

Record of Decision

South Basin Groundwater Protection Project, OU2 Interim Remedy

PART 1: DECLARATION

Site Name and Location

South Basin Groundwater Protection Project (SBGPP), Operable Unit 2 – Irvine, Santa Ana, Tustin, California

Statement of Basis and Purpose

This decision document presents the Selected Interim Remedy for the SBGPP, Operable Unit 2 – Irvine, Santa Ana, Tustin, California, which was chosen in general accordance with CERCLA¹, as amended by SARA², and, to the extent practicable, the NCP³.

Orange County Water District (OCWD) was formed in 1933 by the California legislature to manage the Orange County Groundwater Basin (Basin), which comprises a 350-square-mile area underlying the central and northern portions of Orange County and provides 85 percent of the water supplies to 19 cities and retail water agencies and 2.5 million people. OCWD is authorized under the Orange County Water District Act (District Act) to manage the Basin, and one of the primary roles of OCWD is to manage the Basin’s water quality to ensure safe groundwater supplies. OCWD’s statutory powers include the powers to “transport, reclaim, purify, treat, inject, extract, or otherwise manage and control water for the beneficial use of persons or property within the district and to improve and protect the quality of the groundwater supplies within the district;” to “provide for the protection and enhancement of the environment within and outside the district in connection with the water activities of the district;” and to “expend available funds to perform any cleanup, abatement, or remedial work required under the circumstances which, in the determination of the board of directors, is required by the magnitude of the endeavor or the urgency of prompt action needed to prevent, abate, or contain any threatened or existing contamination of, or pollution to, the surface or groundwaters of the district” (District Act, §§ 2(6)(j), 2(7), 8(b)).

This decision is based on the Administrative Record file for this Site.

Consistent with the preceding USEPA⁴ guidance, OCWD intends to implement cost effective interim remedial measures (IRMs) that will be consistent with any final remedy, if required. Conceptually, IRMs would be applied to Operable Unit 2 (OU2) groundwater and long-term groundwater monitoring would be performed as part of these actions. Five-year remedy

¹ Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

² Superfund Amendments and Reauthorization Act (SARA)

³ National Oil and Hazardous Substances Pollution Contingency Plan (NCP)

⁴ United States Environmental Protection Agency (USEPA)

reviews would be performed to track the progress and effectiveness of the interim remedy. The five-year remedy reviews also would evaluate the progress and effectiveness of the source site remedial efforts as they pertain to preventing off-property migration of chemicals of concern (COCs). Evaluation of the combined effectiveness both of the OU2 IRMs and the source site remedial efforts would provide the basis for determining if changes to the IRMs were warranted. A final remedy will likely incorporate the cost-effective remediation of groundwater contamination caused by the COCs impacting the designated beneficial uses, to the extent practicable.

Assessment of Site

The response action selected in this Record of Decision (ROD) is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment.

Statutory Determinations

The Selected Interim Remedy, described in Part 2, is protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate to the remedial action (unless justified by a waiver), is cost-effective, and utilizes permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable. The Selected Interim Remedy also satisfies the statutory preference for treatment as a principal element of the interim remedy (i.e., reduces the toxicity, mobility, or volume of hazardous substances, pollutants, or contaminants). Because the Selected Interim Remedy will not result in hazardous substances, pollutants, or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure but will take more than five years to attain remedial action objectives and cleanup levels, a review may be conducted within five years of construction completion for the site to ensure that the Selected Interim Remedy is, or will be, protective of human health and the environment.

ROD Data Certification Checklist

The following information is included in the Decision Summary section of this ROD. Additional information can be found in the Administrative Record file for this site.

- Chemicals of concern and their respective concentrations
- Baseline risk represented by chemicals of concern
- How source materials constituting principal threats are addressed
- Current and potential future beneficial uses of groundwater used in the baseline risk assessment
- Estimated capital, annual operation and maintenance (O&M), and total present worth costs, discount rate, and the number of years over which the Selected Interim Remedy cost estimates are projected

- Evaluation of the NCP criteria that led to selecting the Interim Remedy, summarized in Section 7.1 in the SBGPP Feasibility Study (FS)⁵

Authorizing Signatures of the Interim Remedy

⁵ Feasibility Study, South Basin Groundwater Protection Project, Operable Unit 2, dated January 27, 2023. Prepared by Engineering Analytics, Inc.

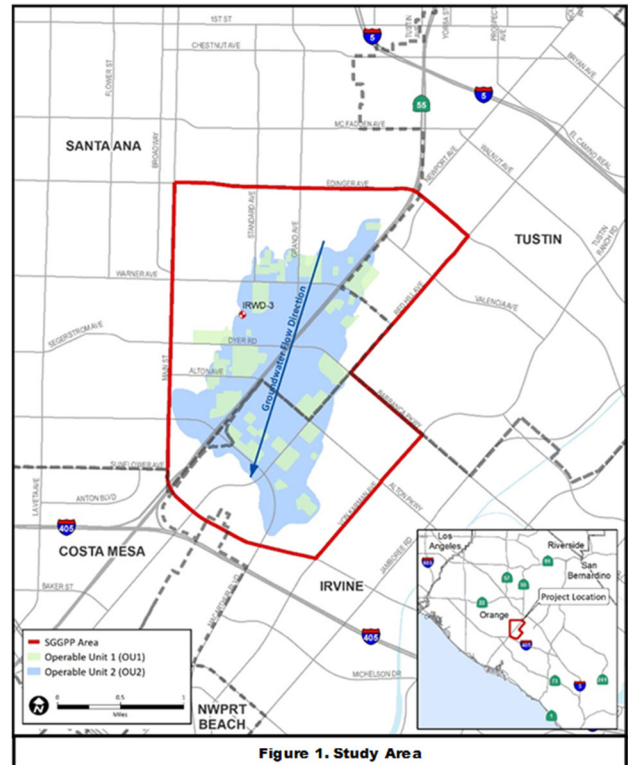
PART 2: DECISION SUMMARY

Site Name, Location, and Brief Description

The SBGPP area (Project Area) is located in the south-central part of the roughly 350-square mile Orange County Groundwater Basin in Orange County, California. The Project Area is within the southeastern portion of the city of Santa Ana, the western portion of the city of Irvine, and the southwestern portion of the city of Tustin.

Groundwater contamination from industrial and manufacturing activities, underground storage tank leaks, waste disposal practices, and many other sources occurs in the Project Area, primarily in the Shallow Aquifer System of the Basin. The Shallow Aquifer System is designated as a municipal beneficial use supply source by the Santa Ana Regional Water Quality Control Board (RWQCB 2019 – Water Quality Control Plan Santa Ana River Basin, as amended) and is a valuable environmental resource worthy of protection from contamination. In addition, in some areas of the basin where densely spaced industrial properties have been present for decades and have released chemicals to the groundwater, the groundwater contamination from these sites has migrated off the individual sites and merged to form extensive “commingled plumes” of contamination. In these cases, including the Project Area, the uncontrolled contaminant plumes have not been comprehensively contained or treated by responsible parties and, therefore, threaten the drinking water supply. The Project Area contamination is located within the southeastern part of the Basin and includes an approximately 5.6-square mile area (see Figure 1) in the cities of Santa Ana, Irvine, and Tustin, California (City or collectively, the Cities).

The contamination in the Project Area has been divided into two operable units which designate geographic areas, specific problems, or areas where a specific action is required. Operable Unit 1 (OU1) pertains to vadose zone and groundwater contamination in the Shallow Aquifer System directly beneath source properties (Aquilogic 2015⁶). Operable Unit 2 (OU2) is groundwater contamination in the Shallow Aquifer System off-site of the source site properties and is the primary focus of the SBGPP.



⁶ Preliminary Remedial Investigation Report, Operable Unit 2, South Basin Groundwater Protection Project (SBGPP), Orange County, California, dated October 2015. Prepared by Aquilogic, Inc.

From a remedial objectives standpoint, there is overlap between OU1 and OU2. For example, in some cases responsible parties are conducting groundwater remediation in areas outside the source area property boundaries. The Selected Interim Remedy will account for these situations by locating and operating facilities in such a manner that minimizes overlap with and/or impact to other remedial efforts. In addition, while an objective of the SBGPP is to remediate groundwater contamination beyond source site boundaries, it may be necessary to locate project facilities on source site properties due to land availability, construction and operational requirements and constraints, hydrogeologic characteristics, contaminant distribution, surface water receptor locations, actions by responsible parties (or lack thereof), public safety, and other factors.

OCWD is the lead agency for the SBGPP and will self-fund the Selected Interim Remedy. The California Department of Toxic Substances Control (DTSC) and the Santa Ana RWQCB are the State Agencies.

Site History and Enforcement Activities

In 2004, following volatile organic compound (VOC) and perchlorate detections at its well number 3 (IRWD-3), Irvine Ranch Water District (IRWD) requested that OCWD exercise its statutory authority to develop a plan to investigate and remediate groundwater contamination in the area encompassing IRWD-3. OCWD subsequently commissioned an investigation of contamination in the vicinity of IRWD-3 which resulted in the review of 55 potential source sites, of which 37 sites were identified as having detections of tetrachloroethene (PCE), trichloroethene (TCE), and/or perchlorate (Todd 2007⁷).

Following the identification of potential source sites, a series of remedial investigations by OCWD, including the installation of 39 groundwater monitoring wells and over 200 cone penetrometer test (CPT) soil borings, occurred between 2008 and 2020, and resulted in the SBGPP Preliminary Remedial Investigation Report, Operable Unit 2 (Aquilogic 2015) and Supplemental Remedial Investigation Report, Operable Unit 2⁸ (Hargis + Associates 2020).

In 2018, a technical advisory committee (TAC) was formed to oversee and advise OCWD on its Remedial Investigation (RI) and FS activities in OU2 in compliance with the NCP (40 Code of Federal Regulations [CFR], Part 300). The TAC members included the DTSC, the Santa Ana RWQCB, and the State Water Resources Control Board (State Water Board). The TAC met frequently during the RI/FS process from 2018 to January 2023.

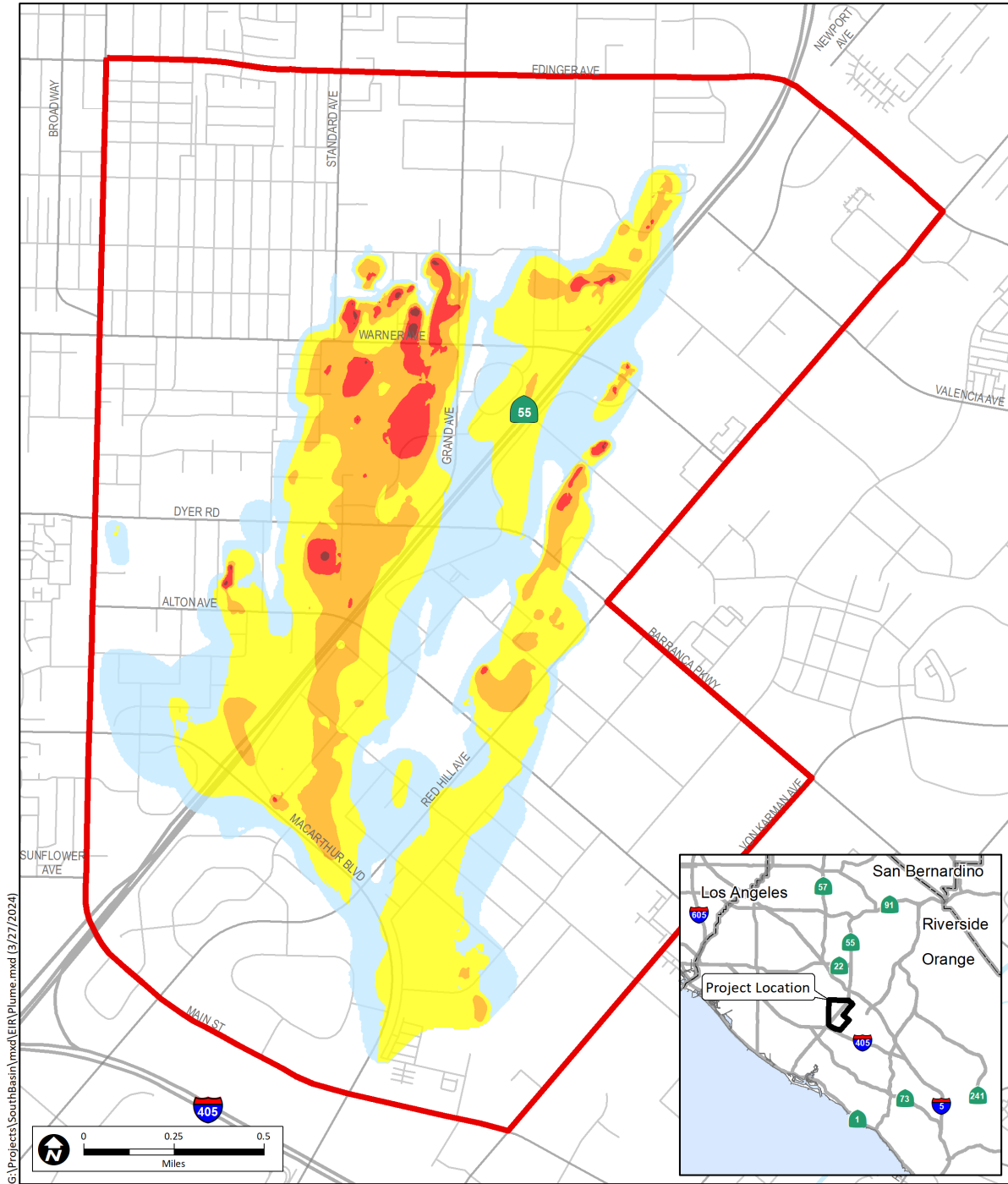
Contaminants have been detected in OU2 at concentrations exceeding maximum contaminant levels (MCLs) in the groundwater in the Shallow Aquifer System above a depth of approximately 100 feet below ground surface (bgs). The main contaminants or COCs within OU2 include TCE, PCE (also known as perchloroethylene), 1,1-dichloroethene (1,1-DCE), 1,4-dioxane, and perchlorate. Other

⁷ Technical Memorandum and Work Plan South Basin Groundwater Protection Project, dated July 2007. Prepared by Todd Engineers.

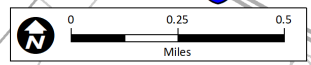
⁸ Supplemental Remedial Investigation Report, Orange County Water District, South Basin Groundwater Protection Project, Operable Unit 2, dated July 1, 2020. Prepared by Hargis + Associates, Inc.

constituents have also been detected above MCLs less frequently, including but not limited to 1,1-dichloroethane (1,1-DCA), 1,2-dichloroethane (1,2-DCA), cis-1,2-dichloroethene (cis-1,2-DCE), vinyl chloride, and hexavalent chromium (Cr[VI]). The distribution of COCs in the Shallow Aquifer System exceeds approximately two miles in length and one mile in width and is elongated in the general direction of groundwater flow, which is to the south-southwest (Figure 2).

Certain responsible parties have implemented or are currently implementing remedies to address the sources of groundwater contamination with enforcement and oversight provided by DTSC and the Santa Ana RWQCB. However, other responsible parties have not implemented groundwater remedies that have contained and remediated the contamination from their sites, which has resulted in the continued and persistent migration of contamination in OU2 groundwater. As a result, this has necessitated the implementation of this interim remedy by OCWD to protect human health, the groundwater resource and its beneficial uses.



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- SBGPP Area
- Groundwater Contamination Plume (approx.)
 - 1 - 10 µg/L
 - 10 - 100 µg/L
 - 100 - 1,000 µg/L
 - 1,000 - 10,000 µg/L
 - ≥ 10,000 µg/L

**South Basin Groundwater Protection Project
Groundwater Contamination Plume**

Figure 2

SOURCE: OCWD (03/2024)

Community Participation

Since 2003, OCWD has engaged the community on the SBGPP through outreach to state regulatory agencies, local groundwater producers, community and business groups, through its website, and through its development and implementation of the SBGPP Community Involvement Plan⁹ (H + A 2017). OCWD has engaged in the following activities and/or document production throughout the RI/FS stages of the SBGPP.

- Community survey
- Fact sheets
- Public notices
- Construction hotlines
- Prop 1 Grant
- Technical Advisory Committee
- Stakeholder Advisory Group (established October 29, 2019)
- Public comments on Preliminary Remedial Investigation (PRI), Supplemental Remedial Investigation (SRI), Feasibility Study (FS), Interim Remedial Action Plan (IRAP), Program Environmental Impact Report (PEIR)
- City government meetings
- Community meetings and outreach
- Additional meetings, as detailed in Section 1.0 of the FS

OCWD has conducted remedial investigations to collect the necessary data to adequately characterize the site for the purpose of developing and evaluating effective remedial alternatives. These investigations are documented in the PRI and SRI reports. OCWD has also conducted an FS to ensure that appropriate remedial alternatives were developed and evaluated such that relevant information concerning the remedial action options could be presented to decision-makers and an appropriate remedy selected. Finally, OCWD prepared an IRAP (Proposed Plan) based on the RI/FS and provided the public with a reasonable opportunity to comment on the preferred alternative for remedial action, as well as alternative plans under consideration, and to participate in the selection of an interim remedial action for the SBGPP.

The RI/FS Reports (previously provided for stakeholder review and comment) and IRAP (Proposed Plan) for the SBGPP were made available to the public in December 2024. They can be found in the Administrative Record file and the information repository maintained at the Delhi Center, Santa Ana, CA. The notice of availability of these documents was published in the Orange County Register on December 13, 2024. A public comment period was held from December 13, 2024 to January 27, 2025. There were no requested extensions to the public comment period. In addition, a public meeting was held on January 16, 2025, to present the Proposed Plan to a broader community audience than those

⁹ Community Involvement Plan, Orange County Water District, South Basin Groundwater Protection Project, Orange County, California, Revision 1.0, dated May 9, 2017. Prepared by Hargis + Associates, Inc.

that had already been involved at the site. At this meeting, representatives answered questions about problems at the site and the remedial alternatives evaluated. OCWD's response to the comments on the Proposed Plan received during this period is included in the Responsiveness Summary, which is part of this Record of Decision.

Scope and Role of Operable Unit or Response Action

The Selected Interim Remedy includes construction of a groundwater extraction and treatment system to pump contaminated groundwater along multiple extraction alignments, treat the groundwater locally, discharge the treated water to the sewer. The water discharged to the sewer will be further treated at the Orange County Sanitation District's Reclamation Plant No. 1, further treated at OCWD's Groundwater Replenishment System, and returned to the groundwater basin. The Selected Interim Remedy will be conducted in three phases. The first phase includes a preliminary design investigation to gather detailed hydrogeologic data at the individual extraction alignments. The second phase will be the interim remedy design. The third phase will be the interim remedy implementation.

The subsurface hydrogeology and contaminant distribution in the Project Area are complex. Many source sites have contributed contaminants to the soil and groundwater. The groundwater contaminants have commingled (mixed together). This commingled plume extends laterally downgradient from source sites in the general direction of groundwater flow from north to south, over an area approximately 2 miles long and 1 mile wide. As a result, OCWD has organized the work into two operable units (OUs):

- Operable Unit 1: OU1 pertains to vadose zone and groundwater contamination in the Shallow Aquifer System directly beneath source properties (Aquilogic 2015).
- Operable Unit 2: OU2 pertains to groundwater contamination in the Shallow Aquifer System off-property of numerous groundwater contamination source sites located within the SBGPP Project Area where groundwater contaminant plumes emanating from individual source sites have migrated and commingled.

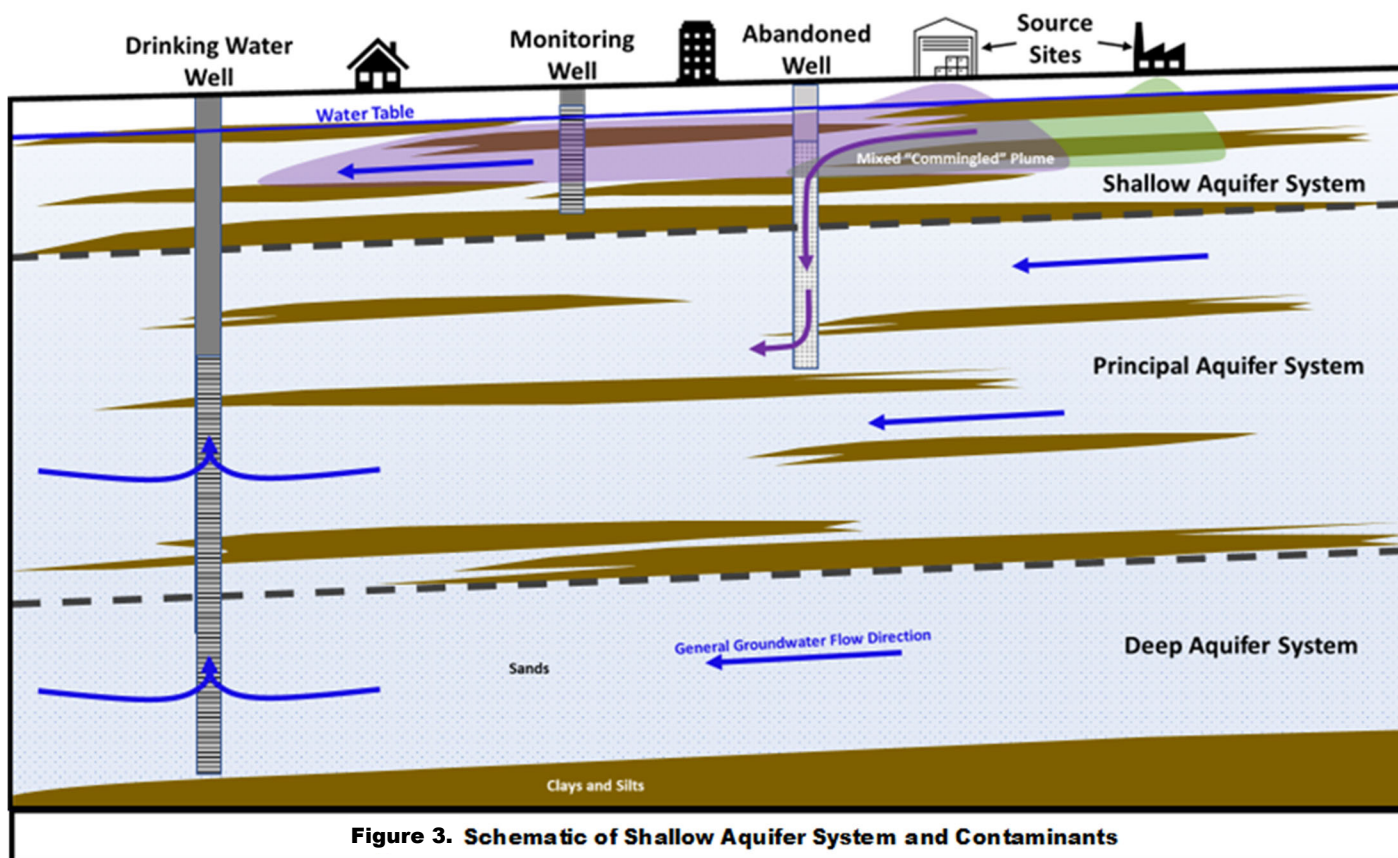
Operable Unit 1 source sites are under the enforcement and oversight of either the DTSC or the Santa Ana RWQCB. Multiple source site remedies are being implemented at OU1 by responsible parties using various technologies such as in-situ bioremediation or chemical oxidation, and groundwater extraction and treatment. Some remedies have been implemented off the source site properties into OU2. Other source sites do not have planned or active remedies onsite and/or offsite. This ROD addresses groundwater contamination in OU2, where human health and ecological risks exceed local, state, and federal regulatory levels.

Site Characteristics

The RI/FS identified the magnitude and extent of contaminants and evaluated ways to address the contamination. The RI/FS activities included the installation of over 200 cone penetrometer tests and grab groundwater samples that helped define the vertical and lateral extent of the groundwater contamination. Additionally, 39 groundwater monitoring wells were installed and regularly sampled to

further define the vertical and lateral extent of the groundwater contamination, identify temporal trends in groundwater elevations and contaminant concentrations, and help refine the site conceptual model. The Preliminary and Supplemental RI reports indicated that:

- Large portions of the Project Area have been used for industrial purposes for several decades, and operations at a substantial number of these facilities have released a broad range of contaminants to soil and groundwater.
- COCs that occur in groundwater include, among others, trichloroethylene (TCE), tetrachloroethylene (PCE), 1,1-dichloroethylene (1,1-DCE), and 1,4-dioxane.
- From shallow to deep, the three aquifer systems in the Project Area are the Shallow Aquifer System, the Principal Aquifer System, and the Deep Aquifer System, as illustrated in the schematic geologic cross-section on Figure 3.



- The Shallow Aquifer System in the Project Area is generally less than 200 feet below ground surface and is where the groundwater contamination found in the RI primarily occurs. The Shallow Aquifer System is characterized by lenses, layers, and interbeds of interfingered fine and coarse-grained material, and is subdivided into the following four layers:
 - Layer 1: an uppermost clay/silt zone at and below the water table;
 - Layer 2: a generally laterally continuous predominantly coarse sand zone;
 - Layer 3: a mixed zone of sands and clays/silts; and

Land use is anticipated to remain urbanized with residential, commercial, and industrial development.

Groundwater is used for 85% of the water demand within the OCWD service area, including the Project Area, and is anticipated to remain the predominant source of water supply in the future.

Summary of Site Risks

As part of the SRI to support the FS, a Human Health and Ecological Risk Assessment (HHERA) was performed to determine the potential effects of contaminants in groundwater on human health and the environment using baseline risk assumptions. The HHERA quantified potential risks associated with residential and ecological exposure to contaminants in groundwater. Specifically, the people, animals, and plants evaluated included a residential child, residential adult, freshwater and saltwater aquatic plants, aquatic invertebrates, and fish. The HHERA was conducted as a “baseline risk assessment” that evaluated potential current risks in the absence of an IRM to address the contaminated groundwater in OU2. The Selected Interim Remedy is necessary to protect human health and the environment from actual and threatened contamination caused by releases of hazardous substances into the environment.

Human Health Risk

There were 58 chemicals of potential concern (COPCs) identified in the HHERA (H + A 2020; TFG 2020) that exceeded exposure point concentrations (EPCs). Human health incremental lifetime cancer risk and noncancer hazard index values were developed as explained in the HHERA and are based on exposure to COCs by inhalation, dermal contact while showering, and ingestion. An incremental lifetime cancer risk of 10^{-4} corresponds to the upper end of USEPA’s generally acceptable risk range of 10^{-6} to 10^{-4} as discussed in the NCP, 40 CFR 300.430(e)(2)(i). For human health, the incremental lifetime cancer risk and hazard index values are 4.4×10^{-1} and 3,100, respectively. Both values exceed the upper bound benchmark human health risk management levels of 10^{-4} and 1, respectively, which are commonly applied by local, state, and federal regulatory agencies to evaluate human health risk.

Ecological Hazard

To assess environmental risks, ecological hazard ratios were calculated for freshwater and saltwater habitats. The ecological hazard ratio values calculated for freshwater and saltwater are 790 and 480, respectively. Both values exceed the target benchmark ecological risk management level of 1 commonly applied by local, state, and federal regulatory agencies to evaluate environmental risk (H + A 2020).

Remedial Action Objectives

The Remedial Action Objectives (RAOs) for the OU2 IRMs evaluated in the FS are to:

1. Protect groundwater resources from further degradation by preventing lateral and vertical migration of high concentration COCs into zones with lower concentrations of COCs within OU2, to the extent practicable;

2. Protect groundwater resources by preventing the potential for vertical migration of high concentration COCs from the upper/middle portions of the Shallow Aquifer System to the Principal Aquifer System through legacy water supply wells, to the extent practicable;
3. Protect groundwater resources from further degradation by preventing the spread of COCs exceeding drinking water maximum contaminant levels (MCLs) in the leading-edge areas of the plume, to the extent practicable;
4. Implement a reliable interim groundwater remedy (or remedies) that is (or are) compatible with ongoing and planned remediation at source sites and associated off-property locations, where applicable;
5. Prevent discharge of COCs exceeding ecological risk-based concentrations from the Shallow Aquifer System to surface water channels; and
6. Prevent human exposure to contaminated groundwater with COC concentrations exceeding MCLs or other Applicable or Relevant and Appropriate Requirements (ARARs).

Description of Alternatives

Six alternative IRMs for OU2 groundwater were evaluated in the FS, which is publicly available as part of the Administrative Record. The IRMs for OU2 groundwater, with the exception of the No Action alternative, were developed and evaluated in the FS using a combination of general response actions and associated remedial technologies that have the potential to achieve the RAOs. The alternatives are presented below and are numbered to correspond with the alternative numbers presented in the FS.

In addition to containment and treatment of contaminated groundwater, all IRMs except No Action incorporate institutional controls, monitoring, and sealing legacy supply wells until each alternative achieves the RAOs.

Institutional controls are actions such as administrative and legal controls that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy. Consistent with USEPA regulations, none of the alternatives rely exclusively on institutional controls to protect human

Summary of Remedial Alternatives for OU2 IRMs		
Alternative	Proposed Plan Designation	Description
1	No Action	No Action
2	Monitored Natural Attenuation	Monitored Natural Attenuation (MNA) includes physical processes; chemical processes; and reactions resulting from biological processes to reduce contaminant concentrations to an acceptable level without active intervention
3	Groundwater Extraction and Treatment with Sewer Discharge	Containment and treatment of relatively high concentration and leading-edge areas using groundwater extraction and treatment with discharge of treated groundwater to an Orange County Sanitation District wastewater treatment plant (WWTP) and the OCWD Groundwater Replenishment System Advanced Wastewater Purification Facility (GWRS)
4	Groundwater Extraction and Treatment with ReInjection	Containment and treatment of relatively high concentration and leading-edge areas using groundwater extraction and treatment with injection of treated groundwater in the Basal Sand
5	In-Situ Treatment Using Chemical Oxidation	In-Situ treatment of relatively high concentration and leading-edge areas using chemical oxidation
6	Combination of Groundwater Extraction and Treatment with Sewer Discharge and In-Situ Treatment using Chemical Oxidation	Containment and in-situ treatment of relatively high concentration and leading-edge areas using chemical oxidation combined with groundwater extraction and treatment with discharge of treated groundwater to the WWTP and GWRS

health and the environment. For all alternatives except No Action, monitoring groundwater levels and quality would be conducted to monitor and evaluate performance of the IRMs and to adjust as warranted, based on the data, to improve remedy effectiveness. Sealing of legacy water supply wells would mitigate vertical migration of contaminants from the Shallow Aquifer System to deeper aquifers to the extent that legacy water supply wells are discovered and accessible during the IRMs.

The estimated capital costs for each alternative described below include the design, construction, and equipping of each IRM over the first three years of the implementation period. The estimated operation,

maintenance, and monitoring (OMM) costs over the remainder of the implementation period, and the net present value of the cost, assume a 27-year operating period for each IRM.

As explained in the FS, the net present value of each IRM is based on a 2.5% discount rate, which is the typical current discount rate OCWD uses to assess long-term projects.

Alternative 1 – No Action

The No Action alternative (FS page 61) is the baseline to which all other alternatives are compared. In the No Action alternative, there is no groundwater monitoring, no compliance with ARARs, and no protection of human health or the environment.

- Estimated Capital Cost: \$0
- Estimated OMM Cost: \$0
- Estimated Net Present Value: \$0

Alternative 2 - Monitored Natural Attenuation

Alternative 2 (FS page 62) would include installation of monitor wells within OU2, followed by long-term monitoring of natural attenuation of the contaminants. Monitored natural attenuation (MNA) would be used to track the rate at which natural destructive and nondestructive processes are reducing COCs in OU2 groundwater. This alternative would include institutional controls for prohibiting the use of groundwater for potable purposes within OU2, and with appropriate notification and planning, would be protective of human health by minimizing the risk of exposure to OU2 COCs in groundwater. However, Alternative 2 would not prevent migration or promote further degradation of COCs in OU2 groundwater and would not prevent COCs exceeding ecological thresholds from potentially discharging into surface waters. Alternative 2 would simply monitor the concentration changes that would occur through natural attenuation of COCs. Thus, despite institutional controls, MNA would not fully protect human health and the environment. This alternative would not comply with applicable ARARs, including state and federal MCLs for groundwater COCs, in a reasonable timeframe.

- Estimated Capital Cost: \$5,200,000
- Estimated OMM Cost: \$26,400,000
- Estimated Net Present Value: \$24,600,000

Alternative 3 - Groundwater Extraction and Treatment with Sewer Discharge

Alternative 3 (FS page 66) would include installation of groundwater extraction wells and conveyance piping, filtration to reduce sediment load, liquid-phase granular activated carbon to remove VOCs, and discharge of treated groundwater to the sewer for further treatment at an Orange County Sanitation District wastewater treatment plant (WWTP) and OCWD's Groundwater Replenishment System (GWRS). The WWTP provides primary and secondary treatment (including screening, clarification, activated sludge process, trickling filters, clarifiers, biological treatment to break down organic matter, and settling tanks). From the WWTP the extracted water would flow to the GWRS for treatment using a three-step advanced process (microfiltration, reverse osmosis, and ultraviolet light with hydrogen peroxide), producing high quality purified water that would meet all state and federal MCLs. The

purified GWRS water is returned to the Basin by percolation and injection at OCWD's spreading basins and injection wells.

Alternative 3 is protective of human health and the environment because it would reduce the mass of COCs that would migrate within and beyond OU2, thereby reducing potential human health and environmental exposures. In addition, maintaining a prohibition on the use of groundwater for potable purposes within OU2, with appropriate notification and planning, would be protective of human health by minimizing the risk of exposure to OU2 COCs in groundwater. This alternative would meet ARARs. For example, extracted groundwater would be treated to meet sewer discharge requirements. In the context of transitioning the IRM to final remedy, this alternative also would meet ARARs associated with the state and federal MCLs for groundwater COCs by removing these COCs from groundwater.

- Estimated Capital Cost: \$14,600,000
- Estimated OMM Cost: \$31,200,000
- Estimated Net Present Value: \$35,800,000

Alternative 4 - Groundwater Extraction and Treatment with Reinjection

Alternative 4 (FS page 71) would include installation of groundwater extraction wells and conveyance piping, treatment using filtration, advanced oxidation, liquid-phase granular activated carbon, and reverse osmosis membrane technologies to remove COCs, and reinjection of treated groundwater into the Shallow Aquifer System through injection wells. These treatment technologies together would produce water that meets or exceeds state and federal MCLs.

Alternative 4 is protective of human health and the environment because it would reduce the mass of COCs that would migrate within and beyond OU2, thereby reducing potential human health and environmental exposures. In addition, maintaining a prohibition on the use of groundwater for potable purposes within OU2, with appropriate notification and planning, would be protective of human health by minimizing the risk of exposure to COCs in groundwater. This alternative would meet ARARs. For example, extracted groundwater would be treated to meet COC MCLs/notification levels prior to reinjection. In the context of transitioning the IRM to final remedy, this alternative also would meet ARARs associated with the state and federal MCLs for groundwater COCs by removing these COCs from groundwater.

- Estimated Capital Cost: \$34,900,000
- Estimated OMM Cost: \$43,600,000
- Estimated Net Present Value: \$64,000,000

Alternative 5 - In-Situ Treatment Using Chemical Oxidation

Alternative 5 (FS page 76) would include in-situ chemical oxidation using activated persulfate (a chemical oxidant) delivered to groundwater through injection wells. Chemical oxidants are intended to destroy COCs, and some oxidants are generally accepted as being effective in oxidizing organic chemicals in groundwater. Injection wells would be installed along alignments that are oriented perpendicular to the contaminant plumes and the direction of groundwater flow.

Alternative 5 may be protective of human health and the environment, since it would likely reduce the mass of COCs that would migrate within and beyond OU2, thereby reducing potential human health and environmental exposures. However, potential generation of byproducts, such as hexavalent

chromium, could threaten the environment if the byproduct is persistent in groundwater. This possibility presents particular challenges in the southern portion of the Project Area where in-situ injection occurs near the Armstrong Channel, into which groundwater in the uppermost portion of the Shallow Aquifer System likely flows. This alternative may meet ARARs if the application of in-situ chemical oxidation does not create persistent undesirable byproducts, for example hexavalent chromium, and repeated persulfate injection does not exceed the water quality objectives (WQO) in the RWQCB Basin Plan or otherwise threaten water quality, neither of which is assured. In the context of transitioning the IRMs to a final remedy, Alternative 5 could meet ARARs, including state and federal MCLs, by removing these COCs from groundwater. However, the potential for persistent undesirable byproducts and/or threats to water quality remains a concern.

- Estimated Capital Cost: \$58,000,000
- Estimated OMM Cost: \$424,600,000
- Estimated Net Present Value: \$348,600,000

Alternative 6 - Combination of Groundwater Extraction and Treatment with Sewer Discharge and In-Situ Treatment using Chemical Oxidation

Alternative 6 (FS page 83) would include in-situ chemical oxidation in a portion of the Project Area using activated persulfate delivered to groundwater through injection wells (similar to Alternative 5), combined with groundwater extraction and treatment in other portions of the Project Area (similar to Alternative 3).

Alternative 6 may be protective of human health and the environment; however, it still retains the potential to generate byproducts associated with in-situ chemical oxidation, such as hexavalent chromium, as with Alternative 5. For the groundwater extraction and treatment portion of Alternative 6, ARARs would be met. For example, extracted groundwater would be treated to meet sewer discharge requirements. In the context of transitioning the groundwater extraction and treatment portion of Alternative 6 to a final remedy, this also would meet ARARs associated with the state and federal MCLs for groundwater COCs by removing these COCs from groundwater.

- Estimated Capital Cost: \$28,800,000
- Estimated OMM Cost: \$109,200,000
- Estimated Net Present Value: \$103,400,000

Comparative Analysis of Alternatives

This section of the ROD summarizes the FS evaluation of alternative IRMs for OU2 groundwater. A more detailed description, evaluation, and comparison of the alternatives is provided in the FS (pages 101-104), which is publicly available as part of the Administrative Record.

The nine evaluation criteria specified in the National Contingency Plan (40CFR300.430(e)(9)(iii)) are identified in the table below and have been used by OCWD and the State agencies to evaluate the alternatives individually and in comparison to each other and by OCWD to select the Preferred Alternative with concurrence of the State agencies. The analysis of alternatives in the FS reflects the scope and complexity of the Project Area and OU2 groundwater contamination and considers the factors in each criterion.

This section of the ROD also summarizes the relative performance of each alternative under the Threshold Criteria and Balancing Criteria, noting how each alternative compares to the other

alternatives. The last two criteria, referred to as Modifying Criteria in the NCP, were evaluated based on State agency and public comments on the IRAP, including any received at the public meeting. The evaluation of the alternatives under the nine criteria is summarized below.

Threshold Criteria

Applying the Threshold Criteria to each alternative, Alternatives 3 and 4 rank highest, Alternative 6 ranks moderately high, Alternative 5 has a moderate ranking, Alternative 2 has a relatively low ranking, and Alternative 1 is lowest in rank.

Alternative 1 (No Action) does not meet the primary Threshold Criterion of protectiveness of human health or the environment. With excess risk present and unaddressed, Alternative 1 was not retained for consideration as a preferred alternative because of its inability to meet the most basic Threshold Criterion of protectiveness.

Alternative 2 (Monitored Natural Attenuation) also does not meet the primary Threshold Criterion of protectiveness of human health or the environment, except for prevention of human exposure to contaminated groundwater through institutional controls. Regarding monitored natural attenuation in OU2, the RWQCB stated: "Please be advised that we do not consider natural attenuation a 'cleanup action,' because it is a passive remedy," and thus the RWQCB does not approve of monitored natural attenuation as a stand-alone remedy for OU2 groundwater." Monitored natural attenuation was nonetheless evaluated as a potential stand-alone remedial measure in the FS for purposes of completeness and consistency with the NCP. Because no active remedial measure (e.g., groundwater extraction or in situ treatment) is being implemented, there are no ARARs identified for Alternative 2; however, in the context of transitioning an IRM to a final remedy, this alternative would not comply with the ARARs associated with the state and federal MCLs for groundwater COCs in a reasonable timeframe.

Alternative 3 (Groundwater Extraction and Treatment with Sewer Discharge) and **Alternative 4** (Groundwater Extraction and Treatment with ReInjection) meet the primary Threshold Criterion of protectiveness of human health and the environment, and compliance with ARARs, through containment, removal, and treatment of contaminated groundwater, and the application of institutional controls.

Alternative 5 (In-Situ Chemical Oxidation) might meet the Threshold Criterion for protectiveness of human health and the environment. However, the potential for generation of persistent undesirable byproducts such as hexavalent chromium, particularly near some source sites and near the surface water channels, including the Armstrong Channel, in the southern portion of the Project Area, are of concern. The potential for generation of persistent undesirable byproducts along with potential for not complying with the RWQCB Basin Plan water quality objectives due to repeated application of relatively large volumes of amendments to groundwater and generation of persistent byproducts (i.e., different contaminants) are also of concern when evaluating compliance with ARARs.

Alternative 6 (Combination of Groundwater Extraction and Treatment with Sewer Discharge and In-Situ Chemical Oxidation) combines aspects of Alternatives 3 and 5, with a smaller application area for in-situ chemical oxidation, thereby reducing, but not eliminating (e.g., potential generation of undesirable byproducts), protectiveness of human health and the environment and ARARs.

Balancing Criteria								
Alternative	Long-Term Effectiveness and Permanence	Reduction of Toxicity, Mobility, or Volume	Short-Term Effectiveness	Implementability	Cost Ranking	Cost (\$, million) (Design, Capital and OMM)		
						Total	Net Present Value	
1	No Action	Low	Low	Low	High	Not Applicable	\$0	\$0
2	Monitored Natural Attenuation	Low	Low	Low	High	High	\$31.6	\$24.6
3	Groundwater Extraction and Treatment with Sewer Discharge	High	High	High	Moderate to High	Moderate to High	\$45.7	\$35.8
4	Groundwater Extraction and Treatment with Reinjection	High	High	High	Moderate	Moderate	\$78.5	\$64.0
5	In-Situ Treatment Using Chemical Oxidation	Moderate	Moderate	Moderate	Moderate	Low	\$482.6	\$348.6
6	Combination of Groundwater Extraction and Treatment with Sewer Discharge and In-Situ Treatment using Chemical Oxidation	Moderate to High	Moderate to High	Moderate to High	Moderate to High	Low to Moderate	\$138.1	\$103.4

Balancing Criteria

Applying the Balancing Criteria to each alternative, Alternative 3 ranks highest followed closely by Alternative 4, Alternatives 5 and 6 rank moderately high, Alternative 2 has a relatively low ranking, and Alternative 1 is lowest in rank.

Alternative 1 (No Action) ranks low in long-term effectiveness, reduction of toxicity, mobility, and volume, and short-term effectiveness, and high in implementability. Alternative 1 has no associated cost and therefore was not ranked in cost.

Alternative 2 (Monitored Natural Attenuation) ranks low in long-term effectiveness, reduction of toxicity, mobility, and volume, and short-term effectiveness, and high in implementability and cost.

Alternative 3 (Groundwater Extraction and Treatment with Sewer Discharge) ranks high in long-term effectiveness, reduction of toxicity, mobility, and volume, and short-term effectiveness, and moderate to high in implementability and cost.

Alternative 4 (Groundwater Extraction and Treatment with Reinjection) ranks high in long-term effectiveness, reduction of toxicity, mobility, and volume, and short-term effectiveness, and moderate in implementability and cost.

Alternative 5 (In-Situ Chemical Oxidation) ranks moderate in long-term effectiveness, reduction of toxicity, mobility, and volume, short-term effectiveness, and implementability and low in cost.

Alternative 6 (Combination of Groundwater Extraction and Treatment with Sewer Discharge and In-Situ Chemical Oxidation) ranks moderate to high in long-term effectiveness, reduction of toxicity, mobility, and volume, short-term effectiveness, and implementability, and low to moderate in cost.

Modifying Criteria

Modifying criteria include State and community acceptance of the proposed Interim Remedy. OCWD coordinated with the RWQCB and DTSC in the preparation of the IRAP, including

providing a draft IRAP to these State agencies for review. Agency comments were addressed in the final IRAP (Proposed Plan) which was circulated for public comment, and no further comments were received. As previously discussed, a public comment period on the Proposed Plan describing the proposed Interim Remedy was held from December 13, 2024 to January 27, 2025. In addition, a public meeting was held on January 16, 2025. Other than informational and clarification questions, which were addressed at the meeting, there were no comments on the Proposed Plan made at the meeting requiring responses. OCWD received one letter commenting on the Proposed Plan during the comment period which is included along with the responses in Part 3 Responsiveness Summary below.

Other Considerations

The sustainability of each of the remedial alternatives was evaluated and ranked using the *SiteWise Tool for Green and Sustainable Remediation*.¹⁰ Comparing the overall sustainability of each alternative, Alternative 2 ranked highest closely followed by Alternative 3, Alternative 4 has modest ranking, Alternative 6 has a relatively low ranking, and Alternative 5 has a low ranking.

The alternatives were also evaluated relative to one another based on compatibility with source site remediation and the potential for discharge of groundwater containing undesirable byproducts (e.g., hexavalent chromium) to surface water in Armstrong Channel. Alternatives 1 and 2 are compatible with source remediation systems and with Armstrong Channel. Alternative 5 is slightly more compatible with source site remediation systems when compared to Alternatives 3, 4 and 6; however, this alternative is not compatible with Armstrong Channel. Alternatives 3 and 4 are compatible with source site remediation and with Armstrong Channel, given the operational flexibility (e.g., balancing extraction rates and extraction well locations) of these IRMs.

Principal Threat Waste

The Selected Interim Remedy is not anticipated to generate principal threat wastes.

Selected Interim Remedy

The Selected Interim Remedy is Alternative 3 – Groundwater Extraction and Treatment with Discharge to the WWTP and GWRS. Alternative 3 is selected as the Interim Remedy because it would be protective of human health and the environment by removing COCs through a safe, reliable, and effective technology that is cost-effective and compatible with source site remedial efforts. Alternative 3 reduces risk more effectively and at lower cost than the other alternatives. The RWQCB and DTSC support the selection of Alternative 3 as the Interim Remedy.

Based on information currently available, the Selected Interim Remedy would meet the Threshold Criteria and provide the best balance of tradeoffs among the alternatives under the Balancing Criteria and Modifying Criteria. The Selected Interim Remedy permanently and significantly reduces the volume, toxicity, and mobility of the COCs, and best meets the statutory goals of CERCLA §121(b)

¹⁰ Naval Facilities Engineering Command (NAVFAC), Engineering and Expeditionary Warfare Center, (2018). *SiteWise™ Version 3.2 User Guide (UG-0000-ENV)*. Prepared in collaboration with Army Corps of Engineers, US Army, NAVFAC and Battelle

because it (1) is protective of human health and the environment, (2) is cost effective, and (3) utilizes permanent solutions to reduce the threat to human health and the environment by reducing the COCs in OU2.

The Selected Interim Remedy will include approximately eight extraction alignments with approximately 75 extraction wells in total. The extraction wells will pump contaminated groundwater from three zones within the Shallow Aquifer System and have a maximum depth of approximately 80 feet below ground surface. Approximately nine local treatment systems will treat the pumped groundwater (up to 1,000 gallons per minute total) to remove VOCs. The treated groundwater will be discharged to the sewer system where it will flow to the WWTP and GWRS, from which it will be percolated back into the Basin. To measure the effectiveness of the Selected Interim Remedy at removing COCs and protecting human health and the environment, a network of monitoring wells will be constructed to a maximum depth of approximately 130 feet.

Prior to construction of the Selected Interim Remedy, OCWD will perform a preliminary design investigation from which OCWD will determine the final number, location, depth, and flow rates of the extraction wells, monitoring wells, conveyance pipes, and treatment systems. Upon completion of the preliminary design investigation, the final remedy design will be prepared, and the system will be constructed and operated until the RAOs are met.

OCWD, as the Lead Agency, will implement and operate the remedy. OCWD will invite the RWQCB and DTSC to advise OCWD during the design and implementation of the remedy.

Statutory Determinations

Under CERCLA §121 and the NCP, the lead agency must select remedies that are protective of human health and the environment, comply with applicable or relevant and appropriate requirements (unless a statutory waiver is justified), are cost-effective, and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. In addition, CERCLA includes a preference for remedies that employ treatment that permanently and significantly reduces the volume, toxicity, or mobility of hazardous wastes as a principal element and a bias against off-site disposal of untreated wastes. The following sections discuss how the Selected Interim Remedy meets these statutory requirements.

Protection of Human Health and the Environment

The Selected Interim Remedy will protect human health and the environment through the treatment of VOC- and perchlorate-contaminated groundwater in OU2 by pumping and treating contaminated groundwater from the Shallow Aquifer System, thus reducing toxicity. The Selected Interim Remedy will also prevent the existing plume from migrating both vertically and laterally from higher concentration areas to lower concentration areas.

Compliance with Applicable or Relevant and Appropriate Requirements

The Selected Interim Remedy of groundwater extraction and treating the ground water by carbon adsorption and reverse osmosis complies with all ARARs. The ARARs are presented in Table B-1 of the FS (Engineering Analytics 2023).

Documentation of Significant Changes

Comments received on the Proposed Plan during the public comment period, and their associated responses, are presented in Part 3 Responsiveness Summary. Based on the comments received and responses, no changes to the Selected Interim Remedy were necessary.

PART 3: RESPONSIVENESS SUMMARY

Introduction

The Interim Remedial Action Plan (IRAP or Proposed Plan) was prepared by OCWD (the lead agency) in coordination with the DTSC and the Santa Ana RWQCB (the state agencies). The Proposed Plan briefly describes the remedial alternatives analyzed by OCWD, proposes a preferred remedial action alternative, and summarizes the information relied upon to select the preferred alternative. The purpose of the Proposed Plan is to supplement the Remedial Investigation (RI) and Feasibility Study (FS) and provide the public with a reasonable opportunity to comment on the preferred alternative for remedial action, as well as alternative plans under consideration, and to participate in the selection of remedial action at a site.

The Proposed Plan identified a preferred alternative and presented it to the public for review and comment. The Proposed Plan was issued for a 45-day public review period, beginning December 13, 2024, and ending January 27, 2025.

- A. A notice of availability and brief analysis of the Proposed Plan was published in the *Orange County Register* on December 13, 2024.
- B. The Proposed Plan and supporting analysis and information is available in the administrative record (<https://www.ocwd.com/what-we-do/water-quality/groundwater-cleanup/south-basin/>).
- C. OCWD provided a reasonable opportunity, not less than 30 calendar days, for submission of written and oral comments on the Proposed Plan and the supporting analysis and information located in the information repository, including the RI/FS. OCWD did not receive any requests to extend the public comment period for the Proposed Plan.
- D. As stated above, OCWD held a public meeting during the public comment period at or near the Site at issue regarding the Proposed Plan and the supporting analysis and information.
- E. OCWD kept a transcript of the public meeting held during the public comment period pursuant to CERCLA section 117(a) and made the transcript available to the public.
- F. OCWD, herein, has prepared a written summary of significant comments, criticisms, and new relevant information submitted during the public comment period and has responded to each issue. This responsiveness summary is made available, herein, with the record of decision.

No new information was made available to OCWD after the publication of the Proposed Plan that significantly changes the basic features of the remedy with respect to scope, performance, or cost, such that the remedy significantly differs from the original proposal in the Proposed Plan and the supporting analysis and information.

Second, the lead agency reviewed the public comments and consulted with the State agencies (or support agency) in order to determine if the alternative remains the most appropriate remedial action for the Site.

Presented below is a summary of all comments received on the Proposed Plan, and OCWD’s responses to those comments.

**TABLE 1
COMMENTS RECEIVED IN RESPONSE TO THE IRAP (PROPOSED PLAN)**

No.	Name	Date Received	Page Number
State/Local Agencies			
	No Comments Received		
Organizations			
Org-3	Newmeyer & Dillion LLP / DRSS-I, LLC – January 27, 2025	January 27, 2025	

Responses to Comments

Comment Letter from Newmeyer & Dillon LLP

Letter Org-3



Newmeyer & Dillon LLP
895 Dove Street
Fifth Floor
Newport Beach, CA 92660
949 854 7000

January 27, 2025

John Van Vlear
john.vanvlear@ndlf.com

VIA EMAIL AND U.S. MAIL

bleever@ocwd.com

Bill Leever
Project Manager
Orange County Water District
18700 Ward Street
Fountain Valley, CA 92708

Re: DRSS's Comments on *Proposed Interim Remedial Action Plan (South Basin Groundwater Protection Project)* and Related Materials

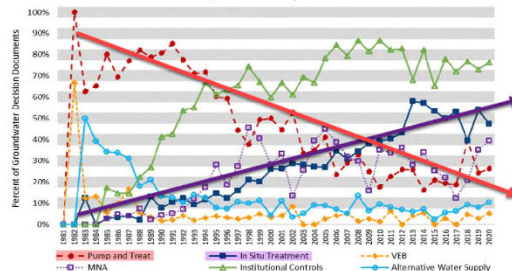
Mr. Leever:

On behalf of DRSS-I, LLC (DRSS), owner since 1997 of the property at 2040 E. Dyer, southeast corner of Dyer and Redhill (2040 Site), we make the below comments on Orange County Water District's (OCWD) *Proposed Interim Remedial Action Plan South Basin Groundwater Protection Project (IRAP)* and the related materials OCWD has produced and is using related to its IRAP effort.

1. Proposed IRAP for a Long-Term Pump and Treat Is a Disfavored Remedy.

As the federal United States Environmental Protection Agency (EPA) depicts in its most recent Superfund Remedy Report (January 2023),¹ Pump and Treat (P&T) continues to be disfavored as a groundwater remedy. These trends are based upon the EPA's own evaluation of thousands of decision documents spanning almost 40 years. In 1982, EPA-led projects selected P&T 100% of the time. However by 2018-2020, EPA Superfund sites selected P&T only 25% of the time (red in graph).² On the

Figure 5: Selection Trends for Decision Documents with Groundwater Remedies (FY 1981-2020)



Org-3 A

¹ <https://www.epa.gov/remedytech/superfund-remedy-report> (graph is original, as annotated by the two arrows and matching highlights in the legend).

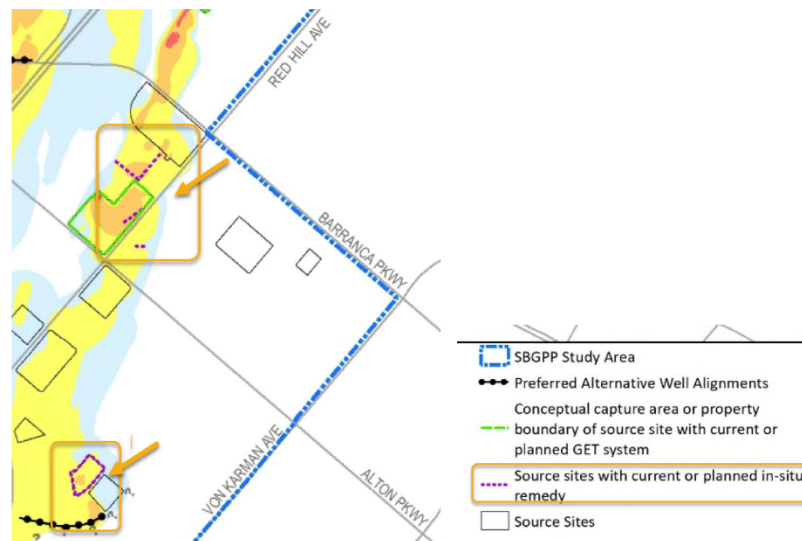
² For source remedies, selection of P&T in the 2018-2020 period dropped to only 2%. *Id.*, at p. 9.

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other hand, selection of *in situ* treatment shows the opposite - an upward trend (purple in graph) where EPA-led sites selected *in situ* around 50% of the time over the last decade.

Many factors underlie these trends, including the poor performance of P&T in the long run, its high cost, and the proven effectiveness of *in situ* remedies. Moreover, P&T is not a green solution. As stated by the EPA in late 2021: "More than 80 percent of the groundwater remedies selected for Superfund sites in the early 1990s included P&T systems, some of which *still operate*. Although selection of remedies involving P&T has since declined significantly, to about 20 percent in fiscal year 2017, newer P&T systems are anticipated to similarly operate *for long time periods*. As a result, the most significant opportunities to *minimize the environmental footprint of P&T* implementation concern usage of energy and treatment materials over multiple years, in some cases *decades*."³

P&T was already under attack back in August 2012 when OCWD's lead expert hydrogeologist Anthony Brown proposed this remedy. Certainly now, OCWD's proposed IRAP is outdated and not necessary, reasonable, or cost-effective as currently configured, especially for areas where parties are implementing modernly-favored *in situ* remedies under Santa Ana Regional Water Quality Control Board (RWQCB) oversight. For example, as detailed on page 12 of the proposed IRAP (gold highlights below) there are *in situ* remedies down-gradient of the Sabic Site and 2040 Site already, and apparently too for the "source site" at 17511 Armstrong ("Baxter Site"). This makes no sense and should not be implemented as currently proposed.



Org-3 A
(cont.)

³ "Green Remediation Best Management Practices: Pump and Treat Systems," United States Environmental Protection Agency (December 2021 Update), emphasis added.

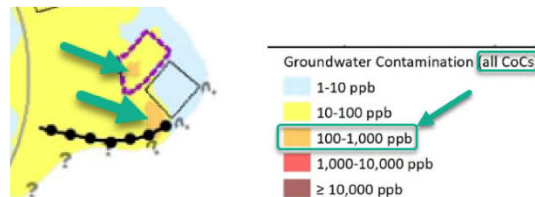
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2. The IRAP Misrepresents The Extent Of Impacts At the Baxter Sites Which Are Literally *Within* the Proposed Distal-End Well Array.

For context and further orientation, this is from Figures 1-2 of OCWD's South Basin Feasibility Study showing the Baxter Site and the property at 17502 Armstrong (commonly known as the former "Edwards Lifesciences Site") across the street. For ease of reference here, the Baxter Site and Former Edwards Lifesciences Site will jointly be referred to as the "Baxter Sites." Baxter Healthcare Corporation is the current owner/operator of the Baxter Site. A Nevada entity named "JS SJK L.P." is the current owner of the former Edwards Lifesciences Site, which Baxter Healthcare Corporation owned and operated from approximately 1989 through at least 1996.



The IRAP seriously misrepresents the extent of impacts at the Baxter Sites – *and it's not even close*. The following is from the IRAP (green highlights added):

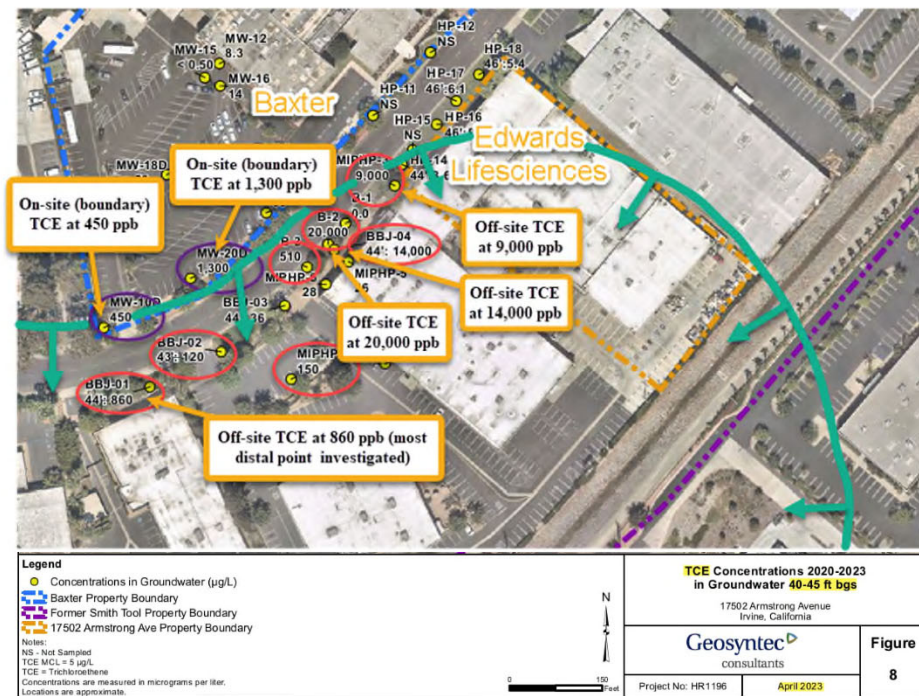


Org-3 B

OCWD is thus saying to everyone that the impacts at the Baxter Sites are at worst in the 100-1,000 part per billion (ppb) range (orange) for the combined aggregate of all contaminants of concern (COCs). This is a blatant misrepresentation. The following is from a *January 2023 Supplemental Assessment* (Geosyntec, April 2023) submitted to the RWQCB, made public on GeoTracker,⁴ and which OCWD had actual knowledge of prior to issuing the proposed IRAP.⁵

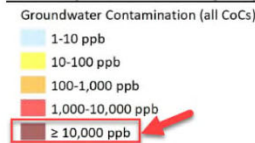
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⁴ https://geotracker.waterboards.ca.gov/getfile?filename=/esi%2Fuploads%2Fgeo_report%2F1901248514%2FSL208624048.PDF
⁵ See DRSS's *Comments on Scoping for OCWD's Environmental Impact Report – South Basin Groundwater Protection Project Interim Remedial Action Plan*, November 3, 2023, at p. 4 (attached at PDF page 465 to ESA's December 2024 *Final Public Review Draft, Draft Environmental Impact Report – South Basin Groundwater Protection Project*, prepared for Orange County Water District).



Org-3 B
(cont.)

The above figure has been annotated by adding red circles around the off-site groundwater impacts, with purple circles showing high on-site results. As highlighted, the Baxter Sites have off-site impacts of TCE at 9,000, 14,000, and 20,000 ppb. If aggregated, that's TCE at 43,000 ppb. Even only the highest findings were used, that's TCE at 20,000 ppb for just this one COC. Thus, if the IRAP were accurately depicting the situation for the public and decision-makers, it should be using **dark maroon** ($\geq 10,000$ ppb). Instead, the IRAP uses **orange** (100-1,000 ppb) which isn't close to reality. Closer would be red (1,000-10,000 ppb), but the IRAP doesn't use that either. What's going on?



Moreover, the most down-gradient groundwater point for the Baxter Sites plume shows TCE at 860 ppb. That means that this Baxter Sites' distal end shows TCE, one COC, at 172 times more than the Maximum Contaminant Level (MCL) of 5 ppb and 34 times higher than the more relevant 5x MCL practical standard for active remediation of chlorinated solvents in groundwater (*see* further comments below).

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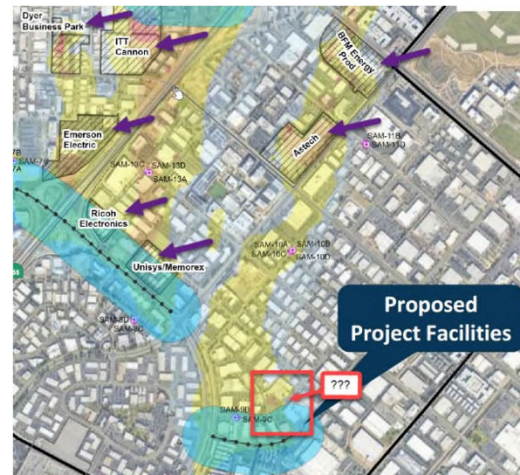
Apart from the critical issue of truth and veracity for the public and decision-makers, why does this matter for the proposed IRAP? Because the IRAP's distal-end extraction well array is literally on top of the Baxter Sites impacts! The below figure is from slide 12 of OCWD's January 16, 2025 public meeting on the proposed IRAP (red highlights added):



Org-3 B
 (cont.)

The IRAP's "proposed project facilities" for the distal-end well array literally sits on top of the Baxter Sites' impacts as reflected in the *January 2023 Supplemental Assessment* discussed above.

Further, why aren't the Baxter Sites shown on the above Slide #12 shown at the public meeting as being a "responsible party" like other sites? To the right is a highlighted version of Slide #12 with purple arrows added showing the other sites but nothing for the Baxter Sites (red highlighted). Did OCWD omit to show such because the heavily impacted Baxter Sites sit on top of the IRAP's proposed distal-end well array (i.e., the Proposed Project Facilities)?



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The glaring nature of the above omission is all the more troublesome when earlier in the same public meeting OCWD identified on Slide #6 that the Baxter Sites were "Active Source Sites" (purple highlighted at right, red in original). Similarly, the IRAP itself on page 12 (shown on page 2 of these comments above) identifies the Baxter Sites as a "Source Site." It's only when the proposed distal-end well array is depicted that the Baxter Sites disappear.



Unfortunately, the necessity, reasonableness, cost-effectiveness, impacts, implementability, and basic logic for the distal-end well array is not being accurately and fully presented to decision-makers and the public in the proposed IRAP and OCWD's related materials. If this portion of proposed system is built and turned on, it will immediately, consistently, and permanently draw in TCE and related COCs from the Baxter Sites. Frankly, it's impossible that it won't. Such Baxter Sites' impacts will *overwhelm* any low ppb-range impacts that OCWD alleges the well array is otherwise intended to capture. Moreover, where is the documentation that the RWQCB would *ever* approve of such a massive change in groundwater conditions, contaminant distribution, and/or investigation and remedial efforts at the Baxter Sites? If the RWQCB does allow such, will the Baxter Sites pay for the distal-end well array where 99% (or whatever) of the contaminant mass being drawn into the system is from their impacts? At a minimum, it would seem that the Baxter Sites should be required to complete the down-gradient lateral delineation of their chlorinated solvent impacts *before* any design or implementation of OCWD's distal-end well array proceeds. Otherwise, how can a final decision on the necessity for inclusion of that component, or the reasonable and proper design of such if included, be done based on verified data?

Org-3 B
 (cont.)

3. The Monitoring Area (aka "No Remedy" Carve-Out) Is Missing From The IRAP And Must Be Maintained.

As mentioned above, the off-site and downgradient *in situ* groundwater remedies being implemented by Sabic Site and 2040 Site in the Eastern Study Area under RWQCB oversight resulted in Alternative 3 creating a "monitoring only" zone downgradient of those effective remedial efforts and past the unaddressed source site of Kaiser Electroprecision (Kaiser).⁶ OCWD's Feasibility Study (FS) calls this "Area 6" for Alternative 3 and shows it in Figure 7-2 downgradient (below) of the *in situ* remedies and the unaddressed Kaiser Electroprecision site (gold highlights added).



Org-3 C

⁶ According to OCWD, Kaiser had DNAPL – TCE at 34,000 ppb (OCWD v. Sabic, RRT 1222:2-13 – OCWD's Dr. Fogg); Kaiser installed a permeable reactive barrier (PRB) near a former UST location but at the time of closure there were total VOCs downgradient of the PRB of at least 318, 164, and 107 ppb that were never addressed (OCWD v. Sabic, TX 9032-29); and there was an unaddressed inside vapor degreaser at Kaiser with consistent VOCs levels in downgradient groundwater above 100 ppb at the time of closing the outside UST to the east (OCWD v. Sabic, TX 9032-25).

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The background for this carve-out area can be summarized by the following from the Court's final Statement of Decision (SOD) in the South Basin case,⁷ all based upon admitted trial evidence:

"On May 1, 2019, the Regional Water Board informed DRSS by letter that OCWD staff had stated at a meeting that they were *satisfied with DRSS's offsite remediation efforts*, and that the District had *agreed not to plan or undertake any remediation* "to address VOCs in the downgradient areas of the Site.. contingent on DRSS's commitment to delineate the full extent of VOCs in groundwater...." (Exh. 9141) The OCWD, which was copied on this letter and on DRSS's May 15, 2019 confirmatory letter (Exh. 9142), *did not disagree or object to these statements*. Consistent with these statements, the Regional Board, in commenting on the District's 2020 Revised Draft Supplemental Remedial Investigation, requested that the 2040 Site (and adjacent properties) *be excluded from any Feasibility Study*. (Exh. 5390)" (April 3, 2023 Final SOD 89:5-15, emphasis added.)

In the December 2024 Draft Environmental Impact Report (EIR), OCWD retained this important carve-out which its staff agreed to as witnessed by the RWQCB. For example, this figure appears in the EIR (at PDF p. 301):



Org-3 C
(cont.)

Figure 3.8-5
Groundwater Monitoring Areas - Alternative 3; Containment and Treatment of Relatively High Concentration and Leading-Edge Areas using Groundwater Extraction and Treatment with Discharge to POTW and GWRS

Yet, the proposed IRAP excludes any mention of this important carve-out and omits such from any figure in the IRAP or any figure in the slides presented at the January 16, 2025 Public Meeting on the draft IRAP. This omission must be rectified and OCWD needs to remain true to the 2019 agreement of its staff, and consistent with the FS and to the EIR and highlight this important carve-out area where no actual remedy is planned.

⁷ OCWD v. Sabie et al., OCSC Case No. 30-2008-00078246.

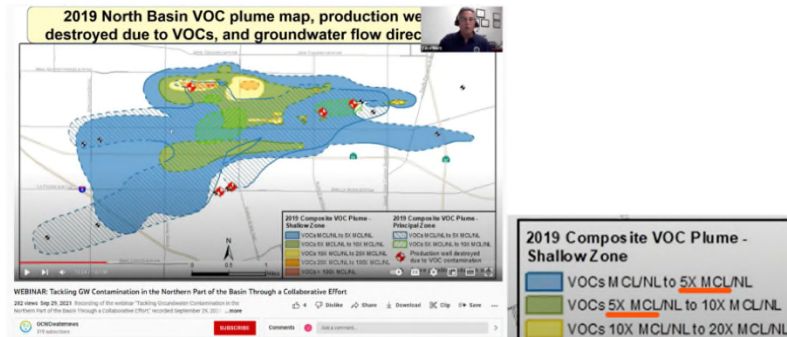
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4. Since OCWD Admits 5x MCL Is The Real Threshold For Active Remediation, Absent Baxter/Edwards Lifesciences Considerations, Shouldn't The Distal-End Well Array Be Merely a Future Contingency?

As OCWD's lead expert Anthony Brown has admitted for over 13 years, the much-touted MCLs are *not* the relevant standard for these solvent plumes. Brown has sworn under oath multiple times that the *real* threshold for the OU2 shallow aquifer is *five times* the MCL:

“You’ve testified many times, going back to 2012 in this case, that for concentrations of offsite contamination in groundwater *at less than five times the MCL, there would be no need for active remediation*, as such concentrations could be addressed over longer periods by *monitored natural attenuation*, right? A: *Yes, that’s my opinion...*”
(OCWD v. Sabie, RRT 996:22-997:5, emphasis added).

In fact, OCWD is actually using the 5x MCL standard – just not for the South Basin. As OCWD relayed in a 2021 webinar (later posted to OCWD’s YouTube channel),⁸ the District uses 5x MCL contours for mapping of VOCs in groundwater in the North Basin, as testified to under oath by OCWD's own Chief Hydrogeologist Roy Herndon (at RRT 8752:21-23, annotations added):



Org-3 D

If this reality-based contouring is done for the South Basin, *the plume(s) requiring active remediation shrink if not disappear.*

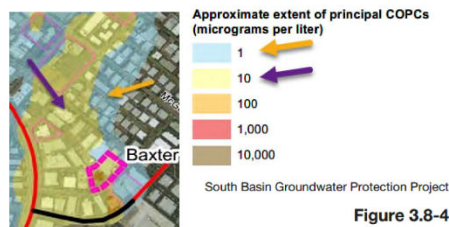
[Cont.]

⁸ <https://www.youtube.com/watch?v=KrEbVAilqk>

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As DRSS commented as to the Draft FS by letter in July of 2022:

"Excluding the whole discussion about the Baxter Sites and their massive GW impacts, acknowledging that no active remediation is necessary for solvents at less than 5x MCL, compels the elimination of a *just-in-case* well array like the distal-end one. From Figure 3.8-4 of the December 2024 EIR, see [to the right] how OCWD represents all non-Baxter Site impacts in GW to be either 1 ppb (blue in original; gold arrow added) or at worst 10 ppb (yellow in original; purple arrow added)."



Org-3 D
(cont.)

Since the MCL for both perchloroethylene (PCE) and trichloroethylene (TCE) is 5 ppb, 5x MCL for each is 25 ppb. Thus, according to OCWD's own Anthony Brown, **no active remediation is necessary or reasonable** for the non-Baxter Sites alleged mega-plume. To be crystal clear, OCWD should eliminate from current planning and implementation any active remediation by inclusion of the IRAP's distal-end well array since such is unnecessary for any upgradient alleged impacts and such would only remediate contaminant levels of significance associated **with the Baxter Sites**.

5. Financial Benefits to OCWD/OCSD. DRSS understands that the proposed IRAP would send extracted and untreated groundwater into sewer lines that would end up in Fountain Valley at OCWD and/or Orange County Sanitation District's (OCSD) facilities. Then, OCWD/OCSD would re-inject treated water back into the Orange County South Basin. Shouldn't the public know exactly how much OCWD will benefit financially by implementing the proposed IRAP by not having to purchase water for reinjecting? Assuming OCWD has run the calculations, have those amounts been made public?

Org-3 E

DRSS appreciates the opportunity to comment on the proposed IRAP and hopes OCWD takes these points seriously and acts accordingly.

Thank you.

Very truly yours,

John Van Vlear, Esq.

cc: Client

Response Org-3 A

For purposes of this response, OCWD has consulted the US EPA Superfund Remedy Report 18th Edition (January 2025)(Report) in addition to the 2023 17th Edition referenced by the commenter.

The Report does not characterize pump and treat remedies as ‘disfavored.’ That is a characterization made by the commenter. At the outset, it is noted that the statistical grouping addressed in the Report includes instances substantially different from the beneficial groundwater protection that is the goal of the Proposed Plan. Removal actions nationally are not included; a removal action is included only if a remedial action is also instituted with a ROD Decision Document. (Report, p. 1) 36 percent of the sites addressed are for Federal facilities, many of which are not necessarily located in a beneficial use groundwater area. (Report, p. 2) Superfund Alternative Approach sites (sites which operate under agreements with responsible parties instead of with Superfund enforcement mechanisms) are not included. (Report, p. 2, n. 5). Reference to the sites selected in the Report is not an ‘apples-to-apples’ statistical comparison. The Report reflects that pump and treat remedies are utilized in a significant number of cases.

As the Report addresses, combined remedies are often utilized in sites reviewed within the scope of the Report. (Report, *passim*) That, in one sense, is what is proposed for South Basin under the Proposed Plan: there are certain sites with onsite source removal actions being undertaken under oversight of the RWQCB or DTSC. The scope of the Proposed Plan is to address the COCs that were not remediated from source sites and escaped downgradient. For that reason, the Proposed Plan’s remedy is to be evaluated on the merits in accordance with the criteria required under the National Contingency Plan (NCP). The “Preferred Alternative” identified in the IRAP was evaluated using the NCP criteria that are summarized in Section 7.0 of the FS, and it was best ranked among the six alternatives evaluated and selected as the preferred alternative. This comment provides no substantial evidence to challenge the findings of the FS.

As presented in the FS, the *SiteWise Tool for Green and Sustainable Remediation* was used to evaluate and semi-quantitatively rank the sustainability of each of the remedial alternatives (detailed in FS Tables ES-1 and 8-2). Excluding the No Action alternative, the Preferred Alternative was ranked in the FS as the second-most sustainable alternative after Monitored Natural Attenuation (MNA), which does not meet the project objectives as a standalone remedy. Further, the FS ranked the Preferred Alternative the second lowest cost alternative, after MNA. Lastly, the FS evaluated the In-Situ Chemical Oxidation alternative (ISCO Alternative) which consistently ranked lower than the Preferred Alternative in all balancing and threshold criteria and was the poorest ranking of all alternatives considered with respect to green and sustainability processes.

Please refer to the detailed analysis of NCP criteria set forth in the Proposed Plan.

Response Org-3 B

The IRAP does not misrepresent the extent of impacts at the Baxter Site (17511 Armstrong Avenue). The IRAP appropriately relies on the data presented in the Preliminary and Supplemental RI reports (PRI and SRI, respectively) as well as the FS, which was completed on January 27, 2023, prior to the commenter-referenced April 2023 Geosyntec report. The plume representations in the PRI, SRI, and FS reports reflect substantial COC concentrations, up to 1,000 parts per billion (ppb), on and downgradient of the Baxter Site (17511 Armstrong Avenue). Additional data showing COC concentrations greater than 1,000 ppb does not materially or significantly affect the selection or implementation of the IRAP's Preferred Alternative. In fact, the higher COC concentrations provide further evidence supporting the basis for implementation of the Preferred Alternative. The extraction and treatment technologies of the Preferred Alternative are fully capable of containing and treating COCs at these concentrations. The IRAP and supporting FS provide information on the phases of the Preferred Alternative implementation, including the Preliminary Design Investigation, during which additional data will be collected and other available data compiled to inform the Remedial Design prior to construction.

Not illustrating the Baxter sites (Baxter Health Care at 17511 Armstrong Avenue and Edwards Lifesciences at 17502 Armstrong Avenue) on Slide 12 of the January 16, 2025 IRAP public information meeting presentation was a simple mistake and not a "glaring omission". Figure 1 of the IRAP provides the approximate extent of principal COCs in the Project Area. The Baxter sites are shown on Figure 3 of the IRAP and on Figure 1-2 of the FS.

The Baxter sites' impacts will not "...overwhelm any low ppb-range impacts that OCWD alleges the well array is otherwise intended to capture." This is a misunderstanding or misrepresentation of the objectives of the Preferred Alternative and what it is "intended to capture." The substantial COC concentrations at the Baxter sites provide further evidence supporting the basis for implementation of the Preferred Alternative. The extraction and treatment technologies of the Preferred Alternative are fully capable of containing and treating COCs at these concentrations.

As detailed in the IRAP and FS, implementation of the Preferred Alternative will not cause "... a massive change in groundwater conditions, contaminant distribution, and/or investigation and remedial efforts at the Baxter Sites", which currently have no active groundwater remediation. The comment does not include any substantial evidence to support its assumptions.

The FS and IRAP provide approximate conceptual extraction well alignment locations. The extraction well alignments will be revised, if warranted, based on Preliminary Design Investigation results, and could also be revised during Remedial Design based on the remedial actions performed by OU1 Source Sites. The intent of the Preferred Alternative is to capture the plume at the alignments illustrated in the IRAP Figure 3. If the groundwater plume(s) exceeding MCLs extends farther south than currently conceived, then it (they) will be addressed in future project phases, which will be subject to additional CEQA environmental determination and documentation and provided to the public and interested stakeholders for their review and comment pursuant to the CEQA Guidelines.

Response Org-3 C

The FS, Section 8.1.4, states that the operation of the Preferred Alternative will include “Adaptive Management” that would monitor the response of the aquifer to remedy operations and make adjustments to operations, as needed to most effectively achieve the RAOs. As used herein, Adaptive Management is a planned iterative process of decision making that uses monitoring data to evaluate the response of a system to the operation of a project. The extraction facilities and monitoring wells will be monitored for groundwater flow direction, hydraulic gradient, and COCs concentrations in groundwater to verify the Preferred Alternative is operating as planned and designed. In the event more variation is detected than was modeled and may result in a significant adverse effect on individual Source Site groundwater remediation systems, the operation of the Preferred Alternative will be modified to avoid the undesirable effect. Modifications may include reducing the pumping rate of the extraction facility and/or relocating the extraction facility components.

Response Org-3 D

The comment that the “District . . . Admits 5x MCL Is The Real Threshold For Active Remediation...” is not based on fact. Appendix A of the FS provides the concentration contour intervals used to prepare OU2 groundwater COC plan view figures. This statement incorrectly conflates concentration contour intervals used to illustrate the North Basin groundwater plume (miles away from the Project Area) with remedial target concentrations for the Preferred Alternative. The 5x MCL is a contour interval, not a standard. A key objective of the Preferred Alternative is to contain groundwater contamination that exceeds drinking water standards. The cited concentration contour interval (multiples of NL or MCL) was used for the North Basin RI/FS. The South Basin RI/FS used different, yet commonly used, contour intervals, e.g., 1, 10, 100, etc. parts per billion.

Therefore, the 5x MCL is not the real threshold for active remediation for the Preferred Alternative.

The Remedial Action Objectives defined in the IRAP include "Protect groundwater resources from further degradation by preventing the spread of COCs exceeding maximum contaminant levels (MCLs) in the leading-edge areas of the plume, to the extent practicable."

Response Org-3 E

The Preferred Alternative does not, as the commentor states, reinject treated water back into the “Orange County South Basin”. As described in the FS, Section 7.2.3.3 and in the IRAP, the Preferred Alternative pumps groundwater from the Shallow Aquifer System, and the locally treated water is discharged to the sewer system. The treated water flows with other wastewater to Orange County Sanitation District (OC San) Plant No. 1 for treatment, and then to the OCWD-operated Groundwater Replenishment System (GWRS) for further treatment. Once the water is treated at GWRS it is returned to other portions of the Orange County groundwater basin for beneficial use through surface recharge basins in the city of Anaheim, Talbert Seawater Barrier wells in the cities of Fountain Valley and Huntington Beach, or Mid-Basin Injection wells in the city of Santa Ana, all of which are outside the South Basin area.

Of the estimated 560 acre-feet per year of groundwater that is pumped from the Shallow Aquifer System by the Preferred Alternative, there is an estimated net decrease in the amount of water in the Basin of approximately 160 acre-ft per year due to treatment processes, which is considered de minimis. There is no financial benefit to OCWD, because returning all but 160 acre-feet of the pumped groundwater to the groundwater basin does not significantly change the amount of water OCWD purchases for reinjection.

RESOLUTION NO. 25-6-XX
CERTIFYING THE FINAL PROGRAM ENVIRONMENTAL IMPACT REPORT (STATE
CLEARINGHOUSE #2023100188), APPROVING THE INTERIM REMEDIAL ACTION
PLAN, AUTHORIZING THE GENERAL MANAGER TO SIGN THE RECORD OF
DECISION, AND AUTHORIZING ISSUANCE OF A REQUEST FOR PROPOSALS TO
PREPARE A PRELIMINARY DESIGN INVESTIGATION WORK PLAN FOR THE
SOUTH BASIN GROUNDWATER PROTECTION PROJECT

WHEREAS, pursuant to the Orange County Water District Act, Chapter 924 of the Statutes of 1933 as amended (California Water Code Appendix section 40-2), Orange County Water District (“District”), acting by and through its Board of Directors (“Board”), is authorized to manage, replenish, regulate and protect the groundwater supplies of the Orange County Groundwater Basin (“Basin”), and to construct, operate and maintain facilities useful or necessary to augment and protect the quality of the common water supplies of the District; and

WHEREAS, the District has previously identified the existence of groundwater contamination consisting of volatile organic compounds (“VOC”) and perchlorate at concentrations in excess of Maximum Contaminant Levels (“MCL”) and Notification Levels (“NL”) in the southeastern part of the Basin underlying the cities of Santa Ana, Irvine, and Tustin, generally west of Von Karman Avenue, north of I-405, east of Main Street, and south of Edinger Avenue (“Project Area”); and

WHEREAS, on May 21, 2008, by Resolution No. 08-11-135, OCWD duly instituted the South Basin Groundwater Protection Project (SBGPP) to investigate the extent of such groundwater contamination and remediate if necessary; and

WHEREAS, staff has advised that, if unabated, this contamination will continue spreading in the Shallow aquifer, moving toward pathways which include abandoned production wells into deeper aquifers, and potentially impact drinking water supplies; and

WHEREAS, Section 40-8(b) of the District Act authorizes OCWD to take action with regard to investigation and remediation; and

WHEREAS, the District’s Board authorized filing of a Notice of Exemption for drilling three CPT borings and constructing six monitoring wells; received and filed *Geologist’s Report – South Basin Groundwater Protection Project Hydrogeologic Investigation*; authorized the installation of three CPT borings and six monitoring wells to investigate the extent of groundwater contamination in the vicinity of well IRWD-3; and established a project budget of \$625,000, and found that construction of such borings and wells is feasible, necessary to answer critical basin management questions, and of general benefit to the lands of the District; and

WHEREAS, after such approvals, the District installed the three CPT borings and six monitoring wells; conducted water quality tests; prepared a VOC plume map; and prepared geologic cross sections in the vicinity of the monitoring wells; and

WHEREAS, District staff advised the Board that substantial VOC and perchlorate groundwater contamination exists in the shallow groundwater in the Project Area and that this contamination has been detected in a deep Irvine Ranch Water District production well; and

WHEREAS, on June 18, 2008, the District’s Board found that it is necessary to expend available

funds to investigate, clean up, abate and perform remedial work to address VOC and perchlorate contamination in the Project Area and that such expenditures are required by the magnitude of the endeavor and the urgency of prompt action needed to prevent, abate, or contain the threatened and existing VOC and perchlorate contamination in the Project Area; initiate litigation against potentially responsible parties for cost recovery measures for the SBGPP; and authorize General Manager, with concurrence from General Counsel, to execute Amendment No. 1 to legal services agreement between OCWD and Miller, Axline & Sawyer; and

WHEREAS, on August 6, 2014, by Resolution No. 14-8-108, the District's Board deemed it is in the best interests of the District to adopt an updated Groundwater Protection Policy that is consistent with the District's mission to protect and enhance the quality of the Basin; and

WHEREAS, the Groundwater Protection Policy incorporated and integrated key provisions contained in previous related policies adopted in 1984, 1987, and 2013 into a single policy and included a provision regarding consistency with the National Contingency Plan (NCP) in situations where the District is seeking cost recovery from responsible parties; and

WHEREAS, on August 6, 2014, by Resolution No. 14-8-109, the District's Board approved developing remedial strategies for the Project Area groundwater contamination in a manner that is consistent with the NCP, and authorized issuance of a request for proposals (RFP) to retain NCP consulting services for remedial investigation and evaluation of remedial alternatives in the Project Area consistent with NCP protocol; and

WHEREAS, the District has prepared a Preliminary Remedial Investigation (PRI) Report for the SBGPP dated October 2015, to characterize the hydrogeology and the extent of groundwater contamination in the Project Area, and to support the development of a remedial action for the protection of drinking water supplies; and

WHEREAS, the District, in consultation with the Santa Ana Regional Water Quality Control Board and Department of Toxic Substances Control (State Agencies), has prepared a Supplemental Remedial Investigation (SRI) Report for the SBGPP dated July 2020, to further characterize the hydrogeology and the extent of groundwater contamination in the Project Area, and to support the development of a remedial action for the protection of drinking water supplies; and

WHEREAS, the District, in consultation with State Agencies, has prepared a Feasibility Study (FS) Report for the SBGPP dated January 2023, to evaluate a range of remedial alternatives for the groundwater contamination in the Project Area that will protect groundwater resources from further degradation by controlling the lateral and vertical migration of contamination in the Shallow Aquifer, reduce the concentrations of groundwater contamination, prevent the discharge of groundwater contamination to surface water systems, and prevent human and ecological exposure to groundwater contamination; and

WHEREAS, District staff presented the results of the FS Report to the Board on February 15, 2023, and the Board tentatively identified Alternative 3 from the FS Report as the preferred remedial alternative to be developed into the proposed Interim Remedial Action Plan (IRAP), subject to completion of environmental documentation, and authorized issuance of a RFP to the District's on-call environmental consultants to prepare programmatic California Environmental Quality Act (CEQA) compliance documentation of Alternative 3 described in the FS Report.

WHEREAS, a Notice of Preparation (NOP) was circulated to the public, responsible agencies and other interested persons for review and comments prior to the preparation of a Draft Program Environmental Impact Report (PEIR) in accordance with the California Environmental Quality Act (CEQA) and the CEQA Guidelines to evaluate program level short-term construction impacts, long term operational impacts, cumulative impacts, and indirect impacts that could result from the implementation of the SBGPP, between October 5, 2023, and November 6, 2023; and

WHEREAS, the District prepared a Draft PEIR, provided a 45-day public review period from December 13, 2024 to January 27, 2025, and held a public meeting on January 16, 2025, to explain the Draft PEIR and receive public comments; and

WHEREAS, District staff have reviewed comments received on the Draft PEIR, have prepared responses to those comments and have forwarded responses to comments to all responding agencies and parties, and find that no changes to the Draft PEIR are required that would result in the need to recirculate the Draft PEIR for public review; and

WHEREAS, District staff have prepared a Final PEIR that includes the District's response to comments on the Draft PEIR, revisions, clarifications and corrections to the Draft PEIR, Mitigation Monitoring and Reporting Plan (MMRP), and Statement of Findings and Facts in Support of Findings; and

WHEREAS, District staff prepared a Draft IRAP (also referred to as the Proposed Plan), provided a 45-day public review period from December 13, 2024 to January 27, 2025, and held a public meeting on January 16, 2025, to explain the Draft IRAP and receive public comments; and

WHEREAS, District staff have reviewed comments received on the Draft IRAP, have prepared responses to those comments, and find that the Preferred Alternative identified in the Draft IRAP does not require minor or significant changes; and

WHEREAS, District staff prepared a Record of Decision (ROD) that documents the selection and future implementation of the Preferred Alternative from the IRAP as an interim remedial measure for the Project Area, and submitted the ROD to the State Agencies with a review period from May 16, 2025 to June 4, 2025; and

WHEREAS, the District Board held a noticed, regularly scheduled public meeting on June 4, 2025, to receive public comments on, discuss, and consider action on: (1) certification of the Final Program Environmental Impact Report, Findings and Facts in Support of Findings, and the Mitigation Monitoring and Reporting Program in connection with the Program Environmental Impact Report, (2) approval of the Interim Remedial Action Plan (Proposed Plan), (3) Authorizing the General Manager to sign the Record of Decision, and (4) Authorizing a Request For Proposals to prepare a Preliminary Design Investigation work plan for the South Basin Groundwater Protection Project; and

WHEREAS, the District Board has reviewed and considered the staff presentation and the testimony and documentation presented by the interested public and government agencies at the noticed, regularly scheduled public meeting held on June 4, 2025, and has discussed and deliberated on the Final PEIR, Interim Remedial Action Plan (Proposed Plan), and Record of Decision.

NOW, THEREFORE, the Board of Directors of the Orange County Water District does hereby resolve as follows:

Section 1: Based on the entire Record of Proceedings before the Board of Directors of the District, the Board finds that:

1) Pertaining to the Program Environmental Impact Report

(a) The Board of Directors of the District has reviewed and considered the information contained in the Final PEIR for the South Basin Groundwater Protection Project (State Clearinghouse No. 2023100188) and finds that the Final PEIR has been prepared and completed in compliance with state law, including CEQA and the CEQA Guidelines.

(b) The Board of Directors further finds that there was adequate opportunity provided for public review and comment on the Draft PEIR, and that the Board has considered all comments and responses to comments before certifying the Final PEIR.

(c) The Board of Directors further finds that the Final PEIR adequately analyzes and discusses all environmental issues in connection with the SBGPP, and that the Final PEIR reflects the independent judgment and analysis of the District as Lead Agency for the SBGPP.

(d) The Statement of Findings and Facts in Support of Findings attached to this Resolution as Exhibit 1 are incorporated by reference as if fully set forth herein.

2) Pertaining to the Interim Remedial Action Plan (Proposed Plan) and Record of Decision

(a) The Board of Directors of the District has reviewed and considered the information contained in the Interim Remedial Action Plan (Proposed Plan) and Record of Decision for the South Basin Groundwater Protection Project and finds that the IRAP (Proposed Plan) and ROD have been prepared and completed in compliance with state and federal law, including the NCP.

(b) The Board of Directors further finds that there was adequate opportunity provided for State Agency and public review and comment on the RI/FS and Draft IRAP (Proposed Plan), and that the Board has considered all comments and responses to comments before approving the Preferred Alternative.

(c) The Board of Directors further finds that there was adequate opportunity provided for State Agency review and comment on the Record of Decision.

Section 2: Based on the foregoing, the Board of Directors hereby:

- (a) certifies as complete and adequate the Final PEIR for the SBGPP; and
- (b) approves the Statement of Findings and Facts in Support of Findings (Exhibit 1); and
- (c) approves the Mitigation Monitoring and Reporting Program (Final PEIR, Chapter 12);
and
- (d) approves the Interim Remedial Action Plan (Proposed Plan) for the SBGPP; and

(e) authorizes the District General Manager to sign the Record of Decision; and

(f) establishes a capital budget of \$19,300,000 for the SBGPP; and

(g) authorizes District staff to issue an RFP for the preparation of a Preliminary Design Investigation work plan for the SBGPP.

Section 3: The SBGPP, described in the Interim Remedial Action Plan (Proposed Plan), Record of Decision, and the Final PEIR, is determined to be feasible, necessary and beneficial to the lands of the District, and is duly instituted because, among other things:

(a) The SBGPP is necessary to provide adequate capture and treatment of the contaminant plume, to protect the groundwater supplies of the Basin from the spread of VOCs within the Project Area, to protect the quality of the drinking water supplies within the District, and to prevent ecological and human receptors from exposure to groundwater contaminants.

Section 4: The Board of Directors hereby authorizes and directs District staff to (1) file a Notice of Determination with respect to the Board's certification of the Final PEIR, and (2) publish a notice of availability of the Record of Decision for public inspection and copying in a major local newspaper.