

APPENDIX A

APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
SOUTH BASIN GROUNDWATER PROTECTION PROJECT
ORANGE COUNTY WATER DISTRICT
ORANGE COUNTY, CALIFORNIA

APPENDIX A
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
SOUTH BASIN GROUNDWATER PROTECTION PROJECT
ORANGE COUNTY WATER DISTRICT
ORANGE COUNTY, CALIFORNIA

TABLE OF CONTENTS

Section	Page
ACRONYMS AND ABBREVIATIONS.....	A-iv
1. 0 INTRODUCTION.....	A-1
1.1 ARARS DEFINITION	A-2
1.2 ARAR WAIVER PROVISIONS	A-5
1.3 IDENTIFICATION OF ARARS	A-6
2. 0 CHEMICAL-SPECIFIC ARARS	A-8
2.1 FEDERAL CHEMICAL-SPECIFIC ARARS	A-8
2.2 STATE CHEMICAL-SPECIFIC ARARS	A-8
2.2.1 California Toxics Rule	A-8
2.2.2 Primary Drinking Water Standards (22 CCR §64431 and 64444)	A-9
2.2.3 Water Quality Control Plan for Santa Ana River Basin	A-9
2.2.4 SWRCB Resolution No. 92-49.....	A-10
3. 0 LOCATION-SPECIFIC ARARS	A-11
3.1 FEDERAL LOCATION-SPECIFIC ARARS	A-11
3.1.1 National Historic Preservation Act (16 U.S.C. §470 et seq.).....	A-11
3.1.2 Historic Sites, Buildings, and Antiquities Act	A-11
3.1.3 Archaeological Resources Protection Act Of 1979.....	A-12
3.1.4 Endangered Species Act of 1973	A-12
3.2 STATE LOCATION-SPECIFIC ARARS	A-13
3.2.1 Hazardous Waste Seismic Consideration (22 CCR §66264.18.a)	A-13
3.2.2 California Fish and Game Code §3800	A-13
3.2.3 California Fish and Game Code §5650	A-13
4. 0 ACTION-SPECIFIC ARARS	A-14
4.1 FEDERAL ACTION-SPECIFIC ARARS	A-14
4.1.1 Federal Clean Water Act National Pollutant Discharge Elimination System Clean Water Act §402 et seq.	A-14
4.1.2 Storm Water Discharges (40 CFR §122.26).....	A-15
4.1.3 Technology Based Treatment Requirements in Permits (40 CFR §125.3)	A-15
4.1.4 General Pretreatment Regulations for Existing and New Sources of Pollution (40 CFR Part 403).....	A-15
4.2 STATE ACTION-SPECIFIC ARARS	A-16
4.2.1 Water Quality Control Plan.....	A-16

TABLE OF CONTENTS (continued)

Section	Page
4.2.2 Water Quality Control Plan for Santa Ana River Basin (adopted January 28, 1995 and subsequent amendments) (California Water Code §13240 et seq.)	A-16
4.2.3 Porter-Cologne Water Quality Control Act (California Water Code)	A-17
4.2.4 Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California.....	A-17
4.2.5 Concentration Limits (27 CCR §20400).....	A-18
4.2.6 Compliance Period (27 CCR §20410).....	A-18
4.2.7 General Water Quality Monitoring and Systems Requirements (27 CCR §20415)	A-18
4.2.8 Maintaining High Quality Water in California (SWRCB Resolution No. 68-16 and California Water Code §13140)	A-18
4.2.9 California Hazardous Waste Laws.....	A-19
4.2.10 SWRCB Resolution No. 88-63.....	A-20
4.2.11 Remediation of Pollution: State Board Resolution No. 68-16; State Board Resolution No. 92-49; California Code of Regulations, Title 23, Chapter 15, Article 5.....	A-20
4.2.12 Water Quality Monitoring and Response Programs for Solid Waste Management Units (27 CCR §20385 et seq.)	A-21
4.2.13 Corrective Action Program (27 CCR §20430)	A-22
4.2.14 South Coast Air Quality Management District Rules and Regulations	A-22
4.3 TO-BE-CONSIDERED CRITERIA.....	A-24
4.4 CALIFORNIA NOTIFICATION LEVELS	A-24
4.5 1,4-DIOXANE	A-25
4.6 CALIFORNIA WELL STANDARDS BULLETIN 74-81; 74-90.....	A-25
5. 0 REFERENCES.....	A-26

TABLE OF CONTENTS (continued)

TABLES

Table

A-1	POTENTIAL APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
A-2	TO-BE-CONSIDERED DOCUMENTS
A-3	SUMMARY OF PRELIMINARY CONTAMINANTS OF CONCERN
A-4	ENDANGERED SPECIES

ACRONYMS AND ABBREVIATIONS

AAQs	Ambient air quality standards
ARARs	Applicable or relevant and appropriate requirements
BACT	Best available control technology
Basin Plan	Water Quality Control Plan for the Santa Ana River Basin
BMPs	Best management practices
CCR	California Code of Regulations
CDPH	California Department of Public Health
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COCs	Contaminants of concern
ESA	Endangered Species Act
H&SC	California Health and Safety Code
HAZWOPER	Hazardous Waste Operations and Emergency Response
MCLs	Maximum Contaminant Levels
NLs	Notification Levels
NPDES	National Pollutant Discharge Elimination System
POTW	Publicly Owned Treatment Works
RCRA	Resource Conservation and Recovery Act
RWQCB	Regional Water Quality Control Board
SBGPP	South Basin Groundwater Protection Project
SCAQMD	South Coast Air Quality Management District
SIP	State Implementation Plan
SWRCB	State Water Resources Control Board
T-BACT	Best Available Control Technology for Toxics
TBC	To-be-considered
U.S.C.	United States Code
US EPA	United States Environmental Protection Agency
WQOs	Water quality objectives

APPENDIX A
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
SOUTH BASIN GROUNDWATER PROTECTION PROJECT
ORANGE COUNTY WATER DISTRICT
ORANGE COUNTY, CALIFORNIA

1.0 INTRODUCTION

This appendix identifies and evaluates potential federal and State of California applicable or relevant and appropriate requirements (ARARs) from the universe of regulations, requirements, and guidance for the South Basin Groundwater Protection Project (SBGPP), located in Orange County, California. This appendix uses descriptions of ARARs that have been developed for and approved by the United States Environmental Protection Agency (US EPA) on a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) site in Southern California where the groundwater was designated to have existing or potential Municipal Supply uses (CH2M Hill, 2010). Under CERCLA regulations, a remedial action must achieve ARARs, unless a waiver is granted. The ARARs can be defined as standards, requirements, criteria or limitations under federal (or if more stringent, state) environmental laws as they relate to onsite remedial actions. In the context of this appendix, “onsite” includes the areal extent of contamination and all suitable areas near the contamination necessary for implementation of the response action (40 Code of Federal Regulations [CFR] §300.5). For CERCLA sites, onsite actions must comply with the substantive aspects of ARARs. Since the SBGPP is not a CERCLA site, onsite and offsite actions must comply with applicable local, state, and federal requirements.

In some situations, ARARs may not be available or adequately address protection of human health and the environment. Where ARARs do not sufficiently address a situation, to-be-considered (TBC) criteria (e.g., non-promulgated advisories, criteria, guidance, or proposed standards) issued by federal and state agencies can be used to define cleanup and/or performance standards (40 CFR §300.400[g][3]). These TBC criteria are not ARARs; they are

not enforceable, nor are they legally binding, unless that TBC criterion is adopted as a cleanup or performance standard in the Statement of Basis or applicable permit to construct or operate the Interim Remedy.

The ARARs, in conjunction with the overall protection of human health and the environment criterion, form the threshold criteria to evaluate remedial alternatives when selecting a remedial action. This evaluation includes an initial determination of whether the potential ARARs actually qualify as ARARs, and a comparison for stringency between the federal and state regulations to identify the controlling ARARs. The identification of ARARs is an iterative process. The final determination of ARARs will be made in the Statement of Basis, after public review, as part of the remedial action selection process. Therefore, the ARARs and TBCs identified herein are considered preliminary.

1.1 ARARS DEFINITION

ARARs are defined in CERCLA to include the following:

- Any standard, requirement, criterion, or limitation under federal environmental law
- Any promulgated standard, requirement, criterion, or limitation under a state environmental or facility-siting law that is more stringent than the associated federal standard, requirement, criterion, or limitation

An ARAR may be either “applicable” or “relevant and appropriate.” These terms are defined in the National Oil and Hazardous Substances Pollution Contingency Plan (referred to as the National Contingency Plan) (40 CFR §300.5) as follows:

- Applicable requirements are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state environmental or facility-siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at the CERCLA site.

- Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal or state environmental or facility-siting laws that, while not “applicable” to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at the site, address problems or situations sufficiently similar to those encountered at the site that their use is well suited to the particular site. If, it is determined that a requirement is not applicable to a specific release, the requirement may still be relevant and appropriate to the circumstances of the release. In evaluating relevance and appropriateness, the factors in the following subbullets are examined, where pertinent, to determine whether a requirement addresses problems or situations sufficiently similar to the circumstances of the release or remedial action contemplated, and whether the requirement is well-suited to the site, and therefore is both relevant and appropriate. The pertinence of each of the following factors will depend, in part, on whether a requirement addresses a chemical, location, or action. The following comparisons shall be made, where pertinent, to determine relevance and appropriateness:
 - The purpose of the requirement and the purpose of the CERCLA action;
 - The medium regulated or affected by the requirement and the medium contaminated or affected at the CERCLA site;
 - The substances regulated by the requirement and the substances found at the CERCLA site;
 - The actions or activities regulated by the requirement and the remedial action contemplated at the CERCLA site;
 - Any variances, waivers, or exemptions of the requirement and their availability for the circumstances at the CERCLA site;
 - The type of place regulated and the type of place affected by the release or CERCLA action;
 - The type and size of structure or facility regulated and the type and size of structure or facility affected by the release or contemplated by the CERCLA action; and

- Any consideration of use or potential use of affected resources in the requirement and the use or potential use of the affected resource at the CERCLA site.

The potential ARARs in this document represent the most stringent of the state and federal requirements. When considering state requirements, only those promulgated state requirements that are identified by the state in a timely manner and that are more stringent than federal requirements are considered ARARs (CERCLA §121[d][2][A][ii]). Non-promulgated advisories or guidance issued by federal or state governments are not legally binding and do not have the status of ARARs. Such requirements may, however, be useful, and are TBC. These requirements complement ARARs, but do not override them. They are useful for guiding decisions regarding cleanup levels or methodologies when regulatory standards are not available.

State agencies have published or provided state requirements relevant to their agency jurisdiction. The application of these requirements to the SBGPP is also evaluated. Although non-environmental laws are not discussed as ARARs, including worker safety laws, the hazardous waste worker safety regulations are acknowledged as part of any remediation activity. The remediation activity selected for the site is anticipated to conform to the California worker safety regulations for Hazardous Waste Operations and Emergency Response (HAZWOPER) (Title 8, California Code of Regulations [CCR] §5192 et seq.). Employee safety requirements are provided for cleanup operations or hazardous substance removal work required by a governmental body. The California regulations have incorporated the HAZWOPER requirements (29 CFR §1910.120 et seq.) and are considered more stringent than federal requirements.

1.2 ARAR WAIVER PROVISIONS

Specific circumstances in which ARARs may be legally waived are established in CERCLA (CERCLA §121[d][4]). Six waiver criteria are available (i.e., interim measures, greater risk to health and the environment, technical impracticability, equivalent standard of performance, inconsistent application of state requirements, and fund balancing). Under any of the following criteria and circumstances, a remedial action may be selected despite not attaining an ARAR:

- **Interim Measure** – The remedial action selected is only a part of the total remedial action that will attain such level or standard of control when completed.
- **Greater Risk to Health and the Environment** – Compliance with the requirement will result in greater risk to human health and the environment than alternative operations.
- **Technical Impracticability** – Compliance with the requirement is technically impracticable from an engineering perspective.
- **Equivalent Standard of Performance** – The remedial action selected will attain a standard of performance that is equivalent to that required under the otherwise applicable standard, requirement, criteria, or limitation, through use of another method or approach.
- **Inconsistent Application of State Requirements** – With respect to state standards, requirements, criteria, or limitations, the state has not consistently applied (or demonstrated the intention to consistently apply) the standard, requirement, criterion, or limitation in similar circumstances at other remedial actions within the state.
- **Fund Balancing** – In case of a remedial action to be undertaken solely under CERCLA §104 using the Hazardous Substance Response Fund, selection of a remedial action that attains such level or standards of control will not provide a balance between the need for protection of public health and welfare and the environment at the facility under consideration, taking into consideration the relative immediacy of such threats.

1.3 IDENTIFICATION OF ARARS

The identification and documentation of potential ARARs was accomplished using US EPA guidance in conjunction with a review of federal and state laws, regulations, and policies (US EPA, 1988). There are ARARs established for a majority of the preliminary contaminants of concern (COCs) identified for the SBGPP. These ARARs are based on promulgated Federal and/or State of California Maximum Contaminant Levels (MCLs). US EPA's policy of generally establishing preliminary remediation goals based on ARARs, in the absence of multiple pathways or contaminants, is based on the assumption that individual ARARs will be protective (US EPA, 1997). In cases involving multiple contaminants or pathways where attainment of chemical-specific ARARs will result in cumulative carcinogenic risk in excess of 10^{-4} , cleanup levels that are more stringent than ARARs may be considered (US EPA b40 CFR 300.430(E)(2)(I)(D)).

The identified potential ARARs for the SBGPP are presented in Table A-1. This table provides rationale for the decision that a specific requirement is applicable or relevant and appropriate for a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at the SBGPP.

There are three categories of ARARs:

- Chemical-Specific ARARs: Requirements that set health- or risk-based limits that establish the acceptable amount or concentration of a chemical that may be left in or discharged to the ambient environment.
- Location-Specific ARARs: Restrictions placed upon the conduct of remedial actions because the site is in a special location (e.g., restrictions related to flood plains, historic sites, earthquake zones, and wetlands).
- Action-Specific ARARs: Requirements that govern particular technologies or activities for site remedial actions and are triggered by the remedial action alternatives that are selected to accomplish the cleanup.

This classification was developed to aid in the identification of ARARs; some ARARs do not fall precisely into one group or another. Within the three categories, the requirements are further organized by federal ARARs, followed by state ARARs. The TBCs are presented in Table A-2. A description of categories, followed by the principal requirements within each category, is provided as follows. Furthermore, only those standards and regulations that are considered ARARs are addressed.

2.0 CHEMICAL-SPECIFIC ARARS

Potential chemical-specific ARARs are health- or risk-based concentration limits, numerical values, or methodologies for various environmental media (e.g., groundwater, soil, and soil vapor) and establish the acceptable amount or concentration of a chemical that may be found in or discharged to the environment. Chemical-specific requirements are available and are presented for the contaminated aquifer.

2.1 FEDERAL CHEMICAL-SPECIFIC ARARS

Federal primary MCLs under the Safe Drinking Water Act (2 United States Code [U.S.C.] §§ 300, et seq.) protect the public from contaminants that may be found in drinking water. The MCLs are only applicable “at the tap” for drinking water provided to 25 or more people or water systems with 15 or more service connections. Because groundwater underlying the SBGPP is identified by the state as a potential source of drinking water, the requirements are relevant and appropriate to the aquifer underlying the SBGPP. The federal MCLs for the COCs are presented in Table 3.

2.2 STATE CHEMICAL-SPECIFIC ARARS

State chemical-specific ARARs are discussed below.

2.2.1 California Toxics Rule

This establishes water quality criteria for surface water, typically implemented through the federal National Pollutant Discharge Elimination System (NPDES) permit program. These standards may be applicable for discharge of treated groundwater to surface water.

2.2.2 Primary Drinking Water Standards (22 CCR §64431 and 64444)

California has promulgated drinking water standards for public drinking water sources under the California Safe Drinking Water Act (California Health and Safety Code [H&SC] §4010 et seq.). The Act establishes California primary MCLs to protect public health from contaminants that may be found in drinking water sources.

For some of the COCs, the California MCLs are more stringent than the federal requirements. In those cases when California MCLs are more stringent than federal MCLs, then California MCLs supersede the federal MCLs. The California MCLs identified as ARARs for the COCs are presented in Table A-3.

2.2.3 Water Quality Control Plan for Santa Ana River Basin

The Water Quality Control Plan for the Santa Ana River Basin (Basin Plan, adopted January 24, 1995, and associated subsequent updates), adopted pursuant to California Water Code Sections 13240 et seq., contains numerical and narrative water quality objectives for waters of the state that ensure protection of beneficial uses and prevention of nuisances affecting beneficial use. These objectives are not merely restricted to surface water but also apply to groundwater. Promulgated numerical water quality objectives may be chemical-specific ARARs. Non-promulgated mechanisms or theories on how to derive a numerical water quality objective or meet a numerical water quality goal may also be ARARs, if specific regulations are promulgated implementing the goal (55 CFR 8746, March 8, 1990).

The numerical water quality objectives for groundwater supply used as a domestic or municipal supply are based on drinking water standards. Because the primary MCLs have already been identified as potential ARARs for the COCs at the SBGPP, the numerical water quality objectives in the Basin Plan are addressed through the primary MCLs as chemical-specific ARARs.

Similarly, the Regional Water Quality Control Board (RWQCB) narrative water quality objectives for groundwater are addressed through the primary MCLs. The Basin Plan specifies that the Hydrologic Unit in which the SBGPP is within includes the following existing or potential

beneficial uses: municipal, agricultural, industrial service supply, and industrial process supply. The narrative water quality objectives establish that “All waters of the region shall be maintained free of substances in concentrations which are toxic, or that produce detrimental physiological responses in human, plant, animal or aquatic life.” The groundwater under the SBGPP has been designated as a beneficial use for a drinking water source pursuant to the drinking water policy of the State Water Resources Control Board (SWRCB); the SBGPP has the potential to impact groundwater that is used as a drinking water source.

2.2.4 SWRCB Resolution No. 92-49

The Policy and Procedures for Investigation and Cleanup and Abatement of Discharges under Water Code §13304 derives its authority to maintain the highest quality of water (SWRCB Resolution No. 68-16) through waste discharge requirements as implemented through the federal NPDES or RWQCB waste management and discharge requirements (27 CCR §20200 et seq.).

SWRCB Resolution No. 92-49, Section III.G requires cleanup to either background water quality, or the best water quality that is reasonable if background cannot be restored. A selected alternative cleanup level greater than chemical background concentration for the aquifer would have to be consistent with maximum benefit to the public and to the present and anticipated future beneficial uses, as well as conform to water quality control plans and policies. Additional detail is located in Table A-1.

3.0 LOCATION-SPECIFIC ARARS

Potential location-specific ARARs are restrictions placed on the chemical contaminant or the remedial activities based on the geographic or ecological features of the SBGPP. Examples of location-specific features include cultural resources, floodplains, seismic faults, wetlands, historic places, and sensitive ecosystems or habitats.

The footprint of the SBGPP does not contain wetlands. No potential federal or state ARARs were identified for wetlands protection and floodplain management.

Any remedial action at the SBGPP would not impact hydrologic resources as defined in the Wild and Scenic Rivers Act or the Rivers and Harbors Act of 1890. Therefore, there are no potential federal or state hydrologic resources ARARs for the SBGPP.

3.1 FEDERAL LOCATION-SPECIFIC ARARS

Federal location-specific ARARs are discussed below.

3.1.1 National Historic Preservation Act (16 U.S.C. §470 et seq.)

The requirements of the National Historic Preservation Act are applicable to the SBGPP if the remedy impacts any historic site protected under the act. This requirement may be identified as an ARAR, and further evaluation of this ARAR may be necessary.

3.1.2 Historic Sites, Buildings, and Antiquities Act

The purpose of the Historic Sites, Buildings, and Antiquities Act (16 U.S.C. § 461–467) and the implementing regulations (40 CFR § 6.301[a]) are to encourage the long-term preservation of nationally significant properties that illustrate or commemorate the history and prehistory of the United States, including historic landmarks (36 CFR § 65) and natural landmarks (36 CFR § 62).

Properties designated as National Historic Landmarks in California are listed in the National Register. Natural landmarks are nationally significant examples of a full range of ecological and geological features that constitute the nation's natural heritage. In conducting an environmental review of a proposed action, the responsible official shall consider the existence and location of natural landmarks using information provided by the National Park Service pursuant to 36 CFR § 62.6(d) to avoid undesirable impacts on such landmarks. These requirements are not substantive and are not potential ARARs. However, if it is determined that areas to be disturbed during the remedial action(s) are potentially eligible for the National Natural Historic Landmark Program, the State Historic Preservation Officer should be contacted. Based on a recent internet search of the National Register, there is no evidence of significant cultural resources.

3.1.3 Archaeological Resources Protection Act Of 1979

Public Law 96-95 (16 U.S.C. § 470aa–470mm) was enacted in 1979 and amended in 1988 and applies to all lands to which the fee title is held by the United States. The purpose of this statute is to provide for the protection of archaeological resources on federal and Indian lands. The act prohibits unauthorized excavation, removal, damage, alteration, or defacement of archaeological resources located on public lands unless such activity is pursuant to a permit issued under Section 470cc.

3.1.4 Endangered Species Act of 1973

The Endangered Species Act (ESA) of 1973 (16 U.S.C. § 1531[a],[h][1][B]) provides a means for conserving various species of fish, wildlife, and plants that are threatened with extinction. The ESA defines an endangered species and provides for the designation of critical habitats. Federal agencies may not jeopardize the continued existence of any listed species or cause the destruction or adverse modification of critical habitat. Federal agencies must carry out conservation programs for listed species. The Endangered Species Committee may grant an exemption for agency action if reasonable mitigation and enhancement measures such as propagation, transplantation, and habitat acquisition and improvement are implemented. Endangered, threatened, or sensitive species may potentially be found within the vicinity of the SBGPP (Table A-4). The ESA is, therefore, a potentially applicable ARAR.

3.2 STATE LOCATION-SPECIFIC ARARS

State location-specific ARARs are discussed below.

3.2.1 Hazardous Waste Seismic Consideration (22 CCR §66264.18.a)

This requirement applies to portions of new hazardous waste facilities where treatment, storage, or disposal of hazardous waste will be conducted. The affected areas must not be located within 61 meters (200 feet) of a fault that has had displacement in Holocene time. Active and non-active faults may be identified within 200 feet of remedial facilities for the SBGPP. This requirement may be identified as an ARAR, and further evaluation of this ARAR for seismic considerations may be necessary.

3.2.2 California Fish and Game Code §3800

This section prohibits the taking of nongame birds, except in accordance with regulations of the commission, or when related to mining operations with a mitigation plan approved by the department. This section further provides requirements concerning mitigation plans related to mining. This section is applicable to the extent that non-game birds or their eggs are located on or near the SBGPP.

3.2.3 California Fish and Game Code §5650

California Fish & Game Code §5650 prohibits the passage of substances or materials into waters of the state deleterious to fish, plant life, or birds. This requirement does not apply to discharges or releases authorized through waste discharge requirements issued by the RWQCB. This Section is not an ARAR because none of the alternatives evaluate unpermitted surface water releases.

4.0 ACTION-SPECIFIC ARARS

Potential action-specific ARARs are usually technology- or activity-based requirements for remedial activities. The action-specific ARARs presented are intended to address the remedial alternatives being evaluated. This ARARs analysis is based on three proposed remedial alternatives.

1. Alternative #1 – No action
2. Alternative #2 – Monitored natural attenuation
3. Alternative #3 – Pump and treat

Detailed descriptions of the remedial alternatives are provided in the Feasibility Study document.

4.1 FEDERAL ACTION-SPECIFIC ARARS

Federal action-specific ARARs are discussed below.

4.1.1 Federal Clean Water Act National Pollutant Discharge Elimination System Clean Water Act §402 et seq.

NPDES requirements are applied to point and non-point discharge sources. Requirements include the establishment of discharge limitations, monitoring requirements, and best management practices (BMPs) for surface water discharges. NPDES requirements are applicable to the control of contaminants to storm water runoff from a treatment plant construction site and groundwater treatment systems.

4.1.2 Storm Water Discharges (40 CFR §122.26)

Non-point sources address using BMPs for control of contaminants to storm water runoff from construction activities. The SWRCB has established requirements for general construction activities, including clearing, grading, excavation, reconstruction, and dredge and fill activities. This section regulates pollutants in storm water discharge from hazardous waste treatment plants, landfills, land application sites, and spent dumps. This requirement may be identified as an ARAR, and further evaluation of this ARAR may be necessary.

4.1.3 Technology Based Treatment Requirements in Permits (40 CFR §125.3)

Point sources are primarily end-of-pipe discharge points such as treated effluent from a groundwater treatment plant. Discharges of treated effluent from a groundwater extraction system, monitor well development and sampling, and treatment system maintenance are the primary sources. The RWQCB will designate effluent limitations and monitoring conditions for discharges to surface water including treated water conveyed to storm drains and ditches. Technology-based treatment requirements represent the minimum level of control that must be imposed to meet the effluent limitations using best professional judgment and be economically achievable. For all toxic pollutants, the Best Available Technology is applied to the site. The requirement is applicable to alternatives evaluating surface water discharge.

4.1.4 General Pretreatment Regulations for Existing and New Sources of Pollution (40 CFR Part 403)

Alternatives that include groundwater disposal at a wastewater treatment facility must meet pretreatment requirements. Effluent discharged to sanitary sewers and Publicly Owned Treatment Works (POTWs) is regulated by municipalities through the discharge permits applicable to the respective POTW. This section prevents pass-through, interference, violations of prohibitions, and violation of local limits. This requirement would be applicable to wastewater (e.g., wash water, brines, etc.) discharge from a treatment plant to a POTW.

In addition, groundwater discharge to a sanitary sewer will need to comply with any requirements set forth by the current POTW owner. Discharges to POTWs are also subject to

pretreatment requirements, which enable the POTWs to comply with their discharge permit limits.

4.2 STATE ACTION-SPECIFIC ARARS

State action-specific ARARs are discussed below.

4.2.1 Water Quality Control Plan

The RWQCB has developed and adopted the regional water quality control plan (Basin Plan) to protect waters of beneficial use fulfilling the legal requirements of the California Water Code. While the water quality objectives (WQOs) vary for the water bodies affected, the objectives may be applicable for discharges to surface water or land.

4.2.2 Water Quality Control Plan for Santa Ana River Basin (adopted January 28, 1995 and subsequent amendments) (California Water Code §13240 et seq.)

The Basin Plan presents numerical and narrative WQOs for maintaining a high quality of protection for the inland surface water and groundwater in the region. Groundwater underlying the SBGPP site has been identified by the Basin Plan as a potential drinking water aquifer. Groundwater and surface water WQOs are provided for contaminants including bacteria, chemicals, radioactivity, minerals, nitrogen, taste, and odor. The groundwater WQOs for the COCs at the SBGPP are based on primary MCLs. Additional WQOs are provided for surface water. The requirement is relevant to alternatives evaluating treated groundwater reinjection to the aquifer and applicable to alternatives evaluating discharge of treated groundwater to surface water.

4.2.3 Porter-Cologne Water Quality Control Act (California Water Code)

The following Porter-Cologne Water Quality Control Act and implementing regulations have been reviewed for applicability.

- **California Water Code §13140 – 13147, 13172, 13260, 13263, 132267, 13304, 27 CCR §20090** – Actions taken by public agencies for cleanup of nonhazardous releases are exempt from 27 CCR Div. 2, Subdiv. 1 provided the contaminated materials removed from the immediate place of release shall be discharged according to 27 CCR Div. 2, Subdiv. 1, Chap. 3, Subchap. 2, Art. 2. Remedial actions intended to contain such wastes at the place of release shall implement applicable SWRCB-promulgated provisions of this division to the extent feasible. These requirements may be applicable to a containment remedy.
- **California Water Code §13140 – 13147, 13172, 13260, 13263, 132267, 13304, 27 CCR Div. 2, Subdiv. 1, Chap. 3, Subchap. 2, Art. 2** – Wastes classified as a threat to water quality (designated waste) may be discharged to a Class I hazardous waste or Class II designated waste management unit. Nonhazardous solid waste may be discharged to a Class I, II, or III waste management unit. Inert waste is not required to be discharged into a SWRCB-classified waste management unit (27 CCR §20200 et seq.). The requirement is relevant because investigation-derived waste may be generated and would be disposed at an appropriate off-site waste management unit.

4.2.4 Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California.

Policy for implementing criteria for priority toxic pollutants contained in the California Toxics Rule promulgated by US EPA, as well as other priority toxic pollutant criteria and objectives. Criteria are implemented through the NPDES permit process. This section is applicable to discharges of treated groundwater to surface water.

4.2.5 Concentration Limits (27 CCR §20400)

Concentration limits must be established for groundwater, surface water, and the unsaturated zone. The limits must be based on background, equal to background, or for corrective actions, may be greater than background, not to exceed the lower of the applicable water quality objective or the concentration technologically or economically achievable. Specific factors must be considered in setting cleanup standards above background levels. The specific factors have been addressed in SWRCB Resolution No. 92-49. These requirements are relevant and appropriate.

4.2.6 Compliance Period (27 CCR §20410)

Requires monitoring for compliance with remedial action objectives for a specified number of years from the date of achieving cleanup standards. These requirements are relevant and appropriate.

4.2.7 General Water Quality Monitoring and Systems Requirements (27 CCR §20415)

Requires general soil, surface water, and groundwater monitoring. Applies to all areas at which waste is discharged to land. These requirements are applicable.

4.2.8 Maintaining High Quality Water in California (SWRCB Resolution No. 68-16 and California Water Code §13140)

SWRCB Resolution No. 68-16 requires maintenance of existing state water quality using best practicable treatment technology unless a demonstrated change will benefit the people of California, will not unreasonably affect present or potential uses, and will not result in water quality less than that prescribed in other state policies. The policy derives its authority to maintain the highest quality of water through waste discharge regulations to surface water and land implemented through the federal NPDES (anti-degradation policy, 40 CFR §131.12) and California's Discharges of Waste to Land (27 CCR Division 2, Chapter 3), respectively.

These codes apply to the discharge of waste to waters, including alternatives that include reinjection into the aquifer and discharges that may affect surface water or groundwater. In situ cleanup levels for contaminated groundwater must be set at background level, unless otherwise allowed. If degradation of waters is allowed to remain, the discharge must meet best practical treatment or control standards; and result in the highest water quality possible that is consistent with the maximum benefit to the people of the state. WQOs may not be exceeded in any case. These requirements are applicable.

4.2.9 California Hazardous Waste Laws

On July 26, 1982, the federal Resource Conservation and Recovery Act (RCRA) requirements were promulgated. California received US EPA authorization to administer and implement a state hazardous waste management program that is more stringent than the federal RCRA program. Authorization to enforce the federal requirements is received only after the RCRA requirements are incorporated into California's hazardous waste regulations. Those portions of the RCRA program presented in this report have received authorization by US EPA and have been incorporated into California regulations. The California Hazardous Waste Control Law, Chapter 6.5 of Division 20 of the California H&SCs, and the regulations of Title 22 CCR are therefore referenced in this report in lieu of federal RCRA provisions.

The two methods for characterizing hazardous waste are (1) RCRA-listed (i.e., source and non-source specific) and (2) by characteristics (i.e., ignitability, corrosivity, reactivity, and toxicity). For CERCLA actions that involve treatment, storage, or disposal of hazardous waste after July 26, 1982, the hazardous waste standards are generally applicable. If federal hazardous waste was treated, stored, or disposed at the SBGPP site before the effective date of these standards, the standards would be relevant and appropriate (US EPA, 1988).

Considering the time frame of former SBGPP facility operations, contaminants, and characteristics, there is sufficient information to classify the COCs in the groundwater as characteristic hazardous waste. The specific hazardous waste requirements that may be relevant and appropriate (i.e., an ARAR) to the site are discussed in the comprehensive tabular summary of ARARs (Table A-1).

4.2.10 SWRCB Resolution No. 88-63

SWRCB resolution “Sources of Drinking Water” designates, with certain exceptions, all groundwater and surface waters in the state as municipal or domestic water supply sources. This resolution is also incorporated into the Basin Plan. Because SWRCB Resolutions No. 68-16 and 92-49 focus on the protection of groundwater for beneficial uses, the definition of drinking water sources is an important consideration for this site.

For groundwater below the SBGPP site, an aquifer would be considered suitable or potentially suitable as a municipal or domestic water supply with the exception of water sources that exhibit the following characteristics:

- Yield water with the total dissolved solids exceeding 3,000 milligrams per liter;
- Contain natural or anthropogenic contaminated water that cannot be reasonably treated for domestic use using either BMPs or best economically achievable treatment practices; and
- Are not capable of sustaining 200 gallons per day through a single well.

These exceptions are not satisfied for the groundwater at the SBGPP. The groundwater located beneath the site is not known to discharge to surface water. It is an aquifer with potential for contaminants to migrate to aquifers used for municipal and domestic drinking water supply. Therefore, SWRCB Resolution No. 88-63 is applicable (i.e., an ARAR) to the site; and the aquifer will be treated as a potential source of drinking water for protection under SWRCB Resolutions No. 68-16 and 92-49.

4.2.11 Remediation of Pollution: State Board Resolution No. 68-16; State Board Resolution No. 92-49; California Code of Regulations, Title 23, Chapter 15, Article 5

The “Statement of Policy with Respect to Maintaining High Quality of Waters in California” (Resolution 68-16) is the state’s anti-degradation policy, which provides a narrative standard requiring that high-quality surface water and groundwater be maintained to the maximum extent possible.

Any waste discharge to existing high-quality waters will be required to meet waste discharge requirements that will result in best practical treatment technology, ensuring that a pollution or nuisance will not occur and that the highest water quality consistent with maximum benefit to the people of the state will be maintained. Determination is made through a two-step process to determine (1) whether further degradation may be allowed and (2) the discharge level that will result in the best practicable treatment or control of the discharge.

Resolution No. 68-16 is an action-specific ARAR applicable to remedial alternatives that include surface water discharges, ponding basins, or groundwater reinjection, and to treatment technologies with active discharges to surface water or groundwater. Anti-degradation requirements apply prospectively to prevent further degradation of the water during and at completion of the cleanup action (US EPA, 1990). Groundwater treatment system effluent will be monitored to ensure that surface and groundwater quality will be maintained to the maximum extent possible.

Groundwater reinjection or surface water discharge are potential options for the disposal of treated groundwater at the SBGPP. Groundwater reinjection and/or surface water discharges would comply with RWQCB Waste Discharge Requirements and/or NPDES permits, respectively.

4.2.12 Water Quality Monitoring and Response Programs for Solid Waste Management Units (27 CCR §20385 et seq.)

The monitoring requirements apply to all determinations of alternative cleanup levels for unpermitted discharges to land of solid waste, pursuant to SWRCB Resolution No. 92-49, Section III. The provisions of the “Detection, Evaluation, and Corrective Action” monitoring requirements were developed for the purposes of detecting, characterizing, and responding to releases to groundwater, surface water, or the unsaturated vadose zone. Because the SBGPP site has not yet completed the Remedial Investigation/Feasibility Study phase, the detection and characterization monitoring requirements are relevant to the SBGPP. However, corrective action monitoring to demonstrate completion of the selected interim remedy for groundwater

treatment at SBGPP would be relevant and appropriate (i.e., an ARAR) and is further discussed in Corrective Action Program (27 CCR §20430).

4.2.13 Corrective Action Program (27 CCR §20430)

Corrective action measures taken (e.g., groundwater pump-and-treat system) may be terminated when the discharger demonstrates that all the COC concentrations have been reduced to levels below their respective concentration limits throughout the entire zone affected by the release. Completion of the corrective action for the treatment system(s) is demonstrated using the following criteria and requirements:

- The concentration of each COC in each sample from each monitoring point in the Corrective Action Program for the unit must have remained at or below its respective concentration limit during a proof period of at least 1 year, beginning immediately after the suspension of corrective action measures.
- The individual sampling events for each monitoring point must have been evenly distributed throughout the proof period and have consisted of no less than eight sampling events per year per monitoring point.

The schedule to demonstrate compliance for corrective action appears relevant and appropriate (i.e., an ARAR).

4.2.14 South Coast Air Quality Management District Rules and Regulations

In California, the authority for enforcing the standards established under the Clean Air Act has been delegated to the state. To implement the federal Clean Air Act, states are required to submit and adopt a state implementation plan (SIP) for US EPA approval. The SIP addresses implementation, maintenance, and enforcement of the national and California ambient air quality standards (AAQs). A significant component of the SIP is the inclusion of local air pollution district regulations and rules, which are used to control emissions and attain these AAQs. Federal approval resulted in the SIP being federally enforceable and considered a potential ARAR for the SBGPP response actions. Accordingly, the South Coast Air Quality Management

District (SCAQMD) rules and regulations addressed in this SIP establish the local air pollution control requirements for Los Angeles, Orange, and portions of Riverside and San Bernardino counties, including the following:

- **Regulation IV, Rule 401, Visible Emissions** – Discharge of any contaminant into the atmosphere from any single source of emission shall not be as dark or darker than shade No. 1 on the Ringelmann Chart or of such opacity that may obscure an observer's view to a degree equal to or greater than shade No. 1 on the Ringelmann Chart. This rule is a potential ARAR.
- **Regulation IV, Rule 402, Nuisance** – Discharge from any source shall not contain air contaminants or other material, which causes injury, detriment, nuisance, or annoyance to any considerable number of persons, or to the public. Discharge shall also not endanger the comfort, repose, health, or safety of any such persons or the public, or cause injury or damage to business or property. This rule is a potential ARAR.
- **Regulation IV, Rule 403, Fugitive Dust** – The intention of Rule 403 is to reduce, prevent, or mitigate emission of fugitive dusts from any activity or man-made condition capable of generating fugitive dust. Emissions of fugitive dust shall not remain visible in the atmosphere beyond the property line of the emission source. Activities conducted in the South Coast Air Basin shall use best available control measures to minimize fugitive dust emissions and take necessary steps to prevent the track-out of bulk material onto public paved roadways as a result of their operations. This rule is a potential ARAR.
- **Regulation IV, Rule 404, Particulate Matter Concentration** – Particulate matter in excess of the concentration standard shall not be discharged from any source. Particulate matter in excess of 450 milligrams per cubic meter (0.196 grain per cubic foot) in discharged gas, calculated as dry gas at standard conditions, shall not be discharged to the atmosphere from any source. Emissions shall be averaged over one complete cycle of operation or 1 hour, whichever is the lesser time. This rule is a potential ARAR.

- **Regulation IV, Rule 405, Solid Particulate Matter-Weight** – Solid particulate matter discharged into the atmosphere from any source shall not exceed the rates provided in Table 405(a) of this Rule. Emissions shall be averaged over one complete cycle of operation or 1 hour, whichever is the lesser time period. This rule is a potential ARAR.
- **Regulation XIII, Rule 1303, Best Available Control Technology** – Any new or modified source of air contaminant that results in an emission increase of any nonattainment air contaminant, ozone-depleting compounds, or ammonia shall apply the best available control technology (BACT) using the published SCAQMD BACT Guidelines. This rule is a potential ARAR.
- **Regulation XIV, Rule 1401, New Source of Toxic Air Contaminants** – The rule specifies limits for maximum individual cancer risks, cancer burden, and non-cancer acute and chronic health from new or existing sources that emit toxic air contaminants. Sources constructed with Best Available Control Technology for Toxics (T-BACT) should not exceed a cumulative carcinogenic increase greater than 10 in 1 million (1.0E-05) at any receptor location or one in a million (1.0E-06) for sources constructed without T-BACT. Additionally, the cumulative increase for the chronic health should not exceed 1.0 at any receptor location for any target organ system due to total emissions from the source. This rule is a potential ARAR.

4.3 TO-BE-CONSIDERED CRITERIA

The TBC category consists of advisories, criteria, or guidance that were developed by US EPA, other federal agencies, or states that may be useful in developing CERCLA remedies. The following paragraphs describe TBCs identified as potentially useful to the development and evaluation of remedial alternatives for the SBGPP. The TBCs are summarized in Table A-2.

4.4 CALIFORNIA NOTIFICATION LEVELS

California Notification Levels (NLs) are health-based advisory levels established by the California Department of Public Health (CDPH) for contaminants that lack primary MCLs. NLs are advisory levels, not enforceable standards. A NL is the concentration of a contaminant in

drinking water that is considered not to pose a significant health risk to people ingesting that water on a daily basis. It is calculated using standard risk assessment methods for non-cancer and cancer endpoints and typical exposure assumptions, including a 2-liter-per-day ingestion rate, a 70-kilogram adult body weight, and a 70-year lifetime.

4.5 1,4-DIOXANE

For 1,4-dioxane, a chemical considered a possible carcinogen and a COC at the SBGPP, the CDPH NL is 1 microgram per liter. This concentration is a level considered to pose a “de minimis” risk (i.e., a theoretical lifetime increase in risk of up to one excess case of cancer in a population of 1,000,000 people—the 1×10^{-6} risk level).

4.6 CALIFORNIA WELL STANDARDS BULLETIN 74-81; 74-90

Substantive standards for the construction of wells have been published by the State of California. California Well Standards Bulletin 74-81 includes municipal and injection well standards. California Well Standards Bulletin 74-90 amends Bulletin 74-81 and includes monitor well standards. While these standards have not been promulgated and, therefore, are not ARARs, any extraction wells and/or injection wells installed as part of the remedy at the SBGPP will comply with water well construction standards of Bulletin 74-81 and amendments contained in Bulletin 74-90. These standards include annular sealing material and construction, well casing specification, and disinfection procedures. However, extraction and injection well siting requirements are inappropriate for the SBGPP because the effectiveness of the remedy is dependent upon well locations. These California well standards are TBCs for the SBGPP.

5.0 REFERENCES

CH2M Hill, Inc., 2010. Final Feasibility Study Report, Omega Chemical Corporation Superfund Site. EPA Contract No. EP-S9-08-03. August 2010.

United States Environmental Protection Agency (US EPA), 1988. Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA. U.S. EPA Office of Emergency and Remedial Response, Washington D.C. EPA/540/G-89/004. October 1988.

_____, 1990. National Oil and Hazardous Substances Pollution Contingency Plan, Final Rule. Federal Register, 8670-8852. March 8, 1990.

_____, 1997. Memorandum Re: Clarification of the Role of Applicable, or Relevant and Appropriate Requirements in Establishing Preliminary Remediation Goals under CERCLA. OSWER No. 9200.4-23. August, 1997.

**TABLE A-1
POTENTIAL APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
SOUTH BASIN GROUNDWATER PROTECTION PROJECT
ORANGE COUNTY, CALIFORNIA**

Requirements	Description	Applicable or Relevant and Appropriate
CHEMICAL-SPECIFIC ARARs		
Federal Primary Drinking Water Standards, 40 CFR Part 141	Federal primary MCLs under the Safe Drinking Water Act protect the public from contaminants that may be found in drinking water. The MCLs are only applicable “at the tap” for drinking water provided to 25 or more people or water systems with 15 or more service connections. Because the groundwater underlying the site has been identified as a potential source of drinking water, the requirements are relevant and appropriate to the aquifer underlying the SBGPP site.	Relevant and appropriate
California Toxics Rule	Establishes water quality criteria for surface water and is typically implemented through NPDES permits.	Applicable to Surface Water Discharge
California Primary Drinking Water Standards, Health and Safety Code (H&S Code) §4010 <i>et seq.</i> , 22 CCR §64431 and 64444	California primary MCLs are established to protect public health from contaminants “at the tap” that may be found in drinking water sources. The California MCLs established for the primary contaminants are at least as stringent as the federal standard. The MCLs would be relevant and appropriate to the aquifer underlying the SBGPP site.	Relevant and appropriate
Secondary Drinking Water Standards 22 CCR §64471	Secondary MCLs are applicable to public water system and establish aesthetic characteristics “at the tap” (that is, taste, odors, or appearance) of drinking water.	Potentially Relevant and appropriate
Water Quality Control Plan for Santa Ana River Basin (adopted 01/24/95) California Water Code §13240 <i>et seq.</i>	Establishes beneficial uses of ground and surface waters; establishes water quality objectives, including narrative and numerical standards; establishes implementation plans to meet WQOs and protect beneficial uses, and incorporates statewide water quality control plans and policies. The WQOs for groundwater are based on the primary MCLs. The Santa Ana River Basin Plan designates the beneficial uses of groundwater in the Los Angeles coastal plain to be municipal and domestic, agricultural, industrial service, and industrial process supplies. Any activity that may affect water quality must not result in the water quality exceeding the WQOs.	Relevant and appropriate
SWRCB Resolution No. 92- 49 Policy and Procedures for Investigation and Cleanup and Abatement of Discharges under Water Code Section 13304 (amended 4/21/94), California Water Code §13307 23 CCR §2550.4	Establishes policies and procedures for oversight of investigations and cleanup and abatement activities resulting from discharges of waste that affect or threaten water quality. Section III requires cleanup to attainment of either background water quality or the best water quality that is reasonable if background water quality cannot be restored. Alternative cleanup levels greater than chemical background concentration for the aquifer will be consistent with maximum benefit to the public, present and anticipated future beneficial uses, and conform to water quality control plans and policies.	Relevant and appropriate

**TABLE A-1
POTENTIAL APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
SOUTH BASIN GROUNDWATER PROTECTION PROJECT
ORANGE COUNTY, CALIFORNIA**

Requirements	Description	Applicable or Relevant and Appropriate
LOCATION-SPECIFIC ARARs		
National Historic Preservation Act 16 U.S.C. §470 et seq., 36 CFR §60.4	The requirements establish a National Register and Advisory Council on Historic Preservation. Remedial activities that would affect a property on or eligible for the National Register are required to consult with the Advisory Council and the State Historic Preservation Officer. Surveys that may be required will result in the determination of adverse effects and the development of mitigation reports. Historic sites that would be affected by potential remedial activity at this location may be identified on or adjacent to the site.	To be determined
Endangered Species Act of 1973 16 U.S.C. §1531	Establishes a means for conserving various species of fish, wildlife, and plants that are threatened with extinction. The ESA defines an endangered species and provides for the designation of critical habitats. Federal agencies may not jeopardize the continued existence of any listed species or cause the destruction or adverse modification of critical habitat. Federal agencies must carry out conservation programs for listed species. The Endangered Species Committee may grant an exemption for agency action if reasonable mitigation and enhancement measures such as propagation, transplantation, and habitat acquisition and improvement are implemented. Endangered, threatened, or sensitive species may potentially be found within the vicinity of the SBGPP.	Relevant and appropriate
Fish and Game Code §3800	This section prohibits the taking of nongame birds, except in accordance with regulations of the commission, or when related to mining operations with a mitigation plan approved by the department. This section further provides requirements concerning mitigation plans related to mining. This section is applicable and relevant to the extent that nongame birds or their eggs are located on or near the site.	To be determined
Fish and Game Code §5650	The requirements prohibit the deposition into waters of the state, petroleum products, factory refuse, and any substance deleterious to fish, plants, or birds. This requirement does not apply to discharges or release authorized through waste discharge requirements issued by the RWQCB. This is not an ARAR because none of the alternatives evaluate unpermitted surface water releases.	Not an ARAR
Hazardous Waste Seismic Considerations, 22 CCR §66264.18, 22 CCR §66264.25	Portions of a new hazardous waste facility where treatment, storage, or disposal of hazardous waste will be conducted must not be located within 61 meters (200 feet) of a fault which has had displacement in Holocene time. The site may be located within 61 meters (200 feet) of a fault that has had displacement in Holocene time.	To be determined

**TABLE A-1
POTENTIAL APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
SOUTH BASIN GROUNDWATER PROTECTION PROJECT
ORANGE COUNTY, CALIFORNIA**

Requirements	Description	Applicable or Relevant and Appropriate
ACTION-SPECIFIC ARARs		
Federal Clean Water Act, NPDES, CWA §402 et seq.	The NPDES requirements are applied to point and nonpoint discharge sources. Requirements including the establishment of discharge limitations, monitoring requirements, and BMPs for surface water discharges. Applicable to the control of contaminants to stormwater runoff from a treatment plant construction site and groundwater treatment systems.	Evaluation of the Federal Clean Water Act provided below
Storm Water Discharges 40 CFR §122.26	Nonpoint sources address using BMPs for control of contaminants to stormwater runoff from construction activities. The SWRCB has established requirements for general construction activities, including clearing, grading, excavation reconstruction, and dredge and fill activities. Regulates pollutants in stormwater discharge from hazardous waste treatment plants, landfills, land application sites, and spent dumps.	To be determined
Technology Based Treatment Requirements in Permits 40 CFR §125.3	Point sources are primarily end-of-pipe discharge points such as treated effluent from a groundwater treatment plant. Discharges of treated effluent from a groundwater extraction system, monitor well development and sampling, and treatment system maintenance are the primary sources. The RWQCB will designate effluent limitations and monitoring conditions for discharges to surface water including treated water conveyed to storm drains and ditches. Technology-based treatment requirements represent the minimum level of control that must be imposed to meet the effluent limitations using best professional judgment and be economically achievable. For all toxic pollutants, the BAT is applied to the site. The requirement is applicable to alternatives evaluating surface water discharge.	Applicable to Surface Water Discharge
General Pretreatment Regulations for Existing and New Sources of Pollution 40 CFR §403 et seq.	Alternatives that include groundwater disposal at an offsite wastewater treatment facility must meet pretreatment requirements. Effluent discharged to sanitary sewers and POTWs are regulated by municipalities through the NPDES Program. Prevents pass-through, interference, violations of prohibitions, and violation of local limits. Applicable to treated groundwater discharge from treatment plant to the POTW.	Applicable to POTW Discharge

**TABLE A-1
POTENTIAL APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
SOUTH BASIN GROUNDWATER PROTECTION PROJECT
ORANGE COUNTY, CALIFORNIA**

Requirements	Description	Applicable or Relevant and Appropriate
Water Quality Control Plan	The RWQCB has developed and adopted the regional water quality control plan (Basin Plan) to protect waters of beneficial use fulfilling the legal requirements of the California Water Code. While the WQOs vary for the water bodies affected, the objectives may be applicable for discharges to surface water or land.	Evaluation of the Water Quality Control Plan provided below
Water Quality Control Plan for Santa Ana River Basin (adopted 1/28/95), California Water Code §13240 et seq.	The Basin Plan presents numerical and narrative WQOs for maintaining a high quality of protection for the inland surface water and groundwater in the region. Groundwater underlying the site has been identified by the Basin Plan as a potential drinking water aquifer. Groundwater and surface water WQOs are provided for contaminants including bacteria, chemicals, radioactivity, minerals, nitrogen, taste, and odor. The groundwater WQOs for the COCs at the site are based on primary MCLs. Additional WQOs are provided for surface water. The requirement is relevant to alternatives evaluating treated groundwater reinjection to the aquifer and applicable to alternatives evaluating discharge of treated groundwater to surface water.	Relevant and applicable
Remediation of Pollution, (State Board Resolution No. 68-16; State Board Resolution No. 92-49; California Code of Regulations, Title 23, Chapter 15, Article 5.)	The Basin Plan recognizes the cleanup goals based on the State's Antidegradation Policy as set forth in State Board Resolution No. 68-16. Under the Antidegradation Policy, whenever the existing quality of water is better than that needed to protect present and potential beneficial uses, such existing quality will be maintained. Accordingly, the RWQCB prescribes cleanup goals that are based upon background concentrations. For those cases wherein dischargers have demonstrated that cleanup goals based on background concentrations cannot be attained due to technological and economic limitations, State Board Resolution No. 92-49 sets forth policy for cleanup and abatement based on the protection of beneficial uses. Under this policy, the RWQCB can, on a case-by-case basis, set cleanup levels as close to background as technologically and economically feasible. Such levels must, at a minimum, consider all beneficial uses of the waters. Furthermore, cleanup levels must be established in a manner consistent with CCR, Title 23, Chapter 15, Article 5; cannot result in water quality less than that prescribed in the Basin Plans and policies adopted by the state and regional boards; and must be consistent with maximum benefit to the people of the state.	Relevant and appropriate
Porter-Cologne Water Quality Control Act (California Water Code)	The following Porter-Cologne Water Quality Control Act and implementing regulations are reviewed for application to the site.	Evaluation of the California Water Code provided below

**TABLE A-1
POTENTIAL APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
SOUTH BASIN GROUNDWATER PROTECTION PROJECT
ORANGE COUNTY, CALIFORNIA**

Requirements	Description	Applicable or Relevant and Appropriate
California Water Code §13140 – 13147, 13172, 13260, 13263, 132267, 13304, 27 CCR §20090	Actions taken by public agencies for cleanup of <i>nonhazardous</i> releases are exempt from 27 CCR Div. 2, Subdiv. 1 provided the contaminated materials removed from the immediate place of release shall be discharged according to 27 CCR Div. 2, Subdiv. 1, Chap. 3, Subchap. 2, Art. 2. Remedial actions intended to contain such wastes at the place of release shall implement applicable SWRCB-promulgated provisions of this division to the extent feasible.	To be determined
California Water Code §13140 – 13147, 13172, 13260, 13263, 132267, 13304, 27 CCR Div. 2, Subdiv. 1, Chap. 3, Subchap. 2, Art. 2	Wastes classified as a threat to water quality (designated waste) may be discharged to a Class I hazardous waste or Class II designated waste management unit. Nonhazardous solid waste may be discharged to a Class I, II, or III waste management unit. Inert waste would not be required to be discharged into a SWRCB-classified waste management unit (27 CCR §20200 et seq.).	To be determined
Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California	Policy for implementing criteria for priority toxic pollutants contained in the California Toxics Rule promulgated by EPA as well as other priority toxic pollutant criteria and objectives. Criteria implemented through NPDES permit process. Applicable to discharges of treated groundwater to surface water.	Applicable to Surface Water Discharge
Water Quality Monitoring and Response Programs for Solid Waste Management Units, 27 CCR §20380 et seq.	The monitoring requirements apply to all determinations of alternative cleanup levels for unpermitted discharges to land of solid waste, pursuant to SWRCB Resolution No. 92-49, Section III. The provisions for Detection, Evaluation, and Corrective Action Monitoring requirements were developed for the purposes of detecting, characterizing, and responding to releases to groundwater, surface water, or the unsaturated vadose zone. For this removal, corrective action monitoring to demonstrate completion of the selected remedy at the site would be relevant and appropriate and is further discussed in Corrective Action Program (27 CCR §20430).	Relevant and appropriate
Concentration Limits 27 CCR §20400	Concentration limits must be established for groundwater, surface water, and the unsaturated zone. Must be based on background, equal to background, or for corrective actions, may be greater than background, not to exceed the lower of the applicable water quality objective or the concentration technologically or economically achievable. Specific factors must be considered in setting cleanup standards above background levels. The specific factors have been addressed in SWRCB Resolution No. 92-49.	Relevant and appropriate
Compliance Period 27 CCR §20410	Requires monitoring for compliance with remedial action objectives for years from the date of achieving cleanup standards.	Relevant and appropriate
General Water Quality Monitoring and Systems Requirements, 27 CCR §20415	Requires general soil, surface water, and groundwater monitoring. Applies to all areas at which waste has been discharged to land.	Relevant and appropriate

**TABLE A-1
POTENTIAL APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
SOUTH BASIN GROUNDWATER PROTECTION PROJECT
ORANGE COUNTY, CALIFORNIA**

Requirements	Description	Applicable or Relevant and Appropriate
Evaluation Monitoring Program 27 CCR §20425	Requires an assessment of the nature and extent of the release, including a determination of the spatial distribution and concentration of each constituent. The nature and extent of contamination is still being determined.	To be determined
Corrective Action Program 27 CCR §20430	<p>Corrective action measures taken (for example, groundwater pump-and-treat system) may be terminated when the discharger demonstrates that all the COC concentrations are reduced to levels below their respective concentration limits throughout the entire zone affected by the release.</p> <p>Corrective action completed when:</p> <ul style="list-style-type: none"> * The concentration of each COC in each sample from each monitoring point in the Corrective Action Program for the Unit has remained at or below its respective concentration limit during a proof period of at least one year, beginning immediately after the suspension of corrective action measures. * The individual sampling events for each monitoring point have been evenly distributed throughout the proof period and have consisted of no less than eight sampling events per year per monitoring point. <p>The schedule to confirm attainment of cleanup levels appears relevant and appropriate.</p>	Relevant and appropriate
Water Code §13140 40 CFR §131.12, Maintaining High Quality Water in California, SWRCB Resolution No. 68-16	The policy derives its authority to maintain the highest quality of water through waste discharge regulations to surface water and land implemented through the federal NPDES or California's Discharges of Waste to Land (27 CCR Division 2, Chapter 3), respectively. SWRCB Resolution No. 68-16 requires maintenance of existing state water quality using best practicable treatment technology unless a demonstrated change will benefit the people of California, will not unreasonably affect present or potential uses, and will not result in water quality less than that prescribed in other state policies. Applies to the discharge of waste to waters, including alternatives that include reinjection into the aquifer and discharges to soil that may affect surface water or groundwater. In situ cleanup levels for contaminated groundwaters must be set at background level, unless allowed. If degradation of waters is allowed to remain, the discharge must meet best practical treatment or control standards, and result in the highest water quality possible that is consistent with the maximum benefit to the people of the state. In no case may water quality objectives be exceeded.	Applicable

**TABLE A-1
POTENTIAL APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
SOUTH BASIN GROUNDWATER PROTECTION PROJECT
ORANGE COUNTY, CALIFORNIA**

Requirements	Description	Applicable or Relevant and Appropriate
Sources of Drinking Water SWRCB Resolution No. 88-63	This policy specifies that ground and surface waters of the state are either existing or potential sources of municipal and domestic supply except water supplies with one of the following: a. Total dissolved solids exceeding 3,000 mg/L b. Natural or anthropogenic contamination (unrelated to a specific pollution incident) that cannot reasonably be treated for domestic use using either BMPs or best economically achievable treatment practices, or c. The water source does not provide a sustained yield of 200 gpd. The requirement appears to be applicable because groundwater underlying the site meets the criteria as a potential source for drinking water.	Applicable
Fish & Game Code §3503	This law prohibits taking, possession, or needless destruction of any bird nests and eggs, except as provided by the Fish and Game Code or regulations. Implementation of the final remedy will comply with this requirement.	Applicable
California Hazardous Waste Control Law, H&S Code Div. 20, Chap. 6.5	The California law is more stringent than federal hazardous waste law and is applied to this site. The following hazardous waste requirements are reviewed for application to the site.	Evaluation of the Hazardous Waste Control Law provided below
Identification and Listing of Hazardous Waste, 22 CCR Div. 4.5, Chap. 11 22 CCR §66264.13, 22 CCR §66260.200	A generator must determine if the waste is classified as a hazardous waste in accordance with the criteria provided in these requirements. Waste characteristics of treated soil and groundwater will be defined prior to treatment and disposal. This methodology to characterize waste at the site may result in some of the waste being identified as meeting the characteristics of hazardous waste. Any subsequent hazardous waste requirement would be relevant and appropriate or not an ARAR.	Applicable
Standards Applicable to Generators of Hazardous Waste 22 CCR Div. 4.5, Chap. 12 22 CCR Div. 4.5, Chap. 12	Waste transport offsite for treatment or disposal must obtain and use a hazardous waste manifest and comply with the DOT packaging, labeling, marking, and placarding requirements. Waste may be accumulated onsite for 90 days without a permit. Offsite actions and administrative requirements such as transport, manifesting, permitting, and record keeping are not applicable or relevant because ARARs address onsite activities. The purpose of the 90-day storage limit is to prevent creating a greater environmental hazard than already exists at the site. Waste contained onsite will be maintained in a container in good condition (see Use and Management of Containers) prior to offsite disposal.	Relevant and appropriate
Hazardous Waste Security, 22 CCR §66264.14	Any proposed treatment facility is anticipated to maintain a fence in good repair that completely surrounds the active portion of the facility. A locked gate at the facility should restrict unauthorized personnel entrance. The security standards to prevent entry from unauthorized personnel for the proposed remedial treatment alternatives should be applied.	Relevant and appropriate

**TABLE A-1
POTENTIAL APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
SOUTH BASIN GROUNDWATER PROTECTION PROJECT
ORANGE COUNTY, CALIFORNIA**

Requirements	Description	Applicable or Relevant and Appropriate
Hazardous Waste Facility General Inspection Requirements and Personnel Training, 22 CCR §66264.15 – 66264.16	The hazardous waste facility standards require routine facility inspections conducted by trained hazardous waste facility personnel. Inspections are to be conducted at a frequency to detect malfunctions and deterioration, operator errors, and discharges that may be causing or leading to a hazardous waste release and a threat to human health or the environment. Relevant to the proposed treatment facilities for this site.	Relevant and appropriate
Preparedness and Prevention, 22 CCR Div. 4.5, Chap. 14, Art. 3	Facility design and operation to minimize potential fire, explosion, or unauthorized release of hazardous waste.	Relevant and appropriate
Water Quality Monitoring and Response Systems for Permitted Systems 22 CCR Div. 4.5, Chap. 14, Art. 6	The requirements present the groundwater monitoring system objectives and standards to evaluate the effectiveness of the corrective action program (remedial activities). After completion of the remedial activities and closure of the facility, groundwater monitoring will continue for additional years to ensure attainment of the remedial action objectives. This requirement is similar to 27 CCR §20410. Groundwater monitoring considered for the remedial alternatives.	Relevant and appropriate
Closure and Post-Closure, 22 CCR Div. 4.5, Chap. 14, Art. 7	The closure and post-closure requirements establish standards to minimize maintenance after facility closure to protect human health and the environment. The closure and post-closure requirements may be dependent upon the treatment alternatives. Clean closure of the treatment facility through equipment decontamination and removal of any hazardous waste is anticipated.	Relevant and appropriate
Use and Management of Containers 22 CCR Div. 4.5, Chap. 14, Art. 9	Maintain container and dispose to a Class I hazardous waste disposal facility within 90 days. Storage of investigation-derived waste (soil cuttings and well development) will be generated. Requirements may apply for the storage of contaminated groundwater and sediments trapped by the bag filter during startup operation. The 90-day storage limit is to not create a greater environmental hazard than already exists. Maintaining the containers in good condition at all times and not creating an environmental hazard is relevant and appropriate.	Relevant and appropriate
Tank Systems, 22 CCR Div. 4.5, Chap. 14, Art. 10	Minimum design standards (shell strength, foundation, structural support, pressure controls, and seismic considerations) for tank and ancillary equipment are established. The requirements for minimum shell thickness and pressure controls to prevent collapse or rupture is to not create a greater environmental hazard than already exists. The requirements are relevant and appropriate for the proposed treatment alternatives (22 CCR§ 66264.193).	Relevant and appropriate

**TABLE A-1
POTENTIAL APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
SOUTH BASIN GROUNDWATER PROTECTION PROJECT
ORANGE COUNTY, CALIFORNIA**

Requirements	Description	Applicable or Relevant and Appropriate
Incinerators, 22 CCR Div. 4.5, Chap. 14, Art. 15	Performance standards, operation, operational monitoring, closure requirements for incinerators. Site-related contamination may be hazardous waste; however, not at levels required appropriate for this regulation.	To be determined
Corrective Action for Waste Management Units, 22 CCR Div. 4.5, Chap. 14, Art. 15.5	Establishes placement, consolidation, and treatment of soils and wastes being generated as part of a corrective action under RCRA and will not be considered a new disposal to land as long as the materials are handled in a CAMU.	To be determined
Miscellaneous Units Requirements 22 CCR Div. 4.5, Chap. 14, Art. 16, 22 CCR §66264.601 – 66264.603	Minimum performance standards are established for miscellaneous equipment to protect health and the environment. Treatment of hazardous waste through an air stripper or GAC would qualify as a RCRA miscellaneous unit if the contaminated water constituted a hazardous waste. Therefore, the requirements for miscellaneous units and related closure requirements may be relevant and appropriate for the site.	To be Determined
Land Disposal Restrictions, Schedule for Land Disposal Prohibition and Establishment of Treatment Standards, 22 CCR Div. 4.5, Chap. 18, Art. 2	Provides a list of waste subject to land disposal restrictions. Only relevant if excavated or treatment residual wastes are classified as hazardous waste and disposed or treated ex situ and onsite outside the CAMU-designated area.	To be determined
Land Disposal Restrictions Prohibition on Land Disposal, 22 CCR Div. 4.5, Chap. 18, Art. 3	Provides waste-specific land disposal restrictions for solvent waste, dioxin-containing wastes, and California-Listed waste. Only relevant if excavated or treatment residual wastes are classified as hazardous waste and disposed or treated ex situ and onsite outside the CAMU-designated area.	To be determined
Land Disposal Restrictions Treatment Standards, 22 CCR Div. 4.5, Chap. 18, Art. 4	Provides treatment standards expressed in contaminant concentrations in waste extract, specified technologies, and waste treatment concentrations. Only relevant if excavated wastes are classified as hazardous wastes and disposed or treated ex situ and onsite outside the CAMU-designated area.	To be determined
Land Disposal Restrictions Prohibition on Storage, 22 CCR Div. 4.5, Chap. 18, Art. 5	Provides prohibition on storage of restricted waste. Only relevant if excavated wastes are classified as hazardous wastes and disposed or treated ex situ and onsite outside the CAMU-designated area.	To be determined
Land Disposal Restrictions, Land Disposal Prohibitions – Non-RCRA Wastes, 22 CCR Div. 4.5, Chap. 18, Art. 10	The requirements establish hazardous waste disposal standards through numerical treatment limitations and treatment technologies. Only relevant if excavated wastes are classified as hazardous wastes and disposed or treated ex situ and onsite outside the CAMU-designated area.	To be determined
Land Disposal Restrictions, Treatment Standards – Non-RCRA Waste Categories, 22 CCR Div. 4.5, Chap. 18, Art. 11	The requirements establish hazardous waste disposal standards through numerical treatment limitations and treatment technologies. Only applicable or relevant if excavated wastes are classified as hazardous wastes and disposed or treated ex situ and onsite outside the CAMU-designated area.	To be determined

**TABLE A-1
POTENTIAL APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
SOUTH BASIN GROUNDWATER PROTECTION PROJECT
ORANGE COUNTY, CALIFORNIA**

Requirements	Description	Applicable or Relevant and Appropriate
SCAQMD Rules and Regulations	The SCAQMD regulations are established to achieve and maintain state and federal ambient air quality standards through the federal-approved SIP.	Evaluation of SCAQMD rules and regulations provided below
Regulation IV, Rule 401, Visible Emissions	Prohibitions on gross visible smoke emission exceeding Ringlemann standards, open burning, burn refuse, gross SO _x and PM combustion contaminants, organic solvent emissions, SO _x , NO _x , and PM emissions from generators, circumvention of rules, and storage of organic liquids.	To be determined
Regulation IV, Rule 402, Nuisance	A person shall not discharge from any source whatsoever such quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or that endanger the comfort, repose, health, or safety of any such persons or the public or that cause to have a natural tendency to cause injury or damage to business or property.	To be determined
Regulation IV, Rule 403, Fugitive Dust	Emissions of fugitive dust shall not remain visible in the atmosphere beyond the property line of the emission source. Activities conducted in the South Coast Air Basin shall use best available control measures to minimize fugitive dust emissions and take necessary steps to prevent the trackout of bulk material onto public paved roadways as a result of their operations.	To be determined
Regulation IV, Rule 404, Particulate Matter – Concentration	Particulate matter in excess of the concentration standard conditions shall not be discharged from any source. Particulate matter in excess of 450 mg/m ³ (0.196 grain per cubic foot) in discharged gas, calculated as dry gas at standard conditions, shall not be discharged to the atmosphere from any source.	To be determined
Regulation IV, Rule 405, Solid Particulate Matter – Weight	Solid particulate matter including lead and lead compounds discharged into the atmosphere from any source shall not exceed the rates Table 450(a) of Rule 405. Nor shall solid particulate matter including lead and lead compounds in excess of 0.23 kg (0.5 lb) per 907 kg (2,000 lb) of process weight be discharged to the atmosphere. Emissions shall be averaged over one complete cycle of operation or 1 hour, whichever is the lesser time period.	To be determined
Regulation XIII, Rule 1303 – New Source Review	Construction for any relocation or for any new or modified source that results in an emission increase of any nonattainment air contaminant, any ozone-depleting compound, or ammonia must include BACT for the new or relocated source or for the actual modification to an existing source. This requirement would apply to treatment technologies with potential to emit primary pollutant(s) to the atmosphere.	To be determined

**TABLE A-1
POTENTIAL APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
SOUTH BASIN GROUNDWATER PROTECTION PROJECT
ORANGE COUNTY, CALIFORNIA**

Requirements	Description	Applicable or Relevant and Appropriate
Regulation XIV, Rule 1401, New Source of Toxic Air Contaminants.	Construction or reconstruction of major stationary source emitting hazardous air pollutants shall be constructed with T-BACT and comply with all other applicable requirements.	To be determined
POTW Requirements	Treated effluent discharge to sanitary sewer will need to comply with any requirements set forth by the current POTW owner: Orange County Sanitation District.	To be determined

Acronyms/Abbreviations:

- ARARs = Applicable or Relevant and Appropriate Requirements
- BACT = Best Available Control Technology
- BAT = Best Available Technology
- BMPs = Best management practices
- CAMU = Corrective Action Management Unit
- CCR = California Code of Regulations
- CFR = Code of Federal Regulations
- COCs = Contaminants of concern
- CWA = Clean Water Act
- DOT = Department of Transportation
- EPA = United States Environmental Protection Agency
- ESA = Endangered Species Act
- GAC = Granulated activated carbon
- gpd = Gallons per day
- H&S = Health and safety
- kg = Kilogram
- lb = Pound
- MCLs = Maximum Contaminant Levels
- mg/L = Milligrams per liter
- mg/m3 = Milligram per cubic meter
- NOx = Nitrogen oxides
- NPDES = National Pollutant Discharge Elimination System
- PM = Particulate matter
- POTWs = Publicly Owned Treatment Works
- RCRA = Resource Conservation and Recovery Act
- RWQCB = Regional Water Quality Control Board
- SBGPP = South Basin Groundwater Protection Project
- SCAQMD = South Coast Air Quality Management District
- SIP = State Implementation Plan
- SOx = Sulfur oxides
- SWRCB = State Water Resources Control Board
- T-BACT = Best Available Control Technology for Toxics
- U.S.C. = United States Code
- WQOs = Water quality objectives

**TABLE A-2
TO-BE-CONSIDERED DOCUMENTS
SOUTH BASIN GROUNDWATER PROTECTION PROJECT
ORANGE COUNTY, CALIFORNIA**

Requirements	Description	Applicable or Relevant and Appropriate
The Designated Level Methodology for Waste Classification and Cleanup Level Determination	Provides guidance on how to classify wastes to meet SWRCB hazardous waste management requirements (23 CCR Div. 3, Chap. 15, Art. 2) and designated, nonhazardous, and inert waste management requirements (27 CCR Div. 2, Subdiv. 1, Chap. 3, Subchap. 2, Art. 2). Not considered as usually used to evaluate control of contaminants in the vadose zone.	Not Considered
California NLS	NLS are health-based advisory levels established by the California Department of Health Services for contaminants that lack primary MCLs. NLS are advisory levels and not enforceable standards. A NL is the level of a contaminant in drinking water that is considered not to pose a significant health risk to people ingesting that water on a daily basis. It is calculated using standard risk assessment methods for noncancer and cancer endpoints, and typical exposure assumptions, including a 2-liter-per-day ingestion rate, a 70-kilogram adult body weight, and a 70-year lifetime. For 1,4-dioxane, a chemical considered a probable carcinogen and a COC at the Site, the NL is generally a level considered to pose “de minimis” risk (that is, a theoretical lifetime increase in risk of up to one excess case of cancer in a population of 1,000,000 people—the 10E-6 risk level).	TBC
California Well Standards California Department of Water Resources Bulletin 74-90	This is a supplement to Bulletin 74-81 (domestic water well standards) that addresses minimum specifications for monitor wells, extractions wells, injection wells, and exploratory borings. Design and construction specifications are considered for construction and destruction of wells and borings.	TBC
California Department of Public Health Policy Guidance for Direct Domestic Use of Extremely Impaired Sources (Policy 97-005)	This policy establishes a process, including permitting, that must be followed before using an extremely impaired water source as a drinking water supply. This policy is not a promulgated requirement and would be included as a TBC for drinking water end use to the extent this is considered.	TBC

Acronyms/Abbreviations:

- CCR = California Code of Regulations
- COC = Contaminant of concern
- MCLs = Maximum Contaminant Levels
- NLS = Notification Levels
- SWRCB = State Water Resources Control Board
- TBC = To-be-considered

**TABLE A-3
SUMMARY OF PRELIMINARY CONTAMINANTS OF CONCERN¹
SOUTH BASIN GROUNDWATER PROTECTION PROJECT
ORANGE COUNTY, CALIFORNIA**

Analyte	Range of Detected Concentrations	FEDERAL		CALIFORNIA				NUMBER OF LOCATIONS EXCEEDING STANDARD	BASIS OF STANDARD
		MCL	MCLG	MCL**	NL	PHG**	Date of PHG		
Chlorinated Volatile Organics (µg/L)									
1,1-Dichloroethane	TBD	5	Zero	5		3	2003	TBD	Federal MCL
1,1-Dichloroethene	TBD	7	7	6		10	1999	TBD	California MCL
1,2-Dichloroethane	TBD	5	Zero	0.5		0.4	1999 (rev 2005)	TBD	California MCL
Freon-11	TBD	---	---	150		1300	2014	TBD	California MCL
Freon-113	TBD	---	---	1200		4000	1997 (rev 2011)	TBD	California MCL
Freon-123	TBD	---	---	---		---		TBD	
Tetrachloroethene	TBD	5	Zero	5		0.06	2001	TBD	Federal MCL
Trichloroethene	TBD	5	Zero	5		1.7	2009	TBD	Federal MCL
Vinyl chloride	TBD	2	Zero	0.5		0.05	2000	TBD	California MCL
Emergents (µg/L)									
1,4-Dioxane	TBD	---	---	---	1	---	---	TBD	California Notification Level
Chromium, Hexavalent	TBD	100 ^a	100 ^a	50 ^a		0.02	2011	TBD	California MCL ^a
Perchlorate	TBD	---	---	6		1	2015	TBD	California MCL

Notes:

- ¹ Preliminary contaminants of concern based on Preliminary Remedial Investigation Report (Aquilogic, 2015)
- ** Data retrieved from:
State Water Resources Control Board Division of Drinking Water data file "MCLs, DLRs, and PHGs for Regulated Drinking Water Contaminants" (Dated September 29, 2016)
State Water Resources Control Board Division of Drinking Water data file "Drinking Water Notification Levels and Response Levels: An Overview" (Dated February 4, 2015)
- ^a Hexavalent chromium based on total chromium standards as California deleted the hexavalent chromium MCL from the California Code of Regulations

Acronyms/Abbreviations:

- MCL = Maximum Contaminant Levels
- MCLG = Maximum Contaminant Level Goal
- µg/L = microgram per liter
- = not available
- PHG = Public Health Goal
- TBD = to be determined
- NL= Notification Level

**TABLE A-4
ENDANGERED SPECIES
SOUTH BASIN GROUNDWATER PROTECTION PROJECT
ORANGE COUNTY, CALIFORNIA**

Name ^a	Possible Habitat within Project Boundaries	Listing Status ^b	General Information
California Least Tern	Southeast of Project Site	Endangered	Long, narrow wings and a broad, forked tail identify the California least tern. Also have black-capped head and black-tipped, pale gray wings of the least tern in contrast with its white body. It bears a white blaze across its forehead, dark forewings, black-tipped yellow bill, and yellowish feet. Is less than 25 cm when full grown and has 75 cm wingspan.
Light-Footed Clapper Rail	Southeast of Project Site	Endangered	The light-footed clapper rail is a hen-sized marsh bird that is long-legged, long-toed, and approximately 14 in long. It has a slightly down-curved beak and a short, upturned tail. Males and females are identical in plumage. Their cinnamon breast contrasts with the streaked plumage of its grayish brown back and gray and white barred flanks.
Least Bell's Vireo	North, East, and South of Project Site	Endangered	Least Bell's vireos are small birds. They are only 11.5-12.5 cm long. (Approximately 4.5 to 5.0 in.) They have short rounded wings and short, straight bills. There is a faint white eye ring. Feathers are mostly gray above and pale below.
Western Snowy Plover	Entire Project Site	Threatened	Small shorebird distinguished from other Plovers (family Charadriidae) by its small size, pale brown upper parts, dark patches on either side of the upper breast, and dark gray to blackish legs. Snowy Plovers weigh between 1.2 and 2 ounces. They are about 5.9 to 6.6 in long.
Coastal California Gnatcatcher	East and South of Project Site	Threatened	The coastal California gnatcatcher is a small blue-gray songbird which measures only 4.5 in (11 cm) and weighs 0.2 ounces (6 grams). It has dark blue-gray feathers on its back and grayish-white feathers on its underside. The wings have a brownish wash to them. Its long tail is mostly black with white outer tail feathers. They have a thin, small bill.
Southwestern Willow Flycatcher	Entire Project Site	Endangered	Small; usually a little less than 6 in in length, including tail. Conspicuous light-colored wing bars. Lacks the conspicuous pale eye-ring of many similar Empidonax species. Overall, body brownish-olive to gray-green above. Throat whitish, breast pale olive, and belly yellowish. Bill relatively large; lower mandible completely pale. Best identified by vocalizations. Call a liquid, sharply whistled whit! or a dry sprit; song a sneezy witch-pew or fitz-bew.

Notes:

- ^a Data retrieved from U.S. Fish & Wildlife Service Environmental Conservation Online System Registrar.
- ^b Endangered, threatened, or sensitive species that may potentially be found within the vicinity of SBGPP.

Acronyms/Abbreviations:

- cm = Centimeter
- in = Inches
- SBGPP = South Basin Groundwater Protection Project