groundwater monitoring; no additional cleanup activities would be conducted.

Alternative 2: EPA's Preferred Alternative: Extract/Treat(either Air Stripping w/Vapor-Phase GAC or Liquid-Phase GAC/Blend for nitrates/Public Water System

Alternative 2 involves the extraction of 2,000 gpm of contaminated groundwater for 12 years. The extraction wells would be located to inhibit most effectively the migration of the contaminant plume. Various locations and scenarios for extraction wells and rates of extraction are proposed in the feasibility study report for the Glendale South OU. However, all design decisions for this interim remedy will be made during the remedial design phase. At that time, one of the locations proposed for extraction wells and scenarios for rates of extraction at individual wells may be selected or new ones may be selected.

The extracted groundwater will be filtered to remove any suspended solids, if necessary, and then treated for VOCs using dual-stage or single-stage air stripping with vapor-phase GAC adsorption for emissions control or liquid-phase GAC. Whether air-stripping (dual versus single) or liquid phase GAC will be used will be determined during remedial design as will the exact location for the treatment plant. If necessary to meet drinking water standards, a chromium reduction and filtration unit will be added to the treatment train. The treated water will be blended with water of a quality such that the treated, blended water would meet all drinking water standards (including the nitrate MCL). The treated water shall meet all ARARs identified in Section 10 of this ROD and will be conveyed to the City of Glendale and/or another San Fernando Valley water purveyor for blending and distribution through the public water supply system. The blended water will have to meet all applicable drinking water requirements for drinking water in existence at the time that the water is served prior to distribution through the public drinking water supply system.

In response to comments by the City of Glendale on the Glendale North and South OU Proposed Plans and in order to decrease overall costs associated with the OUs, EPA has determined that the treatment plants for the Glendale North and Glendale South OUs will be combined at a single location and the total 5,000 gpm of treated water will be conveyed to the City of Glendale for distribution to its public water supply system. The exact location and configuration of the combined treatment plant will be determined during the remedial design phase of the project. The Glendale North OU Record of Decision will also reflect this decision to combine the treatment plants. However, if the City of Glendale does not accept any or all of the treated water (possibly due to water supply needs), any remaining portion of water will be: 1) offered to another San Fernando Valley water purveyor or 2)

recharged into the aquifer at the Headworks Spreading Grounds per Alternative 6 (see description below).

If EPA determines that combining the treatment plants will significantly delay or hinder the implementation of the Glendale South OU, a separate Glendale South OU treatment plant will be constructed and the water will be conveyed to another San Fernando Valley water purveyor. Two of the possible locations for the treatment plant in the Glendale South OU are proposed in the Glendale South OUFS report. As a further contingency, if a municipality or municipalities do not accept all or part of the treated water from a separate Glendale South OU treatment plant (possibly due to water supply needs), the extracted treated water will be conveyed to the Headworks Spreading Grounds where it will be recharged to the aquifer.

Groundwater monitoring wells will be installed to evaluate the effectiveness of the remedial action. More specifically, groundwater monitoring shall be conducted no less frequently than quarterly to: 1) evaluate influent and effluent water quality, 2) determine and evaluate the capture zone of the extraction wells, 3) evaluate the vertical and lateral (including downgradient) migration of contaminants, 4) evaluate the effectiveness of the recharge system, if necessary and 5) monitor any other factors associated with the effectiveness of the interim remedy determined to be necessary during remedial design.

Alternative 3: Extract/Treat(Perozone Oxidation)/Blending for Nitrates/Public Water System

Alternative 3 also requires the extraction of 2,000 gpm of contaminated groundwater for 12 years, and the same final use of the treated water and the same groundwater monitoring requirements as Alternative 2. Alternative 3 only differs from Alternative 2 in that the extracted groundwater would be treated for VOCs using perozone oxidation, followed by either air stripping with vapor-phase GAC adsorption for emissions control or liquid phase GAC. Air stripping or liquid-phase GAC would be required to remove any carbon tetrachloride in the extracted groundwater because the perozone oxidation process alone does not effectively treat this VOC. If necessary to meet drinking water standards, a chromium reduction and filtration unit will be added to the treatment train.

Alternative 4: Extract/Treat (either Air Stripping w/Vapor-Phase GAC or Liquid-Phase GAC)/No Nitrate Treatment/River

Alternative 4 also involves the extraction of 2,000 gpm of contaminated groundwater for 12 years, and the same treatment methodology and the same groundwater monitoring requirements as Alternative 2. As with Alternative 2, if necessary to meet drinking water standards, a chromium reduction and filtration unit will be added to the treatment train. However, rather than

providing the treated water to a public water purveyor, the treated water would be discharged to the Los Angeles River.

Alternative 5[1]: Extract/Treat (either Air Stripping w/Vapor-Phase GAC or Liquid-Phase GAC)/Ion Exchange for Nitrates/Recharge at Spreading Grounds

Alternative 5 also involves the extraction of 2,000 gpm of contaminated groundwater for 12 years, and the same treatment and monitoring requirements as Alternative 2. As with Alternative 2, if necessary to meet drinking water standards, a chromium reduction and filtration unit will be added to the treatment train. Alternative 5 differs from Alternative 2 in that after treatment for VOCs, the water would be treated using ion exchange to reduce the nitrate levels in the water to meet the nitrate MCL. The treated water would then be recharged at a spreading ground.

Alternative 6: Extract/Treat (either Air Stripping w/Vapor-Phase GAC or Liquid-Phase GAC)/No Nitrate Treatment/Recharge at Spreading Grounds

Alternative 6 also involves the extraction of 2,000 gpm of contaminated groundwater for 12 years, the same treatment approach as described in Alternative 2 and the same ground water monitoring requirements as Alternative 2. As with Alternative 2, if necessary to meet drinking water standards, a chromium reduction and filtration unit will be added to the treatment train. However, unlike Alternative 2, the treated water would be recharged to the aquifer at the Headworks Spreading Grounds. No blending or treatment for nitrates would occur prior to recharge.

9.0 SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

A comparative analysis of the alternatives against the nine evaluation criteria is presented in this section.

No Action versus the Nine Criteria. Clearly, Alternative 1 would not be effective in the short- and long-term in protecting human health and the environment as it does not provide for removing any contaminants from the upper zone of the aquifer, for inhibiting further downgradient and vertical contaminant plume migration, or for reducing the toxicity, mobility and volume of contaminants through treatment. Implementing the no-action alternative would be simple and inexpensive since it involves only groundwater monitoring. As indicated by the baseline risk assessment for the Glendale South OU presented in the RI Report for the Glendale Study Area (January 1992), Alternative 1 could pose both carcinogenic and

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[1] Note: Alternative #5 as presented in this ROD was formerly Alternative #8 in the Feasibility Study for the Glendale Study Area: South Plume Operable Unit (August 1992).

non-carcinogenic risk if a person were exposed to the groundwater from the upper zone of the aquifer. Loss of a valuable water resource from continued degradation of the aquifer and discharge of valuable water to the river is a major concern.

Overall Protection of Human Health and the Environment, Short Term Effectiveness and Long Term Effectiveness.

Alternatives 2, 3, 4, 5, and 6 have the same effectiveness in the short and long term in reducing the risk to human health and the environment by removing contaminants from the Upper Zone of the aquifer; by inhibiting further downgradient contaminant migration; and by reducing the toxicity, mobility, and volume of contaminants in the aquifer. During the first 12 years of operation, these alternatives are estimated to remove approximately 80 percent of the total estimated initial dissolved-phase TCE mass, with a peak TCE concentration of 10 ug/l remaining in the Upper Zone of the aquifer.

Reduction of Toxicity, Mobility and Volume through Treatment. The VOC treatment technologies used in Alternatives 2, 4, 5, and 6 (either air stripping with vapor-phase GAC adsorption or liquid phase GAC adsorption) and used in Alternative 3 (perozone oxidation followed by either air stripping with vapor-phase GAC adsorption or liquid-phase GAC) are technically feasible and effective in meeting ARARs for VOCs in the extracted and treated groundwater. Treatment of the extracted contaminated groundwater via air stripping with vapor-phase GAC adsorption or liquid phase GAC adsorption would reduce substantially the toxicity and mobility of contaminants in the aqueous phase. The adsorption of contaminants onto the GAC would reduce the volume of contaminated media. However, a substantially larger quantity of contaminated GAC media would be generated with either air stripping with vapor-phase GAC or liquid-phase GAC systems compared to perozone oxidation (which is a destructive technology) followed by either air stripping with vapor-phase GAC adsorption or liquid-phase GAC. This contaminated GAC would require disposal or regeneration.

Treatment of the extracted contaminated groundwater via perozone oxidation followed by either air stripping with vapor-phase GAC adsorption or liquid-phase GAC would destroy greater than 90 percent of the VOCs, and generate a smaller quantity of contaminated GAC media compared to air stripping with vapor-phase GAC alone. VOC treatment using perozone oxidation has only been tested and applied in pilot-scale/limited applications, and limited O&M data are available; however, a demonstration-scale (2,000-gpm) facility has begun operation in North Hollywood for treating TCE- and PCE-contaminated groundwater. This prototype facility should provide useful information regarding the long-term performance and O&M costs.

As a result of comments received during the public comment period for the Glendale North OU, EPA further evaluated the use of perozone oxidation for the Glendale South OU. Additional research on perozone use and revised cost estimates based on a bench scale treatability study can be found in the following technical memorandum: Applicability of Perozone Treatment Process for the Glendale North Operable Unit Groundwater Remediation (March 12, 1993) included in the Administrative Record for the Glendale South OU available at all five information repositories for the San Fernando Valley Superfund sites. Carbon tetrachloride, which is one of the contaminants found in the groundwater of the Glendale South plume, is not as readily treated using the perozone process and must be treated using air-stripping or liquid phase GAC to ensure that the treated water will meet all drinking water standards for VOCs. In addition, incomplete oxidation can lead to the formation of by-products such as formaldehyde which would also need to addressed. The bench scale treatability study found that the total present worth cost estimated in the FS report is underestimated and $500,000 or more could be added to the estimated $31,200,000. These factors coupled with the uncertainties associated with design, capital and operational costs and reliability, and finally the fact that a municipality will be receiving this water, all combine to make Alternative 3 less preferable than Alternatives 2 and 4 through 6 which propose using air stripping or liquid phase GAC for VOC treatment.

Compliance with ARARs. As discussed in the ARARs section (Section 10) of this ROD, since this remedial action is an interim action, there are no chemical-specific ARARs for aquifer cleanup for any of the alternatives. For Alternatives 2 through 6, the chemical-specific ARARs for the treated water from the VOC treatment plant at this site are Federal MCLs and more stringent State MCLs for VOCs. Alternatives 2, 4, 5, and 6 are expected to meet these ARARs for the treated water. There is some uncertainty regarding the ability of Alternative 3 to meet these ARARs because perozone has not been used to treat such high concentrations of VOCs at such high flow rates. Therefore, there is the potential for not meeting MCLs unless the air stripping or liquid-phase GAC unit following the perozone system is a redundant treatment system (which would add substantially to the cost).

For the Alternatives that involve distribution of the treated water to a public water supply system (Alternatives 2 and 3), secondary drinking water standards are ARARs and will be met prior to blending of the water for nitrate. For water that will be served at the tap, all applicable requirements will have to be met after blending, including the nitrate MCL. For Alternatives 5 and 6, the nitrate levels in the treated groundwater will meet ARARs by ensuring that recharge of the treated groundwater occurs where levels of these substances in the receiving aquifer are similar to those in the treated water to be recharged or that the water will be treated for nitrates prior to recharge. EPA has confirmed that

nitrate levels in the groundwater beneath the Headworks Spreading Grounds are similar to the nitrate levels observed in the vicinity of proposed extraction well sites. In Alternative 4, the treated water will meet MCLs for VOCs prior to discharge to the Los Angeles River (which is on-site).

Implementability. Technically and administratively, Alternatives 2, 3, 4 and 6 could be implemented. The technologies considered for groundwater monitoring, extraction, and conveyance are proven and have been applied extensively. For Alternative 6, the availability of the Headworks Spreading Grounds for discharge of extracted and treated groundwater would need to be addressed. Technically, Alternative 5 could probably be implemented, but using ion exchange for nitrate treatment poses some technical and administrative feasibility issues. In particular, disposing of the waste brine generated from backwashing the ion exchange system may restrict the technical and administrative feasibility of using ion exchange for nitrate treatment.

EPA has determined that the treatment plants for the Glendale North and Glendale South OUs will be combined. The total 5,000 gpm of treated water will be conveyed to the City of Glendale for distribution to its public water supply system. The exact configuration of the combined treatment plant will be determined during the remedial design phase of the project. The City of Glendale has indicated that it has sufficient water credits and capacity in their existing water system to accept this amount of extracted treated water. Therefore, combining the treatment plants for the Glendale North and South OUs would be implementable.

State and Public Acceptance. Based on comments received during the public comment period, the public generally expressed support for Alternatives 2 through 6. EPA received comments from the City of Glendale and members of the Glendale community specifically in support of Alternatives 2 and 6. Comments received during the public comment period along with EPA responses are presented in Part III of this ROD, the Responsiveness Summary. In a letter dated May 28, 1993, the State (Cal-EPA) agreed with EPA's selected remedy for the Glendale South OU. The State Water Resources Control Board did not support Alternative 4 which involves discharge to the Los Angeles River because this alternative does not put the treated water "to beneficial use to the fullest extent of which they are capable."

A public meeting was held in the City of Glendale on October 21, 1992, to discuss EPA's preferred alternative and the other alternatives. At this meeting EPA gave a brief presentation regarding the Proposed Plan, answered questions, and accepted comments from members of the public.

In their written comments during the public comment period for the Glendale South Proposed Plan, the City of Glendale emphasized

that it would like to receive more than just the 3,000 gpm of extracted, treated groundwater proposed for Glendale North and that the City would accept the water from both North and South OUs. The City also indicated that it had stored water credits and water rights sufficient to accept greater than 5,000 gpm of extracted, treated groundwater from the San Fernando Valley. As a result of the City's comments on the Glendale North and South OUs and the cost analysis discussed below, EPA has determined that the treatment plants for the Glendale North and South OUs will be combined and the total 5,000 gpm of treated water will be conveyed to the City of Glendale.

Cost. The estimated total present worth of Alternatives 2, 3, 4, and 6 ranges from $17,700,000 to $25,470,000. The total present worth cost for Alternative 2 is $25,020,000 . The total present worth for Alternative 5 which includes nitrate treatment using ion exchange is $37,750,000. Using ion exchange for nitrate treatment adds significantly to the cost of the alternatives. If a chromium reduction and filtration unit is found to be necessary to meet drinking water standards this would add an estimated $6,750,000 to the total present worth of the alternatives.

EPA has determined that the treatment plants for the Glendale North and Glendale South OUs will be combined. The total 5,000 gpm of treated water will be conveyed to the City of Glendale for distribution to its public water supply system. The exact configuration of the combined treatment plant will be determined during the remedial design phase of the project. The costs of the two separate OU projects is estimated to be $36,420,000 for Glendale North and $25,020,000 for Glendale South. Therefore, these two separate OU projects would total $61,420,000. Recent EPA cost estimates (included in the Glendale South OU Administrative Record) indicate that combining the Glendale North and South OUs could result in a total cost of $ 47,532,000, resulting in an estimated cost savings of $ 13,888,000.

Although the cost estimate for Alternative 2 is slightly higher than some of the other alternatives, these overall project costs do not take into account the value of utilizing the groundwater resource as opposed to disposing of the water in the Los Angeles River (Alternative 4) or recharging at the Headworks Spreading Ground (Alternatives 5 and 6).

10.0 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

This section discusses Applicable or Relevant and Appropriate requirements (ARARs) for the Glendale South OU. Under Section 121(d)(1) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 as amended by the Superfund Amendments and Reauthorization Act of 1986 (collectively, CERCLA), 42 U.S.C. § 9621(d) remedial actions must attain a level or standard of control of hazardous substances which complies with ARARs of

Federal environmental laws and more stringent state environmental and facility siting laws. Only state requirements that are more stringent than Federal ARARs, and are legally enforceable and consistently enforced may be ARARs.

Pursuant to Section 121(d) of CERCLA, the on-site portion of a remedial action selected for a Superfund site must comply with all ARARs. Any portion of a remedial action which takes place off-site must comply with all laws legally applicable at the time of the off-site activity occurs, both administrative and substantive.

An ARAR may be either "applicable", or "relevant and appropriate", but not both. According to the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 CFR Part 300), "applicable" and "relevant and appropriate" are defined as follows:

- Applicable requirements are those cleanup standards, standards of control, or other substantive environmental protection requirements, criteria, or limitations promulgated under Federal or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site. Only those state standards that are identified by a state in a timely manner and that are more stringent than Federal requirements may be applicable. "Applicability" implies that the remedial action or the circumstances at the site satisfy all of the jurisdictional prerequisites of a requirement.

- Relevant and appropriate requirements are those cleanup standards, standard of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under Federal environmental or State environmental or facility siting laws that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site. Only those state standards that are identified in a timely manner and that are more stringent than Federal requirements may be relevant and appropriate.

Chemical-Specific ARARs. Chemical-specific ARARs are health- or risk-based concentration limits, numerical values, or methodologies for various environmental media (i.e., groundwater, surface water, air, and soil) that are established for a specific chemical that may be present in a specific media at the site, or that may be discharged to the site during remedial activities. These ARARs set

limits on concentrations of specific hazardous substances, pollutants, and contaminants in the environment. Examples of this type of ARAR are ambient water quality criteria and drinking water standards.

Location-Specific ARARs. Location-specific requirements set restrictions on certain types of activities based on site characteristics. Federal and state location-specific ARARs are restrictions placed on the concentration of a contaminant or the activities to be conducted because they are in a specific location. Examples of special locations possibly requiring ARARs may include flood plains, wetlands, historic places, and sensitive ecosystems or habitats.

Action-Specific ARARs. Action-specific requirements are technology- or activity-based requirements which are triggered by the type of remedial activities under consideration. Examples are Resource, Conservation and Recovery Act (RCRA) regulations for waste treatment, storage or disposal.

Neither CERCLA nor the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (400 C.F.R. Part 300) provides across-the-board standards for determining whether a particular remedy will result in an adequate cleanup at a particular site. Rather, the process recognizes that each site will have unique characteristics that must be evaluated and compared to those requirements that apply under the given circumstances. Therefore, ARARs are identified on a site-specific basis from information about specific chemicals at the site, specific features of the site location, and actions that are being considered as remedies.

The following section outlines the Applicable or Relevant and Appropriate Requirements (ARARs) that apply to this site.

10.1 Chemical-Specific ARARs

10.1.1 Federal Drinking Water Standards

Section 1412 of the Safe Drinking Water Act (SDWA), 42 U.S.C. S300g-1, "National Water Regulations"; National Primary Drinking Water Regulations, 40 CFR Part 141.

EPA has established Maximum Contaminant Levels (MCLs) (40 CFR Part 141) under the Safe Drinking Water Act (SDWA) to protect public health from contaminants that may be found in drinking water sources. These requirements are applicable at the tap for water provided directly to 25 or more people or which will be supplied to 15 or more service connections. The MCLs are applicable to any water that would be served as drinking water. Under NCP Section 300.430(f)(5), remedial actions must generally attain MCLs and non-zero Maximum Contaminant Level Goals (MCLGs) for remedial actions where the groundwater is currently or potentially a source of

drinking water.

The Glendale South groundwater is a potential source of drinking water. However, since the Glendale South OU remedial action is an interim action, chemical-specific cleanup requirements for the aquifer such as attaining MCLs and non-zero MCLGs, which would be ARARs for a final remedy, are not ARARs for this interim action. (See 55 Fed. Reg. 8755.) Nevertheless, EPA has determined that for the treatment plant effluent from the Glendale South OU, the Federal Maximum Contaminant Levels (MCLs) for VOCs and any more stringent State of California MCLs for VOCs are relevant and appropriate and must be attained regardless of the end use or discharge method for the treated water.

For the treated and blended water which will be put into the public water supply, all applicable requirements for drinking water in existence at the time that the water is served will have to be met because EPA considers the blending facility and the serving of the water to the public (at the tap) to be off-site. Complying with all applicable requirements for drinking water at the tap will also require attainment of the MCL for nitrate prior to serving the water to the public. Since these are not ARARs, these requirements are not "frozen" as of the date of the ROD. Rather, they can change over time as new laws and regulations applicable to drinking water change. See 55 Fed. Reg. 8758 (March 8, 1990). Figure 10-1 provides a diagram of the treatment chain and blending process for the treated water prior to distribution of the treated and blended water to the public water supply for Alternatives 2 and 3.

10.1.2 State Drinking Water Standards

California Safe Drinking Water Act, Health and Safety Code, Division 5, Part 1, Chapter 7, §4010 et seq., California Domestic Water Quality Monitoring regulations, CCR Title 22, Division 4, Chapter 15, §64401 et seq.

California has also established drinking water standards for sources of public drinking water, under the California Safe Drinking Water Act of 1976, Health and Safety Code Sections 4010.1(b) and 4026(c). California has promulgated MCLs for primary VOCs. Several of the State MCLs are more stringent than Federal MCLs. In these cases, EPA has determined that the more stringent State MCLs for VOCs are relevant and appropriate for the treatment plant effluent from the Glendale South OU interim remedy. The VOCs for which there are more stringent State standards include: benzene; carbon tetrachloride; 1,2-dichloroethane (1,2-DCA); 1,1-dichloroethene (1,1-DCE); cis-1,2-DCE; trans-1,2-DCE; and xylene. There are also some chemicals where State MCLs exist but there are no Federal MCLs. EPA has determined that these State MCLs are relevant and appropriate for the treated water prior to discharge or delivery to the water purveyor. The VOCs for which there are no Federal MCLs but for which State MCLs exist include: 1,1-DCA;

1,1,2,2-tetrachloroethane; and 1,1,2-trichloroethane.

Water served as drinking water is required to meet MCLs at the tap, not MCLGs. Therefore, EPA would generally not expect a future change in an MCLG to affect the use of treated groundwater as a drinking water source. The cumulative hazard index is also not an ARAR. However, EPA does retain the authority to require changes in the remedy if necessary to protect human health and the environment, including changes to previously selected ARARS. See 40 C.F.R. Sections 300.430(f)(1)(ii)(B)(1) and 300.430(f)(5)(iii)(C). If EPA receives new information indicating the remedy is not protective of public health and the environment, EPA would review the remedy and make any changes necessary to ensure protectiveness.

EPA has also determined that the monitoring requirements found in CCR Title 22 Sections 64421-64445.2 are relevant and appropriate for any treated water which will be delivered to the City of Glendale's Public Water distribution system. However, the selection of these sections as ARARs involves only the requirements that specific monitoring be performed. It would not include any administrative requirements (such as reporting requirements) and would also not include meeting substantive standards set within these sections since no such standards have been identified by the State as being more stringent than Federal requirements. For the off-site portion of this remedy, including the treated water after blending, all applicable requirements would have to be satisfied including the monitoring requirements in CCR Title 22 Sections 64421-64445.2.

Accordingly, the chemical-specific standards for the groundwater extracted and treated under the Glendale South OU interim remedy are the current Federal or State MCLs for VOCs, whichever is more stringent.

10.2 Location-Specific ARARs

No special characteristics exist in the Glendale Study Area to warrant location-specific requirements. Therefore, EPA has determined that there are no location-specific ARARs for the Glendale South OU.

10.3 Action-Specific ARARs

10.3.1 Clean Air Act, 42 U.S.C. §7401 et seq.

Rules and Regulations of the South Coast Air Quality Management District

Glendale South OU treatment of VOCs by air stripping, whereby the volatiles are emitted to the atmosphere, triggers action-specific ARARs with respect to air quality.

The Clean Air Act regulates air emissions to protect human health and the environment, and is the enabling statute for air quality programs and standards. The substantive requirements of programs provided under the Clean Air Act are implemented primarily through Air Pollution Control Districts. The South Coast Air Quality Management District (SCAQMD) is the district regulating air quality in the San Fernando Valley.

The SCAQMD has adopted rules that limit air emissions of identified toxics and contaminants. The SCAQMD Regulation XIV, comprising Rules 1401, on new source review of carcinogenic air contaminants is applicable for the Glendale South OU. SCAQMD Rule 1401 also requires that best available control technology (T-BACT) be employed for new stationary operating equipment, so the cumulative carcinogenic impact from air toxics does not exceed the maximum individual cancer risk limit of ten in one million (1×10^{-5}). EPA has determined that this T-BACT rule is applicable for the Glendale South OU because compounds such as TCE and PCE are present in groundwater, and release of these compounds to the atmosphere may pose health risks exceeding SCAQMD requirements.

The substantive portions of SCAQMD Regulation XIII, comprising Rules 1301 through 1313, on new source review are also ARARs for the Glendale South OU.

The SCAQMD also has rules to limit the visible emissions from a point source (Rule 401), which prohibits discharge of material that is odorous or causes injury, nuisance or annoyance to the public (Rule 402), and limits down-wind particulate concentrations (Rule 403). EPA has determined that these rules are also ARARs for the Glendale South OU interim remedy.

10.3.2 Water Quality Standards for Discharges of Treated Water to Surface Waters or Land

State Standards

For any recharge to the basin, including spreading, or discharges to surface water that occur on-site, the recharged or discharged water must meet all action-specific ARARs for such recharge or discharge. The ARAR applicable to the recharged (Alternative 6) water is:

- The Los Angeles Regional Water Quality Control Board's Water Quality Control Plan, which incorporates State Water Resources Control Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California." Resolution No. 68-16 requires maintenance of existing State water quality unless it is demonstrated that a change will benefit the people of California, will not unreasonably affect

present or potential uses, and will not result in water quality less than that prescribed by other State policies.

In order to comply with this State ARAR, any treated groundwater that is recharged on-site will be treated to concentrations below Federal MCLs or State MCLs for VOCs, whichever is more stringent. In addition, any nitrate concentrations in the water to be recharged will have to be similar to or lower than the levels of these substances in the area of the aquifer where the recharge will occur. The quality and quantity of the water to be recharged, as well as the duration of the project, will be considered with respect to the existing water quality.

EPA anticipates that there may be short-term discharges of treated water to the Los Angeles River during the initial operation of the VOC treatment plant and on certain other limited occasions. The ARAR for any treated water that is discharged, on a short term basis, to the Los Angeles River is the National Pollutant Discharge Elimination System (NPDES) Program which is implemented by the LARWQCB. In establishing effluent limitations for such discharges, the LARWQCB considers the Water Quality Control Plan for the Los Angeles River Basin (the "Basin Plan"), which incorporates Resolution 68-16, and the best available technology economically achievable (BAT). See, Cal. Water Code § 13263.

Since the RWQCB did not identify specific substantive discharge requirements or technology standards for such temporary discharges, EPA has reviewed the Basin Plan and considered BAT and has made certain determinations for the short-term discharges to the Los Angeles River. In order to comply with this ARAR, any treated groundwater that will be discharged, on a short-term basis, to the Los Angeles River on-site must be treated to meet Federal MCLs or State MCLs for VOCs, whichever is more stringent.

The treated water will also contain nitrate. The Basin Plan states that the level of nitrate shall not exceed 45 mg/l in water designated for use as domestic or municipal supply. According to the Basin Plan, the Los Angeles River is not designated for municipal or domestic water supply. Therefore, the 45 mg/l is not an ARAR for the short-term discharges associated with the OU.

EPA has also considered what BAT could be for such short-term discharges. For on-site discharges, meeting the nitrate MCL through treatment by ion exchange would result in complex technical issues, such as disposal of waste brine, and would be very costly given the temporary nature of such discharges. Therefore, EPA has not identified ion exchange as the NPDES treatment standard for such short-term discharges.

EPA also considered the Mineral Quality Objective for the Los Angeles River of 36 mg/l (8 mg/l nitrate-N) established in the

Basin Plan. Because the anticipated average concentration of nitrate in the short-term discharge is likely to be close to the MCL, and any discharge would be short-term, there should not be any significant long-term effects on the mineral quality of the Los Angeles river associated with short-term discharges of VOC-treated water from the Glendale South OU.

It should also be noted that extractions of 2,000 gpm of groundwater per the Glendale South OU will result in decreased amounts of contaminated groundwater recharging to the Los Angeles River, thereby further protecting its beneficial uses.

Again, with respect to VOCs, any on-site discharge to the Los Angeles River must meet Federal MCLs or State MCLs for VOCs, whichever is more stringent. Since short-term discharges to the Los Angeles River would occur on-site, the procedural requirements for Federal National Pollution Discharge Elimination System (NPDES) as implemented in RWQCB Waste Discharge Requirements (WDRs) issued under Section 13263 of the California Water Code would not be ARARs.

10.3.3 Secondary Drinking Water Quality Standards

The State of California's Secondary Drinking Water Standards (SDWS) which are more stringent than the Federal Secondary Drinking Water Standards shall be ARARs for the Glendale South OU if the final use option involves serving treated groundwater as drinking water. 22 CCR §64471. The California SDWS are selected as ARARs because they are promulgated State standards and are relevant and appropriate to the action of supplying the treated water to a public water supplier. Although California SDWS are not applicable to non-public water system suppliers, the California SDWS are relevant and appropriate since the treated water under this action would be put into the City's drinking water system. Since the Federal SDWS are not enforceable limits and are intended as guidelines only, they are not ARARs for this action. Furthermore, since the State SDWS are more stringent than the Federal SDWS, EPA has not selected the Federal SDWS as requirements for this action. In summary, if the treated water is to be served as drinking water, the treated water prior to the point of delivery must meet the California SDWS. See Figure 10-1. If the treated water is recharged or discharged to the river, the water will not be required to meet State SDWS.

10.3.4 Resource Conservation and Recovery Act (RCRA) and Hazardous Solid Waste Amendment (HSWA) Standards, 42 U.S.C. §§6901-6987.

RCRA, passed by Congress in 1976 and amended by the Hazardous and Solid Waste Amendments of 1984, contains several provisions that are ARARs for the Glendale South OU. The State of California has been authorized to enforce its own hazardous waste regulations (California Hazardous Waste Control Act) in lieu of the Federal