

APPENDIX A
ARARs Evaluation

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ACRONYMS/ABBREVIATIONS

AM	action memorandum
app.	appendix
ARAR	applicable or relevant and appropriate requirement
BAAQMD	Bay Area Air Quality Management District
BCT	best control technology
bgs	below ground surface
BMP	best management practice
BRAC	Base Realignment and Closure
CAA	Clean Air Act
Cal. Civ. Code	<i>California Civil Code</i>
Cal. Code Regs.	<i>California Code of Regulations</i>
Cal/EPA	California Environmental Protection Agency
Cal. Fish & Game Code	<i>California Fish and Game Code</i>
Cal. Health & Safety Code	<i>California Health and Safety Code</i>
Cal. Water Code	<i>California Water Code</i>
CCC	California Coastal Commission
CDFG	California Department of Fish & Game
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
C.F.R.	<i>Code of Federal Regulations</i>
ch.	chapter
COC	chemical of concern
CWA	Clean Water Act
div.	division
DoDHF	Department of Defense Housing Facility
DOI	(United States) Department of the Interior
DON	Department of the Navy
DTSC	(Cal/EPA) Department of Toxic Substances Control
EE/CA	Engineering Evaluation/Cost Analysis
EP	extraction procedure
Fed. Reg.	<i>Federal Register</i>
IC	Institutional Control
LDR	land disposal restriction
µg	microgram
µg/L	micrograms per liter
MACT	Maximum Achievable Control Technology

Acronyms/Abbreviations

MBTA	Migratory Bird Treaty Act
MCL	maximum contaminant level
MCLG	maximum contaminant level goal
mg/L	milligrams per liter
NAAQS	National Ambient Air Quality Standards
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NG	nitroglycerine
NHPA	National Historic Preservation Act
NRC	National Regulatory Commission
NRWQC	National Recommended Water Quality Criteria
NTCRA	non-time critical removal action
NUSD	Novato Unified School District
Porter Cologne Act	Porter-Cologne Water Quality Control Act
RAO	remedial action objective
RBSL	risk based screening level
RCRA	Resource Conservation and Recovery Act
Res.	Resolution
RWQCB	(California) Regional Water Quality Control Board
§	section
SARA	Superfund Amendments and Reauthorization Act
SCAQMD	South Coast Air Quality Management District
SDWA	Safe Drinking Water Act
SIP	State Implementation Plan
STLC	soluble threshold limit concentration
subdiv.	subdivision
SVE	soil vapor extraction
SWDA	Solid Waste Disposal Act
SWRCB	(California) State Water Resource Control Board
TAC	toxic air contaminant
TBC	to be considered
TCLP	toxicity characteristic leaching procedure
TDS	total dissolved solids
tit.	title
TSCA	Toxic Substances Control Act
TTLC	total threshold limit concentration
UMTRCA	Uranium Mill Tailings Radiation Control Act
USACE	United States Army Corps of Engineers
U.S.C.	<i>United States Code</i>
U.S. EPA	United States Environmental Protection Agency

VOC	volatile organic compound
WDR	waste discharge requirement
WET	Waste Extraction Test
WQCP	Water Quality Control Plan
WQO	water quality objective

Section A1

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 and sets forth the Department of the Navy (DON) determinations regarding those potential ARARs for each response action alternative retained for detailed analysis in this Engineering Evaluation/Cost Analysis (EE/CA) for the non-time critical removal action (NTCRA) planned in the Building 965 Area at Parcel 1A of the Department of Defense Housing Facility (DoDHF) Novato in Novato, California.

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 (no longer “potential” ARARs) will be made by the DON in the action memorandum (AM), after public review, as part of the response action selection process.

A1.1 SUMMARY OF CERCLA AND NCP REQUIREMENTS

Section 121(d) of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 United States Code [U.S.C.] § 9621[d]), as amended, states that remedial actions at CERCLA sites must attain (or the decision document must justify the waiver of) any federal or more stringent state environmental standards, requirements, criteria, or limitations determined to be legally applicable or relevant and appropriate. Although Section 121 of CERCLA does not itself expressly require that CERCLA removal actions comply with ARARs, the United States Environmental Protection Agency (U.S. EPA) has promulgated a requirement in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) mandating that CERCLA removal actions “. . . shall, to the extent practicable considering the exigencies of the situation, attain applicable or relevant and appropriate requirements under federal environmental or state environmental or facility siting laws” (Title 40 *Code of Federal Regulations* [40 C.F.R.] § 300.415[j]). It is DON policy to follow this requirement. Certain specified waivers may be used for removal actions, as is the case with remedial actions.

Applicable requirements are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that specifically address circumstances at a CERCLA site. The requirement is applicable if the jurisdictional prerequisites of the standard show a direct correspondence when objectively compared to the conditions at the site. An applicable federal requirement is an ARAR. An applicable state requirement is an ARAR only if it is more stringent than federal ARARs.

If the requirement is not legally applicable, then the requirement is evaluated to determine whether it is relevant and appropriate. Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that, while not applicable, address problems or situations similar to the circumstances of the proposed removal action and are well suited to the conditions of the site (U.S. EPA 1988a). A requirement must be determined to be both relevant *and* appropriate to be considered an ARAR.

The criteria for determining relevance and appropriateness are listed in 40 C.F.R. § 300.400(g)(2) and include the following:

- the purpose of both the requirement and 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 response 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 proposed in the CERCLA action
- any consideration of use or potential use of affected resources in the requirement and the use or potential use of the affected resources at the CERCLA site

According to CERCLA ARARs guidance (U.S. EPA 1988a), a requirement may be “applicable” or “relevant and appropriate,” but not both. ARARs must be identified on a site-specific basis and involve a two-part analysis: first, a determination whether a given requirement is applicable; then, if it is not applicable, a determination whether it is both relevant and appropriate. It is important to explain that some regulations may be applicable or, if not applicable, may still be relevant and appropriate. When the analysis determines that a requirement is both relevant and appropriate, such a requirement must be complied with to the same degree as if it were applicable (U.S. EPA 1988a).

Tables included in this appendix present each potential ARAR with an initial determination of ARAR status (i.e., applicable, relevant and appropriate, or not an ARAR). For the determination of relevance and appropriateness, the pertinent criteria were examined to determine whether the requirements addressed problems or situations sufficiently similar to the circumstances of the release or response action contemplated, and whether the requirement was well suited to the site. A negative determination of relevance and appropriateness indicates that the requirement did not meet the pertinent criteria. Negative determinations are documented in the tables of this appendix and are discussed in the text only for specific cases.

To qualify as a state ARAR under CERCLA and the NCP, a state requirement must be:

- a state law or regulation,
- an environmental or facility siting law or regulation,
- promulgated (of general applicability and legally enforceable),
- substantive (not procedural or administrative),
- more stringent than federal requirements,

- identified in a timely manner, and
- consistently applied.

To constitute an ARAR, a requirement must be substantive. Therefore, only the substantive provisions of requirements identified as ARARs in this analysis are considered to be ARARs. Permits are considered to be procedural or administrative requirements. Provisions of generally relevant federal and state statutes and regulations that were determined to be procedural or nonenvironmental, including permit requirements, are not considered to be ARARs. CERCLA Section 121(e)(1), 42 U.S.C. § 9621(e)(1), states, “No Federal, State, or local permit shall be required for the portion of any removal or remedial action conducted entirely on-site, where such remedial action is selected and carried out in compliance with this section.” The term *on-site* is defined for purposes of this ARARs discussion as “the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response action” (40 C.F.R. § 300.5).

Nonpromulgated 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 “to be considered” (TBC). TBC requirements (40 C.F.R. § 300.400[g][3]) complement ARARs but do not override them. They are useful for guiding decisions regarding cleanup levels or methodologies when regulatory standards are not available.

Pursuant to U.S. EPA guidance (U.S. EPA 1988a), ARARs are generally divided into three categories: chemical-, location-, and action-specific requirements. This classification was developed to aid in the identification of ARARs; some ARARs do not fall precisely into one group or another. ARARs are identified on a site-specific basis for remedial actions where CERCLA authority is the basis for cleanup.

As the lead federal agency, the DON has primary responsibility for identifying federal ARARs at the Building 965 Area. Potential federal ARARs that have been identified for the Building 965 Area EE/CA are discussed in Section A1.2.2. Pursuant to the definition of the term *on-site* in 40 C.F.R. § 300.5, the on-station area that is part of this action is an area located directly underneath and in the immediate vicinity of a former wash pad adjacent to Building 965. Thus, this area is considered to be the on-site boundary for groundwater, soil, and air for purposes of this ARARs analysis. Excavation and temporary storage of impacted soil, pavement removal, soil vapor extraction (SVE) treatment technology, institutional controls, and site restoration activities are defined as “on-site.” Regulatory requirements that apply to off-site actions are not ARARs. Off-site actions (i.e., off-site soil waste disposal) are required to comply with applicable requirements only and are not required to comply with relevant and appropriate requirements identified as ARARs for on-site actions.

Identification of potential state ARARs was initiated through DON requests that the California Environmental Protection Agency (Cal/EPA) Department of Toxic Substances Control (DTSC) identify potential state ARARs, an action described in more detail in Section A1.2.3. Potential state ARARs that have been identified for the Building 965 Area are discussed below.

A1.2 METHODOLOGY DESCRIPTION

The process of identifying and evaluating potential federal and state ARARs is described in this subsection.

A1.2.1 General

As the lead federal agency, the DON has primary responsibility for identification of potential ARARs for the Building 965 Area at DoDHF Novato. In preparing this ARARs analysis, the DON undertook the following measures, consistent with CERCLA and the NCP:

- identified federal ARARs for each removal action alternative addressed in the EE/CA, taking into account site-specific information for the Building 965 Area
- reviewed potential ARARs identified by the state to determine whether they satisfy CERCLA and NCP criteria that must be met in order to constitute state ARARs
- evaluated and compared federal ARARs and their state counterparts to determine whether state ARARs are more stringent than the federal ARARs or are in addition to the federally required actions
- reached a conclusion as to which federal and state ARARs are the most stringent and/or “controlling” ARARs for each alternative

As outlined in Section 5.0 of this EE/CA Report, the removal action objectives (RAOs) for Building 965 Area soil gas action are to:

- reduce human health risk at the site to acceptable levels so that site closure can be achieved following the removal action; and,
- restore the area so that Parcel 1A is suitable for property transfer to the Novato Unified School District (NUSD).

Removal action alternatives retained for detailed analysis in this EE/CA are designed to accomplish these RAOs. To reduce human health risk, volatile organic compounds (VOCs) in the subsurface may be removed through excavation of vadose zone soil directly underneath a former wash pad along with a contingency to implement institutional controls (ICs) if they are determined necessary to address residual risk at the site after the proposed removal action. Additional treatment may include pavement removal or contingency SVE.

The Building 965 Area removal action alternatives considered evaluated in this EE/CA, and for which an ARAR analysis is presented in this appendix, are as follows:

- **Alternative 1** – No further action (as required under the NCP)
- **Alternative 2** – Institutional Controls (ICs)
- **Alternative 3** – Source area removal excavation with ICs
- **Alternative 4** – Source area removal excavation with contingency SVE and ICs

A1.2.2 Identifying and Evaluating Federal ARARs

The DON is responsible for identifying federal ARARs as the lead federal agency under CERCLA and the NCP. The final determination of federal ARARs will be made when the DON issues the AM. The federal government implements a number of federal environmental statutes that are the source of potential federal ARARs, either in the form of the statutes or regulations promulgated thereunder. Examples include the Resource Conservation and Recovery Act (RCRA), the Clean Water Act (CWA), the Safe Drinking Water Act (SDWA), the Toxic Substances Control Act (TSCA), and their implementing regulations. See NCP preamble at 55 *Federal Register* (Fed. Reg.) 8764–8765 (1990) for a more complete listing.

The DON reviewed the proposed removal action and alternatives against all potential federal ARARs, including but not limited to those set forth at 55 Fed. Reg. 8764–8765 (1990), in order to determine whether they were applicable or relevant and appropriate using the CERCLA and NCP criteria and procedures for ARARs identification by lead federal agencies.

A1.2.3 Identifying and Evaluating State ARARs

The process of identifying and evaluating potential state ARARs by the state and the DON is described in this subsection.

A1.2.3.1 SOLICITATION OF STATE ARARs UNDER NCP

U.S. EPA guidance recommends that the lead federal agency consult with the state when identifying state ARARs for removal actions (U.S. EPA 1988b). In essence, the CERCLA/NCP requirements at 40 C.F.R. § 300.515 for removal actions provide that the lead federal agency request that the state identify chemical-, location-, and action-specific state ARARs upon completion of site characterization. The requirements also provide that the lead federal agency request identification of all categories of state ARARs (chemical-, location-, and action-specific) upon completion of identification of removal alternatives for detailed analysis. The state must respond within 30 days of receipt of the lead federal agency requests. The remainder of this subsection documents the DON's efforts to date to identify and evaluate state ARARs. The DON has followed the process that was determined during Base Realignment and Closure (BRAC) Cleanup Team (BCT) meetings for DoDHF Novato for seeking state assistance with identification of state ARARs.

A1.2.3.2 CHRONOLOGY OF EFFORTS TO IDENTIFY STATE ARARs

The following chronology summarizes the DON's efforts to obtain state assistance with identification of state ARARs for the removal action at the Building 965 Area. Key correspondence between the DON and the state agencies relating to this effort has been included in the Administrative Record for this EE/CA.

On October 20, 2008, the DON formally requested state chemical-, location-, and action-specific ARARs for Building 965 Area soil gas. A letter was sent to California DTSC soliciting ARARs based on preliminary removal actions and treatment technology options detailed to the agency by the DON.

On November 25, 2008, the DON received correspondence from DTSC listing potential chemical-, location-, and action-specific ARARs for Building 965 Area soil gas from the Bay Area Air Quality Management District (BAAQMD) and San Francisco Bay Regional Water Quality Control Board (RWQCB).

A1.3 OTHER GENERAL ISSUES

General issues identified during the evaluation of ARARs for the Building 965 Area are discussed in the following subsections.

A1.3.1 General Approach to Requirements of the Federal Resource Conservation and Recovery Act

RCRA is a federal statute passed in 1976 to meet four goals: protection of human health and the environment, reduction of waste, conservation of energy and natural resources, and elimination of the generation of hazardous waste as expeditiously as possible. The Hazardous and Solid Waste Amendments of 1984 significantly expanded the scope of RCRA by adding new corrective action requirements, land disposal restrictions (LDRs), and technical requirements. RCRA, as amended, contains several provisions that are potential ARARs for CERCLA sites.

Substantive RCRA requirements are applicable to removal actions on CERCLA sites if the waste is a RCRA hazardous waste, and either:

- the waste was initially treated, stored, or disposed after the effective date of the particular RCRA requirement; or
- the activity at the CERCLA site constitutes treatment, storage, or disposal as defined by RCRA (U.S. EPA 1988a).

The preamble to the NCP indicates that state regulations that are components of a federally authorized or delegated state program are generally considered federal requirements and potential federal ARARs for the purposes of ARARs analysis (55 Fed. Reg. 8666, 8742 [1990]). The State of California received approval for its base RCRA hazardous waste management program on 23 July 1992 (57 Fed. Reg. 32726 [1992]). The State of California “Environmental Health Standards for the Management of Hazardous Waste,” set forth in Title 22 *California Code of Regulations*, Division 4.5 (Cal. Code Regs. tit. 22, div. 4.5), were approved by U.S. EPA as a component of the federally authorized State of California RCRA program. On 26 September 2001, California received final authorization of its revised State Hazardous Waste Management Program from U.S. EPA (63 Fed. Reg. 49118 [2001]).

The regulations of Cal. Code Regs. tit. 22, div. 4.5 are therefore a source of potential federal ARARs for CERCLA removal actions. The exception is when a state regulation is “broader in scope” than the corresponding federal RCRA regulations. In that case, such regulations are not considered part of the federally authorized program or potential federal ARARs. Instead, they are purely state law requirements and potential state ARARs.

The U.S. EPA notice of 23 July 1992, approving the State of California RCRA program (57 Fed. Reg. 32726 [1992]), specifically indicated that the state regulations addressed certain non-RCRA, state-regulated hazardous wastes that fell outside the scope of federal

RCRA requirements. Cal. Code Regs. tit. 22, div. 4.5 requirements would be potential state ARARs for such non-RCRA, state-regulated wastes.

A key threshold question for the ARARs analysis is whether the contaminants at the Building 965 Area constitute federal hazardous waste as defined under RCRA and the state's authorized program or qualify as non-RCRA, state-regulated hazardous waste. A discussion of waste characterization is included in Section A1.4.

A1.3.2 California Environmental Quality Act

The California Environmental Quality Act (CEQA) is applicable to state discretionary decision-making but not to actions of the federal government. Furthermore, U.S. EPA and the DON have determined that the requirements of the CEQA are no more stringent than the requirements for environmental review under CERCLA, as amended by the Superfund Amendments and Reauthorization Act (SARA). Pursuant to the provisions of CERCLA, the NCP, and other federal environmental impact evaluation requirements, selecting a remedial action with feasible mitigation measures and provision for public review is designed to assure that the proposed action provides for short- and long-term protection of the environment and public health. Hence, CERCLA performs the same function as, and is functionally equivalent to, the state's requirements under CEQA.

For the reasons set forth above, CEQA is not an ARAR for CERCLA actions.

A1.4 WASTE CHARACTERIZATION

Selection of ARARs involves the characterization of wastes as described below.

A1.4.1 RCRA Hazardous Waste Determination

Federal RCRA hazardous waste determination is necessary to determine whether a waste is subject to RCRA requirements at Cal. Code Regs. tit. 22, div. 4.5 and other state requirements at Cal. Code Regs. tit. 23, div. 3, Chapter (ch.) 15. The first step in the RCRA hazardous waste characterization process is to evaluate contaminated media at the site(s) and determine whether the contaminant constitutes a "listed" RCRA waste. The preamble to the NCP states that ". . . it is often necessary to know the origin of the waste to determine whether it is a listed waste and that, if such documentation is lacking, the lead agency may assume it is not a listed waste" (55 Fed. Reg. 8666, 8758 [1990]).

This approach is confirmed in U.S. EPA guidance for CERCLA compliance with other laws (U.S. EPA 1988a) as follows.

To determine whether a waste is a listed waste under RCRA, it is often necessary to know the source. However, at many Superfund sites, no information exists on the source of wastes. The lead agency should use available site information, manifests, storage records, and vouchers in an effort to ascertain the nature of these contaminants. When this documentation is not available, the lead agency may assume that the wastes are not listed RCRA hazardous wastes, unless further analysis or information becomes available that allows the lead agency to determine that the wastes are listed RCRA hazardous wastes.

RCRA hazardous wastes that have been assigned U.S. EPA hazardous waste numbers (or codes) are listed in Cal. Code Regs. tit. 22, § 66261.30–66261.33. The lists include hazardous waste codes beginning with the letters “F,” “K,” “P,” and “U.”

Knowledge of the exact source of a waste is required for source-specific listed wastes (K waste codes). Some knowledge of the nature or source of the waste is required even for listed wastes from nonspecific sources, such as spent solvents (F waste codes) or commercial chemical products (P and U waste codes). These listed RCRA hazardous wastes are restricted to commercially pure chemicals used in particular processes such as degreasing.

P and U wastes cover only unused and unmixed commercial chemical products, particularly spilled or off-specification products (U.S. EPA 1991a). Not every waste containing a P or U chemical is a hazardous waste. To determine whether a CERCLA investigation-derived waste contains a P or U waste, there must be direct evidence of product use. In particular, all the following criteria must be met. The chemicals must be:

- discarded (as described in 40 C.F.R. § 261.2[a][2]),
- either off-specification commercial products or a commercially sold grade,
- not used (i.e., soil contaminated with spilled unused wastes is a P or U waste), and
- the sole active ingredient in a formulation.

No documentation (i.e., waste manifests or storage records) of past waste disposal practices at the Building 965 Area was found that would serve to classify the source of chemicals in the subsurface as the aforementioned RCRA waste listings. Therefore, the DON has made the determination that Building 965 Area soil does not contain potential RCRA-listed hazardous waste. By extension, excavated soil would not be RCRA-listed hazardous waste.

The second step in the RCRA hazardous waste characterization process is to evaluate potential hazardous characteristics of the waste. The evaluation of characteristic waste is described in U.S. EPA guidance as follows (U.S. EPA 1988a).

Under certain circumstances, although no historical information exists about the waste, it may be possible to identify the waste as RCRA characteristic waste. This is important in the event that (1) remedial alternatives under consideration at the site involve on-site treatment, storage, or disposal, in which case RCRA may be triggered as discussed in this section; or (2) a remedial alternative involves off-site shipment. Since the generator (in this case, the agency or responsible party conducting the Superfund action) is responsible for determining whether the wastes exhibit any of these characteristics (defined in 40 C.F.R. § 261.21–261.24), testing may be required. The lead agency must use best professional judgment to determine, on a site-specific basis, if testing for hazardous characteristics is necessary.

In determining whether to test for the toxicity characteristic using the extraction procedure (EP) toxicity test, it may be possible to assume that certain low concentrations of waste are not toxic. For example, if the total waste concentration in soil is 20 times or less the EP toxicity concentration, the waste cannot be characteristic hazardous waste. In such a case, RCRA requirements

would not be applicable. In other instances, where it appears that the substances may be characteristic hazardous waste (ignitable, corrosive, reactive, or EP toxic), testing should be performed.

Hazardous waste characteristics, as defined in 40 C.F.R. § 261.21–261.24, are commonly referred to as ignitability, corrosivity, reactivity, and toxicity. California environmental health standards for the management of hazardous waste set forth in Cal. Code Regs. tit. 22, div. 4.5 were approved by U.S. EPA as a component of the federally authorized California RCRA program. Therefore, the characterization of RCRA waste is based on the state requirements.

The characteristics of ignitability, corrosivity, reactivity, and toxicity are defined in Cal. Code Regs. tit. 22, § 66261.21–66261.24. According to Cal. Code Regs. tit. 22, § 66261.24(a)(1)(A), “A waste that exhibits the characteristic of toxicity pursuant to subsection (a)(1) of this section has the U.S. EPA Hazardous Waste Number specified in Table I of this section which corresponds to the toxic contaminant causing it to be hazardous.” Table I assigns hazardous waste codes beginning with the letter “D” to wastes that exhibit the characteristic of toxicity; D waste codes are limited to “characteristic” hazardous wastes.

According to Cal. Code Regs. tit. 22, § 66261.10, waste characteristics can be measured by an available standardized test method or be reasonably classified by generators of waste based on their knowledge of the waste, provided that the waste has already been reliably tested or there is documentation of chemicals used. The excavated soil waste at the Building 965 Area is not ignitable, corrosive, or reactive in accordance with Cal. Code Regs. tit. 22, § 66261.21–66261.23. This determination was based on knowledge of the nature and concentrations of contaminants.

The requirements at Cal. Code Regs. tit. 22, § 66261.24 list the toxic contaminant concentrations that determine the characteristic of toxicity. The concentration limits are in milligrams per liter (mg/L). For waste soils, these concentrations apply to the extract or leachate produced by the toxicity characteristic leaching procedure (TCLP).

A waste is considered hazardous if the contaminants in the soil TCLP extract equal or exceed the TCLP limits. TCLP testing is required only if total contaminant concentrations in soil equal or exceed 20 times the TCLP limits because TCLP uses a 20-to-1 dilution for the extract (U.S. EPA 1988a).

Soil sampling in the Building 965 Area has indicated that low concentrations of VOCs exist in soil and it has been determined that none of the concentrations exceeded 20 times the listed concentrations. However, given the relatively small number of soil samples that have been collected at the site, it will be necessary to sample excavated soil waste to ensure that it is not a RCRA hazardous waste.

A1.4.2 California-Regulated, Non-RCRA Hazardous Waste

A waste determined not to be a RCRA hazardous waste may still be considered a California-regulated non-RCRA hazardous waste. The state’s RCRA program is broader in scope in its hazardous waste determination. Cal. Code Regs. tit. 22, § 66261.24(a)(2) lists the total threshold limit concentrations (TTLCs) and the soluble threshold limit concentrations (STLCs) for non-RCRA hazardous waste. The state applies its own leaching procedure, the Waste Extraction Test (WET), which uses a different acid reagent and has a different dilution

factor (tenfold). There are other state requirements that may be broader in scope than federal ARARs for identifying non-RCRA wastes regulated by the state. These may be potential ARARs for wastes not covered under federal ARARs. See additional subsections of Cal. Code Regs. tit. 22, § 66261.24. A waste is considered hazardous if its total concentrations exceed the TTLCs or if the extract concentrations from the WET exceed the STLCs. A WET is required when the total concentrations exceed the STLC but are less than the TTLCs (Cal. Code Regs. tit. 22, div. 4.5, ch. 11, Appendix [app.] II [b]).

A1.4.3 Other California Waste Classifications

For waste discharged after 18 July 1997, solid waste classifications at Cal. Code Regs. tit. 27, §§ 20210, 20220, and 20230 are used to determine applicability of waste management requirements. These are summarized below.

A “designated waste” under Cal. Code Regs. tit. 27, § 20210 is defined at *California Water Code* (Cal. Water Code) § 13173. Under Cal. Water Code § 13173, designated waste is hazardous waste that has been granted a variance from hazardous waste management requirements or nonhazardous waste that consists of or contains pollutants that, under ambient environmental conditions at a waste management unit, could be released in concentrations exceeding applicable water quality objectives (WQOs) or that could reasonably be expected to affect beneficial uses of the waters of the state.

A “nonhazardous solid waste” under Cal. Code Regs. tit. 27, § 20220 is all putrescible and nonputrescible solid, semisolid, and liquid wastes, including garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, abandoned vehicles and parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semisolid wastes, and other discarded waste (whether of solid or semisolid consistency), provided that such wastes do not contain wastes that must be managed as hazardous wastes or wastes that contain soluble pollutants in concentrations that exceed applicable WQOs or could cause degradation of waters of the state.

Under Cal. Code Regs. tit. 27, § 20230, inert waste is that subset of solid waste that does not contain hazardous waste or soluble pollutants at concentrations in excess of applicable WQOs and does not contain significant quantities of decomposable waste.

Limited soil sampling in the Building 965 Area has indicated that low concentrations of VOCs exist in soil. However, given the relatively small number of soil samples, it will be necessary to sample excavated soil waste to ensure that it is properly classified.

Section A2

CHEMICAL-SPECIFIC ARARs

Chemical-specific ARARs are generally health- or risk-based numerical values or methodologies applied to site-specific conditions that result in the establishment of a cleanup level. Many potential ARARs associated with particular response alternatives (such as closure or discharge) can be characterized as action-specific but include numerical values or methodologies to establish them; therefore, they fit into both categories (chemical- and action-specific). To simplify the comparison of numerical values, most action-specific requirements that include numerical values are included in this chemical-specific section and, if repeated in the action-specific section, the discussion refers back to this section.

This section presents the ARARs determination conclusions that address numerical values for groundwater, soil, and air and a summary of the potential ARARs followed by a more detailed discussion of the ARARs for groundwater, soil, and air.

Examples of numerical chemical-specific summaries are included as Tables A2-1 and A2-2. Potential federal and state chemical-specific ARARs are summarized in Tables A2-3 and A2-4, respectively, which are at the end of this section.

A2.1 SUMMARY OF ARARs CONCLUSIONS BY MEDIUM

Groundwater, soil, and air are the environmental media potentially affected by the Building 965 Area removal action. The conclusions for ARARs pertaining to these media are presented in the following sections.

A2.1.1 Groundwater ARARs Conclusions

Chemicals of concern (COCs) at the Building 965 Area include 1,3-butadiene and vinyl chloride. Table A2-1 lists the groundwater COCs for this EE/CA NTCRA for the Building 965 Area at Parcel 1A DoDHF Novato, California.

The substantive provisions of the following requirements are the most stringent of the potential federal and state chemical-specific ARARs and TBCs for the Building 965 Area groundwater:

- RCRA groundwater protection standards in Cal. Code Regs. tit. 22, § 66264.94(a)(1), (a)(3), (c), (d), and (e)
- State primary and secondary MCLs for 1,3-butadiene and vinyl chloride at Cal. Code Regs. tit. 22, § 64444 and Cal. Code Regs. tit. 22, § 64449
- Chapters 2 and 3 of the Water Quality Control Plan (WQCP) for the San Francisco Bay Region establishing beneficial uses, WQOs, and an implementation plan

Numerical values of potential groundwater ARARs and identification of the controlling potential ARAR are presented in Table A2-1.

A2.1.2 Soil ARARs Conclusions

Requirements of 22 CCR §66261.24 present criteria for testing and identifying RCRA hazardous wastes, sets levels for TTLC and STLC, and are considered applicable ARARs for the proposed

removal action at the Building 965 Area. Based on limited analytical results for soil, it will be necessary to ensure that excavated soil does not exceed characteristic hazardous waste levels for toxicity.

Requirements of 22 CCR §66262.10 and §66262.11 establish standards for generators of hazardous wastes in California, including those for hazardous waste determination, manifesting, transportation record keeping, and reporting. Substantive requirements are applicable if the excavated soils from the Building 965 Area exceed RCRA hazardous waste thresholds and are further examined in Section A4.

Numerical values for classification criteria of soil waste are presented in Table A2-2.

A2.1.3 Air ARARs Conclusions

The soil excavation activities proposed for the Building 965 Area have the potential to generate dust particle emissions. Several BAAQMD requirements have been determined to be chemical-specific federal ARARs for dust control. BAAQMD Regulation 2 Rule 1 addresses discharge of any air contaminant and is considered an applicable federal ARAR for the discharge of particulate matter via fugitive dust emissions from soil excavation (see Section A4).

SVE treatment technology is being considered to reduce COC concentrations (vinyl chloride, benzene, 1,3-butadiene, cis-1,2-dichloroethene, trichloroethene, and ethylbenzene) in soil gas at the Building 965 Area. California Environmental Protection Standards requirements 22 CCR §66264.702 et seq. set concentration limits for discharges of contaminants to soil and air from permitted treatment, storage, or disposal facilities. If a SVE treatment system is implemented at the site and discharges COCs to air, these requirements would be applicable state ARARs.

A2.2 DETAILED DISCUSSION OF ARARs BY MEDIUM

The following subsections provide a detailed discussion of federal and state ARARs by medium.

A2.2.1 Groundwater ARARs

The site geology is Late Pleistocene to Holocene unconsolidated alluvial materials (i.e., sands, silts, gravels, and clays) encountered in varying portions and depths eroded from the Mendocino Range, located to the west of DoDHF Novato. Bedrock is encountered approximately 15 ft below ground surface (bgs) but increases in depth towards the north. The bedrock underlying the site is significantly less permeable than the alluvial materials and acts to enhance lateral groundwater flow within the alluvium and prohibit downward flow. Depth to groundwater is approximately 10 ft bgs, with some seasonal fluctuations observed throughout the year. The direction of groundwater flow is towards the north at approximately 100 ft per year.

As part of sampling activities conducted in August 2007, two groundwater samples were collected downgradient of the suspected source area to evaluate potential groundwater impacts. The results indicated that VOCs were not detected at either location. Six additional groundwater samples were collected in May 2008 to gain a better understanding of whether groundwater may be serving as a potential source of VOC mass to soil gas. In conclusion, vinyl chloride and 1,3-butadiene were the only chemicals detected in groundwater at concentrations that exceeded DTSC risk based screening levels (RBSLs). 1,3-butadiene was detected at only one location exceeding the DTSC RBSL of 0.029 micrograms per liter (µg/L). Vinyl chloride was detected in

two locations at levels that exceeded the DTSC RBSL of 0.373 µg/L. In general, these concentrations are very low and are not indicative of a potential source to soil gas or potential groundwater issue.

A2.2.1.1 FEDERAL

Under the SDWA and RCRA, a significant issue in identifying ARARs for groundwater is whether the groundwater at the site can be classified as a source of drinking water. The U.S. EPA groundwater policy is set forth in the preamble to the NCP (55 Fed. Reg. 8666, 8752–8756 [1990]). This policy uses the protocols in the U.S. EPA Guidelines for Groundwater Classification under the U.S. EPA Groundwater Protection Strategy (U.S. EPA 1986). Under this policy, groundwater is classified in one of three categories (Class I, II, or III), on the basis of ecological importance, its ability to be replaced, and vulnerability. Class I groundwater is irreplaceable groundwater currently used by a substantial population or groundwater that supports a vital habitat. Class II consists of groundwater currently used or that might be used as a source of drinking water in the future. Class III groundwater is groundwater that cannot be used for drinking water because of its poor quality (e.g., high salinity or widespread, naturally occurring contamination) or insufficient quantity. The U.S. EPA guidelines define Class III groundwater as groundwater with total dissolved solids (TDS) concentrations over 10,000 mg/L and a yield of less than 150 gallons per day (U.S. EPA 1986). Class III groundwater can also be classified based on economic or technological treatability tests as well as quality or quantity.

The groundwater at the Building 965 Area has been determined to be a Class III groundwater due to an insufficient quantity of groundwater present in the aquifer underlying the area of interest. The approximate depth to groundwater at the Site is nine ft bgs, with an impermeable bedrock layer present at approximately 14 to 15 ft bgs. The resultant aquifer thickness is approximately five to six feet and based on past difficulties collecting groundwater at the site (due to low yield), it is unlikely that an appreciable quantity of groundwater (e.g., 150 gallons per day) could be extracted.

Safe Drinking Water Act

U.S. EPA has promulgated drinking water standards for public water supply systems pursuant to its authority under the SDWA. These drinking water standards consist of primary and secondary MCLs and MCLGs. These standards are applicable requirements for drinking water quality “at the tap” of the end users of the regulated public water supply systems. They are not directly applicable to *in situ* groundwater and therefore do not qualify as applicable federal ARARs for groundwater response actions. However, they may be relevant and appropriate requirements for such actions.

U.S. EPA provided policy guidance in the 1990 NCP preamble directing that the U.S. EPA guidelines for groundwater classification set forth in the U.S. EPA Groundwater Protection Strategy (U.S. EPA 1986) be followed in determining when federal primary MCLs may be relevant and appropriate for groundwater response actions (see 55 Fed. Reg. 8666, 8752–8756 [1990]). The intent of this policy is to focus CERCLA cleanup efforts based on groundwater quality (classification).

Federal MCLs are neither applicable nor relevant and appropriate for aquifers with Class III characteristics and are not used to determine preliminary response action goals (U.S.

EPA 1986; 55 Fed. Reg. 8666, 8750–8754 [1990]). Therefore, federal MCLs are not potential ARARs for the Building 965 Area at Parcel 1A.

RCRA Hazardous Waste

The federal RCRA requirements at 40 C.F.R. pt. 261 do not apply in California because the state RCRA program is authorized. The authorized state RCRA requirements are therefore considered potential federal ARARs (Section A1.3.1). The applicability of RCRA requirements depends on whether the waste is a RCRA hazardous waste; whether the waste was initially treated, stored, or disposed after the effective date of the particular RCRA requirement; and whether the activity at the site constitutes treatment, storage, or disposal as defined by RCRA. However, RCRA requirements may be relevant and appropriate even if they are not applicable. Examples include activities that are similar to those defined as RCRA treatment, storage, or disposal for waste that is similar to RCRA hazardous waste.

The determination of whether a waste is a RCRA hazardous waste can be made by comparing the site waste to the definition of RCRA hazardous waste. The RCRA requirements at Cal. Code Regs. tit. 22, § 66261.21, 66261.22(a)(1), 66261.23, 66261.24(a)(1), and 66261.100 are potential ARARs because they define RCRA hazardous waste. A waste can meet the definition of hazardous waste if it has the toxicity characteristic of hazardous waste. This determination is made by using the TCLP. The maximum concentrations allowable for the TCLP listed in Cal. Code Regs. tit. 22, § 66261.24(a)(1)(B) are potential federal ARARs for determining whether the site has hazardous waste. If the site waste has concentrations exceeding these values, it is determined to be a characteristic RCRA hazardous waste (Section A1.4.1).

Water Quality Criteria

Section 304(a)(1) of the CWA (33 U.S.C. § 1314[a][1]) directs U.S. EPA to publish and periodically update the National Recommended Water Quality Criteria (NRWQC). These standards are intended to protect human health and aquatic life from contamination in surface water. The NRWQC are updated in the *Federal Register*. The latest list of the NRWQC dated 2006 is available on the website at <http://www.epa.gov/waterscience/criteria/wqcriteria.html>. If criteria are not listed for a pollutant, U.S. EPA does not have any national recommended water quality criteria.

These criteria are to reflect the latest scientific knowledge on the identifiable effects of pollutants on public health and welfare, aquatic life, and recreation. These criteria serve as guidance to states in adopting water quality standards under Section 303(c) of the CWA (33 U.S.C. § 1313[c]) that protect aquatic life from acute and chronic effects.

The applicability of surface water criteria to groundwater is discussed in CERCLA Section 121(d)(2)(B)(i) (42 U.S.C. § 9621[d][2][B][i]), 40 C.F.R. § 300.430(e), and the NCP preamble (55 Fed. Reg. 8666, 8754–8755 [1990]). Although the NRWQC are nonenforceable guidelines, they may be potentially relevant and appropriate for groundwater only in the absence of promulgated MCLs or MCLGs. In such cases, the NRWQC may be adjusted to reflect only drinking water use and be used as cleanup goals for the response action.

Risk based screening levels have been established for the proposed removal action at the Building 965 Area. For groundwater, these screening levels have been calculated using the Johnson and Ettinger Model and have been established to be protective of risks to indoor air.

A2.2.1.2 STATE

The state has identified the following potential ARARs for groundwater cleanup at the site:

SWRCB Res. 88-63, Adoption of Policy Entitled “Sources of Drinking Water.”

SWRCB Res. 88-63 establishes criteria to help RWQCBs identify potential sources of drinking water (SWRCB 1988). According to this resolution, all groundwater in California is considered suitable or potentially suitable for domestic or municipal freshwater supply except in cases where any one of the following water quality and production criteria is met.

- TDS exceed 3,000 mg/L (or electrical conductivity is greater than 5,000 micromhos per centimeter) and the RWQCB does not reasonably expect the groundwater to supply a public drinking water system.
- Groundwater is contaminated, either by natural processes or by human activity unrelated to a specific pollution incident, and cannot reasonably be treated for domestic use either by best management practices (BMPs) or best economically available treatment practices.
- The groundwater does not provide sufficient water to supply a single well capable of producing an average sustained yield of 200 gallons per day.

SWRCB Res. 88-63 has been incorporated by reference into the Basin Plan (RWQCB 2007). The DON has determined that the substantive provisions of this policy are potential state ARARs for this FS, but may not be controlling ARARs because the groundwater does not provide sufficient water to supply a singly well capable of producing an average sustained yield of 200 gallons per day and is not considered a potential source of drinking water under SWRCB Res. 88-63.

Comprehensive Water Quality Control Plan for the San Francisco Bay (Basin Plan)

The DON accepts the substantive provisions in Chapters 2 and 3 of the Basin Plan for the San Francisco Bay (RWQCB 2007), including beneficial use, WQOs, and WDRs, as potential ARARs. The uses designated for the groundwater underlying the Building 965 at Parcel 1A are potential ARARs for this EE/CA.

The Basin Plan for the San Francisco Bay was prepared and implemented by the RWQCB Region 2 to protect and enhance the quality of the waters in the San Francisco Bay area. The Basin Plan establishes location-specific beneficial uses and WQOs for the surface water and groundwater of the region and is the basis of the RWQCB Region 2 regulatory programs. The Basin Plan includes both numeric and narrative WQOs for specific groundwater subbasins. The WQOs are intended to protect the beneficial uses of the waters of the region and to prevent nuisance.

Beneficial use and reuse of water are key aspects of the Basin Plan for the San Francisco Bay. The Department of Defense Housing Facility is located in the San Pablo Basin. The San Pablo Basin has the following beneficial use designations (RWQCB 2007):

- municipal and domestic supply
- agricultural supply
- industrial service supply
- industrial process supply

The Basin Plan beneficial uses listed above are determined to be applicable state ARARs except for the municipal and domestic supply. The municipal and domestic supply beneficial use is not a potential ARAR for groundwater since it is not a potential source of drinking as determined under SWRCB Res. 88-63. The Basin Plan allows for exceptions to the beneficial uses in accordance with SWRCB Res. 88-63.

Primary and Secondary State MCLs

Primary and secondary state MCLs are set forth in Cal. Code Regs. tit. 22:

- § 64431 (Maximum Contaminant Levels – Inorganic Chemicals)
- § 64444 (Maximum Contaminant Levels – Organic Chemicals)
- § 64449(a) (Secondary Maximum Contaminant Levels)

The DON has determined that the substantive provisions of the standards in Cal. Code Regs. tit. 22, §§ 64431, and 64444 constitute potential relevant and appropriate state ARARs for the aquifer for COCs as listed in Table A2-1.

Secondary MCLs are applicable at the tap and are not potentially applicable ARARs for groundwater cleanup. Secondary MCLs at Cal. Code Regs. tit. 22, § 64449(a) have been determined not to be state ARARs for the groundwater cleanup at the Building 965 Area at Parcel 1A (see Table A2-4).

Porter-Cologne Water Quality Control Act.

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) became Division 7 of the *California Water Code* in 1969. The Porter-Cologne Act requires each regional board to formulate and adopt basin plans for all areas within the region (Cal. Water Code § 13240). It also requires each regional board to establish WQOs that will protect the beneficial uses of the water basin (Cal. Water Code § 13241) and to prescribe waste discharge requirements (WDRs) that would implement the basin plan for any discharge of waste to the waters of the state (Cal. Water Code § 13263[a]).

Other sections of the Porter-Cologne Act include Cal. Water Code § 13243, which allows regional boards to specify conditions or areas where waste discharge is not permitted. Cal. Water Code § 13269 provides the boards' authority for waivers for reports or compliance with requirements as long as it is not against the public interest. Cal. Water Code § 13360 specifies circumstances for regional boards to order compliance in a specific manner.

The DON accepts the substantive provisions of Cal. Water Code §§ 13241, 13243, 13263(a), 13269, and 13360 of the Porter-Cologne Act as enabling legislation as

implemented through the beneficial uses, WQOs, WDRs, promulgated policies of the WQCP for the San Francisco Bay, SWRCB Res. 68-16 and 88-63, and state primary MCLs as potential state ARARs. Where WDRs are specified in general permits, the DON considers the substantive requirements, as well as the permits themselves, to be TBC guidance, although on-site CERCLA response actions are exempt from permit requirements under Section 121(e) of CERCLA. These TBCs would be used as a means of assuring compliance with the potential ARARs, such as the MCLs, and promulgated policy of the WQCP and SWRCB Res. 68-16.

Cal. Water Code § 13304 sets forth enforcement authority and an enforcement process (orders issued by the state) and is procedural in nature. It does not constitute an ARAR because it does not itself establish or contain substantive environmental “standards, requirements, criteria, or limitations” (CERCLA Section 121 [42 U.S.C. § 9621]) and is not in itself directive in intent. Through its enforcement authority and procedures, substantive state environmental standards set forth in other statutes, regulations, plans, and orders are enforced. In addition, Cal. Water Code § 13304 is no more stringent than the substantive requirements of the potential state ARARs identified in the above paragraphs or potential federal ARARs for groundwater.

State Water Resources Control Board Res. 92-49 and 68-16

State Water Resources Control Board Res. 92-49 (as amended on 21 April 1994 and 02 October 1996) is titled Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Cal. Water Code § 13304. This resolution contains policies and procedures for the regional boards that apply to all investigations and cleanup and abatement activities for all types of discharges subject to Cal. Water Code § 13304.

SWRCB Res. 68-16, Statement of Policy With Respect to Maintaining High Quality of Waters in California, establishes the policy that high-quality waters of the state “shall be maintained to the maximum extent possible” consistent with the “maximum benefit to the people of the state.” It provides that whenever the existing quality of water is better than the required applicable water quality policies, such existing high-quality water will be maintained until it has been demonstrated to the state that any change will be consistent with maximum benefit to the people of the state, will not unreasonably affect present and anticipated beneficial use of such water, and will not result in water quality less than that prescribed in the policies. It also states that any activity that produces or may produce a waste or increased volume or concentration of waste and that discharges or proposes to discharge to existing high-quality waters will be required to meet waste discharge requirements that will result in the best practicable treatment or control of the discharge necessary to assure that a) pollution or a nuisance will not occur and b) the highest water quality consistent with maximum benefit to the people of the state will be maintained (SWRCB 1968).

Cleanup to below background water quality conditions is not required by the SWRCB under the Porter-Cologne Act. SWRCB Res. 92-49 II.F.1 (SWRCB 1992) provides that regional boards may require cleanup and abatement to “conform to the provisions of the Resolution No. 68-16 of the State Water Board, and the Water Quality Control Plans of the State and Regional Water Quality Control Boards, provided that under no

circumstances shall these provisions be interpreted to require cleanup and abatement which achieves water quality conditions that are better than background conditions.”

DON’s Position Regarding SWRCB Res. 92-49 and 68-16. The DON recognizes that the key substantive requirements of Cal. Code Regs. tit. 22, § 66264.94 (and the identical requirements of Cal. Code Regs. tit. 23, § 2550.4 and Section III.G of SWRCB Res. 92-49) require cleanup to background levels of constituents unless such restoration proves to be technologically or economically infeasible and an alternative cleanup level of constituents will not pose a substantial present or potential hazard to human health or the environment. In addition, the DON recognizes that these provisions are more stringent than corresponding provisions of 40 C.F.R. § 264.94 and, although they are federally enforceable via the RCRA program authorization, they are also independently based on state law to the extent that they are more stringent than the federal regulations.

The DON has also determined that SWRCB Res. 68-16 is not a chemical-specific ARAR for determining response action goals. However, SWRCB Res. 68-16 is a potential action-specific ARAR for regulating new discharges, such as treated groundwater, into the aquifer. The DON has determined that further migration of already-contaminated groundwater or soil gas is not a discharge governed by the language in Res. 68-16. More specifically, the language of SWRCB Res. 68-16 indicates that it is prospective in intent, applying to new discharges in order to maintain existing high-quality waters. It is not intended to apply to restoration of waters that are already degraded.

The DON’s position is that SWRCB Res. 92-49 and 68-16 and Cal. Code Regs. tit. 23, § 2550.4 do not constitute chemical-specific ARARs for this removal action because they are state requirements and are not more stringent than federal ARAR provisions of Cal. Code Regs. tit. 22, § 66264.94. The NCP set forth in 40 C.F.R. § 300.400(g)(4) provides that only state standards more stringent than federal standards may be ARARs (see also CERCLA Section 121(d)(2)(A)(ii) [42 U.S.C. § 9621(d)(2)(A)(ii)]).

The substantive technical standard in the equivalent state requirements (i.e., Cal. Code Regs. tit. 23, div. 3, ch. 15 and SWRCB Res. 92-49 and 68-16) is identical to the substantive technical standard in Cal. Code Regs. tit. 22, § 66264.94. This section of Cal. Code Regs. tit. 22 will likely be applied in a manner consistent with equivalent provisions of other regulations, including SWRCB Res. 92-49 and 68-16.

State of California’s Position Regarding SWRCB Res. 92-49 and 68-16. The state does not agree with the DON determination that SWRCB Res. 92-49 and 68-16 and certain provisions at Cal. Code Regs. tit. 23, div. 3, ch. 15 are not ARARs for this response action. SWRCB has interpreted the term “discharges” in the Cal. Water Code to include the movement of waste from soils to groundwater and from contaminated to uncontaminated water (SWRCB 1994). However, the state agrees that the proposed action would comply with SWRCB Res. 92-49 and 68-16, and compliance with the Cal. Code Regs. tit. 22 provisions should result in compliance with the Cal. Code Regs. tit. 23 provisions. The state does not intend to dispute the ROD, but reserves its rights if implementation of the Cal. Code Regs. tit. 22 provisions is not as stringent as state implementation of Cal. Code Regs. tit. 23 provisions. Because Cal. Code Regs. tit. 22 regulation is part of the state’s authorized hazardous waste control program, it is also the state’s position that Cal. Code Regs. tit. 22, § 66264.94 is a state ARAR and not a federal ARAR (United States v. State of Colorado, 990 F.2d 1565 [1993]).

Whereas the DON and the State of California have not agreed on whether SWRCB Res. 92-49 and 68-16 and Cal. Code Regs. tit. 23, § 2550.4 are ARARs for this response action, this EE/CA documents each party's position on the resolutions but does not attempt to resolve the issue.

Cal. Code Regs. tit. 23, div. 3, ch. 15, § 2550(a), 2550.4(d), (e), and (f), and 2550.5. The Cal. Code Regs. tit. 23, div. 3, ch. 15 regulations address hazardous waste discharges to land. Other waste classifications are addressed under Cal. Code Regs. tit. 27, div. 2, subdiv. 1. Cal. Code Regs. tit. 23, § 2550(a) addresses the general applicability of other technical standards in Chapter 15 and it does not contain standards itself. Therefore, Cal. Code Regs. tit. 23, § 2550(a) is not an ARAR. Cal. Code Regs. tit. 23, § 2550.4(d), (e), and (f) address concentration limits for monitoring and cleanup programs at hazardous waste management units. The DON has determined that the requirements contained in these sections are identical to those found in Cal. Code Regs. tit. 22, § 66264.94(d)(1), (2), and (4), and (e)(1) and (2). Since they are not more stringent than the corresponding federal ARARs, these regulations are therefore not ARARs for the Building 965 Area at Parcel 1A.

RCRA Requirements. State RCRA requirements included within the U.S. EPA-authorized RCRA program for California are considered to be potential federal ARARs and are discussed in the previous section. The exception is when a state regulation is "broader in scope" than the corresponding federal RCRA regulations. In that case, such regulations are not considered part of the federally authorized program or potential federal ARARs. Instead, they are purely state law requirements and potential state ARARs.

State requirements such as the non-RCRA, state-regulated hazardous waste requirements may be potential state ARARs because they are not within the scope of the federal ARARs (57 Fed. Reg. 60848). The Cal. Code Regs. tit. 22, div. 4.5 requirements that are part of the state-approved RCRA program would be potential state ARARs for non-RCRA, state-regulated hazardous wastes.

A2.2.2 Soil ARARs

The key threshold question for soil ARARs is whether the wastes located at the Building 965 Area would be classified as hazardous waste. The soil may be classified as federal hazardous waste as defined by RCRA and the state-authorized program or as non-RCRA, state-regulated hazardous waste. If the soil is determined to be hazardous waste, the appropriate requirements will apply.

A2.2.2.1 FEDERAL

Federal requirements evaluated as potential ARARs for soil are discussed in the subsections below.

RCRA Hazardous Waste and Groundwater Protection Standards

The federal RCRA requirements at 40 C.F.R. pt. 261 do not apply in California because the state RCRA program is authorized. The authorized state RCRA requirements are therefore considered potential federal ARARs (Section A1.3.1). The applicability of RCRA requirements depends on whether the waste is a RCRA hazardous waste; whether

the waste was initially treated, stored, or disposed after the effective date of the particular RCRA requirement; and whether the activity at the site constitutes treatment, storage, or disposal as defined by RCRA. However, RCRA requirements may be relevant and appropriate even if they are not applicable. Examples include activities that are similar to the definition of RCRA treatment, storage, or disposal for waste that is similar to RCRA hazardous waste.

Determination of whether a waste is a RCRA hazardous waste can be made by comparing site waste to the definition of RCRA hazardous waste. RCRA requirements at Cal. Code Regs. tit. 22, § 66261.21, 66261.22(a)(1), 66261.23, 66261.24(a)(1), and 66261.100 are potential ARARs because they define RCRA hazardous waste. A waste can meet the definition of hazardous waste if it has the toxicity characteristic of hazardous waste. This determination is made by using the TCLP. The maximum concentrations allowable for the TCLP listed in § 66261.24(a)(1)(B) are potential federal ARARs for determining whether hazardous waste is present at the site. If the site waste has concentrations exceeding these values, it is determined to be a characteristic RCRA hazardous waste (Section A1.4.1).

The requirements at Cal. Code Regs. tit. 22, § 66264.94(a)(1), (a)(3), (c), (d), and (e) are potential federal ARARs for contamination in the vadose zone (i.e., the unsaturated zone). These sections set concentration limits for the unsaturated zone as well as for groundwater and surface water. These requirements are considered to be potential federal ARARs because they are part of the approved state RCRA program.

A2.2.2.2 STATE

State requirements evaluated as potential ARARs for soil are discussed in the subsections below.

RCRA Requirements

State RCRA requirements included within the U.S. EPA-authorized RCRA program for California are considered to be potential federal ARARs and are discussed in the previous section. The exception is when a state regulation is broader in scope than the corresponding federal RCRA regulations. In that case, such regulations are not considered part of the federally authorized program or potential federal ARARs. Instead, they are purely state law requirements and potential state ARARs.

State requirements such as the non-RCRA, state-regulated hazardous waste requirements may be potential state ARARs because they are not within the scope of the federal ARARs (57 Fed. Reg. 60848). The Cal. Code Regs. tit. 22, div. 4.5 requirements that are part of the state-approved RCRA program would be potential state ARARs for non-RCRA, state-regulated hazardous wastes.

The site waste characteristics need to be compared to the definition of non-RCRA, state-regulated hazardous waste. The non-RCRA, state-regulated waste definition requirements at Cal. Code Regs. tit. 22, § 66261.24(a)(2) are potential state ARARs for determining whether other RCRA requirements are potential state ARARs. This section lists the TTLCs and STLCs. The site waste may be compared to these thresholds to determine whether it meets the characteristics for a non-RCRA, state-regulated hazardous waste.

Cal. Code Regs. tit. 23, div. 3, ch. 15

The requirements at this section define a hazardous waste that is covered by the Chapter 15 requirements. These are not more stringent than federal or state RCRA ARARs for identifying hazardous waste. However, if the site waste meets the definition of hazardous waste under Cal. Code Regs. tit. 23, § 2521, other Chapter 15 requirements may be ARARs for discharging waste to land including landfill requirements.

Section 2550.4 of Chapter 15 has also been identified by the state as a potential ARAR for soil cleanup levels for hazardous waste. This section is essentially the same as federal ARARs identified at Cal. Code Regs. tit. 22, § 66264.94(a)(1)(3), (c), (d), and (e). Therefore, Section 2550.4 is not an ARAR for soil cleanup levels at Parcel 1A. See Table A4-3 for a comparison of Chapter 15 requirements with parallel Cal. Code Regs. tit. 22 requirements.

Cal. Code Regs. tit. 27, div. 2, subdiv. 1

Former Cal. Code Regs. tit. 23, div. 3, ch. 15 requirements that were repealed went into effect under Cal. Code Regs. tit. 27 on 18 July 1997. The following Cal. Code Regs. tit. 27 sections define waste characteristics for discharge of waste to land. These requirements may be applicable for soil left in place that was discharged after the effective date of the requirements. They are not potentially applicable to discharges before that date but may be relevant and appropriate.

Cal. Code Regs. tit. 27, § 20230(a) defines inert waste as waste “that does not contain hazardous waste or soluble pollutants at concentrations in excess of applicable water quality objectives, and does not contain significant quantities of decomposable waste.” Cal. Code Regs. tit. 27, § 20230(b) states, “inert wastes do not need to be discharged at classified waste management units.” Cal. Code Regs. tit. 27, § 20230(a) and (b) may be potential state ARARs for soil that meets the definition of inert waste.

Cal. Code Regs. tit. 27, §§ 20210 and 20220 are state definitions for designated waste and nonhazardous waste, respectively. These may be potential ARARs for soil that meets the definitions. These soil classifications determine state classification and siting requirements for discharging waste to land.

Cal. Code Regs. tit. 27, § 20400(a), (c), (d), (e), and (g) have been identified by the state as potential monitoring and cleanup concentration limit ARARs for waste soil other than hazardous waste. This section is also not more stringent than federal ARARs at Cal. Code Regs. tit. 22, § 66264.94(a)(1) and (3), (c), (d), and (e). Therefore, Cal. Code Regs. tit. 27, § 20400 is not an ARAR for soil at the Building 965 Area.

A2.2.3 Air ARARs

For this EE/CA, the soil excavation activities proposed for the Building 965 Area have the potential to generate dust particle emissions. ARARs for air are discussed in this section and in greater detail under action-specific requirements.

A2.2.3.1 FEDERAL

The Clean Air Act (CAA), RCRA, National Regulatory Commission (NRC), Uranium Mill Tailings Radiation Control Act (UMTRCA), and National Emissions Standards for Hazardous Air Pollutants (NESHAP) air emission requirements are discussed below.

Clean Air Act

The CAA establishes the National Ambient Air Quality Standards (NAAQS) in 40 C.F.R. § 50.4–50.12. NAAQS are not enforceable in and of themselves; they are translated into source-specific emissions limitations by the state (U.S. EPA 1990). Substantive requirements of the BAAQMD rules that have been approved by U.S. EPA as part of the State Implementation Plan (SIP) under the CAA are potential federal ARARs for air emissions (CAA Section 110). This includes BAAQMP Regulation 2 Rule 1, addressing discharge of any air contaminant. The SIP includes rules for emissions restrictions for particulates, organic compounds, and hazardous air pollutants, as well as standards of performance for new sources.

A2.2.3.2 STATE

RCRA requirements for non-RCRA, state-regulated hazardous wastes and BAAQMD rules are described below.

State RCRA requirements included within the U.S. EPA-authorized RCRA program for California are considered to be potential federal ARARs and are discussed above. The exception is when a state regulation is broader in scope than the corresponding federal RCRA regulations. In that case, such regulations are not considered part of the federally authorized program or potential federal ARARs. Instead, they are purely state law requirements and potential state ARARs.

State requirements such as the non-RCRA, state-regulated hazardous waste requirements may be potential state ARARs because they are not within the scope of the federal ARARs (57 Fed. Reg. 32726 [1992]).

Table A2-1
Criteria and Standards for Chemicals of Concern in Groundwater
(units reported in micrograms per liter)

Analyte	California Maximum Contaminant Level (Cal. Code Regs. tit. 22, § 64444)
1,3-butadiene	20
vinyl chloride	0.5

Notes:

- ^a Current Drinking Water Standards, Office of Water, 01 July 1999 (U.S. EPA 1999)
- ^b dash indicates not available
- ^c maximum contaminant level is either a single isomer or the sum of the isomers

Acronyms/Abbreviations:

- ARAR – applicable or relevant and appropriate requirement
- Cal. Code Regs. – *California Code of Regulations*
- C.F.R. – *Code of Federal Regulations*
- § – section
- tit. – title

Table A2-2
Classification Criteria for Chemicals of Concern in Soil Waste

Analyte	California-Hazardous Criteria		RCRA-Hazardous Criteria
	TTLC (mg/kg)	STLC (mg/L)	TCLP (mg/L)
<i>Volatile Organic Compounds</i>			
Benzene	NE	NE	0.5
Trichloroethene	2,040	204	0.5
Vinyl Chloride	NE	NE	0.2

NE – not established

STLC – soluble threshold limit concentration

TTLC – total threshold limit concentration

**Table A2-3
Potential Federal Chemical-Specific^a ARARs by Medium**

Requirement	Prerequisite	Citation ^b	ARAR Determination	Comments
GROUNDWATER				
Safe Drinking Water Act (42 U.S.C., ch. 6A, § 300[f]–300[j]-26)^c				
National primary drinking water standards are health-based standards for public water systems (MCLs).	Public water system.	40 C.F.R. § 141.11–141.13, excluding § 141.11(d)(3), 141.15, 141.16, 141.61(a) and (c), and 141.62(b)	Not an ARAR	MCLs are neither applicable nor relevant and appropriate for aquifers with Class III characteristics and are not used to determine preliminary response action goals (U.S. EPA 1986; 55 Fed. Reg. 8666, 8750–8754 [1990]). Therefore, MCLs are not potential ARARs for the Building 965 Area, which has a Class III aquifer.
Resource Conservation and Recovery Act (42 U.S.C., ch. 82, §§ 6901–6991[i])^c				
Defines RCRA hazardous waste. A solid waste is characterized as toxic, based on the TCLP, if the waste exceeds the TCLP maximum concentrations.	Waste.	Cal. Code Regs. tit. 22, § 66261.21, 66261.22(a)(1), 66261.23, 66261.24(a)(1), and 66261.100	Applicable	Applicable ARARs if groundwater waste is determined to be a characteristic RCRA hazardous waste.

Table A2-3 (continued)

Requirement	Prerequisite	Citation ^b	ARAR Determination	Comments
Clean Water Act of 1977, as Amended (33 U.S.C., ch. 26, §§ 1251–1387)^c				
National Recommended Water Quality Criteria.	Discharges to waters of the United States and groundwater.	33 U.S.C. § 1314(a)	Not an ARAR	<p>NRWQC are neither applicable nor relevant and appropriate cleanup goals for the response action at the Building 965 Area.</p> <p>For the proposed removal action, risk based screening levels have been established using the Johnson and Ettinger Model. For groundwater, these screening levels have been calculated and established to be protective of risks to indoor air.</p>
SOIL				
Resource Conservation and Recovery Act (42 U.S.C., ch. 82, §§ 6901–6991[i])^c				
Defines RCRA hazardous waste. A solid waste is characterized as toxic, based on the TCLP, if the waste exceeds the TCLP maximum concentrations.	Waste.	Cal. Code Regs. tit. 22, § 66261.21, 66261.22(a)(1), 66261.23, 66261.24(a)(1), and 66261.100	Applicable	Substantive provisions are applicable for determining whether waste soil, if generated, is hazardous.

Section A2 Chemical-Specific ARARs

Table A2-3 (continued)

Requirement	Prerequisite	Citation ^b	ARAR Determination	Comments
Groundwater Protection Standards: requirements to ensure that hazardous constituents entering the groundwater from a regulated unit do not exceed the concentration limits for contaminants of concern in the uppermost aquifer underlying the waste management area of concern at the POC.	A regulated unit that receives or has received hazardous waste before 26 July 1982 or regulated units that ceased receiving hazardous waste prior to 26 July 1982 where constituents in or derived from the waste may pose a threat to human health or the environment.	Cal. Code Regs. tit. 22, § 66264.94(a)(1) and (3), (c), (d), and (e)	Relevant and appropriate	The proposed substantive provisions are relevant and appropriate for setting cleanup levels for vadose zone soil. Cleanup to background has been determined to be NOT technologically and economically feasible. The lowest achievable concentrations are risk-based.
LDRs prohibit disposal of hazardous waste unless treatment standards are met.	Hazardous waste land disposal.	Cal. Code Regs. tit. 22, § 66268.1(f)	Not an ARAR	Substantive provisions are applicable if waste soil is determined to be hazardous.
Treatment standards including technology requirements before hazardous waste can be disposed to land.	Hazardous waste land disposal.	Cal. Code Regs. tit. 22, § 66268.40	Not an ARAR	Substantive provisions are applicable if waste soil is determined to be hazardous.
Universal Treatment Standards used to comply with treatment standards.	Hazardous waste land disposal.	Cal. Code Regs. tit. 22, § 66268.48	Not an ARAR	Substantive provisions are applicable if waste soil is determined to be hazardous.
Clean Air Act (42 U.S.C., ch. 85, §§ 7401–7671)^c				
NAAQS: Primary and secondary standards for ambient air quality to protect public health and welfare (including standards for particulate matter and lead).	Contamination of air affecting public health and welfare.	40 C.F.R. § 50.4–50.12	Not an ARAR	Not enforceable standards and therefore not an ARAR.

Table A2-3 (continued)

Requirement	Prerequisite	Citation ^b	ARAR Determination	Comments
AIR				
Clean Air Act (42 U.S.C., ch. 85, §§ 7401–7671)^c				
Provisions of SIP approved by U.S. EPA under Section 110 of CAA.	Major sources of air pollutants.	42 U.S.C. § 7401; portions of 40 C.F.R. § 52.220 applicable to San Diego APCD	Applicable	Substantive provisions are applicable. See pertinent specific provisions of the SIP.

Notes:

- ^a many potential action-specific ARARs contain chemical-specific limitations and are addressed in the action-specific ARAR tables
- ^b only the substantive provisions of the requirements cited in this table are potential ARARs
- ^c statutes and policies, and their citations, are provided as headings to identify general categories of potential ARARs for the convenience of the reader; listing the statutes and policies does not indicate that the DON accepts the entire statutes or policies as potential ARARs; specific potential ARARs are addressed in the table below each general heading; only pertinent substantive requirements of the specific citations are considered potential ARARs

Acronyms/Abbreviations:

ACL – alternative concentration limit
ALARA – as low as reasonably achievable
APCD – Air Pollution Control District
app. – appendix
ARAR – applicable or relevant and appropriate requirement
BAT – best available technology
BCPCT – best conventional pollution control technology
CAA – Clean Air Act
Cal. Code Regs. – *California Code of Regulations*
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act
C.F.R. – *Code of Federal Regulations*
ch. – chapter
cm – centimeters
COC – chemical of concern
CWA – Clean Water Act
DoD – Department of Defense
DON – Department of the Navy
Fed. Reg. – *Federal Register*
LDR – land disposal restriction

Section A2 Chemical-Specific ARARs

Table A2-3 (continued)

LLW – low-level radioactive waste
 µg/L – micrograms per liter
 MCL – maximum contaminant level
 MCLG – maximum contaminant level goal
 mg/L – milligrams per liter
 mrem – millirem
 mrem/yr – millirem per year
 NAAQS – National Ambient Air Quality Standards (primary and secondary)
 NCP – National Oil and Hazardous Substances Pollution Contingency Plan
 NESHAP – National Emissions Standards for Hazardous Air Pollutants
 NPDES – National Pollutant Discharge Elimination System
 NRC – Nuclear Regulatory Commission
 OU – operable unit
 PCB – polychlorinated biphenyl
 pCi/g – picocuries per gram
 pCi/L – picocuries per liter
 POC – point of compliance
 ppm – parts per million
 ppm_w – parts per million by weight
 pt. – part
 R3M – Range Rule Risk Methodology
 RAO – remedial action objective
 RCRA – Resource Conservation and Recovery Act
 RWQCB – (California) Regional Water Quality Control Board San Francisco Bay
 § – section
 SIP – State Implementation Plan
 SMCL – secondary maximum contaminant level
 subpt. – subpart
 SWRCB – (California) State Water Resources Control Board
 TBC – to be considered
 TCLP – toxicity characteristic leaching procedure
 TEDE – total effective dose equivalent
 tit. – title
 UMTRCA – Uranium Mill Tailings Radiation Control Act
 U.S.C. – *United States Code*
 U.S. EPA – United States Environmental Protection Agency
 UXO – unexploded ordnance
 VOC – volatile organic compound
 WL – working level

**Table A2-4
Potential State Chemical-Specific^a ARARs by Medium**

Requirement	Prerequisite	Citation ^b	ARAR Determination	Comments
GROUNDWATER				
Cal/EPA Department of Toxic Substances Control^c				
State MCL list.	Source of drinking water.	Cal. Code Regs. tit. 22, §§ 64431 and 64444	Relevant and Appropriate	Substantive provisions are relevant and appropriate ARARs because the aquifer is a potential drinking water source.
State secondary MCL list.	Source of drinking water.	Cal. Code Regs. tit. 22, § 64449(a)	Not an ARAR	Secondary MCLs are not applicable or relevant and appropriate ARARs because they are not designed to be protective of human health. They are in place for contaminants that may cause cosmetic effects or aesthetic effects in drinking water.

Section A2 Chemical-Specific ARARs

Table A2-4 (Continued)

Requirement	Prerequisite	Citation ^b	ARAR Determination	Comments
		Cal. Water Code, div. 7, § 13304	Not an ARAR	Section 13304 does not constitute an ARAR because it does not itself establish or contain substantive environmental “standards, requirements, criteria or limitations” (CERCLA Section 121) and is not in itself directive in intent. In addition, Section 13304 is not more stringent than the substantive requirements of the potential state and federal ARARs identified in this table and Table A2-2.
Describes the water basins in San Francisco Bay Region, establishes beneficial uses of groundwater and surface water, establishes WQOs, including narrative and numerical standards, establishes implementation plans to meet WQOs and protect beneficial uses, and incorporates statewide water quality control plans and policies.		Comprehensive Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) (Cal. Water Code § 13240)	Applicable	Substantive requirements of Chapters 2 and 3 pertaining to beneficial uses, WQOs, an implementation plan and certain statewide water quality control plans are potential state ARARs for the surface water and groundwater components of this response action.

Table A2-4 (continued)

Requirement	Prerequisite	Citation ^b	ARAR Determination	Comments
<p>Establishes the policy that high-quality waters of the state “shall be maintained to the maximum extent possible” consistent with the “maximum benefit to the people of the State.” It provides that whenever the existing quality of water is better than that required by applicable water quality policies, such existing high-quality water will be maintained until it has been demonstrated to the state that any change will be consistent with maximum benefit to the people of the state, will not unreasonably affect present and anticipated beneficial use of such water, and</p> <p>will not result in water quality less than that prescribed in the policies. It also states that any activity that produces or may produce a waste or increased volume or concentration of waste and that discharges or proposes to discharge to existing high-quality waters will be required to meet waste-discharge requirements that will result in the best practicable treatment or control of the discharge.</p>		<p>Statement of Policy With Respect to Maintaining High Quality of Waters in California, SWRCB Res. 68-16</p>	<p>Not an ARAR</p>	<p>The DON has determined that SWRCB Res. 68-16 is not a chemical-specific ARAR for determining response action goals. However, SWRCB Res. 68-16 is a potential action-specific ARAR for regulating new discharges, such as treated groundwater, into the aquifer. The DON has determined that further migration of already-contaminated groundwater or soil gas is not a discharge governed by the language in Res. 68-16. More specifically, the language of SWRCB Res. 68-16 indicates that it is prospective in intent, applying to new discharges in order to maintain existing high-quality waters. It is not intended to apply to restoration of waters that are already degraded.</p>

Section A2 Chemical-Specific ARARs

Table A2-4 (continued)

Requirement	Prerequisite	Citation ^b	ARAR Determination	Comments
<p>Describes requirements for RWQCB oversight of investigation and cleanup and abatement activities resulting from discharges of hazardous substances. RWQCB may decide on cleanup and abatement goals and objectives for the protection of water quality and beneficial uses of water within each region. Establishes criteria for “containment zones” where cleanup to established water-quality goals is not economically or technically practicable.</p>		<p>Policies and procedures for investigation and cleanup and abatement of discharges under Cal. Water Code § 13304, SWRCB Res. 92-49</p>	<p>Not an ARAR</p>	<p>Not an ARAR for groundwater cleanup if Cal. Code Regs. tit. 22, § 66264.94(c) is determined to be a federal ARAR because SWRCB Res. 92-49 is not more stringent. Section A.2.2.1.2 includes a detailed discussion of SWRCB Res. 92-49.</p>
<p>Incorporated into all regional board basin plans. Designates all groundwater and surface waters of the state as drinking water except where the TDS is greater than 3,000 ppm, the well yield is less than 200 gpd from a single well, the water is a geothermal resource or in a water conveyance facility, or the water cannot reasonably be treated for domestic use using either best management practices or best economically achievable treatment practices.</p>		<p>SWRCB Res. 88-63 (Sources of Drinking Water Policy)</p>	<p>Applicable</p>	<p>Applies in determining beneficial uses for waters that may be affected by discharges of waste.</p> <p>Applies to soil actions that will result in a discharge to groundwater or surface water.</p>

Table A2-4 (continued)

Requirement	Prerequisite	Citation ^b	ARAR Determination	Comments
Establishes concentration limits for cleanup actions, including groundwater, surface water, and the unsaturated zones for other than hazardous waste at background. Allows a higher cleanup limit (but not to exceed MCLs) if background is not technically or economically achievable.		Cal. Code Regs. tit. 27, §§ 20380(a); 20400(a), (c), (d), (e), and (g)	Not an ARAR	Not more stringent than federal regulations at Cal. Code Regs. tit. 22, § 66264.94. See Section A2.2.1.2 for additional discussion.
Establishes concentration limits for cleanup actions, including groundwater, surface water, and the unsaturated zones for hazardous waste at background. Allows a higher cleanup limit (but not to exceed MCLs) if background is not technically or economically achievable.		Cal. Code Regs. tit. 23, §§ 2550(a); 2550.4(d), (e), and (f)	Not an ARAR	Cal. Code Regs. tit. 23, § 2550(a) addresses the general applicability of other standards in Chapter 15 and does not contain standards itself. Cal. Code Regs. tit. 23, §§ 2550.4(d), (e), and (f) are not more stringent than federal ARARs at Cal. Code Regs. tit. 22, § 66264.94. See Section A2.2.1.2 for additional discussion.
Definitions of designated waste, nonhazardous waste, and inert waste.		Cal. Code Regs. tit. 27, §§ 20210, 20220, and 20230	Applicable	Applies to discharges of designated waste (nonhazardous waste that could cause degradation of surface or ground waters), nonhazardous waste, or inert waste to land for treatment, storage, or disposal.

Section A2 Chemical-Specific ARARs

Table A2-4 (continued)

Notes:

- ^a many potential action-specific ARARs contain chemical-specific limitations and are addressed in the action-specific ARAR tables
- ^b only the substantive provisions of the requirements cited in this table are potential ARARs
- ^c statutes and policies, and their citations, are provided as headings to identify general categories of potential ARARs for the convenience of the reader; listing the statutes and policies does not indicate that the DON accepts the entire statutes or policies as potential ARARs; specific potential ARARs are addressed in the table below each general heading; only pertinent substantive requirements of specific citations are considered potential ARARs

Acronyms/Abbreviations:

ARAR – applicable or relevant and appropriate requirement
 Basin Plan – Water Quality Control Plan (RWQCB Region) Basin
 Cal. Code Regs. – *California Code of Regulations*
 Cal/EPA – California Environmental Protection Agency
 Cal. Water Code – *California Water Code*
 CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act
 C.F.R. – *Code of Federal Regulations*
 div. – division
 DON – Department of the Navy
 gpd – gallons per day
 MCL – maximum contaminant level
 millirem/year – millirem per year
 NPDES – National Pollutant Discharge Elimination System
 OU – operable unit
 pCi/L – picocuries per liter
 Porter-Cologne Act – Porter-Cologne Water Quality Control Act
 ppm – parts per million
 RCRA – Resource Conservation and Recovery Act
 Res. – Resolution
 RWQCB – (California) Regional Water Quality Control Board
 § – section
 SIP – State Implementation Plan
 SWRCB – (California) State Water Resources Control Board
 TDS – total dissolved solids
 tit. – title
 WQO – water quality objective

Section A3

LOCATION-SPECIFIC ARARs

Potential location-specific ARARs are identified and discussed in this section. The discussions are presented based on various attributes of the site location, such as whether it is within a floodplain. Additional surveys will be performed in connection with the removal action design and implementation to confirm location-specific ARARs where inadequate siting information currently exists, or in the event of changes to planned facility locations.

A3.1 SUMMARY OF LOCATION-SPECIFIC ARARs

Cultural resources and biological resources are the resource categories relating to location-specific requirements potentially affected by the Building 965 Area removal actions. The conclusions for ARARs pertaining to this resource are presented in the following section.

A3.1.1 Cultural Resources Conclusions

There are no potential historical buildings or landmarks in the Building 965 Area. There are no known archaeological resources in the Building 965 Area. However, depending on the final depth of excavation, there is a potential for undisturbed land to be excavated in the Building 965 Area. As a result, substantive provisions of the Archaeological Resources Protection Act of 1979, set forth in 32 CFR 229.4 and 229.13(a), for the protection of archaeological resources on federal lands, are applicable federal ARARs for the excavation activities. In addition, substantive provisions of the Archaeological and Historic Preservation Act (16 USC §469–469c-1) are applicable for the removal excavation at the Building 965 Area. Because this work is being performed on previously disturbed land, an archaeological survey of the area is not required.

A3.1.2 Biological Resources Conclusions

California Department of Fish & Game (CDFG) code sections impose a substantive, promulgated environmental protection requirement in which state protected species would be protected when practicable and the appropriate state authority would be consulted if conflicts arise. However, pertinent species, including migratory nongame bird species, are not present at the site. Therefore, substantive provisions of CDFG Code § 3005, § 3511, and § 3513 are not state ARARs.

A3.2 DETAILED DISCUSSION OF ARARs

The following subsection provides a detailed discussion of federal and state ARARs by location-specific resources. Pertinent and substantive provisions of the potential ARARs listed and described below were reviewed to determine whether they are potential federal or state ARARs for the Building 965 Area groundwater, soil, and air EE/CA.

Requirements that are determined to be ARARs or TBCs are identified in Table A3-1 (federal) and Table A3-2 (state) at the end of this section. ARARs determinations are presented in the column with the heading “ARAR Determination.” Determinations of status for location-specific ARARs were generally based on maps or lists included in the

regulation or prepared by the administering agency. References to the document or agency consulted are provided in the “Comments” column and may be provided in footnotes to the table. Specific issues concerning some of the requirements are discussed in the following sections.

A3.2.1 Cultural Resources ARARs

There are no potential historical buildings or landmarks in the Building 965 Area. There are no known archaeological resources in the Building 965 Area. However, depending on the final depth of excavation, there is a potential for undisturbed land to be excavated at the site. As a result, substantive provisions of the following federal acts:

- Archaeological and Historic Preservation Act (16 USC §469–469c-1) and
- Archaeological Resources Protection Act of 1979 (16 U.S.C. § 470aa–470mm)

are applicable federal ARARs for the removal actions at the Building 965 Area.

A3.2.1.1 ARCHAEOLOGICAL AND HISTORIC PRESERVATION ACT

The Archaeological and Historic Preservation Act, 16 U.S.C. § 469–469c-1, provides for the preservation of historical and archaeological data that might otherwise be lost as a result of dam construction or alterations of the terrain. If activities in connection with any federal construction project or federally approved project may cause irreparable loss to significant scientific, prehistorical, or archaeological data, the act requires the agency undertaking that project to preserve the data or request the Department of the Interior (DOI) to do so. This act differs from the National Historic Preservation Act (NHPA) in that it encompasses a broader range of resources than those listed on the National Register and mandates only the preservation of the data (including analysis and publication).

The Archaeological and Historic Preservation Act requires that for federally approved projects that may cause irreparable loss to significant scientific, prehistoric, historic, or archaeological data, the data must be preserved by the agency undertaking the project or the agency undertaking the project may request DOI to do so. There are no potential historical buildings or landmarks, or known archeological resources which could potentially be impacted by the removal action in the Building 965 Area. Because this work is being performed on previously disturbed land, an archaeological survey of the area is not required.

A3.2.1.2 ARCHAEOLOGICAL RESOURCES PROTECTION ACT OF 1979

Pub. L. No. 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 16 U.S.C. § 470cc.

Substantive provisions at 16 U.S.C. § 470ee(a) state, “No person may excavate, remove, damage, or otherwise alter or deface, or attempt to excavate, remove, damage, or

otherwise alter or deface any archaeological resource located on public lands or Indian lands unless” permitted. Although no permit is required for work under CERCLA, the requirements for a permit were reviewed.

There are no potential historical buildings or landmarks, or known archeological resources which could potentially be impacted by the removal action in the Building 965 Area. However, depending on the final depth of excavation, there is a potential for undisturbed land to be excavated at the site. Therefore, the substantive requirements of this act may be potentially ARARs.

A3.2.2 Biological Resources ARARs

However, pertinent species, including migratory nongame bird species, are not present at the site. Therefore, substantive provisions of CDFG Code § 3005, § 3511, and § 3513 are not state ARARs. These code sections impose a substantive, promulgated environmental protection requirement in which state protected species would be protected when practicable and the appropriate state authority would be consulted if conflicts arise.

A3.2.2.1 FEDERAL

Due to the inadequate habitat and lack of biological resources, no federal requirements were identified as potential ARARs for the removal action at the Building 965 Area.

A3.2.2.2 STATE

Fully Protected Species

Cal. Fish & Game Code § 3511: This section states that fully protected birds or parts thereof may not be taken or possessed at any time. The list of fully protected birds includes: American peregrine falcon (*Falco peregrinus anatum*), California brown pelican, California black rail (*Laterallus jamaicensis coturniculus*), California clapper rail (*Rallus longirostris obsoletus*), California condor (*Gymnogyps californianus*), California least tern (*Sterna albifrons browni*), golden eagle, greater sandhill crane (*Grus canadensis tabida*), light-footed clapper rail (*Rallus longirostris levipes*), southern bald eagle (*Haliaeetus leucocephalus leucocephalus*), trumpeter swan (*Cygnus buccinator*), white-tailed kite (*Elanus leucurus*), and Yuma clapper rail (*Rallus longirostris yumanensis*). Cal. Fish & Game Code § 3511 is not applicable because the United States of America has not waived sovereign immunity for this State of California requirement. It is not a relevant and appropriate requirement because none of the pertinent species are present at the site. Cal. Fish & Game Code § 3511 is not an ARAR.

Other California Fish and Game Code Requirements

The following requirements are also not ARARs:

- Cal. Fish & Game Code, § 3005(a) is not applicable because the United States of America has not waived sovereign immunity for this State of California requirement. It is not a relevant and appropriate requirement because none of the pertinent species are present at the site. Cal. Fish & Game Code, § 3005(a) is not an ARAR.

Section A3 Location-Specific ARARs

- Cal. Fish & Game Code § 3513 requirement is not applicable because of the lack of the migratory nongame bird species at the site. Cal. Fish & Game Code § 3513 is not an ARAR.

**Table A3-1
Potential Federal Location-Specific ARARs**

Location	Requirement	Prerequisite	Citation ^a	ARAR Determination	Comments
Archaeological and Historic Preservation Act (16 U.S.C. § 469–469c-1)^b					
Within area where action may cause irreparable harm, loss, or destruction of significant artifacts	Construction on previously undisturbed land would require an archaeological survey of the area. Data recovery and preservation would be required if significant archaeological or historical data were found on-site. The responsible official or Secretary of the Interior is authorized to undertake data recovery and preservation.	Regulated alteration of terrain caused as a result of a federal construction project or federally licensed activity or program where action may cause irreparable harm, loss, or destruction of significant artifacts.	16 U.S.C. § 469–469c-1 40 C.F.R. § 6.301(c)	Applicable	Substantive provisions are applicable if excavation at Parcel 1A enters areas previously undisturbed where there is a potential to affect archaeological or historical data.
Archaeological Resources Protection Act of 1979, as Amended (16 U.S.C. § 470aa–470mm)^b					
Archaeological resources on federal land	Prohibits unauthorized excavation, removal, damage, alteration, or defacement of archaeological resources located on public lands unless such action is conducted pursuant to a permit.	Archaeological resources on federal land.	Pub. L. No. 96-95 16 U.S.C. § 470aa–470mm	Applicable	Substantive provisions are applicable for excavation at Parcel 1A if it is determined that archaeological resources are potentially present in area of excavation.

Section A3 Location-Specific ARARs

Table A3-1 (Continued)

NOTES:

- ^a only the substantive provisions of the requirements cited in this table are potential ARARs
- ^b statutes and policies, and their citations, are provided as headings to identify general categories of potential ARARs for the convenience of the reader; listing the statutes and policies does not indicate that the DON accepts the entire statutes or policies as potential ARARs; specific potential ARARs are addressed in the table below each general heading; only substantive requirements of the specific citations are considered potential ARARs

Acronyms/Abbreviations:

app. – appendix
ARAR – applicable or relevant and appropriate requirement
CCC – California Coastal Commission
Cal. Code Regs. – *California Code of Regulations*
C.F.R. – *Code of Federal Regulations*
DON – Department of the Navy
Exec. Order No. – executive order number
FEMA – Federal Emergency Management Agency
pt. – part
Pub. L. No. – public law number
RCRA – Resource Conservation and Recovery Act
§ – section
U.S. – United States
U.S.C. – *United States Code*

**Table A3-2
Potential State Location-Specific ARARs**

Location	Requirement	Prerequisite	Citation ^a	ARAR Determination	Comments
Birds or mammals	It is unlawful to take birds or mammals with any net, pound, cage, trap, set line or wire, or poisonous substance, or to possess birds or mammals so taken, whether taken within or without this state.		Cal. Fish & Game Code § 3005(a) (Statute 1957, c. 456, p. 1353, Section 3005)	Not an ARAR	Cal. Fish & Game Code, § 3005(a) is not applicable because the United States of America has not waived sovereign immunity for this State of California requirement. It is not a relevant and appropriate requirement because none of the pertinent species are present at the site. Cal. Fish & Game Code, § 3005(a) is not an ARAR.
Fully protected birds	Fully protected birds or parts thereof may not be taken or possessed at any time.	A fully protected species must be potentially affected. See Section A3.2.4.2 for list.	Cal. Fish & Game Code § 3511	Not an ARAR	Cal. Fish & Game Code § 3511 is not applicable because the United States of America has not waived sovereign immunity for this State of California requirement. It is not a relevant and appropriate requirement because none of the pertinent species are present at the site. Cal. Fish & Game Code § 3511 is not an ARAR.
Migratory nongame birds	Action must be taken to prevent take of migratory nongame birds (as designated in the MBTA).	Migratory nongame birds.	Cal. Fish & Game Code § 3513	Not an ARAR	This requirement is not applicable because of the lack of the migratory nongame bird species at the site. Cal. Fish & Game Code § 3513 is not an ARAR.

NOTES:

- ^a only the substantive provisions of the requirements cited in this table are potential ARARs
- ^b statutes and policies, and their citations, are provided as headings to identify general categories of potential ARARs for the convenience of the reader; listing the statutes and policies does not indicate that the DON accepts the entire statutes or policies as potential ARARs; specific potential ARARs follow each general heading; only substantive requirements of the specific citations are considered potential ARARs

Acronyms/Abbreviations:

- ARAR – applicable or relevant and appropriate requirement
- Cal. Code Regs. – *California Code of Regulations*
- Cal. Fish & Game Code – *California Fish and Game Code*
- Cal. Pub. Res. Code – *California Public Resources Code*

Table A3-2 (Continued)

Section A3 Location-Specific ARARs

Cal. Water Code – *California Water Code*
CCC – California Coastal Commission
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act
CESA – California Endangered Species Act
C.F.R. – *Code of Federal Regulations*
CWA – Clean Water Act
DON – Department of the Navy
FESA – Federal Endangered Species Act
MBTA – Migratory Bird Treaty Act
NCP – National Oil and Hazardous Substances Pollution Contingency Plan
§ – section
TBC – to be considered
tit. – title
U.S.C. – *United States Code*

Section A4

ACTION-SPECIFIC ARARs

This EE/CA Report evaluates the removal action alternatives for the Building 965 Area in Parcel 1A at DoDHF Novato in Novato, California. This ARARs analysis is based on five alternatives for the site. Alternative 1 is no further action as required under the NCP, Alternative 2 is institutional controls, Alternative 3 is source area removal excavation with institutional controls, Alternative 4 is the same as Alternative 3 but includes contingency soil vapor extraction. Detailed descriptions of the removal alternatives are provided in the main text of this EE/CA Report.

Tables A4-1 and A4-2 at the end of this section present and evaluate federal and state potential action-specific ARARs for the Building 965 Area, respectively. A discussion of the requirements determined to be pertinent to each alternative being evaluated for Building 965 Area action is presented in this section. A discussion of how the alternative complies with each identified ARAR is also provided.

A4.1 ALTERNATIVE 1 – NO FURTHER ACTION

There is no need to identify ARARs for the no action alternative because ARARs apply to “any removal or remedial action conducted entirely on-site” and “no action” is not a removal or remedial action (CERCLA Section 121[e], 42 U.S.C. § 9621[e]). CERCLA Section 121 (42 U.S.C. § 9621) cleanup standards for selection of a Superfund remedy, including the requirement to meet ARARs, are not triggered by the no action alternative (U.S. EPA 1991b). Therefore, a discussion of compliance with action-specific ARARs is not appropriate for this alternative.

A4.2 ALTERNATIVE 2 – INSTITUTIONAL CONTROLS

Institutional controls may be required to manage residual risk within the Building 965 Area at Parcel 1A at DoDHF Novato if active remediation does not reduce risk to levels that are acceptable for future unrestricted use.

State statutes that have been accepted by the DON as ARARs for implementing institutional controls and entering into an Environmental Restriction Covenant and Agreement with DTSC include substantive provisions of the Cal. Civ. Code § 1471 and Cal. Health & Safety Code §§ 25355.5. DTSC promulgated a regulation on 19 April 2003 regarding “Requirements for Land Use Covenants” at Cal. Code Regs. tit. 22, § 67391.1. The substantive provisions of this regulation have been determined to be “relevant and appropriate” state ARARs by the DON.

The substantive provisions of Cal. Civ. Code § 1471 are the following general narrative standard: “. . . to do or refrain from doing some act on his or her own land . . . where . . . : (c) Each such act relates to the use of land and each such act is reasonably necessary to protect present or future human health or safety or the environment as a result of the presence on the land of hazardous materials, as defined in Section 25260 of the Health and Safety Code.” This narrative standard would be implemented through incorporation of restrictive environmental covenants in the deed at the time of transfer. These covenants would be recorded with the environmental restriction covenant and agreement and run with the property.

Cal. Health & Safety Code §§ 25355.5(a)(1)(C) provide the authority for the state to enter into voluntary agreements to establish land-use covenants with the owner of property. The substantive requirements of the following Cal. Health & Safety Code § 25355.5(a)(1)(C) provisions are “relevant and appropriate”: “. . . execution and recording of a written instrument that imposes an easement, covenant, restriction, or servitude, or combination thereof, as appropriate, upon the present and future uses of the land.” The DON will comply with the substantive requirements of Cal. Health & Safety Code §§ 25355.5(a)(1)(C) by incorporating the CERCLA use restrictions into the DON’s deed of conveyance in the form of restrictive covenants under the authority of Cal. Civ. Code § 1471 and into the environmental restriction covenant and agreement. The substantive provisions of Cal. Health & Safety Code §§ 25355.5(a)(1)(C) may be interpreted in a manner that is consistent with the substantive provisions of Cal. Civ. Code § 1471. The covenants shall be recorded with the deed and run with the property.

In addition to being implemented through the Environmental Restriction Covenant and Agreement between the DON and DTSC, the appropriate and relevant portions of Cal. Health & Safety Code §§ 25355.5(a)(1)(C) and Cal. Civ. Code § 1471 shall also be implemented through the deed between the DON and the transferee.

U.S. EPA agrees that the substantive portions of the state statutes and regulations referenced in this section are ARARs. U.S. EPA specifically considers sections (a)(1), (a)(2), (d), (e)(1) and (e)(2) of Cal. Code Regs., tit. 22 § 67391.1, to be ARARs for this EE/CA. DTSC’s position is that all of the state statutes and regulations referenced in this section are ARARs.

A4.3 ALTERNATIVE 3 – SOURCE AREA REMOVAL EXCAVATION WITH INSTITUTIONAL CONTROLS

The following sections describe the potential federal and state ARARs for excavation and temporary storage of waste. Guidance pertaining to institutional controls and potential state ARARs for sites that are transferring to nonfederal entities are discussed in Section A4.2.

A4.3.1 Identification and Management of Waste Soil

Soil excavated during this project will be stockpiled on lined and bermed staging areas prior to off-site disposal. Though the existing soil data suggest that the excavated waste will likely classify as non-hazardous, the soil will be managed in accordance with the following federal and state requirements depending on the nature of the contamination and whether the soil is RCRA or non-RCRA hazardous. It is anticipated the excavated soil will consist of RCRA hazardous and/or non-RCRA hazardous waste due to elevated concentrations of VOCs and metals. Where possible, the different waste types will be segregated.

If, based on representative sampling and analysis of each stockpile, soil excavated from the area is determined to be RCRA hazardous waste, then the substantive provisions of the amended (effective 22 April 2002) RCRA staging pile regulations are potentially applicable. These regulations consist of the performance and technical standards for staging piles (40 C.F.R. § 264.554[d][1][i–ii] and [d][2]); staging pile requirements for reactive, ignitable, and incompatible wastes (§ 264.554[e–f]); and closure requirements for staging piles (§ 264.554[j]–[k]). A staging pile may be designated for temporary (up to 2 years or more based on the necessity to assure timely and efficient implementation of remedial actions (§ 264.554[i][2])

treatment or storage of solid, nonflowing remediation waste (§ 264.554[h]). The RCRA LDRs, the landfill minimum technology requirements, and the waste pile permitting requirements are not applicable to staging piles for RCRA hazardous wastes.

The staging pile regulations also require that the unit facilitate a remedy that is reliable, effective, and protective (40 C.F.R. § 264.554[d][1][i]), and be designed using appropriate measures (e.g., liners, covers, run-on/runoff controls) to prevent or minimize releases and cross-media transfers of hazardous wastes and constituents (§ 264.554[d][1][ii]). For units located in a previously contaminated area of the facility, all remediation wastes, contaminated containment system components, structures, and equipment that are contaminated with waste or leachate must be removed or decontaminated within 180 days after the operating term of the staging pile expires (§ 264.554[j]). In addition, contaminated subsoils must be decontaminated. For units located on uncontaminated areas of the facility, within 180 days following expiration of the operating term, the staging pile must be closed in accordance with waste pile closure requirements at Cal. Code Regs. tit. 22, § 66264.258(a) or § 66265.258(a) and the closure performance standards at Cal. Code Regs. tit. 22, § 66264.111 or § 66265.111 for permitted and interim status facilities, respectively (§ 264.554[k]).

If the waste is determined not to be a RCRA hazardous waste, further evaluation of the criteria to determine whether the requirements are relevant and appropriate is necessary. The wastes and proposed actions are similar to those addressed by the RCRA staging pile requirements. Using the pertinent NCP criteria listed in 40 C.F.R. § 300.400(g)(2) (the substances and media at the site are the same or similar to those addressed by the RCRA requirements), the media and the proposed action are the same as those addressed by RCRA. Therefore, the 40 C.F.R. § 264.554(d)(1)(i–ii) and (d)(2) (e), (f), (h), (i), (j), and (k) requirements are potentially relevant and appropriate even if they are determined not to be applicable.

For excavated soil that is determined, based on representative sampling and analysis, to be non-RCRA hazardous waste, the substantive requirements at Cal. Health & Safety Code, div. 20, ch. 6.5, § 25123.3, may be potentially applicable temporary storage. Under these requirements, the material can be stockpiled (pending off-site transportation and disposal) at the site for up to 90 days without satisfying all the requirements of a hazardous waste facility permit provided the following conditions are met.

- The soil does not contain free liquids.
- The waste is accumulated on an impermeable surface (minimum 20-mil liner).
- The generator controls against wind dispersion and rain runoff.
- The generator inspects the site weekly and after storms to assure the erosion controls are working properly.
- After final off-site transportation, the accumulation site is inspected and remediated as necessary.

Only those substantive requirements that are more stringent than the federal ARARs at 40 C.F.R. § 264.554(d)(1)(i–ii) and (d)(2) (e), (f), (h), (i), (j), and (k) are potential ARARs. The 90-day period, the specific liner requirements, and the inspection requirements at Cal. Health & Safety Code § 25123.3(a)(2)(B) and (D) are more stringent and are potential state ARARs.

A4.3.2 MANAGEMENT OF EXTREMELY HAZARDOUS WASTES

Substantive provisions of Cal. Code Regs. Title 22 §67430.3 requires the removal of spilled or improperly disposed extremely hazardous wastes. If the excavated soil waste at the Building 965 Area is determined to be extremely hazardous waste, the substantive provisions of Cal. Code Regs. Title 22 §67430.3 are potentially applicable state ARARs.

A4.3.3 FUGITIVE DUST CONTROL

Requirements that have been incorporated into the SIP and are therefore considered to be federal ARARs for this action include substantive requirements of South Coast Air Quality Management District (SCAQMD) fugitive dust Rules 403, 404, and 405. Requirements that have not been incorporated into the SIP and are therefore considered state requirements include Rule 401. Rules 401, 403, 404, and 405 regulate release of dust and particulate matter that could occur during grading of soil. The DON will comply with these potential action-specific federal and state ARARs by employing standard dust-suppression measures such as wetting the soil during the remedial action phase.

A4.4 ALTERNATIVE 4 – SOURCE AREA REMOVAL EXCAVATION WITH CONTINGENCY SOIL VAPOR EXTRACTION AND INSTITUTIONAL CONTROLS

The following sections discuss potential federal and state ARARs for SVE. Potential federal and state ARARs for the excavation component of this alternative are discussed in Section A4.3. Guidance pertaining institutional controls and potential state ARARs for sites that are transferring to nonfederal entities are discussed in Section A4.2.

A4.4.1 Criteria for “Shutoff” of the SVE System

The goal of the SVE system, if required, would be to remove concentrations of VOCs from vadose zone so that residual risk is acceptable for unrestricted land use. System operation would be discontinued if the following condition is met:

1. VOC removal results in risks to human health that are within acceptable limits for unrestricted use (i.e., below 1×10^{-6}).

If one of the two following conditions are encountered during SVE system operation, the Navy will consult with the regulatory agencies to discuss potential shutdown of the SVE system:

2. Soil gas concentrations in performance monitoring probes reach and remain at asymptotic conditions (i.e., the slope of time-series soil gas results in performance monitoring probes approaches zero).
3. The SVE system has operated for a four to six month time-frame.

A4.4.2 FEDERAL ARARs

Federal laws that give rise to potential ARARs for actions to be undertaken as part of Alternative 4 include RCRA. These requirements are described in the following subsections.

RCRA

Waste streams created in the course of implementing the removal action would be subject to RCRA requirements for determining whether wastes would be classified as hazardous. Hazardous waste determinations for the soil cuttings generated from the installation of the SVE system and the spent carbon generated from the off-gas treatment would be made at the time the waste is generated. If these wastes are determined to be hazardous, then the appropriate requirements outlined in Table A4-1 for storing, manifesting, and transporting these materials for final disposal would need to be followed.

Clean Air Act

Off-gas from the air stripper operation would need to comply with the air emissions requirements of the BAAQMD. Requirements that have been incorporated into the SIP and are therefore considered to be federal ARARs include Regulation 8 Rules 40 and 47 and Regulation 2 Rules 1 and 5 and 1303.

A4.4.3 STATE ARARs

Off-gas from the SVE system operation would need to comply with the air emissions requirements of the BAAQMD. Requirements include Regulation 8 Rule 40, Regulation 8 Rule 47, Regulation 2 Rule 1, and Regulation 2 Rule 5. These requirements and their applicability to Alternative 4 are discussed below.

Regulation 8 Rule 40 Aeration of Contaminated Soil and Removal of Underground Storage Tanks

The purpose of this Rule is to limit the emission of organic compounds from soil that has been contaminated by organic chemical or petroleum chemical leaks or spills, and to describe an acceptable procedure for controlling emissions from underground storage tanks during removal or replacement. The operation of the SVE system may result in the emission of organic compounds from soil and soil gas therefore; this Rule is an applicable state ARAR.

Regulation 8 Rule 47 Air Stripping and Soil Vapor Extraction Operations

The purpose of this Rule is to limit emissions of organic compounds from contaminated groundwater and soil. The provisions of this Rule shall apply to new and modified air stripping and soil vapor extraction equipment used for the treatment of groundwater or soil contaminated with organic compounds. The operation of the SVE system may result in the emission of organic compounds from soil and soil gas therefore; this Rule is an applicable state ARAR.

Regulation 2 Rule 1 General Permit Requirements

The purpose of Regulation 2 is to provide an orderly procedure for the review of new sources of air pollution, and of the modification and operation of existing sources, and of associated air pollution control devices, through the issuance of authorities to construct and permits to operate. The applicability of Regulation 2, Rule 1 is illustrated by Figure 2-1-101, Permit/Exemption Flow Chart. An applicant may choose to obtain a permit to operate for a source that is exempt from permit requirements. In that case, the affected

source is deemed to be subject to the requirements of Section 2-1-302 until such time as an application for return to exempt status is approved. The operation of the SVE system may result in a new source of air pollution therefore; this Rule is an applicable state ARAR.

Regulation 2 Rule 5 New Source Review of Toxic Air Contaminants

The purpose of this rule is to provide for the review of new and modified sources of toxic air contaminant (TAC) emissions in order to evaluate potential public exposure and health risk, to mitigate potentially significant health risks resulting from these exposures, and to provide net health risk benefits by improving the level of control when existing sources are modified or replaced. The rule applies to a new or modified source of toxic air contaminants that is required to have an authority to construct or permit to operate pursuant to Regulation 2, Rule 1. New and modified sources with Hazardous Air Pollutant emissions may also be subject to the Maximum Achievable Control Technology (MACT) requirement of Regulation 2, Rule 2, Section 317. The operation of the SVE system may result in a review of new TAC emissions therefore; this Rule is an applicable state ARAR.

Regulation 11, Rule 2 Asbestos Demolition, Renovation and Manufacturing

The purpose of this Rule is to control emissions of asbestos to the atmosphere during demolition, renovation, milling and manufacturing to establish appropriate waste disposal procedures. While preliminary inspections of Building 965 indicate that no asbestos is present, the BAAQMD will be notified of plans to demolish the building if it is determined to be a component of the proposed action at the Building 965 Area.

A4.4.4 CONCLUSIONS

For Alternative 4, potentially applicable federal ARAR include RCRA and potential applicable state ARARs include BAAQMD Regulation 8 Rule 40, Regulation 8 Rule 47, Regulation 2 Rule 1, and Regulation 2 Rule 5.

**Table A4-1
Potential Federal Action-Specific ARARs**

Alternatives for the EE/CA at the Building 965 Area: 1 – No Further Action, 2 – Institutional Controls, 3 – Source area Removal Excavation with Institutional Controls, and 4 – Source area Removal Excavation with Contingency Soil Vapor Extraction and Institutional Controls.							
Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
Resource Conservation and Recovery Act (42 U.S.C. §§ 6901–6991[i])*							
Site closure	Minimize the need for further maintenance controls and minimize or eliminate, to the extent necessary to protect human health and the environment, postclosure escape of hazardous waste, hazardous constituents, leachate, contaminated rainfall or runoff, or waste decomposition products to groundwater or surface water or to the atmosphere.	Hazardous waste management facility.	Cal. Code Regs. tit. 22, § 66264.111(a) and (b)	3, 4		Applicable for the closure of the staging piles at the site.	
On-site waste generation	Person who generates waste shall determine if that waste is a hazardous waste.	Generator of waste.	Cal. Code Regs. tit. 22, § 66262.10(a), 66262.11	3, 4		Applicable for operations where waste soil is generated. The determination of whether wastes generated during remedial activities are hazardous will be made at the time the wastes are generated.	
	Requirements for analyzing waste for determining whether waste is hazardous.	Generator of waste.	Cal. Code Regs. tit. 22, § 66264.13(a) and (b)	3, 4		Applicable for characterizing generated waste soil.	
Hazardous waste accumulation	On-site hazardous waste accumulation is allowed for up to 90 days as long as the waste is stored in containers in accordance with § 66262.171–178 or in tanks, on drip pads, inside buildings, is labeled and dated, etc.	Accumulate hazardous waste.	Cal. Code Regs. tit. 22, § 66262.34	3, 4		Applicable for any operation where hazardous waste is generated. Generated waste soil that has the potential to be hazardous waste will be handled as hazardous during characterization. Waste determined to be hazardous will be disposed of within 90 days.	

Section A4 Action-Specific ARARs

Table A4-1 (continued)

Alternatives for the EE/CA at the Building 965 Area: 1 – No Further Action, 2 – Institutional Controls, 3 – Source area Removal Excavation with Institutional Controls, and 4 – Source area Removal Excavation with Contingency Soil Vapor Extraction and Institutional Controls.

Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
Container storage	Containers of RCRA hazardous waste must be:	Storage of RCRA hazardous waste not meeting small-quantity generator criteria before treatment, disposal, or storage elsewhere, in a container.	Cal. Code Regs. tit. 22, § 66264.171, 66264.172, and 66264.173	3, 4			Applicable for temporary storage of soil waste during characterization or, if hazardous, prior to off-site disposal. Temporary storage requirements may be relaxed by 264.553 below.
	<ul style="list-style-type: none"> • maintained in good condition, • compatible with hazardous waste to be stored, and • closed during storage except to add or remove waste. 						
	Inspect container storage areas weekly for deterioration.						
	Place containers on a sloped, crack-free base, and protect from contact with accumulated liquid. Provide containment system with a capacity of 10 percent of the volume of containers of free liquids. Remove spilled or leaked waste in a timely manner to prevent overflow of the containment system.	Storage in a container of RCRA hazardous waste not meeting small-quantity generator criteria before treatment, disposal, or storage elsewhere.	Cal. Code Regs. tit. 22, § 66264.175(a) and (b)	3, 4			Applicable for temporary storage of soil waste during characterization or, if hazardous, prior to off-site disposal. Temporary storage requirements may be relaxed by 264.553 below.

Table A4-1 (continued)

Alternatives for the EE/CA at the Building 965 Area: 1 – No Further Action, 2 – Institutional Controls, 3 – Source area Removal Excavation with Institutional Controls, and 4 – Source area Removal Excavation with Contingency Soil Vapor Extraction and Institutional Controls.							
Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
Container storage (continued)	Keep incompatible materials separate. Separate incompatible materials stored near each other by a dike or other barrier.		Cal. Code Regs. tit. 22, § 66264.177	3, 4			Potentially applicable for temporary storage of soil or groundwater waste during characterization or, if hazardous, prior to off-site disposal. Temporary storage requirements may be relaxed by 264.553 below.
	At closure, remove all hazardous waste and residues from the containment system, and decontaminate or remove all containers and liners.		Cal. Code Regs. tit. 22, § 66264.178	3, 4			Potentially applicable for temporary storage of soil or groundwater waste during characterization or, if hazardous, prior to off-site disposal. Temporary storage requirements may be relaxed by 264.553 below.
Waste pile	Use a single liner and leachate collection system. Waste put into waste pile is subject to land ban regulations.	RCRA hazardous waste, noncontainerized accumulation of solid, nonflammable hazardous waste that is used for treatment or storage.	Cal. Code Regs. tit. 22, § 66264.251 (except 251[j], 251[e][11])	3, 4			Applicable if a RCRA hazardous waste is stored or treated in piles
Staging pile	Staging piles need to follow the federal requirements at 40 C.F.R. § 264.554.	RCRA or non-RCRA hazardous waste stored temporarily.	Cal. Code Regs. tit. 22, § 66264.552(f)	3, 4			Applicable if a RCRA hazardous waste is treated, stored, or disposed of in a miscellaneous unit
Temporary unit	Alternative requirements that are protective of human health or the environment may replace design, operating, or closure standards for temporary tanks and container storage areas.		Cal. Code Regs. tit. 22, § 66264.553(b), (d), (e), and (f)	3, 4			Applicable for waste containers stored for characterization or staging prior to off-site disposal.

Section A4 Action-Specific ARARs

Table A4-1 (continued)

Alternatives for the EE/CA at the Building 965 Area: 1 – No Further Action, 2 – Institutional Controls, 3 – Source area Removal Excavation with Institutional Controls, and 4 – Source area Removal Excavation with Contingency Soil Vapor Extraction and Institutional Controls.							
Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
Staging pile	Allows generators to accumulate solid remediation waste in a U.S. EPA-designated pile for storage only, up to 2 years, during remedial operations without triggering LDRs.	Hazardous remediation waste temporarily stored in piles.	40 C.F.R. § 264.554(d)(1)(i–ii) and (d)(2), (e), (f), (h), (i), (j), and (k)	3, 4			Applicable for soil excavated and staged prior to characterization and off-site disposal.
Closure of waste pile	At closure, owner shall remove or decontaminate all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste. If waste is left on-site, perform postclosure care in accordance with the closure and postclosure care requirements that apply to landfills.	Waste pile used to store hazardous waste.	Cal. Code Regs. tit. 22, § 66264.258(a) and (b) except references to procedural requirements		3, 4		Substantive provisions are relevant and appropriate for closure of staging piles.
Closure of staging pile	At closure, owner shall remove or decontaminate all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste.	Staging pile used to temporarily store or treat waste.	Cal. Code Regs. tit. 22, § 66264.258(a)		3, 4		Substantive provisions are relevant and appropriate for closure of staging piles.
Treatment in a miscellaneous unit	Design and operating standards for unit in which hazardous waste is treated.	Treatment of hazardous waste in a unit.	Cal. Code Regs. tit. 22, § 66264.601	3, 4			Applicable if a RCRA hazardous waste is treated, stored, or disposed of in a miscellaneous unit

Table A4-1 (continued)

Alternatives for the EE/CA at the Building 965 Area: 1 – No Further Action, 2 – Institutional Controls, 3 – Source area Removal Excavation with Institutional Controls, and 4 – Source area Removal Excavation with Contingency Soil Vapor Extraction and Institutional Controls.							
Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
Safe Drinking Water Act (42 U.S.C. § 300[f]–300[j]-26)*							
Injection	The UIC program prohibits injection activities that allow movement of contaminants into underground sources of drinking water that may result in violations of MCLs or adversely affect health.	An approved UIC program is required in states listed under SDWA Section 1422. Class I wells and Class IV wells are the relevant classifications for CERCLA sites. Class I wells are used to inject hazardous waste beneath the lowermost formation that contains a USDW within 0.25 mile of the well.	40 C.F.R. § 144.12, excluding the reporting requirements in § 144.12(b) and 144.12(c)(1)				Not an ARAR. No injection of treated groundwater.
	The UIC program regulates construction of new Class IV wells and operation and maintenance of existing wells.	Class IV wells are used to inject hazardous or radioactive waste into or above a formation that contains a USDW within 0.25 mile of the well.	40 C.F.R. § 144.13				Not an ARAR. No injection of treated groundwater.
	Class IV wells are banned except for reinjection of treated groundwater into the same formation from which it was withdrawn, as part of a CERCLA cleanup or RCRA corrective action.		40 C.F.R. § 144.13(c)				Not an ARAR. No injection of treated groundwater.

Section A4 Action-Specific ARARs

Table A4-1 (continued)

Alternatives for the EE/CA at the Building 965 Area: 1 – No Further Action, 2 – Institutional Controls, 3 – Source area Removal Excavation with Institutional Controls, and 4 – Source area Removal Excavation with Contingency Soil Vapor Extraction and Institutional Controls.							
Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
Injection (continued)	The director of the UIC program in a state may lessen the stringency of 40 C.F.R. § 144.52 construction, operation, and manifesting requirements for a well if injection does not occur into, through, or above a USDW or if the radius of endangering influence is less than or equal to the radius of the well.		40 C.F.R. § 144.16				Not an ARAR. No injection of treated groundwater.
	Prepare, maintain, and comply with plugging and abandonment plan.	Class I wells.	40 C.F.R. § 144.28(c), § 144.51(e)				Not an ARAR. No injection of treated groundwater.
	Monitor Class I wells by: <ul style="list-style-type: none"> • frequent analysis of injection fluid; • continuous monitoring of injection pressure, flow rate, and volume; and • installation and monitoring of groundwater monitoring wells. 	Class I wells are used to inject hazardous waste beneath the lowermost formation that contains a USDW within 0.25 mile of the well.	40 C.F.R. § 144.28(g)				Not an ARAR. No injection of treated groundwater.
	Applicants for Class I permits must: <ul style="list-style-type: none"> • identify all injection wells within the area of review; and • take action as necessary to ensure that such wells are properly sealed, completed, or abandoned to prevent contamination of a USDW. 		40 C.F.R. § 144.55 (§ 144.55[b][4] is applicable only for Class III wells)				Not an ARAR. No injection of treated groundwater.

Table A4-1 (continued)

Alternatives for the EE/CA at the Building 965 Area: 1 – No Further Action, 2 – Institutional Controls, 3 – Source area Removal Excavation with Institutional Controls, and 4 – Source area Removal Excavation with Contingency Soil Vapor Extraction and Institutional Controls.							
Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
Injection (continued)	Criteria for determining whether an aquifer may be determined to be an exempted aquifer include current and future use, yield, and water quality characteristics.		40 C.F.R. § 146.4				Not an ARAR. No injection of treated groundwater.
	Case and cement all Class I wells to prevent movement of fluids into USDW, taking into consideration well depth, injection pressure, hole size, composition of injected waste, and other factors.		40 C.F.R. § 144.28(e)				Not an ARAR. No injection of treated groundwater.
	Conduct appropriate geologic drilling logs and other tests during construction.		40 C.F.R. § 146.12(d), excluding the reporting requirements				Not an ARAR. No injection of treated groundwater.
	Injection pressure may not exceed a maximum level designed to ensure that injection does not initiate new fractures or propagate existing ones and cause the movement of fluids into a USDW. Continuously monitor injection pressure, flow rate, and volume, and annual pressure, if required. Demonstration of mechanical integrity is required every 5 years. Groundwater monitoring may also be required.		40 C.F.R. § 146.13(a), (b), (d)				Not an ARAR. No injection of treated groundwater.
	Comply with state underground injection requirements.		40 C.F.R. § 147				Not an ARAR. No injection of treated groundwater.

Section A4 Action-Specific ARARs

Table A4-1 (continued)

Alternatives for the EE/CA at the Building 965 Area: 1 – No Further Action, 2 – Institutional Controls, 3 – Source area Removal Excavation with Institutional Controls, and 4 – Source area Removal Excavation with Contingency Soil Vapor Extraction and Institutional Controls.							
Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
Clean Air Act (42 U.S.C. §§ 7401–7671)*							
Discharge to air	Provisions of SIP approved by U.S. EPA under Section 110 of CAA.	Major sources of air pollutants.	40 U.S.C. § 7410; portions of 40 C.F.R. § 52.220	3, 4			Substantive requirements of SCAQMD fugitive dust Rule 403, 404, and 405 are applicable for excavation activities which may release dust and particulate matter.
	NAAQS – primary and secondary standards for ambient air quality to protect public health and welfare (including standards for particulate matter and lead).	Contamination of air affecting public health and welfare.	40 C.F.R. § 50.4–50.12				Not an ARAR. Federal NAAQS are nonenforceable standards.
	Rule is to provide an orderly procedure for the review of new sources of air pollution, and of the modification and operation of existing sources, and of associated air pollution control devices, through the issuance of authorities to construct and permits to operate.	New source or modified source.	BAAQMD Regulation 2, Rule 1	4			Substantive provisions are applicable for the off-gas of the SVE system operations.
	rule is to provide for the review of new and modified sources of toxic air contaminant (TAC) emissions in order to evaluate potential public exposure and health risk, to mitigate potentially significant health risks resulting from these exposures, and to provide net health risk benefits by improving the level of control when existing sources are modified or replaced.		BAAQMD Regulation 2, Rule 5	4			Substantive provisions are applicable for the off-gas of the SVE system operations.

Table A4-1 (continued)

Alternatives for the EE/CA at the Building 965 Area: 1 – No Further Action, 2 – Institutional Controls, 3 – Source area Removal Excavation with Institutional Controls, and 4 – Source area Removal Excavation with Contingency Soil Vapor Extraction and Institutional Controls.

Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
Discharge to air (continued)	Rule is to control emissions of asbestos to the atmosphere during demolition, renovation, milling and manufacturing and establish appropriate waste disposal procedures.		BAAQMD Regulation 11, Rule 2	4			Substantive provisions are applicable for the off-gas of the SVE system operations.
	Rule is to limit the emission of organic compounds from soil that has been contaminated by organic chemical or petroleum chemical leaks or spills, and to describe an acceptable procedure for controlling emissions from underground storage tanks during removal or replacement.		BAAQMD Regulation 8, Rule 40	4			Substantive provisions are applicable for the off-gas of the SVE system operations.
	Rule is to limit emissions of organic compounds from contaminated groundwater and soil.		BAAQMD Regulation 8, Rule 47	4			Substantive provisions are applicable for the off-gas of the SVE system operations.
Air stripping or soil vapor extraction	Any air stripping and soil vapor extraction operations that emit benzene, vinyl chloride, perchloroethylene, methylene chloride, and/or trichloroethylene shall be vented to a control device that reduces emissions to the atmosphere by at least 90 percent by weight.		BAAQMD Regulation 8-47-301	4			Substantive provisions are applicable for Alternative 4

Section A4 Action-Specific ARARs

Table A4-1 (continued)

Alternatives for the EE/CA at the Building 965 Area: 1 – No Further Action, 2 – Institutional Controls, 3 – Source area Removal Excavation with Institutional Controls, and 4 – Source area Removal Excavation with Contingency Soil Vapor Extraction and Institutional Controls.							
Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
Air stripping or soil vapor extraction (continued)	Any air stripping and soil vapor extraction operations with a total organic compound emission greater than 15 pounds per day shall be vented to a control device that reduces the total organic compound emission to the atmosphere by at least 90 percent by weight.		BAAQMD Regulation 8-47-302	4			Substantive provisions are applicable for Alternative 4
	A person shall not aerate contaminated soil except as provided in Regulations 8-40-304 through 306.	More than 1 cubic yard of soil contaminated with 50 ppm _w organic content from other than a known chemical with less than 302 °F initial boiling point. More than 8 cubic yards if less than 500 ppm _w . Does not apply to accidental spills of 5 gallons or less.		BAAQMD Regulation 8-40-301	4		

Table A4-1 (continued)

Alternatives for the EE/CA at the Building 965 Area: 1 – No Further Action, 2 – Institutional Controls, 3 – Source area Removal Excavation with Institutional Controls, and 4 – Source area Removal Excavation with Contingency Soil Vapor Extraction and Institutional Controls.							
Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
Air stripping or soil vapor extraction (continued)	For active storage piles, contaminated soil shall be kept visibly moist by water spray, treated with a vapor suppressant, or covered with continuous heavy duty plastic sheeting or other covering to minimize emissions of organic compounds to the atmosphere. Covering shall be in good condition, joined at the seams, and securely anchored to minimize headspace where vapors may accumulate. The surface area not covered by plastic sheeting or other covering shall not exceed 6,000 square feet.		BAAQMD Regulation 8-40-304	4			Substantive provisions are applicable for Alternative 4
	For inactive storage piles, contaminated soil shall be covered during periods of inactivity longer than 1 hour as required above for Regulation 8-40-304.		BAAQMD Regulation 8-40-305	4			Substantive provisions are applicable for Alternative 4
	During excavation, all exposed contaminated soil surfaces above existing grade level shall be kept visibly moist or covered as described above for Regulation 8-40-304.		BAAQMD Regulation 8-40-306.1	4			Substantive provisions are applicable for Alternative 4

Section A4 Action-Specific ARARs

Table A4-1 (continued)

Alternatives for the EE/CA at the Building 965 Area: 1 – No Further Action, 2 – Institutional Controls, 3 – Source area Removal Excavation with Institutional Controls, and 4 – Source area Removal Excavation with Contingency Soil Vapor Extraction and Institutional Controls.							
Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
Air stripping or soil vapor extraction (continued)	All contaminated soils loaded into trucks or trailers for off-site disposal or treatment shall be covered with continuous heavy duty plastic sheeting or other covering so as to minimize emissions to the atmosphere as described above for Regulation 8-40-304.		BAAQMD Regulation 8-40-306.2	4			Substantive provisions are applicable for Alternative 4
	All contaminated soil shall be stockpiled separately from soil that is not contaminated unless emissions from the storage pile are minimized according to provisions of this rule.		BAAQMD Regulation 8-40-306.3	4			Substantive provisions are applicable for Alternative 4
	Within 45 days of excavation, or within 90 days for soil of organic content less than 500 ppm _w : 4.1) all contaminated soil shall be backfilled and covered with at least 6 inches of uncontaminated soil; or 4.2) all contaminated soil shall be removed from the site; or 4.3) treatment to remove the contamination shall be initiated.		BAAQMD Regulation 8-40-306.4	4			Substantive provisions are applicable for Alternative 4

Table A4-1 (continued)

Alternatives for the EE/CA at the Building 965 Area: 1 – No Further Action, 2 – Institutional Controls, 3 – Source area Removal Excavation with Institutional Controls, and 4 – Source area Removal Excavation with Contingency Soil Vapor Extraction and Institutional Controls.							
Action	Requirement	Prerequisite	Citation	ARAR Determination			Requirement
				A	RA	Action	
Air stripping or soil vapor extraction (continued)	During backfilling, all exposed contaminated soil surfaces shall be kept visibly moist by water spray, treated with a vapor suppressant, or covered with continuous heavy duty plastic sheeting or other covering to minimize emissions of organic compounds to the atmosphere. During periods of inactivity longer than 12 hours, backfilled contaminated soil shall be covered with at least 6 inches of uncontaminated soil, or covered as described above.		BAAQMD Regulation 8-40-306.6	4			Substantive provisions are applicable for Alternative 4

Section A4 Action-Specific ARARs

Table A4-1 (continued)

Note:

- * statutes and policies, and their citations, are provided as headings to identify general categories of potential ARARs for the convenience of the reader. Listing the statutes and policies does not indicate that the DON accepts the entire statutes or policies as potential ARARs; specific potential ARARs are addressed in the table below each general heading; only substantive requirements of specific citations are considered potential ARARs

Acronyms/Abbreviations:

A – applicable	OU – operable unit
ARAR – applicable or relevant and appropriate requirement	PCB – polychlorinated biphenyl
BAAQMD – Bay Area Air Quality Management District	PM ₁₀ – particulate matter, less than 10 micrometers in diameter
BACT – best available control technology	POC – point of compliance
BDAT – best demonstrated available technology	ppm – parts per million
CAA – Clean Air Act	ppm _w – parts per million by weight
Cal. Code Regs. – <i>California Code of Regulations</i>	pt. – part
CAMU – corrective action management unit	Pub. L. No. – public law number
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act	RA – relevant and appropriate
C.F.R. – <i>Code of Federal Regulations</i>	RAO – remedial action objective
ch. – chapter	RCRA – Resource Conservation and Recovery Act
CWA – Clean Water Act	RI – remedial investigation
DON – Department of the Navy	§ – section
EE/CA – Engineering Evaluation/Cost Analysis	SCAQMD – South Coast Air Quality Management District
°F – degrees Fahrenheit	SDAPCD – San Diego Air Pollution Control District
FS – feasibility study	SDWA – Safe Drinking Water Act
GBq – gigabecquerel	SIP – State Implementation Plan
IR – Installation Restoration (Program)	subpt. – subpart
kg/day – kilograms per day	SWMU – solid waste management unit
LAER – lowest achievable emission rate	TBC – to be considered
LDR – land disposal restriction	TCE – trichloroethene
LLW – low-level radioactive waste	tit. – title
MCAS – Marine Corps Air Station	TSCA – Toxic Substances Control Act
MCL – maximum contaminant level	UIC – underground injection control
mg/dscm – milligrams per dry standard cubic meter	U.S. – United States
mrem – millirem	U.S.C. – <i>United States Code</i>
MSW – municipal solid waste	USDW – underground source of drinking water
NAAQS – National Ambient Air Quality Standards (primary and secondary)	U.S. EPA – United States Environmental Protection Agency
NPDES – National Pollutant Discharge Elimination System	VOC – volatile organic compound
NRC – Nuclear Regulatory Commission	

**Table A4-2
Potential State Action-Specific ARARs**

Alternatives for the EE/CA at the Building 965 Area: 1 – No Further Action, 2 – Institutional Controls, 3 – Source area Removal Excavation with Institutional Controls, and 4 – Source area Removal Excavation with Contingency Soil Vapor Extraction and Institutional Controls.							
Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
State Water Resources Control Board*							
Disposal of waste	Requires that designated waste as defined at Cal. Water Code § 13173 be discharged to Class I or Class II waste management units.	Discharges of designated waste after 18 July 1997 (nonhazardous waste that could cause degradation of surface or ground waters) to land for treatment, storage, or disposal.	Cal. Code Regs. tit. 27, § 20210	3, 4			Substantive provisions are applicable to discharges of designated waste (nonhazardous waste that could cause degradation of surface or ground waters) to land for treatment, storage, or disposal. Waste characterization is necessary for final ARAR determination.
Disposal of waste (continued)	Requires that nonhazardous solid waste as defined at § 20220(a) be discharged to a classified waste management unit.	Discharge of nonhazardous solid waste after 18 July 1997 to land for treatment, storage, or disposal.	Cal. Code Regs. tit. 27, § 20220(b), (c), and (d)	3, 4			Substantive provisions are applicable to discharges of nonhazardous solid waste to land for treatment, storage, or disposal. Waste characterization is necessary to determine final ARAR status.
	Inert waste as defined at Cal. Code Regs. tit. 27 § 20230(a) need not be discharged at a classified unit.	Applies to discharges of inert waste to land after 18 July 1997 for treatment, storage, or disposal.	Cal. Code Regs. tit. 27, § 20230(b)	3, 4			Substantive provisions are applicable to discharges of inert waste to land for treatment, storage, or disposal.
Detection monitoring	Detection monitoring program.	Cal. Code Regs. tit. 23 requirements are only applicable to waste discharges to land after 27 November 1984.	Cal. Code Regs. tit. 23, § 2550.8	3, 4			Applies to all areas where waste has been discharged to land and groundwater is threatened.

Section A4 Action-Specific ARARs

Table A4-2 (continued)

Alternatives for the EE/CA at the Building 965 Area: 1 – No Further Action, 2 – Institutional Controls, 3 – Source area Removal Excavation with Institutional Controls, and 4 – Source area Removal Excavation with Contingency Soil Vapor Extraction and Institutional Controls.							
Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
Evaluation monitoring	Evaluation monitoring program.	Cal. Code Regs. tit. 23 requirements are only applicable to waste discharges to land after 27 November 1984.	Cal. Code Regs. tit. 23, § 2550.9	3, 4			Applies to sites at which monitoring results show statistically significant evidence of a release.
Monitoring	Corrective action monitoring.	Cal. Code Regs. tit. 23 requirements are only applicable to waste discharges to land after 27 November 1984.	Cal. Code Regs. tit. 23, § 2550.10		3, 4		If water quality is threatened, this section applies to all soil cleanup activities.
Groundwater cleanup	Point of compliance.	Cal. Code Regs. tit. 23 requirements are only applicable to waste discharges to land after 27 November 1984.	Cal. Code Regs. tit. 23, § 2550.5	3, 4			Applies to all areas in which waste has been discharged to land where groundwater is threatened.
Cal/EPA Department of Toxic Substances Control*							
Land-use covenants	A land-use covenant imposing appropriate limitations on land use shall be executed and recorded when facility closure, corrective action, remedial or removal action, or other response actions are undertaken, and hazardous materials, hazardous wastes or constituents, or hazardous substances will remain at the property at levels that are not suitable for unrestricted use of the land.	Property transfer by federal government to nonfederal entity.	Cal. Code Regs. tit. 22, § 67391.1		2, 3, 4		Cal. Code Regs. tit. 22, § 67391.1 provides for a land-use covenant to be executed and recorded when remedial actions are taken and hazardous substances will remain at the property at concentrations that are unsuitable for unrestricted use of the land. The substantive provisions of this regulation have been determined to be “relevant and appropriate” state ARARs by the DON. See Section A4.2.1 for DTSC and U.S. EPA positions.

Table A4-2 (continued)

Alternatives for the EE/CA at the Building 965 Area: 1 – No Further Action, 2 – Institutional Controls, 3 – Source area Removal Excavation with Institutional Controls, and 4 – Source area Removal Excavation with Contingency Soil Vapor Extraction and Institutional Controls.							
Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
California Civil Code*							
Land-use controls	Provides conditions under which land-use restrictions will apply to successive owners of land.	Transfer property from the DON to a nonfederal agency.	Cal. Civ. Code § 1471		2, 3, 4		Generally, Cal. Civ. Code § 1471 allows an owner of land to make a covenant to restrict the use of land for the benefit of a covenantee. The covenant runs with the land to bind successive owners, and the restrictions must be reasonably necessary to protect present or future human health or safety or the environment as a result of the presence on the land of hazardous materials, as defined in Cal. Health & Safety Code § 25260. Substantive provisions are the following general narrative standard: “to do or refrain from doing some act on his or her own land . . . where (c) Each such act relates to the use of land and each such act is reasonably necessary to protect present or future human health or safety or the environment as a result of the presence of hazardous materials, as defined in Section 25260 of the California Health and Safety Code.” This narrative standard would be implemented through incorporation of restrictive covenants in the deed and Environmental Restriction and Covenant Agreement at the time of transfer. See Section X4.2.1 for DTSC and U.S. EPA positions.

Section A4 Action-Specific ARARs

Table A4-2 (continued)

Alternatives for the EE/CA at the Building 965 Area: 1 – No Further Action, 2 – Institutional Controls, 3 – Source area Removal Excavation with Institutional Controls, and 4 – Source area Removal Excavation with Contingency Soil Vapor Extraction and Institutional Controls.							
Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
Land-use controls (continued)	Provides a streamlined process to be used to enter into an agreement to restrict specific use of property in order to implement the substantive use restrictions of Cal. Health & Safety Code § 25232(b)(1)(A)–(E).	Transfer property from the DON to a nonfederal agency.	Cal. Health & Safety Code §§ 25222.1 and 25355.5(a)(1)(C)		2, 3, 4		Generally, Cal. Health & Safety Code §§ 25222.1 and 25355.5(a)(1)(C) provide the authority for the DTSC to enter into voluntary agreements with land owners to restrict the use of property. The agreements run with the land restricting present and future uses of the land. The substantive requirements of the following Cal. Health & Safety Code § 25222.1 provisions are “relevant and appropriate”: (1) the general narrative standard: “restricting specified uses of the property...” and (2) “...the agreement is irrevocable, and shall be recorded by the owner, ...as a hazardous waste easement, covenant, restriction or servitude, or any combination thereof, as appropriate, upon the present and future uses of the land.” The substantive requirements of the following Cal. Health & Safety Code § 25355.5(a)(1)(C) provisions are “relevant and appropriate”: “...execution and recording of a written instrument that imposes an easement, covenant, restriction, or servitude, or combination thereof, as appropriate, upon the present and future uses of the land.” See Section A4.2.1 for the DTSC and U.S. EPA positions.

Table A4-2 (continued)

Alternatives for the EE/CA at the Building 965 Area: 1 – No Further Action, 2 – Institutional Controls, 3 – Source area Removal Excavation with Institutional Controls, and 4 – Source area Removal Excavation with Contingency Soil Vapor Extraction and Institutional Controls.							
Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
California Health and Safety Code*							
Land-use controls (continued)	Allows DTSC to enter into an agreement with the owner of a hazardous waste facility to restrict present and future land uses.	Transfer property from the DON to a nonfederal agency.	Cal. Health & Safety Code § 25202.5		2, 3, 4		The substantive provisions of Cal. Health & Safety Code § 25202.5 are the general narrative standards to restrict “present and future uses of all or part of the land on which the . . . facility . . . is located . . .”
	Provides a streamlined process to be used to enter into an agreement to restrict specific use of property in order to implement the substantive use restrictions of Cal. Health & Safety Code § 25232(b)(1)(A)–(E).	Transfer property from the DON to a nonfederal agency.	Cal. Health & Safety Code §§ 25222.1 and 25355.5(a)(1)(C)		2, 3, 4		Generally, Cal. Health & Safety Code §§ 25222.1 and 25355.5(a)(1)(C) provide the authority for the DTSC to enter into voluntary agreements with land owners to restrict the use of property. The agreements run with the land restricting present and future uses of the land.
	Prohibits certain uses of land containing hazardous waste without a specific variance.	Hazardous waste property.	Cal. Health & Safety Code § 25232(b)(1)(A)–(E)				Parcel 1A is intended for transfer to the Novato Unified School District for future “unrestricted” as a school site, therefore, Cal. Health & Safety Code § 25232(b)(1)(A)–(E) is not an ARAR.
	Provides processes and criteria for obtaining written variances from a land-use restriction and for removal of the land use restrictions.	Transfer property from the DON to a nonfederal agency.	Cal. Health & Safety Code §§ 25233(c) and 25234		2, 3, 4		Cal. Health & Safety Code § 25233(c) sets forth “relevant and appropriate” substantive criteria for granting variances based upon specified

Table A4-2 (continued)

Alternatives for the EE/CA at the Building 965 Area: 1 – No Further Action, 2 – Institutional Controls, 3 – Source area Removal Excavation with Institutional Controls, and 4 – Source area Removal Excavation with Contingency Soil Vapor Extraction and Institutional Controls.							
Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
Stockpiling	Stockpiled at the site for up to 90 days without satisfying all substantive requirements of a hazardous waste facility storage permit provided certain conditions are met with regard to storage, inspections, and management. These conditions include: the waste is non-RCRA contaminated soil; the hazardous waste being accumulated does not contain free liquids; the hazardous waste is accumulated on an impermeable surface, such as high-density polyethylene, of at least 20 mils that is supported by a foundation, or high-density polyethylene of at least 60 mils that is not supported by a foundation; the generator provides controls for windblown dispersion and precipitation runoff and run-on, and	Non-RCRA hazardous waste intended for on-site treatment and disposal.	Cal. Health & Safety Code § 25123.3	3, 4			

Table A4-2 (continued)

Alternatives for the EE/CA at the Building 965 Area: 1 – No Further Action, 2 – Institutional Controls, 3 – Source area Removal Excavation with Institutional Controls, and 4 – Source area Removal Excavation with Contingency Soil Vapor Extraction and Institutional Controls.							
Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
Stockpiling (continued)	complies with any stormwater permit requirements issued by an RWQCB; the generator has the accumulation site inspected weekly and after storms to assure that the controls for windblown dispersion and precipitation runoff and run-on are functioning properly; the generator, after final off-site transportation, inspects the accumulation site for contamination and remediates as necessary; the site is certified by a registered engineer for compliance with the standards specified herein.						
Air Quality Management District/Air Pollution Control District*							
Air emission	Visible emissions standard that states a person shall not discharge any air contaminant into the atmosphere from any single source of emission for a period or periods aggregating more than 3 minutes in a 60-minute period, which is (a) as dark or darker in shade as that designated No. 1 on the Ringelmann Chart, or (b) of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in (a).		SCAQMD Rule 401	3, 4			Grading and excavation activities have the potential to produce visible emissions due to fugitive dust. Substantive provisions pertaining to visible emissions, such as wetting the soil or waste, are applicable and may be required to minimize fugitive dust.

Section A4 Action-Specific ARARs

Table A4-2 (continued)

NOTES:

* statutes and policies, and their citations, are provided as headings to identify general categories of potential ARARs for the convenience of the reader; listing the statutes and policies does not indicate that the DON accepts the entire statutes or policies as potential ARARs; specific potential ARARs are addressed in the table below each general heading; only substantive requirements of the specific actions are considered potential ARARs.

Acronyms/Abbreviations:

A – applicable

APCD – Air Pollution Control District

AQMD – Air Quality Management District

ARAR – applicable or relevant and appropriate requirement
art. – article

BAT – best available technology

BPT – best practicable treatment

CAI – closed, abandoned, or inactive

Cal. Civil Code – *California Civil Code*

Cal. Code Regs. – *California Code of Regulations*

Cal/EPA – California Environmental Protection Agency

Cal. Health & Safety Code – *California Health and Safety Code*

Cal. Pub. Res. Code – *California Public Resources Code*

Cal. Water Code – *California Water Code*

CAMU – corrective action management unit

CEQA – California Environmental Quality Act

CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act

C.F.R. – *Code of Federal Regulations*

ch. – chapter

CWA – Clean Water Act

div. – division

DON – Department of the Navy

DTSC – (Cal/EPA) Department of Toxic Substances Control

EE/CA – engineering evaluation/cost analysis

FS – feasibility study

LDR – land disposal restriction

MCAS – Marine Corps Air Station

mg/L – milligrams per liter

NRWQC – National Recommended Water Quality Criteria

PM₁₀ – particulate matter, less than 10 micrometers in diameter

Prop. – proposition

RA – relevant and appropriate

RAO – removal action objective

RCRA – Resource Conservation and Recovery Act

Res. – resolution

RI – remedial investigation

RWQCB – Regional Water Quality Control Board San Francisco Bay

§ – section

SCAQMD – South Coast Air Quality Management District

SIP – State Implementation Plan

subch. – subchapter

subdiv. – subdivision

SWAT – Solid Waste Assessment Test

SWRCB – (California) State Water Resources Control Board

T-BACT – best available control technology for toxics

TBC – to be considered

tit. – title

TPH – total petroleum hydrocarbons

U.S. EPA – United States Environmental Protection Agency

UST – underground storage tank

VOC – volatile organic compound

WQO – water quality objective

**Table A4-3
Comparison of Monitoring ARARs**

Action	California Code of Regulations Title 22	California Code of Regulations Title 23	California Code of Regulations Title 27	Controlling ARARs
Monitoring	<p>§ 66264.91(a)(1) Institute a detection monitoring program under § 66264.98 for each unit; (2) institute an evaluation monitoring program under § 66264.99 whenever there is statistically significant evidence of a release from the regulated unit during a detection monitoring program; or (3) whenever there is significant physical evidence of a release from the regulated unit, including unexplained volumetric changes in surface impoundments, unexplained stress in biological communities, unexplained changes in soil coloration, visible signs of leachate migration, unexplained water table mounding beneath or adjacent to the regulated unit, and any other change to the environment that could reasonably be expected to be the result of a release from the regulated unit; and (4) institute a corrective action program under § 66264.100 when it is determined pursuant to § 66264.99 that the assessment of the nature and extent of the release and the design of the corrective action program have been satisfactorily completed.</p> <p>(b) For each regulated unit, include one or more of the programs identified in subsection (a) of this section in the facility permit as may be necessary to protect human health or the environment and specify the circumstances under which each of the programs will be required. In deciding whether to institute a particular program, consider the potential adverse effects on human health or the environment that might occur before final administrative action on a permit modification application to incorporate such a program could be taken.</p>	<p>§ 2550.1(a)(1) The discharger shall institute a detection monitoring program under § 2550.8 for each waste management unit; (2) the discharger shall institute an evaluation monitoring program under § 2550.9 whenever there is statistically significant evidence of a release from the waste management unit during a detection monitoring program; or (3) whenever there is significant physical evidence of a release from the waste management unit, including unexplained volumetric changes in surface impoundments, unexplained stress in biological communities, unexplained changes in soil characteristics, visible signs of leachate migration, and unexplained water table mounding beneath or adjacent to the waste management unit and any other change to the environment that could reasonably be expected to be the result of a release from the waste management unit; and (4) the discharger shall institute a corrective action program under § 2550.10 when, pursuant to § 2550.9, the assessment of the nature and extent of the release and the design of a corrective action program has been satisfactorily completed. (b) One or more of the programs identified in subsection (a) of this section that are appropriate for the prevailing state of containment at the waste management unit may be required. In deciding whether a particular program is required, potential adverse effects on human health or the environment that might occur shall be considered before program action could be taken. (c) In conjunction with an evaluation monitoring program or a corrective action</p>	<p>§ 20385(a)(1) The discharger shall institute a detection monitoring program (under § 20420) for each unit; (2) the discharger shall institute an evaluation monitoring program (under § 20425) whenever there is “measurably significant” evidence of a release from the unit during a detection monitoring program (under § 20420); or (3) whenever there is significant physical evidence of a release from the unit, including unexplained volumetric changes in surface impoundments, unexplained stress in biological communities, unexplained changes in soil characteristics, visible signs of leachate migration, and unexplained water table mounding beneath or adjacent to the unit, and any other change to the environment that could reasonably be expected to be the result of a release from the unit; and (4) the discharger shall institute a corrective action program under § 20430 when the assessment of the nature and extent of the release and the design of a corrective action program has been satisfactorily completed.</p> <p>(b) For each unit, one or more of the programs identified in ¶(a) that are appropriate for the prevailing state of containment at the unit shall be required, and the circumstances will be specified under which each of the programs will be required. In deciding whether to require the discharger to be prepared to institute a particular program, the RWQCB shall consider the potential adverse effects on human health or the environment that might occur before final administrative action on an amended report of waste discharge to incorporate such a program could be taken.</p>	<p>Cal. Code Regs., tit. 22, § 66264.91(a)(1), (2), (3), (4), (b), and (c)</p>

Section A4 Action-Specific ARARs

Table A4-3 (continued)

Action	California Code of Regulations Title 22	California Code of Regulations Title 23	California Code of Regulations Title 27	Controlling ARARs
Monitoring (continued)	(c) In conjunction with an evaluation monitoring program or a corrective action program, continue to conduct a detection monitoring program under § 66264.98 as necessary to provide the best assurance of the detection of subsequent releases from the regulated unit.	program, the discharger shall continue to conduct a detection monitoring program under § 2550.8 as necessary to provide the best assurance of the detection of subsequent releases from the waste management unit.	(c) In conjunction with an evaluation monitoring program or a corrective action program, the discharger shall continue to conduct a detection monitoring program as necessary to provide the best assurance of the detection of subsequent releases from the unit.	
COCs	§ 66264.93 COCs are the waste constituents, reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the regulated unit.	§ 2550.3 COCs are the waste constituents, reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the waste management unit.	§ 20395(a) The COC list shall include all waste constituents, reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the unit.	Cal. Code Regs., tit. 22, § 66264.93
Concentration limits	§ 66264.94(a)(1) and (3) For each COC the owner or operator shall propose for each medium (groundwater, surface water, and the unsaturated zone) monitored a concentration limit not to exceed the background value or a CLGB established for a corrective action program.	§ 2550.4(a)(1) and (3) For each COC, the discharger shall propose for each medium (including groundwater, surface water, and the unsaturated zone) monitored a concentration limit not to exceed the background value or a CLGB established for a corrective action program.	20400(a)(1) and (3) For each COC, the discharger shall propose for each medium (including groundwater, surface water, and the unsaturated zone) monitored: a concentration limit not to exceed the background value or a CLGB established for a corrective action program.	Cal. Code Regs., tit. 22, § 66264.94(a)(1) and (3)
	§ 66264.94(c) A concentration limit that is greater than the background value can only be used if demonstrated that it is technologically or economically infeasible to achieve the background value and the COC will not pose a substantial present or potential hazard to human health or the environment.	§ 2550.4(c) A concentration limit that is greater than the background value can be used only if it is technologically or economically infeasible to achieve the background value and the COC will not pose a substantial present or potential hazard to human health or the environment.	§ 20400(c) For a corrective action program, a CLGB can be used only if it is technologically or economically infeasible to achieve the background value and it will not pose a substantial present or potential hazard to human health or the environment.	Cal. Code Regs., tit. 22, § 66264.94(c)
	§ 66264.94(d) In establishing a CLGB, the following factors shall be considered: potential adverse effects on groundwater and surface water quality; any identification of underground sources of drinking water; risk being evaluated for groundwater as if exposure would occur at the point of compliance.	§ 2550.4(d) In establishing a CLGB, groundwater and surface water quality shall be considered.	§ 20400(d) In establishing a CLGB for a COC, the RWQCB shall consider groundwater and surface water quality.	Cal. Code Regs., tit. 22, § 66264.94(d)

Table A4-3 (continued)

Action	California Code of Regulations Title 22	California Code of Regulations Title 23	California Code of Regulations Title 27	Controlling ARARs
Concentration limits (continued)	§ 66264.94(e) In no event shall a concentration limit greater than background exceed other applicable statutes or regulations (e.g., an MCL) and the lowest concentration demonstrated to be technologically and economically achievable.	§ 2550.4(e) In no event shall a concentration limit greater than background exceed the lowest concentration that the discharger demonstrates is technologically and economically achievable. No concentration limit greater than background may exceed the maximum concentration that would be allowed under other applicable statutes or regulations (e.g., MCLs).	§ 20400(e) In no event shall a CLGB exceed the lowest concentration that the discharger demonstrates is technologically and economically achievable. No provision of this section shall be taken to allow a CLGB to exceed the maximum concentration that would be allowed under other applicable statutes or regulations (e.g., MCLs).	Cal. Code Regs., tit. 22, § 66264.94(e)
Point of compliance	§ 66264.95(a) The point of compliance is a vertical surface, located at the hydraulically downgradient limit of the waste management area that extends through the uppermost aquifer underlying the regulated unit.	§ 2550.5(a) The point of compliance is a vertical surface located at the hydraulically downgradient limit of the waste management unit that extends through the uppermost aquifer underlying the unit.	§ 20405 The point of compliance is a vertical surface located at the hydraulically downgradient limit of the unit that extends through the uppermost aquifer underlying the unit.	Cal. Code Regs., tit. 22, § 66264.95(a)
Unsaturated zone monitoring	§ 66264.97(d)(1) The owner or operator shall establish an unsaturated zone monitoring system for each regulated unit including (2)(A) a sufficient number of background monitoring points established at appropriate locations and depths to yield soil-pore liquid samples or soil-pore liquid measurements that represent the quality of soil-pore liquid that has not been affected by a release from the regulated unit; (B) for a detection monitoring program under § 66264.98, a sufficient number of monitoring points established at appropriate locations and depths to yield soil-pore liquid samples or soil-pore liquid measurements that provide the best assurance of the earliest possible detection of a release from the regulated unit; (C) for an evaluation monitoring program under § 66264.99, a sufficient number of monitoring points established at appropriate locations and depths to yield soil-pore liquid samples or soil-pore	§ 2550.7(d)(1) The discharger shall establish an unsaturated zone monitoring system for each waste management unit including (2)(A) a sufficient number of background monitoring points established at appropriate locations and depths to yield soil-pore liquid samples or soil-pore liquid measurements that represent the quality of soil-pore liquid that has not been affected by a release from the waste management unit; (B) for a detection monitoring program under § 2550.8 of this article, a sufficient number of monitoring points established at appropriate locations and depths to yield soil-pore liquid samples or soil-pore liquid measurements that provide the best assurance of the earliest possible detection of a release from the waste management unit; (C) for an evaluation monitoring program under § 2550.9 of this article, a sufficient number of monitoring points established at appropriate locations and depths to yield	20415(d)(1) The discharger shall establish an unsaturated zone monitoring system for each unit including (2)(A) a sufficient number of background monitoring points established at appropriate locations and depths to yield soil-pore liquid samples or soil-pore liquid measurements that represent the quality of soil-pore liquid that has not been affected by a release from the unit; (B) for a detection monitoring program (under § 20420), a sufficient number of monitoring points established at appropriate locations and depths to yield soil-pore liquid samples or soil-pore liquid measurements that provide the best assurance of the earliest possible detection of a release from the unit; (C) for an evaluation monitoring program (under § 20425), a sufficient number of monitoring points established at appropriate locations and depths to yield soil-pore liquid samples or soil-pore liquid measurements that provide the data to	Cal. Code Regs., tit. 22, § 66264.97(d) (1), (2)(A), (B), (C), (D), (3), (4), (5)

Section A4 Action-Specific ARARs

Table A4-3 (continued)

Action	California Code of Regulations Title 22	California Code of Regulations Title 23	California Code of Regulations Title 27	Controlling ARARs
<p>Unsaturated zone monitoring (continued)</p>	<p>liquid measurements as necessary to provide the data needed to evaluate changes in water quality due to the release from the regulated unit; and (D) for a corrective action program under § 66264.100, a sufficient number of monitoring points established at appropriate locations and depths to yield soil-pore liquid samples or soil-pore liquid measurements as necessary to provide the data needed to evaluate compliance with the water quality protection standard and to evaluate the effectiveness of the corrective action program.</p> <p>(3) Background monitoring points shall be installed at a background plot having soil characteristics similar to those of the soil underlying the regulated unit.</p> <p>(4) Liquid recovery types of unsaturated zone monitoring (e.g., the use of lysimeters) are required unless the owner or operator demonstrates to the satisfaction of the Department that such methods of unsaturated zone monitoring cannot provide an indication of a release from the regulated unit. The Department shall require complementary or alternative (nonliquid recovery) types of unsaturated zone monitoring as necessary to provide the best assurance of the earliest possible detection of a release from the regulated unit.</p> <p>(5) Unsaturated zone monitoring is required at all new regulated units unless the owner or operator demonstrates to the satisfaction of the Department that no method for unsaturated zone monitoring can provide any indication of a release from that regulated unit. For a regulated unit that has operated or has received all permits necessary for construction and</p>	<p>soil-pore liquid samples or soil-pore liquid measurements that provide the data to evaluate changes in water quality due to the release from the waste management unit; and (D) for a corrective action program under § 2550.10 of this article, a sufficient number of monitoring points established at appropriate locations and depths to yield soil-pore liquid samples or soil-pore liquid measurements that provide the data to evaluate compliance with the water quality protection standard and to evaluate the effectiveness of the corrective action program.</p> <p>(3) Background monitoring points shall be installed at a background plot having soil characteristics similar to those of the soil underlying the waste management unit.</p> <p>(4) Liquid recovery types of unsaturated zone monitoring (e.g., the use of lysimeters) are required unless the discharger demonstrates to the satisfaction of the regional board that such methods of unsaturated zone monitoring cannot provide an indication of a release from the waste management unit. The regional board shall require complementary or alternative (nonliquid recovery) types of unsaturated zone monitoring to provide the best assurance of the earliest possible detection of a release from the waste management unit.</p> <p>(5) Unsaturated zone monitoring is required at all new waste management units unless the discharger demonstrates to the satisfaction of the regional board that there is no unsaturated zone monitoring device or method designed to operate under the subsurface conditions existent at that waste management unit. For a waste management unit that has operated or has received all permits necessary for</p>	<p>evaluate changes in water quality due to the release from the unit; and (D) for a corrective action program (under § 20430), a sufficient number of monitoring points established at appropriate locations and depths to yield soil-pore liquid samples or soil-pore liquid measurements that provide the data to evaluate compliance with the Water Standard (of § 20390) and to evaluate the effectiveness of the corrective action program.</p> <p>(3) background monitoring points shall be installed at a background plot having soil characteristics similar to those of the soil underlying the unit.</p> <p>(4) Liquid recovery types of unsaturated zone monitoring (e.g., the use of lysimeters) are required unless the discharger demonstrates to the satisfaction of the RWQCB that such methods of unsaturated zone monitoring cannot provide an indication of a release from the unit. The RWQCB shall require complementary or alternative (nonliquid recovery or remote sensing) types of unsaturated zone monitoring to provide the best assurance of the earliest possible detection of a release from the unit.</p> <p>(5) Unsaturated zone monitoring is required at all new units unless the discharger demonstrates to the satisfaction of the RWQCB that there is no unsaturated zone monitoring device or method designed to operate under the subsurface conditions existent at that unit. For a unit that has operated or has received all permits necessary for construction and operation before 01 July 1991, unsaturated zone monitoring is required unless the discharger demonstrates that either</p>	

Table A4-3 (continued)

Action	California Code of Regulations Title 22	California Code of Regulations Title 23	California Code of Regulations Title 27	Controlling ARARs
Unsaturated zone monitoring (continued)	operation before 01 July 1991, unsaturated zone monitoring is required unless the owner or operator demonstrates that either there is no unsaturated zone monitoring device or method designed to operate under the subsurface conditions existent at that waste management unit or the installation of unsaturated zone monitoring devices would require unreasonable dismantling or relocating of permanent structures.	construction and operation before 01 July 1991, unsaturated zone monitoring is required unless the discharger demonstrates that either there is no unsaturated zone monitoring device or method designed to operate under the subsurface conditions existent at that waste management unit or that installation of unsaturated zone monitoring devices would require unreasonable dismantling or relocating of permanent structures.	there is no unsaturated zone monitoring device or method designed to operate under the subsurface conditions existent at that unit or that installation of unsaturated zone monitoring devices would require unreasonable dismantling or relocating of permanent structures.	
General monitoring	§ 66264.97(e)(1) All monitoring systems shall be designed and certified by a registered geologist or a registered civil engineer. (3) If a facility contains contiguous regulated units, separate groundwater monitoring systems are not required for each such unit if the owner or operator demonstrates to the satisfaction of the Department that the water quality monitoring program for each unit will enable the earliest possible detection and measurement of a release from that unit. (5) The water quality monitoring program shall include appropriate sampling and analytical methods for groundwater, surface water, and the unsaturated zone that accurately measure the concentration of each COC and the concentration or value of each monitoring parameter. (6) For each regulated unit, the owner or operator shall collect all data necessary for selecting the appropriate statistical method pursuant to subsections (e)(7), (e)(8), and (e)(9) of this section and for establishing the background values pursuant to subsection (e)(11) of this section. At a minimum, these data shall include analytical data obtained during quarterly sampling of all background monitoring points for a period of 1 year, including the times of expected highest and lowest annual elevations of the	§ 2550.7(e)(1) All monitoring systems shall be designed and certified by a registered geologist or a registered civil engineer. (3) If a facility contains contiguous waste management units, separate groundwater monitoring systems are not required for each such unit if the discharger demonstrates to the satisfaction of the regional board that the water quality monitoring program for each unit will enable the earliest possible detection and measurement of a release from that unit. (5) The water quality monitoring program shall include appropriate sampling and analytical methods for groundwater, surface water, and the unsaturated zone that accurately measure the concentration of each COC and the concentration or value of each monitoring parameter. (6) For each waste management unit, the discharger shall collect all data necessary for selecting the appropriate statistical methods pursuant to subsections (e)(7), (e)(8), and (e)(9) of this section and for establishing the background values specified pursuant to subsection (e)(11) of this section. At a minimum, these data shall include analytical data obtained during quarterly sampling of all background monitoring points for a period of 1 year, including the times of expected highest and lowest annual elevations	§ 20415(e)(1) All monitoring systems shall be designed and certified by a registered geologist or a registered civil engineer. (3) If a facility contains contiguous units, separate groundwater monitoring systems are not required for each such unit if the discharger demonstrates to the satisfaction of the RWQCB that the water quality monitoring program for each unit will enable the earliest possible detection and measurement of a release from that unit. (5) The water quality monitoring program shall include appropriate sampling and analytical methods for groundwater, surface water, and the unsaturated zone that accurately measure the concentration of each COC and the concentration or value of each monitoring parameter. (6) For each unit, the discharger shall collect all data necessary for selecting the appropriate data analysis methods pursuant to ¶(e)(7–9) and for establishing the background values specified pursuant to ¶(e)(10). At a minimum, these data shall include analytical data obtained during quarterly sampling of all background monitoring points for a period of 1 year, including the times of expected highest and lowest annual elevations of the groundwater surface. For a new unit, these data shall be collected before wastes are discharged	Cal. Code Regs., tit. 22, § 66264.97(e)(1), (3), (5), and (6)

Section A4 Action-Specific ARARs

Table A4-3 (continued)

Action	California Code of Regulations Title 22	California Code of Regulations Title 23	California Code of Regulations Title 27	Controlling ARARs
General monitoring (continued)	<p>groundwater surface. For a new regulated unit, these data shall be collected before wastes are discharged at the unit and background soil-pore liquid data shall be collected from beneath the unit before the unit is constructed.</p> <p>§ 66264.97(e)(12)(B) The sampling method (including the sampling frequency and the interval of time between successive samples) shall be appropriate for the medium from which samples are taken (e.g., groundwater, surface water, and soil-pore liquid). The sampling method shall include a sequence of at least four samples collected at least semiannually from each monitoring point and each background monitoring point and statistical analysis performed at least semiannually. Samples shall be taken at an interval that assures, to the greatest extent possible, that an independent sample is obtained. More frequent sampling and statistical analysis may be required when necessary to protect human health and the environment. For groundwater, the sampling frequency and the interval between successive sampling events shall be based on the rate of groundwater flow, and on any variation in groundwater flow rate and direction. The rate of groundwater movement shall be calculated by reference to the aquifer's effective porosity, hydraulic conductivity, and hydraulic gradient. An alternative sampling method is allowed if it provides for the collection of not less than one sample quarterly from each monitoring point and background monitoring point and statistical analysis performed at least quarterly.</p> <p>§ 66264.98(f) The owner or operator shall conduct sampling and analyses for the monitoring parameters. For groundwater,</p>	<p>of the groundwater surface. For a new waste management unit, these data shall be collected before wastes are discharged at the unit and background soil-pore liquid data shall be collected from beneath the unit before the unit is constructed.</p> <p>§ 2550.7(e)(12)(B) The discharger shall propose the sampling methods to be used to establish background values and the sampling methods to be used for monitoring pursuant to this article. For groundwater, sampling shall be scheduled to include the times of expected highest and lowest elevations of the potentiometric surface and shall assure, to the greatest extent possible, that independent samples are obtained. In addition to any presampling purge prescribed in the sampling and analysis plan, groundwater monitoring wells shall be purged immediately after sampling is completed in order to remove all residual water that was in the wellbore during the sampling event so as to assure the independence of samples from successive sampling events. The volume of well water to be withdrawn from the wellbore for the postsampling purge shall be determined by the same method used to determine adequate presampling purging. The sampling method selected shall include either: a sequence of at least four samples collected at least semiannually from each monitoring point and background monitoring point and statistical analysis carried out at least semiannually or more frequent sampling and statistical analysis where necessary to protect human health or the environment; or not less than one sample collected quarterly from each monitoring point and background monitoring point and statistical analysis performed at least quarterly.</p>	<p>at the unit and background soil-pore liquid data shall be collected from beneath the unit before the unit is constructed.</p> <p>§ 20415(e)(12)(B) The sampling method (including the sampling frequency and the interval of time between successive samples) shall be appropriate for the medium from which samples are taken (e.g., groundwater, surface water, and soil-pore liquid). For groundwater, sampling shall be scheduled to include the times of expected highest and lowest elevations of the potentiometric surface. The sampling method shall assure, to the greatest extent possible, that independent samples are obtained. For groundwater, the discharger can use a postsampling purge to assure sample independence whenever the time between successive sampling events (for a given COC or monitoring parameter) is insufficient to assure sample independence, in which case the volume of well water to be withdrawn from the wellbore for the postsampling purge shall be determined by the same method used to determine adequate presampling purging. The sampling method selected shall include collection of at least the appropriate number of new data points (pursuant to § 20415(e)(12)(A)) at least semiannually from each monitoring point and background monitoring point and data analysis carried out at least semiannually. More frequent sampling and statistical analysis may be required where necessary to protect human health or the environment.</p>	<p>Cal. Code Regs., tit. 22, § 66264.97(e)(12)(B) and Cal. Code Regs., tit. 22, § 66264.98(f)</p>

Table A4-3 (continued)

Action	California Code of Regulations Title 22	California Code of Regulations Title 23	California Code of Regulations Title 27	Controlling ARARs
General monitoring (continued)	sampling shall be scheduled to include the times of expected highest and lowest annual elevations of the groundwater surface.			
Detection monitoring	<p>§ 66264.98(b) and (c) The owner or operator shall install appropriate water quality detection monitoring systems and shall establish a background value in accordance with § 66264.97 for each monitoring parameter and COC.</p> <p>§ 66264.98(f) The owner or operator shall conduct sampling and analyses for the monitoring parameters. For groundwater, sampling shall be scheduled to include the times of expected highest and lowest annual elevations of the groundwater surface.</p> <p>§ 66264.98(g) In addition to monitoring for the monitoring parameters, the owner or operator shall periodically monitor for all COCs and determine whether there is statistically significant evidence of a release for any COC pursuant to § 66264.97. Monitoring pursuant to this subsection shall be conducted at least every 5 years.</p> <p>§ 66264.98(i) For each monitoring point, the owner or operator shall determine whether there is statistically significant evidence of a release from the regulated unit for any monitoring parameter.</p>	<p>§ 2550.8(b) and (c) The discharger shall install appropriate water quality detection monitoring systems and establish a background value pursuant to § 2550.7 for each monitoring parameter and COC.</p> <p>§ 2550.8(f) The discharger shall monitor for the parameters listed in the waste discharge requirements pursuant to subsection (e) of this section.</p> <p>§ 2550.8(g) In addition to monitoring for the monitoring parameters, the discharger shall periodically monitor for all COCs and determine whether there is statistically significant evidence of a release for any COC pursuant to § 2550.7. Monitoring pursuant to this subsection shall be conducted at least every 5 years.</p> <p>§ 2550.8(i) For each monitoring point, the discharger shall determine whether there is statistically significant evidence of a release from the waste management unit for any monitoring parameter.</p>	<p>§ 20420(b) and (c) The discharger shall install appropriate water quality detection monitoring systems and shall establish a background value pursuant to § 20415 for each monitoring parameter and COC.</p> <p>§ 20420(f) The discharger shall monitor for the monitoring parameters listed in the WDRs pursuant to ¶(e).</p> <p>§ 20420(g) In addition to monitoring for the monitoring parameters, the discharger shall periodically monitor for COCs specified in the WDRs, and shall determine whether there is “measurably significant” evidence of a release for any COC pursuant to § 20415. Monitoring pursuant to this paragraph shall be conducted at least every 5 years.</p> <p>§ 20420(i) For each monitoring point, the discharger shall determine whether there is “measurably significant” evidence of a release from the unit for any monitoring parameter (or COC).</p>	<p>Cal. Code Regs., tit. 22, § 66264.98(b) and (c)</p> <p>Cal. Code Regs., tit. 22, § 66264.98(f)</p> <p>Cal. Code Regs., tit. 22, § 66264.98(g)</p> <p>Cal. Code Regs., tit. 22, § 66264.98(i)</p>
Evaluation monitoring	§ 66264.99(b) The owner or operator shall collect and analyze all data necessary to assess the nature and extent of the release from the regulated unit. This assessment shall include a determination of the spatial distribution and concentration of each COC throughout the zone affected by the release. The owner or operator shall complete and submit this assessment to the Department within 90 days of establishing an evaluation monitoring program.	§ 2550.9(b) The discharger shall collect and analyze all data necessary to assess the nature and extent of the release from the waste management unit. This assessment shall include a determination of the spatial distribution and concentration of each COC throughout the zone affected by the release. The discharger shall complete and submit this assessment within 90 days of establishing an evaluation monitoring program.	§ 20425(b) The discharger shall collect and analyze all data necessary to assess the nature and extent of the release from the unit. This assessment shall include a determination of the spatial distribution and concentration of each COC throughout the zone affected by the release. The discharger shall complete and submit this assessment within 90 days of establishing an evaluation monitoring program. For MSW landfills, the discharger shall comply with the additional notification	Cal. Code Regs., tit. 22, § 66264.99(b)

Section A4 Action-Specific ARARs

Table A4-3 (continued)

Action	California Code of Regulations Title 22	California Code of Regulations Title 23	California Code of Regulations Title 27	Controlling ARARs
Evaluation monitoring (continued)	<p>§ 66264.99(c) Based on the data collected pursuant to subsections (b) and (e) of this section, the owner or operator shall update the engineering feasibility study required under § 66264.98(k)(6). The owner or operator shall submit this engineering feasibility study to the Department within 90 days of establishing an evaluation monitoring program.</p> <p>66264.99(e) The owner or operator shall monitor groundwater, surface water, and the unsaturated zone to evaluate changes in water quality resulting from the release from the regulated unit. (2) The list of monitoring parameters for each medium shall include all hazardous constituents that have been detected in that medium and shall include those physical parameters, waste constituents, and reaction products that provide a reliable indication of changes in water quality resulting from the release from the regulated unit to that medium. (3) The owner or operator shall conduct sampling and analyses for the monitoring parameters. (4) The owner or operator shall periodically monitor for all COCs specified in the facility permit and evaluate changes in water quality due to the release from the regulated unit. The Department shall specify the frequencies for monitoring pursuant to this subsection after considering the degree of certainty associated with the demonstrated correlation between values for monitoring parameters and values</p>	<p>§ 2550.9(c) Based on the data collected pursuant to subsections (b) and (e) of this section, the discharger shall update the engineering feasibility study for corrective action required pursuant to § 2550.8(k)(6) of this article. The discharger shall submit this engineering feasibility study to the regional board within 90 days of establishing an evaluation monitoring program.</p> <p>§ 2550.9(e) The discharger shall monitor groundwater, surface water, and the unsaturated zone to evaluate changes in water quality resulting from the release from the waste management unit; (2) the list of monitoring parameters for each medium shall include all hazardous constituents that have been detected in that medium and those physical parameters, waste constituents, and reaction products that provide a reliable indication of changes in water quality resulting from any release from the waste management unit to that medium; (3) the discharger shall monitor for the monitoring parameters; (4) the discharger shall periodically monitor for all COCs and evaluate changes in water quality due to the release from the waste management unit. Frequencies for monitoring will consider the degree of certainty associated with the demonstrated correlation between values for monitoring parameters and values for the COCs; (5) the discharger shall maintain a record of water quality analytical data as measured and in a form necessary for the</p>	<p>and monitoring system requirements incorporated by reference into SWRCB Res. 93-62, regarding notification and monitoring relative to off-site or potential off-site migration of waste constituents (see § 258.55[g][1][ii] and [iii] of 40 C.F.R. § 258). § 20425(c) Based on the data collected pursuant to ¶(b) and ¶(e), the discharger shall update the engineering feasibility study for corrective action required pursuant to § 20420(k)(6). The discharger shall submit this updated engineering feasibility study to the RWQCB within 90 days of establishing an evaluation monitoring program.</p> <p>§ 20420(e) The discharger shall monitor groundwater, surface water, and the unsaturated zone to evaluate changes in water quality resulting from the release from the unit; (2) the list of monitoring parameters for each medium shall include all hazardous constituents that have been detected in that medium and those physical parameters, waste constituents, and reaction products that provide a reliable indication of changes in water quality resulting from any release from the unit to that medium; (3) the discharger shall monitor for the monitoring parameters listed; (4) in addition to monitoring for the monitoring parameters specified pursuant to ¶(e)(3), at least every 5 years, the discharger shall periodically monitor for all COCs specified in the WDRs to evaluate changes in water quality due to the release from the unit. The discharger shall use data analysis methods for conducting data analyses that comply with § 20415 for evaluating changes in water quality due to the release from the unit; (5) the discharger shall maintain a record of water</p>	<p>Cal. Code Regs., tit. 22, § 66264.99(c)</p> <p>Cal. Code Regs., tit. 22, § 66264.99(e)</p>

Table A4-3 (continued)

Action	California Code of Regulations Title 22	California Code of Regulations Title 23	California Code of Regulations Title 27	Controlling ARARs
Evaluation monitoring (continued)	for the COCs. (5) The owner or operator shall maintain a record of water quality analytical data as measured and in a form necessary for the evaluation of changes in water quality due to the release from the regulated unit.	evaluation of changes in water quality due to a release from the waste management unit; (6) the discharger shall analyze samples from all monitoring points in the affected medium for all constituents contained in Cal. Code Regs. tit. 22, app. IX, div. 4.5, ch. 14 (Appendix IX) at least annually to determine whether additional hazardous constituents are present and, if so, at what concentration(s). If the discharger finds Appendix IX constituents in the groundwater, surface water, or the unsaturated zone that are not already identified in the WDRs as COCs, the discharger may resample within 1 month and repeat the analysis for those constituents. If the second analysis confirms the presence of new constituents, the discharger shall report the concentration of these additional constituents to the regional board by certified mail within 7 days after the completion of the second analysis and the regional board shall add them to the list of COCs specified in the WDRs unless the discharger demonstrates to the satisfaction of the regional board that the constituent is not reasonably expected to be in or derived from waste in the waste management unit. If the discharger does not resample, then the discharger shall report the concentrations of these additional constituents to the regional board by certified mail within 7 days after completion of the initial analysis and the regional board shall add them to the list of COCs specified in the WDRs unless the discharger demonstrates to the satisfaction of the regional board that the constituent is not reasonably expected to be in or derived from waste in the waste management unit.	quality analytical data as measured and in a form necessary for the evaluation of changes in water quality due to a release from the unit.	

Section A4 Action-Specific ARARs

Table A4-3 (continued)

Action	California Code of Regulations Title 22	California Code of Regulations Title 23	California Code of Regulations Title 27	Controlling ARARs
Evaluation monitoring (continued)	<p>§ 66264.99(f) If the owner or operator demonstrates to the satisfaction of the Department that a source other than the regulated unit caused the evidence of a release or that the evidence is an artifact caused by an error in sampling, analysis, or statistical evaluation, or by natural variation in groundwater, surface water, or the unsaturated zone, the owner or operator shall submit an application for a permit modification to reinstitute a detection monitoring program meeting the requirements of § 66264.98. This application shall include specifications for all appropriate changes to the monitoring program.</p> <p>§ 66264.99(g) Interim corrective action measures shall be required where necessary to protect human health or the environment.</p>	<p>§ 2550.9(f) The discharger may demonstrate that a source other than the waste management unit caused the evidence of a release or that the evidence is an artifact caused by an error in sampling, analysis, or statistical evaluation, or by natural variation in groundwater, surface water, or the unsaturated zone. Upon a successful demonstration the regional board shall specify that the discharger shall reinstitute a detection monitoring program meeting the requirements of § 2550.8.</p> <p>§ 2550.9(g) Interim corrective action measures shall be required where necessary to protect human health or the environment.</p>	<p>§ 20425(f) The discharger may demonstrate that a source other than the unit caused the evidence of a release or that the evidence is an artifact caused by an error in sampling, analysis, or statistical evaluation, or by natural variation in groundwater, surface water, or the unsaturated zone. Upon a successful demonstration, the RWQCB shall specify that the discharger shall reinstitute a detection monitoring program meeting the requirements of § 20420.</p> <p>§ 20425(g) Interim corrective action measures shall be required where necessary to protect human health or the environment.</p>	<p>Cal. Code Regs., tit. 22, § 66264.99(f)</p> <p>Cal. Code Regs., tit. 22, § 66264.99(g)</p>

Acronyms/Abbreviations:

- app. – appendix
- ARAR – applicable or relevant and appropriate requirement
- Cal. Code Regs. – *California Code of Regulations*
- C.F.R. – *Code of Federal Regulations*
- ch. – chapter
- CLGB – concentration limit greater than background
- COC – constituent of concern
- div. – division
- MCL – maximum containment level
- MSW – municipal solid waste
- ¶ – paragraph
- Res. – resolution
- RWQCB – (California) Regional Water Quality Control Board
- § – section
- SWRCB – (California) State Water Resources Control Board
- tit. – title
- WDR – waste discharge requirement

Section A5

SUMMARY

Controlling ARARs have been identified in the text of this appendix for each medium, location, and proposed response action alternative.

A5.1 CHEMICAL-SPECIFIC ARARs

The substantive provisions of the following requirements were identified as the controlling potential federal and state chemical-specific ARARs for the Building 965 Area at Parcel 1A:

Groundwater ARARs

Chemicals of concern (COCs) at the Building 965 Area include 1,3-butadiene and vinyl chloride. Table A2-1 lists the groundwater COCs for this EE/CA NTCRA for the Building 965 Area at Parcel 1A DoDHF Novato, California.

The substantive provisions of the following requirements are the most stringent of the potential federal and state chemical-specific ARARs and TBCs for the Building 965 Area groundwater:

- RCRA groundwater protection standards in Cal. Code Regs. tit. 22, § 66264.94(a)(1), (a)(3), (c), (d), and (e)
- State primary and secondary MCLs for 1,3-butadiene and vinyl chloride at Cal. Code Regs. tit. 22, § 64444 and Cal. Code Regs. tit. 22, § 64449
- Water Quality Control Plan (WQCP) for the San Francisco Bay Region establishing beneficial uses, WQOs, and an implementation plan

Soil ARARs

Requirements of 22 CCR §66261.24 present criteria for testing and identifying RCRA hazardous wastes, sets levels for TTLC and STLC, and are considered applicable ARARs for the proposed removal action at the Building 965 Area. Based on limited analytical results for soil, it will be necessary to ensure that excavated soil does not exceed characteristic hazardous waste levels for toxicity.

Requirements of 22 CCR §66262.10 and §66262.11 establish standards for generators of hazardous wastes in California, including those for hazardous waste determination, manifesting, transportation record keeping, and reporting. Substantive requirements are applicable if the excavated soils from the Building 965 Area exceed RCRA hazardous waste thresholds.

Air ARARs

The soil excavation activities proposed for the Building 965 Area have the potential to generate dust particle emissions. Several BAAQMD requirements have been determined to be chemical-specific federal ARARs for dust control. BAAQMD Regulation 2 Rule 1 addresses discharge of any air contaminant and is considered an applicable federal ARAR for the discharge of particulate matter via fugitive dust emissions from soil excavation.

SVE treatment technology is being considered to reduce COC concentrations (vinyl chloride, benzene, 1,3-butadiene, cis-1,2-dichloroethene, trichloroethene, and ethylbenzene) in soil gas at the Building 965 Area. California Environmental Protection Standards requirements 22 CCR §66264.702 et seq. set concentration limits for discharges of contaminants to soil and air from

permitted treatment, storage, or disposal facilities. If a SVE treatment system is implemented at the site and discharges COCs to air, these requirements would be applicable state ARARs.

A5.2 LOCATION-SPECIFIC ARARs

The location-specific ARARs are summarized in Section A3. The resource categories relating to location-specific requirements potentially affected by Building 965 removal are as follows:

- *Cultural Resources* – The substantive provisions of the Archaeological and Historic Preservation Act and Archaeological Resources Protection Act of 1979 are applicable federal ARARs for the removal action at the Building 965 Area.
- *Biological Resources* – Substantive provisions of sections of the Cal. Fish & Game Code and Cal. Code Regs. listed below were identified as potentially relevant and appropriate ARARs only for species not already addressed by federal ARARs:
 - Cal. Fish & Game Code § 3511 is not applicable because the United States of America has not waived sovereign immunity for this State of California requirement. It is not a relevant and appropriate requirement because none of the pertinent species are present at the site. Cal. Fish & Game Code § 3511 is not an ARAR.
 - Cal. Fish & Game Code, § 3005(a) is not applicable because the United States of America has not waived sovereign immunity for this State of California requirement. It is not a relevant and appropriate requirement because none of the pertinent species are present at the site. Cal. Fish & Game Code, § 3005(a) is not an ARAR.
 - Cal. Fish & Game Code § 3513 requirement is not applicable because of the lack of the migratory nongame bird species at the site. Cal. Fish & Game Code § 3513 is not an ARAR.

A5.3 Action-Specific ARARS

This EE/CA Report evaluates the removal action alternatives for the Building 965 Area in Parcel 1A at DoDHF Novato in Novato, California. This ARARs analysis is based on five alternatives for the site. Alternative 1 is no further action as required under the NCP, Alternative 2 is institutional controls, Alternative 3 is source area removal excavation with institutional controls, Alternative 4 is the same as Alternative 3 but includes contingency soil vapor extraction.

- *Institutional Controls* – State statutes that have been accepted by the DON as ARARs for implementing institutional controls and entering into an Environmental Restriction Covenant and Agreement with DTSC include substantive provisions of the Cal. Civ. Code § 1471 and Cal. Health & Safety Code §§ 25355.5. DTSC promulgated a regulation on 19 April 2003 regarding “Requirements for Land Use Covenants” at Cal. Code Regs. tit. 22, § 67391.1 to be implemented through incorporation of restrictive environmental covenants in the deed at the time of transfer. These covenants would be recorded with the environmental restriction covenant and agreement and run with the property.
- *Identification and Management of Waste Soil* - Only those substantive requirements that are more stringent than the federal ARARs at 40 C.F.R. § 264.554(d)(1)(i–ii) and (d)(2) (e), (f), (h), (i), (j), and (k) are potential ARARs. The 90-day period, the specific liner requirements, and the inspection requirements at Cal. Health & Safety Code § 25123.3(a)(2)(B) and (D) are more stringent and are potential state ARARs.

- *Criteria for “Shutoff” of the SVE System* – The goal of the SVE system, if required, would be to remove concentrations of VOCs from vadose zone so that residual risk is acceptable for unrestricted land use. System operation would be discontinued if the following condition is met:

1. VOC removal results in risks to human health that are within acceptable limits for unrestricted use (i.e., below 1×10^{-6}).

If one of the two following conditions are encountered during SVE system operation, the Navy will consult with the regulatory agencies to discuss potential shutdown of the SVE system:

2. Soil gas concentrations in performance monitoring probes reach and remain at asymptotic conditions (i.e., the slope of time-series soil gas results in performance monitoring probes approaches zero).
 3. The SVE system has operated for a four to six month time-frame.
- *Regulation 8 Rule 47 Air Stripping and Soil Vapor Extraction Operations* - The purpose of this Rule is to limit emissions of organic compounds from contaminated groundwater and soil. The provisions of this Rule shall apply to new and modified air stripping and soil vapor extraction equipment used for the treatment of groundwater or soil contaminated with organic compounds. The operation of the SVE system may result in the emission of organic compounds from soil and soil gas therefore; this Rule is an applicable state ARAR.

Section A6

REFERENCES

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