 2019, the east side shallow zone remedy project has treated approximately 132.94 acre-feet of contaminated groundwater and has removed 25.00 lbs. of VOCs.

In 2013, ESPSD in conjunction with CEM installed three extraction wells in the intermediate zone aquifer in the southeastern sector and constructed a centralized treatment facility to control migration of low levels of VOCs. The treated water will be conveyed into CEM's existing distribution system in the area. WQA has provided the ESPSD federal reimbursements for their projects. The east side deep zone remedy project finished construction and is in the process of the required 97-005 amended water supply permit testing.

In 2019, CEM received its 97-005 amended water supply permit for the treatment facility and is using the treated water in its domestic supply. As of September 30, 2019, the east side deep zone remedy project has treated approximately 3,353.90 acre-feet of contaminated groundwater and has removed 172.80 lbs. of VOCs.

➤ Other Intermediate Zone Remedies

Similar to the SEMOU, affected purveyors in the EMOU had to construct additional treatment facilities. Specifically, the CEM constructed three VOC treatment facilities at wells 2A, 10 and 12 to ensure safe and reliable supply to their customers. Although these projects are not identified as EMOU remedy projects by USEPA they do

contribute to the remedy by removing mass contamination within the groundwater thus improving the regional groundwater basin as a whole.

As of September 30, 2019, CEM wells 2, 10 and 12 have treated approximately 34,031.37 acre-feet of contaminated groundwater and have remove 1,366.60 lbs. of VOCs.

4. WHITTIER NARROWS OPERABLE UNIT

Whittier Narrows is a 1.5-mile gap in the bedrock hills that separates the San Gabriel and Central Basins and represents the primary discharge point for groundwater and surface water flow exiting the Main San Gabriel Basin. USEPA designated Whittier Narrows as an OU specifically to address groundwater contamination flowing out of the Main San Gabriel Basin, through Whittier Narrows, into the Montebello Forebay portion of the Central Basin. The WNOU is bounded to the north by the South El Monte OU (at Highway 60) and to the south by the Montebello Forebay portion of the Central Basin (near the Whittier Narrows Dam).

VOCs, 1,4-dioxane, and NDMA are the primary groundwater contaminants found in the Whittier Narrows Operable Unit (WNOU). USEPA has not identified any significant sources of VOC and 1,4-dioxane contamination in the WNOU. Hence, the VOC and 1,4-dioxane contamination is migrating into the WNOU from upgradient industrial sources within the Main San Gabriel Basin. The contamination being addressed by the interim remedy largely appears to originate from the South El Monte OU, located immediately north of the WNOU.

In 1999, USEPA issued an amendment to the ROD for the WNOU which identifies the need for a groundwater extraction barrier approximately ¼ mile north of the Whittier Narrows Dam (Appendix E) to halt the flow of contamination traveling towards Central Basin. To form an effective containment barrier, five or six extraction sites were required to remove and treat a total of about 12,000 gpm extracting from both the shallow and intermediate zone aquifers. Because USEPA was implementing this remedy under its “fund lead” authority, the responsibility for administering the design, construction and operation of the comprehensive cleanup facility was USEPA. In 2002, USEPA finished construction of the comprehensive cleanup facility.

In recognition of the immediate threat to downgradient water supplies in Central Basin and the potential for significant delays associated with a large-scale treatment facility, WQA had prescribed a phased approach (Figure 6) that addressed the most severe threats first with an immediate early action at well EW4-3. WQA prescribed that well EW4-3 be integrated into the comprehensive potable treatment facility proposed by USEPA. WQA implemented the first component of this early action with the construction of a temporary treatment facility located at well EW4-3. Water from well EW4-3 was treated and temporarily discharged into nearby surface drainages until the full-scale remedy could be implemented. USEPA has completed construction of their centralized treatment facility and integrated well EW4-3 into their extraction system.

In 2002, the City of Whittier reached an agreement with USEPA to take most of the water extracted from the intermediate zone aquifer and use it as a potable supply for its customers. Water from the shallow zone is extracted at a reduced rate and is being discharged into Legg Lake.

In 2006, USEPA conducted a five-year review of the WNOU remedy to ensure that it remains protective of human health and the environment. USEPA concluded that the remedy for the WNOU is protective of human health and the environment.

In 2011, USEPA conducted its second five-year review of the WNOU remedy. USEPA concluded that in the shallow zone the extent of contamination has shrunk dramatically since the remedy construction was completed in 2002 and that contaminant concentrations have continued to decline consistently over the last five years (2006 to 2010). There are currently no shallow zone MCL exceedances in the WNOU, indicating that continued extraction is not needed to meet the goals of the remedy and was ceased in 2013.

As of September 30, 2019, the WNOU shallow zone remedy project has treated approximately 30,066 acre-feet of contaminated groundwater and has removed approximately 1,619 lbs. of VOCs.

USEPA's second five-year review also reports that in the intermediate zone the extent of intermediate zone contamination downgradient of the WNOU extraction wells has declined dramatically since remedy extraction began in 2002. These continued concentration declines have occurred despite intermediate zone extraction averaging

less than 3,300 gpm over the last five years. This provides strong evidence that the remedial objectives (hydraulic control of migrating contamination) can be met at a lower extraction rate than the current intermediate zone target extraction rate of 6,000 gpm.

In May of 2013, DTSC assumed operation of the WNOU remedy from USEPA. DTSC subsequently entered into a long term operational agreement with SGVWC in which SGVWC will use the treated intermediate zone water supply in its service area. Currently SGVWC is operating the treatment facility and discharging the water into Legg Lake while additional infrastructure is being constructed to allow SGVWC to take the treated water into its existing distribution system.

In 2018, DTSC received Proposition 1 funding that will be used to add additional infrastructure to return the WNOU intermediate zone remedy back to a potable water supply project.

As of September 30, 2019, the WNOU intermediate zone remedy project has treated approximately 56,458.65 acre-feet of contaminated groundwater and has removed approximately 1,832.20 lbs. of VOCs.

5. PUENTE VALLEY OPERABLE UNIT

The Puente Valley Operable Unit (“PVOU”) includes most of the City of Industry, portions of the City of La Puente, and portions of unincorporated Los Angeles County. Groundwater and soil are contaminated with various VOCs, 1,4-dioxane, perchlorate, and hexavalent chromium. Groundwater contamination occurs primarily in the shallow and intermediate groundwater zones of the aquifer, with most of the contaminant mass found in the shallow groundwater zone. VOC concentrations exceed drinking water standards in both the shallow and intermediate zones.

In 1998, the USEPA released the Interim ROD for the Puente Valley Operable Unit (“PVOU”) that described, in part, USEPA’s selected remedy for both shallow and intermediate zone contamination. It stated that the remedial action for the shallow zone shall prevent contaminated groundwater from migrating beyond its current lateral and vertical extent as described in the Remedial Investigation/Feasibility Study (“RI/FS”). The remedial action selected by USEPA for the intermediate zone shall prevent contaminated groundwater from migrating beyond the SGVWC B7 Well Field Area (an

area defined by 14 wells in the immediate area of SGVWC's B7 Well Field).

Furthermore, perchlorate was recently discovered in the B7 Well Field Area causing USEPA to further evaluate remedy options.

In 2005 USEPA issued an ESD for the PVOU mandating treatment for all ECs in both the shallow and intermediate zones (Appendix E).

In 2009, the PVOU remedial activity was stalled due to conflicting interpretations by two separate divisions of the USEPA, namely the Superfund Division and the Water Division which enforces the Clean Water Act. As a result, USEPA required additional feasibility studies to be conducted to re-evaluate alternatives for the disposition of the treated water in both the shallow and intermediate zone remedies.

➤ *Shallow Zone North Remedy*

In 2005 USEPA entered into a CD with United Technologies Corporation ("UTC") to perform the shallow zone remedy north of Puente Creek in the PVOU. The shallow zone remedy will consist of the installation of ten extraction wells, associated pipelines and a centralized treatment facility at the mouth of the valley (Figure 7). In 2008, UTC completed the installation of all extraction wells and is currently securing pipeline access agreements. Since water from the shallow zone is not suitable for potable use due to high Nitrates and TDS, UTC originally planned to discharge the treated water into a neighboring creek under a discharge waiver from the LARWQCB. However, recent changes to regulations have eliminated that discharge option. .

In 2011, due to the continued migration of the contaminant plume USEPA requested that the shallow zone remedy be completed in phases. Phase I consists of migration control of the eastern plume via extraction from well S05, treatment for VOCs and ECs and re-injection of the treated water into the shallow zone aquifer.

In 2019, UTC amended its Consent Decree with the USEPA to allow re-injection as a potential end use. With this modification UTC has ramped up its remedial design of the shallow zone north remedy.

➤ *Shallow Zone South Remedy*

The Northrop Grumman Systems Corporation (“Northrop”) is responsible for cleanup of the shallow contamination south of Puente Creek emanating from the former Benchmark Technology Facility. The Benchmark facility is understood to be the largest single source of VOC and 1,4-Dioxane contamination in the eastern portion of the shallow aquifer at the mouth of the Puente Valley. This portion of the shallow zone remedial action was part of the remedy in the 1998 ROD. In 2003, the groundwater contamination downgradient of the former Benchmark facility was to be addressed by a facility-specific cleanup through a Cleanup and Abatement Order (“CAO”) administered by the LARWCQB. However, the cleanup was never implemented and in May 2010, lead agency status was transferred to USEPA. Therefore, the groundwater contamination downgradient of the Benchmark facility is again being addressed as part of the shallow zone remedy.

➤ *Intermediate Zone Remedy*

In 2008, Northrop finished construction of the six extraction wells and a portion of the pipeline that were approved by USEPA as part of the intermediate zone remedy at the mouth of the valley (Figure 8). At that time the remedy called for contaminated water to be treated at SGVWC’s existing Plant B7 VOC facility. Treatment would consist of an existing air-stripper, liquid phase granular activated carbon, ion-exchange and advanced oxidation/ultraviolet technologies for the treatment of VOCs and all ECs. In addition, Northrop has reached an agreement in principal for SGVWC to accept the treated water and to provide a blending component with SGVWC’s Plant B24 wells. SGVWC has constructed a transmission main from its B6 service area to its Plant B24 to facilitate blending of the PVOU treated water.

In 2013, water quality samples indicated elevated levels of TDS and nitrates that would require a much greater volume of blend water to be compatible with SGVWC’s distribution system. As a result it was determined that additional treatment consisting of reverse osmosis would be required. As a result SGVWC’s Plant B7 site is not likely to accommodate the additional treatment because of its size. Northrop immediately began working with the City of Industry to purchase an alternative site that would be large enough for all treatment facilities.

In 2014, Northrop acquired a property from the City of Industry large enough to site both Intermediate Zone and Shallow Zone South treatment facilities. The current conceptual plan is to have LPVCWD operate the Intermediate Zone Remedy and utilize the treated water in its distribution system.

Pursuant to USEPA's request and agreement with Northrop, SGVWC in October 2016, properly destroyed Well B7C and decommissioned the accompanying treatment system. SGVWC's Well B11B and accompanying treatment system continues to operate in the PVOU.

In 2018, Northrop will complete the construction of an additional extraction well for a total of 7 wells to capture contamination at the toe of the plume. In addition it is anticipated that Northrop will begin construction of the treatment facility.

As of September 30, 2019, Plants B7 and B11 have treated approximately 96,678.98 acre-feet and have removed approximately 5,159.40 lbs. of VOCs.

6. AREA 3 OPERABLE UNIT

The Area Three Operable Unit ("ATOU") covers 19 square miles in the western portion of the San Gabriel Valley, Area 3 is located west of Rosemead Blvd, north of I-10, and south of the Raymond Fault (which separates the main San Gabriel Basin from the Raymond Basin to the northwest). Area 3 includes all of the City of San Gabriel, as well as portions of the Cities of Alhambra, Rosemead, Temple City, San Marino and South Pasadena. VOCs have been detected in production wells and safeguards are in place to ensure acceptable drinking water quality.

ATOU groundwater is contaminated with VOCs, perchlorate, and nitrate at concentrations exceeding state and federal water quality standards.

In 1999, USEPA began RI/FS investigations in the ATOU. The purpose of the RI/FS is to determine the nature and extent of soil and groundwater contamination and to identify likely sources. USEPA has completed the installation of additional monitoring wells in order to collect additional data to assess the extent of the contamination and its relationship to suspected source areas. USEPA released the RI in 2010 and is currently evaluating the results to identify cleanup options. Conclusions of the RI will form the basis of an FS to evaluate cleanup alternatives to prevent and eliminate the

release or threat of release of contaminants at the site. USEPA anticipates the release of the FS sometime mid-2020. The focus of the FS is to develop, screen and evaluate cleanup alternatives. During development of the FS, USEPA continues investigations to address remaining uncertainties identified in the RI

ATOU VOC contamination has impacted a number of the City of Alhambra's ("Alhambra") wells. In 2001, Alhambra started operation of Phase I of its pump and treat program. Phase I consists of a VOC treatment facility at Well No. 7. In 2008, Alhambra finished most of the construction of Phase II of its pump and treat program. Phase II consists of VOC and Nitrate treatment technologies at Well No. 8 and has the ability to treat contaminated groundwater from Wells Nos. 8, 11 and 12. Alhambra finished construction of Phase II in 2008 and it is operational. All water treated from both Phase I and Phase II projects is used by Alhambra in its distribution system (Figure 9). Both phases of the Alhambra's pump and treat program received reimbursement from WQA's federal funding programs. In addition, California American Water Company (CAWC) has informed USEPA of its rising contamination found at its Rosemead and Grand wells located in the south eastern ATOU.

In 2019, the City of South Pasadena ("CSP") responded to new regulations that more strictly limit the MCL of 1,2,3-TCP. The CSP completed construction of its 1,2,3-TCP treatment facility at the Wilson wellsite.

As of September 30, 2019, Alhambra's treatment facilities have treated approximately 35,286.25 acre-feet of contaminated groundwater and have removed approximately 1,162.30 lbs. of VOCs and nitrates.

APPENDIX B

Appendix B

NON-OPERABLE UNIT SPECIFIC PLANS

The overwhelming amount of time spent planning remedial actions is understandably focused on projects that are related to a specific OU, i.e., Baldwin Park, El Monte, South El Monte, Whittier Narrows, and Puente Valley. This is because USEPA's enforcement actions in these areas make headlines and demand public attention. However, necessity for cleanup in the Basin is not limited to the specific locations designated by USEPA. Because the USEPA mandate is limited to defining only how a plume of contamination may be contained, their RODs fail to address the remedial actions necessary to restore water supply wells that are not a part of their official cleanup plan. Furthermore, many contaminated water supply wells are facing imminent shutdown or have already been shut down and remain in this state largely due to overburdened regulatory agencies. WQA prescribes the treatment of the water at these wells to restore the water supplies and to remove contaminant mass from the Basin thus enhancing future water supplies. Table 4 provides a list of contaminated wells that are not part of any OU specific plan. Figure 10 shows the locations of these wells relative to Basin contamination.

Over the past several years the City of Monrovia ("Monrovia") has experienced rising levels of VOCs at their Myrtle Well Field. In 2007, Monrovia finished construction of a VOC treatment facility to help contain contamination and restore lost water supply.

As of September 30, 2018, Monrovia's treatment facility has treated approximately 68,407.88 acre-feet of contaminated groundwater and has removed approximately 1,165.00 lbs. of VOCs.

In addition to Monrovia, the City of Arcadia had to construct a VOC treatment facility at their Longden Well Field directly down gradient from the Monrovia Well Field and is currently investigating the need for additional treatment at their Live Oak Well.

As of September 30, 2018, Arcadia's Longden treatment facility has treated approximately 70,385.37 acre-feet of contaminated groundwater and has removed approximately 740.50 lbs. of VOCs.

APPENDIX F

SAN GABRIEL BASIN WATER QUALITY AUTHORITY
Policy and Procedures Manual

ADMINISTRATIVE PROCEDURES

No. 38

Date: 2/12/01 Revised: 11/21/05

WQA PROJECT PARTICIPATION

Purpose

WQA's focused role is primarily to facilitate projects and to seek and provide funds for remediation projects in the San Gabriel Valley. As a public agency, WQA is accountable to the general public. Therefore, the WQA shall apply a consistent process to provide opportunities for input by the public and to qualify projects for WQA participation.

The WQA will also seek to recover costs from potentially responsible parties (PRPs), whenever practicable and consistent with the policies and procedures of the WQA. To assist in the success of such cost recoveries, the WQA will evaluate the projects submitted to determine whether the projects are "necessary" and "consistent" with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). For cost recovery purposes, remediation projects will be considered "necessary" if there is evidence of a release of hazardous substances, the project is designed to mitigate the impact of such releases and the project is needed to meet regulatory requirements for remediation and/or water supply. The determination of necessity shall be based on data of sufficient quality and quantity to satisfy the WQA. Remediation projects will be considered "consistent" with the NCP if the remediation project is in substantial compliance with the applicable requirements of the NCP and results in a CERCLA-quality clean-up. Specific potentially applicable NCP requirements are addressed below.

Criteria to which a proposed project shall be measured, but not required, are as follows:

- Project conforms and furthers the objectives of WQA's Section 406 Plan or the intent thereof
- Ranking on priority list if multiple requests are competing for available funds
- Project is "necessary" and "consistent" with the NCP
- Requesting party to pay no less than 25% of capital costs
- Funding for operation and maintenance secured from funds other than WQA assessment
- Implementation of construction anticipated within one year of executed agreement

Phase I

A written request for WQA project participation by a Project Committee or any other entity shall be considered by the full board on a preliminary basis. Staff shall identify potential funding sources and shall identify all of the criteria the proposed project meets. If approved by a simple majority of the full board, staff will then allocate resources to implement Phase II. Staff shall begin the process of determining whether the project is a California Environmental Quality Act (“CEQA”) Project and, if so, whether it is exempt from CEQA requirements.

Phase II

- WQA’s staff engineer shall prepare a technical report for review by the WQA Engineering Committee.
 - The report shall analyze and review all pertinent documentation, including, but not limited to, WQA’s Section 406 Plan, U.S. EPA’s documents, whether the project is “necessary” and “consistent” with the NCP, Watermaster’s Section 28 Application and documentation supporting project cost estimates provided by the project owner.
 - The report shall present the alternatives considered and an analysis of the cost and feasibility of such alternatives.
 - The report shall also present the basis for the selection of the proposed alternative.
- In the event costs are recovered for project capital and/or O&M from PRPs, a separate agreement may be developed, independent of or jointly with, the affected water purveyor(s). Such agreement and the terms thereof shall supersede any of the terms contained within this procedure. This may include allocation of direct and/or indirect labor costs, overhead, etc. If such agreement is silent, then terms contained within this section (Phase II) shall have primacy.
- WQA staff, in coordination with WQA legal counsel and the requesting party or project committee, shall develop a funding agreement or FFPA letter agreement for review by the WQA Administrative/Finance Committee.
 - As part of the agreement, legal counsel shall identify project components which may not be legally recoverable from responsible parties, under CERCLA or the WQA Act, or reimbursable from proposed funding source(s), if any. Staff shall provide oral communications to the committee regarding legal counsel’s review and provide recommendations, if appropriate, for modifications to the project to address NCP requirements. The agreement may include the following minimum components:
 - A project description;
 - A statement of project costs which shall include an estimate for the major components of the project as well as estimates for internal costs such as direct labor, fringe benefits, and overhead.
 - Definition of capital and O&M costs (i.e., overhead, legal costs, contingency, etc.)
 - Allowable costs are those costs included in “WQA’s Allowable Project Capital and Operations and Maintenance Costs”, included as Attachment “A”.

- Internal overhead of all parties to the agreement may be included in the capital and O&M costs but cannot exceed **5% (Five percent)** of the total costs of the project. Each party shall be responsible for determining the legally acceptable rate of their respective overhead and for the documentation and accounting thereof.
- A maximum 10% contingency shall be considered a part of capital cost
- WQA's costs for CEQA compliance will be considered capital costs, unless expressly excluded.
- A process for payment of invoices;
- An agreement termination date;
- Change order provisions shall require approval by the project committee or parties to the agreement;
- Funding apportionments;
- Project owner shall be responsible for compliance with all state and federal regulatory requirements, contract bidding, and any other regulations pertinent to the respective funding sources [i.e., CEQA, USBR, competitive bidding, etc.]. WQA shall be responsible for the coordination of federal environmental requirements, if applicable, and will also assist the requesting party with any project-related required process to the extent needed, including serving as the lead agency for purposes of CEQA.
- The project owner shall work with the WQA to ensure that the project is managed consistent with the requirements of the NCP for remedial design, construction and operation and maintenance, if applicable.
- The project owner shall work with the WQA to assure that the remediation project conforms with a health and safety program consistent with 29 CFR 1910.120, if applicable.
- Modification to the agreement shall require approval by parties to the agreement.

PHASE III

- In conjunction with the preparation of the staff engineer report and funding agreement, if the project is not exempt from CEQA requirements, staff shall begin an initial study required by CEQA. All required CEQA documentation shall be completed before the implementation of Phase III.
- A public notice of the proposed project will be mailed, by the WQA, to interested individuals and published in a local newspaper. The notice will include a brief summary of the proposed project and the proposed funding for the project and describe how interested individuals can provide input to the WQA. A public meeting shall be held, within the comment period, to describe the proposed project and the proposed funding by the WQA. At least 30 days notice shall be provided to receive public comments. A summary of the WQA staff engineer's report, describing the proposed project, will be made available to interested members of the community, and be available at the public meeting and at the WQA offices.

- A record of the public meeting shall be kept and a written summary of the significant public comments shall be prepared and presented to the WQA Board.
- Based on the original proposal and any modifications needed as a result of public input the final proposed agreement will be presented to the WQA Board.
- If the proposed project changes significantly, based on public comments, another public comment period will be afforded to interested parties.

Phase IV

- Approval for execution of a proposed agreement by the Executive Director shall be provided by a simple majority of the full board.
 - A written agenda submittal providing background and project summary and the comments received from the public shall be provided to the full board and shall include a draft funding agreement and the staff engineer report. The submittal shall certify that legal counsel has approved the draft agreement, unless a final review is required. In this case, staff may recommend approval contingent upon legal counsel's final approval. Any material changes shall require a subsequent approval by a simple majority of the board.

Phase V

- Project implementation shall require continuous WQA staff oversight.
 - Project invoices, regardless of the presence of a project committee, shall be processed through WQA's internal, multi-level review process to provide redundant oversight.
 - Bid documents shall be reviewed by WQA staff to verify that the project requirements are met by responsible bidders and that the chosen bidder is selected considering technical and managerial qualifications, experience, proposed costs and other relevant factors.
 - The remediation project will be designed, constructed and operated consistent with the proposal approved by the WQA Board.
 - If the remediation project that is constructed differs significantly from the proposed remediation project submitted for public comment, an explanation of significant differences shall be prepared and presented to the public for comment in a manner consistent with the original proposal.
 - The project owner shall work with the WQA to verify that the remediation project continues to conform with a health and safety program consistent with 29 CFR 1910.120
 - The project owner shall work with the WQA to establish a system for project implementation that includes accurate accounting of costs, proof of payment of and maintenance of invoices and other cost accounting documentation.
 - Progress reports shall be provided by WQA's staff engineer at Engineering Committee and full board meetings once per month minimum.

ATTACHMENT A

SAN GABRIEL BASIN WATER QUALITY AUTHORITY ALLOWABLE PROJECT CAPITAL AND OPERATION AND MAINTENANCE COSTS

ALLOWABLE PROJECT CAPITAL COSTS

(Copies of Invoices Required on Items 1-9)

1. Outside Engineering & Design
2. Equipment
3. Contractor/Sub-Contractor
4. Energy/Utilities
5. Permit Fees
6. Laboratory Costs
7. Additional Required Property & Liability Insurance
8. Outside Legal Fees
 - a. General preparation and review of project documents (RFPs, contracts, etc.)
9. Land/Property
10. Interest
11. Direct Labor & Fringe (Summary Breakdown Req'd.)
 - a. Directly tracked labor (timesheets req'd.)
 - b. Medical benefits
 - c. Worker's Compensation
 - d. Payroll taxes
 - e. Pension/Retirement
 - f. Other employee benefits
12. Overhead (Summary Breakdown Req'd.)
 - a. Property taxes
 - b. General Property & Liability Insurance
 - c. Administrative & Management Salaries & Benefits
 - d. Vehicle Expense (not mileage)
13. Other Tracked Direct Costs (Breakdown Documentation Req'd.)
 - a. Postage
 - b. Shipping
 - c. Copies/Facsimiles
 - d. Phone
 - e. Vehicle mileage
 - f. Other tracked direct costs
14. Unique cost items for a specific project (Requires approval by WQA)

ALLOWABLE PROJECT OPERATION & MAINTENANCE COSTS

(Copies of Invoices Required on Items 1-9)

1. Laboratory Costs
2. Consumables
3. Energy/Utilities

4. Incremental energy/utilities costs (Treatment Plant)
5. Permit Fees
6. Contractor/Sub-Contractor
7. Outside Legal Fees
 - a. General preparation and review of project documents (RFPs, contracts, etc.)
8. Equipment
9. Additional Required Property & Liability Insurance
10. Direct Labor & Fringe (Summary Breakdown Req'd.)
 - a. Directly tracked labor (timesheets req'd.)
 - b. Medical benefits
 - c. Worker's Compensation
 - d. Payroll taxes
 - e. Pension/Retirement
 - f. Other employee benefits
11. Overhead (Summary Breakdown Req'd.)
 - a. Property taxes
 - b. General Property & Liability Insurance
 - c. Administrative & Management Salaries & Benefits
 - d. Vehicle Expense (not mileage)
12. Other Tracked Direct Costs (Breakdown Documentation Req'd.)
 - a. Postage
 - b. Shipping
 - c. Copies/Facsimiles
 - d. Phone
 - e. Vehicle mileage
 - f. Other tracked direct costs

APPENDIX G

Appendix G

MEMBER WATER DISTRICT PROJECTS

The WQA, in coordination with its three member water districts, USGMWD, TVMWD and SGVMWD, incorporates the following projects by reference. The projects are sponsored, administered and implemented by the water districts. It is WQA's determination that these projects: 1) directly benefit the Basin; 2) help augment WQA's groundwater cleanup activities; and therefore 3) help enhance the long-term reliability of the Basin's water supply.

<u>Description</u>	<u>Estimated Budget</u>
1) <u>Fulton Plant Water Resource Enhancements</u> Utilization of District's Fulton Property to develop groundwater well, nitrate removal facility, 1.0 MG reservoir, and appurtenant piping. (TVMWD)	\$4,000,000
2) <u>Covina Irrigating Company Water Treatment & Supply Plan</u> Upgrade of surface water treatment processes at Temple Plant and addition of a groundwater treatment facility and transmission pipelines. (TVMWD)	\$7,000,000
3) <u>Imported Water Spreading Connection at San Dimas Wash</u> Raw water service connection to MWD's Foothill Feeder to replenish groundwater in the Basin on behalf of Golden State Water Company. (TVMWD)	\$1,500,000
4) <u>Extension of PM-26 Replenishment Service Connection</u> Pipeline facilities and turnout from existing connection in Little Dalton Wash to Big Dalton Wash for enhanced groundwater replenishment opportunities in the Basin. (TVMWD)	\$2,000,000
5) <u>TVMWD – SGVMWD Interconnection</u> Raw water connection between District's Miramar Plant and nearby Azusa~Devil's Canyon Pipeline. (TVMWD)	\$1,750,000

- | | | |
|-----|---|--------------|
| 6) | <u>Alostia Connection</u>
Provide operational flexibility to Upper District/MWD to provide untreated imported water to Canyon Basin area. (SGVMWD) | \$2,000,000 |
| 7) | <u>Extension of SGVMWD Pipeline</u>
Provide groundwater recharge to Raymond Basin and to Eaton S.B. (SGVMWD) | \$10,000,000 |
| 8) | <u>Wellfield Outside of Alhambra Pumping Hole</u>
Provide alternative sources of supply to various purveyors to reduce the drawdown in the pumping hole area. Consists of new wells, pumps and transmission pipeline. (SGVMWD & USGVMWD) | \$10,000,000 |
| 9) | <u>Suburban Water Systems Improvements</u>
Infrastructure improvements including well(s) and transmission pipelines to convey groundwater. (USGVMWD) | \$5,000,000 |
| 10) | <u>New Spreading Ground Development</u>
Infrastructure improvements including well(s) and transmission pipeline to convey groundwater. (USGVMWD) | \$10,000,000 |

TABLES

SAN GABRIEL BASIN WATER QUALITY AUTHORITY
SAN GABRIEL BASIN GROUNDWATER QUALITY MANAGEMENT AND REMEDIATION PLAN

Table 1 - Major WQA Activities and Milestones

Month	Year	Area	Activity/Milestone
Sept.	2018		WQA Participates as a founding partner of the 5th San Gabriel Valley Water Forum
Sept.	2018	PVOU	WQA held a groundbreaking ceremony for the Intermediate Zone Remedy**
Mar.	2018	SEMOU	SWRCB awards \$118,264 in Proposition 1 funding for the Whitmore Street Groundwater Remediation Facility Expanded Site Investigation**
Mar.	2018		WQA celebrates its 25th anniversary
Feb.	2018	EMOU	Eastside Intermediate Zone Remedy facilities completed
May	2018	BPOU	BPOU Project Agreement Extension Completed
Sept.	2016		WQA Participates as a founding partner of the 4th San Gabriel Valley Water Forum
Jan.	2016	EMOU	Eastside Shallow Zone Remedy facilities completed
Nov.	2015	All	Initiated comprehensive basinwide database cooperation between WQA, USEPA and Watermaster
Jul.	2015	All	Final Award for IRWMP funding from Prop 84
Apr.	2015	BPOU	Initiated BPOU Project Agreement Extension Negotiations
Nov	2014	ALL	WQA re-allocates \$5.9M in federal funding to qualified projects
Nov	2014	ALL	Proposition 1 approved by voters
Oct	2014		WQA Participates as a founding partner of the 3rd annual San Gabriel Valley Water Forum
July	2014	ALL	Los Angeles Regional Water Quality Control Board adopts WQA's basinwide NPDES Discharge Permit
April	2014	BPOU	WQA partners with Covina Irrigating Company in hosting a groundbreaking ceremony for CIC Baldwin Pumping Plant
Oct.	2013		WQA participates as a founding partner of the 2nd annual San Gabriel Valley Water Forum
Sept.	2013		Governor signs SB 429 extending WQA's sunset date to July 1, 2030
Jan.	2013	SEMOU	WQA concluded settlement agreements with 72 responsible parties encompassing 9 Consent Decrees
Dec.	2012	SEMOU	SWRCB awards \$950,646 to WQA for Whitmore Street Groundwater Remediation Facility**
Oct.	2012	EMOU	Dedication of the El Monte Operable Unit Westside Shallow Zone Remedy Project
Aug.	2012		WQA participates as a founding partner of the 1st annual San Gabriel Valley Water Forum
Apr.	2012	ALL	Secured \$10M in Proposition 84 funding for four projects
Jan.	2012	EMOU	Westside Shallow Zone Remedy facilities completed
Aug.	2011	ALL	WQA submitted applications on behalf of 5 projects for the second round of Proposition 84 funding
Jun.	2011	ALL	WQA launched its social media campaign on Facebook, Twitter and YouTube
Sept.	2010	ALL	AB153 passes to allow future WQA bond funding to be used for treatment and remediation
Mar.	2010	SEMOU	Initiated reimbursements from Consent Decree settlements
Mar.	2009	ALL	Congress passed H.R. 146 which included an additional \$50 million for the Restoration Fund
Oct.	2008	ATOU	City of Alhambra's Phase II treatment facility completed
Oct.	2008	SEMOU	Dedication of WQA's Whitmore Street groundwater remediation treatment facility
Nov.	2007	SEMOU	1-4 Dioxane & VOC Treatment Project completed at Bozung site**
Nov.	2007	SEMOU	Two Consent Decrees filed by U.S. EPA as a result of settlements between WQA, affected purveyors, several PRPs, U.S. EPA & DTSC.
Oct.	2007		Governor signs AB 1010 extending WQA's sunset date to July 1, 2017
Sept.	2007	SEMOU	SWRCB awards \$1.4M to WQA for project at Bozung site (capital & O&M)**
Jan.	2007	BPOU	San Gabriel Valley Water Company B5 treatment facility completed
Jan.	2007		Congressman Dreier Introduced HR 123 to raise authorization cap of the Restoration Fund by \$50M
Oct.	2007		City of Monrovia's Myrtle Wellfield treatment facility completed
Jun.	2006	SEMOU	Monterey Park Well No. 5 perchlorate blending facility completed
Aug.	2005	BPOU	Valley County Water District SA-1 treatment facility completed
Nov.	2004	SEMOU	San Gabriel Valley Water Company Plant No. 8 secondary barrier completed
Apr.	2004	SEMOU	Plant No. 8 sentinel well completed
Feb.	2004	SEMOU	Monterey Park Well No. 12 secondary barrier completed
Jan.	2004	SEMOU	Monterey Park Well No. 15 completed
Jul.	2004	BPOU	San Gabriel Valley Water Company B6 treatment facility completed
Jun.	2004		Proposition 50 passes and includes \$7M loan for WQA

Note: Groundwater remediation projects in **BOLD** were completed with funding participation from WQA. **Projects solely funded and operated by WQA.

SAN GABRIEL BASIN WATER QUALITY AUTHORITY
SAN GABRIEL BASIN GROUNDWATER QUALITY MANAGEMENT AND REMEDIATION PLAN

Table 1 (cont.) - Major WQA Activities and Milestones

Month	Year	Area	Activity/Milestone
Nov.	2003	SEMOU	Monterey Park Well Nos. 1,3,10 treatment facility completed
Oct.	2003	SEMOU	Monterey Park Well No. 12 Delta Plant perchlorate treatment facility completed
May	2003		Governor signs AB 334 extending WQA's sunset date to July 1, 2010
Apr.	2003	SEMOU	San Gabriel Valley Water Company G4 treatment facility completed
Mar.	2003	BPOU	BPOU Project Agreement completed
Feb.	2003	EMOU	Golden State Water Company Encinita Phase III treatment facility completed
Apr.	2002	SEMOU	Led negotiations with settling parties (G10 & G13) and administered settlement funds
Mar.	2001	SEMOU	Golden State Water Company SG1 & SG2 treatment facility completed
Apr.	2000	SEMOU	San Gabriel Valley Water Company Plant No. 8 treatment facility completed
Mar.	2000		WQA Board adopts the Amended San Gabriel Basin Groundwater Quality Management & Remediation Plan and updates it annually thereafter
Feb.	2000	BPOU	LPVCWD treatment plant construction completed
Jan.	2000	WNOU	Whittier Narrows Barrier project completed**
Aug.	1999	Area 3	Alhambra Phase I treatment facility completed
May	1999	SEMOU	Led development of ROD and implementation of projects
Apr.	1999	SEMOU	WQA-sponsored investigation and design study completed
Jan.	1999	ALL	Spear-headed legislative effort (H.R. 910) with San Gabriel Valley Water Association to acquire \$75M in federal funding to accelerate cleanup
Jul.	1999	SEMOU	Monterey Park Well No. 5 treatment facility completed
Jul.	1999	SEMOU	South El Monte Barrier project completed**
Jun.	1999	SEMOU	Monterey Park Well No. 12 air stripping treatment facility completed
Nov.	1998	EMOU	Golden State Water Company Encinita Phase I & II treatment facility completed
Oct.	1998	BPOU	WQA first to authorize \$1.5M to expedite LPVCWD Perchlorate and NDMA treatment facility construction and acquires 25% USBR funding
Mar.	1998	EMOU	Clayton Manufacturing treatment facility construction completed
Jul.	1998	EMOU	WQA sponsored investigation and design study completed
Jul.	1998	EMOU	WQA and PRPs form partnership to conduct voluntary design and implementation of early action cleanup
Sep.	1997	BPOU	WQA successfully acquires \$1.7M from a state administered escrow funds and reimburses BPOU producer for cleanup costs
Nov.	1996	EMOU	Crown City Plating/Hermetic Seal treatment facility construction completed
Feb.	1996	BPOU	State and Federal Environmental Documentation Completed for BPOU cleanup
Feb.	1996	BPOU	Final design and construction administration transferred to Three Valleys MWD
Jun.	1996	BPOU	Discovery of perchlorate contamination
Nov.	1995	SEMOU	WQA and PRPs form partnership to conduct voluntary investigations and remedy design study
May	1995	BPOU	Big Dalton treatment facility completed
Apr.	1995	BPOU	WQA and PRPs form partnership for voluntary pre-design leading to \$4.39M in contributions from PRPs
Feb.	1995	Monrovia	Monrovia treatment facility completed
Feb.	1995	EMOU	WQA and PRPs form partnership to conduct voluntary investigations and remedy design study
Aug.	1994	BPOU	WQA develops Consensus Approach plan integrating water supply and cleanup
Jun.	1993		WQA Board adopted the San Gabriel Basin Groundwater Quality Management & Remediation Plan (406 Plan)
Jan.	1992	BPOU	Arrow Well treatment facility completed
Sep.	1992		Governor signs SB 1679 which establishes WQA

Note: Groundwater remediation projects in **BOLD** were completed with funding participation from WQA. **Projects solely funded and operated by WQA.

SAN GABRIEL BASIN WATER
QUALITY AUTHORITY
SAN GABRIEL BASIN
GROUNDWATER QUALITY
MANAGEMENT AND REMEDIATION PLAN

REVIEWED 02/13/2020

Table 2- Estimated Costs of
WQA-Assisted Projects
Within Operable Unit Areas
Plans per Fiscal Year

OPERABLE UNIT	FISCAL YEAR 2019-2020		FISCAL YEAR 2020-2021		FISCAL YEAR 2021-2022		FISCAL YEAR 2021-2022		FISCAL YEAR 2022-2023		FISCAL YEAR 2022-2023	
	CAPITAL	O&M	CAPITAL	O&M	CAPITAL	O&M	CAPITAL	O&M	CAPITAL	O&M	CAPITAL	O&M
BALDWIN PARK												
LPVCWD (2)		1,000,000		1,000,000		1,000,000		1,000,000		1,000,000		1,000,000
LPVCWD New Well & Single Pass Perchlorate Treatment (2)		438,000		438,000		438,000		438,000		438,000		438,000
SGVWC B6 (7)	1,500,000	4,600,000		4,600,000		4,600,000		4,600,000		4,600,000		4,600,000
SGVWC B5 (2)		3,300,000		3,300,000		3,300,000		3,300,000		3,300,000		3,300,000
VCWD Arrow/Lante (2)		5,200,000		5,200,000		5,200,000		5,200,000		5,200,000		5,200,000
VCWD Nixon Wells Treatment (14)		600,000		600,000		600,000		600,000		600,000		600,000
California Domestic Well 14-NDMA, VOC (2), (3)		1,000,000		1,000,000		1,000,000		1,000,000		1,000,000		1,000,000
California Domestic Well 14-Perchlorate (2), (3)												
California Domestic Well 14 Rehabilitation (14)												
California Domestic New Well and Treatment (14)												
SWS Extraction Wells & Pipelines (2), (3)		350,000		350,000		350,000		350,000		350,000		350,000
CIC Baldwin Wells Pumping Plant (14)												
EL MONTE												
West Shallow Extraction (4)	1,500,000	1,400,000		1,400,000		1,400,000		1,400,000		1,400,000		1,400,000
East Shallow Extraction (5)		630,000		630,000		630,000		630,000		630,000		630,000
GSWC Encinita Plant (1)		184,450		184,450		184,450		184,450		184,450		184,450
ESPSD/City of El Monte East Deep Extraction (5)		330,000		330,000		330,000		330,000		330,000		330,000
SOUTH EL MONTE												
Monterey Park No.5 (1)												
Monterey Park No.5 Perchlorate Blending (1)		17,000		17,000		17,000		17,000		17,000		17,000
Monterey Park Centralized UV (6)		510,000		510,000		510,000		510,000		510,000		510,000
Monterey Park No.12 & No.15 VOC (1)		522,000		522,000		522,000		522,000		522,000		522,000
Monterey Park No. 15 Well and Pipeline (1)		104,000		104,000		104,000		104,000		104,000		104,000
Monterey Park No.12 & No.15 Secondary Barrier (1)		180,000		180,000		180,000		180,000		180,000		180,000
SGVWC Plant 8 (1)		175,000		175,000		175,000		175,000		175,000		175,000
SGVWC Plant 8 Secondary Barrier (1)		365,000		365,000		365,000		365,000		365,000		365,000
SGVWC Plant 8 Perchlorate, 1,4-Dioxane (14)	1,500,000	750,000		750,000		750,000		750,000		750,000		750,000
SGVWC Plant G4 (1)												
GSWC SG1 & SG2 VOC (1)		179,000		179,000		179,000		179,000		179,000		179,000
GSWC Nitrate Blend (8)		10,850		10,850		10,850		10,850		10,850		10,850
WQA WSGRF Project		167,000		167,000		167,000		167,000		167,000		167,000
WHITTIER NARROWS												
DTSC Intermediate Zone Remedy	3,000,000	620,000	8,000,000	620,000	2,000,000	620,000		620,000		620,000		620,000
PUENTE VALLEY												
UTC Shallow Zone Remedy (11)	5,000,000		10,000,000	1,280,000		2,000,000		2,000,000		2,000,000		2,000,000
Northrop Intermediate Extraction (12)	1,500,000	1,479,350		1,479,350		1,479,350		1,479,350		1,479,350		1,479,350
Northrop Benchmark Extraction (12)	15,000,000		3,000,000	1,000,000		2,000,000		2,000,000		2,000,000		2,000,000
AREA 3												
Alhambra Water Treatment Facilities Phase I (1)		200,000		200,000		200,000		200,000		200,000		200,000
Alhambra Water Treatment Facilities Phase II (13)		1,080,338		1,080,338		1,080,338		1,080,338		1,080,338		1,080,338
TOTAL COSTS	29,000,000	25,391,988	21,000,000	27,871,988	2,000,000	29,391,988	-	29,391,988	-	29,391,988	-	29,391,988

Notes:

- (1) Existing Projects
- (2) BPOU Project Agreement Estimate, May 2002.
- (3) Project not included in Operable Unit Specific Plan, but is included in the comprehensive BPOU Project Agreement
- (4) West Side Performing Settling Defendants Estimate, November 2017
- (5) East Side Performing Settling Defendants Estimate, July 2014
- (6) City of Monterey Park Estimate, March 2015
- (7) San Gabriel Valley Water Company Estimate, July 2016

- (8) Golden State Water Company Estimate, September 2012
 - (9) Discontinued 2004
 - (10) U.S Environmental Protection Agency Estimate, February 2004
 - (11) UTC Estimate, January 2011
 - (12) Northrop Estimate, July 2018
 - (13) City of Alhambra Estimate March 2008
 - (14) FFPA Estimate July 2014
- *Costs are present value and do not include monitoring wells and long term monitoring, which may be required by EPA.

SAN GABRIEL BASIN WATER QUALITY AUTHORITY

**TABLE 3 - SCHEDULE OF FUNDING FROM POTENTIALLY RESPONSIBLE PARTIES AND OTHER SOURCES
AS OF JUNE 30, 2019**

FUNDING FOR CAPITAL AND TREATMENT & REMEDIATION COSTS^{1, 2}							
	SEMOU	BPOU⁴	EMOU⁹	PVOU⁹	ATOU⁵	Other⁶	Total
Responsible Parties	\$ 15,681,766	\$ 552,679,601	\$ 51,053,979	\$ 106,207,492	\$ -	\$ -	\$ 725,622,838
EPA Federal Grants & Settlements with Responsible Parties ³	23,673,725	-	-	-	-	-	23,673,725
Federal Grants - Bureau of Reclamation	13,923,033	48,357,671	10,188,794	5,320,769	3,163,612	1,692,803	82,646,682
State Grants - SWRCB ¹⁰	5,000,000	4,629,416	-	-	-	-	9,629,416
State Grants - SWRCB Clean Up & Abatement	2,375,646	-	-	-	-	-	2,375,646
State Grants - DTSC	-	2,853,658	-	-	-	684,499	3,538,157
State Loan - DTSC (Responsible Parties) ⁷	-	6,440,000	-	-	-	-	6,440,000
State Funding - Proposition 84 ⁸	5,250,000	7,897,473	1,500,000	-	-	-	14,647,473
Water Producers	30,481,081	19,028,018	1,283,000	2,500,000	11,244,903	3,909,546	68,446,548
Watermaster	-	358,319	-	-	-	-	358,319
WQA Sources (Assessments, interest, etc.)	5,315,543	4,328,578	1,608,653	-	-	836,548	12,089,322
Total Funding for Capital and Treatment & Remediation	\$ 101,700,794	\$ 646,572,734	\$ 65,634,426	\$ 114,028,261	\$ 14,408,515	\$ 7,123,396	\$ 949,468,126
ESTIMATED COSTS FOR CAPITAL AND TREATMENT & REMEDIATION^{2, 4, 9}							
	\$ 193,027,324	\$ 873,123,052	\$ 120,163,252	\$ 196,916,435	\$ 34,623,815	\$ 31,851,363	\$ 1,449,705,241
FUNDING GAP	\$ (91,326,530)	\$ (226,550,318)	\$ (54,528,826)	\$ (82,888,174)	\$ (20,215,300)	\$ (24,727,967)	\$ (500,237,115)

ANNOTATIONS

- 1 Funding for Capital Projects and Treatment & Remediation ("T & R") Costs reflects funding obligations per current agreements including funds received to date and future anticipated funds.
- 2 The dollar amounts for future anticipated funds and estimated costs do not include an inflation factor. Although there are currently agreements in place for the funding of future Capital Projects and T & R Costs, the agreements do not specify the timing of the funding contributions, nor is the funding itself guaranteed.
- 3 The U.S. Environmental Protection Agency ("EPA") and the U.S. Department of Justice have lodged Consent Decrees which require Responsible Parties to pay a certain amount. WQA has entered into Cooperative Agreements with EPA for \$15.27M of these funds. EPA also granted \$2.65M of additional Superfund funding to the Cooperative Agreement. EPA is holding an additional \$5.75M from the Consent Decrees which will be added to the cooperative agreement at a future date.
- 4 The BPOU agreement covers Capital Projects as well as T & R Costs for operations through 2027. Treatment costs shown above are projected to be ongoing for an additional 5 to 10 years.
- 5 Area Three Operable Unit (ATOU) does not currently have a source of funding for T & R Costs. Treatment is projected for 15 years.
- 6 Funding for Capital Projects and T & R has been provided for treatment facilities that are located within the San Gabriel Basin boundaries but are operating outside the bounds of known operable units.
- 7 State Loan - DTSC, shown above as a source of funding, is being repaid to the State of California by the BPOU Responsible Parties.
- 8 Funding for Capital Projects includes \$9.40M from the second round of Proposition 84, Section 75025, as well as \$5.25M in a Proposition 84 IRWMP grant.
- 9 Responsible Parties are projected to fund T & R Costs for the EMOU and the PVOU for 8 years as required by the Consent Decrees. Treatment Costs shown above are projected to be ongoing for 30 years, therefore the remaining years are considered unfunded.
- 10 State funding for SEMOU includes \$5.0M of Proposition 1 funding which requires a match ranging from 10% to 50%.

SAN GABRIEL BASIN WATER QUALITY AUTHORITY
SAN GABRIEL BASIN GROUNDWATER MANAGEMENT AND REMEDIATION PLAN

Table 4 - Additional Existing and Potential Projects Basinwide
(With and Without WQA Funding)

PURVEYOR	WELL NAME	TREATMENT	ESTIMATED COSTS (3)	CAPACITY (GPM)
ALHAMBRA, CITY OF	09	LGAC	\$ 650,000	590
AMARILLO MUTUAL WATER (1)	01 & 02	LGAC	\$ 400,000	1,100
ARCADIA, CITY OF	ST. JOSEPH	LGAC/IONEXCHANGE	\$ 5,250,000	3,000
ARCADIA, CITY OF	LIVE OAK	LGAC	\$ 1,500,000	3,000
AZUSA, CITY OF	GEN. 3	LGAC	\$ 1,060,000	3,780
AZUSA, CITY OF	10	LGAC	\$ 1,840,000	2,650
CALIFORNIA AMERICAN	HOWLAND	LGAC	\$ 1,040,000	1,060
CALIFORNIA AMERICAN	IVAR 1	LGAC	\$ 1,500,000	780
CALIFORNIA AMERICAN	ROSEMEAD	LGAC	\$ 650,000	580
CALIFORNIA AMERICAN	ROANOKE	LGAC	\$ 1,040,000	1,210
COVINA, CITY OF	02	ION EXCHANGE, LGAC	\$ 6,700,000	600
EL MONTE, CITY OF	10	LGAC	\$ 1,440,000	2,000
EL MONTE, CITY OF	13	LGAC	\$ 500,000	1,500
GLENDORA, CITY OF (2)	IRWINDALE	ION EXCHANGE	\$ 9,000,000±5,000,000 (2)	4,250
LA VERNE, CITY OF		ION EXCHANGE	\$ 3,500,000	2,000
MONROVIA, CITY OF	MYRTLE WELLS	LGAC/IONEXCHANGE	\$ 4,780,000	6,000
MONTEREY PARK, CITY OF	09	LGAC	\$ 1,440,000	1,980
SAN GABRIEL COUNTY WATER DISTRICT	10	ION EXCHANGE		2,200
GSWC SAN DIMAS	ART-3 and BAS-3,4	ION EXCHANGE, LGAC	\$ 6,590,000	360
GSWC SAN DIMAS	COL-4, 6	ION EXCHANGE		
GSWC SAN GABRIEL (1)	JEF 1	LGAC	\$ 1,440,000	600
GSWC SAN GABRIEL	JEF 2	LGAC		350
GSWC SAN GABRIEL	JEF 3	LGAC		960
GSWC SAN GABRIEL (1)	GARVEY 3	LGAC	\$ 1,500,000	1,500

SAN GABRIEL BASIN WATER QUALITY AUTHORITY
SAN GABRIEL BASIN GROUNDWATER MANAGEMENT AND REMEDIATION PLAN

Table 4 (cont.) - Additional Existing and Potential Projects Basinwide
(With and Without WQA Funding)

PURVEYOR	WELL NAME	TREATMENT	ESTIMATED COSTS (3)	CAPACITY (GPM)
SOUTH PASADENA, CITY OF (1)	WIL 2	LGAC	\$ 2,348,000	3,000
SOUTH PASADENA, CITY OF	WIL 3	LGAC		1,590
SOUTH PASADENA, CITY OF	WIL 4	LGAC		1,040
SOUTH PASADENA, CITY OF	GRAV 2	LGAC	\$ 2,356,000	900
SUBURBAN WATER SYSTEMS (1)	139W-2	ION EXCHANGE, UV OXIDATION	\$ 5,000,000	2,570
SUBURBAN WATER SYSTEMS	139W-4	ION EXCHANGE, UV OXIDATION		2,580
SUBURBAN WATER SYSTEMS	139W-5	ION EXCHANGE, UV OXIDATION		3,470
SUBURBAN WATER SYSTEMS	139W-6	ION EXCHANGE, UV OXIDATION		3,500
SUBURBAN WATER SYSTEMS (1), (5)	140W-3	ION EXCHANGE, UV OXIDATION	\$ 7,360,000	850
SUBURBAN WATER SYSTEMS	140W-5	ION EXCHANGE, UV OXIDATION		3,720
VALENCIA HEIGHTS WATER	06	ION EXCHANGE, AIR STRIPPING	\$ 4,570,000	2,180
VALLEY COUNTY WATER	PADDY LN	ION EXCHANGE, AIR STRIPPING	\$ 6,750,000	1,460
VALLEY COUNTY WATER (6)	PALM	LGAC	\$ 640,000	790
VALLEY COUNTY WATER	MORADA	ION EXCHANGE, LGAC	\$ 6,640,000	1,200
WHITTIER, CITY OF	18	AIR STRIPPING	\$ 3,030,000	5,210

NOTES

PROJECTS IN BOLD RECEIVED WQA FUNDING

(1) COSTS FOR ENTIRE WELLFIELD

(2) CITY OF GLENDORA'S 1999 COST ESTIMATE

(3) STETSON ENGINEERS ESTIMATE, JANUARY 2001

(4) INCLUDED IN SUBURBAN WATER SYSTEMS 139W-2 COST

(5) UV TREATMENT NOT INCLUDED IN ESTIMATED COSTS

(6) EXISTING PROPERTY CANNOT ACCOMMODATE TREATMENT FACILITY

Table 5 – Project Scoring

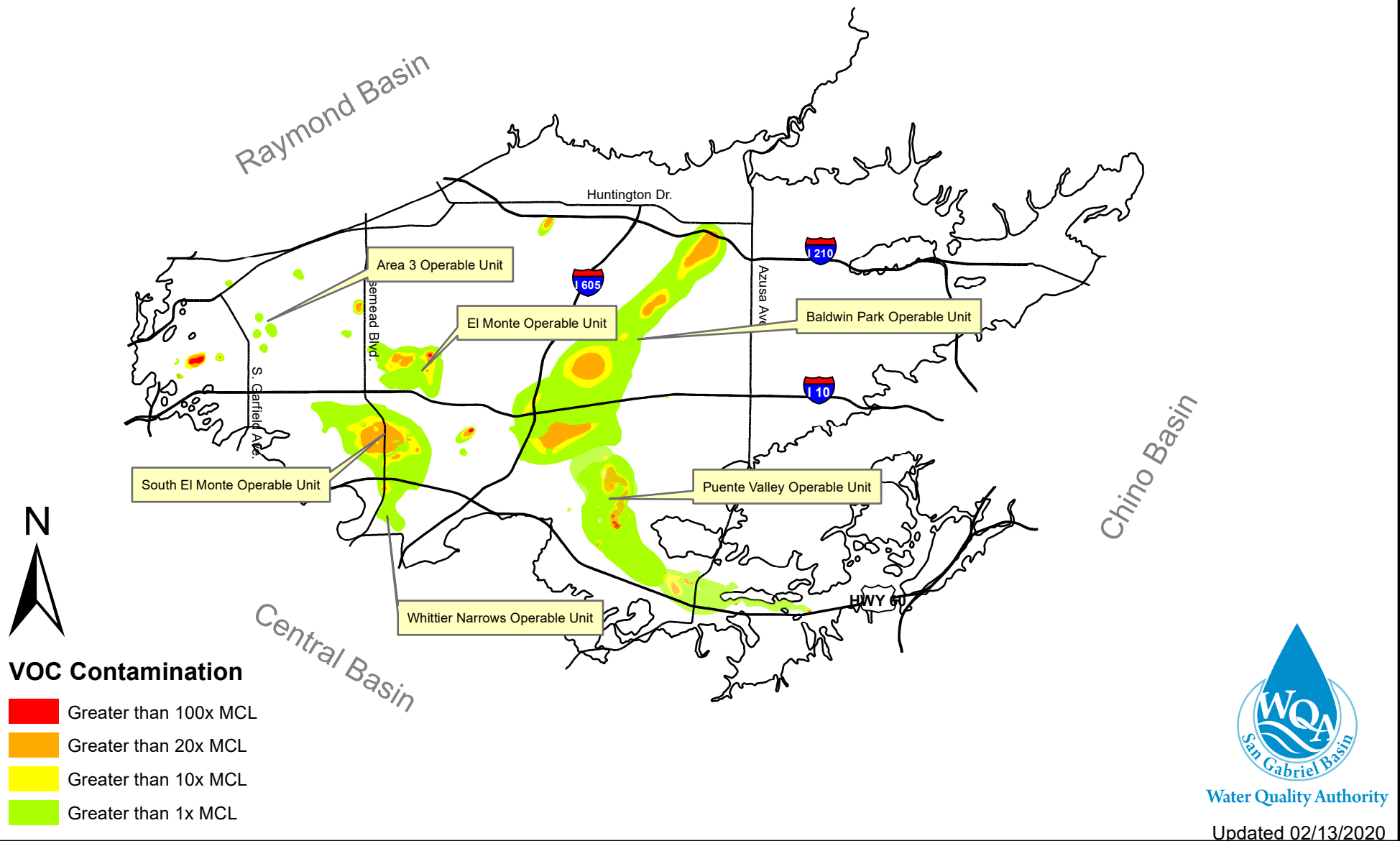
QUESTION	PTS.	RESPONSE
Is applicant(s) ready to proceed with the groundwater remediation project?	0	Not fully ready to proceed
	10	Yes, ready to proceed
Does the project complement U.S. USEPA's plans? Is it consistent with USEPA's plans and the NCP?	0	Does not complement plan and is not consistent
	5	Complements and is consistent with USEPA plans
	10	Complements and is consistent with USEPA plans and NCP
How effective is project relative to amount of water treated and made available for use? Does the project use technology consistent with BAT?	0	Not effective relative to amount treated & available for use
	5	Somewhat effective and consistent with BAT
	10	Effective relative to amount treated & available for use, consistent with BAT
What are the impacts or potential impacts to the plume within the Main San Gabriel Basin?	0	No
	5	Some impact
	15	Very significant impact
Is project a joint cleanup and water supply project?	0	Not a joint cleanup and supply project
	5	Only a cleanup project
	15	Yes, project is a joint cleanup/supply project
Is project partially or solely funded by affected purveyor(s)?	0	N/A
	5	Yes, partially funded by purveyor(s)
	10	Yes, solely funded by purveyor(s)
Does the project address immediate water supply needs in the MSG Basin?	0	No
	15	Yes
Does the project address a need for migration control?	0	No
	15	Yes
Is project partially or solely funded by PRPs through an executed agreement?	0	No PRP agreement
	5	Yes, partially funded by PRPs with an agreement
	10	Yes, solely funded by PRPs with an agreement

Table 6 – Priority Ranking

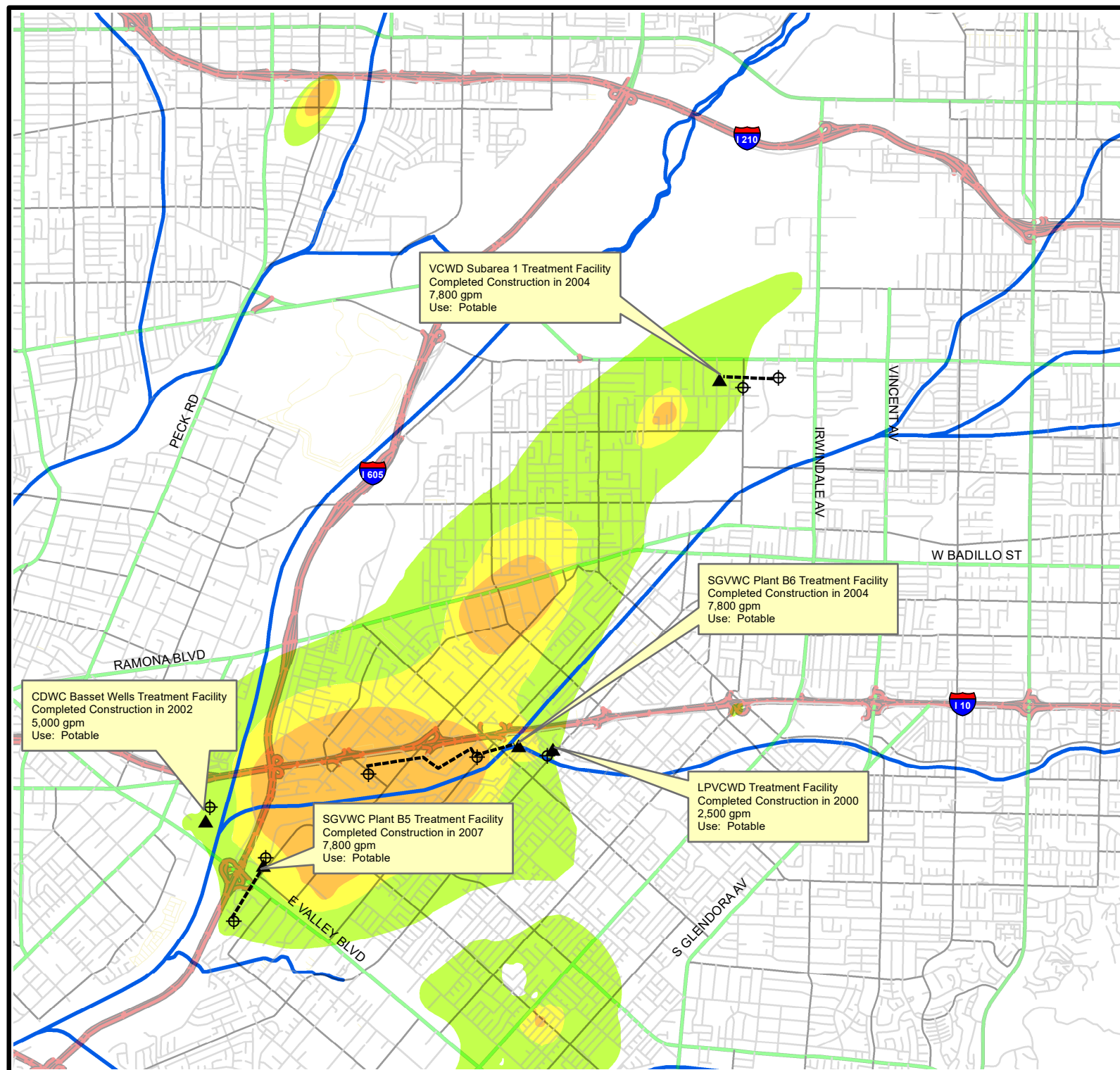
CATEGORY	SCORING RANGE	TITLE XVI	RESTORATION FUNDS
Category 1	90-100	0 to 25%	up to 65% capital and/or T&R
Category 2	80-89	0 to 25%	up to 50% capital and/or T&R
Category 3	70-79	based upon availability	up to 40% capital and/or T&R
Category 4	0-69	based upon availability	up to 30% capital and/or T&R

- FIGURE 1-

San Gabriel Basin Contamination



**-Figure 2-
Prescribed Remedy
Baldwin Park
Operable Unit**

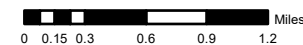


- Pipeline
- ⊕ Remedial Extraction Well
- ▲ Treatment Plant
- Washes

VOC Contamination

- Greater than 100x MCL
- Greater than 20x MCL
- Greater than 10x MCL
- Greater than 1x MCL

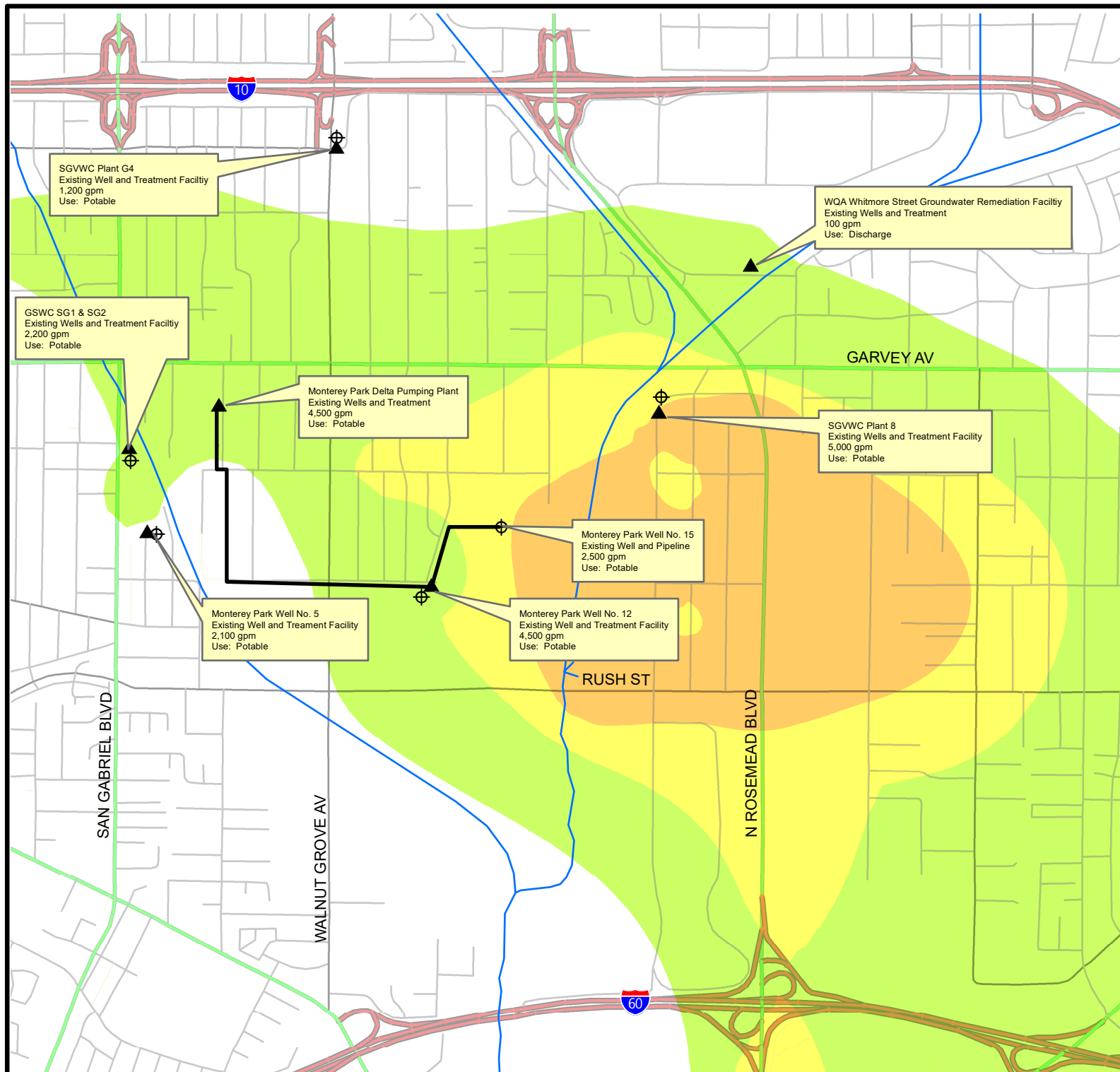
Source:
Ecology and Environment, Inc.
San Gabriel Basin Database GIS
Prepared for EPA 2011



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**-Figure 3-
Prescribed Remedy
South El Monte
Operable Unit**



- Pipeline
- ⊕ Remedial Extraction Well
- ▲ Treatment Plant

— Washes

VOC Contamination

- Greater than 100x MCL
- Greater than 20x MCL
- Greater than 10x MCL
- Greater than 1x MCL

Source:
Ecology and Environment, Inc.
San Gabriel Basin Database GIS
Prepared for EPA 2011

1,300 650 0 1,300 Feet



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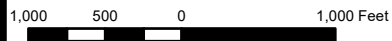
**-Figure 4-
Prescribed Remedy
Shallow Zone
El Monte
Operable Unit**



- Pipeline
- ⊕ Remedial Extraction Well
- ▲ Treatment Plant
- ⊠ Injection Well
- Proposed Extraction Well

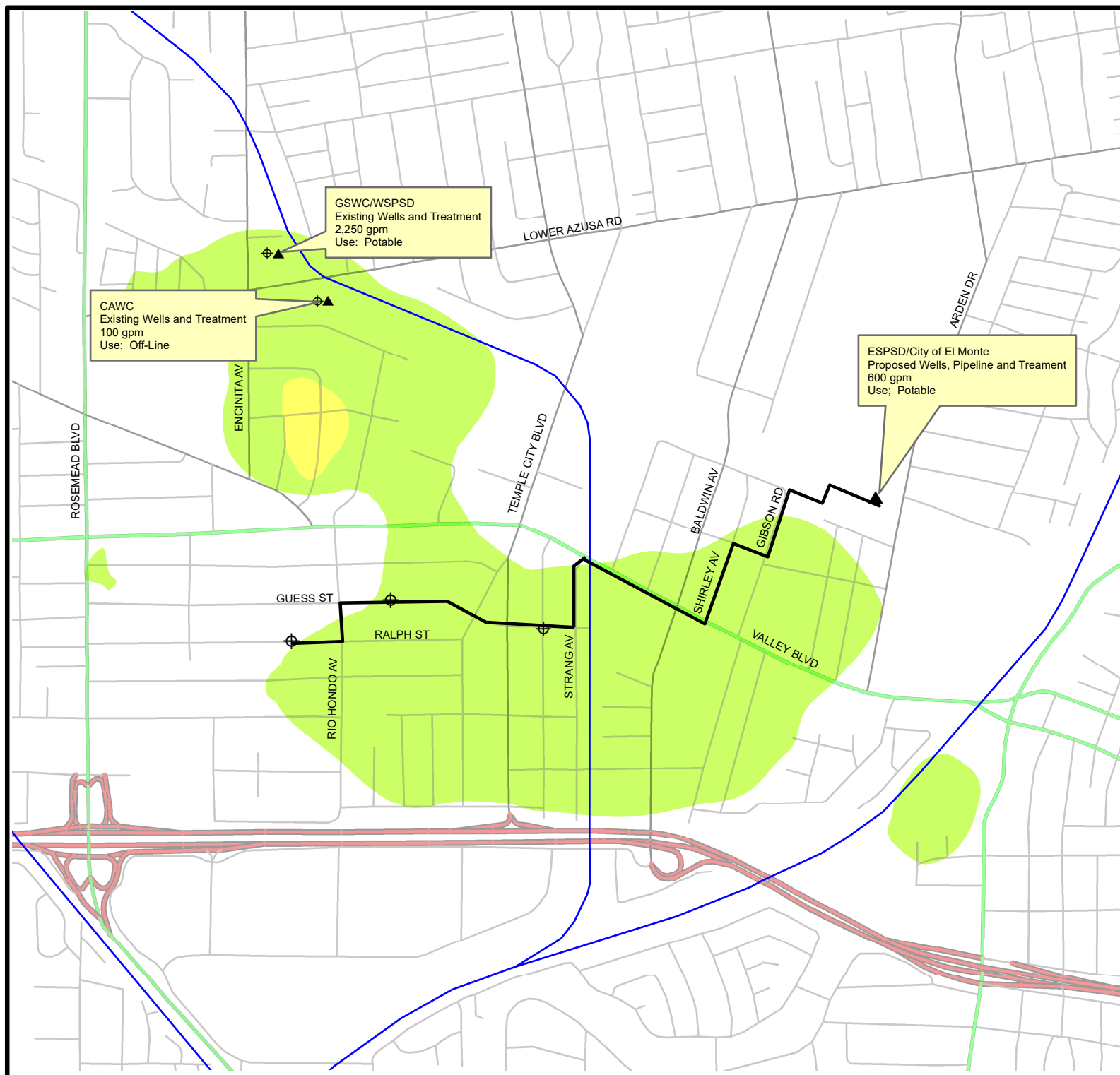
- Washes
- VOC Contamination**
- Greater than 100x MCL
 - Greater than 20x MCL
 - Greater than 10x MCL
 - Greater than 1x MCL

Source:
Ecology and Environment, Inc.
San Gabriel Basin Database GIS
Prepared for EPA 2011



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**-Figure 5-
Prescribed Remedy
Intermediate Zone
El Monte
Operable Unit**



- Pipeline
- Extraction Well
- Treatment Plant

Washes

VOC Contamination

- Greater than 100x MCL
- Greater than 20x MCL
- Greater than 10x MCL
- Greater than 1x MCL

Source:
Ecology and Environment, Inc.
San Gabriel Basin Database GIS
Prepared for EPA 2011

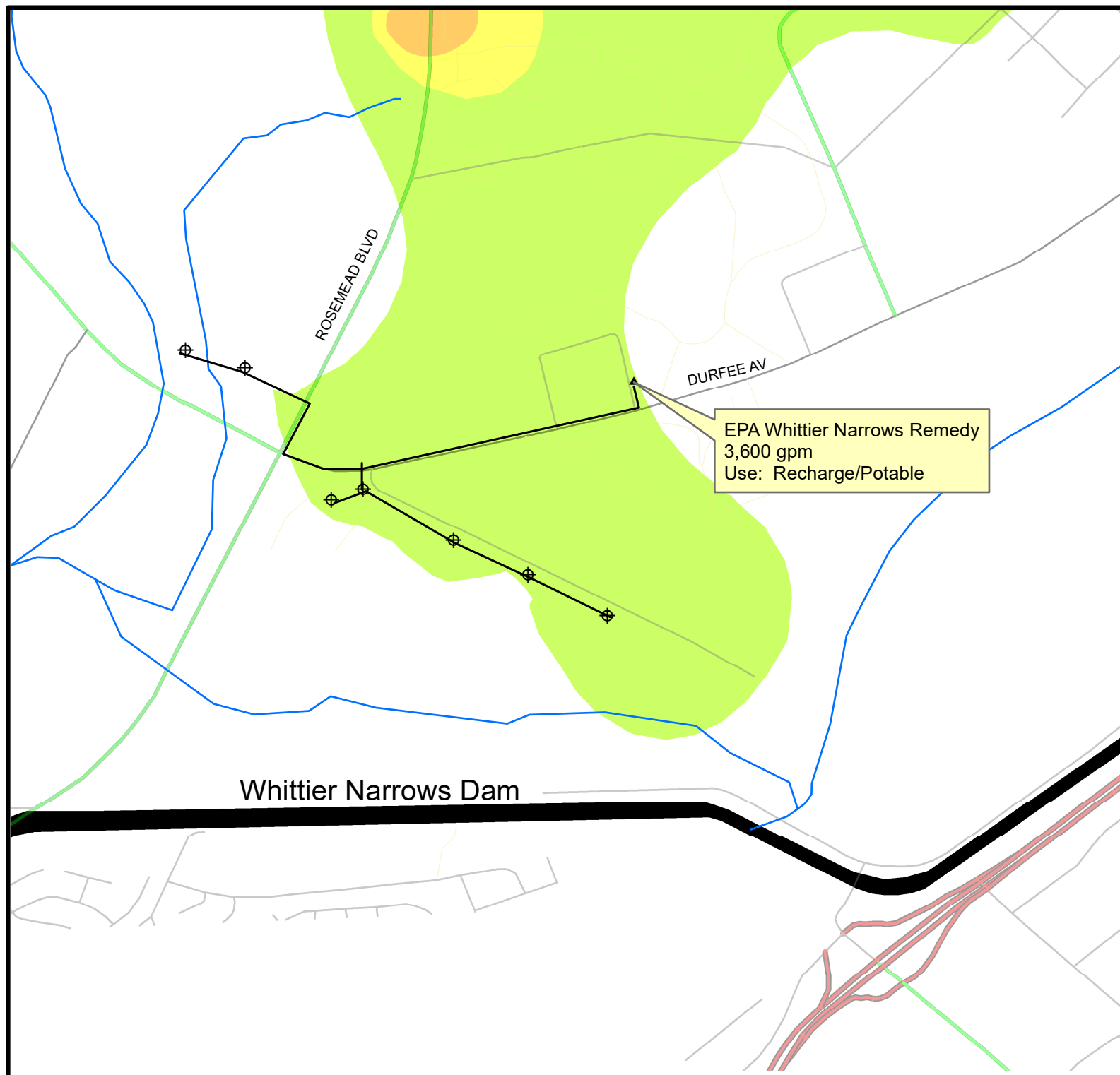
1,100 550 0 1,100 Feet






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**-Figure 6-
Prescribed Remedy
Whittier Narrows
Operable Unit**



-  Pipeline
-  Remedial Extraction Well
-  Treatment Plant


 Washes

VOC Contamination

-  Greater than 100x MCL
-  Greater than 20x MCL
-  Greater than 10x MCL
-  Greater than 1x MCL
-  Dams

Source:
Ecology and Environment, Inc.
San Gabriel Basin Database GIS
Prepared for EPA 2011

800 400 0 800 Feet




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**-Figure 7-
Prescribed Remedy
Shallow Zone
Puente Valley
Operable Unit**



- Shallow Zone Remedy Pipeline
- ⊙ SZ Remedial Extraction Well
- ▲ Treatment Plant

— Washes

VOC Contamination

- Greater than 100x MCL
- Greater than 20x MCL
- Greater than 10x MCL
- Greater than 1x MCL

Source:
Ecology and Environment, Inc.
San Gabriel Basin Database GIS
Prepared for EPA 2011

1,100 550 0 1,100 Feet






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**-Figure 8-
Prescribed Remedy
Intermediate Zone
Puente Valley
Operable Unit**







-  Intermediate Zone Remedy Pipeline
-  IZ Remedial Extraction Well
-  Treatment Plant

 Washes

VOC Contamination

Exceedance

-  Greater than 100x MCL
-  Greater than 20x MCL
-  Greater than 10x MCL
-  Greater than 1x MCL

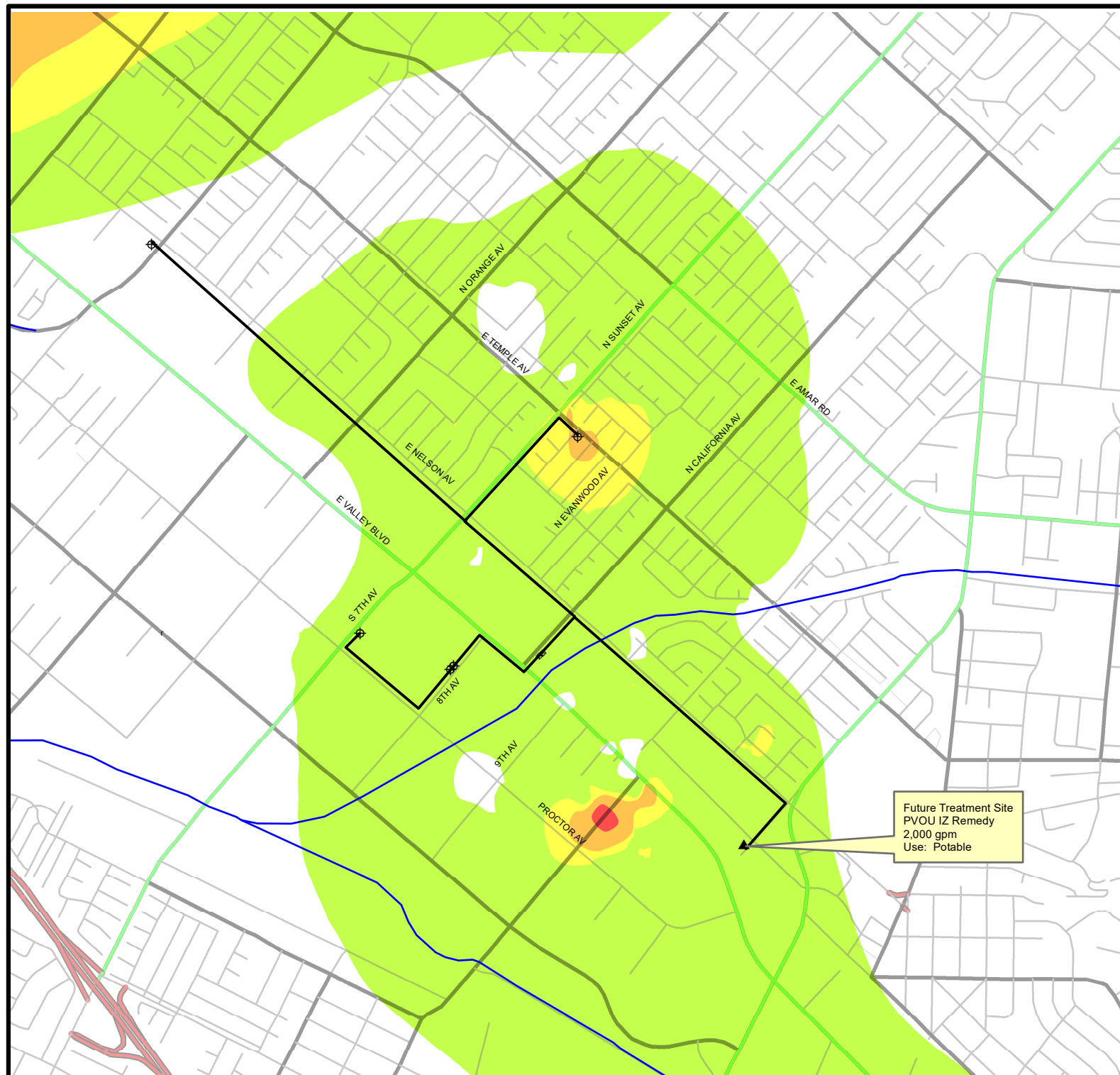
Source:
Ecology and Environment, Inc.
San Gabriel Basin Database GIS
Prepared for EPA 2011

1,200 600 0 1,200 Feet

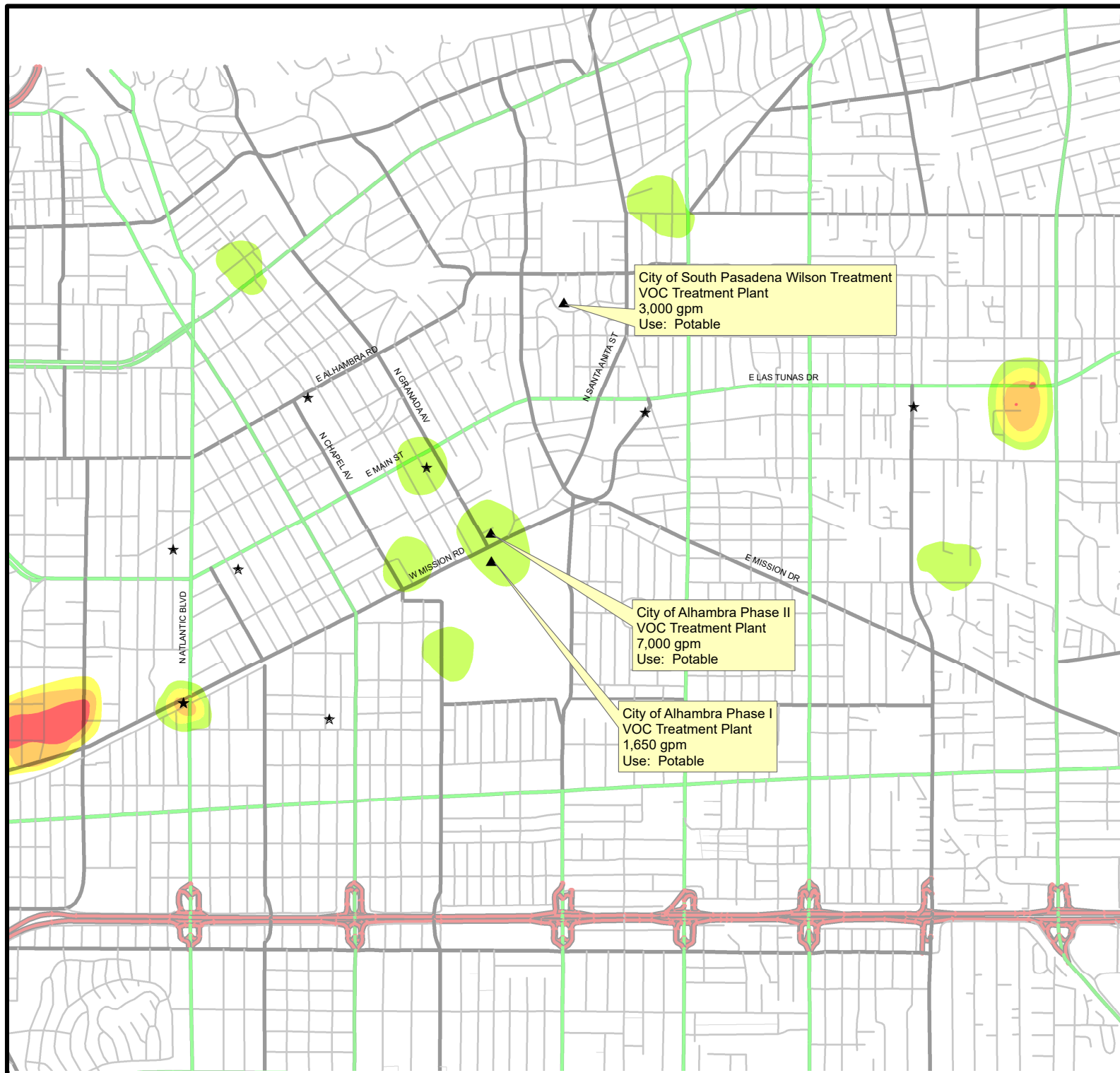



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**-Figure 9-
Prescribed Remedy
Area 3
Operable Unit**



- ★ EPA Installed Monitoring Well
- ▲ Treatment Plant

- Greater than 100x MCL
- Greater than 20x MCL
- Greater than 10x MCL
- Greater than 1x MCL

Source:
Ecology and Environment, Inc.
San Gabriel Basin Database GIS
Prepared for EPA 2011

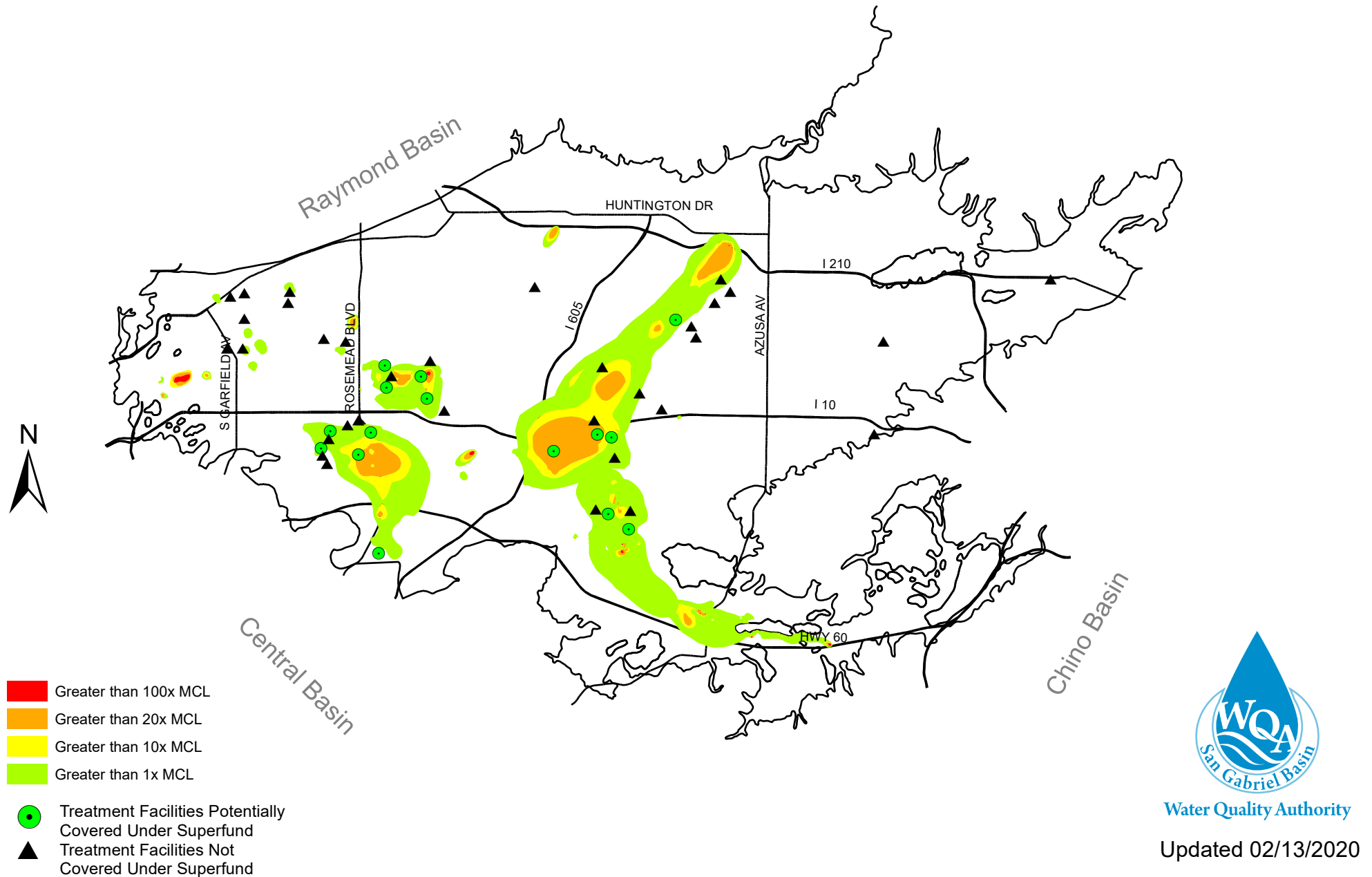
2,100 1,050 0 2,100 Feet



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-FIGURE 10- Superfund vs. Nonsuperfund Projects



- Figure 11 -
Disadvantaged Communities in the San Gabriel Basin

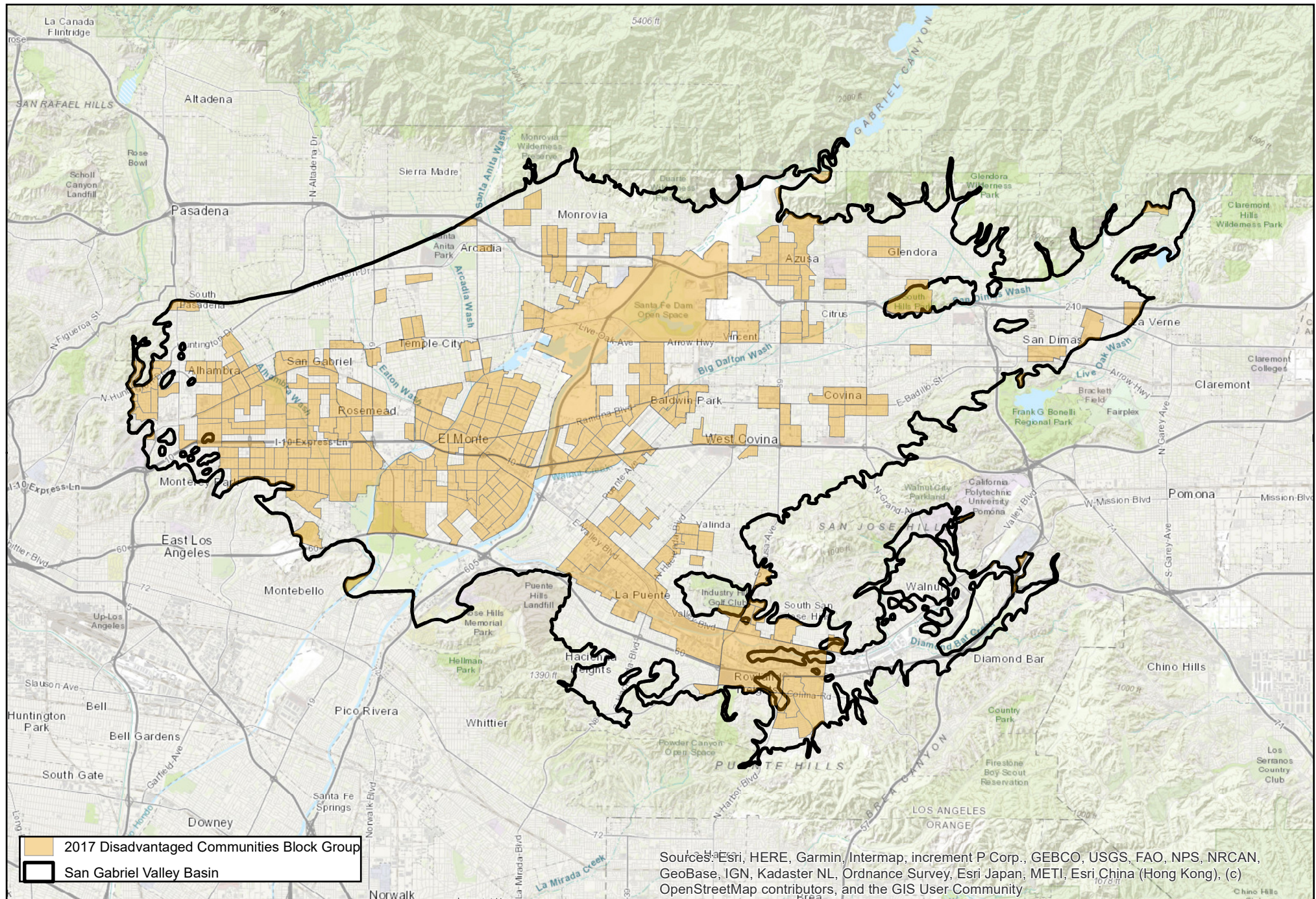


FIGURE 12 – The number of treatment plants operating in the Basin through June 30, 2019.

