



DEPARTMENT OF THE NAVY  
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NAVAL FACILITIES ENGINEERING COMMAND  
ENVIRONMENTAL DIVISION  
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SAN DIEGO, CALIFORNIA 92132-5181

MCC

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MCAS EL TORO  
SSIC # 5090.3

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Ser 1832.JJ/435  
February 17, 1995

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Juan M. Jimenez  
Remedial Project Manager  
State of California Environmental Protection Agency  
Department of Toxic Substance Control, Region 4  
Base Closure Unit  
245 Broadway, Suite 425  
Long Beach, CA 90802-4444

Re: IDENTIFICATION OF STATE "APPLICABLE" OR "RELEVANT AND APPROPRIATE" REQUIREMENTS (ARARs) FOR THE REMEDIAL INVESTIGATION AND FEASIBILITY STUDY (RI/FS) FOR OU1 AT MARINE CORPS AIR STATION, EL TORO

Dear Mr. Jimenez:

The purpose of this letter is to request that the Department of Toxic Substances Control (DTSC), as lead agency for the State of California, identify any additional specific potentially applicable or relevant and appropriate requirements (ARARs) under State law for Marine Corps Air Station (MCAS) El Toro for additional remedial alternatives which the Department of Navy (DON) has determined should be added to the MCAS El Toro Operable Unit (OU) #1 Interim Action Feasibility Study (IAFS) currently under development. These additional alternatives are described in Enclosure 1. They have been discussed among representatives of the parties to the MCAS El Toro Federal Facilities Agreement (FFA) at the BRAC Project Team meeting in San Francisco on January 18, 1995 and during a conference call on January 31, 1995. The alternatives were also the topic of discussion at a meeting between DON and the Santa Ana Regional Water Quality Control Board in Riverside on January 19, 1995.

DON acknowledges receipt of DTSC's April 11, 1994 response to DON's March 4, 1994 request for identification of State ARARs on the remedial alternatives previously addressed in the September 1994 draft IAFS submitted to USEPA and CALEPA for review and comment. DON is currently reviewing and considering comments received on the ARARs analyses contained in that draft IAFS and will respond in due course. DON would like to emphasize that it is requesting that DTSC and supporting agencies identify additional potential State ARARs for the additional alternatives being added to the IAFS and is specifically not requesting that ARARs for the remedial alternatives already addressed in the September 1994 draft IAFS and the related USEPA and CALEPA

comments be addressed unless those requirements have been amended, repealed or otherwise changed. In order to facilitate DTSC's effort, two components of a draft ARARs analysis addressing the "new" ARARs for the "new" remedial alternatives have been enclosed (Enclosures 2 and 3). Enclosure 2 specifically addresses certain key potential State ARARs of central importance to remedial alternatives involving reinjection of treated groundwater back into aquifers from which the groundwater was drawn. Enclosure 3 contains draft ARARs analyses that relate to other "new" State ARARs for the "new" remedial alternatives (Enclosure 3).

Section 2.1 of Enclosure 2 addresses potential ARARs relating to total dissolved solids (TDS) and nitrates that are administered by the Santa Ana Regional Water Quality Control Board. These potential ARARs are of time-critical concern to DON because they directly bear on the scope and cost of the reinjection remedial alternatives. Early State concurrence with the Section 2.1 ARARs analysis will significantly facilitate keeping the project on schedule. DON would greatly appreciate receiving a response to this portion of the draft ARARs analysis directly from the Santa Ana Regional Water Quality Control Board not later than fourteen (14) calendar days from the date of receipt of this letter. DON recognizes that this timeframe is shorter than that provided under the requirements set forth below but would greatly appreciate the cooperation of the State in accommodating it. If the State is unable to respond in that timeframe, DON will look for a response within the timeframes set forth below.

To ensure complete ARARs identification, we ask that you provide us the following information for any potential State ARARs which are not addressed in the enclosures to this letter:

1. A specific citation to the statutory or regulatory provision(s) for the potential State ARAR and the date of enactment or promulgation.
2. A brief description of why the potential State ARAR is applicable or relevant and appropriate.
3. A description of how the potential State ARAR would apply to potential remedial actions, including: specific numeric discharge, effluent, or emission limitations; hazardous substance/constituent action or cleanup levels; and whether the State intends to take the position that the potential State ARAR will be interpreted to include such limitations, levels, etc.

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4. If the State believes its proposed ARAR is more stringent than the corresponding Federal ARAR, please provide the rationale and technical justification for this position.
5. If the State determines that there is not enough information to fully respond to our request, please identify any additional information that would be required to support identification of State ARARS and their application.
6. A description of any other criteria, advisories, guidance, and proposed standards that the State of California requests to be considered (TBCs) for OU-1.

As you know, timely identification of potential State ARARS is required under Section 121(d)(2)(a) of CERCLA and under the National Contingency Plan (NCP), 40 CFR Sections 300.400(g) and 300.515(d) and (h). Additionally, identification of ARARS is stipulated in paragraph 7.69 (a) & (b) of the Federal Facility Agreement (FFA) between the U.S. Environmental Protection Agency, the State of California, and the U.S. Department of the Navy; and in Section V.A.2.c of the 1990 Memorandum of Understanding between your agency, the State Water Resources Control Board, and the Regional Water Quality Control Boards.

Consistent with the above-cited provisions, we request that you send a response via first class mail addressed to me and postmarked within 30 calendar days of receipt of this request. If you have any technical questions concerning this request, please contact Andy Piszkin, Remedial Project Manager, SOUTHWEST NAVFACENGCOM at (619) 532-2635. Legal questions should be directed to Rex Callaway, Associate Counsel (Environmental), SOUTHWESTNAVFACENGCOM (619) 532-1662. Thank you for your prompt attention in this matter.

Sincerely,



JOSEPH J. BOYCE  
BRAC Environmental Coordinator  
By direction of  
the Commanding Officer

Enclosures (3)

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Copy to:  
Commanding General  
Attn: Vish Parpiani  
Environmental Department, 1AU  
MCAS El Toro  
Santa Ana, CA 92709

Gary Stewart  
Santa Ana Regional Water Quality Control Board  
2010 Iowa Avenue, Suite 100  
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Steve Pico, Esq.  
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Ms. Karen A. Goldberg  
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75 Hawthorne Street  
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Blind Copy to:  
Major J. Scharfen, USMC WACO  
Ron Ress, Counsel, COMCABWEST  
Kelly Dreyer, CMC-LFL  
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## Enclosure #1

### MCAS EL TORO RI/FS

#### OPERABLE UNIT 1 - REGIONAL GROUNDWATER

#### DRAFT ALTERNATIVES

These alternatives are being evaluated during revisions to the OU-1 Interim Action Feasibility Study (IAFS) now under development.

The only actions identified for evaluation in the new draft which were not evaluated in the previous draft of the IAFS are the discharge actions in Alternatives 2 (MCAS El Toro Extraction/Treatment) and 5 (Desalter with Independent MCAS El Toro Shallow Aquifer Extraction/Treatment) and potential recharge to the aquifer via dry washes (but not to include discharge to surface waters). They are briefly described below.

As the development of the revised IAFS proceeds, the alternatives listed here may change slightly. However, the Department of Navy (DON) does not anticipate introducing actions that are not presented in the following list.

#### ***1. No Action***

This alternative consists of conditions as they exist at present.

#### ***2. MCAS El Toro Extraction/Treatment***

- a. Extracted/treated groundwater reinjected***
- b. Extracted/treated groundwater reinjected but with a portion sent to irrigation and/or the IRWD reclaim water system during the dry season***
- c. Extracted/treated groundwater recharged to aquifer via dry washes (no discharge to surface water)***
- d. Extracted/treated groundwater discharged to water purveyor for upgrade to potable water quality***

In this alternative the Desalter Project does not proceed. The Department of Navy (DON) designs and constructs a groundwater extraction system to contain the highest detected concentrations of TCE and benzene in the southwest portion of the Station and to address the

VOC contamination that has migrated into the principal aquifer downgradient of the Station. The extracted groundwater is treated to remove VOCs.

### ***3. Desalter Only***

In this alternative the Desalter Project proceeds as presented in *The Irvine Desalter Project Preliminary Design Report* (Orange County Water District, March 1994). The plans call for installation of several wells in the principal aquifer west and downgradient of MCAS El Toro to extract approximately 5700 gallons per minute of groundwater. The extracted groundwater is treated to remove VOCs, and further treated to be sold as potable water.

### ***4. Desalter/Additional Extraction with Discharge to Desalter***

- a. Without Pretreatment to Remove VOCs***
- b. With Pretreatment to Remove VOCs***

In this alternative the Desalter Project proceeds as in Alternative 3, above, with the addition of on-Station shallow extraction wells to contain the groundwater with the highest detected concentrations of TCE and benzene in the southwest portion of the Station. In addition, existing agricultural wells may be used to assist in containment at the toe of the VOC plume.

### ***5. Desalter with Independent MCAS El Toro Shallow Groundwater Extraction/Treatment/Discharge***

- a. Extracted/treated shallow groundwater reinjected***
- b. Extracted/treated shallow groundwater reinjected but with a portion sent to irrigation and/or the IRWD reclaim water system during the dry season***
- c. Extracted/treated shallow groundwater recharged to aquifer via dry washes (no discharge to surface water)***
- d. Extracted/treated shallow groundwater discharged to water purveyor for upgrade to potable water quality***

This alternative is the same as Alternative 4 except that the shallow groundwater extracted on-Station is not discharged to the Desalter.

## Enclosure #2

### Preliminary Identification of ARARs for ReInjection of Groundwater

#### 1.0 Introduction

This Enclosure includes a preliminary identification of specific, potential Applicable or Relevant and Appropriate Requirements (ARARs) for additional remedial alternatives under development for Operable Unit 1 (OU-1) of the revised draft of the MCAS El Toro Interim Action Feasibility Study Report (Revised Draft IAFS) that relate to reinjection of groundwater following removal of volatile organic compounds (VOCs) in lieu of delivering the treated water to the proposed Irvine Desalter Project. Identification of State ARARs for the OU-1 IAFS was requested by the Navy on March 4, 1994. The State of California Department of Toxic Substances Control responded on April 11, 1994 with a preliminary identification of State ARARs. The OU-1 Draft IAFS was submitted for Agency review on September 1, 1994. Agency comments on the Draft IAFS, including ARARs, have been received. Agency comments on ARARs that were raised in the Draft IAFS, but are also relevant to reinjection are not specifically addressed here, but will be addressed later in the comment response period.

The impetus for early action on the VOC contamination in the regional groundwater stemmed from the planned development of the Irvine Desalter Project (Desalter) by the Orange County Water District (OCWD). All but one of the remedial alternatives considered in the September 1, 1994 Draft IAFS were developed under the baseline assumption that the Desalter would be operational in the near future. Alternative 2 did not incorporate the Desalter as a final treatment of extracted groundwater, and was not carried through the full analysis.

The Draft IAFS is currently being revised to add remedial alternatives that do not include discharge of extracted groundwater to the Desalter. These new alternatives expand on Alternatives 2 and 4 in the Draft IAFS. Preliminary descriptions of these alternatives are included in Enclosure #1. The alternatives will be more fully developed as a part of the revision of the Draft IAFS, and will be presented in the Revised Draft IAFS.

This enclosure contains a preliminary identification of ARARs only for reinjection of extracted and treated groundwater. ReInjection of treated groundwater is a key component of two of the alternatives being developed, and represents a technology that has not been evaluated previously for this site. A timely identification of State ARARs is key to the further development of these remedial alternatives. The discussion of ARARs for these alternatives will be refined as the alternatives are fully evaluated during development of the Revised Draft IAFS. This enclosure does not duplicate ARARs discussion contained in Appendix B of the Draft IAFS. Preliminary identification of ARARs for the other potential discharge options is contained in Enclosure #3.

## **2.0 Preliminary Identification of ARARs for Remedial Alternatives Incorporating Reinjection of Treated Groundwater.**

The chemicals of concern and remedial objectives for the regional groundwater were identified in the Draft IAFS, and will not be repeated here. Similarly, ARARs related to extraction or treatment of groundwater will not be included in this discussion. Only issues related to the reinjection of treated groundwater are covered here.

Two remedial alternatives are being developed for the OU-1 Revised Draft IAFS that incorporate reinjection following treatment of groundwater for VOC removal.

### **Alternative 2a. MCAS El Toro Extraction/Treatment, with Reinjection of Treated Groundwater**

- **Alternative 5a. Desalter with Independent MCAS El Toro Shallow Groundwater Extraction, Treatment, and Reinjection**

Alternative 2a. includes extraction of groundwater to contain the highest detected concentrations of trichloroethylene (TCE) and benzene in the southwest portion of the Station, and to address the VOC contamination that has migrated into the principal aquifer downgradient of the Station. The extracted groundwater will be treated to remove VOCs, then reinjected into the aquifer. This alternative is based on the assumption that the Desalter will not proceed.

Alternative 5a. includes on-Station extraction of the shallow groundwater containing the highest detected concentrations of TCE and benzene in the southwest portion of the Station. The extracted groundwater will be treated to remove VOCs, and reinjected into the groundwater. Unlike Alternative 2a., this alternative is based on the assumption that the Desalter will proceed, and will capture most of the VOC contamination in the principal aquifer.

ARARs related to reinjection concern the quality of groundwater to be reinjected, and the relative placement of extraction and reinjection wells. Since these issues affect both reinjection alternatives, the alternatives will not be examined separately. Issues related to regional groundwater quality (TDS and nitrates, specifically) and treatment for VOC removal will be addressed separately.

## ***2.1 Potential ARARs Relating to Reinjection, and TDS and Nitrates***

Groundwater quality in the vicinity of MCAS El Toro includes elevated concentrations of total dissolved solids (TDS) and nitrates. The TDS concentrations appear to be due to natural processes. Nitrates appear to be of human origin (agriculture, etc.). Groundwater monitoring performed as part of the MCAS El Toro RI/FS indicates that the presence of elevated concentrations of TDS and nitrates is not related to MCAS El Toro activities. Potential ARARs relating to reinjection of treated groundwater (following VOC remediation) which

contains natural TDS and nitrates from non-DON sources that were evaluated include provisions of the Porter-Cologne Water Quality Control Act, State Water Resources Control Board (SWRCB) policies, and Basin Water Quality Control Plan. ReInjection of treated groundwater (following VOC remediation) which contains naturally occurring levels of TDS, and nitrates from non-DON sources, without treatment of such TDS and nitrates is consistent with the Porter-Cologne Water Quality Control Act, State Water Resources Control Board (SWRCB) policies, and the Santa Ana Basin Water Quality Control Plan, so long as the location of reinjection does not result in degradation of existing water quality. See following discussion. In addition, it should be noted that the Department of Navy has no liability for or authority under CERCLA to respond to these pollutants in these circumstances. See Sections 104 (a) (3) (A) and 101 (22) (D) of CERCLA.

### **2.1.1 SWRCB Resolution No. 92-49 Cleanup Policy**

State Water Resources Control Board Resolution No. 92-49 entitled "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304" (Resolution No. 92-49) addresses the establishment of cleanup levels. The Department of Navy accepts Section III.G. of Resolution No. 92-49 as a potential "relevant and appropriate" State ARAR. Resolution No. 92-49 states that :

"dischargers are required to cleanup and abate the effects of discharges in a manner that promotes attainment of background water quality, or the highest water quality which is reasonable if background levels of water quality cannot be restored, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible." (Resolution No. 92-49 section III G)

It is clear that this policy does not require cleanup below background concentrations. Section III. F. 1 of the Resolution states: "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."

Groundwater monitoring performed as part of the MCAS El Toro RI/FS indicates that background conditions for the El Toro site includes elevated concentrations of TDS and nitrates from sources unrelated to MCAS El Toro activities.

### **2.1.2 Water Quality Control Plan for the Santa Ana River Basin, 1994.**

As discussed in Section 2.1.1, Resolution No. 92-49 does not require cleanup beyond existing background groundwater quality. This position is consistent with the Water Quality Control Plan, although Resolution No. 92-49 would take precedence in the event of a conflict with the Plan on this.

The Water Quality Control Plan for the Santa Ana River Basin is prepared and implemented by the Santa Ana Regional Water Quality Control Board (Regional Board) for the purpose of protecting and enhancing the quality of the waters of the State in the Santa Ana Region. The Water Quality Control Plan (Basin Plan) establishes location specific beneficial uses and water quality objectives for the ground and surface waters of the region, and is the basis of the Regional Board's regulatory programs. The Basin Plan includes both numeric and narrative water quality objectives for specific groundwater subbasins. The water quality objectives are intended to protect the beneficial uses of the waters of the Region, and to prevent nuisance. The 1994 amended Basin Plan is currently under review by the State Office of Administrative Law. If it is approved as a properly promulgated plan, it will be considered a potential State ARAR. It is addressed below in anticipation of approval.

The most serious water-related problem in the Santa Ana River Basin is water supply (Basin Plan, p. 1-10). Therefore, beneficial use and reuse of water are key aspects of the Basin Plan. MCAS El Toro is located in the Lower Santa Ana River Basin. The subbasins potentially affected by the reinjection alternatives include the Irvine Forebay I, Irvine Forebay II, and the Irvine Pressure subbasins. Those three subbasins all have the following beneficial use designations (Basin Plan, p. 3-32):

- Municipal and Domestic Supply
- Agricultural Supply
- Industrial Service Supply
- Industrial Process Supply

Water Quality Objectives have been established for all three subbasins in the El Toro OU-1 project area. The Objectives for Total Dissolved Solids and Nitrates are listed in Table 1.

<b>Subbasin</b>	<b>TDS (mg/l)</b>	<b>Nitrate (as N) (mg/l)</b>
Irvine Forebay I	1000	8
Irvine Forebay II	720	6
Irvine Pressure	720	6

1 Water Quality Control Plan for the Santa Ana River Basin, 1994, page 4-45

The first Basin Plan for the Santa Ana River Basin was prepared in 1974 (1974 Basin Plan). The 1974 Basin Plan contained water quality objectives for the Irvine Forebay and Irvine Pressure Subbasins. The water quality objectives were based on existing (1967-1970) groundwater quality. (The Irvine Forebay was subsequently divided into two subbasins, denoted Forebay I and Forebay II.) The original water quality objectives (WQOs) represented "the average quality of water in the zones being pumped. That is, the current groundwater quantity and quality data, based on use, were the background data for establishing the numerical value[s]." (Water Quality Control Plan Report, Santa Ana River Basin (8), 1974, page 4-11.) The 1974 plan stated, "The physical extent of these groundwater subbasins and the variations in quality within each subbasin strongly suggest an averaging of the quality to allow the establishment of stringent yet effective objectives for these waters." (ibid, page 4-11)

Intended implementation of the WQOs included consideration of localized water quality. "The beneficial uses and water quality objectives set forth in this plan apply to general areas. The Regional Board, in setting waste discharge requirements, will consider the particular impact on beneficial uses within the immediate area of influence of the discharge, the existing quality of receiving waters, and the appropriate water quality objective." (Water Quality Control Plan Report, Santa Ana River Basin (8), 1974, page 4-1.)

For the Irvine Forebay and Irvine Pressure subbasins, the 1974 Basin Plan set WQOs including an objective of 720 mg/l for Filterable Residue (Total Dissolved Solids), and 6 mg/l for Nitrate (as N). (Water Quality Control Plan Report, Santa Ana River Basin (8), 1974, Table 4-4.) The WQOs for TDS and nitrate in the Irvine Forebay II and Irvine Pressure subbasins have not changed, although the Basin Plan was reevaluated and revised in 1983 and in 1994. (1994 Basin Plan, Table 4-1, page 4-45.) In June 1980, a study done for the State of California Department of Water Resources Southern District reviewed the data for the Irvine Forebay I subbasin, and resulted in a change in the WQOs for the Irvine Forebay I subbasin. ("Ground Water Basin Objectives for Irvine Forebay Subarea", Memorandum Report, State of California Department of Water Resources Southern District, June 1980.) The new WQOs appeared in the 1983 Basin plan, and subsequently in the 1994 Basin Plan as 1000 mg/l Total Dissolved Solids (TDS) and 8 mg/l Nitrate (as N).

Although the 1974 Basin Plan implementation was intended to preserve water quality, it was recognized that subbasins without assimilative capacity, which included both the Irvine Forebay and Irvine Pressure subbasins, were likely to degrade in quality. "In those subbasins listed below, the basin plan development and choices of alternatives indicated that no assimilative capacity exists, and that the mineral quality of such subbasins will continue to degrade in spite of controls, management procedures and practices set forth and recommended in this Water Quality Control Plan." (Water Quality Control Plan Report, Santa Ana River Basin (8), 1974, page 4-11.)

Lower WQOs for TDS and nitrates have been established for the Irvine Forebay II, and Irvine Pressure Subbasins (720 mg/l, and 6 mg/l, respectively) than for the Irvine Forebay I Subbasin (1000 mg/l, and 8 mg/l, respectively). Since the water quality varies within and between the

subbasins, the WQOs may be considered relevant for establishment of reinjection locations relative to extraction locations. ReInjection locations will be selected to prevent degradation of groundwater quality, or to enhance groundwater quality, if possible. (The relative quality of groundwater at extraction and reinjection locations is further discussed under Resolution 68-16, below).

Under past SWRCB adjudicatory precedent, existing ambient levels of pollutants in receiving water bodies which originated from other sources than the proposed discharger (i.e. naturally occurring levels of TDS) can be a basis for establishing waste discharge requirements which exceed WQOs and still be considered to be consistent with a Water Quality Control Plan. The SWRCB addressed a proposed discharge into waters containing naturally occurring TDS levels in In the Matter of the Petition of Gerry D. Bayless for Review of Order No. 76-4 of the California Regional Water Quality Control Board, Santa Ana Region Order No. 77-13. That case involved the establishment of waste discharge requirements where naturally occurring levels of TDS at the proposed discharge location exceeded those relied upon to establish the Basin Plan water quality objectives and relied upon by the Regional Board in establishing proposed waste discharge requirements for TDS.

Upon review of the petitioner's appeal, the State Board held that naturally occurring dissolved solids at the proposed discharge location should be utilized as the appropriate "base level" for establishing waste discharge requirements in lieu of the Basin Plan's water quality objectives. The State Board held: "In this particular case, the quality of the water in the non-water bearing area is the appropriate base dissolved solids level. The Regional Board should issue waste discharge requirements for the proposed discharge using this base level".

At MCAS El Toro, current groundwater concentrations of TDS and nitrates, as reflected in monitoring data, exceed the WQOs at some locations. Based on the discussion from the 1974 Basin Plan of variability in water quality throughout the basin, this is not surprising. The elevated background concentrations of TDS and nitrates in the El Toro project area are not due to El Toro activities. Treated water would be reinjected in locations that would not degrade water quality at the reinjection locations. ReInjection of the groundwater would not contribute additional solids or nitrates to the basin, and would be consistent with Basin Plan and the WQOs, as a reflection of average (not uniform) water quality in the basin.

### **2.1.3 California State Water Resources Control Board Resolution No. 68-16**

As discussed in Section 2.1.1, Resolution No. 92-49 does not require cleanup beyond existing background groundwater quality. Resolution No. 92-49 provides that State Water Resources Control Board Resolution No. 68-16 (antidegradation policy) cannot be interpreted to require "cleanup and abatement which achieves water quality conditions that are better than background conditions".

The antidegradation policy is not an ARAR for Alternatives 2a. and 5a., as no actions that would result in degradation of water quality are being considered.

## ***2.2 Potential ARARs Relating to ReInjection, and VOCs***

Groundwater quality in the MCAS El Toro OU-1 project area contains VOCs released during past operations at MCAS El Toro. Appendix B of the MCAS El Toro OU-1 Draft IAFS includes discussion of potential chemical and action specific ARARs for groundwater extraction and treatment. That discussion will not be repeated here. The remedial objective for groundwater was derived from that discussion. Treatment of extracted groundwater prior to reinjection will be consistent with the remedial objectives for groundwater. Supplemental discussion of how the potential ARARs addressed in Appendix B of the OU-1 Draft IAFS relate to reinjection are set forth below.

### **2.2.1 Resolution No. 92-49 Cleanup Policy**

State Water Resources Control Board Resolution No. 92-49 entitled "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304" (Resolution No. 92-49) addresses the establishment of cleanup levels. The Department of Navy accepts Section III.G. of Resolution No. 92-49 as a potential "relevant and appropriate" State ARAR. Resolution No. 92-49 states that :

"dischargers are required to cleanup and abate the effects of discharges in a manner that promotes attainment of background water quality, or the highest water quality which is reasonable if background levels of water quality cannot be restored, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible." (Resolution No. 92-49 section III G)

Remedial action objectives for the area of concern for OU-1 were established in the El Toro OU-1 Draft IAFS. Treatment of extracted groundwater for removal of VOCs prior to reinjection, using the technologies discussed in the Draft IAFS, would be consistent with the remedial action objectives of MCLs. The technologies being considered for treatment of extracted groundwater are adsorption and air stripping, which are classified as Best Available Control Technologies.

### **2.2.2 Water Quality Control Plan for the Santa Ana River Basin, 1994.**

As discussed earlier, the Water Quality Control Plan for the Santa Ana River Basin is prepared and implemented by the Santa Ana Regional Water Quality Control Board (Regional Board) for the purpose of protecting and enhancing the quality of the waters of the State in the Santa Ana Region. Numeric water quality objectives have not been established in the Basin Plan for VOCs. A narrative objective for toxic substances in groundwater states:

"All waters of the region shall be maintained free of substances in concentrations which are toxic, or that produce detrimental physiological responses in human, plant, animal, or aquatic life." (1994 Basin Plan, page 4-14)

As discussed in Section 2.2.1, the remedial action objective for VOCs in groundwater are the MCLs, which are designed to be protective of human health.

### **2.2.3 California State Water Resources Control Board Resolution No. 68-16**

The State Water Resources Control Board Resolution No. 68-16 (antidegradation policy) establishes a 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" (Resolution 68-16 paragraph 1.) The antidegradation policy 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. If degradation of water quality may occur due to water use or discharge, the State or Regional Water Board's antidegradation analysis must be performed to determine if the degradation is permissible. (State Water Resources Control Board Administrative Procedures Update on Antidegradation Policy Implementation of NPDES Permitting, APU No. 90-004, p.1) The antidegradation analysis determines whether the degradation will (1) be consistent with the maximum benefit to the people of the State; (2) will not unreasonably affect present and anticipated beneficial use of such water, and (3) will not result in water quality less than that prescribed in the polices. (Resolution 68-16 paragraph.1)

Antidegradation analysis is required only if the proposed discharge will lower baseline water quality of the receiving waters. (State Water Resources Control Board Administrative Procedures Update on Antidegradation Policy Implementation of NPDES Permitting, APU No. 90-004, p.1) Alternatives 2a. and 5a. will improve the overall water quality in the area of known contamination; however, the exact location of the reinjection wells has not yet been determined. Alternatives 2a. and 5a. will not consider reinjection in areas of the Basin not already associated with the known contamination. However, if to better accomplish cleanup, treated groundwater may be reinjected just outside the area of known contamination. Placement of these wells will depend on additional data that will be collected during remedial design (e.g., long-term pumping tests), on technical decisions with regard to the most effective approach to overall cleanup of the known contamination (e.g., reinjection at the upgradient edge to provide flushing, or at the downgradient edge to provide a hydraulic barrier), and on physical constraints present at the site (e.g., buildings, tarmac). Placement of the reinjection wells actually within the contaminant plume could be expected to induce contaminant migration rather than to reduce it.

If the most effective technical approach requires that reinjection wells be placed at the edge of the area of contamination rather than within it, the extracted groundwater to be reinjected would be treated to MCLs. These levels will protect beneficial use.

#### **2.2.4 RWQCB General Permit- VOC Limit on Reinjecting Water**

Preliminary discussions were held with the Regional Board on 19 January 1995, to identify treatment standards for removal of VOCs prior to reinjection. The Regional Board has issued a General Groundwater Cleanup Permit for the discharge of extracted and treated groundwater resulting from the cleanup of groundwater polluted by fuel leaks and other related wastes at service stations and similar sites (Order No. 91-63, NPDES NO. CA 8000233, October 18, 1991.). The Regional Board representative indicated that, for consistency across the basin, the numeric treatment standards listed in the General Permit should be used for the MCAS El Toro OU-1 groundwater treatment prior to reinjection. The General Permit is scheduled to expire in October, 1996. When it is reissued, the treatment standards may be more stringent.

Although onsite CERCLA response actions are exempt from permit requirements under Section 121(e) of CERCLA, DON considers the substantive requirements of the General Permit to be a "TBC" and means of ensuring compliance with potential ARARs such as MCLs, the Basin Plan, SWRCB Resolution No. 68-16, etc. Treatment standards that may be relevant to the reinjection alternatives are listed in Table 2. (General Permit p. 5 of 51, A.2.)

Table 2 - Discharge Standards for Treatment of Groundwater<sup>1</sup>

Constituent	Maximum Daily Concentration Limit	Units
Benzene	1.0	ug/l
Carbon Tetrachloride	0.5	ug/l
Chloroform	5.0	ug/l
Chloromethane	N.S. <sup>2</sup>	
1,2-Dichloroethylene (1,2-DCE) (total)	10.0	ug/l
1,1-Dichloroethylene (1,1-DCE)	6.0	ug/l
1,2-Dichloroethane (1,2-DCA)	N.S.	
1,1-Dichloroethane (1,1-DCA)	5.0	ug/l
Ethylbenzene	10.0	ug/l
Methylene Chloride	N.S.	
Tetrachloroethylene (PCE)	5.0	ug/l
Toluene	10.0	ug/l
Trichloroethylene (TCE)	5.0	ug/l
1,1,1-Trichloroethane (1,1,1-TCA)	5.0	ug/l
1,1,2-Trichloroethane (1,1,2-TCA)	N.S.	
Xylenes	10.0	ug/l

<sup>1</sup> General Groundwater Cleanup Permit, Order No. 91-93, NPDES No. CA 8000233, October 18, 1991, page 5 of 51.  
<sup>2</sup>N.S. = No Standard Listed

## Enclosure #3

# Preliminary Identification of ARARs for Potential Discharge Options for Treated Groundwater

### 1.0 Introduction

This enclosure includes a preliminary identification of specific potential Applicable or Relevant and Appropriate Requirements (ARARs) for additional remedial alternatives under development for Operable Unit 1 (OU-1) of the revised draft of the MCAS El Toro Interim Action Feasibility Study Report (Revised Draft IAFS). Identification of State ARARs for the OU-1 IAFS was requested by the Navy on March 4, 1994. The State of California Department of Toxic Substances Control responded on April 11, 1994 with a preliminary identification of State ARARs. The OU-1 Draft IAFS was submitted for Agency review on September 1, 1994. Agency comments on the Draft IAFS, including ARARs have been received. Agency comments on ARARs that were raised for other alternatives, but are also relevant to the new alternatives, are not specifically addressed here, but will be addressed later in the comment response period.

The impetus for early action on the volatile organic compound (VOC) contamination in the regional groundwater stemmed from the planned development of the Irvine Desalter Project (Desalter) by the Orange County Water District (OCWD). All but one of the remedial alternatives considered in the Draft IAFS were developed under the baseline assumption that the Desalter would be operational in the near future. Alternative 2 did not incorporate the Desalter as a final treatment of extracted groundwater, and was not carried through the full analysis.

The Draft IAFS is currently being revised to add remedial alternatives that do not include discharge of extracted groundwater to the Desalter. These new alternatives expand on Alternative 2 in the Draft IAFS. Preliminary descriptions of these alternatives are included in Enclosure #1. The alternatives will be more fully developed as a part of the revision of the Draft IAFS, and will be presented in the Revised Draft IAFS.

This enclosure contains a preliminary identification of ARARs only for the new remedial alternatives, and only for discharge options other than reinjection. Preliminary ARARs related to reinjection of treated groundwater were discussed separately in Enclosure #2. The discussion of ARARs for these new alternatives will be refined as the alternatives are fully evaluated during development of the Revised Draft IAFS. This enclosure does not duplicate ARARs discussion contained in Appendix B of the Draft IAFS.

## **2.0 Preliminary Identification of ARARs.**

The chemicals of concern and remedial objectives for groundwater have not changed from those identified in the Draft IAFS, and will not be repeated here. Similarly, ARARs related to extraction or treatment of groundwater will not be included in this discussion, because they were covered in the Draft IAFS Appendix B. Only issues related to the final disposition of extracted and treated groundwater will be covered here.

### ***2.1 Alternative 2b. MCAS El Toro Extraction and Treatment of Groundwater with Discharge to the IRWD Reclaim Water System or the Area Irrigation System (The Irvine Company, or Other)***

Potential ARARs for Alternative 2b. concern the quality of groundwater to be discharged to the IRWD Reclaim line or the area irrigation system. The IRWD was established pursuant to California Water Code 34000 to treat water for municipal and industrial (potable) uses, and non-potable uses (irrigation). The IRWD operates a reclaim water system which distributes water for irrigation purposes and other similar uses. IRWD controls the quality of water in the reclaim system by limiting discharges into the system. Since the IRWD requirements are not promulgated State requirements, they are not ARARs, but administrative requirements.

The Irvine Company (TIC) operates a network of irrigation supply lines in the area, and regulates the quantity and quality of discharges to the line. Similarly to the IRWD requirements, these limits are not ARARs, but administrative requirements.

Both IRWD and TIC seek to control the quality of the water in their systems to prevent degradation of basin water quality. Irrigation is considered a beneficial use of water. Therefore the WQOs in the Basin Plan do not apply.

### ***2.3 Alternative 2c. MCAS El Toro Extraction and Treatment of Groundwater with Recharge of Aquifer via Dry Washes***

There are several dry washes located near the Station which may be suitable for use as recharge basins. OCWD operates and maintains rapid percolation basins in the Santa Ana River streambed and recharge pits, ponds, and basins in the Santa Ana Forebay area. (Basin Plan, 1994, page 5-26.)

In locating dry washes for potential use as recharge basins, evaluation of underlying groundwater quality, with respect to TDS and nitrates would be a key consideration. If extracted water quality is significantly lower than the groundwater quality underlying the dry wash, desalting could be required to prevent groundwater degradation.

The ARARs for recharge basins are essentially the same as those described for reinjection (Enclosure #2). Since recharge of treated groundwater would not result in the addition of salts or nitrates to the groundwater, the Waste Discharge Requirements (WDRs) and WQOs would not apply. The WQOs for the subbasins could be relevant to use of the washes for

recharge in areas outside the area of contamination. If the washes are located in area of cleaner groundwater, relative to the extraction area, groundwater treatment may need to include partial desalting to meet the WQOs for TDS or nitrates.

The dry washes would be dammed to enhance recharge to the aquifer and to prevent discharge to surface water. Therefore, NPDES requirements would not apply. Evaluation of flood plains may be needed if damming the washes would affect surface water runoff during flood conditions.

#### ***2.4 Alternative 2d. MCAS El Toro Extraction and Treatment of Groundwater with Discharge to Water Purveyor for Upgrade to Potable Water Quality***

ARARs would be the same as those evaluated for Alternative 4 in the Draft IAFS.

#### ***2.4 Alternative 5b. MCAS El Toro Extraction and Treatment of Shallow Groundwater with Discharge to the IRWD Reclaim Water System or to the Area Irrigation System (The Irvine Company or Other)***

Potential ARARs for Alternative 5b. concern the quality of groundwater to be discharged to the IRWD Reclaim line or The Irvine Company (TIC) irrigation system. The IRWD was established pursuant to California Water Code 34000 to treat water for municipal and industrial (potable) uses, and non-potable uses (irrigation). The IRWD operates a reclaim water system which distributes water for irrigation purposes and other similar uses. IRWD controls the quality of water in the reclaim system by limiting discharges into the system. Since the IRWD requirements are not promulgated State requirements, they are not ARARs, but administrative requirements.

The Irvine Company (TIC) operates a network of irrigation supply lines in the area, and regulates the quantity and quality of discharges to the line. Similar to the IRWD requirements, these limits are not ARARs, but administrative requirements.

Both IRWD and TIC seek to control the quality of the water in their systems to prevent degradation of basin water quality. Irrigation is considered a beneficial use of water. Therefore the WQOs in the Basin Plan do not apply.

Other ARARs would be similar to those evaluated in the Draft IAFS for Alternative 4.